

Review of NOAA Fisheries Safety Policies and Procedures In US Regional and International Observer Programs



Report prepared by

Kurt J. Heinz

Teresa A. Turk

Kimberly S. Dietrich

Robert L. Markle

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List of Acronyms/Abbreviations

Acronym/Abbreviation	Definition
AAC	Alaska Administrative Code
AAR	After Action Reporting
ADF&G	Alaska Department of Fish & Game
AERD	Antarctic Ecosystem Research Division
AFA	American Fisheries Act
AFSC	Alaska Fisheries Science Center
AIDCP	Agreement on the International Dolphin Conservation Program
AIS	A.I.S., Inc.
AOI	Alaskan Observers, Inc.
AMLR	Antarctic Living Marine Resources
AMSEA	Alaska Marine Safety Education Association
APASS	Alarm-Pull-Aim-Squeeze-Sweep
AS	American Samoa
ASCP	Alternate Safety Compliance Program
ASEE	Alternative Safety Equipment Examination
ASM	At-Sea Monitoring Program or At-Sea Monitor
A-SHOP	At-Sea Hake Observer Program
ASOP	American Samoa Observer Program
ATCA	Atlantic Tunas Convention Act
BSAI	Bering Sea and Aleutian Islands
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCROP-HS	Code of Conduct for Responsible Observer Programmes – Observer Health & Safety
CDQ	Community Development Quota
CFR	Code of Federal Regulations
CFSAC	Commercial Fishing Safety Advisory Committee
CISM	Critical Incident Stress Management
CMM	Conservation Management Measure
COR	Contracting Officer's Representative
COTR	Contracting Officer's Technical Representative
CR	Crab Rationalization
DC	Damage control
DEAP	Delayed onset Emergency Action Plan
DOL	Department of Labor
DSC	Digital Selective Calling
EAP	Emergency Action Plan

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EEZ	Exclusive Economic Zone
ENP	Emergency Notification Plan
EPIRB	Emergency Position Indicating Radio Beacon
EM	Electronic Monitoring
ESA	Endangered Species Act
EWTS	East West Technical Services, LLC
FCE	Functional Capacity Evaluation
FECA	Federal Employees Compensation Act
FFA	Forum Fisheries Agency
FFP	Federal Fisheries Permit
F/IS	NOAA Fisheries Office of International Affairs and Seafood Inspection
FMA	(AFSC) Fisheries Monitoring and Analysis Division
FMP	Fishery Management Plan
FOCA	Fisheries Observer Compensation Act
FSB	NEFSC Fisheries Sampling Branch (includes NEFOP, IFS, ASM)
FSC	Fisheries Science Center (typically associated with a region)
FTE	Full-Time Equivalent
FTR	Federal Travel Regulation (41 CFR 300-304)
GARFO	Greater Atlantic Regional Fisheries Office (previously the Northeast Region office)
GCES	General Counsel Enforcement Section
GMFMC	Gulf of Mexico Fishery Management Council
GOA	Gulf of Alaska
GOM	Gulf of Mexico
GRT	Gross Registered Tonnage
HMS	Highly Migratory Species
HRU	Hydrostatic release unit
IATTC	Inter-American Tropical Tuna Commission
IBA	Inflatable Buoyant Apparatus
ICCAT	International Commission for the Conservation of Atlantic Tunas
IER	Incident Evaluation Report
IFOMC	International Fisheries Observer and Monitoring Conference
IFQ	Individual Fishing Quota
IFS	Industry-funded Scallop Observer Program
IMO	International Maritime Organization
LEADS	Law Enforcement Accessible Database System
LODS	Longline Observer Database
LSA	Life-Saving Appliance
MAFMC	Mid-Atlantic Fishery Management Council

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MARFIN	Marine Fisheries Initiative
MARPOL	International Convention for the Prevention of Pollution from Ships
Medevac	Medical evacuation
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MOC	Memorandum of Cooperation
MOU	Memorandum of Understanding
MRSA	Methicillin-resistant <i>Staphylococcus aureus</i>
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSIB	(USCG) Marine Safety Information Bulletin
MSIT	Marine Safety Instructor Training
NAFO	North Atlantic Fisheries Organization
NAFO-CEM	NAFO Conservation and Enforcement Measures
NEFOP	Northeast Fisheries Observer Program
NEFSC	Northeast Fisheries Science Center
NIOSH	National Institute for Occupational Safety and Health
nm	nautical mile
NMFS	National Marine Fisheries Service (also referred to as NOAA Fisheries)
NOAA	National Oceanic and Atmospheric Administration
NOP	National Observer Program
NOPAT	National Observer Program Advisory Team
NOPAT SAC	NOPAT Safety Advisory Committee
NPFMC	North Pacific Fishery Management Council
NPOP	North Pacific Observer Program
NPRM	Notice of Proposed Rulemaking
NVIC	(USCG) Navigation and Vessel Inspection Circular
NWFSC	Northwest Fisheries Science Center
ObsLog	Observer Logistics Database
OGC	NOAA Fisheries Office of General Counsel
OHSRs	Observer Health and Safety Regulations (50 CFR 600.725 & 600.746)
OLE	NOAA Office of Law Enforcement
OMAO	NOAA Office of Marine and Aviation Operations
OSPR	Observer Safety Program Review
PFMC	Pacific Fishery Management Council
PIFSC	Pacific Islands Fisheries Science Center
PIRFO	Pacific Islands Regional Fisheries Observer
PIRO	Pacific Islands Regional Office
PIROP	Pacific Islands Regional Observer Program

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PIROPS	Pacific Islands Regional Observer Program System
PLB	Personal Locator Beacon
PML	Personal Marker Light
POP	See SEFSC POP
POV	Personally Owned Vehicle
PPE	Personal protective equipment
PSMFC	Pacific States Marine Fisheries Commission
PSIX	(USCG) Port State Information Exchange
PTNS	Pre-Trip Notification System
PTSD	Post-traumatic stress disorder
PTVSC	Pre-Trip Vessel Safety Checklist
PWS	Performance Work Statement
RFB	Regional Fishery Body
RFMO	Regional Fisheries Management Organization
RFOP	Reef Fish Observer Program
ROP	Regional Observer Program (US domestic)
S&T	(NOAA Office of) Science and Technology
SAR	Search and rescue
SART	Search and rescue transponder
SATl	South Atlantic
SBLOP	Shark Bottom Longline Observer Program
SCA	Service Contract Act
SECO	Safety and Environmental Compliance Office
SEFSC POP	Southeast Fisheries Science Center Pelagic Observer Program
SERO	Southeast Regional Office
SGOP	Southeast Gillnet Observer Program
SISO	CCAMLR Scheme of International Scientific Observation
SME	Subject matter expert
SOLAS	International Convention for the Safety of Life at Sea, 1974 (as amended)
SOP	Shrimp Observer Program
SOW	Statement of Work
SPC	Secretariat of the Pacific Community
STCW-F	International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel 1995
SWFSC	Southwest Fisheries Science Center
TSI	TechSea International, Inc.
TTOP	Tuna Transshipment Observer Program

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UIN	Uniform Identification Number
USDEL	US Delegation
USCG	US Coast Guard
USG	US Government
USL&H	United States Longshore and Harbor Workers Compensation Act
VHF	Very High Frequency
WCPFC	Western and Central Pacific Fisheries Commission
WCRO	West Coast Regional Office (recently merged Northwest and Southwest regional offices)
WCROP	West Coast Region Observer Program
WCGOP	West Coast Groundfish Observer Program

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1 EXECUTIVE SUMMARY

1.1 Introduction

Considering that commercial fishing is historically one of the most hazardous occupations in the United States, and that fisheries observers are often exposed to similar risks as fishers, the safety record of fisheries observers has been generally good, with only six work-related fatalities of US citizen observers in over 40 years of deployments at sea worldwide. Thus, in late 2016, the highly unusual loss in a one-year period of two NOAA Fisheries-trained observers (one in a domestic fishery and one in an international fishery), and a foreign observer on a US-flag fishing vessel in the Western Pacific, prompted the NOAA Office of Science and Technology to conduct a review of Observer Program safety policies and practices. A review team of outside auditors with a combination of extensive observer, marine safety, and program review experience examined regional, national, and international policies and procedures for observer health and safety through review of program documentation; interviews with key observer and associated program personnel, observer providers, safety trainers, and observers; outreach to other agencies and organizations with relevant expertise and involvement; and site visits to regional observer programs (ROPs) and specified remote program offices to review observer training programs and observe safety-related policies in practice. In general, the team found the domestic NOAA Fisheries national and regional observer safety programs to be robust, mature, and effective. Of the three casualties which were the impetus for this review, none were considered to have stemmed from systemic shortcomings in the US domestic observer safety programs. Nevertheless, in the course of its comprehensive review, the team identified a number of gaps and inconsistencies, as well as best practices, which formed the basis for the findings and recommendations in this report. Of particular concern were significant gaps between the safety policies and practices of US ROPs, and those of international observer programs in which US citizen observers participate. The findings and recommendations which the review team felt to be the most significant are summarized in section 1.2 below. Additional findings and recommendations can be found in the relevant sections of the report to which they apply, and a summary of all of the findings and recommendations in this report, sorted by program, priority, and review element (section 2), can be found in section 6.

This report was prepared by a four-member team of external reviewers. The opinions and views expressed in this report are those of the authors and do not reflect the official policy, position, or opinion of NOAA.

The review team was given wide latitude in developing its findings and recommendations. Some findings reflect the reviewer's opinion, based on application of established subject matter

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expertise to direct observations. Some recommendations, if NOAA Fisheries chooses to pursue them, may require the agency to seek additional resources and/or statutory authorities, or to pursue amendments to international agreements through established multilateral processes.

1.2 Summary of major findings and recommendations

1.2.1 Incident investigations and after-action reporting

Finding: The NOAA Fisheries National and Regional Observer Programs currently lack a systematic process for following up on significant incidents and casualties involving observers. As a prime example, despite the passage of well over a year (over two years in the case of Keith Davis¹) since the three observer losses which were the impetus for this review, the causes (or even facts) of death remain inconclusive. While two appear to have stemmed from natural causes, there remain many outstanding questions about the nature and effectiveness of the communications protocols and actions taken in response to these fatalities. The establishment of this review is a significant step forward, however it remains troubling that three observers (two of whom were trained by NOAA Fisheries) were lost in the line of duty over the space of a year, yet there has to date been no official closure or systematic analysis of lessons learned with respect to any of them. In the case of Keith Davis, this information vacuum has fed media speculation in several investigative reports. In informal interactions with observers during their field visits, the review team found that many were not aware of the fact that three of their colleagues lost their lives on the job in the course of a single year. Past casualties can and should generate useful lessons for incorporation in observer safety training. While aware that NOAA Fisheries is not an investigative agency, and that jurisdictional and geographical issues were very complex in two of the three cases, the review team believes that more could have been done in cooperation with other agencies involved to pursue more comprehensive and transparent closure of these tragic incidents.

Recommendation: The National Observer Program (NOP), in consultation with the NOP Advisory Team (NOPAT) and the NOPAT Safety Advisory Committee (NOPAT SAC) as appropriate, should, as a high priority, work to develop and maintain a robust, timely, and transparent process for incident reporting and After Action Reporting. Particularly in cases of incidents involving serious injury or death of an observer, the agency should ensure that all necessary resources are brought to bear so that the root causes can be identified, appropriate actions can be taken to prevent or mitigate the consequences of a recurrence, and lessons learned can be applied to future safety training and policy development. In cases where NOAA Fisheries does not possess the necessary investigative authority, resources, or jurisdiction, the

¹ http://www.nmfs.noaa.gov/aboutus/leadership/oct_2015_leadership_message_observers.html

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agency should identify and seek support and expertise of other agencies who do, at as high a level as necessary to break any administrative logjams. The review team was of the view that since observers are working on behalf of (and in most cases funded, if indirectly, by) NOAA Fisheries, NOAA Fisheries has an important responsibility to ensure that casualties involving those observers are thoroughly and conclusively investigated. The results of investigations of the most serious incidents should be cleared through and endorsed at the highest level of the agency, and applied as resources to inform future safety training and policy development.

1.2.2 Emergency Action Plans

Finding: With one notable exception, NOAA Fisheries ROPs currently lack comprehensive or coordinated Emergency Action Plans (EAPs), despite detailed recommendations for such plans provided in a 2004 review of program EAPs for the agency (Ajango *et al.* 2004a). Effective EAPs not only specify notification protocols, but also address appropriate substantive actions in response to an at-sea or other on-duty emergency or crisis with an observer, including, but not limited to, serious injury, death, harassment, or intimidation.

Recommendation: Each ROP and its active observer providers should develop comprehensive and coordinated Emergency Action Plans (EAP) that address appropriate responses (beyond just notifications up the chain of command) to an on-duty emergency or crisis with an observer, appropriately scaled to the size and characteristics of the program. EAP development should take into account consideration of processes to periodically test and assess the effectiveness of the EAP. Emergency Notification Plans (ENP) are an important element of EAPs. However, non-NOAA entities operationally responding to observer emergencies may not have access to the full range of available options, operational conditions, and personal information with respect to observers, so ROPs (and in major cases, even the NOP) may need to assume an important role in coordinating response and follow-up to such emergencies. The review team was of the view that the EAP developed by the Fish Sampling Branch (FSB) of the Northeast Fisheries Science Center (NEFSC) represents a best practice that could be applied as a conceptual model for development of EAPs by other ROPs. In addition, the recommendations in Ajango *et al.* (2004a) should be utilized during development (see also section 3.6), and other EAPs such as those developed and implemented by some observer providers (*e.g.*, MRAG Americas and Saltwater, Inc. in the North Pacific Observer Program) also contain useful examples of suitable EAP content. ROPs should ideally collaborate with observer providers in their regions to ensure that their EAPs complement each other. For smaller programs, EAPs may need to be scaled as appropriate to the size and resources of the program.

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Finding: The NEFOP Fishery Science Branch EAP identified as a best practice in the previous recommendation was the product of staff with previous extensive emergency management (FEMA) experience. This specialized expertise may not be available internally to other ROPs which tend to be predominantly staffed by fisheries biologists.

Recommendation: Since comprehensive EAP development may require a skill set not found in many observer programs, the review team recommends that the NOPAT SAC identify regional program needs for more detailed EAP development as described in Ajango *et al.* (2004a), and identify resources for appropriate professional assistance (potentially including sharing of expertise between programs) to strengthen and enhance their EAPs.

1.2.3 Bed bugs

Finding: The Pacific Islands Regional Observer Program (PIROP) has worked collaboratively with the observer provider and the Pelagic Longline Fleet for over 10 years to reduce and eliminate bed bugs from vessels carrying observers. The incidence of bed bugs was initially dampened, but during the past four years, bed bug infestations have significantly increased, with over 41 infestations reported in 2016. Bed bugs pose potential serious safety and health risks due to sleep loss/fatigue, potential transmission of diseases (*e.g.*, Chagas disease), and increased infection potential from open sores (*e.g.*, highly contagious bacteria such as *Staphylococcus* (staph) can enter the bloodstream).

Recommendation: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a national policy that prohibits an observer from being deployed to a vessel with an active bed bug infestation, or a recent infestation that has not been completely eradicated. The national policy should include procedures to inspect, assess, identify required actions for eradication (*e.g.*, fumigation tenting), and carry out follow-up inspections prior to the next observer deployment. Experts from the CDC, state or local health departments, or pest control companies should be consulted to determine successful eradication procedures and follow-up inspections to ensure the protection of observer health and safety.

1.2.4 Observer physical examination requirements and practices

Finding: In light of two recent observer fatalities attributed to illness or medical conditions, the review team examined pre-employment and continuing physical examination requirements and practices for observers across all programs. Physical and medical eligibility requirements are specified by NMFS Instruction 04-109-01, *National Minimum Eligibility Standards for Marine Fisheries Observers* (hereinafter “Observer Eligibility Standard”). The physical exam requirement is two-tiered: 1) “A licensed physician must certify not more than 12

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months prior to the end of the observer training that the observer candidate is physically capable of serving as an observer”; and 2) “Documentation must be provided to the program prior to the observer candidate’s completion of training.” This policy language lacks specificity, and has been subject to wide interpretation. With respect to the first tier, there is disparity among ROPs regarding whether the physical examination requirement applies to only new trainees, or to veteran observers who continue to work long-term. All programs have first time observers complete the physical examination prior to the end of training, whereas the frequency of examinations for continuing observers ranges from every 12 months to every 3 years. In recent history in at least one program, there was no requirement at all for experienced observers. In addition, currently not all examinations are performed in-person with a physician. The review team is of the view that a telephone consultation with a physician is not sufficient to accurately assess the capability of a potential observer to handle the physical rigors of the job. Finally, although providing documentation from the physician that the individual is “physically capable of serving as an observer” is a national requirement, this is not a specified deliverable in all observer provider contracts with NOAA Fisheries, nor is documentation being provided to some programs.

Recommendation 1: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should clarify the intent of the physical/eligibility requirements regarding whether physical examinations should be required only upon initial hire, or on a regular basis for all observers. The review team is of the view that the policy should include a frequency requirement for currently employed observers. Due to the physical rigors of the observer occupation, the review team recommends that all observers have an in-person physical examination both upon initial hire and every 12-18 months thereafter using guidelines such as those provided in section 4.1.2, Finding 1, Recommendation .1.

Recommendation 2: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should enhance the physical/medical examination requirement in the Observer Eligibility Standard to specify that the physical examination must be performed in-person by a licensed physician.

Recommendation 3: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should take appropriate steps to ensure that the physical examination documentation requirement is included in all observer provider contracts, and that copies of the physician statements as a minimum are provided to the programs (with appropriate handling to protect medical confidentiality). In connection with this, acceptable types of “documentation” should be clarified. To avoid wasted resources, the review team recommends

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that the physical examination be completed and a copy of the physician statement be provided to the program at least 14 calendar days prior to the first day of training.

Finding: Current observer provider contracts or regulations require that physicians performing physical examinations in support of certification of observers be provided with a form letter or ROP-developed pamphlet describing the observer occupation, to ensure they have sufficient information to make a medical assessment of the candidate's fitness to do the job. However, the materials as currently drafted may not be providing enough information for a physician to adequately assess fitness and risk to the observer's health. Physicians are not required to test any functional abilities as part of the current "physical evaluation" process. Several observers have been hired who had medical conditions which required a US Coast Guard (USCG) emergency response (one extraction, and one air drop of extra medication). Several program managers advised the reviewers that they felt physical ability should be addressed prior to acceptance into training and should be performed by a professional as part of the physician's assessment. The NOAA OMAO requirements for deployment on a NOAA or NOAA-chartered vessel, which is generally less physically stressful and isolating than deployment as an observer on a fishing vessel, are far more stringent than the current observer physical requirements.

Recommendation 1: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a national template of minimum information to provide to physicians performing observer physical examinations. A suggested example "Letter to Physician" is included in Appendix 7.

Recommendation 2: The NOP should initiate consultation with appropriate medical professionals to evaluate a variety of disqualifying medical conditions or medications that may pose increased health risks to an observer or unnecessary economic risk or undue hardship to a fishing vessel if they must terminate a trip due to an observer's pre-existing medical condition. The review team has developed a draft based on the NOAA OMAO requirements, as a starting point for further development in consultation with the OMAO or other appropriate medical professionals (Appendix 8).

Recommendation 3: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should review the physical requirements for observers, and seek occupational therapy expertise from the NOAA OMAO or other agencies such as NIOSH to design an appropriate skills test or functional capacity evaluation to be conducted as part of the physical evaluation process.

Recommendation 4: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should include in policy or practice methods to ensure that before each

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deployment, an observer has sufficient and extra supplies of any prescribed medication(s) to address the possibility of an unanticipated extension of a deployment. A potential effective practice may be to include a general question on each pre-trip vessel safety checklist (PTVSC) where the observer must confirm having sufficient and extra medication as may be needed.

1.2.5 Observer insurance

Finding: Observer providers currently offer a wide range of insurance types to cover work-related illness or injury claims by observers. Insurance requirements by NOAA Fisheries also vary widely between regional program regulations, policies, and contracts. Attempts to harmonize observer insurance started in 2001 through the process of convening a workshop of insurance industry representatives, observer providers, observer program staff and observers. The primary outcome of this workshop was the crafting of proposed legislation called the Fisheries Observer Compensation Act (FOCA). This proposed legislation stalled in Congress and has not been pursued further. In the meantime, ROPs have applied inconsistent insurance requirements through the contracting and permitting/certification process for observer providers. Correspondence between Alaskan Observers Inc. (AOI), an observer provider, and the North Pacific Fishery Management Council (NPFMC) in 2014 illustrated some of the disparity between regional regulations requiring different insurance types and amounts. Fifteen years after the original workshop, in November 2016, the NOP sponsored a two-day workshop to again review and discuss the subject of observer insurance. The end product of this latest workshop was a NOAA Fisheries Technical Memorandum summarizing the discussions in the workshop which, while serving as a useful starting point for future policy development by laying out a series of goals to address the issues in the future, did not recommend or initiate any changes in the current policy/situation.

In some programs, an observer is not an employee of the observer provider, but rather considered an independent contractor. It is unclear if the observer provider's insurance (as required through regulation or contract) would apply in the event of an accident or injury to an observer working as an independent contractor.

Recommendation 1: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should convene a working group of insurance experts, observer providers, observer program staff, and observers (and perhaps appropriate legislative affairs staff if a follow-up to FOCA is envisioned), to develop specific proposals for suitable harmonized national observer insurance standards that could apply within state, federal and international waters to compensate observers in the event of work-related illness, injury, disability from a work-related injury, or death. (While the 2016 workshop may serve as a catalyst for future action by the agency, it made no decisions, and developed no specific recommendations.) Once established, compliance with such national insurance standards should be required within each observer

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provider contract with NOAA Fisheries, and incorporated in national and/or regional regulations for application to observer providers who provide observers in industry funded programs. Standardization of observer insurance coverage would provide a more predictable cost to both industry and the federal government, and eliminate it as a competitive factor within the federal contracting system.

Recommendation 2: Absent a comprehensive approach as recommended above, the NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should consider development of suitable policy or regulation (seeking appropriate statutory authority, if deemed necessary) which would require observer providers to provide injury, illness, liability, and accidental death insurance for observers whether or not they are classified as employees, or as independent contractors or subcontractors.

1.2.6 International observer programs

1.2.6.1 Emergency Action Plans

Finding: Where they exist, current EAPs maintained by observer providers for international observer programs are not specific to a particular program, and are insufficiently detailed and overgeneralized, especially concerning notification procedures with respect to the different Search and Rescue (SAR) regions. International observer programs present a complicated jurisdictional situation for SAR as well as enforcement actions. In the event of an emergency, response procedures and jurisdictional authority potentially require careful review and collaboration between many US government (USG) agencies, such as the USCG, Department of State, NOAA Fisheries Office of Law Enforcement (OLE), and the FBI. The jurisdictional issues and delayed communication processes that hampered recovery and investigation in the case of Keith Davis's 2015 disappearance (see section 5.3.2.8) have not been addressed in the EAPs. However, recent measures adopted by the WCPFC and CCAMLR based on US initiatives represent a promising start.

Recommendation: The US delegations (USDEL) to the relevant Regional Fishery Management Organizations (RFMO) should advocate for suitable measures to ensure that observer providers and appropriate USG liaisons to international observer programs maintain EAPs which conform to national recommendations (section 3.6) for EAPs as may be developed. Each EAP should be program- and region-specific.

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1.2.6.2 Observer insurance

Finding: Currently, it appears that US observers² deployed in international observer programs are generally provided insurance by their employers (although this is not currently required). However, the effectiveness of the current insurance coverage has not been tested in an extreme situation, medical evacuation (Medevac), or a serious injury while at sea in international waters.

Recommendation: Either through regulation, or through the USDEL advocating through the appropriate RFMO(s), adopt measures to require that observer providers for US observers employed in international observer programs provide adequate medical insurance at least equivalent to what is currently required for US domestic observer programs administered by NOAA Fisheries. The insurance coverage should include observer evacuation from the vessel at sea, medical treatment, hospitalization or any other medical expenses in foreign countries, and transport back to the US or other place of residence, if necessary.

1.2.6.3 Safety and survival training

Finding: Of the five international programs examined under this review, only three of the programs (NAFO, CCAMLR, IATTC-TTOP) appear to apply safety training requirements similar to those of US domestic observer programs, largely due to historic or continued participation of their observer providers in US domestic observer programs, or by regulation.³ Rigorous safety training and refresher training requirements can help to lessen risks to fisheries observers whether on a small fishing vessel or a large transshipment carrier. The review team was advised of the NOP Coordinator's understanding that the Observer Eligibility Standard, and NMFS Instruction 04-110-01 *NOAA Fisheries Observer Safety Training Standards* (hereinafter "Observer Safety Training Standards") do not apply to US observers working in international fisheries.

Recommendation: The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should take necessary action, including seeking statutory authority if necessary and working with the relevant international programs, to require the application of the Observer Eligibility and Safety Training Standards (or equivalent ones) to US observers working in international fisheries.

² In the context of international observer programs, "US observers" means observers who are US citizens working in international fisheries observer programs established under international agreements to which the US is a party.

³ Although NOAA has provided regional training assistance to some international observer programs, these were targeted local initiatives that did not affect the training regimes of the programs as a whole, and are outside the scope of this review because they did not involve US observers or US-flagged vessels.

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1.2.6.4 Observer providers

Finding: For US observers working on NAFO and CCAMLR authorized vessels, there are currently no US regulations, contracts, permits, or certifications between observer providers and NOAA Fisheries, nor any required approval or USG oversight to address observer health and safety, medical standards or other provisions consistent with US domestic programs. In addition, there are no requirements for observer providers for these fisheries to inform the USG of the name, location or status of such observers. Without regulatory requirements or contractual agreements, the ability of the USG to effectively ensure the safety of US observers serving in the NAFO and CCAMLR fisheries is extremely limited.

Recommendation: To ensure adequate oversight and monitoring of observer providers by the USG, consider development and execution of a Memorandum of Understanding (MOU) or similar agreement between the USG and international observer providers deploying US observers, or develop regulations requiring an international observer provider deploying US observers to be permitted or certified similar to those requirements in the NEFSC Industry-funded Scallop Observer (IFS) and At-Sea Monitoring (ASM) programs, or the North Pacific Observer Program (NPOP) full coverage sector.

1.2.6.5 F/IS representation at NOPAT

Finding: In the past 12 years, many new observer programs have been established to monitor fishing vessels and transshipment vessels in international fisheries. These new programs are generally administered through RFMOs, and the USG is represented at RFMO fora by staff from the NOAA Fisheries Office of International Affairs and Seafood Inspection (F/IS). However, there is currently little interaction between F/IS and the US national or regional observer programs to ensure that F/IS is aware of current health and safety issues of concern involving observers.

Recommendation: In order to ensure that US observers working in international fisheries observer programs have the protections of similar standards to those applicable to US domestic fisheries, F/IS should be represented on the NOPAT. The F/IS representative would be responsible for ensuring F/IS familiarity with domestic observer program policies, best practices, and ongoing issues, and keeping the NOPAT informed of current health and safety-related issues relating to international observer programs.

1.2.6.6 CCAMLR vessel examinations

Finding: The CCAMLR observer program contains a provision for an international observer to work on board a foreign vessel under a bilateral arrangement. Although no US

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observers have been deployed in the CCAMLR fishery through a bilateral arrangement in over ten years, there have been recent discussions with other member nations to negotiate new bilateral arrangements. A review of previous bilateral arrangements between the US and other nations revealed that they did not contain any additional safety provisions to those identified in the CCAMLR Scheme of International Scientific Observation (SISO), which do not include a PTVSC or other safety inspection as required by the US Observer Health and Safety Regulations (OHSRs) when observers are deployed on board US-flagged vessels.

Recommendation: All bilateral arrangements for carriage of US observers under CCAMLR should provide for a safety inspection and PTVSC equivalent to those required by the US OHSRs. Such arrangements should require submission of the checklist to the appropriate USG point of contact before leaving port.

1.2.6.7 RFMO observer protections

Finding: Currently, most RFMO measures provide few protections and little to no transparency in the event of an accident involving an observer at sea. In 2016, spurred by Keith Davis's disappearance and after considerable debate, the Western and Central Pacific Fisheries Commission (WCPFC) passed the most comprehensive and transparent policy of all the tuna RFMOs, WCPFC CMM-2016-03 (Appendix 29). This new policy is a good start in providing additional important safeguards at sea for observers. USDEL representatives at the ICCAT and the IATTC have proposed similar measures to those bodies, but so far have been unsuccessful in attaining their adoption. However, in October 2017, the USDEL to CCAMLR introduced measures similar to the WCPFC CMM 2016-03, which were adopted by CCAMLR as Annex II to the CCAMLR Scheme of International Scientific Observation (SISO).

Recommendation: Through USDEL engagement in all relevant RFMO processes, advocate similar or additional protections to those recently passed in the WCPFC and CCAMLR.

1.2.6.8 Penalties for observer injury

Finding: RFMOs do not currently provide any penalties against flag states, vessels, captains or crew who are involved with the loss, serious injury or death of an observer while under their authority. The lack of any repercussions continues to perpetuate a potentially unsafe work environment for observers, and ignores the increased risk associated with the compliance role of an observer, especially in the transshipment observer programs.

Recommendation: The USDEL to the relevant RFMO should advocate binding measures that implement penalty provisions excluding the vessel, the crew, and captains of any fishing or

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transshipment vessel involved in the serious injury or loss of life of an observer at sea resulting from negligence or criminal activity of the captain and crew from being listed as an authorized vessel/person participating in the relevant convention area or fishery. Such provisions may serve as a deterrent to any future observer safety threats and create a safer working environment.

2 SCOPE OF WORK AND METHODOLOGY

The overarching goal of this review is to evaluate current NOAA Fisheries health and safety practices and policies in domestic ROPs, as well as international observer programs in which US observers and US-flagged vessels may participate, to identify best practices, as well as any gaps and inconsistencies; and to recommend changes that will result in improvements to mitigate the risks inherent to fisheries observers and the fishing industry. The results of this review may be used to make recommendations that would allow for the development of flexible self-evaluation tools that would adapt to changing safety concerns as they evolve. While certain minimum domestic observer health and safety requirements (including safety training) have been standardized nationally in the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and associated Observer Health and Safety Regulations (OHSRs; 50 CFR 600.725 and 746), and in directives promulgated by the NOAA Fisheries Office of Science and Technology, there are also a variety of regionally-specific regulations, policy documents, and practices that apply to domestic fisheries. In addition, certain USCG fishing vessel safety regulations and practices impact observer health and safety for the domestic fleet. The review team carefully examined and compared all of these in the course of its work. The identification and implementation of regional, national, and industry best practices, along with the ability to continually assess the effectiveness of observer health and safety practices and policies in light of evolving risks, will enhance the safety of the observer community.

International fisheries are subject to a variety of regional international agreements (section 5). The international observer programs considered under this review were analyzed against the core safety-related elements and protocols that are common to most domestic ROPs as a baseline. These include physical examinations; insurance for deployed observers; classroom training; observer manuals with sampling and safety information; regular communication protocols; pre-trip vessel safety inspections/checklists; at-sea support and means of independent communication; and post-deployment debriefing. RFMO and relevant NOAA Fisheries personnel, observer providers, and observers, where available, were contacted and asked for details on how their particular observer programs are managed, with an emphasis on safety, equipment, communication, insurance, and training procedures. If a safety or procedural “gap” was identified, recommendations on improving a critical component of that

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observer program were made. The review also evaluated the application to international programs of other best practices identified in this report.

Specific tasks for this review were specified in the Statement of Work as follows:

- Participate in an orientation meeting at NOAA Fisheries headquarters for all reviewing team members
- Collect and accumulate safety procedural information through interviews with regional and national policy owners and subject matter experts from each ROP and the NOP
 - Combine into one central repository all collected documentation on policies reviewed
- Observation and/or evaluation of the following:
 - ROP trainings and curricula
 - ROP record keeping, reporting, certification requirements, and risk assessment methods to mitigate evolving risks
 - Communication and notification policies
 - ROP processes for observer deployments
 - Emergency Action Plans (EAPs)
 - Impacts of national, regional, and provider insurance and health standard requirements
 - ROP and NOP safety oversight mechanisms
 - ROP- and provider-issued observer safety equipment
 - Regional and national regulatory impacts on observer safety
- Where applicable, evaluate the role of ROPs and the NOP in maintaining international safety standards under any international treaties to which the US is a signatory
- In addition to observation/evaluation visits to the NOP and each ROP to work directly with designated representatives to collect documentation, conduct interviews, and observe processes in practice, the Statement of Work requires program visits to the remote offices in Kodiak and Dutch Harbor, AK, as well as Pago Pago, American Samoa.

At the initial orientation meeting at NOAA Silver Spring in late September 2016, the review team was provided an overview prepared by the NOP staff who designed the review, that identified the following seven core elements and associated sub-elements as key components of the overall observer safety program envisioned to be examined (listed as, and in the order provided, with the exception of one added sub-element shown in *italic text*):

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- **Regulations**
 - Evaluate regional regulatory impact on safety
 - Evaluate national regulatory impact
 - Evaluate insurance requirements on safety program

- **Practices/ Policies**
 - Evaluate observer vessel placement inspections
 - Review observer roles during vessel drills
 - Evaluate at-sea safety policies and enforcement
 - Review observer health requirements
 - Review methods to identify and mitigate safety trends
 - Review program oversight of contractor assigned duties

- **Training**
 - Review curricula
 - Evaluate risk management & assessment tools
 - Evaluate trainer qualifications requirements/ maintenance
 - Review national standards compliance
 - Review records and reporting methods
 - Evaluate logistics/coordination methods
 - Evaluate observer certifications requirements/ maintenance

- **Equipment**
 - Compare program and industry standards
 - Review service maintenance records, etc. to evaluate effectiveness of regional programs in ensuring operational reliability of safety equipment
 - Evaluate suitability to observer duties

- **Communications**
 - *Describe and evaluate routine communications while at sea*
 - Evaluate program and provider Emergency Action (or Notification) Plans (EAP/ENP)
 - EAP/ENP evaluation and update methods
 - Evacuations from sea

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- **Safety Reporting**
 - Review incident reporting & tracking mechanisms
 - Evaluate After Action Reports.
 - Review National report compilation methods

- **International**
 - Review International regulatory impact on NMFS program safety
 - NMFS role in fostering international safety

Although this list of elements was not explicitly included in the Statement of Work, the review team considered them as providing a useful framework for organizing its review activities and categorizing its findings and recommendations.

The team was also provided clarifying guidance to refine the scope of the review as encompassing only active, domestic, fisheries observer programs working under authority of the MSA, ESA, and MMPA, and under jurisdiction of NOAA Fisheries. International observer programs were limited to those programs that employ either observers who are US citizens deployed on foreign flagged or US flagged vessels operating in international fisheries, or foreign observers deployed on board US flagged vessels.

The team was briefed by NOP staff on the expectations for the individual program reviews. In this context, the team reviewed the project travel budget. Travel funding for the project was developed based on the expectation of visits to each of the assigned regions to monitor the various regional observer training programs, with primary focus on the safety-related components of the training. It was uncertain at the outset whether regional training schedules would allow for attendance at all of the programs within the review contract performance period. However, the review team was ultimately able to monitor a new observer or refresher safety training for every ROP except the WCROP-Southwest Region, where staff safety training (which included much of the observer training components) was attended as an effective alternative, and the SGOP/SBLOP in the Southeast Region.

Immediately subsequent to the orientation meeting the review team met to develop an initial Plan of Action (POA). This POA, which was briefed to the NOP staff at the conclusion of the meeting, assigned responsibility for review of the various ROPs to the individual members. Each team member was assigned a minimum of two US domestic programs to review (Appendix 1). International programs (taken as a group) and the NOP were also assigned. To avoid any undue influence of team members with past observer experience, these members were each assigned to review programs with which they did not have any significant prior experience. As part of the team's evaluation of the effectiveness of overall observer program training, a team member

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was also assigned to observe and review an Alaska Marine Safety Education Association (AMSEA) Marine Safety Instructor Training (MSIT) session in Panama City, FL (10-14 April 2017; Appendix 1). The NPOP reviewer also leveraged the proximity of the NPOP Field Operations office in Kodiak, Alaska to the Alaska Department of Fish & Game (ADF&G) next door to provide an opportunity to review the ADF&G crab and scallop observer programs as a measure of oversight over these partially federally funded programs.

To accomplish the task of collecting safety procedural information for the regional programs under review, the team built on the Google Drive folder initiated by NOP staff to share initial reference documents with the team. The team used the cloud storage capabilities to share information as needed both within and outside the team in its work, as well as to maintain security of confidential and pre-decisional data and work products to within the team. The Drive site used for the project is the foundation for the “central repository of all collected documentation on policies reviewed” which is a project deliverable.

As a first step in reaching out to the programs under review, a “Regional Briefings” document was forwarded to each program by the NOP, notifying them of the upcoming review, and providing a list of pre-review documentation that each program should make available to the reviewers. A similar document was sent by the review team to all active observer providers, informing them of the review and soliciting certain pre-review materials relevant to them. Regional programs and observer providers were generally cooperative, providing requested information in a variety of hard copy, e-mailed electronic documents, and shared directly to the Drive. The team experienced some difficulties in obtaining contractual information from a few regions, and procedural information from a few observer providers, due to concerns about the proprietary nature of the materials, and possible impacts on competition for future contracts. Some other information collection challenges are pointed out in the relevant sections of the report. Overall, however, the team was able to collect sufficient information to accomplish its objectives.

The team reviewed past minutes of NOPAT and NOPAT SAC meetings to identify outstanding observer safety issues, and to evaluate the effectiveness of the NOP and the NOPAT in following up on identified issues and recommended actions.

Due to procedural issues stemming from Paperwork Reduction Act information collection requirements and the limited time in the contract period, in lieu of an observer survey, the team solicited input from observers in person during site visits, and by phone or email via a general request for observer input on the NOP’s website (links to which were then shared with observer group social media outlets). The personal interaction during site visits proved to be a fruitful approach; some observers remarked that their unconventional work schedules limited

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their ability to remain current with social media, where posts can quickly fall from view. The team reached out as needed to other organizations and agencies (*e.g.*, NIOSH, USCG, FBI) to seek additional information regarding several of the casualties that were the impetus for this review, and to identify other sources of fishing vessel casualty data relevant to fisheries observers.

In viewing incidents of observer assault, harassment, and interference as having clear observer safety implications, the team interviewed relevant OLE personnel on incident reporting methodologies, and reviewed available OGC summaries of the outcomes of OLE enforcement actions to identify those incidents involving observers for further review as appropriate.

A list of all contacts visited by the team in the course of the review is provided as Appendix 2.

3 OVERVIEW OF THE NOAA FISHERIES OBSERVER PROGRAMS

3.1 Background

The Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), through its NOAA Fisheries line office (also known as the National Marine Fisheries Service, or NMFS), is responsible for managing, conserving, and rehabilitating marine resources within the United States. NOAA Fisheries, under the leadership of the NOAA Assistant Administrator for Fisheries, is charged with maintaining sustainable fisheries, providing safe sources of seafood, promoting conservation and recovery of protected species, and protecting the health of coastal marine habitats. Management decisions are based on sound science using the best available data.

Worldwide, fisheries observers and monitors are deployed on commercial fishing vessels and processing vessels, and in fish processing plants to collect data and monitor fishing activities. In general, an "observer" is a person who is authorized by a regulatory authority to collect information in the field (either at sea or on shore) to support sustainable aquatic resource management (IOBR 2013). Observers do not have enforcement authority, although the information they collect may be used for enforcement purposes.

In the United States, the use of observers can be traced back to the 1970s, when NOAA Fisheries placed observers on foreign fishing vessels pursuant to international treaties (Brooke 2014). Following the passage of the Fishery Conservation and Management Act of 1976 (re-named the Magnuson-Stevens Fishery Conservation and Management Act (MSA) in 1996), and the extension of the US Exclusive Economic Zone (EEZ) to 200 miles, NOAA Fisheries began deploying observers on domestic fishing vessels to record estimates of total catch and bycatch, marine mammal interactions, and a variety of biological data to assess marine resource sustainability. Under the MSA, fishery management plans (FMPs) are developed for federal

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fisheries that require conservation and management. The MSA provides for eight regional fishery management councils, and provides the Secretary of Commerce with the authority to require that “one or more observers be carried on board a vessel of the United States engaged in fishing for species that are subject to the plan, for the purpose of collecting data necessary for the conservation and management of the fishery.”⁴ The Marine Mammal Protection Act (MMPA) also authorizes the placement of observers on board vessels engaged in Category I and Category II commercial fisheries⁵ that frequently or occasionally take marine mammals (50 CFR 229.7(c)). NOAA Fisheries uses observer data to quantify the impacts of fishing activities on marine mammal populations, and evaluate the success of bycatch reduction measures. The Endangered Species Act (ESA) authorizes NOAA Fisheries to place fisheries observers aboard commercial and recreational vessels in state and federal fisheries operating in the territorial seas or EEZ where sea turtle interactions may occur. Under the ESA, observer data help managers to determine whether existing measures to reduce sea turtle bycatch are working, or whether new or additional measures are needed to address sea turtle bycatch. NOAA Fisheries annually identifies which fisheries are eligible for observer coverage under this requirement.

The data collected by observers are used by scientists and policymakers, in partnership with Regional Fishery Management Councils, to make fishery management decisions for purposes of maintaining the nation’s marine resources under the MSA FMPs. Observers are often the only independent data source for some types of at-sea information, such as catch composition and utilization, marine mammal, sea turtle and seabird interactions, and compliance with fisheries regulations. In addition to the MSA, ESA, and MMPA, observers are placed on fishing vessels in support of a number of other US statutes and international agreements (*e.g.*, the Atlantic Tunas Convention Act (ATCA), the CCAMLR Scheme of International Scientific Observation (SISO), etc.).

3.1.1 US observer training

NOAA Fisheries trains and oversees the training of hundreds of observers annually for domestic fisheries. This training encompasses both fisheries management subject matter relevant to each region, and observer safety policies and practices. The observer safety training is carried out in accordance with minimum national standards that NOAA Fisheries has determined are critical to preparing observers for the risks and hazards associated with commercial fishing operations, including (but not limited to) risk awareness, conflict resolution, first aid, crisis prevention, emergency response, and survival at sea. The minimum national observer safety training

⁴ 16 U.S.C. §1853 (b)(8)

⁵ Category I fishery means a commercial fishery determined to have frequent incidental mortality and serious injury of marine mammals. Category II fishery means a commercial fishery determined to have occasional incidental mortality and serious injury of marine mammals. (See 50 CFR 229.2 for details.)

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standards, under cover of NMFS Policy Directive 04-110 *NOAA Fisheries Observer Safety*, are contained in NMFS Instruction 04-110-01 *NOAA Fisheries Observer Safety Training Standards* (NOAA Fisheries 2007c). Regional observer safety trainers developed these training standards in coordination with the NOP and the Alaska Marine Safety Education Association (AMSEA) (Ajango *et al.* 2004b). The AMSEA marine safety instructor training methodologies and lessons are the foundation of every regional observer safety training program (AMSEA 2012).

All trainers providing instruction to domestic observers on health and safety topics must have passed a USCG-approved MSIT course (NOAA Fisheries 2007c). NOAA Fisheries has utilized the AMSEA MSIT course almost exclusively to train observer trainers, as AMSEA has played an integral role in developing much of the training material used by observer programs (*e.g.*, (AMSEA 2012, Jensen and Dzugan 2014)). The MSIT course includes a combination of sessions on teaching techniques and the safety and survival training modules as they are intended to be presented to observer trainees. Teaching techniques include preparing lesson plans, adult learning styles, dealing with barriers to learning, dealing with difficult students, and using teaching tools such as presentations, flash cards and answering questions. The safety and survival modules include deck safety, embarking and disembarking, but the emphasis is on dealing with emergencies on board such as man overboard, fire, damage control, flooding, and survival when it is necessary to abandon ship. The “Seven Steps to Survival” form the core concept of the class. The class also covers conflict prevention and resolution as well as dealing with harassment response techniques. Class members are assigned to prepare and present various subjects and are then critiqued by the lead instructor and members of the class. The importance of performance-based, practical exercises with authentic equipment is emphasized, since retention is improved when students have actually used gear such as flares, fire extinguishers, immersion suits, and liferafts. When available, USCG training equipment is borrowed for training, such as a damage control training trailer, dewatering pump (typically the “P6”), and helicopter rescue basket.

The initial AMSEA MSIT course lasts six days (five training days plus one day for testing) (AMSEA 2017). The Observer Safety Training Standards require 24 hours of training on relevant topics every two years (see section 4.1.3 for more discussion on the frequency requirement). In practice, most trainers simply attend 24 hours of the AMSEA MSIT course. This is reported to be at least in part resource-driven, as the AMSEA training is sponsored by the NOP. AMSEA, as the certifying entity, can revoke or not reissue the MSIT certification if chronic performance deficiencies are documented. Turk (2014) observed in general that the AMSEA MSIT class “was well attended, well managed, well organized, provided very good and useful training materials, and provided a variety of instructional techniques that fully supported the goals of the NOAA/NMFS contract and safety policies.” A reviewer who attended the 2017 MSIT class in Panama City, FL confirmed those findings, and noted in particular the familiarity of the

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instructors with the ROPs, and the suitability of the training materials. The class also provided an opportunity for the experienced trainers to discuss issues and share their experiences with the lead instructor.

The Observer Safety Training Standards also include requirements for safety trainer professional development and maintenance. To further develop and maintain teaching skills, observer safety trainers are required to teach or co-teach at least one marine safety course every year, and at least one trainer from each ROP should co-teach in a different program once every three years.

3.1.2 Regional observer programs (ROPs)

Over the years, observer programs have been developed by NOAA Fisheries regional staff to meet local scientific and fishery management information needs. Since observer programs were developed, implemented, and operated regionally, limited coordination and communication existed between the programs. Accordingly, in 1999 NOAA Fisheries established the National Observer Program (NOP) to support and coordinate the activities of the ROPs and increase their usefulness to the overall goals of NOAA Fisheries.⁶ NOAA Fisheries ROPs currently cover deployment of observers in six geographical regions across multiple fisheries (Figure 1).

⁶ <http://www.st.nmfs.noaa.gov/observer-home/>

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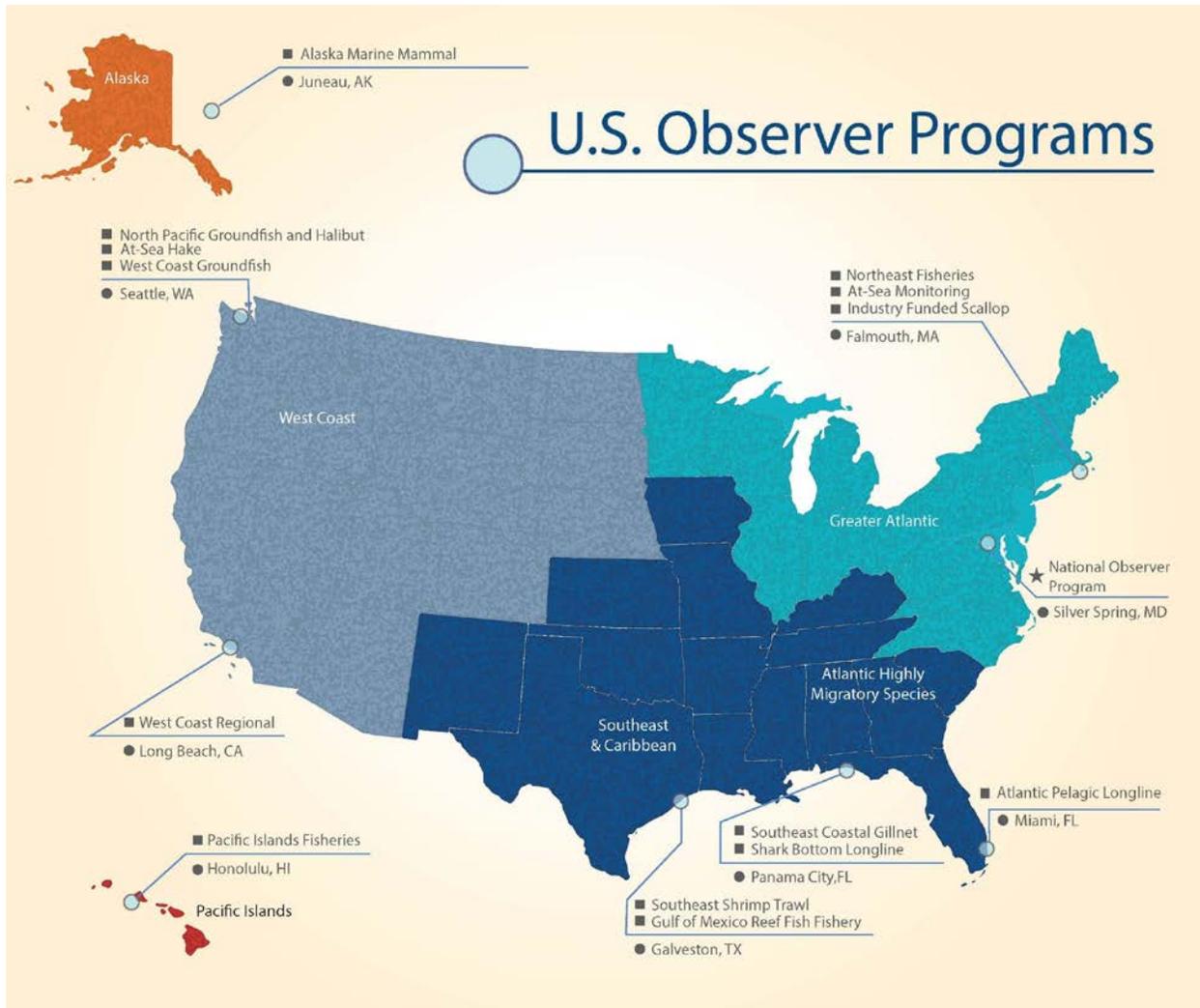


Figure 1 - US regional observer programs.
Image supplied by NOAA Fisheries.

3.1.3 Observer procurement

NOAA Fisheries obtains observers through one of three mechanisms: direct contracts between NOAA Fisheries and observer providers, cooperative agreements between NOAA Fisheries and multi-state fisheries commissions, or through a regulatory certification or permit process (Table 1). NOAA Fisheries no longer directly employs or directly contracts observers for domestic fisheries.

Except for the NPOP partial coverage fleet, for which observers are funded by revenue generated from a fee (currently 1.25%) assessed by NOAA Fisheries on the *ex-vessel* value of the landed groundfish and halibut, NOAA Fisheries lacks legislative authority to collect funds from fishing vessels to support observer program services. Most US ROPs under the auspices of NOAA Fisheries are federally funded, with the exception of the NEFSC's IFS Observer Program

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and ASM, the NWFSC’s A-SHOP, and the AFSC’s NPOP full coverage sector. Under these four programs, observer services are paid for by the fishing vessels through a direct contract between the observer provider and the fishing vessel requiring observer coverage, or the fishing vessel’s sector if there is one. The possible appearance of a conflict of interest between observer providers and the fishing industry was noted in the Management Control Review of NMFS Observer Programs (NMFS 2000). As NOAA Fisheries has been limited in its oversight capacity through traditional means (*i.e.*, contracted services), it has sought ways to increase the requirements and monitoring of observer providers through a certification or permitting process.

FSC or Regional Office	Contract with observer provider	Cooperative agreement with commission	Regulatory certification or permit
AFSC	X (Partial coverage)		X (Full coverage)
NWFSC		X	X (A-SHOP)
WCRO	X		
NEFSC	X (NEFOP)		X (ASM, IFS)
SEFSC	X		
PIRO	X		

Table 1 – Summary of federal observer procurement type by Fishery Science Center (FSC) or regional office

In 2016, approximately 902 individual observers were deployed in US domestic observer programs, all of which are administered through one of the NOAA Fisheries regional Fisheries Science Centers (FSCs) or regional offices (RO; Table 2).

The primary responsibilities of the observer providers are to recruit and hire observers, provide logistical support for observer travel and deployment, and insure observers for work-related illness or injury. Depending on the program, either federal personnel, contracted office support staff, Fisheries Commission staff, or all of the above are responsible for training, certifying and debriefing observers returning from deployment.

Several observer provider contracts state that the recruitment and retention of fully qualified observers is essential to successful performance under the contract, and a few include retention rate requirements. Observer programs have limited staff time and funds to provide safety training for new and current observers beyond those currently offered. Low retention may increase training costs and may result in higher safety risks due to lack of at-sea experience. Recommendations on this topic have been discussed in previous reports (Mayhew and Dietrich 2005, NMFS 2000, U.S. Dept. of Commerce 2004). However, to date there has been no quantitative analysis of available data to definitively assess any correlation between increased retention and higher quality data or lower risk of safety incidents.

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FSC or Regional Office	# days	# observers
AFSC	41,436	469
WCRO	294	7
NWFSC	5,961	89
PIRO	8,523	60
SEFSC	5,995	76
NEFSC	11,634	201
Total	73,843	902

Table 2 – Summary of deployment days and individual observers deployed in 2016 by FSC or regional office.

(Data provided by NOP)

Contracts with providers to furnish observers to commercial fishing vessels and processing plants are made through a solicitation process managed at the regional level by a contracting officer. The ROPs develop solicitations describing the services needed and the expected level of effort. Responses to solicitations are evaluated using several factors and a contract is awarded to the successful offeror.

Several of the current federal contracts did not contain any reference to the national standards for eligibility and training directly related to the recruitment of observers (sections 4.1.2, 4.1.3).

Contracts with the observer providers are for nonpersonal services. “Nonpersonal services contract” is defined as a contract under which the personnel rendering the services are not subject, either by the contract’s terms or by the manner of its administration, to the supervision and control usually prevailing in relationships between the Government and its employees (48 CFR 37.101). Furthermore, the Federal Acquisition Regulation (FAR), at 48 CFR 37.104(d), provides the following descriptive elements to be used as a guide in assessing whether or not a proposed contract is “personal” in nature:

- (1) Performance on site.
- (2) Principal tools and equipment furnished by the Government.
- (3) Services are applied directly to the integral effort of agencies or an organizational subpart in furtherance of assigned function or mission.
- (4) Comparable services, meeting comparable needs, are performed in the same or similar agencies using civil service personnel.
- (5) The need for the type of service provided can reasonably be expected to last beyond one year.
- (6) The inherent nature of the service, or the manner in which it is provided, reasonably requires directly or indirectly, Government direction or supervision of contractor employees in order to—

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- (i) Adequately protect the Government's interest;
- (ii) Retain control of the function involved; or
- (iii) Retain full personal responsibility for the function supported in a duly authorized Federal officer or employee.

Recently, NOAA has begun to implement a contracting process known as ProTech which will award Indefinite Delivery, Indefinite Quantity (IDIQ) contracts to successful offerors to provide a broad range of professional and technical support services to NOAA domains, although offerors may limit their proposals to specific services (NOAA 2017c). Initial awards will be for a two-year base period and three one-year option periods for a total period of performance of five years if all options are exercised. When support services are required by a program, the program is obliged to use one of the contract holders to obtain the services. In the Fisheries domain, this process is expected to apply to the contracting of observer providers.⁷

The review team explored some concerns that ProTech contractors might not have experience in hiring and deploying fishery observers, and that this could lead to problems in obtaining qualified observers. Under the ProTech process, programs requiring services will issue competitive task orders to which potential IDIQ contractors can respond. If the contractor does not have the required expertise, they can submit a proposal that includes a qualified subcontractor. In effect, the task order process replaces the present solicitation process, but the task order could be just as thorough as a contract solicitation would be. If no satisfactory task order response is received, it might be possible for an ROP to obtain a waiver to allow a direct contract with a suitable provider. This ProTech process is intended to simplify obtaining support services, and it avoids the GSA "tax" on contracts. On the negative side, working with an observer provider as a subcontractor through the IDIQ contractor has the potential to further complicate relationships with the provider by inserting an entity between the regional program and its observer provider.

As of this writing, the ProTech solicitation process for fisheries has closed. Proposals are being evaluated, and awards are expected in December 2017, if protests don't delay the process. Based on conversations with persons following the process, between 12 and 30 ProTech-Fisheries contracts might be awarded. NOAA promises a logical transition from the present contracting system, and existing contracts will not be terminated.⁸

⁷ <http://www.protechservices.noaa.gov/index.html>

⁸ http://www.protechservices.noaa.gov/docs/protech_industry_day_brief_20150812.pdf

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No.	Program	Discussion	Review Element(s)
1	Regional Programs	3.1.3, 4.7.2.1	Practices/Policies
	Findings	<p>.1 The Non-Personal Services Statement in the SOW for the SEFSC, and likely other ROPs, is worded in a way that could complicate appropriate response to emergency health and safety incidents. The bifurcated chain of command (Figures Figure 18, 20 and 21 in sections 4.7.3.1.3, 4.7.4.1.3, and 4.7.5.1.3, respectively) and lack of explicitly defined roles and responsibilities among personnel could result in indecisiveness among personnel. Observer program staff, regardless of employment status (federal or contracted), must work as a unified team, but technically, the contract type does not always accommodate this practice. Uncertainty about the ability of federal program managers to direct the activities of contracted staff in the event of an emergent situation could create confusion and slow response times. The 2013 Office of Inspector General (OIG) Administrative Inquiry report (U.S. Dept. of Commerce 2013) made a recommendation related to this topic, “Action #9: SEFSC Observer Program in conjunction with NOAA Acquisition personnel shall develop a list of clear responsibilities for SEFSC Observer Program staff, and a list of duties for managers of contract observers.” NOAA Fisheries stated these would be developed as a response to the inquiry (NOP and NOPAT 2014). Other than program-specific EAP/ENPs, no documentation clarifying specific roles and responsibilities of NOAA Fisheries or observer provider personnel in terms of emergency response was provided for review (<i>e.g.</i>, which entity is responsible for contacting the USCG or OLE, which entity is responsible for contacting the observer’s family, which entity is responsible for writing a press release in case of a catastrophic event). The reviewer was told that this OIG action item was identified in the SOWs; but while the SEFSC SOWs list some duties of contracted managers and observers, they lack a detailed “list of clear responsibilities” for both parties (federal and contracted personnel).</p> <p>.2 Current observer procurement practices currently appear to meet several of the tests for determining whether the contract is “personal” in nature. However, personal services contracts are</p>	

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		barred by statute and regulation, unless specifically authorized by Congress, and are not allowed to exceed one year (5 U.S.C. 3109, 48 CFR 37.104).
	Recommendations	.1 The NOP, in consultation with the NOPAT, should work with NOAA’s Acquisition and Grants office to evaluate the different contracting vehicles (including personal service or combination firm-fixed price contracts) to determine if more appropriate contracting types are available for procuring observer services than are currently in use. Increased communication among programs about the types of observer procurement contracts (including how payment schemes are defined) that already exist would benefit the Contracting Officers (CO) and CORs who facilitate observer service contracts nationwide.
		.2 The NOP, in consultation with the NOPAT and NOAA’s Acquisition and Grants office, should review the potential impact of “nonpersonal services” contract language (or ProTech Task Order language, as applicable) on the ability of mixed federal/contract staffs to promptly and effectively respond to emergency situations which may require direction of observer provider staff by federal management personnel (<i>e.g.</i> , after hours, etc.).

No.	Program	Discussion	Review Element(s)
2	Regional Programs	3.1.3, 4.7.2.1	Practices/Policies
	Finding	Some observer procurement contracts do not contain adequate provisions to exclude individuals with chronic performance issues.	
	Recommendation	Contracts/task orders should be written so that Program Managers have input on when an individual is no longer allowed to work in a program as an observer due to work performance issues. For example, individuals whose chronic seasickness compromised their work for more than a certain number of trips (determined by the Program Manager), or resulted in multiple vessels terminating trips to return a seasick observer to port for medical attention should be deemed unfit for at-sea observer duty by the program. See Section H.10 of 2009 Fisheries Observer Solicitation Template (Hurcombe	

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	2009) for sample language, and the Department of Commerce Acquisitions website ⁹ for detailed guidance for writing more effective performance work statements (PWS) in contracts.
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No.	Program	Discussion	Review Element(s)
3	Regional Programs	3.1.3	Practices/Policies
	Finding:	Several observer provider contracts state that the recruitment and retention of fully qualified observers is essential to successful performance under the contract, and a few specify retention rate requirements. Program staff report that they have limited staff time and budget to provide safety training for new and current observers beyond those currently accommodated. Low retention may increase training costs and may result in higher safety risks due to lack of at-sea experience.	
	Recommendation	<ul style="list-style-type: none"> .1 Recruitment and retention requirements should be more explicitly defined and included in contract PWS. .2 Contracts or regional policies should include exit interviews of departing observers performed by NOAA Fisheries staff and use responses to inform future policy regarding retention and/or training of observers. .3 The NOP should review data on observer retention/turnover across programs and consider a quantitative longitudinal study comparing retention versus payment systems, working conditions including safety culture on observed fleets, contract types, eligibility requirements, etc. Study design should be informed by the NOP 2016 retention survey (Wang, unpublished data). 	

⁹ <http://www.ago.noaa.gov/acquisition/solicitation.html>

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No.	Program	Discussion	Review Element(s)
4	Regional Programs	3.1.3, 4.8.1.2.1	Practices/Policies
	Finding:	Several observer provider contracts do not explicitly reference or contain language consistent with the national observer eligibility and safety training standards.	
	Recommendation	All observer contracts should explicitly reference or contain language consistent with the national standards to ensure consistent application and compliance.	

No.	Program	Discussion	Review Element(s)
5	Regional Programs	3.1.3	Practices/Policies
	Finding	The ProTech solicitation appears to be a potentially significant change in the contracting process for observer procurement. However, it is too early to determine whether there may be negative unintended consequences for the quality of observer services as a result of the change.	
	Recommendation	The NOP should evaluate the effectiveness of the ProTech process with respect to observer programs after ProTech contracts have been in place for a period of time, perhaps two years.	

3.2 NOAA Fisheries regulations pertaining to observers

Commercial fishing is one of the most hazardous occupations in the United States with a fatality rate 29 times higher than the national average (CDC/NIOSH 2017). Observers are regularly exposed to the same workplace risks and dangers as fishers, and experience similar types of injuries and illnesses across all observer programs. To address these risks and dangers, in November 2007 NOAA Fisheries promulgated final regulations governing observer safety and health under authority of the MSA (NMFS 2007a).

All wildlife and fisheries regulations are contained in Title 50 of the US Code of Federal Regulations (50 CFR). General regulations governing health and safety of observers under authority of the MSA are codified at 50 CFR 600.725 and 600.746, which define inadequate or unsafe vessels, and address applicable laws, USCG Commercial Fishing Vessel Safety Examination decal requirements for observer placement, and pre-trip vessel safety checks (PTVSC) performed by observers (and corrective measures as appropriate). In addition to these generally applicable regulations, additional parts and subparts contain observer regulations specific to each region, and to different fisheries within each region (Appendix 3).

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In addition to the same occupational hazards that apply to fishers, observers can be subject to harassment, assault, and interference in the course of their work. From the fishers' point of view, an observer program may be an intrusive data collection system, and the mission of the observer is not the same as the mission of the fisher:

“In addition, fishermen do not like to take observers on board for a variety of reasons. Some may fear liability for the safety of observers and others feel that observers are simply a nuisance because they are “in the way.” In the particular case of health and safety, an observer program would expose fishermen to the risk that their fishing craft may not be adequately equipped to carry an extra person....Others do not trust that observer information can be kept confidential”(GMFMC 2004).

Thus, 50 CFR 600.725, and related regional regulations in other parts of 50 CFR Chapter VI (50 CFR 622-697; Appendix 3) expressly prohibit actions such as:

- Forcibly assault, resist, oppose, impede, intimidate, sexually harass, bribe, or interfere with an observer;
- Interfere with or bias the sampling procedure employed by an observer, including physical, mechanical, or other sorting or discarding of catch before sampling;
- Tamper with, destroy, or discard an observer's collected samples, equipment, records, photographic film, papers, or personal effects without the express consent of the observer;
- Prohibit or bar by command, impediment, threat, coercion, or by refusal of reasonable assistance, an observer from collecting samples, conducting product recovery rate determinations, making observations, or otherwise performing the observer's duties;
- Harass an observer by conduct that has sexual connotations, has the purpose or effect of interfering with the observer's work performance, or otherwise creates an intimidating, hostile, or offensive environment; and
- Require, pressure, coerce, or threaten an observer to perform duties normally performed by crew members, including, but not limited to, cooking, washing dishes, standing watch, vessel maintenance, assisting with the setting or retrieval of gear, or any duties associated with the processing of fish, from sorting the catch to the storage of the finished product.

These prohibitions are applicable to any vessel designated to carry an observer under the MSA, MMPA or any other US law, regardless of location or fishery.

In addition, the regulations also require that the vessel and its owner or operator must, in most cases:

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- Display a USCG Commercial Fishing Vessel Safety Examination decal (or equivalent for vessels under 26 ft (8 m) in length) issued in the past two years;
- Meet requirements for observer accommodations at least equal to those provided for the crew;
- Allow for the safe embarking and debarking of the observer;
- Provide the observer with a walk-through examination of the vessel demonstrating compliance with USCG lifesaving and fire protection regulations;
- Provide access to and use of the vessel's communications equipment and personnel upon request for transmission and receipt of messages related to the observer's duties;
- Provide reasonable assistance to enable observer(s) to carry out their duties; and
- Provide observers a safe sampling station adjacent to the fish deck, including a safety harness, if footing is compromised.

Regional Administrators may waive the observer coverage requirement, and providers may refuse to deploy an observer if the facilities on a vessel for housing the observer, or for carrying out observer functions, are so inadequate or unsafe that the health or safety of the observer, or the safe operation of the vessel, would be jeopardized.

NOAA Fisheries OLE is tasked with enforcement of more than 35 federal statutes relating to capture, protection and trade in fisheries and wildlife products (NOAA Fisheries 2015). Observer programs are one of two supporting national OLE priorities that cut across all regions and programs. As such, they require OLE enforcement support to maintain safe work environments that support accurate and objective data collection and reporting. Observer assault, harassment, or interference violations of the OHSRs are consistently identified as a top high priority for each of the five OLE Divisions (Alaska, Northeast, Pacific Islands, Southeast, and West Coast). OLE Special Agents and uniformed enforcement officers from each of the Divisions work with the ROPs to follow up with enforcement actions based on observer "statements" submitted in connection with their deployments. These statements are entered in the observer logbooks or forms and provided to OLE for appropriate action after debriefings. In most regions, OLE passes statements relating to potential violations not under NOAA jurisdiction (*e.g.*, navigation or MARPOL violations) to the USCG for appropriate enforcement action.

OLE agents, officers, and contract liaison staff sometimes participate in observer training programs to cover such OLE-relevant topics as assault, harassment, interference, and in some regions, conflict resolution, and potential victim advocacy services. In some cases, they also provide general advice concerning drafting of effective observer statements. Effective observer statements facilitate the enforcement process because Notices of Violation and Assessment (NOVA) based on observer statements can often be resolved with fines or other enforcement action without requiring further observer participation or feedback in the process.

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A summary of the general NOAA Fisheries regulations pertaining to observer safety, and the associated regulations for each region/program, is contained in Appendix 3.

No.	Program	Discussion	Review Element(s)
1	Regional Programs	3.2	Regulations
	Findings	<p>.1 Appendix 3 illustrates that the OHSRs in 50 CFR 600, and the regional observer regulations in various parts 50 CFR 222, 50 CFR 229, and 50 CFR 622-697, all identify important employment requirements related to the well-being and safety of observers, but neither the OHSRs nor the regional regulations address all of the important safety-related requirements in a consolidated, user-friendly location.</p> <p>.2 Consolidation of regulations would result in consistent observer requirements nationwide, minimize redundancy, and would also be consistent with recent Executive Order (EO) 13771 <i>Reducing Regulation and Controlling Regulatory Costs</i>, dated January 30, 2017, which mandates an elimination of two regulations for each new one, and EO 13777 <i>Enforcing the Regulatory Reform Agenda</i>, dated February 24, 2017, which mandates the elimination of “unnecessary” regulations.</p>	
	Recommendation	<p>.1 To the extent allowed by enabling legislation, consolidate all of the regulations relating to observer health and safety in 50 CFR 600 and remove duplicated national and regional regulations pertaining to observers in parts 50 CFR 222, 50 CFR 229, and 50 CFR 622-697. Programs using observers could refer to the consolidated regulations for safety and working conditions for observers on fishing vessels.</p> <p>.2 Regulations applicable for observer providers would apply to certified, permitted, or approved providers, and should be explicitly referenced in contracts for contracted observer providers.</p>	

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No.	Program	Discussion	Review Element(s)
2	Regional Programs	3.2	Regulations
	Finding	All regional fisheries regulations (<i>i.e.</i> , 50 CFR parts 229, 285, 300, 600, 622, 635, 648, 660, 665, 679, and 697) include requirements for vessels to provide accommodations and food that are equivalent to those provided to the crew. However, water is not explicitly addressed as a regulatory requirement. Observers in several ROPs report that a few vessels do not carry an adequate supply of potable (fresh) water on board for drinking or sanitation purposes. Lack of an adequate supply of potable water is a substantial health and safety risk to the observer and crew, especially on prolonged trips.	
	Recommendation	Add language to 50 CFR 600.746 (see also above recommendation) and each of the applicable individual regional regulations, as well as observer provider contract solicitations/task orders, that requires a sufficient minimum amount of potable fresh water on board per person for drinking and sanitation purposes (<i>e.g.</i> , handwashing prior to meals), appropriately scaled to size of the operation. Alternatively, language could be added referring to applicable USCG regulation implementing this requirement for all fishing vessels.	

No.	Program	Discussion	Review Element(s)
3	Regional Programs	3.2	Practices/Policies
	Finding	.1 Although “observer assault, harassment, or interference violations” is consistently at the top of the list of stated OLE enforcement priorities, lack of feedback to observers and program staff regarding the status of incidents reported to OLE or the USCG was reported by some to be frustrating, and sometimes interpreted as no action being taken. This in turn may provide incentive for observers to not report, and program staff to underemphasize this component of the observer’s duties. The review team itself found that obtaining abstracts of incidents involving observer assault, harassment, or interference violations from OLE’s outdated Law Enforcement Accessible Database System (LEADS) was challenging, at least in part because it is not well configured to code such incidents for identification and retrieval. The team understands the follow-on Trident Case Management System has improved capabilities to	

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		<p>code observer-related incidents by several additional types, which could facilitate analysis of such incidents in the future.</p> <p>.2 For ROPs that track safety incidents, MARPOL violations, enforcement concerns and other at sea concerns such as bed bugs, the definitions, reporting thresholds and tracking procedures for these incidents are inconsistent.</p>
	<p>Recommendation</p>	<p>.1 NOAA Fisheries OLE should consider development of a consistent (<i>e.g.</i>, quarterly) feedback protocol to the ROPs and observers regarding the nature and status of reported violations program-wide, particularly those involving observer health and safety. Another option to improve communication between OLE, program staff and observers could be for OLE to provide an annual summary of the types of issues reported by observers during the refresher briefings, with brief analysis of trends and possible emerging problem areas.</p> <p>.2 Develop a consistent methodology, incident descriptions, reporting thresholds, and tracking procedure for safety incidents, injury, illness, MARPOL violations, enforcement actions and other at sea concerns to be used by all ROPs and where applicable use by international observer programs. The definition of an incident should be harmonized or be coordinated with the USCG, OLE and NIOSH. ROPs and international observer programs should be required to provide information regarding safety-related incidents at least annually to the NOP and these data included in the NOP Annual Report.</p>

3.3 USCG regulations, policies, and agreements pertaining to observers

The NOAA Fisheries regulatory requirements pertaining to observer safety are closely linked to certain USCG requirements for commercial fishing vessel safety. Under 50 CFR 600.746(c), a fishing vessel is considered inadequate for observer deployment if it does not display a current (within the past two years) decal for a USCG Dockside Commercial Fishing Vessel Safety Examination, or does not possess a certificate of compliance with such examination, or (in specified circumstances) has not successfully undergone an alternate safety equipment examination.

The requirement in NOAA Fisheries regulations for a current USCG dockside safety examination promotes the safety both of observers and fishers, as current USCG regulations only specifically require the dockside examination for certain fish processing vessels and Aleutian Trade Act

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tender vessels. By requiring in NOAA Fisheries regulations that all fishing vessels carrying observers have a current dockside safety examination, the number of vessels benefitting from this third-party safety oversight is greatly increased.

Although current USCG regulations only require periodic dockside safety examinations for certain fish processing vessels and Aleutian Trade Act tender vessels (46 CFR 28.710(a) and 28.890(a)), the Coast Guard Authorization Act of 2010 and the Coast Guard and Maritime Transportation Act of 2012 (the Acts) significantly increased the coverage of this requirement, effective October 15, 2015, to all state-numbered and federally documented vessels operating with more than 16 individuals on board, or operating beyond 3 nautical miles of the baseline of the US territorial sea or the coastline of the Great Lakes. Under the Acts, vessels newly subject to the requirement must complete the dockside exam at least once every five years, which encompasses the existing NOAA Fisheries requirement for an exam within the past two years as a condition of observer deployment. USCG regulations still impose a two-year interval for certain fish processing vessels and Aleutian Trade Act tender vessels. Pending rulemaking to incorporate this new statutory requirement in USCG regulations, the USCG has implemented it by means of Marine Safety Information Bulletin (MSIB) 18-14, dated December 1, 2014, and MSIB 12-15, dated October 20, 2015 (USCG 2014, 2015). In addition to USCG Fishing Vessel Safety Examiners, a number of third party organizations have been authorized to conduct dockside safety exams and issue decals on behalf of the USCG; they include the American Bureau of Shipping (ABS), Det Norske Veritas/Germanischer Lloyd (DNV/GL), Society of Accredited Marine Surveyors (SAMS), National Association of Marine Surveyors (NAMS), NAVTECH US Surveyors Association, and Bowditch Marine, Inc. (USCG 2015).

Current USCG regulations (46 CFR 28.120) permit some commercial fishing vessels to carry buoyant apparatus or life floats as their required survival craft. These types of craft do not ensure that their occupants are not immersed in water. The Coast Guard Authorization Act of 2010 (P.L. 11-281) required the Secretary to prescribe regulations that require the installation, maintenance, and use of “a survival craft that ensures that no part of an individual is immersed in water sufficient to accommodate all individuals on board” for all uninspected commercial fishing vessels that a) operate beyond 3 nautical miles from the baseline from which the territorial sea of the United States is measured or beyond 3 nautical miles from the coastline of the Great Lakes; b) operate with more than 16 individuals on board; or c) in the case of a fish tender vessel, engage in the Aleutian trade (46 U.S.C. §4502(b)(2)(B)). This will require many existing vessels (generally smaller vessels operating within 12 miles of the coastline, and in warm waters) to replace life floats and buoyant apparatus with inflatable liferafts or inflatable buoyant apparatus. In a Notice of Proposed Rulemaking (NPRM) (81 FR 40438, June 21, 2016), the USCG proposed to include that requirement in the fishing vessel safety regulations, and requested public comment on potential grandfathering of non-conforming survival craft as

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authorized in the statute. In any case, upgrading from buoyant apparatus or life floats to inflatable survival craft that keep the occupants out of the water is a significant safety improvement both for fishers and for observers on vessels not currently required to carry out-of-water survival craft.

In the same NPRM, the USCG proposed to amend its regulations to require individuals in charge of certain commercial fishing vessels to keep records of safety equipment maintenance, and crew instruction and drills, as required by the Acts. The former in particular can simplify pre-deployment checks for observers. Finally, the same NPRM proposed to amend USCG regulations to require that fishing vessels under 50 feet in length and built in 2010 or later comply with USCG requirements for recreational vessels; and that documented fishing vessels 50 feet or more in length, and built after July 1, 2013, meet the survey and classification requirements of the ABS or other organization approved by the USCG (*i.e.*, be “classed”). (The 2015 Coast Guard Authorization Act exempted vessels from 50 to 79 feet from this requirement, an exemption which will be the subject of a future Coast Guard rulemaking.) The requirements to either meet recreational vessel safety standards (inherent flotation, etc.) or to be classed will ensure that appropriate safety standards will be applied to design and construction of new commercial fishing vessels, potentially improving safety in the future for both observers and fishers.

Since most existing commercial fishing vessels were not built to classification society rules, nor would they be accepted for classification due to their age and original non-classed construction, the Acts included provisions for development of an Alternate Safety Compliance Program (ASCP) for such vessels. The ASCP provision in the Acts would require older vessels to meet safety measures in addition to the safety requirements of 46 CFR Part 28, and the proposed rules in the June 2016 NPRM cited above. Pending a necessary rulemaking to develop an ASCP as required by the Acts, in January 2017 the USCG published “Voluntary Safety Initiatives and Good Marine Practices for Commercial Fishing Vessels”, and advised their implementation on non-classed fishing vessels where possible and reasonable, with particular emphasis on vessels 50 feet or greater in length operating beyond 3 nautical miles from shore, and that are more than 25 years of age (USCG 2017b). However, in announcing the new document, the USCG recommended that these safety initiatives and good marine practices should be considered for all commercial fishing vessels where reasonable and practicable.

The mutual interest of NOAA Fisheries and the USCG in fishing vessel safety and observer safety prompted the development in 2004 of a Memorandum of Agreement (MOA) on Observer Safety between the two federal agencies. The MOA spells out practices and procedures by which NOAA and the USCG commit to work in close cooperation to support each other’s

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activities with regard to the safety of fishing vessels required to carry fisheries observers. In particular, the MOA spells out shared responsibilities with respect to observer safety training, communication between USCG District Commercial Fishing Vessel Safety Coordinators and NOAA ROPs, notification of casualties and safety incidents, and the dockside safety examination program. Although there have been a number of changes to both NOAA and USCG regulations and practices and the USCG organization since the MOA was established in 2004, the contents and the effectiveness of the MOA have not been reviewed since it was established. As a minimum, the USCG contact information in the MOA is long obsolete. In addition, there has been communication between the USCG and NOAA concerning several aspects of the MOA which would require updating. First, the USCG has requested real-time landings data from NOAA in order to better characterize the population of active fishing vessels operating outside the 3 nm limit, which are subject to new USCG dockside safety exam requirements (see letter of 9 Aug 2012 from the USCG to Dr. Doremus (NOAA); (USCG. 2012)). This request included a proposed funding mechanism for the necessary work to establish a dynamic data transfer protocol to be carried out for NOAA Fisheries under contract. That proposal was since shelved, but the need remains. The USCG advised that the information sharing specified in the MOA may be impacted by changes to NOAA confidentiality rules. Finally, a review of the MOA could consider how NOAA Fisheries and the USCG could work together to ensure that USCG marine casualty investigations address issues of significance to the observer community. For example, in a recent incident involving the eventual death of an observer, USCG policy did not call for a formal casualty investigation because the death was deemed to be due to natural causes. However, there were related issues (communication equipment, language barriers, and timing of vessel contact with the program) that might have affected the outcome, and which might have been examined further in a full investigation and yielded valuable lessons learned. Consultation between NOAA Fisheries and the USCG with respect to incidents or casualties significantly involving the health or safety of observers would allow for appropriate scoping of USCG investigations, and leverage USCG casualty investigation capabilities, authorities, and resources to ensure that issues important to the observer program are adequately addressed irrespective of established nominal USCG investigation thresholds.

Rule 5 of both the Inland Navigation Rules and the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS)¹⁰ require that “Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.” There are no exceptions. However, it is reportedly an occasional practice in some fisheries for vessels to drift or ride a sea anchor at night while the

¹⁰ Both codified in USCG regulations at 33 CFR Chapter I, Subchapters D and E

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crew is asleep, without maintaining a lookout. This is explicitly addressed in some contracts (*e.g.*, in NPOP, where the partial coverage observer contract requires that the contractor verify that a vessel intends to maintain a proper lookout at all times while “on the open water” (although this does not address the full coverage fleet)), and has reportedly been successfully addressed by industry outreach and refusal to place observers on known offending vessels elsewhere (West Coast Groundfish Observer Program (WCGOP)). Nevertheless, it is not currently addressed in fisheries observer policy or regulation at the national level, and represents a clear and present safety risk to observers on vessels that do not maintain an effective lookout at night (or any other time).

46 CFR 25.26-5 requires that “The owner of a fishing vessel, a fish processing vessel, or a fish tender vessel, 11 meters (36 feet) or more in length, except for vessels described in paragraph (b) or (c) of this section (*certain smaller vessels or operating close to shore*), shall ensure that the vessel does not operate on the high seas or beyond three miles from the coastline of the Great Lakes unless it has on board a float-free, automatically activated Category 1 406 MHz EPIRB stowed in a manner so that it will float-free if the vessel sinks.” 46 CFR 28.125(a) requires that each inflatable liferaft required to be equipped with a SOLAS A or a SOLAS B equipment pack must be stowed so as to float free in the event the vessel sinks. In general, the primary focus on these requirements in observer training and during pre-deployment safety checks was observed to be ensuring that the vessel safety decal reflects compliance, and checks of the correct installation of unexpired hydrostatic release units in the float-free arrangements. However, in the course of visiting vessels with observers for pre-deployment checks, the reviewers noted a number of installations of EPIRBs in particular that, while meeting the letter of the regulations, were installed in such a manner that they would almost certainly not float free to the surface in the event of the vessel sinking (*e.g.*, installed directly under an aft-facing weather cowling; Figure 2). A 1999 study commissioned by the UK Maritime and Coastguard Agency performed model tank testing of various fishing vessel rigging configurations that clearly demonstrated the risks of liferafts in particular being caught in the vessel rigging and failing to make it to the surface in typical sinking scenarios. The study recommendations highlighted the need to very carefully consider stowage locations of such equipment, and appropriate operational measures in the event of a vessel sinking (Wolfson Unit 1999).

In addition, the USCG regulates various marine pollution initiatives based on the International Convention for the Prevention of Pollution by Ships (MARPOL 73/78) and codified in Title 33 U.S.C. (USCG). The USCG is tasked with the enforcement of these requirements when observers report MARPOL infractions. Witnessing and reporting of MARPOL violations can lead to increased observer intimidation and harassment.

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Figure 2 - Problematic “float-free” EPIRB installations

On 27 March 2015, the USCG Drug and Alcohol Program Manager issued an internal memorandum clarifying regulations pertaining to “Drug testing requirements for fisheries observers.” It stated that an observer would not normally be subject to drug testing requirements since they are not crewmembers and do not serve in a safety-sensitive position. However, if an observer was determined to be directly involved in a marine casualty, the

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observer may be subject to Post-Accident chemical testing requirements per 46 CFR §4.03-4 or §4.05-12 (USCG CG-INV 2015).

No.	Program	Discussion	Review Element(s)
1	NOP	3.3, 3.6	Practices/Policies
	Findings	<p>.1 The NOAA Fisheries/USCG MOA on Observer Safety reflects the mutual interest of NOAA and the USCG in fishing vessel safety and observer safety. However, the MOA has not been reviewed, revised, or evaluated since it was established in 2004. As a result, some of the information in it is obsolete, and there is a need to revisit its provisions to ensure they are up to date, and to reflect subsequent discussions between NOAA and the USCG on several matters of mutual interest.</p> <p>.2 The MOA addresses information exchange and notification procedures for OHSRs and marine casualty/safety incidents, but does not address procedures for sharing information regarding other USCG regulations (<i>e.g.</i>, navigation rules, MARPOL).</p>	
	Recommendations	<p>.1 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should work with the USCG through the Commercial Fishing Safety Advisory Committee (CFSAC) liaison to initiate a review of the 2004 NOAA Fisheries/USCG MOA to ensure that organizational information is up to date; to reflect more recent discussions between the parties with respect to data and other information sharing; to consider ways in which the USCG marine investigation process might better address issues important to the observer program in casualties involving fisheries observers; to explore options to partner with the USCG to include ROPs in Critical Incident Stress Management (CISM) protocols (Mitchell 1983); and to consider measures to facilitate joint agency participation in dockside vessel safety examinations.</p> <p>.2 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should include all relevant USCG regulations in the information exchange guidelines among MOA parties.</p>	

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No.	Program	Discussion	Review Element(s)
2	NOP and Regional Programs	3.3	Practices/Policies
	Finding	Although the COLREGS and related USCG regulations are clear and unequivocal concerning the maintenance of a lookout at all times, in practice they are not always followed by commercial fishing vessels, especially at night, and additional measures may be warranted to ensure the safety of observers as well as fishers.	
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should consider development of a national policy to address the issue of fishing vessels not maintaining a lookout at all times while underway. Such a policy development could consider measures such as adding an entry to PTVSCs to discuss lookout procedures with a vessel before boarding, development of outreach material included with fishing permits, and possible steps to take in cases of non-compliance with the relevant USCG regulations.	

No.	Program	Discussion	Review Element(s)
3	NOP	3.3	Training
	Finding	The USCG regulations requiring float-free installation of certain inflatable liferafts and EPIRBs on commercial fishing vessels do not adequately address potential failure modes due to rigging and other obstructions typical on such vessels, which could result in failure of this vital safety equipment to reach the surface in the event of the vessel sinking.	
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, and through engagement with the CFSAC, should consider the development of appropriate NOAA Fisheries and USCG policy guidance and training materials to address the need to carefully evaluate the stowage locations of float-free lifesaving equipment to maximize the likelihood that it will operate as intended in the event of a fishing vessel sinking.	

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No.	Program	Discussion	Review Element(s)
4	NOP	3.3, 4.7.5.6, 4.8.1.2.1	Practices/Policies
	Finding	Some USCG examiners have included observer program personnel (PIROP-ASOP) or observers (SEFSC SOP/RFOP) when performing commercial fishing vessel dockside safety exams. At times, the PIROP has supported staff cross-training on the USCG vessel safety exam procedures. These practices have benefited both entities by enhancing the ROP’s understanding of the exam process and by increasing awareness of the USCG of observer program needs related to the PTVSC.	
	Recommendations	<p>.1 The NOP, in consultation with the NOPAT and NOPAT SAC, should consider incorporating a policy within the NOAA Fisheries/USCG MOA on Observer Safety to encourage joint agency participation in dockside vessel safety exams.</p> <p>.2 NOAA Fisheries should consider requiring federal and contracted ROP personnel who are directly involved in placing observers on board vessels or assisting with the completion of PTVSCs to attend the USCG commercial fishing vessel safety examiner training. For contracted ROP personnel, such a training requirement should be considered for inclusion in future observer procurement contracts.</p>	

3.4 OSHA regulations

Most NOAA Fisheries observer procurement contracts include language regarding the Department of Labor’s (DOL) Occupational Safety and Health Administration (OSHA) reporting requirements. OSHA oversees rules which hold employers accountable for providing a safe and healthful workplace for their workers without repercussions (OSHA 2016). All major incidents must also be recorded and reported to OSHA (29 CFR 1904.0) and at the end of the year, the summary of illness and injuries must be posted in a visible location so that employees are aware of the injuries and illnesses occurring in their workplace. Several industries are partially exempted (29 CFR 1904.2) including NAICS Codes for Management, Scientific, and Technical Consulting Services (5416...) and Scientific Research and Development Services (5417...) under which most observer services are procured. In addition, OSHA may have limited, if any, jurisdiction on board uninspected commercial fishing vessels, and jurisdiction distance offshore also varies by state. In archived documents, OSHA has agreed that the USCG has jurisdiction for the safe working conditions of “seamen” on uninspected commercial fishing vessels (OSHA

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1996, USCG and OSHA 1983), but the issue of whether observers qualify as “seamen” under this agreement or in terms of OSHA reporting requirements is not clear.

No.	Program	Discussion	Review Element(s)
1	Regional Programs	3.4, 4.7.2.1	Practices/Policies
	Finding	Observer procurement contracts include requirements to comply with OSHA rules. However, the NAICS industries for observer procurement contracts may be exempted, or OSHA may have limited, if any, jurisdiction to “assure safe and healthful working conditions” for observers on board uninspected commercial fishing vessels, and reporting requirements are uncertain.	
	Recommendations	<p>.1 NOAA Fisheries should work with OSHA and the USCG to establish a clear mutual understanding if/when OSHA reporting requirements apply to observers and observer providers, and obtain clarity regarding which entity, OSHA or USCG, has jurisdiction over working conditions for fisheries observers on uninspected commercial fishing vessels.</p> <p>.2 If OSHA rules do not apply, NOAA Fisheries should exclude OSHA requirements from observer procurement contracts. If OSHA rules do apply, NOAA Fisheries should include clarifying guidance and appropriate deliverables in future SOW/contract language (<i>e.g.</i>, if applicable, provide copies of all Accident Reports and OSHA illness/injury reporting forms to the Program Manager within 7 days of an incident and 10 days of submission to OSHA, respectively).</p>	

3.5 Insurance

An amendment to the 1996 MSA resulted in fisheries observers placed on fishing vessels under the authority of the MSA or MMPA being considered “federal employees” for the purposes of compensation for work related injuries under the Federal Employees Compensation Act (FECA, 5 U.S.C 81011 *et seq.*). However, the FECA only applies to injuries occurring at sea. It does not apply to observers who are injured while on land, in transit to the vessel, in training or debriefing, or working as an observer at a shoreside plant. The lack of standardized insurance coverage in these other work related observer activities is where inconsistencies among

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programs occur. Observer providers currently offer a wide range of insurance types to cover work-related illness or injury claims by observers. Insurance requirements by NOAA Fisheries also vary widely among regional program regulations, policies, and contracts (Table 3).

Trying to identify and implement a consistent and effective approach to observer insurance has been a longstanding challenge for NOAA Fisheries. Attempts to harmonize observer insurance started in 2001 through the process of convening a workshop of insurance industry representatives, observer providers, observer program staff and observers (Hansford and Cornish 2001). The primary outcome of the workshop was crafting of proposed legislation called the Fisheries Observer Compensation Act (FOCA). This proposed legislation stalled in Congress, and has not been pursued further. In the meantime, NOAA Fisheries has included inconsistent insurance requirements for observer providers through the contracting and permitting/certification process of observer providers.

Correspondence between Alaskan Observers Inc. (AOI), an observer provider, and the North Pacific Fishery Management Council (NPFMC) in 2014 illustrated the continuing disparity between regional regulations requiring different insurance types and amounts (Lake 2014, Oliver 2014). Accordingly, fifteen years after the initial workshop, in November 2016, the NOP sponsored a two-day workshop to again review and discuss the subject of observer insurance. The report of this workshop was published in November 2017 as NOAA Technical Memorandum NMFS-F/SPO-176 (Patterson *et al.* 2017). While the report is a useful starting point for future work, it does not provide specific recommendations to address the longstanding issues discussed at the workshop, but rather provides a road map for future agency action. In the short term, it recommends a formal Request for Information to collect additional comments on observer provider insurance coverages and amounts, followed by appropriate rulemaking. In the medium term, it recommends continued effort to identify gaps and inconsistencies in current coverages, and improvements in communication between observers, observer providers, NOAA Fisheries, and insurance claims specialists that could improve access to compensation under existing coverages. Finally, it recommends reinitiating legislative efforts toward an update of the previously proposed FOCA through amendment of the MSA. In the interim, NOAA Fisheries must establish a rationale for the types, standards, and amounts of insurance to be required, and how they will benefit the observers and observer providers; and to articulate how the recommended actions will ensure the best possible coverage and compensation for observers in the event of a work-related injury.

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	NEFSC		POP	SEFSC		WCRO	PIRO	NWFSC		AFSC
	NEFOP	ASM, IFS		SGOP, SBLOP	SOP, RFOP	WCROP	PIROP	WCGOP	A-SHOP	NPOP
Insurance type										
<i>Worker's Compensation (state)</i>		R-\$5M				C-\$1M	C	R	R	R-\$1M
<i>General Maritime Law</i>										R-\$1M
<i>Jones Act</i>						C-\$1M				R-\$1M
<i>USL&H</i>						C-\$1M		R-\$1M	R-\$1M	R-\$1M
<i>Commercial General Liability</i>							C	R	R	R
<i>Maritime Employer's Liability</i>		R-\$5M				C-\$1M	C*			
Proof of insurance submission requirements to NOAA Fisheries in contract/regulation?	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes

Table 3 - Summary of insurance requirements within observer provider contracts (C) or regulations (R).
Dollar amounts are specified minimum coverage in millions (M). Blank cells indicate insurance requirements are not specified in contract or by regulation. Some information obtained from (Perry 2016).

**Listed as Employer's liability only.*

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In most but not all programs, an observer is an employee of the observer provider. Currently, all but one observer provider hires observers as employees; one provider is unique in hiring observers as independent contractors. It is unclear if the observer provider's insurance (as required through regulation or contract) would apply in the event of an accident or injury to the independent contractor in the latter case.

No.	Program	Discussion	Review Element(s)
1	NOP	3.5	Practices/Policies
	Finding	Correspondence between Alaskan Observers Inc. (AOI), an observer provider, and the NPFMC in 2014 illustrated the continuing disparity between regional regulations requiring different insurance types and amounts. A two-day workshop to again review and discuss the subject of observer insurance was conducted in November 2016. The report of this workshop is a useful starting point for future work, but does not provide specific recommendations to address the longstanding issues.	
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should convene a working group of insurance experts, observer providers, observer program staff, and observers (and perhaps appropriate legislative affairs staff if a follow-up to FOCA is envisioned), to develop specific proposals for suitable harmonized national observer insurance standards that could apply within state, federal and international waters to compensate observers in the event of work-related illness, injury, disability from a work-related injury, or death. Once established, compliance with such national insurance standards should be required within each observer provider contract with NOAA Fisheries, and incorporated in national and/or regional regulations for application to observer providers who provide observers in industry funded programs. Standardization of observer insurance coverage would provide a more predictable cost to both industry and the federal government, and eliminate it as a competitive factor within the federal contracting system.	

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No.	Program	Discussion	Review Element(s)
2	NOP	3.5,4.5.2.1	Practices/Policies
	Finding	In some programs, an observer is not an employee of the observer provider, but considered an independent contractor. It is unclear if the observer provider's insurance (as required through regulation or contract) would apply in the event of an accident or injury to the independent contractor.	
	Recommendation	Absent a comprehensive approach as recommended above, the NOP, in consultation with the NOPAT and the NOPAT SAC, and with advice from the OGC as appropriate, should consider development of suitable policy or regulation which would require observer providers to provide injury, illness, liability, disability, and accidental death insurance for observers regardless of whether they are classified as employees, or as independent contractors or subcontractors.	

No.	Program	Discussion	Review Element(s)
3	NOP/National programs	3.5	Regulations
	Finding	Section 403(c) of the MSA states: "OBSERVER STATUS.—An observer on a vessel and under contract to carry out responsibilities under this Act or the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361 <i>et seq.</i>) shall be deemed to be a Federal employee for the purpose of compensation under the Federal Employee Compensation Act (5 U.S.C. 8101 <i>et seq.</i>)." Two substantial loopholes currently exist in the current MSA language regarding application of FECA to observers: 1) the FECA coverage only applies to observers deployed to vessels, and has been interpreted to mean vessels 'at-sea'; and 2) Fisheries observers authorized exclusively under ESA authority are excluded, as are any land-based work situations of all fisheries observers.	
	Recommendations	At the next opportunity for legislative changes to the MSA, NOAA Fisheries should recommend the following modifications to Section 403(c): <ul style="list-style-type: none"> • Add fisheries observers authorized by ESA and any other applicable Act to MSA language in section 403; and • Strike "on a vessel" and replace with "deployed" to cover all fisheries observer work scenarios. 	

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No.	Program	Discussion	Review Element(s)
4	NOP/National programs	3.5	Practices/Policies
	Finding	Some but not all observer providers (or their contracted insurance brokers) facilitate the submission of FECA documentation on the observer's behalf.	
	Recommendations	<p>.1 The NOP should take appropriate steps through policy or regulation to ensure that all observer provider contracts or regulations include a requirement for observer providers to facilitate observers' FECA documentation, and to annually, at a minimum, report status of FECA and other injury claims.</p> <p>.2 All ROPs should include processes for the completion and submission of FECA forms in their EAPs.</p>	

3.6 Emergency Action Plans

Although each ROP and observer provider maintains some kind of an Emergency Notification Plan/Emergency Action Plan (ENP/EAP), there are no established national standards for these, and their implementation varies widely across programs. Some observer providers are explicitly required to prepare such plans either by contract requirements or regulation (*e.g.*, 50 CFR 648.11(h)(3)(x), which requires as part of the application process for certification "An Emergency Action Plan (EAP) describing its response to an "at sea" emergency with an observer, including, but not limited to, personal injury, death, harassment, or intimidation"). However, the contents of such plans are not well defined, and in practice, most EAPs of either ROPs or observer providers are actually ENPs, consisting primarily of a phone/e-mail notification tree.

In an emergency situation, time is often of the essence, and immediate actions beyond notification up the chain of command are necessary. Persons responding to an unexpected serious emergency, as well as those they notify, may not be knowledgeable in the most appropriate steps to take in such a situation, and can easily become overwhelmed by events. Most general types of emergencies have occurred before; it should not be necessary to start from scratch with no guidance when they occur again. The lack of consistency in the ENPs/EAPs maintained by observer providers (and indeed, observer programs) stems from a lack in most cases of clear regulatory, contractual, or policy guidance, or even a clear requirement to have one. A uniform standard for the content of such plans would improve the odds of appropriate and thorough actions being taken in many foreseeable emergency situations.

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The most common EAP/ENP currently employed by most observer programs and observer providers is an ENP that is basically a phone tree, identifying information flow in the event of an emergency. Such plans generally do not address actual steps to be taken to manage an emergency, other than notifying involved parties up and down the chain of command. Notification is an important component of an EAP, but an EAP should cover all aspects of how the program will respond to an emergency involving an observer. Non-NOAA entities operationally responding to observer emergencies may not be familiar with available options, operational conditions, and personal information with respect to observers, so NOAA Fisheries ROPs (and perhaps the NOP for a major incident that may involve F/IS) may need to assume important roles in incident management, crisis communication, support to victims, family members, and other stakeholders, and development of after action reports.

A few ROPs and observer providers, on the other hand, have well-developed Emergency Action Plans which spell out immediate, short-, and long-term actions to take in the event of an on-duty emergency, including incident management, crisis communication, clear identification of responsibilities, support to victims, family members, and other stakeholders, and development of after action reports, for a variety of possible situations. The review team considers such comprehensive EAPs as a best practice which should be considered for implementation by all regions and observer providers, appropriately scaled to the size and characteristics of each program.

Observer programs and the observer providers ideally need EAPs that complement and are coordinated with each other. One example is the NEFSC Fish Sampling Branch (FSB) EAP discussed in more detail in 4.5.9.3 and identified as a best practice. In this EAP, the program takes most of the responsibilities. In other programs, it may be more appropriate for the observer provider to take on more of the responsibilities. Regardless, roles and responsibilities should be clearly identified. If an EAP has not been used in an actual crisis situation, it should be tested in a “table top” exercise to see if it is practicable and workable.

Templates and considerations for development of such plans were recommended in an earlier review for the National Observer Program, *Development of a Comprehensive and Effective Emergency Action Plan for NMFS Observer Programs, Phase II* (October 2004) (Ajango *et al.* 2004a). An outline of recommended EAP contents based on this work can be found in Appendix 4 and the table of contents for the NEFSC EAP is contained in Appendix 5.

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No.	Program	Discussion	Review Element(s)
1	NOP/National programs	3.6	Practices/Policies
	Finding	With one notable exception, NOAA Fisheries ROPs currently lack comprehensive or coordinated Emergency Action Plans (EAPs), despite detailed recommendations for such plans provided in a 2004 review of program EAPs for the agency.	
	Recommendation	Each ROP and its current observer providers, as well as the NOP, should develop and maintain coordinated EAPs that not only specify notification protocols, but also address appropriate substantive actions, and identify responsible entities in response to an at-sea or other on-duty emergency or crisis with an observer, including, but not limited to, serious injury, illness, death, harassment, or intimidation. EAP development should take into account consideration of processes to periodically test and assess the effectiveness of the EAP. The review team was of the view that the EAP developed by the Fish Sampling Branch (FSB) of the Northeast Fisheries Science Center (NEFSC) represents a best practice that could be used as a conceptual model for development of EAPs by other ROPs (section 4.5.9.3.1 and Appendix 5). In addition, an outline of recommended EAP contents based on Ajango <i>et al.</i> (2004a) can be found in Appendix 4, and other EAPs such as those developed and implemented by observer providers (<i>e.g.</i> , MRAG Americas and Saltwater, Inc. in the North Pacific Observer Program) also contain useful examples of suitable EAP content. ROPs should ideally collaborate with observer providers in their regions to ensure that their EAPs complement each other. For smaller programs, EAPs may need to be scaled as appropriate to the size of the program. For very small programs (<i>e.g.</i> , the WCROP), the review team recommends consideration, as a minimum, of incorporation of example communications such as those in the NEFOP FSB EAP for use in the rare event of a serious incident involving a major response or media interest. Guidance in that document for reporting a major incident up the chain to the NOP could also be useful.	

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No.	Program	Discussion	Review Element(s)
2	NOP	3.6, 4.7.2.3	Communications
	Finding	<p>The nature of the observer position is both physically and psychologically isolating. Observers have a very different mission than fishers while working on board vessels. Unlike a job in an office environment, observers do not have peer support near their work environment as they live remotely as well (<i>e.g.</i>, observers in some areas are spread out by more than 1,000 miles). Observers who experience traumatic events (<i>e.g.</i>, harassment, vessel sinking or other marine casualty) are rarely provided with any mental health support options (with the exception of professional counseling services accessible to SOP/RFOP observers through IAP World Services). Agency managers may not be adequately trained or prepared to respond appropriately to a traumatic incident impacting the workplace (Tyler 1996). For example, in recent years several observers or staff have died (<i>e.g.</i>, Keith Davis, previous PIROP staff member) or been seriously injured while serving as an observer or between contracts. Grief or post-traumatic stress disorder (PTSD) counseling was rarely offered or available to staff or observers for any of these incidents.</p>	
	Recommendations	<p>.1 The NOP, in consultation with the NOPAT and NOPAT SAC, should explore national-level options to ensure availability of professional mental health support when an observer or other ROP personnel are exposed to a traumatic event. One option may be to partner with the USCG (via the MOA) to include ROPs in Critical Incident Stress Management (CISM) protocols (Mitchell 1983). “CISM is a ‘package’ of crisis intervention tactics that are strategically woven together to: 1) mitigate the impact of a traumatic event; 2) facilitate normal recovery processes in normal people, who are having normal reactions to traumatic events; 3) restore individuals, groups and organizations to adaptive function; and to 4) identify people within an organization or a community who would benefit from additional support services or a referral for further evaluation and, possibly, psychological treatment” (Mitchell 2009). Another option may be to allow observers and other non-federal ROP personnel to access the NOAA Employee Assistance Program (NOAA 2017a) although this may require a modification to the</p>	

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		<p>MSA similar to the allowance of FECA access for observers.</p> <p>.2 Regardless of the method pursued above, future observer procurement contracts should include a provision stating observer providers must ensure access to professional mental health services in the event of a critical incident.</p>
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4 US REGIONAL AND NATIONAL OBSERVER PROGRAMS

4.1 National Observer Program (NOP)

4.1.1 Organization and purpose

The National Observer Program (NOP) is located in the NOAA Office of Science and Technology program office, Assessment and Monitoring Division, Fishery Science Branch. The NOP provides national coordination of 14 observer programs in six regions, and oversight of observer requirements in Atlantic Highly Migratory Species fisheries (NMFS 2017c). In addition to national program administration, budgets, and planning, the NOP works with the regional observer programs to develop national policy, quality standards for observer data, and training standards for observer and marine safety instructors.

The stated mission of the NOP is "to provide a formalized mechanism for NOAA Fisheries to address observer issues of national importance and to develop policies and procedures to ensure that NOAA Fisheries observers and observer programs are fully supported. The policies must reflect the diverse needs of regional observer programs while enhancing data quality and achieving consistency in key areas of national importance."¹¹ NOP objectives in support of that mission include:

- Develop and support national standards and policies to create high quality, cost effective, efficient, and productive observer programs;
- Characterize and quantify the activities and resources of NOAA Fisheries' observer programs and advocate for full support;
- Communicate and advocate the mission of the National Observer Program and each ROP; and
- Coordinate the National Observer Program Advisory Team (NOPAT) (NMFS 2007b).

Since observer programs are developed, implemented, and operated regionally, there was limited coordination and communication between the programs until the NOP was established

¹¹ <http://www.st.nmfs.noaa.gov/observer-home/about-nop/activities/index>

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in 1999. However, the NOP has no direct line authority over the observer programs that are administered by the FSCs or regional offices.

The NOP consists of four personnel: the NOP Coordinator, a bycatch subject matter expert (SME), an observer safety and health SME, and an electronic technologies coordinator. For over a year and a half starting in November 2015, the NOP Coordinator also served as Chief of the Fishery Science Branch, pending a new hire for the NOP Coordinator position (which is now filled). In addition, during an extended military absence of the safety and health SME, three ROP staff were detailed to the NOP for varying periods to handle particular projects including the OSPR, safety reporting, and observer provider insurance. A senior S&T staff member has also assisted the NOP with OSPR coordination and safety reporting.

An advisory team to the NOP (the NOPAT) was also established at its inception, as a forum to increase collaboration and communication among ROPs. The NOPAT meets twice a year (NOPAT 2017). The NOPAT currently consists of one representative from each regional office and FSC, as well as associated NOAA Fisheries headquarters offices and the USCG. The NOP Coordinator serves as the chair of the NOPAT, and in that capacity reports to the Director of the Office of Science and Technology (S&T), as well as other NOAA Fisheries leadership as needed. The NMFS Science Board (composed of the six NMFS science center directors and the Director of S&T, who serves as the Board's chair) reviews NOPAT recommendations, with final decisions made by the Chief Science Advisor (and Assistant Administrator for NOAA Fisheries, when necessary). The NOPAT works with NOP staff to identify issues of national concern, recommend or establish priorities for national research and problem solving, and support information collection and program implementation. Improvements in data collection, observer training, and the integration of observer data with other research are among the issues NOP facilitates on a national level.

Although detailees and assistance from S&T staff were reported to be very helpful in filling in for an extended serious NOP staff shortage, there appear to have been some lingering effects. For example, the 2013 Annual Report for the National Observer Program was not published until Spring 2017 (NMFS 2017c). As such, the "Looking Ahead: Goals and Priorities for NMFS Observer Programs in 2014" section of the report is obviously of limited value in establishing organizational goals and priorities for 2014. A substantial portion of the "Look Ahead" is rather a retrospective look at the year past. The reviewer was advised that a report to cover FY-2014 through 2016 is nearing completion, and hopefully this important report will resume timely annual distribution thereafter with full NOP staffing in place.

Based on review of NOPAT and NOPAT SAC meeting minutes, there appears to have sometimes been a lack of systematic follow-up on outstanding policy issues discussed in the NOPAT. NOPAT Terms of Reference finalized in April 2017 were reported by the NOP to be intended to

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improve tracking and follow up on NOPAT action items. However, the Terms of Reference do not in fact assign any responsibility for tracking and follow-up of action items other than the preparation of minutes after each meeting (NOPAT 2017).

The role of the NOPAT with respect to decision-making is very unclear. The NOP advised the reviewer that the NOPAT does not decide policy, but rather provides recommendations through the NOP to S&T Leadership and NOAA Fisheries Leadership. However, the recently established Terms of Reference for the NOPAT indicate under “Process” that “NOPAT recommendations **and decisions** will be reached by consensus. **If consensus cannot be reached**, the majority opinion and dissenting views will be documented and provided to the Director of Office of Science and Technology for resolution, as appropriate” (emphasis added). The fact that the NOPAT operates by consensus complicates decision-making on policy issues. Because the NOP has no line authority over the regional program managers, any opposition to proposed decisions within the NOPAT can defer actions indefinitely. This lack of authority for the NOP was identified as a weakness in the program going back to the 2004 OIG Report (U.S. Dept. of Commerce 2004), which recommended measures to ensure that that the NOP has a clear and distinct role in monitoring observer program performance. In response to the OIG report, NOAA indicated it was developing a strategic planning process, including establishment of program goals and objectives, in addition to national and regional performance measures. The OIG asked that the action plan describe the methods to be used to ensure that strategic plans are implemented and performance goals achieved. It does not appear that there has been any persistent action to follow up on the OIG report’s recommendations in this regard. Although the NOP advised the reviewer that the NOP tracks several performance metrics, including the number of observers, number of sea days, and the number of fisheries with adequate/near adequate observer programs, there was no indication provided of tracking observer health- and safety-related performance metrics, such as numbers of observer injuries, assault/harassment incidents, etc. Such metrics are essential to any self-assessment of observer safety performance (see section 7 of this report).

No.	Program	Discussion	Review Element(s)
1	NOP	4.1.1	Practices/Policies
	Finding	The NOP appears to have resolved some longstanding staffing shortfalls and is now fully staffed. However, the lack of line authority over the regional programs, coupled with the lack of a structured strategic planning process as recommended in 2004 by the OIG, complicates the establishment of priorities and accomplishment of objectives. The current process of reviewing items from meeting to meeting appears more tactical than strategic.	
	Recommendation	The NOP should take appropriate actions to accomplish the intent of	

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		the recommendations made by the OIG in their 2004 report, in particular establishment of effective and transparent <u>strategic</u> planning processes and performance metrics for both the NOP and the NOPAT. These processes should include identification, prioritization, and tracking of progress on NOP and NOPAT initiatives and specific action items, and ensure specific accountability for their timely completion. Something as simple as a spreadsheet to track action items (and perhaps sub-items), ideally establish linkages to higher level organizational objectives, assign responsibilities, establish timelines and priorities, and monitor progress would be a significant improvement.
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4.1.2 National standards for observer eligibility

The NOP, in collaboration with the NOPAT and NOPAT SAC, has developed six national minimum eligibility requirements for marine fisheries observers, as contained in NMFS Policy Directive 04-109 and associated Instruction 04-109-01 (Observer Eligibility Standard (NOAA Fisheries 2007a)). Current training requirements include,

“Observer candidates must complete required observer training by passing, with an overall score of 80% or greater, a written and/or oral tests developed by the program they wish to work in. In addition, candidates must successfully complete the safety training and review information on the risks of participating in hands on training as identified in the acknowledgment of risk form (see “Observer Safety Training Acknowledgment of Risk”). Failure to pass a training course for one program does not preclude subsequent application to participate in other programs” (section 2.2 of the Observer Eligibility Standard).

Observers are not asked to acknowledge the risk of the position overall, although the risk of the job itself clearly exceeds the risk of the training in relatively controlled environments.

The standard includes educational requirements:

“Unless the Regional Administrator or Science Director has waived this requirement, observer candidates must have: 1) a bachelor's degree from an accredited college or university with a major in one of the natural sciences and a minimum of 30 semester hours or equivalent in the biological sciences; 2) at least one undergraduate course in math or statistics; and 3) experience with data entry on computers. All relevant course work must have been completed and performed at a level equivalent to similar course requirements at the candidate’s academic institution.”

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There are also minimum eligibility requirements prohibiting conflicts of interest, communication skills in the English language, and citizenship or ability to work legally in the US.

One remaining requirement relates to physical/medical conditions. In view of two recent observer deaths attributed to medical conditions as well as at least one that required a USCG medical evacuation, and another which required USCG delivery of medicine, the review team examined pre-employment and continuing physical examination requirements and practices for observers. Physical examinations are performed for a variety of reasons including: collection of baseline health and medical history information in case of an emergency, assessment of functional ability to perform job duties and to minimize risk of work-related illness or injury to the individual or others (Palmer and Brown 2013). The current policy regarding physical/medical condition states,

“A licensed physician must certify not more than 12 months prior to the end of the observer training that the observer candidate is physically capable of serving as an observer. Documentation must be provided to the program prior to the observer candidate’s completion of training” (section 2.4 of the Observer Eligibility Standard).

There are some “gray areas” in the application of the physical/medical condition policy that appear to be problematic (*i.e.*, whether the policy applies to new hires only or all hires, whether the exam must be performed in person with a physician, the extent of the instructions provided to the physician, and what kind of statement is provided to the ROP or observer provider).

A few programs require only that new trainees have a physical exam within the previous 12 months, whereas others generally require a physical exam within 12-18 months of each deployment regardless of experience (Appendix 6). In one case it was found that examinations are performed via a telephone interview rather than in person (see section 4.7.2.2.2). With some exceptions, observer candidates must have a current certification for CPR by the American Red Cross or American Heart Association (AHA), and must have completed at least a basic first aid class.

Some programs inform candidates or physicians that observer candidates must be capable of climbing, lifting 50 lb, and/or dragging a 200-lb fish or animal carcass across the deck. However, there is typically no performance evaluation required. Based on discussions with staff and observers, it would be worthwhile for NOAA Fisheries to reevaluate physical capability requirements necessary for the observer position across all programs. The American Occupational Therapy Association recommends “a well-designed Functional Capacity Evaluation (FCE) should consist of a battery of standardized assessments that offers results in performance-based measures and demonstrates predictive value about the individual's ability”

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to perform the job (AOTA 2012, Kuijer *et al.* 2012, Pransky and Dempsey 2004, Soer *et al.* 2008).

There are at least two other programs within NOAA that require the completion of a medical history form which is accessible in case of a medical emergency. For instance, all personnel embarking on NOAA ships or on some NOAA-contracted vessels must complete a health services questionnaire (NOAA Form (NF) 57-10-01), and OMAO provides thorough guidance to physicians regarding disqualifying conditions which may preclude personnel (including scientists) from sailing on NOAA ships (OMAO 2003). The observer position is physically demanding and medical assistance is frequently further away from medical facilities than what is experienced by a typical NOAA ship. Therefore, physical exams or assessments should be rigorous enough to remove applicants that may become a risk to themselves or others simply due to the nature of the job. Program staff provided several examples of observers with health issues that may have warranted further investigation/query by a physician prior to clearing them “fit for duty,” yet under the current policy standards they were cleared for duty upon initial examination.

In at least one ROP, there was a recent incident of potential exposure of an observer to tuberculosis (TB), in which a crew member of the fishing vessel died of the disease (see section 4.8.1.2.2.2). The observer and several other potentially exposed crew later tested negative, however, the incident highlighted the possible risk of exposure of observers to TB, especially when working in close quarters with certain crew demographics. TB is the number one cause of death from an infectious disease worldwide, with more than 95% of deaths occurring in developing countries (WHO 2017a). About 80% of people in many Asian and African countries test positive (Kumar *et al.* 2008). Most infections are “latent,” *i.e.*, do not have symptoms, but about ten per cent of latent infections progress to the active disease which, if left untreated, kills about half of those infected (CDC 2011b, WHO 2017b). Depending on the stage at which treated, treatment can be difficult and take months of antibiotic treatments which should be medically monitored. The US Preventive Services Task Force (USPSTF) recommends screening people who are at high risk for latent tuberculosis with either tuberculin skin tests or interferon-gamma release assays (USPSTF 2016). TB testing is currently required for personnel serving on NOAA vessels within 12 months preceding the project end date (NF 57-10-01). The review team believes that a similar requirement should be considered for observers, especially those working in ROPs with potentially high-risk crew demographics. In addition, certain vaccinations may be appropriate where infectious diseases are found to be prevalent or emerging.

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No.	Program	Discussion	Review Element(s)
1	NOP	4.1.2, 4.7.2.2.2, 4.8.1.2.2.2	Practices/Policies
	Findings	<p>.1 Physical and medical eligibility requirements are specified by NMFS' Observer Eligibility Standard. The physical exam requirement is two-tiered: 1) "A licensed physician must certify not more than 12 months prior to the end of the observer training that the observer candidate is physically capable of serving as an observer"; and 2) "Documentation must be provided to the program prior to the observer candidate's completion of training." This policy language lacks specificity and has been subject to differing interpretations. With respect to the first tier, there is disparity among ROPs regarding whether the physical examination requirement applies to only new trainees, or to veteran observers who continue to work long-term. All programs have first time observers complete the physical examination prior to the end of training, whereas the frequency of examinations for continuing observers ranges from every 12 months to every 3 years; and in recent history in at least one program there was no requirement at all for experienced observers. In addition, currently not all examinations are performed in-person with a physician. The review team is of the view that a telephone consultation with a physician is not sufficient to accurately assess the capability of a potential observer to handle the physical rigors of the job. Finally, although providing documentation from the physician that the individual is "physically capable of serving as an observer" is a national requirement, this is not a specified deliverable in all observer provider contracts with NOAA Fisheries nor is documentation being provided to some programs.</p> <p>.2 Current observer provider contracts or regulations require that physicians performing physical examinations in support of certification of observers be provided with a form letter or ROP-developed pamphlets describing the observer occupation are provided to ensure they have sufficient information to make a medical assessment of fitness to do the job. However, the materials as currently drafted may not be providing enough information for a physician to adequately assess fitness</p>	

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	<p>requirements and risk to the observer's health. Physicians are not required to test any functional abilities as part of the current “physical evaluation” process. Several observers have been hired who had medical conditions which required a USCG emergency response (one extraction and one drop of extra medication). Several program managers felt physical ability should be addressed prior to acceptance into training and should be performed by a professional. The NOAA OMAO requirements for deployments on NOAA vessels, which are generally less physically stressful than deployment as an observer on a fishing vessel, are far more stringent than the current observer physical requirements.</p> <p>.3 Although observers must sign an “acknowledgment of risk” for training, they are not asked to acknowledge the risk of the actual job duties once deployed which is far more dangerous than training.</p> <p>.4 Recently, a crew member was diagnosed with tuberculosis (TB) upon returning from a fishing trip with an observer on board. Later the crew member died from the infection. Three observers and one of the port coordinators were tested to see if they had been exposed to TB. Fortunately all were negative.</p> <p>.5 The PIROP fishing fleet is comprised primarily of crew and captains from foreign countries that travel frequently to Asia. The threat of transmission of Asian-borne highly contagious diseases (such as avian flu) due to close quarters and the generally unhygienic conditions on a fishing vessel operating hundreds of miles offshore from medical facilities presents a high-risk environment to observers.</p>
<p>Recommendations</p>	<p>.1 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should clarify the intent of the physical/eligibility requirements regarding whether physical examinations should be required only upon initial hire, or on a regular basis for all observers. The review team is of the view that the policy should include a frequency requirement for currently employed observers and this should be specified in the regulatory or contract process. Due to the physical rigors of the observer occupation, the review team recommends that all observers have an in-person physical examination both upon</p>

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- initial hire and every 12-18 months thereafter using guidelines such as those provided in recommendation .5 below.
- .2 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should enhance the physical/medical examination requirement in the Observer Eligibility Standard to specify that the physical examination must be performed in-person by a licensed physician.
 - .3 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should take appropriate steps to ensure that the physical examination documentation requirement is included in all observer provider contracts, and that copies of the physician statements as a minimum are provided to the programs (with appropriate handling to protect medical confidentiality). In connection with this, acceptable types of “documentation” should be clarified. To avoid wasted resources, the review team recommends that the physical examination be completed and a copy of the physician statement be provided to the program at least 14 calendar days prior to the first day of training.
 - .4 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a national template of minimum information to provide to physicians performing observer physical examinations. A suggested example “Letter to Physician” is included in Appendix 7.
 - .5 The NOP should initiate consultation with appropriate medical professionals to evaluate a variety of disqualifying medical conditions or medications that may pose increased health risks to an observer or unnecessary economic risk or undue hardship to a vessel if they must terminate a trip due to an observer’s pre-existing medical condition. The review team has developed a draft based on the NOAA OMAO requirements, as a starting point for further development in consultation with OMAO or other appropriate medical professionals (Appendix 8). ILO/IMO guidelines for mariners (ILO/IMO 2013) may be another resource.
 - .6 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should review the physical (functional) requirements for observers, and seek occupational therapy

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		<p>expertise from NOAA OMAO or other agencies such as NIOSH to design an appropriate skills test or functional capacity evaluation to be conducted as part of the physical evaluation process.</p> <p>.7 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should include in policy or practice methods to ensure that before each deployment, an observer has sufficient and extra supplies of prescribed medication(s) to address the possibility of an unanticipated extension of a deployment. A potential practice may be to include a checkbox on each pre-trip vessel safety checklist where the observer must confirm having sufficient and extra medication if applicable.</p> <p>.8 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop and implement a national standard requiring observers to sign an “acknowledgment of deployment risk” prior to acceptance into training. The NOP should work with NOAA GC to provide content and correct legal language as this may be an employer responsibility rather than NOAA.</p> <p>.9 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a suitable policy to ensure that observer medical history information can be made available 24/7 to appropriate medical response personnel in the event of a medical emergency.</p> <p>.10 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a policy similar to OMAO’s requirement for annual TB screening of observers, especially those working in ROPs with potentially high-risk crew demographics. In addition, certain vaccinations (such as hepatitis) prior to deployment may be appropriate where infectious diseases are found to be prevalent or emerging.</p>
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4.1.3 National standards for observer safety training

The NOP, in collaboration with the NOPAT and its subsidiary Safety Advisory Committee (NOPAT SAC) has developed national Observer Safety Training Standards (NOAA Fisheries 2007c). The review team carefully reviewed the Observer Safety Training Standards in light of recent pending changes (apparently from a review of April 15, 2015) which would include

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increasing the interval for refresher training for observer safety trainers from two years to three years, and adding a list of topics to be covered in observer refresher safety training at a minimum. Adoption of proposed changes has been suspended until after completion of the OSPR.

The team had some concern that the increased interval for refresher training for observer safety trainers from two years to three years could be perceived by some as a reduction in safety, especially since no reason was provided for the change. In this respect, it was noted that the directive revision process and format does not appear to provide transparency or justification of revisions. The team felt that it would be helpful for the summary of revisions on the cover sheet of the document to provide a more thorough description of the specific nature of any revisions, and the reasons for them, to avoid misunderstandings, and to document the rationale for policy decisions for the benefit of those responsible for implementing the changes.

No.	Program	Discussion	Review Element(s)
1	NOP	4.1.3	Practices/Policies
	Finding	The current format for revision of directives such as the Observer Safety Training Standards does not provide for transparency with respect to revisions. The nature of revisions, and the reasons for them, are not addressed with any specificity in the Summary of Revisions.	
	Recommendation	To provide for transparency and traceability, and to avoid misunderstanding of the nature and intent of revisions to NOAA Fisheries directives relating to observer safety, the NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should consider appropriate means to clearly and specifically identify such revisions on the transmittal page of the directive, and provide a brief but thorough synopsis of the rationale for the revisions.	

No.	Program	Discussion	Review Element(s)
2	NOP	4.1.3	Practices/Policies
	Finding	The team identified a number of both editorial and substantive issues in the current Observer Safety Training Standards (Appendix 9).	
	Recommendation	In the course of finalizing the pending changes to the NMFS Observer Safety Training Standards directive, the NOP, in consultation with the NOPAT and NOPAT SAC as appropriate,	

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		should consider the editorial and substantive issues identified by the review team (Appendix 9).
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4.1.4 Communications with deployed observers

There is currently no national policy regarding communications with deployed observers. Regulations at 50 CFR 229.7(c)(4)(iv) under the MMPA and some, but not all the regional observer regulations in 50 CFR Chapter VI require that observers be given access to the vessel’s communications equipment and navigation equipment. Observers are often told by the captain that they can use the boat’s communication equipment whenever they want, and that sometimes includes satellite phones. However, the review noted that some ROPs and international observer programs do not have a routine check in procedure in place.

Although not required by national policy, most of the regional programs have decided that it is important that observers have independent communication capability so that they can communicate with the regional program or their employer in situations where it might be awkward or difficult to use the radios on the bridge. Such occasions might include wanting advice on a difficult working situation onboard, clarification of an issue, or even the ability to communicate independently in a distress, health or other safety situation. One observer told reviewers that it is possible that their communications such as Email can be monitored when using the vessel’s communication systems. This information might then be used to manipulate, harass, coerce, or blackmail the observer, and possibly learn passwords.

To address this issue, observers in some programs are now issued DeLorme (Garmin) InReach^{®12} satellite communicators that allow them to text message their employers, and on a limited basis, friends and family, making it unnecessary to ask for permission to use the vessel’s communication equipment, and providing more privacy. (There is a fee for text messages, so there are usually some limits on personal use.) Furthermore, the tracking feature can provide periodic location information which may be of interest to those ashore, and in an emergency, the SOS feature could supplement the vessel’s EPIRB, the observer’s PLB, and any location data provided by a vessel’s DSC radio. Observers appreciate the ability that the InReach communicator provides to occasionally text friends and family especially on long deployments. Some observers shared that extended trips and irregular hours put a strain on personal life. This feature is of value for the observers’ well-being, and it might have a positive effect on retention.

¹² Although there may be other satellite communicators with comparable capabilities in the future, the InReach is the only one currently being issued to observers. The term InReach as used in this document refers to the DeLorme (Garmin) InReach[®] or other satellite communicators with similar capabilities which may be or become available.

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In addition to an option to define pre-set messages, the InReach has a built-in SOS message capability. The SOS message is sent to GEOS Safety Solutions, Inc., a service which is used by General Motors' OnStar service among others. When the position of an SOS message indicates an emergency at sea, GEOS notifies the USCG Rescue Coordination Center, or the appropriate rescue coordination center if the location is outside of the USCG's area of responsibility. (In the case of an EPIRB activation, the alert is sent to NOAA's National Environmental Satellite, Data, and Information Service, which relays it to the Rescue Coordination Center.) GEOS and the USCG have developed a coordinated process to establish the information needed to provide an appropriate search and rescue response.

InReach is currently the only line of satellite communicators that provides its combination of features and coverage (see also comparisons in WCPFC (2015)). It operates on the Iridium low earth orbiting satellite system with global coverage. Another satellite communicator system is the Globalstar SPOT, but Globalstar covers only terrestrial and some coastal sea areas. Other satellite systems such as Inmarsat use geostationary satellites at far higher orbits, requiring more sensitive receivers and more powerful transmitters, resulting in larger heavier portable devices than the pocket-sized InReach. As satellites become smaller and commercial launching options lower launching costs, other satellite communication systems may offer products and services competitive to InReach.

All observers in domestic ROPs, and many observers in international observer programs are issued Personal Locator Beacons (PLBs) as part of their standard equipment. PLBs generally provide a 406 MHz distress signal, GPS positioning, 121.5 MHz homing capability, and a strobe light. Activation is manual, generally by extending an antenna and flipping a switch. Currently, there is no national requirement for observers to keep the PLB on their person while on deck underway. However, at least one ROP (the WCGOP) already requires observers to wear a PFD at all times when on deck of any vessel, while launching or landing through surf, and when instructed by the USCG. In the case of the 2015 disappearance of observer Keith Davis, the outcome may possibly have been altered had he been carrying his PLB and been in a position to operate it.

No.	Program	Discussion	Review Element(s)
1	NOP/National programs RFMOs/International programs	4.1.4	Practices/Policies
	Finding	Several ROPs and international observer programs do not have a routine check in procedure for observers in place. Some programs use pre-programmed codes with InReach communicators for	

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		observers to report their status, or facilitate emergency extraction.
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a policy requiring that at a minimum, the observer provider or NOAA Fisheries establish a weekly check in procedure with observers deployed at sea. The use of codes such as those implemented by the NEFSC FSB (section 4.5.4) could facilitate successful and consistent observer status updates while deployed, with minimal effort required on the part of the observer or the program.

No.	Program	Discussion	Review Element(s)
2	NOP/National programs RFMOs/International programs	4.1.4	Practices/Policies
	Finding	Satellite communicators such as the InReach appear to be an effective tool to provide observers confidential communication capability while at sea. Some observers are already issued satellite phones. These can address part of the issue, but voice communications are not private on a small vessel, especially with satellite equipment that must be used in the open to connect with the satellite. Satellite phones can also have call quality problems that may not affect an installed satellite communication system with a more powerful transmitter and a better antenna. Text communications are generally more reliable because they typically use a system that repeats message segments so that a full message is received even if some parts are lost in an initial transmission. If issued satellite phones do not have a text or Email function, then a supplemental satellite text communicator such as the InReach may be appropriate.	
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a policy that requires that observers that are deployed beyond cell phone coverage, or that are on trips that may exceed 24 hours, be provided with satellite text communication capabilities independent of the vessel's equipment. An allowance should be made for a certain amount of	

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	personal communication. Pre-set coded text messages should be included to use in urgent situations.
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No.	Program	Discussion	Review Element(s)
3	NOP/National programs	4.1.4	Training
	Finding	Since the observer program owns the InReach communicators, all usage is reported to the program with the billing. There have been instances of excessive personal use, and communicating difficult work situations to friends and family before contacting the program or observer provider. The Northeast FSB has had one experience where an observer sent an ambiguous trouble message to multiple recipients including friends and family, who then deluged the USCG and the FSB with requests for assistance.	
	Recommendation	Observer training programs should incorporate a lesson on the proper use of InReach communicators, including policy on acceptable personal use, and whom to contact in difficult or crisis situations.	

No.	Program	Discussion	Review Element(s)
4	NOP/ National programs RFMOs/International programs	4.1.4	Policy and Procedures
	Finding	Due to the great distance offshore, isolation on the vessel, lack of prompt SAR, and lack of standardized reporting protocols international observers work in a heightened risk environment.	
	Recommendations	<p>.1 Observers working in international programs, especially those serving on foreign-flagged vessels in remote areas, should be required by policy to carry their PLB on their person at all times.</p> <p>.2 Especially on small vessels, or vessels that operate in remote areas, the review team recommends that observers be required by policy to wear a lifejacket with the PLB attached whenever on deck, or at a minimum in situations where there is a significant risk of a fall overboard. For other observers, the NOP, in consultation with the NOPAT and the NOPAT SAC as</p>	

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		appropriate, should consider requiring observers to wear their PFD with PLB attached when on deck.
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4.2 Alaska Fisheries Science Center - North Pacific Observer Program (NPOP)

4.2.1 Program description

4.2.1.1 Program history

Fisheries observers were first placed on some foreign fishing vessels operating in the Bering Sea and Aleutian Islands (BSAI) in 1973, pursuant to treaties and other agreements between the US, Canada, Japan, and the (then) USSR. Starting in 1976, the passage of the Fishery Conservation and Management Act of 1976 (re-named the Magnuson-Stevens Fishery Conservation and Management Act (MSA) in 1996) and the extension of the US Exclusive Economic Zone (EEZ) to 200 miles required development of FMPs, and the Foreign Fisheries Observer Program was expanded for the foreign fleet. As the fishing industry in Alaska waters transitioned from a predominantly foreign fleet, through a joint-venture phase, to a fully domestic fleet by 1991, NOAA Fisheries and the industry pooled resources to establish a pilot domestic observer program in 1989. In 1990, the North Pacific Observer Program ((NPOP); then the North Pacific Groundfish Observer Program or NPGOP) was established, with industry funding the majority of the costs involved in the program.¹³

In 2013 there was a major restructuring of the NPOP, under which important changes were implemented to how observers are deployed, how observer coverage is funded, and the vessels and processors that must have some or all of their operations observed. These changes increased the statistical reliability of observer data, addressed cost inequality between fishery participants, and expanded observer coverage to previously unobserved fisheries and fleets. Coverage levels are no longer based on vessel length and processing tonnage; rather, observers are deployed based on a scientifically valid sampling and deployment plan.¹⁴

Currently under the NPOP, NOAA Fisheries provides the administration and operational oversight of the program with federal funding. Vessel and processing plant owners pay for the cost of the observers, either directly to the observer provider (for the full coverage fleet), or through landing fees (for the partial coverage fleet) (Faunce 2013). Landings from all vessels in the partial coverage category are assessed a 1.25 percent fee on standard *ex-vesse/* prices of the landed catch weight of groundfish and halibut. This fee percentage is set in regulation and reviewed periodically by the NPFMC. The money generated by this fee each year is used to pay

¹³ 55 FR 4829 (Feb. 12, 1990)

¹⁴ 77 FR 70062 (Nov. 21, 2012)

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for observer coverage on the vessels and processors in the partial coverage category in the following year.

4.2.1.2 Regional fisheries

The NPOP observes vessels and processing plants to collect data for use in managing the Alaska groundfish and commercial halibut fishery. Roughly half of US domestic groundfish landings are harvested from the waters off Alaska, including the Gulf of Alaska (GOA) and the US waters of the eastern BSAI (Lowther and Liddel 2016). For many years, Dutch Harbor, followed by Kodiak, have been the largest fishing ports by volume in the United States (Lowther and Liddel 2016).

The 2013 restructuring of the observer program placed all vessels and processors in the groundfish and halibut fisheries off Alaska into one of two observer coverage categories: (1) full coverage category (at least one observer at all times when fishing in federal waters); and (2) partial coverage. The full coverage category includes catcher/processors (with the exception of some small catcher/processor vessels that process no more than one metric ton round weight of groundfish on any day), motherships, catcher vessels participating in American Fisheries Act (AFA) or Community Development Quota (CDQ) pollock fisheries, CDQ groundfish fisheries (except sablefish, and pot or jig gear catcher vessels), catcher vessels participating in the Central GOA Rockfish Program, and inshore processors when receiving or processing Bering Sea pollock. The partial coverage category includes catcher vessels designated on a Federal Fisheries Permit (FFP) when directed fishing for groundfish in federally managed or parallel fisheries, except those in full coverage; catcher vessels when fishing for halibut IFQ or CDQ; catcher vessels when fishing for sablefish IFQ or fixed gear sablefish CDQ; and shoreside or stationary floating processors, except those in full coverage.¹⁵

4.2.1.3 Program organization

The NPOP is the largest fisheries observer program in the United States in terms of the number of sea days and observers (Table 2). In 2016 the program deployed 469 observers who spent 41,436 sea days on fishing vessels and 2,433 days in processing plants. The December 2016 Inseason Management Report (Keaton 2016) reflects data from 1,403 unique catcher vessels with approximately 16,028 landings to 80 unique processors, and 73 unique catcher processor vessels fishing approximately 12,500 vessel days.

The Alaska Fisheries Science Center (AFSC) at Sand Point in Seattle, WA is the research branch of NOAA Fisheries responsible for research on living marine resources in the coastal oceans off Alaska. The AFSC's Fisheries Monitoring and Analysis Division (FMA) has overall responsibility

¹⁵ 50 CFR 679.51(a)(1) and (2)

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for the NPOP. The FMA is directly responsible for the training, briefing, at-sea sampling support, debriefing, and oversight of the observers who collect catch data on fishing vessels and at processing plants, and for quality control and quality assurance of the data provided by these observers (NOAA Fisheries 2013b). The FMA consists of approximately 50 staff, including the subsidiary programs and other staff. A number of staff are employed by the Pacific States Marine Fisheries Commission (PSMFC)¹⁶ under two cooperative agreements, one for EM activities, the other for activities including debriefing, IT, and statistical work. A NOAA Fisheries OLE contract liaison assists debriefers with any questions and concerns, and provides a block of training to observers during their refresher course.

The NPOP Field Operations Program under the FMA is based in Anchorage, with staff also located in two major Alaska fishing ports (Dutch Harbor and Kodiak). It assists industry in accommodating observer sampling requirements, monitors and supports NPOP observers deployed in the field, and ensures the FMA's established data collection procedures were properly followed during observer deployments. The Anchorage office currently has five active assigned staff, two of whom are NOAA employees (including a co-located NOAA Fisheries OLE Special Agent who supports program staff and observers), and the remainder employees of the PSMFC. There are also two Field Operations staff in Kodiak and one in Dutch Harbor. All of the NPOP Field Operations staff report to the Field Operations Supervisor under the FMA in Seattle, and participate in weekly field office meetings to maintain operational consistency and provide updates on field activities.

The Anchorage office maintains an inventory of complete sets of sampling and safety gear for observers re-deploying directly from Anchorage. Anchorage staff receive, track, and ship biological samples collected by observers to the AFSC in support of resource management, scientific research, and observer training. In addition, they document and evaluate each observer's data collection methodologies through interviews, electronic vessel surveys, and written descriptions submitted by observers, as well as conduct data quality control checks to verify data accuracy by identifying errors and ensuring the observer makes the necessary corrections. Staff assist at-sea observers through inseason advising and mid-cruise debriefings. Pre-deployment briefings are provided, at a minimum, for observers deploying for the first time on vessels operating under an exempted fishery permit (EFP; *e.g.*, deck sorting of halibut) to discuss appropriate sampling procedures and safety concerns. In 2016, there were 133 debriefings, and 17 mid-cruise debriefings in Anchorage.

¹⁶ Not to be confused with the Pacific Fishery Management Council (PFMC), the PSMFC operates under an interstate compact, with members from each of the five Pacific coast states. Their mission is to protect and promote better utilization of Pacific coast fisheries.

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The Kodiak Field Office provides support to observers primarily assigned to vessels in the GOA. Observer debriefings only occasionally take place in Kodiak; in 2016, there were just five debriefings there, in addition to 24 mid-cruise debriefings. The Dutch Harbor Field Office, currently with a staff of one, serves as the primary FMA contact for observed vessels and processing facilities in the BSAI. Dutch Harbor staff provided 159 mid-cruise debriefings in 2016.

4.2.2 Procurement of observer services

4.2.2.1 Observer provider contracts and regulations

The NPOP full coverage fleet obtains observers from NPOP-permitted providers, and pays the observer providers directly for the cost of their required observers. The partial coverage fleet obtains their observers from a NOAA contracted observer provider funded by vessel landing fees.

The NPOP has five observer providers currently permitted under 50 CFR 679.52 to provide observer services to the full coverage fleet: AIS, Inc. (AIS), Alaska Observers Inc. (AOI), TechSea International (TSI), Saltwater, Inc., and MRAG Americas (MRAG).¹⁷

For the partial coverage fleet, AIS is currently the single observer provider contracted with the AFSC to provide observer services. In 2016, AIS successfully deployed 83 observers from 33 ports for 4,677 days at sea in the partial coverage category, with a minimal number of trips released from coverage. The reviewer was not provided the actual contract, however the Statement of Work (SOW) for the contract between the AFSC and AIS for “fishery observer support services” requires the contractor to comply with (*inter alia*) NOAA Safety Standards, the Observer Health and Safety Regulations, the Fair Labor Standards Act, the U.S. Longshore and Harbor Worker’s Compensation Act, the Merchant Marine (Jones) Act and General Maritime Law, MSA, MMPA, and ESA, and all applicable federal, state, and local safety regulations. This is a very comprehensive suite of requirements (if perhaps so generally stated as to be of questionable practical application). It also requires that the contractor verify that a vessel intends to maintain a proper lookout at all times while “on the open water,” and that observers be employees of the observer provider.

Under 50 CFR 679.52(b)(11)(vi), permitted observer providers are required to provide Maritime Liability insurance to cover “seamen’s” claims under the Merchant Marine Act (Jones Act) and General Maritime Law (\$1 million minimum), coverage under the U.S. Longshore and Harbor Workers’ Compensation Act (\$1 million minimum), state Worker’s Compensation, as required; and Commercial General Liability. In practice, several observer providers exceed these

¹⁷ MRAG Americas advised the reviewer that MRAG does not have any observers deployed in the NPOP in 2016-17.

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minimum requirements with additional umbrella coverages of up to \$5 million. Two (union) observer contracts specify only that observers are provided insurance coverage “in the amounts required by federal or state regulations or requirements.” AIS does not enter into contracts with its observers, who are considered at-will employees.¹⁸ The employment arrangements between AIS and its observers are contained in an AIS employee handbook which is considered to be proprietary and was not provided to the reviewer. AIS represented, but the reviewer was unable to confirm that the AIS employee handbook provisions are in full compliance with the regulatory requirements for insurance, etc. With respect to the partial coverage fleet, for which AIS has the current contract with the AFSC to provide observer services, compliance with the regulatory requirements as specified in the Statement of Work was presumed to have been verified in the contracting process. In addition, the regulations require of all observer providers that “Copies of “certificates of insurance” that name the NMFS Observer Program leader as the “certificate holder” shall be submitted to the Observer Program Office by February 1 of each year,” so compliance can be readily assessed at least annually.¹⁹

4.2.2.2 Observer recruiting and employment

4.2.2.2.1 Basic qualifications

The NPOP requirements for observer candidates are consistent with the requirements of the Observer Eligibility Standard (section 4.1.2). All of the observer providers described generally similar procedures for the recruitment and hiring of observers. The potential risks and discomforts of observer life are heavily emphasized in employment interviews, as a means of screening out those who may not be well suited for the occupation. AIS has a selection committee and a two-stage interview process, with the final interview a 15-30 minute in-depth discussion of the hazards of observer duties and the challenges of observer training.

4.2.2.2.2 Medical and fitness qualifications

Physical qualification requirements are consistent with the discussion in section 4.1.2 (Appendix 6). 50 CFR 679.52(b)(11)(iii) requires that all observers obtain physical examinations within the twelve months prior to any deployment. The physician must be provided the NPOP-prepared

¹⁸ Although not directly within the safety-related scope of this review, it is unclear how at-will employment without a contract is consistent with the requirements in 50 CFR 679.52(b)(1)(iii) that “For each observer employed by an observer provider, either a written contract or a written contract addendum must exist that is signed by the observer and observer provider prior to the observer’s deployment and that includes the following conditions for continued employment: . . .”, and in 50 CFR 679.52(b)(11)(vii)(C) that the observer provider submit to the Observer Program Office copies of signed and valid contracts an observer provider has with observers.

¹⁹ 50 CFR 679.52(b)(11)(vi)

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“What is a North Pacific Groundfish and Halibut Observer?” pamphlet before the examination, and certify having read it. The physician must provide a signed statement that he or she has physically examined an observer or observer candidate, and confirm that, based on the examination, the observer/candidate does not have any health problems that would jeopardize their individual safety or the safety of others while deployed, or prevent the observer/candidate from performing their duties satisfactorily. However, while all physicians performing observer physical examinations are provided the same NPOP pamphlet, each observer provider has their own medical questionnaire, and these vary substantially. The physician’s statement must be submitted to the NPOP before certification of an observer. For the partial coverage fleet, the practice of AIS is to provide the signed statement as described above from the physician that performed the exam (but not the observer’s medical questionnaire or any confidential medical information) to the NPOP no later than one week before the training class. For current observers the physician statements are updated annually and provided before the observer attends a briefing.

4.2.2.2.3 Compensation

Saltwater, Inc. and AOI observers are unionized, and as such are employed under similar contracts under the Agreement between the observer provider(s) and the Seafarer’s International Union (SIU), AFL-CIO. Under the SIU contract, observers are salaried, temporary employees of the provider. Observers are divided under the contract into seven grade levels based on experience/deployment days. Observers are paid at a daily rate based on their grade level, including waiting time for a deployment after briefing or training for an assignment. A reduced daily rate is payable for debriefing days. The contracts provide for a bonus at the end of the calendar year for observers in grades 2-7 who work a specified number of days for the provider. The union contract provides for a monthly stipend to help defray personal health insurance costs with proof of insurance premium. Several observer providers have contracted with The HealthForce Partners, Inc. Physician HealthLine, to provide observers with access to 24/7 medical advice if needed.

In cases where an observer has an injury or other medical issue that affects their ability to work at sea, several of the observer providers advised the reviewer that their practice would be to attempt transfer that observer to suitable less strenuous work, and keep them on payroll at least through the end of their contract.

As discussed above, the NOAA-contracted provider AIS is an at-will employer, and does not enter into employment contracts with observers. The reviewer was advised by AIS that observer compensation varies with longevity and experience, but was not provided details of the compensation structure other than to state that it meets the DOL guidelines for observers (NOAA Fisheries 2006, US DOL n.d.). The employment arrangements with the other non-union

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observer provider currently active in the NPOP, TSI, appear to be generally similar to those specified in the union contracts, including longevity and experience-based grade levels, based on review of the TSI contract. All of the providers provide either employer personal health insurance or subsidize employee health insurance.

4.2.3 Observer safety training

4.2.3.1 Training program organization

The Observer Services Training and Debriefing Programs at the AFSC develop training materials, train, brief, and debrief NPOP observers, and advise them when deployed. In addition to NPOP observers, the program staff work in collaboration with the NWFSC At-Sea Hake Observer Program (A-SHOP; section 4.4) staff to provide safety training and safety and sampling equipment for observers working in the A-SHOP, which is otherwise administered by the WCGOP.

Three-week initial observer training classes and four-day annual briefings for returning NPOP observers are carried out at the AFSC in Seattle. The reviewer was able to monitor aspects of the safety training portions of both the three-week and four-day programs, which were being conducted simultaneously during the site visit.

The safety trainers at the AFSC are all currently AMSEA-certified marine safety instructors. The training staff emphasizes safety in everything they do, and that strong safety culture was obvious to the reviewer. Observer/trainee safety was repeatedly stressed as a high priority for the observers both in the training environment, and when they are deployed. The trainees were briefed on training risks, and each trainee executed a training risk acknowledgment form (similar to Appendix 16) prior to beginning training. All of the trainers appeared to be enthusiastic, knowledgeable, and very safety-conscious.

The Anchorage office supplements the NPOP training at the AFSC by conducting one- and two-day briefings for re-deploying observers a couple times a month on average, as dictated by operational needs. The senior marine biologist who effectively manages the Anchorage office is an AMSEA-certified marine safety instructor, and takes the lead in carrying out these training sessions.

4.2.3.2 Safety and survival training

The safety training portion of the initial observer training includes approximately 2.5 days of safety training, carried out mostly in the classroom. Audio-visual aids provided were generally very good, clear, and readable as appropriate. "Safety packets" for the training sessions provided useful outlines of the material to be covered. The training program provided the

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reviewer a very thorough spreadsheet linking the contents of the training program to the requirements for content and duration of training topics specified in the Observer Safety Training Standards. Based on the modules witnessed by the reviewer, the content and duration of the training topics as presented in the classroom were generally consistent with the requirements in the Observer Safety Training Standards (Appendix 10 and Appendix 11). Immersion suit donning drills were periodically run at random times with the blowing of a whistle.

The “Water Activity” was carried out in the boat basin in Lake Washington adjacent to the AFSC. The training area was clearly marked for safety. In-water training activities included water entry in immersion suits, chain swim, helicopter rescue basket usage, liferaft inflation, entry, and righting, and the HELP position. In general, the in-water training was very thorough and addressed all of the safety and training elements specified in the Observer Safety Training Standards. The reviewer was of the view that doing this training in open water provides a degree of similitude to real-world conditions that cannot be obtained in a pool. The training staff carefully monitored the trainees in the water at all times to ensure safety, and instructor to student ratios were equivalent to the requirements in the Observer Safety Training Standards for open-water activities. The trainers complied with the open-water checklist. All of the trainees successfully demonstrated all of the in-water safety skills specified in the standards (Appendix 12). There was sufficient supervision to allow several different evolutions (liferaft righting, water entry, in-water skills) to be carried out by different groups in parallel to maximize efficient use of time and minimize down time for the trainees.



Figure 3 - Textbook immersion suit water entry

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Figure 4 - Helicopter rescue basket practice in the water

The training course did not include hands-on fire-fighting training as is done in some other regional observer training programs. The program manager explained that the program does not expect or intend for observers to be involved in fire-fighting on the types of vessels where they are deployed in the NPOP, but rather focuses on the actions observers would most likely be expected to take in a fire emergency on those vessels (generally muster and await instructions). However, NPOP observers can deploy on a wide range of vessel sizes. In 2016 deployments, 17% of the observers deployed, and 11% of sea days were in the partial coverage fleet, which tends to be mostly smaller vessels where experience with fire extinguishers and other emergency equipment would be more likely to come into play. There was also no hands-on demonstration or use of pyrotechnic distress signals (flares and smoke signals), due at least in part to the practical difficulties of doing so in a metropolitan area like Seattle, as well as issues with obtaining and storing these devices in sufficient quantity for the volume of observers trained at the AFSC²⁰. Nevertheless, the reviewer felt that such training, even if done in a limited manner, could be beneficial to observers, since there is a wide variety of devices available, the instructions are sometimes not clearly marked (especially for low light conditions), and they sometimes require more than one effort to ignite. An observer knowing all of these things in advance, and having practical experience with the equipment, could be a great asset in an emergency.

²⁰ The NPOP Observer Services Training Manager advised the reviewer that in 2016, the NPOP conducted 22 annual briefings, 8 3-week initial training sessions, and 53 one-day briefings.

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The training did not include practical demonstration of fishing vessel stability, or the use of standard USCG dewatering pumps. While not required by the Observer Safety Training Standards, the use of a USCG-designed stability demonstration tank and portable damage control trainer in connection with a standard USCG P6 dewatering pump has been incorporated as an additional safety element in many other regional training programs (Appendix 11). Experience with the pump in particular has proven useful in past casualties where the observer was the only person on board a vessel who knew how to operate it.

Mock drills and pre-deployment checks were simulated in the classroom. While these were done in a professional manner, and about as well as could be expected in a room that in no way resembles a fishing vessel, the reviewer felt the training would have been far more effective if carried out on an actual fishing vessel or vessels of opportunity. Some if not most new observers may have little or no experience with conditions on commercial fishing vessels, and carrying out mock drills and pre-deployment checks (PTVSC) on actual fishing vessels would have a number of benefits. In addition to exposing observers to an example of the conditions in which they will soon be living and working, it can be an opportunity to learn about the various types of fishing gear used. It can also be an opportunity for friendly engagement of the observer program and new observers with the local fishing fleet. Finally, it can be an opportunity for some practical exposure to the potential risks of embarking and disembarking fishing vessels, which in Alaska are sometimes nested several vessels deep. The 3-week curriculum includes discussion of the risks of embarkation/disembarkation, including reference to a directly related 2007 casualty in Dutch Harbor which claimed the life of an observer, and available options for the observer in cases where there are safety concerns. However, the reviewer can attest, based on boarding several vessels in Kodiak in a cold rain at low tide, that no amount of classroom discussion can prepare a new observer for their first look at a wet deck a long way down and over a gunwale several feet away from a cold wet ladder.

In addition to the initial observer training, the reviewer audited a significant portion of the 4-day annual briefing for returning NPOP observers which was being carried out during the same period. These annual briefings not only provide the opportunity to update the observers on program changes, but are the program's mechanism to ensure all prior observers are up to date on their safety training. The 4-day briefing included about 6 hours of safety content, including a USCG safety presentation; review instruction in hypothermia, back care, the Seven Steps to Survival and STAY rules; and immersion suit donning exercises. In alternate years, the 4-day briefing includes a water exercise, but this was not done during the training attended for this review.

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No.	Program	Discussion	Review Element(s)
1	NOP/National programs	4.2.3.2	Training
	Finding	While hands-on fire-fighting exercises and use of pyrotechnic distress signals are not currently required by the Observer Safety Training Standards, the review team is of the view that such training is potentially extremely valuable to observers. Some programs have used BullEx® systems for firefighting training to avoid smoke or flame production at locations where it would be a problem.	
	Recommendation	Whenever practicable, regional observer training programs should include opportunities for hands-on training with all emergency equipment, including pyrotechnic distress signals and fire extinguishers used on live fires. Where there are practical challenges with the production of flame or smoke at training facilities, programs should seek to partner with local fire departments and fire training facilities as necessary to identify suitable options. Even if such skills have not been necessary in past casualties involving observers in a particular region, it pays to be proactive and prepared for unknown potential future casualty scenarios. Although observers in programs with generally large vessels like the NPOP are not expected to actively participate in fighting (<i>e.g.</i>) an engine room fire, there may be scenarios like a galley fire or a fire in a trash can where experience in activating and using a fire extinguisher on a live fire can be of great benefit.	

No.	Program	Discussion	Review Element(s)
2	NOP/National programs	4.2.3.2	Training
	Finding	Fishing vessel stability and damage control training is potentially useful and important for observers. These are both elements in which fishers themselves may have little or no experience or hands-on training, where a well-trained observer could be an important asset in an emergency situation, even if only to advise others on appropriate procedures. A suitably trained observer may be able to recognize a developing stability issue before it becomes emergent, and advise the crew accordingly.	
	Recommendation	Regional training programs should make every effort to incorporate hands-on damage control procedures and practical fishing vessel	

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	stability training into their training, leveraging existing Coast Guard resources for the purpose as available.
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No.	Program	Discussion	Review Element(s)
3	NOP/National programs	4.2.3.2	Training
	Finding	Conducting mock drills and pre-deployment checks in the classroom, rather than on an actual vessel, forfeits a valuable opportunity for exposure of the trainees to the environment in which they will soon be living and working, for engagement of the observer program with the fishing fleet, and for an opportunity for observers to walk the docks with knowledgeable observer program staff for familiarization with various types of vessels and fishing gear. It can also be an opportunity for some practical exposure to the potential risks of embarking and disembarking fishing vessels.	
	Recommendation	Whenever practicable, regional programs should identify and utilize actual fishing vessels in their respective areas as platforms for carrying out mock drills and pre-deployment checks during initial observer training programs.	

4.2.4 Observer equipment and maintenance

At the conclusion of training, the observer trainees pick up their gear at the AFSC gear facility (Appendix 14). The NPOP program staff maintains the primary inventory of sampling and safety gear for observers in Seattle (Figure 5, Figure 6). The Alaska field offices also maintain a limited supply of replacement safety and sampling equipment for issuance to observers when needed. The reviewer observed that both the AFSC and the field offices maintain robust, conservative, and well-documented programs for inspection and maintenance of safety equipment issued to observers, in accordance with USCG and manufacturers' recommendations. Although not required by the USCG, immersion suits more than ten years old are removed from operational service and, depending on condition, discarded or used only for training purposes.

In addition to the observer gear for NPOP observers, the AFSC maintains and issues safety and sampling gear for A-SHOP observers otherwise administered by the NWFSC.

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Figure 5 - Observer safety gear facility at the AFSC



Figure 6 - Cleaning and drying immersion suits at the AFSC

Each observer is provided with a Personal Locator Beacon (PLB) as part of their equipment issue at the conclusion of training. Unlike some other regions, NPOP observers are not currently

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issued satellite phones or satellite communicators (such as InReach®). In addition to the PLB, which is registered to the FMA, safety equipment includes a PFD with whistle, and an immersion suit with whistle and strobe. Boots and foul weather gear (listed as required personal safety equipment in the Observer Safety Training Standards) are not provided by the program; rather, observers are provided an allowance by the observer providers to purchase and maintain their personal choice of these items.

4.2.5 Vessel selection and notification

Vessels and processors in the full coverage category obtain observers directly from NPOP-permitted observer providers. Certain catcher/processor vessels and motherships are required to have two or even three observers (depending on workload), which in some specified cases must include one or more level 2 or lead level 2 observers.

Vessels and processors in the partial coverage category are required to carry an observer provided by a NPOP-contracted provider when they are randomly selected through the Observer Declare and Deploy System (ODDS). The ODDS system automates the random deployment of observers, provides a system whereby observer provider companies can assign and track observers deployed to specific vessel, and monitors whether vessels selected for observer coverage are actually carrying observers. The partial coverage fleet must log fishing trips in ODDS at least 72 hours before anticipated departure. If a provider assigns an observer for a trip, the vessel may still opt to defer the trip for up to 48 hours from the anticipated departure to account for unanticipated events such as poor weather conditions. If, however, after this additional 48-hour period has passed, the vessel has still not departed, the observer provider may cancel the trip, the observer is released from the vessel to be deployed elsewhere, and the vessel's next logged trip will require observer coverage.

Certain smaller vessels (<40' LOA), vessels with specified gear types, and vessels involved in the NOAA Fisheries Electronic Monitoring (EM) research program are in a "No Selection" pool, and are not required to carry an observer. However, they are assessed the same landing fee as other vessels in the partial coverage category, to fund the partial coverage observer program.

4.2.6 Observer selection and notification

Observer providers are responsible for arranging and coordinating observer assignments to vessels for fishing trips. The NPOP limits the length of a cruise, which can consist of multiple trips, to 90 days. In addition, full coverage observers may not be assigned to more than four vessels and/or processing plants during one cruise. Finally, observers may not be deployed to the same vessel for more than 90 days in any 365-day period. These limitations were created in

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order to protect observers from “burn-out,” and to allow NOAA Fisheries to finalize their data in a timely manner (AFSC 2016).

There is no established standard process for individual vessel placements. Observers are generally selected by their observer providers and assigned to trips sequentially off a list, but this can vary occasionally to balance workloads. Observers are provided form “Letters of Introduction” by the FMA to present to the captain of each vessel they board. The letters introduce the observer, summarize observer training and duties in some detail, and essentially manage the expectations of the recipient with regard to observer activities.

4.2.7 Deployment and at-sea support

Under 50 CFR 679.52(b)(11)(iv), observer providers for the full coverage sector send the NPOP a deployment/logistics report on a weekly basis. The report provides the deployment status of each observer. This information is entered into the NPOP Observer Logistics System. This system, in combination with the required Vessel Monitoring System (VMS), gives the FMA and field offices the capability to track observer locations practically in real time if needed. If an observer is late for an expected disembarkation date, field staff can query VMS to check on the status of the vessel.

Observer provider field coordinators often help new observers board their first vessel, and assist other observers as time and logistics permit. When a field coordinator is not available, experienced observers will frequently assist new observers with placements.

Observers are expected to communicate with the Observer Program daily, weekly, or on a trip-by-trip basis depending on the vessel type. All full coverage vessels in the NPOP are now equipped with the FMA’s ATLAS communications system software, which allows observers to enter their data electronically for transmission to the FMA. Generally, the full coverage fleet transmits from sea, but for some of the partial coverage fleet, observers are provided with laptops with the ATLAS software installed, and data transmission is deferred until return to port (replacing the former use of facsimile for the purpose). ATLAS can provide the FMA with practically real-time data for fisheries management.

For the vessels capable of transmission from sea, secure text messaging capability included in ATLAS enables two-way communication between observers and FMA staff, allowing FMA to review sampling data and troubleshoot problems while the observer is still at sea, for observers to ask questions or report problems, and generally maintaining a connection with observers while they are deployed. Each vessel and processing facility equipped with ATLAS has a designated FMA staff member that serves as an “inseason advisor” and reviews their incoming data. Through inseason advising, FMA staff can be informed immediately of safety or health

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issues that may arise while the observer is deployed; improve data quality for real-time management of the fishery; provide general support to observers at sea; and expedite the debriefing process by addressing sampling and data accuracy issues while the observer is at sea.

4.2.8 Debriefing

During their first two deployments, observers are required to complete a mid-cruise debriefing while still in the field. This mid-cruise debriefing provides the opportunity for both the observer and FMA staff to assess the data collected up to that point, methods used, challenges encountered, and future vessel assignments. Although it is termed a mid-cruise, this debriefing does not necessarily have to take place during the middle of a cruise. It should be completed early enough to allow the observer to incorporate suggestions and make improvements in their data collection efforts. After successfully completing two contracts, observers commonly receive an “exemption” such that mid-cruise debriefings are only required if recommended on an individual basis by FMA staff. Unless specifically exempted from a mid-cruise during their previous evaluation, each observer must complete an in-person, mid-deployment data review if they travel through a location where observer program staff are available. In 2016 there were 17 mid-cruise debriefings in Anchorage, 159 in Dutch Harbor, 24 in Kodiak, and 39 in Seattle. Mid-cruise debriefings can be completed in person, or in rare cases where a face-to-face meeting cannot be accomplished, over the phone, electronically, or via facsimile.

After each deployment, observers must meet with an FMA staff member for a debriefing interview. During the debriefing process, for the full coverage fleet, sampling and data recording methods are reviewed and, after a thorough data quality check, the data are finalized. Debriefings are also an opportunity for observers to inform Observer Program staff of any problems encountered, make corrections or changes to data, get recommendations for future cruises, and receive a written performance evaluation.

For the partial coverage fleet, the debriefing process is intended to be ongoing throughout a deployment. Each partial coverage observer is assigned a “Text Message Vessel” and an inseason advisor prior to deployment, both for retention for the entire cruise. The Text Message Vessel, or “dummy” vessel, is a vessel and permit number that will never carry an observer and is used for the sole purpose of sending inseason messages from the field. The observer uses the permit number associated with their assigned Text Message Vessel to send and receive ATLAS text messages. Some, none, or all data may be debriefed while the observer is in the field depending on how well the observer complies with requests by their inseason advisor. For vessels not equipped with internet at sea, data for a trip are sent to the inseason advisor by ATLAS as soon as possible upon arriving at a port, along with a post trip summary. Upon arrival at an Observer Program office, the debriefing process is generally similar to that for full coverage observers. The exception is that debriefing will be with the assigned inseason

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advisor, and some or much of the data will have already been debriefed through the inseason process.

A final debriefing occurs after the completion of the last vessel assignment of a contract. The debriefing process consists of: completion of an electronic vessel survey for each vessel; a debriefing interview; gear check-in; a data check; correction of errors and submission of corrected data; filling out the post-debriefing questionnaire; and a final check-out. Beginning with the debriefing interview, the debriefing process generally takes approximately two to five days. In 2016, there were 133 debriefings in Anchorage completed by four FMA staff, 5 in Kodiak, and 643 debriefings in Seattle completed by 27 FMA staff. Many observers deploy multiple times throughout the year and debrief after each contract, followed by a briefing for re-deployment.

Depending on their performance and debriefing assessment, observers must attend a one-day, two-day, or four-day briefing after each deployment. In rare cases when an observer has demonstrated major deficiencies in meeting program expectations, they may be required to attend another three-week initial observer training. Regardless of their required training as the result of debriefing, all returning observers are required to attend an annual four-day refresher briefing prior to their first deployment each calendar year.

4.2.9 Observer incidents

4.2.9.1 Reporting and tracking procedures

An observer who is ill or injured is required to inform NOAA Fisheries and their observer provider immediately. If communications are not readily available on the vessel or if immediate assistance is required, the observer is to notify the vessel captain. The observer is then expected to provide daily updates to the NPOP and their observer provider regarding the status of their situation. If the observer's condition does not improve and continues to affect their work, their assignment may be changed to protect their health and wellbeing. If the observer is not able to communicate every day, they are to keep their captain informed of any changes and contact the NPOP and their observer provider upon arrival in port. Whenever possible, the observer must contact the NPOP each day an illness or injury entirely prevents sampling.

Of the 115 incidents reported in 2016, 80% occurred in the full coverage sector. Observers reported 11 observer injury/illness events and 31 crew injury/illness events. Observer injury/illness events were primarily cuts and strains and about half required professional medical treatment and/or the inability to perform their duties. The majority of the remaining events involved vessel issues such as fire (9), flooding (2), grounding (6), loss of power (29), person overboard (5) and refrigerant leaks (16).

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4.2.9.2 Response to, and investigation of observer incidents

4.2.9.3 Emergency Action Plans/Emergency Notification Plans

4.2.9.3.1 EAP/ENP general description

The NPOP “Emergency Action Plan” (EAP) is in essence an Emergency Notification Plan (ENP). It consists basically of a phone tree, with the second page providing space to document an incident subject to the Plan. The observer providers have implemented several types of Emergency Notification/Action Plans. Most providers maintain a phone tree type ENP, based on the one maintained by the NPOP. MRAG Americas and Saltwater, Inc., on the other hand, have well-developed, recently updated EAPs, which incorporate ENPs, but also spell out specific steps to take in the event of a wide range of emergency situations. These range from incident response and documentation, media and constituent communications, support to family and co-workers in the case of serious injuries or fatalities, Coast Guard casualty reporting procedures, handling of shore-based emergencies, and even administrative details like the procedures for filling out the appropriate FECA documentation.

No.	Program	Discussion	Review Element(s)
1	NPOP	4.2.9.3.1	Practices/Policies
	Finding	The NPOP’s EAP is an ENP which does not spell out immediate, short, and long-term actions to take in the event of an at-sea emergency, such as incident management, crisis communication, support to victims, family members, and other stakeholders, and development of after action reports, for a variety of possible emergency situations. The review team views such comprehensive Emergency Action Plans as a best practice. Templates and considerations for development of such plans have been suggested in earlier reviews for the national observer program, most notably Development of a Comprehensive and Effective Emergency Action Plan for NMFS Observer Programs, Phase II (October 2004) (Ajango <i>et al.</i> 2004a).	
	Recommendation	The NPOP should develop and implement a comprehensive EAP which spells out immediate, short, and long-term actions to take in the event of an at-sea emergency, such as incident management, crisis communication, support to victims, family members, and other stakeholders, and development of after action reports, for a variety of possible emergency situations. See section 3.6, National Finding/Recommendation 1.	

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4.2.9.3.2 EAP/ENP implementation experience

The NPOP staff did not advise the reviewer of any shortcomings with past implementation of the NPOP EAP/ENP currently in place, in providing for effective communication between the parties involved in managing a variety of incidents. Since it consists of just a phone/e-mail communication tree, it is not possible to characterize its effectiveness beyond facilitating communication, or to do more than speculate as to possible improved outcomes had a more comprehensive EAP been in place.

4.3 Alaska Department of Fish & Game – Scallop and Crab Observer Programs

4.3.1 Program descriptions

4.3.1.1 Program history

The Alaska Department of Fish and Game (ADF&G) receives federal funding from NOAA Fisheries, through a NOAA Cooperative Agreement for management of weathervane scallops off Alaska under an FMP developed by the North Pacific Fishery Management Council (NPFMC) under the MSA. This FMP was approved on July 26, 1995, and initially established a one-year interim closure of federal waters to scallop fishing to prevent uncontrolled fishing. The agreement has since been amended several times, initially in order to establish a State-Federal management regime, then to address several Federal requirements under the MSA as well as to address issues such as overcapacity in the fishery.

Crab fisheries in the BSAI are managed under an FMP for BSAI king and Tanner crab. This FMP defers some crab fishery management activities to the State of Alaska, including the opening and closing of fisheries and setting total allowable catches or guideline harvest levels for the fisheries. Established in 2006, the Crab Rationalization (CR) Program allocates BSAI crab resources among harvesters, processors, and coastal communities.

The general regulations covering both the crab and scallop observer programs can be found in Title 5, Chapter 39 of the Alaska Administrative code (Appendix 3).

4.3.1.1.1 Regional fisheries

The ADF&G manages the weathervane scallop program off Alaska and the crab fishery in the Gulf of Alaska (GOA). NOAA Fisheries (through the NPFMC) and the ADF&G jointly manage the Bering Sea and Aleutian Islands (BSAI) crab stocks.

The scallop fishery is very small. Many participants in the fishery established a vessel cooperative in advance of the 2000/2001 regulatory season, and some vessel owners exited the fishery and arranged for their coop shares to be caught by other vessels in the cooperative.

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Only four vessels are now permitted under a license limitation program. In 2017, there are only three scallop catcher/processors active. Of these, typically only one or two remain in the program year to year.

NOAA Fisheries and the NPFMC retain the authority over the CR Program and Essential Fish Habitat, to address conservation and management issues, reduce bycatch and associated discard mortality, prevent overfishing, and rebuild overfished fisheries. NOAA Fisheries and the Council also regulate the trawl fisheries under the NPOP to reduce their impacts on the crab stocks by establishing closed areas and reducing bycatch of crab. The NPFMC Crab Plan Team coordinates crab management between NOAA Fisheries and the State. It also provides Federal oversight of State crab management, develops FMP amendments to comply with the MSA and other applicable federal law, and prepares the annual Stock Assessment and Fishery Evaluation Report. The MSA created the crab Community Development Quota (CDQ) Program which allocates 10 percent of the total allowable catch to CDQ groups.

The CR Program is credited with increasing the safety of crab fishermen (and observers) by ending the race to fish. The program led to a reduction in the size of the crab fleet from 250 vessels at its peak to about 60-70 today, generally larger (and safer) vessels. While there have been some vessel casualties in the sector (most recently the F/V DESTINATION with six crew off St. George Island in February 2017), there have been no observer casualties to date.

Observer coverage is 30% under the CR program, except for the state mandatory 100% observer coverage requirement for the two or three catcher/processors and floating processors participating in the BSAI king and Tanner crab fisheries.

4.3.1.2 Program organization

4.3.1.2.1 Scallop program

The primary purposes of the scallop Onboard Observer Program are to collect essential biological and fishery-based data, monitor bycatch and provide for regulatory enforcement under the FMP. Scallop fishery observer coverage is funded by industry through direct payments to independent observer providers. ADF&G coordinates observer activities including training, deployment, briefing, debriefing, and certification, and maintains a database of observer-collected data. ADF&G funds scallop stock assessments and day to day management of the resource including staff salaries and indirect costs incurred by field offices throughout

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the state.²¹ Two or three observers are needed for 100% coverage (one of the vessels will likely only be fishing in areas not requiring observer coverage).

4.3.1.2.2 Crab program

For crab fisheries under the FMP, the State may place observers aboard crab fishing and/or processing vessels when the State finds that observers provide the only practical mechanism to obtain essential biological and management data or when observers provide the only effective means to enforce regulations. Data collected by onboard observers in crab fisheries include effort data and data on the species, sex, size, and shell-age/shell-hardness composition of the catch. The State currently requires onboard observers on all catcher/processor or floating-processor vessels processing king or Tanner crab and on all vessels participating in the Aleutian Islands red or brown (golden) king crab fisheries. The State currently may require observers on selected catcher vessels taking red or blue king crab in the Norton Sound section, if the ADF&G provides funding for the observer presence. The State may also require onboard observers in other crab fisheries (*e.g.*, the Pribilof Islands Korean hair crab fishery) to, in part, monitor bycatch of king or Tanner crab. Observers provide data on the amount and type of bycatch occurring in each observed fishery, and estimates of bycatch by species, sex, size, and shell-age/shell-hardness for each observed fishery are currently provided in annual reports by ADF&G.

The cost of observer coverage for crab catcher vessels is fully funded by federal CR funds and state “test-fish” funds (where the state charters catcher vessels to catch crab, and applies the proceeds to the observer program). The cost of observer coverage for crab catcher/processors is industry funded, paid directly by the vessels to the observer providers, with 20-30% reimbursement from federal CR funds and test-fish funds.

4.3.2 Procurement of observer services

4.3.2.1 Observer provider contracts and regulations

AOI is currently the only observer provider for the scallop fisheries administered by ADF&G. Currently, Saltwater, Inc. is the observer provider for the crab fishery with the exception of one catcher/processor handled by AOI. Both Saltwater’s and AOI’s contracts with their crab observers are similar to the union contracts for NPOP groundfish observers.

²¹ <http://www.adfg.alaska.gov/index.cfm?adfg=fishresearch.weathervanescallop>

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4.3.2.2 Observer recruiting and employment

4.3.2.2.1 Basic qualifications

Observers are employed under the same union contract as NPOP groundfish observers. Requirements are similar for both jobs, with the exception that ADF&G does not require prior statistics coursework for their shellfish observer candidates. As a practical matter, AOI recruits scallop and shellfish observers who are also qualified for work as groundfish observers since they aim to get them certified in that program as well.

To become certified as either a crab or scallop onboard observer, a person must obtain a crab or scallop onboard observer “trainee permit”, which requires “training and orientation specified by the department,” and pass an exam administered by the department.²²

4.3.2.2.2 Compensation

The programs have about a 100% annual observer turnover rate. The poor retention rate is thought to stem from the combination of a short season, Alaska winter weather, harsh sea conditions during the bulk of the crab season from January through March, and relatively low pay (since the high turnover rate limits seniority). An ADF&G staff member told the reviewer they are considering options to improve retention, possibly through provisions in contracts with observer providers, but nothing definitive has been developed as of this writing.

4.3.3 Observer safety training

4.3.3.1 Training program organization

Scallop observers are currently trained by ADF&G in Kodiak, Alaska. Safety training is conducted annually in June before the start of each season (currently July 1-February 15) by Observer Training Services (OTS). Scallop observer training is funded by a federal grant by NOAA to the State of Alaska to cover costs incurred to meet federal oversight. The two-week course covers both safety and sampling.

Safety training for BSAI crab observers has been provided in Kodiak in recent years by a single AMSEA-certified marine safety instructor under a federal grant, in cooperation with ADF&G staff.

²² Title 5 of the Alaska Administrative Code, 39.143

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4.3.3.2 Safety and survival training

The primary safety trainer for scallop observers is an AMSEA certified marine safety instructor with 13 years of experience as a trainer for groundfish and shellfish observers at the (no longer operating) University of Alaska Anchorage Observer Training Center. Safety training totals a nominal 23 hours and utilizes the pool at the USCG Base in Kodiak for immersion suit, liferaft and man overboard training in the water. The reviewer did not attend the training, but reviewed the lesson plans. OTS maintains very detailed lesson plans for the training, modeled after the NPOP training program at AFSC. The safety record of the scallop observer program is historically very good.

The crab observer safety training is just one day, of which several hours are spent in water activities in the pool at the USCG Base at Kodiak. The remainder of the safety training is based on the NPOP training at the AFSC, focusing on the 7 Steps, STAY rules, etc. According to the current AMSEA trainer, the program tentatively plans to move the training to Anchorage and expand it to two days next year. Once an observer receives safety training, there is no requirement for refresher training. The training is typically carried out for 10-15 students twice a year.

4.3.4 Observer equipment and maintenance

AOI provides their scallop observers with Personal Locator Beacons (PLB). They require their covered vessels to provide their observers with immersion suits and strobe lights, but maintain one of each in Kodiak and Dutch Harbor in the event a vessel is unable to provide them, and AOI reported that they are inspected annually.

Safety gear for crab observers is issued by the observer providers, and consists of an immersion suit with strobe light and whistle, a PFD, a PLB, and a hardhat. Saltwater issues sampling and safety gear to observers out of their Anchorage office, since observers generally must pass through Anchorage on their way to Dutch Harbor for deployment. Saltwater reported that the immersion suits are inspected annually.

4.3.5 Vessel selection and notification

Scallop vessels have a 100% observer coverage rate. For BSAI crab catcher vessels, required observer coverage as determined by the Board of Fisheries varies by area and crab species, from 20% for the Bristol Bay red king crab fishery, to 100% for the Pribilof District red and blue king crab fisheries. Vessels register for the fishery in the fall, and are notified of required observer coverage on a vessel (vs trip by trip) basis. The aggregate coverage rate for the catcher vessel sector is estimated at about 30%, and there are generally 20-30 observers working in the crab fishery in a given year.

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4.3.6 Observer selection and notification

In order to limit over-familiarity, scallop observers are restricted to a maximum of 90 days on any individual vessel during 12 consecutive months. Observers that are required on all vessels fishing for scallops in Alaska outside Cook Inlet monitor the fishery during the season.

4.3.7 Deployment and at-sea support

After a scallop trainee observer has performed satisfactorily over the course of several observer trips, certification will be awarded. Until that occurs, the observer is employed under the trainee permit which expires 180 days from the date trainee status was granted. If a trainee permit expires before an observer is certified, the observer is no longer eligible to deploy and must retake the two-week scallop observer training class. To become a fully certified scallop observer, a trainee must demonstrate professionalism and good judgment while working independently on board a fishing vessel and in port; must demonstrate proficiency in data collection and form protocols for the number of deployments that the department has determined are necessary; and must not engage in any prohibited activities under the state law.

4.3.8 Debriefing

Before deploying on a trip, a scallop trainee or observer must participate in a briefing with the department. Scallop observers transmit data to ADF&G daily, or at least three times weekly by radio or e-mail. A trainee observer may not deploy for longer than 36 days without a face-to-face debriefing with an ADF&G representative. Debriefing is generally conducted with ADF&G staff in Dutch Harbor. A certified observer may deploy for up to 120 days without a face-to-face debriefing with an ADF&G representative. Certifications expire 365 days from the observer's last debriefing. A certified observer may be demoted to trainee status for submitting unsatisfactory data. A demoted observer who continues to submit unsatisfactory data will be decertified.

Trip length for the crab fishery ranges from 4 days to 2-3 weeks for catcher vessels, to 3 weeks or longer for catcher/processors. Debriefing with ADF&G is conducted in Dutch Harbor upon landing. Trainee crab observers must complete a "mid-trip" debrief every 36 days until they are certified by ADF&G, and all observers must also check in with the observer provider after each trip/delivery.

Fishing may be closed in any area before the guideline harvest level is reached due to concerns about localized depletion, trends in Catch Per Unit Effort, or bycatch rates. Inseason data are also used by the scallop industry to avoid areas of high bycatch.

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4.3.9 Observer incidents

In general, the ADF&G program reports a strong safety culture in the crab industry. The ADF&G reported (and casualty reports confirm) a significant increase in safety since the CR Program ended the race to fish. There is little reported harassment of observers in the crab industry, and relationships between observers and vessel crews are reported to be generally cordial, probably due to the fact that the catcher vessels do not have to pay for observer coverage because it is covered by test-fish and CR funds.

No.	Program	Discussion	Review Element(s)
1	ADF&G	4.3	Practices/Policies
	Finding	While recognizing that they are both very small programs with minimal staffing, serving small numbers of observers, the reviewer found that neither ADF&G program was very well documented with respect to observer training policies and procedures. It was very challenging to track down specific information about the respective training programs, generally requiring outreach to the third-party trainers for details. The high turnover in both programs is a potential source of concern. Nevertheless, both programs have in recent years had excellent safety records with respect to observers.	
	Recommendation	ADF&G should seek to improve documentation of the crab and scallop observer programs, such as by providing access to documentation like manuals, training schedules, etc. online. The programs recognize that there are issues with observer retention and are already exploring measures to address that, perhaps through provisions in contracts with observer providers, although nothing definitive had been developed as of the time of the reviewer's visit.	

4.4 Northwest Fisheries Science Center (NWFSC) - West Coast Groundfish Observer Program (WCGOP) At-Sea Hake Observer Program (A-SHOP)

4.4.1 Program descriptions

4.4.1.1 Program history

4.4.1.1.1 WCGOP

Prior to 1982, Washington, Oregon, and California were each independently responsible for management of the domestic groundfish fisheries off their respective coasts. With the approval

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of the Pacific Coast Groundfish FMP in 1982, the Pacific Fisheries Management Council (PFMC), representing states, tribes, NOAA Fisheries, industry, and other interested parties, assumed responsibility for management of over 90 species of groundfish within the EEZ off the coasts of these states.

The PFMC has introduced a variety of management measures since 1982 in response to the changing status of west coast groundfish stocks. Management measures developed by the Council are recommended to the Secretary of Commerce through NOAA Fisheries. The measures are then implemented in regulation by the NOAA Fisheries West Coast Region, and enforced by NOAA OLE, the USCG, and state enforcement agencies. In general, the management measures developed by the PFMC fall into one of two themes: limiting fishery access, and limiting catch of species or species complex.²³

The PFMC first limited access to the fishery by creating limited entry and open access sectors. Federal limited entry permits were issued in 1994 based on the fishing history of qualifying vessels. (Open access fisheries do not require a federal permit, however a state permit is often required.) In 2000, in accordance with MSA requirements for measures to protect overfished stocks, the PFMC began escalating its management strategy in response to diminished stocks of groundfish species. In 2001, the PFMC used a “permit stacking” program for the Limited Entry Sablefish Endorsed fishery to control capacity by reducing the number of vessels in the fishery. In 2003, the federal government and remaining limited entry trawl and pink shrimp fisheries bought out 92 limited entry trawl permits, which represented around 50% of trawl fleet effort.

PFMC fishery managers also regulate catch rates by limiting the allowed harvest amount (Annual Catch Limit, or ACL) of FMP species or species complexes. To maintain a year-round fishery, the PFMC uses a system of trip limits to control the rate of catch over the year (NWFSC 2016b). All vessels in the groundfish fishery are also required to have a Vessel Monitoring System (VMS) installed, which is primarily used to ensure compliance with spatial management restrictions, but can also be used to confirm the location of a vessel in case of a missed expected return time.

In 2001, the West Coast Groundfish Observer Program (WCGOP) was established at the Northwest Fisheries Science Center (NWFSC) through a Cooperative Agreement between the Pacific States Marine Fisheries Commission (PSMFC) and NOAA Fisheries, in response to the West Coast groundfish fishery being declared a failure on January 19, 2000. The main goal of the WCGOP is the collection of coast-wide year-round discard information for groundfish fisheries and fisheries taking groundfish as bycatch off the Pacific coast of the US, in order to

²³ <https://www.pcouncil.org/>

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assess and account for total fishing mortality, and to evaluate the effectiveness of management measures, including rebuilding plans for depleted stocks.²⁴

4.4.1.1.2 A-SHOP

In addition to the WCGOP, the NWFSC administers the At-Sea Hake Observer Program (A-SHOP). The at-sea Pacific hake (whiting) fishery dates back to 1966, when foreign vessels participated. With the passage of the MSA in 1976, the US gained authority to require foreign vessels fishing in US waters to carry observers. From 1978 to 1989 observers were placed aboard foreign-flag vessels targeting hake, with coverage nearing 100% in the 1980's as the fishery evolved into a joint venture with US-flag catcher vessels delivering to foreign processing vessels. By 1991, the hake fishery was completely domesticated, allowing only US vessels to catch and process fish.

Beginning in 1990, domestic catcher/processors and motherships in the at-sea hake fishery voluntarily carried NOAA Fisheries-trained observers. From 1990 through 2000, observer coverage in the fishery was a shared effort between the NOAA Fisheries Northwest Regional Office and the North Pacific Groundfish Observer Program (NPGOP; now NPOP). The NPGOP provided pre-hire screenings, field training, debriefing interviews, at-sea support, sampling equipment, and data management services. In 2001, the NWFSC assumed responsibility for the observers in the at-sea hake fishery with the establishment of the A-SHOP.

In 2001, Amendment 13 to the West Coast Groundfish FMP mandated observer coverage on catcher vessels. For the at-sea hake fishery, catcher vessels were considered to be "observed" based on sampling of their catch by observers on motherships until the catch shares program was established in 2011. Mandatory observer coverage for at-sea processing vessels under the A-SHOP was established by regulation in 2004.²⁵ Processing vessels 125 ft or longer (currently all of them) are required to carry at least two observers, or one observer if less than 125 ft. Observer coverage is maintained to comply with an ESA Section 7 consultation on the Pacific Coast groundfish fishery requiring all incidental takes of ESA-listed salmonids to be recorded, and more recently to address catch and discard monitoring in the trawl rationalization program (Brooke 2014).

4.4.1.2 Regional fisheries

The WCGOP and A-SHOP monitor a highly diverse set of fisheries and vessels, ranging from small boats launched from the surf, to 600+-foot catcher/processors and motherships operating

²⁴ 66 FR 20609, April 24, 2001

²⁵ 69 FR 31751, June 7, 2004

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over the entire West Coast of the US. While the trawl fishery harvests most groundfish, groundfish can also be caught with troll, longline, hook and line, pots, gillnets, and other gear. There are four main components of the West Coast groundfish fishery (Figure 7):

- the Limited Entry (LE) component is comprised of fishers with limited entry permits using trawl²⁶ or fixed gear;
- the Open Access (OA) component of the fishery allocates a portion of the harvest to fishers targeting groundfish without LE permits, and fishers who target non-groundfish fisheries that incidentally catch groundfish;
- the recreational component of the fishery includes anglers targeting groundfish species and others who target non-groundfish species but who incidentally take groundfish; and
- a tribal component of the fishery in Washington State allows tribes who have a federally recognized treaty right to fish for federally managed groundfish in their "usual and accustomed" fishing areas (NOAA Fisheries 2012).

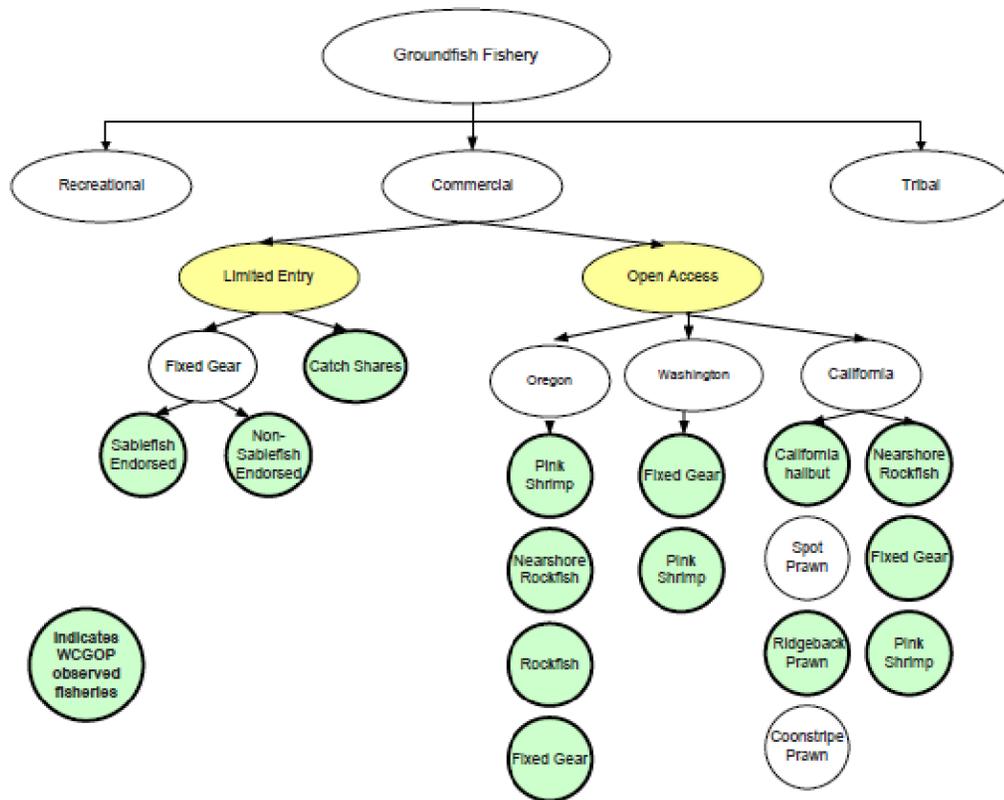


Figure 7 - WCGOP Observed Fisheries
(Source: NWFSC (2017))

²⁶ The LE trawl sector became a catch shares (IFQ) program beginning in 2011.

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The seasonal at-sea Pacific hake fishery is comprised of mothership processing vessels and supporting catcher vessels, and catcher/processors ranging in size from about 250 to over 600 feet LOA. There are approximately 15 vessels that participate in the fishery in any given year, generally between and after the Alaskan pollock fishery seasons. These vessels use mid-water trawl nets to harvest Pacific hake, and process the catch at-sea. Cooperatives are used to manage an overall allocation/quota. Because the at-sea hake fishery uses mid-water trawl nets, bycatch as a percentage of total catch is generally low, so the catch share allocations encompass only five species (NWFSC 2016a). Trip limits, area closures and other harvest measures may be triggered when individual vessel or co-op limits are attained for other species of concern such as Chinook salmon and depleted rockfish species.

Figure 8 characterizes the vessels, types of gear and observer coverage in the fisheries monitored by the WCGOP and the A-SHOP. The figure also reflects that the WCGOP supplies observers for the catcher vessels supporting mothership processor vessels (“mothership catchers”) which have observer coverage under the A-SHOP.

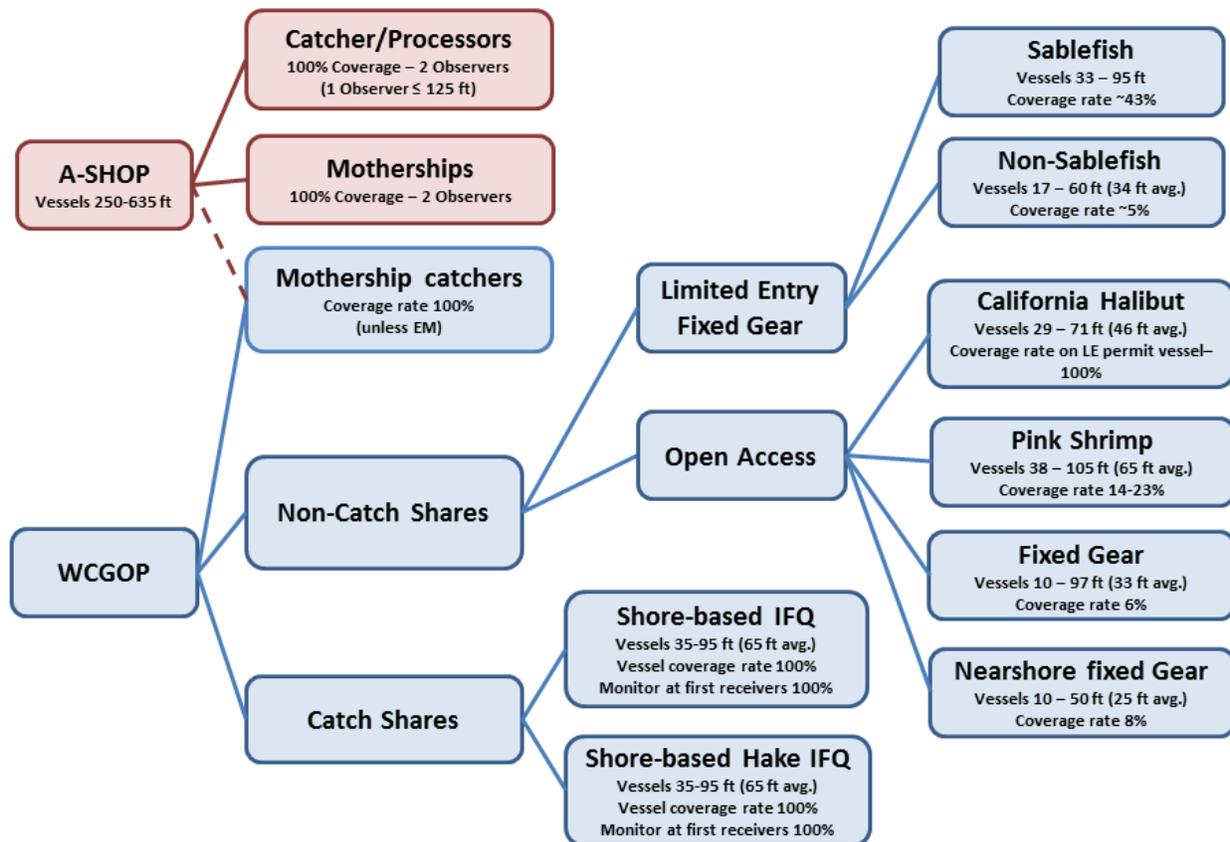


Figure 8 - WCGOP and A-SHOP Fisheries and Vessels
A-shop shown in pink, WCGOP shown in blue.

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4.4.1.2.1 Trawl catch share (IFQ) fisheries

The limited entry (LE) groundfish bottom trawl sector operates from the US/Canada border to Morro Bay, California. Vessels range in size from 35 to 95 feet, with an average length of 65 feet, and must have a federal groundfish permit with a trawl endorsement. Groundfish bottom trawl vessels fish throughout the year in a wide range of depths and deliver catch to shore-side processors. A single groundfish bottom trawl tow often includes 15-20 species which can vary widely in size and weight.

Effective in 2011, pursuant to Amendments 20 and 21 to the Pacific Coast Groundfish FMP, NOAA Fisheries implemented a new catch shares program for the West Coast groundfish trawl fishery. The trawl catch share program, or trawl rationalization program, consists of an Individual Fishing Quota (IFQ) program for the shore-based trawl fleet, and cooperative programs for the at-sea mothership and catcher/processor trawl fleets. The final rule²⁷ requires 100% at-sea monitoring (observers or Electronic Monitoring (EM)) and yearly submissions of economic data. The catch share program divides an overall allowable catch or quota into shares controlled by individual fishers or groups of fishers (cooperatives). These shares can be harvested at the fishers' discretion, ideally more efficiently and safely, and at more profitable marketing times.

The shore-based IFQ sector comprises vessels that land groundfish, including Pacific hake, to shore-based processors. Vessels can use trawl, longline, or pots to take shore-based IFQ quota. Landings data from fish tickets and discard data from observers are entered in the West Coast Regional Office Vessel Account System (VAS), where fishers can view total allocated quota pounds, quota pounds caught, and remaining quota pounds for each species/complex. The observer data are used to account for any IFQ discard, including the mandatory discarding of Pacific halibut, and for other purposes such as stock assessment (NOAA Fisheries 2012).

The regulations require at-sea hake catcher/processors and motherships over 125 ft (currently the entire fleet) to carry 2 observers for every fishing day to provide for 24-hour-a-day data collection. To ensure all discard is accounted for, observers are also required on mothership catcher vessels if EM systems are not present. The A-SHOP manages observers on the at-sea hake motherships and catcher/processors, while the WCGOP manages observers on catcher vessels supporting the motherships.

²⁷ 75 FR 78344, December 15, 2010

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4.4.1.2.2 Non-catch share fisheries

In addition to the trawl catch share fisheries discussed above, the "non-catch share" fisheries/sectors listed below²⁸ are monitored by WCGOP observers, focused largely on monitoring discards:

- Limited Entry Sablefish-Endorsed Fixed Gear;
- Limited Entry Non-Sablefish-Endorsed Fixed Gear;
- Open Access Nearshore Fixed Gear (Oregon and California);
- Open Access Fixed Gear (Washington, Oregon, California);
- Open Access California Halibut Trawl (California); and
- Open Access Pink Shrimp Trawl (Washington, Oregon, and California)

In recent years, observer coverage priorities in this sector have been focused primarily on the limited entry sablefish fishery, with approximately 43% observer coverage in 2016 (coverage in other sectors is much lower). The open access (OA) fixed gear sector does not require federal or state permits. Therefore, the total number of participants in the OA fixed gear sector varies widely from year to year. Open access vessels can use any type of hook-and-line or pot/trap gear, including longline, fishing pole, and vertical longline. Brief descriptions of the various non-catch share fisheries under the WCGOP are provided below.

LE sablefish-endorsed fixed gear fleet

Vessels participating in the LE sablefish-endorsed fixed gear fleet range in size from 33 to 95 feet and operate primarily out of ports in Oregon and Washington. Nearly all vessels deliver their iced catch to shore-side processors. The LE sablefish-endorsed primary season fishing takes place over a seven-month period from April 1 to October 31. Vessels that have LE sablefish-endorsed permits can fish in the LE non-sablefish-endorsed fleet under different trip limits once their quota of primary season sablefish is caught or when the primary season is closed, from November 1 through March 31. LE sablefish-endorsed permits are selected for all trips that land sablefish against their sablefish quota during the primary season. These vessels are only included in the WCGOP sampling frame for the LE sablefish-endorsed primary season, and no longer observed when they begin fishing under LE non-sablefish-endorsed trip limits.

LE non-sablefish-endorsed fixed gear fleet

Vessels in the LE non-sablefish-endorsed fixed gear fleet range in size from 17 to 60 feet, with an average length of 34 feet, and primarily operate out of southern California ports. This fleet

²⁸ In addition to the listed fisheries, at the request of the CA Department of Fish and Game, the WCGOP has recently been observing sea cucumber and ridgeback prawn fisheries off Santa Barbara on a trial basis, and will assess the potential future of the program after analysis of the 2017 data.

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operates year-round, but the majority of fishing activity occurs during the summer. For the LE non-sablefish-endorsed and the open access fixed gear sectors, vessels are selected for a two-month period (except for vessels with sablefish-endorsed permits as noted above).

OA nearshore fixed gear fleet

The West Coast OA nearshore fixed gear groundfish commercial fleet operates from northern Oregon to southern California. Vessels participating in this fleet range in size from 10 to 50 feet, with an average length of 25 feet, and fish a variety of fixed gear including hand-lines, cable gear, fishing poles, and pots. Gear is set and retrieved multiple times a day and catch is generally landed on a daily basis. Some catch is delivered to the live fish market.

Several fishing area closures designated in PFMC federal groundfish management apply to the commercial nearshore fixed gear fisheries. In addition, each state manages its nearshore fleet independently by issuing state regulations on the cumulative trip limits of nearshore species in their state waters. Cumulative trip limits specify an amount of fish (by weight) that can be landed during a particular period, usually two months duration. Often, cumulative trip limits set by the states are more restrictive than the federal limits. Limits for the nearshore fisheries are small; generally between 100 to 2,000 lbs every two months. Within each port group (see Figure 9), state permits are randomly selected for coverage during two-month periods, which coincide with two-month cumulative trip limit periods. Due to the large number of state permits in these fisheries, criteria were developed to reduce the selection lists to those permits that are the most active in each sector and to vessels that have sufficient space to carry an observer. This increases the probability that the vessels selected will be actively fishing and observable.

OA fixed gear fleet

The OA fleet of the fixed gear groundfish sector does not require federal or state permits. Vessels range in size from 10 to 97 feet, with an average length of 33 feet. Vessels operate out of all three states and catch a variety of groundfish species. The trip limit amounts are dependent on area and the time of year fishing occurs. Within each port group, a list of active open access fixed gear vessels is generated based on fish ticket landing receipt information from the Pacific Fisheries Information Network (PacFIN) database. The active list includes all fixed gear vessels with landings in Washington, Oregon, or California that do not have federal limited entry groundfish permits and meet certain criteria. Vessels are randomly selected for coverage during a two-month period, which coincides with two-month cumulative trip limit periods.

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OA California halibut trawl fleet

The OA California halibut trawl fleet generally operates out of ports from San Francisco to Los Angeles, CA. Vessels range in size from 29 to 71 feet, with an average length of 46 feet, and deliver their catch to shore-based processors. In 2006, California began requiring state-issued licenses to participate in this sector in state-designated California Halibut Trawl Grounds (CHTG) from Point Arguello to Point Mugu, California. Commercial bottom trawling is prohibited in California state waters, with the exception of the CHTG. Regulations for vessels operating in the CHTG include minimum mesh sizes to reduce bycatch, a three-month closed season during California halibut spawning, a possession limit on the incidental take, a minimum size limit for retained California halibut, and mandated federal observer coverage by the WCGOP. Selections are for two-month periods of observer coverage. California halibut is a state-managed fishery, although it can co-occur with other FMP flatfish species on the continental shelf.

OA Pink shrimp fleet

The OA pink shrimp trawl sector off the US West Coast primarily operates in Washington, Oregon, and Northern California. Pink shrimp trawl vessels range in size from 38 to 105 feet, with an average length of 65 feet, and can use single and double-rigged shrimp trawl gear. The pink shrimp season is open April 1 through October 31, and vessels deliver catch to shore-side processors. Pink shrimp vessels

are selected for one-month periods of observer coverage (NOAA Fisheries n.d.-b).

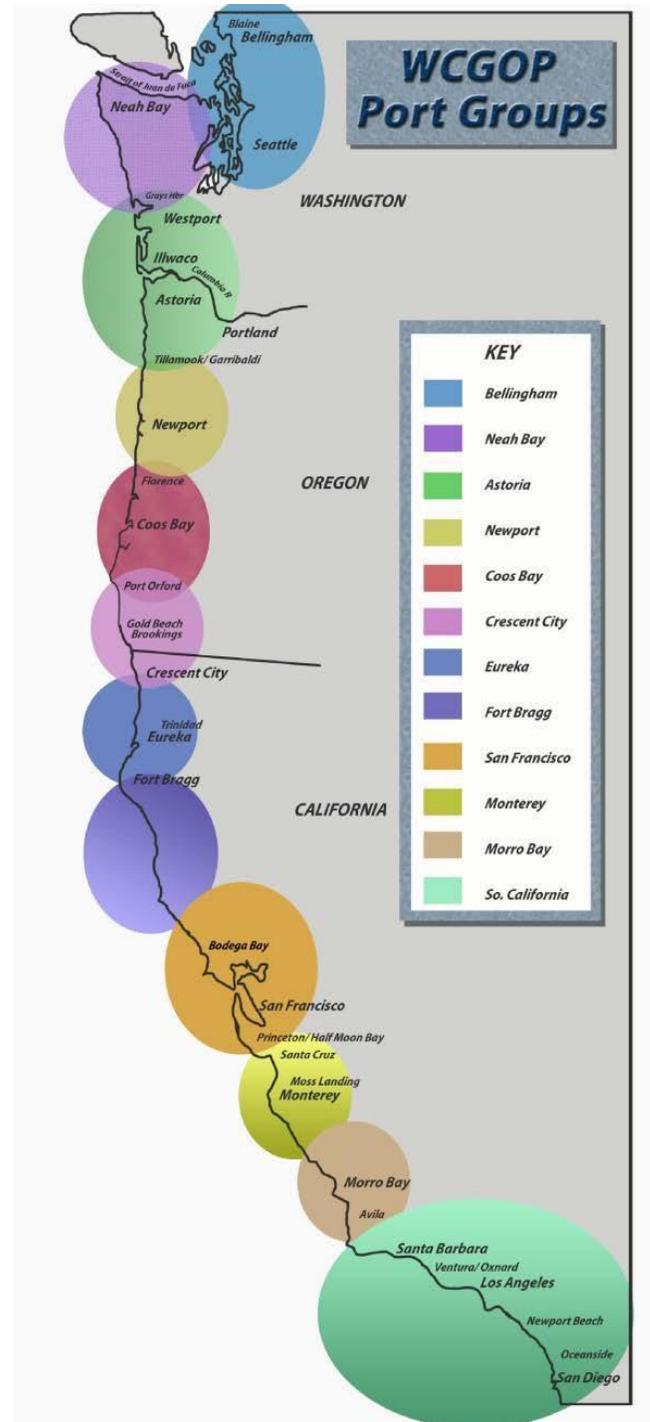


Figure 9 - WCGOP Port Groups
(Source: NWFSC)

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4.4.1.3 Program organization

The WCGOP and A-SHOP are both administered by the NWFSC Fishery Resource Analysis and Management (FRAM) Division, Fisheries Observation Science Program at Montlake Blvd. East in Seattle, WA. The NWFSC is located several miles from the Alaska Fisheries Science Center (AFSC) at Seattle Sand Point (responsible for the NPOP). The program comprises approximately 23 staff, of whom 12 are NOAA Fisheries or OLE employees, with the remainder PSMFC employees. Federal funding is provided through a Cooperative Agreement with the PSMFC. Many of the program staff work in five field locations on the Oregon and California coasts, and three staff supporting the A-SHOP have offices at the AFSC.

NOAA's West Coast Regional office administers a program of shore-based catch monitors assigned to first receiver facilities²⁹, who confirm that total landings are accurately sorted, weighed, and recorded on fish tickets (landing receipts). Each first receiver taking delivery of IFQ species is required to have a certified catch monitor present for the entire duration of the landing. Once verified, catch monitors independently report catch data to the PSMFC and NOAA Fisheries catch accounting databases. Catch monitors perform more of a compliance role than observers. Observers focus on scientific data collection at sea, while catch monitors ensure compliance with IFQ landed fish sorting requirements. Together, observers and catch monitors provide a very accurate and complete picture of the fishing mortality in the catch share program. In practice, the great majority of WCGOP catch share observers are cross-trained as IFQ catch monitors, and often serve as catch monitors for the vessels they observe, and/or other offloads as needed.

4.4.2 Procurement of observer services

4.4.2.1 Observer provider contracts and regulations

4.4.2.1.1 WCGOP observers and catch monitors

As of the summer of 2017, there are approximately 69 active observers in the WCGOP, just over half in the non-catch share sector. In April 2015, NOAA Fisheries published a final rule (80 FR 22270) establishing observer provider permitting requirements specific to the Pacific Coast groundfish fishery. This regulation replaced regulations which had required WCGOP observers to be obtained from NPOP-permitted providers. It provided for permitting of providers for WCGOP observers and catch monitors by the West Coast Region Fisheries Permits Office, beginning in 2016.

²⁹ A first receiver is "a person or company who receives, purchases, or takes custody, control, or possession of catch onshore directly from a vessel" (50 CFR 660.11), such as a processor or cannery.

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The regulations for WCGOP observers are summarized in 50 CFR 660.16 (Groundfish observer program), which provides a table of pointers to detailed regulations dealing with particular fisheries. In general, the regulations are closely modeled after existing NPOP regulations in 50 CFR 679 (Appendix 3). The regulations for catch monitors are contained in 50 CFR 660.17.

Currently, there are three observer providers permitted to provide observer and catch monitor services for the WCGOP. Alaskan Observers, Inc. (AOI) is currently the single observer provider contracted with and funded by the PSMFC to provide observer services to the non-catch share sector. AOI, Saltwater, Inc., and TechSea International, Inc. (TSI) are permitted to provide observer/catch monitor services to the catch share sector; however, TSI is not currently active except for A-SHOP observers, and Saltwater has only a small number of WCGOP observers. Vessels in the catch share fleet select and pay observer providers directly for their observer coverage, and processing plants pay catch monitor providers directly for catch monitor coverage.

The last PSMFC solicitation for a non-catch share observer provider was in 2017. The AOI contract with the observer requires the observer to wear a supplied PFD at all times when on deck of any vessel, while launching or landing through surf, and when instructed by the USCG; and to adhere to the safety standards in the WCGOP Observer Training Manual. The PSMFC reported that they require observer providers contracted with them to provide “insurance adequate to cover injury, liability, and accidental death” for observers. The observer provider will provide insurance during the entire period an observer is employed, including training or briefing, travel to and from ports, during standby time in port and at sea deployment, and while debriefing. The PSMFC Program Manager advised the reviewer that the insurance is expected to include:

- Worker’s Compensation & Employer’s Liability
- Maritime Employer’s Liability adequate to cover observer, vessel owner, and contractor
- Commercial General Liability
- Cure, Maintenance, Wages, and Transportation
- Longshore and Harbor Worker’s Compensation Act
- Automobile Liability
- Medical Insurance

In addition, the regulations for observer providers in 50 CFR Part 660 are modeled after and essentially identical to the NPOP regulations in 50 CFR 679, and require permitted observer providers to provide the observer program with documentation of insurance coverage as follows:

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- Maritime Liability to cover “seamen’s” claims under the Merchant Marine Act (Jones Act) and General Maritime Law (\$1 million minimum);
- Coverage under the US Longshore and Harbor Workers’ Compensation Act (\$1 million minimum);
- States Worker’s Compensation, as required; and
- Commercial General Liability.

Although the PSMFC and regulatory requirements are more substantial, the current non-catch shares observer contract specifies only that the provider maintains worker’s compensation insurance for the observer from the beginning of training through the employment period, and Marine Employers Liability insurance for the observer while under contract. The program did not provide any significant information, positive or negative, concerning experience with the processing of claims under the required insurance coverages, however this would typically be handled by the observer provider as the observer’s employer.

4.4.2.1.2 A-SHOP observers

Unlike WCGOP observers, who are required by their contracts to be locally based in West Coast port areas, A-SHOP observers do not have any residency requirement, and typically return to Alaska for service as NPOP observers outside of the at-sea hake seasons. A-SHOP observers generally deploy for the at-sea hake season out of Seattle or Bellingham, WA. During the peak (spring) season, there are about nine catcher/processors and six motherships active in the fishery. The population of A-SHOP observers varies from year to year. Typically, there are 35-40 active A-SHOP observers during the spring at-sea hake season, and about 15 for the fall season. Contract provisions for the A-SHOP observers are similar or identical to those for NPOP observers (section 4.2.2.1), taking into account that the processing vessels are the same vessels that fish for pollock in the North Pacific region outside of the at-sea hake seasons, and the observers are typically from the same pool of NPOP observers.

4.4.2.2 Observer recruiting and employment

4.4.2.2.1 Basic qualifications

Observer candidates must generally meet the requirements in the Observer Eligibility Standard, but catch monitors need only have a high school diploma, and a two-year degree or one year of specialized experience. In practice, however, almost all WCGOP catch monitors have four-year degrees.

The reviewer interviewed management staff from all of the WCGOP and A-SHOP observer providers, and some of their field coordinators. All of the providers described similar general

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procedures for the hiring of observers. The potential risks and discomforts of observer life are heavily emphasized in employment interviews, as a means of screening out those who may not be well suited for the occupation. In general, though, observer retention in the WCGOP is relatively high (2.6 years for catch share observers, 4.5 years for non-catch share observers according to the PSMFC Program Manager). Informal discussions with observers suggest this stems at least in part from a perception of a well-run and safe program and industry, relatively short deployments, and the ability to live and work in a local area in a relatively benign climate for competitive pay and benefits.

4.4.2.2 Medical and fitness qualifications

The regulations in Part 660 for observer physical examinations are modeled after and essentially identical to the corresponding NPOP regulations in 50 CFR Part 679 (Appendix 6). They require that all observers obtain physical examinations within the twelve months prior to any deployment. The physician must be provided with the WCGOP-prepared information pamphlet about observer duties before the examination, and certify having read it. The physician must provide a signed statement that he or she has physically examined an observer or observer candidate, and confirm that, based on the examination, the observer/candidate does not have any health problems that would jeopardize their individual safety or the safety of others while deployed, or prevent the observer/candidate from performing their duties satisfactorily. The regulations require that the physician's statement must be submitted to the WCGOP before certification of an observer. For the non-catch share observers, AOI's practice is to provide the signed statement as described above from the physician that performed the exam (but not the observer's medical questionnaire or any confidential medical information) to the WCGOP no later than one week before the training class. For current observers, the physician statements are updated annually and provided to the program before the observer attends a briefing.

4.4.2.3 Compensation

Based on informal discussions with observers and WCGOP program staff, WCGOP observer pay and benefits are perceived to be competitive (base salary plus pay for a minimum of 12 deployed sea days per month, increases in daily rates for higher cumulative deployed days, with annual cost of living adjustment in the non-catch share observer contract). The current employment contract for non-catch share observers requires AOI to approve their place of residence in proximity to their assigned home port. It provides for major medical insurance subject to an observer payroll deduction of \$100 per month. The contract specifies that AOI will reimburse the observer specified amounts for cell phone and internet service installed at the observer's home address. It further specifies an allowance for purchase of rain gear, boots, and

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gloves. Observers receive up to \$350.00 for relocation expenses, are reimbursed for meal expenses incurred during travel to and from deployments outside their home ports, and are compensated for mileage driven during deployment-related travel outside their home ports (observers must provide their own automobiles). Observers can also participate in the provider's 401(k) plan after working for 4 months.³⁰

The majority of catch share observers are employed by the same provider as the non-catch share observers, with a similar compensation structure. The other active catch share observer provider contract is generally similar, providing for base monthly "On-call pay", plus daily rates for training, briefing, and deployment days.

In keeping with the short, seasonal nature of the fishery, A-SHOP contracts provided for review provide for compensation on a daily basis, with different rates for training days, briefing and debriefing days, deployed and in-transit days, and days awaiting assignment. Observers are also provided a per diem allowance for briefing, debriefing, training, and stand-by/awaiting assignment days.

4.4.3 Observer safety training

4.4.3.1 Training program organization

The primary training location for WCGOP observers is the NOAA Newport Research Center, located at the Oregon State University's Hatfield Marine Science Center in Newport, OR. The main training team consists of about seven Newport staff. Other personnel (including management staff) from the NWFSC and the PSMFC, as well as debriefers from the field offices often assist with training on both data collection and safety topics. The participation of qualified debriefers, coordinators, and managers in the training is felt to facilitate exposure of observers to perspectives on day-to-day program activities.

Three core A-SHOP staff collaborate with NPOP staff at the AFSC in Seattle, as well as NWFSC and PSMFC management staff, to provide safety training and to issue safety and sampling equipment for observers working in the A-SHOP. The A-SHOP staff also coordinate in-water safety training for A-SHOP observers in the years when it's not included in NPOP briefings.

³⁰ <https://www.alaskanobservers.com/west-coast-groundfish/>

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4.4.3.2 Safety and survival training

4.4.3.2.1 WCGOP observer training

A fifteen-day training course is required of all new WCGOP observers (catch share or non-catch share). Class sizes vary up to 24 trainees for observers in the WCGOP. The course consists of an overview of sampling procedures, species identification, safety training, conflict resolution training, training in the MSA, use of a web-based data-entry application and an offline database, small boat etiquette, and general support information. Trainees must demonstrate a variety of safety-related skills, and effectively participate in on-land, in-water, and on-board safety drills (Appendix 12). Trainees must also demonstrate the use of vessel safety equipment. Additionally, trainees must be able to demonstrate that they have the attitude and ability required to perform a difficult job independently, and to act professionally in stressful situations.

Four-day refresher briefings for returning WCGOP observers are also carried out in Newport, as is a three-day catch monitor training program for persons who have completed the 15-day catch shares training. In the three-day catch monitor training, trainees learn how to independently collect landing data during IFQ offloads at first receivers, how to ensure that all IFQ species are sorted, weighed and recorded according to federal regulations, and proper procedures to follow in the event of data discrepancies. Trainees learn to complete paperwork, submit data, and apply correct methodology to sample and collect salmon data. Also included in this training are discussions on health and safety, conflict resolution and working with enforcement personnel. For those catch monitor candidates who have not completed the observer training, there is a separate five-day training. In addition to the topics covered in the three day training, this training covers additional material from observer training (fishery overview, species ID, and various health and safety topics).

The safety trainers at the Newport training were all currently AMSEA-certified marine safety instructors. A strong safety culture among the training staff was observed by the reviewer. Trainees executed training risk acknowledgment forms prior to beginning training (similar to example in Appendix 16). All of the trainers appeared to be enthusiastic, knowledgeable, and very safety-conscious. Safety was emphasized both in the training environment and while engaged in observer duties. The trainers repeatedly emphasized the WCGOP policy that observers must wear PFDs at all times while on deck, and the potentially serious consequences (decertification) of not doing so. Immersion suit donning drills were random and frequent. The trainers were eager to point out that there have been a number of cases where observer training has led to positive outcomes in casualties for both the observers and the vessel crews, *e.g.*, moving safety equipment out of harm's way in a fire situation, caring for man overboard

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victims, calling in a MAYDAY when vessel personnel were not comfortable using the radio, and calling the USCG and providing immediate assistance when a captain had a heart attack.

Safety training totals approximately 2.5 days and is carried out mostly in the classroom and in the lab. Audio-visual aids provided were generally very good, clear, and readable as appropriate, including some engaging program-produced video material on conflict resolution to accompany classroom lectures and role-play scenarios. Handouts for the training sessions provided useful outlines of the material to be covered. The training program provided a very thorough spreadsheet outlining the course material, and a detailed schedule, allowing easy review against the Observer Safety Training Standards. Based on the modules witnessed by the reviewer, the content of the training and the duration of the training topics were consistent with or exceeded the requirements in the Observer Safety Training Standards (Appendix 10) and included some supplemental topics (Appendix 11). Trainers employed very detailed lesson plans for each day, spelling out the need and objectives for each lesson/subject as recommended by AMSEA (Ajango *et al.* 2004b). The trainers convened in an informal meeting at the end of each day for a collaborative review of that day's classes (what went well, what could be done better), in a collegial and professional atmosphere.

In-water training activities (water entry in immersion suits, chain swim, helicopter rescue basket usage, liferaft inflation, entry, and righting, HELP position, etc.) were carried out in the boat basin near the classroom (Figure 10; an alternative the program has sometimes used is in town at the Englund Marine dock, with the state of the tide having some bearing on where the training is held). In general, the in-water training was very thorough and addressed all of the safety and training elements specified in the Observer Safety Training Standards. The reviewer was of the view that doing this training in open water provides a degree of similitude to real-world conditions that cannot be obtained in a pool. Training staff carefully monitored the trainees in the water at all times to ensure safety, and instructor to student ratios were equivalent to the requirements in the Observer Safety Training Standards for open-water activities. The trainers complied with the open-water checklist. All of the trainees successfully demonstrated all of the in-water safety skills specified in the standards (Appendix 12). There was sufficient supervision to allow several different evolutions (liferaft righting, water entry, in-water skills) to be carried out by different groups in parallel to maximize efficient use of the tidal window and minimize down time for the trainees.

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Figure 10 - Chain swim exercise in the boat basin at Newport

The hands-on fire-fighting training using a BullEx® Intelligent Training System was generally well run and useful, and allowed trainees to get a good feel for how to handle a fire-extinguisher safely as a team to fight one type of fire (Figure 11). The BullEx® live-fire system involves easily rechargeable water extinguishers and a controlled, propane-based fire that does not produce significant smoke and thus can be used in areas where smoke production may be problematic. While efficient and reasonably effective, it's not as realistic as using real extinguishers to extinguish actual fires, such as pan fires of burning flammable liquids. The BullEx® fire is fed by an electronically controlled system with sensors that detect the trainee's aiming and sweeping motion, and which automatically varies the flame in response (as opposed to actually extinguishing the fire). While it's helpful in modeling one type of fire scenario, it does not address other types of fires that an observer might experience, such as a fire in a galley or an electrical fire, where quick response would be more important than teamwork, and a different type of extinguisher might be used. However, different types of fires and extinguishers were covered in classroom training lectures.

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Figure 11 - Practical fire-fighting exercise using the BullEx® ITS at Newport

Observers participated in hands-on demonstration of a variety of pyrotechnic distress signals (hand flares and smoke signals). Trainers followed the Flare Checklist and utilized appropriate personal protective equipment (PPE) for the hands-on exercise (NOAA Fisheries 2007c). The program obtains these (past expiration) devices from a liferaft servicing facility, so they represent a variety of makes, designs and operating procedures. The reviewer observed that since many pyrotechnic distress signals now obtain USCG approval under a Mutual Recognition Agreement (MRA) with the EU as an alternative to USCG review, the markings and instructions are in some cases not as clear as they could be. The reviewer shared this observation with the USCG office responsible for lifesaving equipment approvals, for possible consideration in future updates to equipment standards and the MRA. Given the variety that may be found in the field, prior exposure to various types could prove very helpful in an emergency. Experience with the fact that some required more than one attempt to activate, even in benign conditions, could alleviate potential panic in an emergency situation where one experiences what may seem at first to be a dud.

While hands-on fire-fighting exercises and use of pyrotechnic distress signals are not currently required by the Observer Safety Training Standards, the reviewer is of the view that such training is potentially extremely valuable to observers.

The training included a practical demonstration of fishing vessel stability, and the use of standard USCG dewatering pumps and damage control resources (plugs, rags, etc.) with the

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assistance of a purpose-built damage control trainer brought in by USCG damage control/fishing vessel safety specialists from Portland (Figure 12 & Figure 13). While not required by the Observer Safety Training Standards, the use of a stability demonstration tank and portable damage control trainer such as those developed by the USCG Fishing Vessel Safety Program, in connection with a standard USCG P6 dewatering drop pump, has been incorporated as an additional safety element in the WCGOP. The reviewer was of the view that this training is useful and important for observers. The operation of the P6 pump is surprisingly unintuitive, especially if one is unfamiliar with small engines and pump priming procedures, and it's easy to envision an emergency where a safety-trained observer would be the only person on a vessel familiar with choking, priming, and operating it effectively.



Figure 12 - USCG vessel stability demonstration at Newport

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Figure 13 - Trainee teamwork plugging leaks on the USCG DC trainer at Newport

Mock drills and pre-deployment safety checks were carried out by pre-arrangement on a local fishing vessel. This presented a valuable opportunity for exposure of the trainees to the environment in which they will soon be living and working. A side benefit of arranging with a vessel or vessels of opportunity to perform simulated pre-deployment checks and drills on board is that it can provide an opportunity for engagement of the observer program with the fishing fleet, as well as an opportunity for observers to walk the docks with knowledgeable observer program staff for familiarization with various types of vessels and fishing gear. This is particularly valuable in a port like Newport where there is a wide variety of vessels and gear types.

The reviewer attended both mock and several actual pre-deployment safety checks with trainees and observers, respectively. The reviewer observed that in checking for fire extinguishers, the primary focus was on ensuring the appropriate required numbers and their condition/inspection status. There was not much if any emphasis on the types of fire extinguishers, and whether they were the suitable choices for the potential fire hazards in a space. While classroom lessons addressed the types of extinguishers and the fires for which they are suitable, there was less attention to the need to ensure they are placed in appropriate locations. The PTVSC addresses only numbers and serviceability, but not types (Appendix 13). In addition, even though larger vessels in particular will often have many fire extinguishers in a variety of locations, the PTVSC provides only one less-than-three-inch line for "Location." In

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general, PTVSCs would benefit from a careful look at their design to ensure that if information is significant enough to be recorded, sufficient space is provided for it, and in a logical manner.

No.	Program	Discussion	Review Element(s)
1	NOP/National Programs	4.4.3.2.1	Training
	Finding	Fishing vessel stability and damage control training is potentially useful and important for observers, especially those deployed to small vessels with few crew. These are both elements in which fishers themselves may have little or no experience or hands-on training, where a well-trained observer could be an important asset in an emergency situation, even if only to advise others on appropriate procedures. There has been at least one situation in the WCGOP where an observer, due to their training, was the only person on board a vessel who was able to operate USCG-provided dewatering pumps.	
	Recommendation	Regional training programs should make efforts to incorporate hands-on damage control operations and practical fishing vessel stability training into their training, leveraging existing USCG resources for the purpose as available.	

No.	Program	Discussion	Review Element(s)
2	NOP/National Programs	4.4.3.2.1	Training
	Finding	The WCGOP currently uses BullEx® systems for firefighting training. Some years back, they partnered with a local fire department to fight real fuel fires off-site, but as the volume of training sessions increased, switched to the BullEx® training to reduce the amount of fuel burned for training, with associated smoke, etc. The reviewer was also advised of some concerns of the program with some “close calls” with the more realistic fires.	
	Recommendation	Whenever practicable, regional observer training programs should include opportunities for hands-on training with all emergency equipment, including pyrotechnic distress signals and fire extinguishers used on live fires. Where there are practical challenges with the production of flame or smoke at training facilities, programs should seek to partner with local fire departments and fire training facilities to explore suitable options.	

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	Even if such skills have not been necessary in past casualties involving observers in a particular region, it pays to be proactive and prepared for unknown potential future casualty scenarios.
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No.	Program	Discussion	Review Element(s)
3	NOP/National programs	4.4.3.2.1	Training
	Finding	Conducting mock drills and pre-deployment safety checks on an actual vessel provides a valuable opportunity for exposure of the trainees to the environment in which they will soon be living and working, for engagement of the observer program with the fishing fleet, and for an opportunity for observers to walk the docks with knowledgeable observer program staff for familiarization with vessel arrangements and fishing gear.	
	Recommendation	Whenever practicable, regional programs should identify and utilize actual fishing vessels in their respective areas as platforms for carrying out mock drills and pre-deployment checks during initial observer training programs.	

No.	Program	Discussion	Review Element(s)
4	NOP/National programs	4.4.3.2.1	Practices/Policies
	Finding	While PTVSC forms for the various ROPs have certain common elements, they are all slightly different (see Appendix 13), likely in keeping with the characteristics of the observed fleets. In the case of the WCGOP PTVSC form, there are items (<i>e.g.</i> , fire extinguisher location) where it appears that the space provided to complete the form could be insufficient for many vessels with multiple fire extinguishers.	
	Recommendation	PTVSC forms should be carefully reviewed either on a regional basis, or at the national level through the NOPAT and NOPAT SAC, to ensure that the appropriate information is sought, that it is laid out in a logical manner, and that sufficient space is provided for it. A more consistent “look and feel” would also facilitate observers moving from region to region.	

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4.4.3.2.2 A-SHOP observer training

A-SHOP observers in the at-sea hake (whiting) fishery must have completed the NPOP 3-week training or 4-day briefing, as appropriate, within the calendar year, and completed one or more satisfactory NPOP deployments with satisfactory scores from every vessel/plant from their most recent deployment. The main difference in requirements between A-SHOP safety training and the prerequisite NPOP training is that A-SHOP training includes in-water safety training in the years that it's not included in the NPOP briefing. This additional A-SHOP safety training consists of just 2-3 hours as part of the 4-day A-SHOP briefing at the AFSC. Based on the detailed lesson plan, the in-water portion is essentially similar to the in-water training done during initial 3-week training. The reviewer was not able to attend the A-SHOP-specific in-water training, but attended the safety portions of the NPOP and WCGOP 3-week initial observer training, including the water activities. According to A-SHOP staff, in years when in-water safety training is included in the NPOP briefing, the A-SHOP training covers either fire-fighting (with a BullEx® demonstration) or use of pyrotechnic distress signals instead.

4.4.4 Observer equipment and maintenance

The PSMFC provides sampling and safety gear supplies to outfit observers in both the catch share and non-catch share programs. WCGOP observers are provided with the following safety equipment at the conclusion of training in Newport (see also Appendix 14):

- Immersion Suit
- Personal Locator Beacon (PLB)
- Personal Flotation Device (PFD) (Type III or inflatable)
- Whistles, strobes, and streamers for Immersion Suits and PFDs
- First Aid Kit
- Gear to help prevent injuries such as safety glasses, hard hats, back braces, and earplugs.

A couple items of additional safety equipment are available for non-catch share observers that will be serving on smaller vessels that do not have the safety equipment (*e.g.*, Category I EPIRB) required for larger vessels. Based on the port and anticipated vessel assignments, the observer coordinator may arrange for provision of a water-activated ACR Satellite2 Category II EPIRB (in addition to the PLB), a hand-held GPS, and/or a hand-held VHF radio.

The gear staff at Newport carefully maintains all of the observer safety equipment in accordance with relevant USCG requirements and manufacturer recommendations. Immersion suits are inspected by a commercial facility at 18-month intervals, including air testing for seam integrity (USCG 2008). Although not required by the USCG, the suits are removed from

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inventory for observer use when they are ten years old (or no longer pass inspection). WCGOP staff maintain detailed Safety Gear Standard Operating Procedures for each item of safety equipment, covering use, testing, inspection, storage, marking, and maintenance by both observers and WCGOP staff. In addition, each observer is expected at least monthly to complete an “Equipment Test Checklist” (Appendix 15), which requires them to inspect and test each item of issued equipment (both safety equipment and Marel scale). The completed form must be submitted monthly to the program with observer logbooks. This impressed the reviewer as an excellent and effective way to ensure that equipment is not only present, but fully operational, and to require the observer to carefully examine it periodically which promotes familiarity with it. The training staff at Newport repeatedly emphasized the negative consequences of failure to perform and document these tests and examinations.

A-SHOP observers are issued their safety and sampling equipment by the A-SHOP staff at the AFSC at the conclusion of A-SHOP training. The safety equipment is basically the same equipment provided to NPOP observers. However, the gear facility at the AFSC prepares A-SHOP-specific baskets which contain A-SHOP specific sampling gear instead of the usual NPOP gear. See 4.2.4 for a discussion of safety gear maintenance at the AFSC.

For both A-SHOP and WCGOP observers, the program does not issue rain gear, gloves or boots, but instead requires that observer providers provide an allowance to observers to procure and maintain these personal items. This seems like a prudent practice given the vagaries of sizing, personal brand preferences, and the possible need for periodic replacements.

The gear/sampling baskets provided by the WCGOP at Newport are smaller (approximately half the height) of the gear baskets provided to A-SHOP (and NPOP) observers at the AFSC. The reviewer discussed with staff that this is at least in part to discourage overloading of baskets which can lead to lifting injuries when sampling. However, there were no data available to indicate whether the use of smaller baskets has had any impact on lifting injuries.

No.	Program	Discussion	Review Element(s)
1	NOP/National programs	4.4.4	Equipment
	Finding	The use of an “Equipment Test Checklist” is considered to be a best practice, as a means of ensuring observer familiarity with and attention to maintenance of all their assigned equipment.	
	Recommendation	Observer programs should consider the use of an “Equipment Test Checklist” similar to that employed in the WCGOP, as a minimally burdensome means of ensuring that observers inspect and test all of their issued safety equipment at least monthly.	

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4.4.5 Vessel selection and notification

Vessels in fisheries not subject to 100% observer coverage as shown in Figure 8 (*i.e.*, all non-catch share fisheries) are selected for coverage using various criteria and algorithms designed to result in fair and stratified random sampling, generally by port groups, to produce a logistically feasible sampling plan with observations throughout the entire geographic range for each observed fishery. A trip could be waived from observer coverage due to observer availability, a safety issue that can be fixed in a relatively short period of time, or vessel space issues that arise when an extra person is aboard. Selection cycle waivers are given when a vessel has a serious safety concern that cannot be easily remedied or if vessel space is too limiting to safely carry an observer. A longer selection cycle waiver allows the vessel to fish without an observer during all trips taken during the selection cycle.

Some vessels might receive a coverage period waiver, which allows a vessel to fish all trips during that period without an observer. Coverage period waivers are given for a variety of reasons including observer availability and vessel safety. If a vessel is given a coverage period waiver for a specific two-month period or sablefish season, the vessel is added to the selection list for the next year (LE sablefish-endorsed) or two-month period (LE non-sablefish-endorsed). Vessels continue to be added to subsequent selection lists until either an observer covers them or until the selection cycle ends, whichever comes first (NOAA Fisheries n.d.-c). Given the fairly limited observer pool, low coverage rates for most non-catch share fisheries, and availability of observer program funding, waivers are not uncommon. As 100% observer coverage is required in the catch share fisheries and the at-sea hake processing sector, and these observers are paid for by the vessels, all trips taken by all vessels participating in these fisheries are covered.

Each selected non-catch share vessel is notified via a registered letter one to two months before the observer is to board. This notification includes a time period during which a vessel will be required to notify the WCGOP 24 hours in advance of beginning fishing so that an observer may be assigned. Vessels that inform the WCGOP that they do not plan to fish for groundfish are placed in a holding pattern. Those vessels are asked to notify the WCGOP when they next plan to fish for groundfish so they can be assigned an observer during that period. Once selected to carry an observer, a vessel must obtain a USCG safety examination unless the vessel has a current examination decal and will still be in good standing for the entire time the observer may be on board.

4.4.6 Observer selection and notification

The observers are generally notified of assignments by telephone or e-mail from the appropriate observer provider. WCGOP observers are assigned and required by their contracts to reside in specific port areas along the immense stretch of coast covered by the program. To

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the extent possible, observers are assigned to vessels in their local port areas sequentially, with variations as needed to address workforce balance and any relevant external issues. When needed operationally, they may be required to travel to other port areas.

A-SHOP observers are assigned similarly by their observer providers from the roster of qualified observers.

4.4.7 Deployment and at-sea support

Once a non-catch shares vessel has received notification of observer coverage via a selection letter, a lead observer for the relevant port area will contact the vessel to determine their upcoming fishing plans, discuss logistics, and answer any questions. If there are questions that cannot be answered by the lead observer, a WCGOP observer coordinator (one for CA, one for OR and WA) would follow up with the vessel. Whenever possible, the observer(s) from that port and, where feasible, the observer provider field coordinator will visit the vessel, meet with the captain and crew, familiarize themselves with how to sample, and inspect the emergency equipment on board against the PTVSC. The captain must call and inform the observer program 24 hours in advance of departure. The vessel will be responsible for providing accommodations and food for the observer that are equivalent to those provided to the crew.³¹

Due to the huge expanse of the Pacific coast, and the very limited number of WCGOP and observer provider field coordinators, it is often not possible for a coordinator to actively assist with observer deployments. In many cases, experienced local observers are available to support deployments of new observers in their local port groups. The nature of the WCGOP is that the observers generally live in the port areas of the vessels they will be observing, which can facilitate familiarity with the fleets and interaction with other local observers. Because retention of WCGOP observers is relatively high, there is generally a solid base of experienced observers deploying from a variety of ports distributed along the entire length of the West Coast.

When a non-catch share observer is departing on a trip, they call an answering service that is available 24/7. The operator collects the observer's name, cell number, vessel name, port of departure, departure time, and expected return date and time. The operator generates an email that goes to the observer provider, a program email account and a backup email account. Observer program staff and lead observers have access to this info to aid in coordination and to monitor returning observers. If observers have cell coverage or are able to text, they should update their estimated return time if they expect to be delayed. If an observer is over 12 hours

³¹ 50 CFR 660.216(e), 50 CFR 660.316(e)

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past the estimated return time an attempt is made to contact the observer. If there is no contact, the VMS is checked to see if the vessel is still transmitting position data, and the program's Emergency Action/Notification Plan is activated.

For catch shares observers, one provider utilizes the same system as the non-catch shares. The other provider relies on text/calls from the observer to their appropriate field coordinator, who enters the activity into a company shared spreadsheet. The provider's field coordinator is available 24/7 for observer program staff needing any information from the spreadsheet.

Prior to the first trip on a vessel, observers should ask the captain for a vessel orientation. If the captain does not provide one, the observer should document that in the logbook and in the comment section of the Vessel Safety Orientation Checklist (PTVSC). The observer then examines the vessel and completes the checklist. After completing the checklist, the observer must sign and date it, and mail, fax or email a copy of the checklist and all associated notes to the provider prior to embarking on the first trip. If this is not possible (*e.g.*, observer was sent on travel and arrived after business hours, with no place to fax), the observer must call their provider and leave a verbal confirmation that the vessel has passed inspection. In this case, a copy of the PTVSC must be sent as soon as possible after disembarkation.

In addition to the PTVSC, the observer must complete an Observer Safety Survey in their observer logbook for each vessel during a trip period. These are used to collect data on fleet safety, and can be provided to OLE and/or the USCG if appropriate. In addition to several vessel-specific safety questions, the form includes about 20 check boxes to indicate either, "No problems or accidents occurred," or to indicate observation of a variety of casualties and enforcement incidents (with space provided for elaboration of any checked boxes). There is also space provided to indicate if there were any other conditions affecting the observer's safety and well-being, or if the observer experienced harassment, intimidation, or bribery on or off the vessel.

Deployment and at-sea reporting requirements for A-SHOP observers are similar to those for NPOP observers, and all at-sea hake vessels are equipped with ATLAS (see section 4.2.7). Although ATLAS is an NPOP-managed system, there is special "haul purpose code" for at-sea hake trips which directs the data to the relevant A-SHOP staff instead of the NPOP.

Generally, WCGOP trips are relatively short, and there is no prescribed frequency of communication with the program or observer provider. Many trips are only a day or two, and stay within cell phone range. Vessels are required to provide observers with access to communication systems if needed.

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4.4.8 Debriefing

The WCGOP employs a total of 12 debriefers (seven employed by the PSMFC, and five NOAA Full-Time Equivalent staff (FTE), including one lead debriefer) for both the catch share and non-catch share programs, distributed along the Pacific Coast.

New WCGOP observers must contact their assigned local debriefer before their first trip. The debriefer will review the vessel the observer is assigned to, provide sampling advice as appropriate, and discuss common errors to avoid. New observers are required to turn in the data from their first three trips immediately after each trip is completed. The debriefer will review each trip as it's turned in, and discuss any errors with the observer. If the data are acceptable, a catch shares observer will receive a deployment endorsement, allowing them to continue observing in the WCGOP catch share program. If an observer is not performing to WCGOP standards, they will not receive the deployment endorsement and will not be allowed to be deployed on catch share vessels. Non-catch share observers do not receive an endorsement *per se*, but the program has more direct oversight over them because they are working for the WCGOP-contracted non-catch shares observer provider rather than for a provider paid by the vessel(s).

Data collected by WCGOP observers are vital to the successful management of many fisheries off Washington, Oregon, and California. In order to ensure that data are consistently collected according to program guidelines, all observers must promptly follow the data quality process:

1. After initial data review and edits by the observer, all data must be entered into the WCGOP database within 3 days of disembarkation from a trip. This includes a trip scan completed using a portable scanner issued to each observer. Except for new catch share observers, who must immediately submit documentation for their first three trips after data entry and scanning are complete, trip data, logbooks, species ID forms and appropriate biological specimens must be provided to the debriefer in person or by UPS monthly, no later than the 5th of the following month. The data are then reviewed by the debriefer and returned to the observer for corrections (if needed), along with performance feedback and areas for improvement for the observer. Data corrections must be promptly completed by observer on the paper forms and in the database and sent back to the debriefer within 15 days, unless otherwise specified by the debriefer.
2. If the debriefer determines that a debriefing interview between the debriefer and observer is needed, the observer and provider will be notified as appropriate. At a minimum, an observer can expect an interview after their first three trips, midway through each contract, and at the end of each contract. Performance concerns may also lead to additional debriefings at the discretion of WCGOP staff.

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3. A full written evaluation will be given at each debriefing interview. In addition to this, performance feedback will be given monthly to the observer through the WCGOP data correction sheet.

For WCGOP observers, the Observer Logistics Database (ObsLog) has been used since 2013 for the WCGOP to track observer activity, contacts, certifications and endorsements, as well as trainings, briefings, and debriefings. Vessel safety checklists and incidents (injuries, refusals, safety issues, etc.) can also be entered into ObsLog. In addition to the program staff, OLE and the USCG can access the system, and observer providers have restricted access to certain modules as appropriate.

The A-SHOP has two PSMFC debriefers and a NOAA FTE Team Lead. A-SHOP observers are certified NPOP observers and utilize NPOP databases and procedures. A-SHOP observer logistics are stored and tracked in the existing NPOP observer logistics database.

4.4.9 Observer incidents

4.4.9.1 Reporting and tracking procedures

Any injuries/illnesses, safety issues or suspected violations brought to the WCGOP staff's attention are entered into ObsLog as an "incident". Incidents may be brought up through phone calls, emails, face to face, debriefings, logbooks or data. Supporting documents such as logbook pages, PTVSCs, safety surveys, etc. are uploaded to ObsLog for documentation. Program coordinators and the Program Manager are notified through emails every time a new incident is entered or edited. Information collected prior to the establishment of ObsLog in 2013 has been backloaded into the system. Although ObsLog appears to be a robust tool for the input and storage of observer information, including safety-related information, there is currently no systematic process to analyze the incident history, *e.g.*, to segregate safety-related incidents, establish trends, identify possible emerging risks, etc. This limits the usefulness of the data as a risk management and strategic planning tool (see relevant recommendation in section 1.2.1, and discussion of incident analysis and metrics in section 7.2.2). Recent incidents are integrated as exemplars in observer training, but generally on an *ad hoc* basis based on staff corporate knowledge and input.

4.4.9.2 Response to, and investigation of observer incidents

NOAA OLE and the USCG have access to all incidents in ObsLog, but any major incidents will be pushed directly to enforcement via phone call or email. NOAA OLE has assigned a liaison to work with the observer programs to streamline enforcement and better support the observers. Access to ObsLog by OLE and USCG personnel working with the observer program facilitates transparency and increases efficiency in information transfers. OLE and USCG staff with access

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can log in to the database to view safety checklists and incidents stored there. They can also access observer statements of fact that are completed for more serious incidents or requested by OLE.

4.4.9.3 Emergency Action Plans/Emergency Notification Plans

4.4.9.3.1 EAP/ENP general description

The WCGOP Emergency Action Plan is essentially an Emergency Notification Plan, consisting of a phone/e-mail tree with contact information for relevant NOAA Fisheries, PSMFC, USCG, and observer provider staff. Interestingly, the program also provided the reviewer with an Emergency Action Plan for the NWFSC, which is a detailed 40+-page document spelling out specific actions to take to handle a variety of emergencies (fire, active shooter, bomb threat, shelter in place) at the NWFSC.

As in the NPOP, where the same companies also operate, there are significant differences between the observer providers with respect to their maintenance and implementation of Emergency Notification/Action Plans. Most WCGOP providers maintain a phone tree type Emergency Notification Plan, similar to the one maintained by the WCGOP. Saltwater, Inc., on the other hand, has a well-developed, recently updated EAP, which incorporates an Emergency Notification Plan, but also spells out specific steps to take in the event of a wide range of emergency situations. These range from incident response and documentation, media and constituent communications, support to family and co-workers in the case of serious injuries or fatalities, USCG casualty reporting procedures, handling of shore-based emergencies, and even administrative details like the procedures for filling out the appropriate FECA documentation.

In an emergency situation, time is often of the essence, and immediate actions beyond notification up the chain of command are necessary. Persons responding to an unexpected serious emergency, as well as those they notify, may not be knowledgeable in the most appropriate steps to take in such a situation, and can easily become overwhelmed by events. Most general types of emergencies have occurred before; with the benefit of lessons learned from past incidents, it should not be necessary to start from scratch with no guidance when they occur again. Coordination is needed to ensure that all parties responding to an emergent situation are made aware of the working conditions, hazards, and communications challenges of observers. The lack of consistency in the ENPs/EAPs maintained by observer providers (and indeed, observer programs) stems from a lack in most cases of clear regulatory or policy guidance, or even a clear requirement to have one. A uniform standard for the content of such plans would improve the odds of appropriate and thorough actions being taken in many foreseeable emergency situations.

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No.	Program	Discussion	Review Element(s)
1	WCGOP	4.4.9.3.1	Practices/Policies
	Finding	The WCGOP's EAP is an ENP which does not spell out immediate, short, and long-term actions to take in the event of an at-sea emergency, including incident management, crisis communication, support to victims, family members, and other stakeholders, and development of after action reports, for a variety of possible emergency situations. The review team views such comprehensive Emergency Action Plans as a best practice. Templates and considerations for development of such plans have been suggested in earlier reviews for the national observer program, most notably Development of a Comprehensive and Effective Emergency Action Plan for NMFS Observer Programs, Phase II (October 2004) (Ajango <i>et al.</i> 2004a).	
	Recommendation	The WCGOP should develop and implement a comprehensive EAP which spells out immediate, short, and long-term actions to take in the event of an at-sea emergency, including incident management, crisis communication, support to victims, family members, and other stakeholders, and development of after action reports, for a variety of possible emergency situations. See section 3.6, National Finding/Recommendation 1.	

4.4.9.3.2 EAP/ENP implementation experience

The WCGOP staff advised the reviewer that the WCGOP EAP/ENP currently in place has worked effectively in the past, providing for effective communication between the parties involved in managing a variety of incidents, including very serious ones such as the F/V LADY CECELIA casualty which claimed the life of the observer. Given that it consists of just a phone/e-mail communication tree, it is not possible to characterize its effectiveness beyond facilitating communication.

4.5 Northeast Fisheries Science Center – Northeastern Fisheries Observer Program (NEFOP) At-Sea Monitoring (ASM) Industry Funded Scallop Program (IFS)

4.5.1 Program description

The Northeast Fisheries Sampling Branch (FSB) is a part of the Fishery Monitoring and Research Division of the Northeast Fisheries Science Center in Falmouth, MA. The FSB manages the

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Northeast Fisheries Observer Program (NEFOP), the At-Sea Monitoring Program (ASM), and the Industry Funded Scallop (IFS) Program, which collect, process and manage data and biological samples obtained during commercial fishing trips.

The FSB deploys observers, including “at-sea monitors”, on approximately 800 vessels in 125 ports from Maine to North Carolina.³² Observer coverage is required under the region's FMPs and for some fisheries, by other federal laws and authorities such as the MMPA or the ESA. The FMPs are developed by the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council established under the MSA. The management plans also form the basis for deciding required observer coverage levels. The FSB develops and applies algorithms to determine selection of vessels to carry observers on selected fishing trips. The FSB has approximately 140 available observers in the three programs (NEFOP, ASM, and IFS) totaling approximately 12,000 observer sea days for the 12 months ended March 2017 for all monitored species.³³

4.5.1.1 Program history and regional fisheries

The Northeast Fisheries Observer Program (NEFOP) was established in 1989 and covers US domestic fishing vessels participating in the Northeast Multispecies Groundfish, Atlantic Sea Scallop, and the Atlantic Herring and Mackerel fisheries from Maine to North Carolina. Fishing trips typically range from one to fourteen days. The NEFOP responsibilities include all gillnet fisheries, but some NEFOP trips are primarily concerned with protected species incidental takes.

The ASM program was established in 2010 in response to Amendment 16 of the Northeast Multispecies FMP, to monitor catch and discards for 12 target species fished with large mesh gear in the groundfish fishery. The ASM program may be extended to the herring fishery in the future. Between 2010 and 2014, combined NEFOP and ASM coverage levels varied between 20% and 32%.

The third program is the IFS, initiated by National Marine Fisheries Service Emergency Action in 2006, and permanently re-activated by Amendment 13 to the Scallop Fishery Management Plan in 2007. Observers monitor the bycatch of finfish, collect biological information to inform stock assessments, and monitor any interactions of the scallop fishery with endangered or

³² Unless a distinction is made between “observers” and “monitors”, the term “observer” applies to both in our discussion.

³³ Extrapolated from 11-month data at

https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/58ee68da86e6c0436ed0c7c2/1492019441439/08_MAFMCouncil_Update_Seaday_Accomplishments_final.pdf

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threatened species, such as sea turtles. In recent years, the program has maintained its Council-recommended coverage levels of between 9% and 25%.

4.5.1.2 Program organization

The FSB is staffed with approximately 57 personnel. Twelve of these are NOAA Fisheries employees and the rest are contract staff employed by Integrated Statistics.³⁴ A NOAA OLE Special Agent is also stationed on-site. In many practical ways, the FSB and its contracted personnel operate as a single entity. Different NOAA Fisheries employees are assigned as “leads” for each of the three programs, and the rest as leads for other functions of the FSB. Federal contracting regulations prohibit personal services contracts, so contract staff members must be supervised by the contractor and not by the federal employees. The lead system permits the federal employees to guide the work of the contract staff members through the contractor.

The NEFOP is federally-funded, and observers are currently provided under contract from MRAG Americas, Inc. Observers provided by A.I.S. Inc. (AIS) have recently been added to this program under a two-year contract in order to fill a shortfall. The ASM program is funded using a combination of government and industry sources. (NOAA Fisheries has been able to reimburse a portion of fishers’ monitoring costs, amounting to 85% of costs in 2016, and 60% in 2017.³⁵) Monitors collect a more limited data set than observers, concerned primarily with catch and discards, and are thus paid less than observers.

Monitors cover sector fisheries. As explained by the Northeast Seafood Coalition, a “sector, or a “harvest cooperative,” is a group of fishermen who have joined together to promote the community-based management of their particular fishery under the overarching governance of the federal government” (Northeast Seafood Coalition 2016). There are currently 18 sectors in the Northeast from Maine to Rhode Island. Vessels not affiliated with a sector become part of the “common pool.” Each sector receives an annual total allowable commercial groundfish catch quota (or catch share) for each species in the Multispecies Groundfish FMP. The system also allows for trading of quotas between sectors. Individual vessels in the common pool also receive quotas.

Fishers determine how their sectors will operate, including management, monitoring, reporting, and catch allocation. Each sector drafts and submits an Operations Plan to the FSB, and these plans become a contract between the sector and the FSB. In many ways, sectors shift the responsibilities and costs of federal fisheries management from the federal government to

³⁴ www.integratedstatistics.com

³⁵ “Supreme Court turns down at-sea monitoring case”, National Fisherman, December 2017, p. 18.

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local fishing communities. Some sectors pay some or all of the industry portion of the costs of the observer programs through fees they charge their members. Otherwise, each fishing vessel pays the observer provider directly whenever they are required to carry an observer.

An Electronic Monitoring (EM) program is being tested on selected vessels under the ASM program as a possible cost reduction measure. The EM system uses cameras to record fishing operations, which are reviewed by FSB staff. While these systems can do such things as identify bycatch, they cannot fully substitute for the more comprehensive measurement and sampling work done by observers and monitors.

As its name suggests, the IFS program is industry funded. However, the cost to the vessel is somewhat mitigated since vessels that carry observers are given an extra allocation and are permitted to fish in areas that would otherwise be closed to them. IFS observers collect data that is similar to the data collected under NEFOP and ASM, including vessel costs, gear used, the location fished, weather conditions and catch and bycatch data for at least 50% of the hauls.³⁶

4.5.2 Procurement of observer services

4.5.2.1 Observer provider contracts and regulations

NEFOP observer provider contracts are awarded under a solicitation process open to all qualified bidders. One contract is normally awarded with optional extensions for up to five years.

ASM and IFS observer providers are approved by the FSB under regulations at 50 CFR 648.87(b)(1)(v)(B) and 50 CFR 648.11(h), respectively. Any number of observer providers may apply for approval, and those which are approved as meeting the regulations can offer their services to fishing vessels required to carry observers or monitors. Approved ASM providers include AIS; East West Technical Services, LLC (EWTS); Fathom Research LLC; and MRAG Americas. Atlantic Catch Data Ltd. is also an approved ASM provider, but is not currently active. IFS observers are provided by AIS, EWTS, or Fathom Research LLC.

Three of the four active observer providers hire observers as employees. One, on the other hand, hires individual observers as sub-contractors. The sub-contractor relationship between an observer provider and an observer, instead of direct employment of the observer, may create ambiguity for insurance coverage. If an observer is injured, Worker's Comp and other required

³⁶ <http://aisobservers.com/overview/industry-funded-scallop/>

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insurance coverage may not apply. Currently there are no requirements by NOAA Fisheries for an individual observer to be covered under a suite of insurance types before deployment.

The NEFOP contract requires the observer provider to provide accident and health insurance for on-the-job injuries, but not necessarily for general health insurance. However, the contract includes a reminder that the Service Contract Act requires employees to be paid a Health and Welfare benefit if not receiving general health insurance from the employer. In addition, the contract requires:

- Maritime liability to cover “seaman’s” claims under the Merchant Marine Act (Jones Act) and General Maritime Law (\$5,000,000 minimum);
- Coverage under U. S. Longshore and Harbor Worker’s Compensation Act (\$3,000,000 minimum);
- Coverage of at least \$100,000 as required by federal and state workers’ compensation and occupational disease statutes (with some exceptions);
- Comprehensive bodily injury liability insurance with limits of not less than \$500,000 for each occurrence;
- Property damage liability with a limit of not less than \$100,000 for each occurrence;
- Coverage for bodily injury and property damage liability covering the operation of all automobiles used in connection with performing the contract. In the US, coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per occurrence for property damage is required; and
- In addition, aircraft public and passenger liability insurance if aircraft are used in performance of the contract.

4.5.2.2 Observer recruiting and employment

4.5.2.2.1 Basic qualifications

Observer qualifications are consistent with the Observer Eligibility Standard, except that monitors need only have a high school diploma or equivalent and collect a reduced set of data, thereby reducing training time, gear requirements, and internal support resources. However, some NEFOP observers also obtain ASM qualification to provide them with additional trip opportunities.

4.5.2.2.2 Medical and fitness qualifications

Physical qualification requirements are consistent with the requirements of the Observer Eligibility Standard (Appendix 6). Physicians will verify the candidate is able meet the physical considerations and provides a signed document that outlines the physical requirements and

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serves as proof that the candidate has been examined and is capable of meeting those standards. The observer provider must provide a medical report to the FSB for each observer at least 14 days before the start of training. After employment, the observer must undergo a re-examination at a 12-18-month interval as part of recertification. The training program also requires that trainees prove that they can swim 50 yards, tread water for 3 minutes, and complete a 5-minute survival float.

4.5.2.2.3 Compensation

NEFOP observers are paid on the basis of sea days and an hourly rate in three pay bands, Observer I, II, and III, with Observer III being the most senior and highest paid. The contract specifies that days at sea are paid as full sea days. One-day trips and days when the observer is embarked and disembarked are divided into quarter-days and paid accordingly. An hourly rate is established for travel time, training time, and time spent in debriefing and in other meetings such as regional councils.

4.5.3 Observer safety training

4.5.3.1 Training program organization

Before deployment on fishing vessels, new observer trainees must complete an extensive training program between two and three weeks in length, depending upon which of the three programs in which they will be working. Observers identify and record all species caught and are trained in sub-sampling methodology. ASM monitors are concerned primarily with bycatch and have a shorter job training program. However, all receive safety, harassment, and dispute resolution training. The FSB also offers a five-day specialized NEFOP to ASM Cross Training course. The FSB safety training regime is the same for all three programs (there is no safety training component in the NEFOP to ASM Cross Training course). Safety training consists of Safety I for new observer trainees, Safety II refresher training for experienced observers, and Safety III for experienced observers who have been through Safety II at least twice.

4.5.3.2 Safety and survival training

The first order of business in NEFOP safety and survival training is an explanation of the training risks by the instructor and the signing of an acknowledgment of risk by each trainee (similar to Appendix 16). The two-day "Safety I" session is focused on safety, on-board emergencies, and survival. Safety I training consists of classroom sessions, plus a swimming pool session where trainees learn to use their personal flotation devices and immersion suits, and also practice boarding of an inflatable liferaft, and righting a liferaft that has inflated upside down. Regardless of the observer's employer, that training is led by an AMSEA-certified marine safety

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instructor under contract from Fathom Research. Other safety-related topics are taught at other times during the training by AMSEA-certified FSB marine safety instructors, so that safety training amounts to just under three days in total, not including training trips.

New observer training includes one-day training trips on fishing vessels that the FSB contracts for the purpose. NEFOP and ASM trainees go on two of them, one for trawl and the other for gillnet gear. IFS trainees get one trip on a scallop vessel. Although the primary purpose is to familiarize trainees with the fishing gear and processes, these trips also serve to reinforce safety procedures and responsibilities. For example, trainees conduct a vessel orientation using the Pre-Trip Vessel Safety Checklist (PTVSC) and get to see actual installed safety and emergency equipment. The first trip an observer takes after completing the initial training course will be accompanied by either an FSB member or a certified trip trainer. Certified trip trainers are current observers that have been certified by the FSB.

After observers have been employed for 18-24 months, they must return to the FSB for a two-day safety refresher course designated "Safety II," also led by the Fathom Research instructor. The Safety II agenda is similar to Safety I, except that some of the training takes place dockside on a fishing vessel where station bill drills are held, including abandon ship drills with a liferaft and immersion suits, and simulated fires. In the classroom sessions, Safety II trainees are asked to be prepared to lead a discussion on a particular subject under the supervision of the instructor.

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Figure 14 - Launching a liferaft from a fishing vessel during Safety II training

Refresher training is repeated every 18-24 months. For observers who have been through Safety II at least twice, there is now a one-day class called “Safety III.” This is essentially a condensed version of Safety II, with the expectation that very experienced observers should be well-versed on the safety policies and procedures. Dockside training includes donning and use of personal flotation devices and immersion suits, as well as boarding and use of liferafts. The Safety III session witnessed by the reviewer was the fourth time this class was held. While previous Safety III classes went well, the training team was disappointed by the number of errors made by experienced observers at this session, so they will reassess the frequency and content of classes for experienced observers.

All three of the safety training sessions are based on the AMSEA MSIT model and are led by the Fathom Research marine safety instructor. She is sometimes assisted by FSB employees, and occasionally others including a diver from Fathom Research who is also an AMSEA-certified marine safety instructor, and who conducts instruction and provides any necessary assistance in the water during the dockside in-water immersion suit and liferaft exercises.

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Whenever possible, training is “hands-on,” including firing of hand flare and smoke signals, and use of fire extinguishers to put out a fire in a pan of burning kerosene. The training also includes presentations by the USCG District 1 Fishing Vessel Safety Coordinator at Safety I, and a USCG Aviation Survival Technician (AST) at dockside Safety II and Safety III sessions who instructs trainees how to enter and position themselves properly in a helicopter rescue basket for a helicopter lift. The AST has typically also brought a P6 dewatering pump of the type that the USCG typically provides to vessels taking on water. The FSB has now acquired a P6 pump they can use in Safety I sessions and whenever an AST is not available. Each trainee learns to prime, start, and run this pump. Since operation of the pump is not intuitive, this knowledge could be important if an observer is on a vessel which is delivered one of these pumps by the USCG to control flooding.



Figure 15 - Live fire extinguisher training at Woods Hole Aquarium

One of the current elements of safety training is sending a conventional Mayday radio call on VHF channel 16, or the single sideband (SSB) radio. The USCG has recently completed its “Rescue 21” system, which provides continuous VHF radio coverage of all of the coastal United States, Great Lakes, Western Rivers and the US territories, with the exception of some remote

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areas in Alaska. With this system came the capability of processing Digital Selective Calling (DSC) distress alerts on VHF channel 70. The USCG now prefers to receive distress calls this way.³⁷ Instruction on placing a DSC distress call using the “red button” on the VHF or SSB radio has not yet been consistently incorporated into observer training or the observer operations manual.

New observer training and refresher (recertification) training each include a three-hour session on dispute resolution. The dispute resolution trainer is a contractor and is only involved in observer training for this one three-hour training session. The trainer designed the dispute resolution session for the FSB using the case study method, involving role-playing and setting up different scenarios for the trainees to deal with. The trainer characterized the session as a semester course boiled down to an afternoon. In preparing for the class, she reads the comment cards that the FSB provides to captains to solicit their concerns and opinions, and listens to observers’ current concerns to construct relevant role-playing scenarios based on current situations. Those situations can vary between programs. For instance, the scallop fishery is now profitable, and vessels that carry observers are given an extra allocation and are permitted to fish in areas that would otherwise be closed to them, so relations are generally good. In contrast, the monitors are paid by the vessel they are on (through the observer provider), and that pay comes out of the catch share that would otherwise be paid to the crew, so there can be substantial tension.

The FSB safety training program appears to be comprehensive and effective. The training substantially meets the Observer Safety Training Standards (NOAA Fisheries 2007c)(Appendix 10), and exceeds them in several respects by providing practical hands-on training in addition to classroom sessions (Appendix 11 and Appendix 12) . Instructor/student ratios called for in the standards are met or exceeded. Several people at the FSB and two different USCG personnel involved in observer training indicated that in several actual fishing vessel emergencies, an observer was the best prepared and most effective person on board.

³⁷ <http://www.uscgaux.info/content.php?unit=170&category=dsc-vhf-radio-rescue-21>

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No.	Program	Discussion	Review Element(s)
1	NOP/National programs	4.5.3.2	Training
	Finding	The USCG often supports observer training by sending an Aviation Survival Technician (AST) with a helicopter rescue basket and a P6 dewatering pump. This is an important added element of the safety training because a fishing vessel crew may not have had this kind of training. Operation of the P6 dewatering pump, in particular, is not intuitive, and precious time could be lost in trying to operate it in an emergency. However, the USCG is sometimes not able to send an AST or certain equipment for observer training. The FSB has recently obtained their own P6 pump.	
	Recommendation	Observer training facilities should consider obtaining their own P6 pumps and a helicopter rescue basket (or reasonable facsimile) for times when USCG training support is not available.	

No.	Program	Discussion	Review Element(s)
2	NOP/National Programs	4.5.3.2	Training
	Finding	The USCG may provide their damage control training trailer for a training session. The USCG trainer consists of pipes with various types of simulated damage to provide various operating examples of hull and machinery leakage. "Leaks" are controlled by an operator with a series of valves all connected to a high volume water supply. Trainees try to stop or limit water ingress with a variety of plugs, clamps, and rags, showing how use of available materials and a simple damage control kit can slow flooding. This training may enable observers to be a valuable part of a damage control effort. However, this equipment is not always available.	
	Recommendation	Observer training programs should consider obtaining or developing their own version of a damage control training trailer (storage space permitting) in the event USCG training support with a USCG damage control training trailer is not available. A scaled-down simulator could be fabricated with valves and PVC pipe glued together with materials available from plumbing supply houses or home centers. Such a simulator could be smaller and lighter than the USCG trailer-mounted unit and might have to operate at lower	

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		pressures and flow rates. However, it could be useful when a USCG trainer is not available.
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No.	Program	Discussion	Review Element(s)
3	Regional Programs	4.5.3.2	Practices/Policies
	Finding	Rather than the traditional Mayday-Mayday-Mayday call on channel 16, the USCG now prefers to receive a digital distress message generated automatically on channel 70 by the red DSC distress button on newer VHF radios. Once the message is acknowledged by a USCG shore station, the radio switches to channel 16 to allow voice communication between the shore station and the distressed vessel. If no acknowledgment is received, then the conventional mayday call should be made on channel 16. Similar functionality is provided on modern SSB radios. Observer training does not yet include this procedure as part of the curriculum.	
	Recommendation	Observer radio distress call training and observer manuals should be reviewed to ensure they address the DSC alert procedure in addition to the traditional Mayday call procedure.	

4.5.4 Observer equipment and maintenance

The safety and survival equipment issued to observers is identified in Appendix 14, and is typical of the other regional programs. Observer providers are responsible for purchasing and maintaining almost all of the equipment. They are reimbursed by the FSB for such purchases, and the equipment becomes government property at the end of the contract or termination of approval in the case of approved providers. Once all gear, equipment, and supplies are obtained by the observer provider, they are thereafter maintained and stored by the provider until issuance to observers. The NEFOP observer provider is also required under the contract to inspect and if necessary, repair all equipment to “manufacturer’s standards” once per year. Approved observer providers are required by regulation³⁸ to follow the FSB’s Gear Maintenance policy.³⁹ Any replacement equipment must be to FSB specifications. This policy sometimes leads to different but functionally equivalent equipment being supplied to observers by the different observer providers.

³⁸ 50 CFR 648.11(h)(5)(ii)(C)

³⁹ https://www.nefsc.noaa.gov/femad/fsb/program/Gear_Certification_Program_Maintenance.pdf

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In addition to the requirements cited above for observer providers to maintain, inspect, and repair observer equipment, the FSB observer manual requires observers to test the battery in their PLB monthly, and to inspect and maintain their PFD, immersion suit, and all attachments (PLB, whistle, mirror, and strobe).

Even though it is a regulatory requirement for vessels to provide observers access to communications, observers told the reviewer that they are often told by the captain that they can use the vessel's communication equipment whenever they want, and that sometimes includes satellite phones. Nevertheless, to ensure independent and confidential communications, the FSB issues InReach satellite communicators to observers. (In an exception to other equipment, they are owned and issued by the FSB). The FSB programs the devices to include a number of pre-set text messages (Table 4).

Work Status Code	Definition
1	I'm OK, work OK
2	I'm OK, work difficult, workable
3	I may not be OK, Work not OK
4	I'm not OK, Work not OK
5	Yes
6	No

Table 4 - InReach work status codes utilized by the FSB

Although work status codes 1 and 2 provide for routine observer check-in, there appears to be no established FSB policy on check-in frequency. The experience with the InReach devices has generally been good, although there have been some learning experiences with personal communications. Since all of the InReach usage is reported to the program, one observer was found to be using the device for excessive personal communications. The observer was counseled and may be responsible for the communication charges. In another case, an observer facing a difficult non-emergency situation messaged friends and family, at least one of whom called the USCG. The FSB is incorporating more direction on the appropriate use of its devices to observers in future training sessions.

No.	Program	Discussion	Review Element(s)
1	NOP/National programs	4.1.4	Communications
	Finding	The FSB has loaded its issued InReach satellite communicator devices with six pre-set text message options for observers to select from, so that they can quickly send messages in difficult or urgent situations by selecting the pre-loaded recipient (FSB Branch	

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		<p>Chief in these cases), and then entering the code number of the message they want to send:</p> <ul style="list-style-type: none"> ● Option 1: I'm OK, Work OK ● Option 2: I'm OK, Work difficult, Workable. ● Option 3: I may not be OK, Work not OK. ● Option 4: I'm not OK, Work not OK ● Option 5: Yes ● Option 6: No
	<p>Recommendation</p>	<p>Regional programs should consider using pre-set message codes in satellite communicators to allow observers to quickly and economically send check-in messages to the program or the observer provider concerning their working situation and their well-being. The review team identified this as a best practice to facilitate observer notification of their status to their observer programs.</p>

4.5.5 Vessel selection and notification

With the exception of groundfish (NE multispecies) trips, NEFOP vessel selection is through the “dock intercept” system using homeports. Observers are assigned homeports and typically take most of their trips out of their homeport. The homeport allows observers and observer provider area coordinating staff to establish relationships with the vessels fishing out of the homeport, and develop an understanding of the fisheries. Observers also develop relationships with the captains and exchange contact information which allows observers to set up trips through phone communication as well. The FSB tasks observer providers with a specific number of observer sea days by region and gear type. Observer providers are required to find trips that meet the tasked objectives and select vessels for coverage by observers. The FSB tracks individual vessel coverage to ensure preferences do not influence selection, so that observer coverage is unbiased and representative. Observers and observer providers are encouraged to work with the fishing industry to accomplish the planned observer days. Observers also use dock intercept to set up trips for the week or month, which provides more flexibility for the fishing industry and sets a more cooperative tone for observer coverage.

Amendment 16 of the Northeast Multispecies FMP covering groundfish resulted in the establishment of the ASM program to supplement NEFOP observers. Instead of the dock intercept system, vessels in this fishery are required to use a telephone Pre-Trip Notification System (PTNS) developed in 2010. Vessels must generally notify the FSB 48 hours in advance of a planned trip through the PTNS. The notification identifies the vessel, port of departure, targeted species, gear type, and planned length of trip. The FSB uses an algorithm to randomly

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determine whether the trip will be observed, and then notifies the vessel if there will be an observer assigned.

The PTNS advance notification process has a mixed record. Once a trip is selected to take an observer, there is no penalty for cancellation. The reviewer was advised that some fishers may try to game the system by cancelling trips selected for observation, sometimes at the last minute. The effect on the program has been wasted funds for observer time and travel to port of departure. In addition, the observer may lose employment opportunities that they may have had otherwise had they been assigned to a vessel that actually went fishing.

Vessels operating in the IFS fishery have a similar procedure through the automated Interactive Voice Recording system, except that the notification must be 72 hours in advance. The notification identifies the vessel, owner, phone number, MMPA category,⁴⁰ port of departure and date, area to be fished, and permit number. An algorithm is used by the FSB to randomly determine whether the trip will be observed, and a confirmation is sent back within 24 hours indicating either a waiver or notice of observer requirement. In the case of an observer notice, the owner must arrange for an observer through any one of the three approved observer providers at least 48 hours in advance.

Some of the expense of having an observer on board a vessel under the NEFOP is mitigated by FSB reimbursement to observed vessels of \$40 a day for providing observer food. In the event that an observer falls severely ill or injured at sea, and the vessel must prematurely cease fishing to return the observer to port, the NEFOP observer provider is required by the contract to propose a plan on how to work out a fair reimbursement for the vessel's fuel expenses. In addition, observer providers have access to spare valise life rafts for vessels that do not have sufficient raft capacity to accommodate the observer.

4.5.6 Observer selection and notification

Observer selection processes are generally consistent between the various observer providers. An observer's name enters at the bottom of the list of the provider's observers. Assignments are given to observers as they rise to the top of the list, and after completion of a trip they move to the bottom of the list. An observer's position on the list is not jeopardized if they refuse a trip for a valid reason, such as poor vessel condition, accommodations, or health and

⁴⁰ NOAA List of Fisheries categories under the MMPA:

- I frequent incidental mortality or serious injury of marine mammals
- II occasional incidental mortality or serious injury of marine mammals
- III remote likelihood of / no known incidental mortality or serious injury of marine mammals

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safety concerns. Observer providers try to avoid giving observers consecutive trips on the same vessel, and do not honor a vessel's request for a certain observer.

4.5.7 Deployment and at-sea support

The reviewer was not able to witness any observer deployments since there were no fishing trips scheduled at that time of year near the FSB. He did tour the docks in New Bedford with an FSB staff member who explained the different types of vessels in the port, their gear types, and the conditions that an observer was likely to encounter.

The deployment process is one of the topics covered in training. When an observer is notified that they are assigned for a trip, they call the vessel captain, introduce themselves and confirm arrangements for the trip. The observer is then to arrive at the vessel well before the scheduled departure. Prior to departure, the captain or a designated crewmember is to give the observer an orientation of the vessel including the observer's accommodation and all of the safety and emergency gear. The observer is to verify that the vessel has a USCG Commercial Fishing Vessel Examination decal issued within the past two years. The observer then uses the PTVSC to confirm that all safety and survival equipment is in place, properly installed, and is not expired (Appendix 13). If the PTVSC identifies any non-compliance, the observer must refuse the trip, and the vessel is not permitted to fish. Vessels are required to provide appropriate accommodations and working arrangements as summarized in Appendix 3.

Some of the vessels that participate in the gillnet fishery are trailered open skiffs less than 26 feet long, and launch from ramps, or from private property, scattered throughout the Mid-Atlantic region. Given the remote nature of much of this area, it can be difficult and time consuming for USCG Commercial Fishing Vessel Safety Examiners to examine all the vessels in this fishery. Observers and monitors may therefore be allowed to conduct an Alternative Safety Equipment Examination (ASEE) per 50 CFR Part 600.746 (g) on these vessels if approved by the FSB Branch Chief. A checklist of USCG safety requirements is used for that purpose.

The FSB provides each observer with a flexible, expandable file folder with a variety of written material that may be useful not only to the observer, but the vessel as well. It includes:

- Copies of relevant laws and regulations
- Letter of introduction
- Outreach material for the captain including a sheet explaining observer duties and another explaining the selection process
- Safety information including relevant USCG and FSB pamphlets and flyers
- OLE selection letters
- Incident report and field diary instructions

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- Observer procedures in case of a USCG enforcement boarding
- Fishermen's comment cards
- Written harassment warnings (to be used as necessary), and victim support information
- Certificate of observer's insurance
- Various useful reference material

Most trips typically occur within the observer's homeport, but occasionally travel is required to account for seasonal fishing effort, high or low fishing effort periods, specific fishery (fleet) activity, or how observers are located among the region. Observers are eligible for travel reimbursement when travel is greater than 50 miles outside of their assigned homeport. Travel reimbursement follows the Federal Travel Regulation (FTR; 41 CFR 300-304) and includes mileage, lodging, and per diem, as well as an hourly travel rate.

In addition to their regular duties, NEFOP observers are required to attend at least one FMC meeting in their area annually. They may also be assigned to other industry outreach activities, industry meetings, observer training sessions, port orientations, reconnaissance, or research project needs. The observer is paid an hourly rate for these meetings plus travel expenses. The FSB reimburses the observer provider for these expenses.

4.5.8 Debriefing

Observers carry a ruggedized Android tablet computer on which they record their observations, which vary according to the type of fishing trip and their role as an observer or monitor. When they return, they are debriefed in person, by email, or by telephone by an assigned data editor in the FSB office. Data editors are Integrated Statistics employees. In-person debriefings must take place at least once every six months. The FSB uses an Oracle database accessed via a Web portal for recording real-time data and providing reports as needed concerning observers and their work. In addition to personal and employment data, the portal includes information on trip deployments, captain interviews and comments, and enforcement boarding reports. Observer providers have access to the database as well, and can enter and view information related to their employees only. FSB office staff members have access privileges to the parts of the database they need to perform their jobs.

The observer personal and employment data in the database includes information such as their address, family contacts, observer provider, qualifications, length of employment, deployment records, etc. Observers use the portal to report on notable incidents that may occur such as harassment, injury, MARPOL incidents, crew and vessel problems, and emergencies, including those that may be for OLE or USCG follow-up. All of these incidents are assigned with a category of the incident. The Oracle database allows quick and easy production of reports on numerous subjects of interest to FSB management.

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4.5.9 Observer incidents

4.5.9.1 Reporting and tracking procedures

Any on-the-job injury is reported by the observer on Department of Commerce Form CD-137, then entered and tracked on the FSB's observer data portal. Discussions with observers and observer providers did not reveal any cases where the observer had insurance problems or needed assistance with forms. Observers file their incident reports and other data on the observer portal shortly after they return from a deployment. Nevertheless, AIS and MRAG Americas provide support to their observers for any claims, and the reviewer was advised that all future contracts will contain this as a requirement.

The reviewer held informal discussions with five current observers with experience from one to twelve years. In addition, the reviewer had unstructured conversations with a number of the staff members who are former observers, and with several experienced observers who were on site for Safety II and Safety III training. Those observers did not express any particular concerns about safety-related issues, although heavy weather and apparent overloading sometimes cause concern.

Some observers shared their perceptions that drug use by crews is extensive and obvious. Surprisingly, observers who expressed this opinion did not feel that it creates a safety issue since it tends to slow down the work rather than compromising safety; however, in an emergency, crewmembers under the influence obviously could be a liability.

Observers have been in abandon-ship situations, but they are rare. Experienced observers have witnessed and sometimes assisted with onboard emergencies that don't threaten the vessel, such as heart attacks and serious injuries to crew. The USCG District 1 Fishing Vessel Safety Coordinator told the Safety I class that in 2016, observers had been onboard fishing vessels on six occasions where USCG assistance was required.

During Safety II training, two observers shared casualty experiences in which they were involved. In both cases, the observer's knowledge and initiative exceeded that of the crews. In one case, the observer activated her PLB and used her InReach to contact AIS (her employer). She advised a crewman to inflate the liferaft in the water rather than on deck to prevent damage to the liferaft. When a USCG helicopter arrived and lowered a rescue swimmer, she assisted the rescue swimmer to evacuate the crew, and was the last one to be recovered before the rescue swimmer. In another near-sinking case, the vessel's EPIRB did not work for unknown reasons, but the observer's PLB did. Another fishing vessel arrived in about 6 hours to assist, and eventually the distressed vessel was towed to shore approximately 36 hours after the original incident.

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The FSB maintains a list of “vessels of interest.” These are vessels that have experienced some sort of problem in the past. Problems include unsafe or unsanitary conditions, or instances of harassment. The FSB tries to work with the captain or vessel owner to rectify these situations and carefully considers future assignments of observers accordingly. For instance, working with the observer provider, a well-experienced observer might be assigned to one of these vessels after an instance of harassment.

4.5.9.2 Response to, and investigation of observer incidents

Observer providers typically employ Area Coordinators who are assigned to specific geographic areas and assist observers in the field, coordinate observer deployment, interact with the fishing industry, and provide support. Area Coordinators are focused on one region and have a good understanding of the fisheries, vessels, and individuals (captain and crew) in associated fishing ports. If there are issues on trips or in interactions with fishing vessels, observers would defer to their Area Coordinator and the FSB for assistance. The Area Coordinator will then communicate with other observers who may come into contact with the vessel if there is a safety concern or other important information that should be relayed. Observers are required to file an Incident Report on occurrences including harassment, vessel safety deficiencies, and unsafe vessel operations, to name a few. Observer provider program managers have access to the Incident Reports and will share information as necessary with Area Coordinators and observers. Observers can view their specific Incident Reports, but do not have access to all Incident Reports.

4.5.9.3 Emergency Action Plans/Emergency Notification Plans

4.5.9.3.1 EAP/ENP general description

The FSB maintains a detailed At-Sea EAP which is triggered in the event of serious injury, medical condition, death or vessel distress. It begins with a high-level action plan checklist followed by a detailed checklist to make sure that all important actions are taken in response to the incident. The checklists are followed by 20 appendices that identify every member of staff, including observers and observer providers, and their contact information. It contains guidance on communication within NOAA Fisheries and with staff, families, and the media. It also contains sample communications to aid in making sure that needed information is provided in the appropriate way.

The FSB has one employee who is responsible for the development and continuous updating of the EAP. It was developed in part using her experience and resources at the Federal Emergency Management Agency (FEMA). She personally maintains 13 numbered binders containing the EAP which are distributed to staff involved in carrying out EAP responsibilities.

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The reporting structure and roles are clearly described in the EAP to the point of even providing example wording for announcements to staff. A “scribe” is assigned to assist the FSB Chief and to take continuous notes as an incident unfolds, freeing the chief from this task.

Each observer provider has their own EAP, copies of which are included in the FSB’s EAP binder. The observer providers’ EAPs reflect different approaches:

- The AIS EAP and Fathom Research EAP each consist of two pages describing the companies’ Prevention, Preparedness, and Response policies. A third page is a flowchart of the notification sequence when an observer at-sea emergency occurs. These might more accurately be called ENPs.
- MRAG Americas has the most comprehensive of the observer provider EAPs. It describes the responsibilities of the observer in case of an emergency, and what MRAG will do in case of injury, death, or natural disaster affecting an observer. It then describes the interested parties MRAG will contact, and finally how long-term support will be provided for involved observers and their families.
- Unlike the other observer provider EAPs which are concerned primarily with the company’s response to an emergency, the EWTS EAP is concerned primarily with what an observer should do in case of a medical incident, intimidation or harassment, or fire or vessel distress. It also describes what EWTS will do to support the family in case of observer injury or death.

The reviewer believes that the disparity in observer provider EAPs arises because although they are required to prepare and submit EAPs,⁴¹ there are currently no established standards for them (see 3.6).

4.5.9.3.2 EAP/ENP implementation experience

The reviewer was advised that the FSB EAP was used in an estimated six to eight actual emergency situations in 2016, and is considered to have been effective. After each incident, the FSB conducts an After Action meeting and updates the EAP with lessons learned as appropriate. Every time there is a change to the EAP, the employee responsible for the EAP personally inserts new pages in all 13 official copies, replacing outdated ones in order to ensure that all copies are identical and up to date.

⁴¹ 50 CFR 648.11(h)(3)(x)

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The agenda for the After Action meeting is also detailed in the EAP:

The FSB BC (Branch Chief) will conduct an After Action meeting (lessons learned, *e.g.*, what went well, what didn't go well, and mitigation strategies for future incidents) with appropriate staff and partners. This meeting may also include the observer. The Branch Chief will send the After Action Report to the NOP Lead.⁴² The following information should be included in the After Action Report:

- I. Program level background – why/how the observer was put into an environment that turned into a situation. (*Written by Lead*)
- II. Observer's description of the situation – NOP prefers to have observers transcribe their documentation notebook with more narration and greater detail. (*Observer will provide*)
- III. Program involvement: A. Point and mechanism our office was brought into the situation. (*Lead will provide*); B. Program response (EAP) and interactions with all parties involved. (*Lead will provide*)
- IV. Other involved agency/groups reports. (Pulled together by Lead prior to After Action meeting.)
- V. Outcome/follow up: A. Program continuing efforts after the action/planned support; B. Other organization continuing efforts. (*This information will be obtained at the After Action meeting.*)
- VI. Review of the process/findings. (*This information will be obtained at the After Action meeting.*)

The 2004 report, *Development of a Comprehensive and Effective Emergency Action Plan for NMFS Observer Programs* (Ajango *et al.* 2004a), focuses on the development of training-related EAPs. Much of it deals with responding to serious incidents that might occur during observer training. The FSB's training programs all take place in towns on Cape Cod where professional emergency services are readily available, so other than first aid, there is little for the program to do as a training emergency unfolds. However, the other elements of that report that deal with some of the "second stage" and "third stage" actions to be taken subsequent to the incident are relevant to serious training incidents, as well as incidents involving deployed observers. All of these elements are present in the FSB EAP. These are summarized as:

⁴² "NOP Lead" refers to appropriate staff member at the NOP. In the rest of the passage, "lead" refers to the FSB employee responsible for the observed fishery in which the incident occurred.

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- A system for contacting all interested parties, including the NOP
- A media response plan
- Providing information and updates to FSB staff
- Long term support for affected personnel (including families)
- Documentation and record-keeping
- Post-incident roles and responsibilities
- Testing and evaluating the EAP
- Inclusion of observer provider EAPs (although no criteria have been established for these)

No.	Program	Discussion	Review Element(s)
1	NOP/National programs	4.5.9.3	Communications
	Finding	The FSB EAP is well-designed, comprehensive, tested, and revised as the need arises. It should serve as a model for EAPs in other regions, appropriately scaled to the size and scope of the program. The EAP applies to any incident in which the FSB might be involved.	
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC, should establish minimum standards for regional program and observer provider EAPs.	

4.6 West Coast Regional Office – West Coast Regional Observer Program (WCROP)

4.6.1 Program description

4.6.1.1 Program history

The West Coast Region Observer Program (WCROP - still often unofficially referred to as the Southwest Regional Observer Program; its name before the 2014 merger of the Northwest and Southwest Regions) began in 1976 with the deployment of observers on the eastern Pacific Ocean tuna purse seine fleet based out of San Pedro and Terminal Island, CA. Much of this fleet is now based in American Samoa (see PIROP-American Samoa, section 4.8.2, and International-WCPFC, section 5.4.2 for more information). Observer coverage of this fleet by the then-Southwest Regional Observer Program ended in 1994 when authority was delegated to the Inter-American Tropical Tuna Commission (IATTC). The WCROP has covered a variety of other fisheries since its inception including small and large pelagic fish purse seine fisheries, set and drift gillnet fisheries, and pelagic longline fisheries.

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Observer coverage of the California/Oregon large mesh drift gillnet fishery targeting swordfish and thresher shark started in 1990. Deep-set buoy gear is also used to target swordfish. The observer program for the California set gillnet fishery also began in 1990 and has operated intermittently since then. The primary authorities for these observer programs are the Marine Mammal Protection Act, the Endangered Species Act, the Migratory Bird Treaty Act protecting non-targeted species, and as per the regulations at 50 CFR 600.

4.6.1.2 Regional fisheries

The California/Oregon large mesh drift gillnet fishery, California set gillnet fishery, and an experimental fishery using deep-set buoy gear are currently the only fisheries with active observer coverage requirements. Today, a handful of small vessels operate out of San Diego, San Pedro/Terminal Island, Morro Bay and a few other locations along the California coast and into Oregon. (However, all landings are in California ports.) The drift gillnet and set gillnet vessels operate with crews of two or three and trips can range from a few days to two weeks. The deep-set pelagic longline fishery targeting bigeye tuna has been observed since 2005 on behalf of the PIROP.⁴³ Currently, there is just one vessel working in that fishery with a larger crew that engages in trips that can last as long as 30 days. Unlike most fishing vessels which sell their catch to wholesalers, this vessel delivers directly to retail customers.

4.6.1.3 Program organization

The program is staffed by two people, one of whom is a NOAA employee and the other an employee of the Pacific States Marine Fisheries Commission (PSMFC - see 4.2.1.3). Both are experienced observers. The program has seven observers who are employed by Frank Orth and Associates under contract to the WCROP. The program is located in the NOAA Fisheries West Coast Regional Office (WCRO) in the federal building in downtown Long Beach, CA. The WCRO provides management and regulatory support for both the Southwest Fisheries Science Center (SWFSC) in La Jolla, CA, and the Northwest Fisheries Science Center (NWFSC) in Seattle, WA. The WCROP provides its biological samples to the SWFSC, but is not part of the SWFSC organization.

The WCROP has totaled between 280 and 400 sea days annually over the past four years, with a workforce of seven observers. Electronic Monitoring is not used in the program; there was a pilot program in 2006-2007, but it generated no interest from the fleet. That continued to be the case even when grant money was offered in 2015.

⁴³http://www.westcoast.fisheries.noaa.gov/fisheries/wc_observer_programs/sw_observer_program_info/fisheries_observed_sw_observers.html

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4.6.2 Procurement of observer services

4.6.2.1 Observer provider contracts and regulations

The observer provider is Frank Orth and Associates, staffed by two people in their Long Beach office, both former observers. The office is about six miles from the WCROP offices. The program is federally-funded, and the observer workforce is very stable with a very low turnover rate estimated at about 2.5 years. The program reports having 100% retention for three years before having four new observers in the 2016 observer training class. One new observer is included in the 2017 class.

Under the contract, the observer provider carries insurance for Worker's Compensation, Longshore and Harbor Workers Compensation, and Maritime Employer's Liability (including Jones Act coverage) up to \$1,000,000 (Table 3). In addition, they provide excess Marine Employer's Liability coverage for up to \$5,000,000. An allowance is provided to observers to support the purchase of their own general health insurance. The observer provider is required to provide certification of coverage within 10 days of award of the contract.

4.6.2.2 Observer recruiting and employment

4.6.2.2.1 Basic qualifications

Observer qualifications are consistent with the Observer Eligibility Standard. Observers must possess and maintain a current CPR and First Aid certification including a hands-on course prior to the end of observer training. The observer provider solicitation specifies the requirements for observer candidates to have the education and experience requirements, pass the WCROP training course, not have conflicts of interest, be physically and psychologically capable, be able to clearly and concisely communicate verbally and in writing, and be a US citizen or legally authorized to work in the US.

4.6.2.2.2 Medical and fitness qualifications

Physical qualification requirements are also consistent with the standards discussed in 4.1.2 (Appendix 6). The contract solicitation states, "The contractor shall provide medical fitness screening for each prospective observer candidate prior to the beginning date of the scheduled observer training or briefing session." An examination by the candidate's physician can be accepted if done within 12 months and if it includes the required elements (see next paragraph). However, Frank Orth and Associates will pay the cost of the examination if done at CareOnSite Medical Services in Long Beach. In addition, observers are required to undergo screening for illegal drugs by urinalysis before being hired.

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The program requires under the contract that the observer provider report to the WCROP –

- the name of the individual,
- date of the medical exam,
- vision results,
- statement indicating candidate is able to work at sea for extended periods of time without restrictions and is capable of handling potential stress generated by close working/sleeping quarters,
- printed name of attending physician,
- signature and date of attending physician acknowledging they understand the stressful nature of the work, and
- the address of medical facility performing the examination.

4.6.2.2.3 Compensation

Observers are classed and paid according to their experience and expertise as Fishery Observer I, II, or III (the highest classification). The provider's contract also makes a provision for the possible employment of observers as biological technicians on NOAA research cruises when commercial fishing activity is low. The reviewer was not provided with the observer salary schedule, but was advised that the program staff believes that adequate compensation, along with a southern California lifestyle, contributes to the low turnover rate.

Observers tend to live near Long Beach since they are required to return there for debriefing after every trip. They are reimbursed for travel to ports all along the California coast in accordance with the Federal Travel Regulations.

4.6.3 Observer safety training

4.6.3.1 Training program organization

The small size of the observer workforce allows the WCROP to have all experienced observers go through safety and survival training every year. The reviewer was not able to attend observer training since it is held only once a year outside of the time period initially set for the review. He did, however, attend safety training done by the WCROP staff for NOAA staff members from the Long Beach office and other offices in southern California who may go to sea on NOAA vessels or fishing vessels for research purposes. This training included most of the safety and survival components of observer training, and included seven trainees, making the class size the same as for observer training.

Typically, experienced observers attend two days of safety training. Before they are deployed, new observers have a nine-day training course, of which the equivalent of three days is

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dedicated to health, safety, and survival topics. The August 2017 training session was a typical mixed class:

Day 1 - Experienced observers

Days 2-5,7-9 - New observers (one expected)

Day 6 - All observers (in-water and onboard drills)

In between days 1 and 6, experienced observers have briefing sessions on the upcoming drift gillnet season. Additional one-day briefings may be required before an observer is deployed in another fishery for the first time.

4.6.3.2 Safety and survival training

Training is based on the AMSEA model and is delivered by the two program staff members, both of whom are AMSEA-certified marine safety instructors. Classroom sessions are held in a conference room in the federal building. During the staff training attended by the reviewer, trainees executed training risk acknowledgment forms (similar to example in Appendix 16) prior to beginning training. Training lectures were clear and appropriate, and often accompanied by well-designed PowerPoint presentations.

Because of the unavailability of locations suitable for open flames, hands-on training with live flares and smoke signals was not possible. This is a shortcoming because of the non-standardized design of these distress signals and their firing methods, and in some cases, non-intuitive firing mechanism designs. Dewatering pump and damage control training was also not possible due to unavailability of the necessary equipment.

Training with fire extinguishers is done with a BullEx® Bullseye laser-driven system in the conference room. The system simulates a fire on an LED display. Students use simulated extinguishers that direct a laser beam at the screen. Sensors on the screen determine where the extinguisher is aimed, and whether the trainee is properly sweeping the base of the fire. The simulated fire responds appropriately to the actions of the trainee. When the system determines that the fire is extinguished, the fire simulation ends and the time to extinguish is displayed. Given the limitations of an office building conference room, the system is probably the most effective available. But as good as the BullEx® digital system is, it represents the fire in only two dimensions, does not give the sensation of heat as the trainee approaches the fire, and does not give the sense of the fire being pushed back as it is extinguished. However, the system is portable and is also used later in on-vessel fire drills during the dockside training session to simulate an outbreak of fire on the vessel.

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On the occasion of the reviewer's visit, it had not been possible to arrange for use of a swimming pool for initial swimming skills assessment, PFD, liferaft, and immersion suit training. Pool training is normally included in observer training, and the program is attempting to make reliable arrangements for a pool for future training. However, dockside in-water immersion suit and liferaft exercises were able to be held at the Orange Coast College School of Sailing & Seamanship facilities in Newport Beach. Because of the small class size, these dockside practical sessions moved quickly with little waiting time compared with similar sessions at other regions with classes twice as large or larger.

Due to the cold water, "wet" training in personal flotation devices and donning immersion suits in the water is not possible. In the dockside session attended by the reviewer, trainees were timed donning their immersion suits on the dock. (They had already practiced donning the suits in one minute during classroom sessions.) A liferaft was launched and inflated at the dock, and trainees practiced liferaft boarding and righting of a capsized liferaft, along with their immersion suit swimming skills.

Station bill and simulated fire and abandon-ship exercises were held on board a small passenger vessel across the harbor at Newport Landing. Several emergency scenarios were simulated, with trainees filling various roles. The training was effective and beneficial, although the limitations of the site prevented actually recovering a person from the water or launching a liferaft.

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Figure 16 - Conference room fire extinguisher training with BullEx® Bullseye system

For observer training, the program staff uses a checklist to ensure that each trainee has demonstrated all of the skills required by the Observer Safety Training Standards (Appendix 12). Although there were limitations resulting from the reviewer's observation of training for staff rather than observers, the witnessed training in combination with the observer training course outline indicate that observer training generally conforms to the Observer Safety Training Standards (Appendix 10; (NOAA Fisheries 2007a)). See Appendices Appendix 11 and Appendix 12 for supplemental topics covered.

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No.	Program	Discussion	Review Element(s)
1	NOP/National programs	4.6.3.2	Training
	Finding	While hands-on fire-fighting exercises and use of pyrotechnic distress signals are not currently required by the Observer Safety Training Standards, the review team is of the view that such training is extremely valuable to observers. Some programs have used BullEx systems for firefighting training to avoid smoke or flame production at locations where it would be a problem.	
	Recommendation	Whenever practicable, regional observer training programs should include opportunities for hands-on training with all emergency equipment, including pyrotechnic distress signals and fire extinguishers used on live fires. Where there are practical challenges with the production of flame or smoke at training facilities, programs should seek to partner with local fire departments and fire training facilities as necessary to identify suitable options. Even if such skills have not been necessary in past casualties involving observers in a particular region, it pays to be proactive and prepared for unknown potential future casualty scenarios.	

4.6.4 Observer equipment and maintenance

WCROP provides observer gear, equipment, and supplies to the observer provider after contract award (Appendix 14). Once all gear, equipment, and supplies are transferred, they are thereafter maintained and stored by the observer provider. The provider is also required under the contract to inspect and if necessary, repair all equipment to “manufacturer’s standards” once per year. Any replacement equipment must be to WCROP specifications. Since observer debriefings are conducted in Long Beach, any equipment maintenance or re-supply issues can be addressed at the Frank Orth office where equipment is kept and issued to observers. At the end of the contract period, if there is a change of observer provider, the WCROP takes possession of existing gear, equipment, and supplies to pass on to the new provider.

Observers are required by regulation to have access to the vessel’s communication equipment. However, in order to provide independent and confidential communication capability, the WCROP currently issues the observers Iridium satellite phones, but will soon be switching to InReach satellite communicators.

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4.6.5 Vessel selection and notification

Vessels operating in observed fisheries must generally notify Frank Orth and Associates by telephone 48 hours in advance of a planned trip, or 24 hours in the case of the Deep-Set Pelagic Longline fishery. The notification identifies the vessel, port of departure, targeted species, gear type, and planned length of trip. Observer placement is dependent on observer availability, an effort to spread coverage across vessels, and the WCROP sampling plan. Coverage level⁴⁴ is determined by a combination of biological opinion from the SWFSC, recommendations of the Pacific Offshore Cetacean Take Reduction Team, Pacific Fishery Management Council (PFMC) recommendations, and available funding. However, some vessels are so small that there is no sleeping space to accommodate an observer. These vessels are classed as “unobservable.”

Although fishers can be frustrated with the need to carry observers, the program reports very few instances of obstruction or lack of cooperation. The fleet is very stable with few new entrants, so the program is able to maintain long-term relationships. However, the reviewer was told that increases in marine mammal, sea turtle or endangered species protection measures can strain observer/fisher relations.

4.6.6 Observer selection and notification

Observer selection is done by Frank Orth and Associates using their observer list, the vessel notifications they have received, and the program’s “unobservable” list. An observer’s name is initially entered at the bottom of the list of observers. Assignments are given to observers as they rise to the top of the list with consideration of where they live and the vessel’s point of departure. After completion of a trip they move to the bottom of the list. An observer’s position on the list is not jeopardized if they refuse a trip for a valid reason, such as poor vessel condition, accommodations, or health and safety issues. With the Frank Orth staff members maintaining their observer qualifications, one can serve as an additional observer should the need arise.

4.6.7 Deployment and at-sea support

The reviewer was not able to witness any observer deployments since there were no fishing trips scheduled at that time of year in the Long Beach area. He did tour the docks at Terminal Island with the program staff members who explained the different types of vessels in the port, their gear types, and the conditions that an observer was likely to encounter.

⁴⁴ Referring to the percentage of observed trips in a particular fishery needed for a valid sample.

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The observer's Field Manual requires observers to collect objective and accurate data on vessel gear and operations. They are provided with a PTVSC (Appendix 13) which they are to use before departure. Vessels are required to provide appropriate accommodations and working arrangements as summarized in Appendix 3.

4.6.8 Debriefing

Unlike some other regions, fishers in WCROP-observed fisheries do not have catch quotas for their target species. Observers primarily monitor the incidental capture of marine mammals, sea turtles, and seabirds. Observers also record details on fishing activity, gear configuration, and the catch and disposition of target and non-target fish species. Biological samples collected by observers are used for life history studies and stock assessments performed by the SWFSC.⁴⁵

When an observer returns from a deployment, they enter their data into a computer database at the Frank Orth facility on NOAA Fisheries-provided computers, for transfer to WCROP on a bi-weekly basis. Observers are then debriefed in person generally by the Frank Orth office staff, or in some cases a senior observer (classed as Fishery Observer III). Debriefings are conducted within two days of returning from a trip unless an extension is authorized by Frank Orth, if necessary. Under the provider's contract, program staff normally conduct the first debriefing of each observer annually, and the first two debriefings of any new observer. Program staff debrief pelagic longline observers after every completed longline trip.

4.6.9 Observer incidents

4.6.9.1 Reporting and tracking procedures

Observers complete a post-cruise vessel survey after each deployment which requires them to indicate YES/NO to 22 items related to their working conditions and personal safety during the trip. The survey items are defined by the WCROP, and the provider is required to forward them to the WCROP within seven days after the observer completes their deployment or series of deployments on a particular vessel.

Observers are also provided with a "Green Book" which is intended for use when the observer experiences incidents of interference, intimidation, injuries, drug or alcohol abuse, marine resource violations and MARPOL violations. Observers are required to record the time of occurrence of any injury, the type and extent of the injury, how it occurred, treatment received, by whom, and the names of any witnesses in their Green Book. This information is then

⁴⁵http://www.westcoast.fisheries.noaa.gov/fisheries/wc_observer_programs/sw_observer_program_info/observer_program_sw_fish.html

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reported to the designated Frank Orth Logistics Coordinator at the Long Beach office. Any injury which is serious or prevents the observer from doing their job completely would be reported immediately to the observer provider for advice or response as appropriate. The program staff reports that Green Books are rarely used, since the incidents for which they are intended are rare.

4.6.9.2 Response to, and investigation of observer incidents

The program has never had a long-term disability of an observer due to a work-related incident. Within the last five years, there have been no serious injuries that caused lasting or permanent damage or loss. In most of work-related incidents, the observers continued to work, however if appropriate, an observer may be rotated out of the deployment cycle for a couple of days or weeks, at the discretion of the observer.

4.6.9.3 Emergency Action Plans/Emergency Notification Plans

With its small staff and corps of observers, the WCROP has not found it necessary to develop a full-scale EAP. Instead, they use a use a one-page Emergency Notification Plan (ENP) which has the contact information for everyone in the NOAA Fisheries chain of command that should be made aware of an emergency situation. In case of an emergency involving one of the seven observers, one of the two Frank Orth staff members will notify the emergency contact for the observer involved, and handle communication with the family. Since serious incidents are rare, the program believes that the process does not need to be further elaborated. However, the reviewer was of the view that it could be useful, as a minimum, to incorporate in the ENP the scripted communications in the NEFOP FSB EAP, for use in the rare event of a serious incident involving a major response or media interest. Guidance in that document for reporting a major incident up the chain of command to the NOP could also be useful.

No.	Program	Discussion	Review Element(s)
1	WCROP	4.6.9.3	Practices/Policies
	Finding	Although the program does not have an EAP, the ENP currently in use appears generally appropriate for this very small program.	
	Recommendation	Although a full EAP would seem to be overkill for the very small WCROP, recommend consideration as a minimum, incorporation in their ENP/EAP of the scripted communications in the NEFOP FSB EAP, for use in the rare event of a serious incident involving a major response or media interest. Guidance in that document for reporting a major incident up the chain to NOP could also be useful.	

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4.7 Southeast Fisheries Science Center (SEFSC) – Pelagic Observer Program (POP) Southeast Gillnet Observer Program (SGOP) Shark Bottom Longline Observer Program (SBLOP) Shrimp Observer Program (SOP) Reef Fish Observer Program (RFOP)

4.7.1 Program description

There are five fisheries observer programs administered by the Southeast Fisheries Science Center (SEFSC) based at three regional laboratories:

- The Pelagic Observer Program (POP) is based at the Miami, FL lab;
- The Southeast Gillnet Observer Program (SGOP) and Shark Bottom Longline Observer Program (SBLOP) are based at the Panama City, FL lab; and
- The Shrimp Observer Program (SOP) and Reef Fish Observer Program (RFOP) are based at the Galveston, TX lab.

Since observer procurement is executed at the region level and applies to all programs, region-wide observer procurement is discussed first (section 4.7.2). Program-specific elements related to observer health and safety are discussed in further detail in the following subsections for programs within each regional lab. Findings and recommendations that apply to multiple SEFSC programs are at the end of this section (section 4.7.6).

4.7.2 Procurement of observer services

4.7.2.1 Observer provider contracts and regulations

The SEFSC procures support personnel through a federal competitive solicitation process. The prime contract is currently awarded to Riverside Technology, Inc. (hereinafter referred to as Riverside; Figure 17). Riverside subcontracts the Task Orders for the Galveston Lab to IAP World Services (IAP). Riverside employs seven observer coordinators and approximately 65 observers each year. The Riverside Project Manager, IAP Site Manager, and four additional contracted support personnel are based at a fourth SEFSC lab in Pascagoula, MS; they conduct observer hiring, travel logistics, payroll, illness/injury logistics and other contract administrative tasks for the five supported programs.

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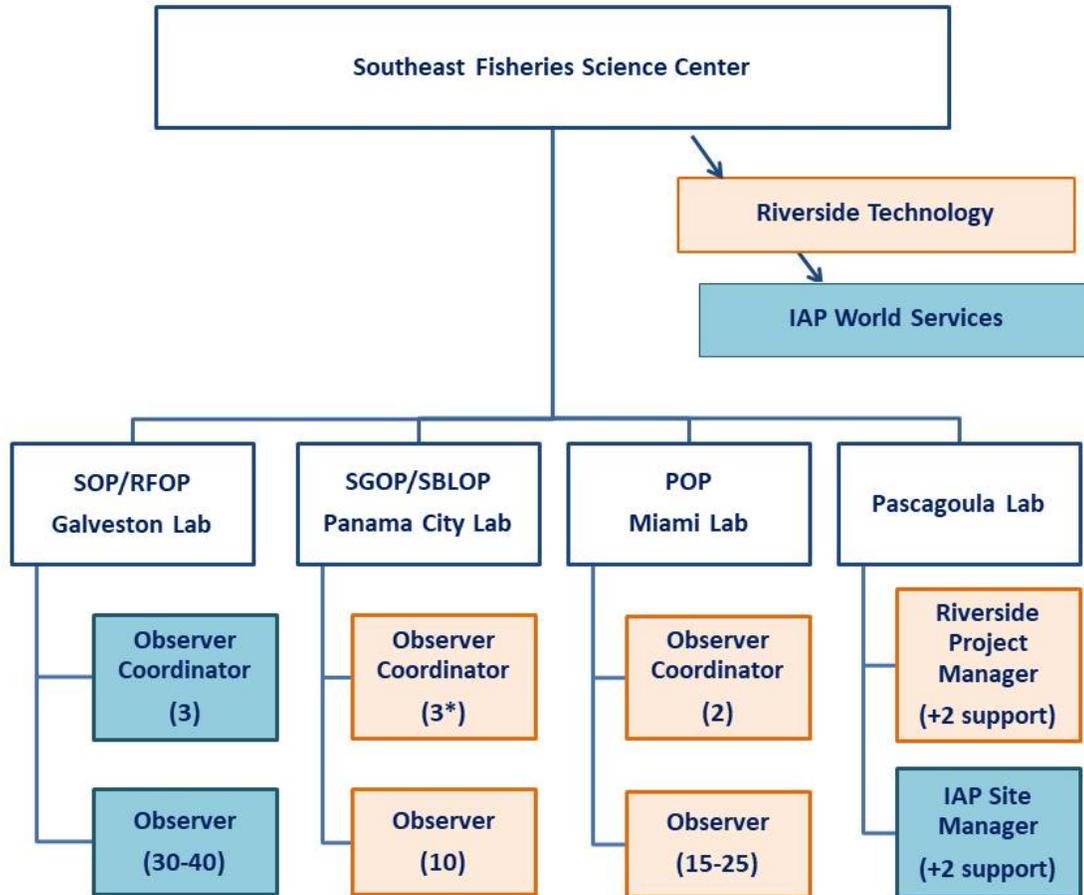


Figure 17 - Riverside Technology / IAP World Services relationships and locations for SEFSC ROPs
NOAA Fisheries lab locations are indicated with white boxes; prime contract and subcontract personnel based at these labs are displayed in orange and turquoise boxes, respectively. *Not all positions currently filled.

Despite repeated requests, the fully executed contract was not made available to the reviewer for review of applicable health- and safety-related elements; however, the most recent Statements of Work (SOW), and excerpts of health- and safety-specific language in the contract were provided and reviewed. The Request for Proposals (RFP) and Task Orders (including the Performance Requirement Summary/Matrix) were also requested but not released. The reviewer was provided a draft Statement of Objectives (SOO) which reportedly formed the basis of the final SOW and contract. Any statements in this section regarding items included or not included in the current contract are based solely on review of the above documents and responses provided to the reviewer, and may not accurately reflect all elements in the fully executed contract.

The Federal Acquisition Regulation (FAR) requires that “All SOWs should include a description of work to be performed; location of work; period of performance; deliverable schedule;

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applicable performance standards; and any special requirements (*e.g.*, security clearances, travel, and eligibility criteria). To the maximum extent practicable, agency requirements should be performance-based statements.”⁴⁶ The SOWs for SEFSC Fisheries Observer I, II and III positions appear to lack sufficient detail given the complexity of providing observer services. The SOWs refer to the Observer Eligibility Standard, but there is no explicit reference to the other two NOAA Fisheries Policy Directives covering observer procurement and observer safety (NOAA Fisheries 2006, 2007c). However, Section 8.0 of each SOW includes the following language (or similar) regarding safety issues:

“Safety Training: Training for all observer programs is conducted at the NMFS [city as appropriate] Laboratory or in cooperation with other SEFSC programs. Training encompasses vessel safety and communication protocols following standards set out by the National Observer Program. After successful completion of training, observers are issued a standard set of safety equipment including, but not limited to, PFDs, EPIRBs, flares, and satellite phones for daily land-based communication. Observer health and safety standards as set forth by federal regulation are mandatory for NOAA-certified observers. All instructors are Alaska Marine Safety Education Association (AMSEA) certified.”

The Safety Issues section of the SOWs provides generic language pertaining to OSHA regulations at government facilities and NOAA Fisheries health and safety policies and regulations. Such generic language may be appropriate when work is primarily performed at a NOAA Fisheries facility; however, observers generally spend a very limited amount of time at such facilities. Risks inherent to the primary location of work (*i.e.*, deployed at sea) are not well defined in the SOWs. Program-specific health and safety policies or reference to specific observer health and safety regulations (*e.g.*, MSA rules at 50 CFR 600.725 or 600.746) are not included in the SOW and are incorrectly referenced in the contract language provided (*i.e.*, 500.746), a typo likely transferred from the 2009 NOAA fisheries observer solicitation template (Hurcombe 2009).

Section 11.0 of the SOWs includes a Non-Personal Services Statement similar to the definition in section 3.1.3, disallowing supervisory oversight of contracted employees by NOAA Fisheries staff as per prohibitions set forth in Subpart 7.5 and Section 37.104 of the FAR. Effective observer program operation requires teamwork among contracted and federal NOAA Fisheries staff. Due to the contract type, NOAA Fisheries Program Managers have little to no control over the work performance of contracted staff. NOAA Fisheries staff provided two recent safety-

⁴⁶ 48 CFR 8.405-2

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related examples in which the Program Managers were given the impression that they were contractually unable to remove individuals from the observer pool for poor performance; one individual who submitted poor quality data on the majority of trips made due to chronic motion sickness (potential risk to the observer's health and vessel economics), and another who deployed on multiple occasions without completing the required PTVSC (potential risk to both observer and vessel safety). The former individual was eventually released by the observer provider due to both concerns, but not before numerous trips of substandard data were collected.

There are no contractual insurance requirements for the observer provider or observers (work-related or personal health) in the SOWs or excerpted contract material provided (Table 3) other than the basic requirements mandated by the FAR (48 CFR Part 28). There are also no regulations pertaining to observer insurance requirements at this time in the Southeast region.

Both Riverside and IAP offer personal health insurance plans to the observers. Riverside has open enrollment for personal health insurance in November. The IAP Site Manager noted that personal health insurance options are communicated to the observers through the hiring packet. The employer plans may impose a minimum hour requirement; however, the observer providers did not provide the reviewer with requested details regarding their specific requirements. Observers can choose to take cash in lieu of benefits as per Service Contract Act (SCA) compensation standards (29 CFR 4.165 - 4.179). When a number of observers were asked by the reviewer what kind of personal health insurance options were available to them, responses ranged from none, to employer provides an option.

The POP staff reported high contractor as well as federal staff turnover and shortages in Miami in recent years. There were no specific cause/effect examples of impacts to health and safety, but lack of management staff continuity is potentially problematic. Reasons given for turnover included the type of position (*i.e.*, very little promotion potential), and high cost of living in Miami can be prohibitive for lower-level positions. Program staff also noted that systemic weaknesses include the contract type (may not be well suited for observer procurement in terms of government ability to control performance); lack of responsiveness from the contracting system; lack of input to the contract selection process; lack of input to the observer hiring process; and the dual chain of command (federal and contracted) can be confusing (*e.g.*, timelines and content of incident reporting to employer and NOAA Fisheries may vary). On the positive side, the ability of an outside entity (observer provider) to hire staff quickly definitely benefits the program's goals in the event of unanticipated increases in observer coverage requirements.

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No.	Program	Discussion	Review Element(s)
1	SEFSC ROPs	4.7.2.1	Practices/Policies
	Finding	<p>The review of SEFSC contract strengths and gaps relative to observer health and safety was complicated by limited access to the full contract language. Many elements common to other ROP contracts and SOWs (<i>e.g.</i>, the NEFOP contract) appear to be missing or lack sufficient detail.</p>	
	Recommendation	<p>The SOW and other contracting documents should be reviewed by the NOAA Acquisitions and Grants office at headquarters to verify all necessary elements are included and include sufficient detail and standardize elements among all ROPs. Observer procurement contracts should include the elements in the NOAA Fisheries Observer Solicitation Template (Hurcombe 2009). At a minimum, the following currently missing items should be included in future RFPs, SOWs and Task Orders and observer provider contract as appropriate:</p> <ol style="list-style-type: none"> a. Detailed list of current programmatic health and safety policies including standards of observer conduct appropriate to each program plus a statement that these policies may be modified at the program’s discretion; b. All programmatic regulatory references especially those specifically related to observer health and safety (<i>e.g.</i>, 50 CFR 622; more in Appendix 3); c. Detailed description of location of work on commercial fishing vessels including a description of working conditions and potential risks that may be encountered; d. Information regarding NOAA Fisheries and observer provider roles and responsibilities especially during emergency situations (see also section 3.6, finding/recommendation 1); e. Requirement for the observer provider or observer to supply an observer’s primary contact and emergency contact information to the applicable observer program manager and a timeline for periodic updates; f. A mechanism for medical personnel to access an observer’s medical condition and history questionnaire in the event of a medical emergency (see section 4.1.2, finding 1, recommendation .9); g. If not already included, provide a detailed schedule of 	

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		<p>performance-based deliverables (with expected frequency parameters) as well as special contract requirements.</p> <p>h. Develop a Performance Work Statement (PWS) describing methods to assess observer performance and agency rights when performance is inadequate (see section 3.1.3, finding/recommendation 2);</p> <p>i. Detailed description of process NOAA Fisheries will utilize to evaluate data collected by the contracted observers and how this evaluation will impact an observer’s ability to continue working in the applicable program;</p> <p>j. Add (or verify inclusion) of the following deliverables:</p> <ul style="list-style-type: none"> ● Provide resumes and transcripts for each candidate 30 days prior to new observer training; ● Provide documentation and notification of any emergency to the Program Manager within 12 hours of an incident; ● Copies of documents/memos sent to observers by the observer provider must be provided to Program Managers within 24 hours of sending; and ● Notice to Program Manager that an observer has been subject to disciplinary action within 24 hours of action.
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No.	Program	Discussion	Review Element(s)
2	SEFSC ROPs	4.7.2.1	Practices/Policies
	Finding	Currently, contracted and NOAA Fisheries staff in some of the SEFSC observer programs are not functioning well as a team. Program Managers have little to no control over the work performance of federal or contracted staff. There is evidence that past SEFSC observer contracts contained “Performance Work Statements” (PWS) addressing observer non-performance (U.S. Dept. of Commerce 2004) but it is unclear why, if currently present, the PWS were not invoked for the poor work performance examples described in section 4.7.2.1 (see also section 3.1.3, finding/recommendation 2).	
	Recommendation	Program Managers or their supervisors should review PWS to ensure Program Managers can effectively address work performance of federal or contracted personnel including controls to address situations where an observer’s health or safety may be a heightened risk as well as data quality issues. The NEFSC contract provides	

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	payment for “successful” sea days which may be a potential approach for addressing poor work performance issues in a timely manner.
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No.	Program	Discussion	Review Element(s)
3	SEFSC ROPs	4.7.2.1	Practices/Policies
	Finding	<p>Several program management personnel reported that the contract as currently executed (<i>i.e.</i>, Time and Materials/Nonpersonal Services) is not working very well, and the federal contracting process is not always responsive to observer program needs. Examples included:</p> <ul style="list-style-type: none"> • Observer participation in regular monthly or quarterly conference calls with observer provider staff (Program Managers and Observer Coordinators) to address health and safety issues is not currently allowed as billable hours. The result is a disincentive to participate since observers are not paid for that time. At least one SEFSC program has discontinued regular calls due to lack of participation; however, lack of participation may have been due to lack of observer pay for the time required for the call; • Observers note that they are occasionally faced with a decision to either work in unsafe conditions or forfeit hours of pay while deployed. Federal personnel deployed under similar conditions (<i>e.g.</i>, research vessels) do not have to make this choice as they are paid an hourly or sea day rate regardless of whether actual work is occurring while deployed; • Program and observer provider staff remarked that at times the relationship with the COR is “adversarial” and it’s unclear what recourse managers or observer providers have to address issues, including safety, as they arise; • Effective program operation likely requires many elements of a personal service contract (see 48 CFR 37.104(d), criteria #2-6). 	
	Recommendation	.1 See section 3.1.3, national findings/recommendations 1 as they pertain to contract type.	

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		.2 The SEFSC should modify the current observer procurement contract to address monetary incentives observers may have to work in unsafe conditions unnecessarily, and disincentives to participate in processes that may enhance their health and safety.
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4.7.2.2 Observer recruiting and employment

The Riverside Project Manager interviews applicants, verifies references and makes all hiring decisions for the POP; the Riverside Project Manager confers with the NOAA Fisheries Program Administrator of the SGOP/SBLOP prior to hiring observers for these programs. The IAP Site Manager interviews applicants, verifies references and makes all hiring decisions for the SOP/RFOP; a standard list of health and safety risks is used during interviews. The contract does not require the observer provider(s) to submit resumes, transcripts or references to the NOAA Fisheries program managers/administrators. The contract states “The recruitment and retention of fully qualified Observers is essential to successful performance under the contract,” but no performance criteria regarding recruitment or retention are included in the SOW. Specific data on retention or turnover rates were not provided to the reviewer by any SEFSC program.

Panama City Lab staff reported that the current system is working for the SGOP/SBLOP. Hiring has been good and both federal and contracted program staff are included in the hiring process. The NOAA Fisheries Program Administrator for the SGOP/SBLOP facilitates the hiring process by sending job announcements to university colleagues. The Panama City Lab also has several student volunteers who occasionally enter the observer corps.

4.7.2.2.1 Basic qualifications

Educational qualifications and conflict of interest, communication and citizenship requirements are consistent with the Observer Eligibility Standard (section 4.1.2). Current basic first aid and CPR certification is a requirement of the contract for all SEFSC programs.

There are no pre-employment, annual or for-cause drug testing requirements in the contract (Appendix 6). When a number of observers were asked by the reviewer about their understanding of the drug testing policy if a work-related incident were to occur at sea, some didn't know if a drug testing policy exists, while others thought drug testing was definitely the policy of their employer. A USCG Drug and Alcohol Program Manager internal memorandum clarifying regulations pertaining to “Drug testing requirements for fisheries observers” stated that although an observer would not normally be subject to drug testing requirements, an observer determined to be directly involved in a marine casualty may be subject to Post-Accident chemical testing (see section 3.3).

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Both observer providers noted that observers receive a hiring packet which explains all of the employer’s health and safety policies. However, the hiring packets were not available to the reviewer.

The observer procurement contract requires that observers must reside in an Atlantic or Gulf of Mexico (GoM) coastal state; their residence is considered their “duty station” and they are expected to spend nearly all of their work time in travel status. Observers drive their personally owned vehicles (POV) to all (SOP/RFOP/SGOP/SBLOP) or most (POP) assignments; therefore, a valid driver’s license and operational vehicle are also requirements implicit to the position although not stated as an eligibility requirement in the SOW. Typical driving distances range between 200-300 miles per deployment.

No.	Program	Discussion	Review Element(s)
1	SEFSC ROPs	4.7.2.2.1	Practices/Policies
	Finding	Hiring packets include health and safety policies/procedures and health insurance benefit options and are provided upon initial hire. Policy modifications are communicated to the observers as they occur. However, in the course of discussing health and safety policies with observers they do not appear to be consistently informed regarding company policies, safety or otherwise. For example, observers report a lack of clarity regarding personal health insurance options. A few claimed to not know personal health insurance was an option whereas others were aware but chose the cash-in-lieu of benefits option because they were told they didn’t work enough hours per pay period to qualify.	
	Recommendations	<p>.1 Observers should be routinely informed by their ROP and employer regarding health and safety policies and requirements (<i>e.g.</i>, a policy checklist that must be acknowledged annually and is linked to deployment eligibility).</p> <p>.2 The contract should also require the provider to annually review health insurance options and other provider health/safety policies with observer personnel.</p>	

No.	Program	Discussion	Review Element(s)
2	SEFSC ROPs	4.7.2.2.1	Practices/Policies
	Finding	Although the observer position is advertised with a first aid/CPR certification requirement and at least one SOW contains	

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		certification requirement language, the contract deliverable is vague.
	Recommendation	The SEFSC should include a contract deliverable requiring the observer provider to supply a copy of each observer’s CPR and first aid certificate to the Program Manager seven days before new observer training and upon renewal thereafter.

4.7.2.2.2 Medical and fitness qualifications

Physical qualification requirements are generally consistent with the medical provisions in the Observer Eligibility Standard and also include a requirement to provide “vaccinations as necessary” (Appendix 6). The SEFSC contract requires newly hired observers to have a physical exam prior to training (or “prior to assignment at the latest”); however, the observer provider is not required to supply the physician’s approval statement supplied in the contract to the NOAA Fisheries Program Managers or other NOAA representative. Although the frequency of physical exams for experienced observers is not explicitly defined in the contract, Riverside and IAP told the reviewer that their policy is to require a physical exam every three years or prior to each refresher safety briefing. OHS Health & Safety Services Inc.⁴⁷ is contracted by Riverside to perform the physical exams; IAP utilizes this service as well, but did not confirm whether or not they use the same or a different Job Analysis (as described below). The OHS process includes the following steps:

1. Employer (Riverside) submits an Americans with Disabilities Act (ADA)-compliant Job Analysis which includes a job description and frequency of essential and marginal work functions, exposures, and risks to OHS. This form contains elements similar to the “Letter to the Physician” from the contract;
2. Employee (observer) completes an automated telephone interview with approximately 70 medical history and physical ability-related questions. Responses are digitally stored and are considered an official electronic medical record;
3. OHS physician reviews interview responses and compares to functional abilities described on the Job Analysis; and
4. OHS submits a report to employer specifying whether the employee has no limitations, needs some accommodation or has severe limitations to fulfilling physical job requirements described in step 1. This form is similar to the physician sign-off form in the contract.

⁴⁷ <http://www.ohsinc.com/>

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The risks of employment are communicated to potential hires by the observer providers in the job advertisement and during the interview, and reiterated during the NOAA Fisheries observer training. The Riverside Project Manager makes every attempt to forewarn applicants that the observer position is mentally and physically challenging and frequently very uncomfortable. Medical assistance is frequently further away than what is experienced working in a typical land-based position. Therefore, physical exams or assessments should be rigorous enough to screen out new hires that may become a risk to themselves or others simply due to the nature of the job. Program staff provided two examples of observers with health issues that should have required further investigation/query by a physician prior to clearing them to work as observers, yet they were cleared for duty using this process. One observer in the SOP/RFOP had a shrimp allergy which could potentially become a life threatening problem if deployed on a shrimp vessel, and the other was on a medication that required a consistent sleep schedule, a fairly uncommon occurrence on fishing vessels.

The Galveston and Panama City programs historically used Standard Form 93 (SF-93 - Report of Medical History) to gather baseline medical history information. The use of SF-93 was discontinued due to privacy concerns although it is unknown exactly when the form was discontinued. The contract does not explicitly state the purpose of the physical exam requirement for observers although the Program Managers explained in great detail the multiple purposes of the observer physical exam:

- Ensures the prospective trainee is able to meet the physical requirements of observer training and is physically capable of deploying on commercial fishing vessels;
- Assures active, experienced observers maintain their physical ability to deploy safely on commercial fishing vessels;
- Confirms that the individual has the physical ability to manage an emergency situation if one unfortunately arises while deployed (*e.g.*, able to physically board a liferaft); and
- Lastly, routine physical exams (personal and professional) are sometimes the only way to detect if there are any underlying health concerns which can be proactively addressed rather than allowing a condition to manifest into a more serious issue at sea.

With regard to illness prior to deployment, the current contract states “The contractor shall not assign observers who are showing symptoms of illness or who may be contagious.”

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No.	Program	Discussion	Review Element(s)
1	SEFSC ROPs	4.1.2 4.7.2.2.2	Practices/Policies
	Finding	Past observers report physical exams were not performed on a regular basis and in a few instances, not at all. The OHS telephone interview is a recent addition (2016) to Riverside’s observer-related practices. The contract does not include frequency requirements for physical exams for experienced observers.	
	Recommendation	The SEFSC should include a physical exam frequency requirement for currently employed observers in the observer provider contract (see section 4.1.2, finding 1, recommendation .1.)	

No.	Program	Discussion	Review Element(s)
2	SEFSC ROPs	4.7.2.2.2	Practices/Policies
	Finding	Program Managers are unable to confirm that the contract requirement for pre-employment physical exams is being met because the contract does not require that the Program Managers receive copies of physician clearance forms for each new observer hired or from currently employed observers.	
	Recommendation	The SEFSC should add a contract deliverable for the signed physician statement or other confirmation of physical exam completion (see section 4.1.2, finding 1, recommendation .3) to be supplied to the Program manager on a specific schedule (<i>e.g.</i> , 14 days prior to first day of training).	

No.	Program	Discussion	Review Element(s)
3	SEFSC ROPs	4.7.2.2.2	Practices/Policies
	Findings	<p>.1 OHS stores responses to the health and medical history questions but this information may not be available in a timely manner in the event of a medical emergency.</p> <p>.2 The SGOP/SBLOP and SOP/RFOP manuals both state, “You will be required to complete a Report of Medical History (Standard Form 93) to be held in a confidential file and reviewed only in the event of a medical emergency at sea” (NMFS 2016a, b). However, the programs no longer utilize this form due to privacy concerns.</p> <p>.3 Observers and Observer Coordinators in the SGOP/SBLOP and SOP/RFOP confirm that current medication information is not reported prior to each trip contrary to the current policies of the</p>	

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No.	Program	Discussion	Review Element(s)
3	SEFSC ROPs	4.7.2.2.2	Practices/Policies
		<p>programs and IAP. Their manuals state “You must inform the Program Manager, in writing, of any medical condition or situation, including medications being taken, prior to departing on a vessel” (NMFS 2016a, b).</p>	
	Recommendations	<p>.1 SEFSC ROPs should implement the collection of health and medical history information as per section 4.1.2, finding 1, recommendation 9, and update all observer manuals to reflect current practices.</p> <p>.2 The SEFSC should add a contract deliverable to require observer providers to describe the procedure for collecting and storing protected health information including current medications as well as ensure appropriate medical personnel involved in an emergency response can have access to the health and medication information 24/7 in case of a medical emergency (see section 4.1.2, finding 1, recommendation .9) .</p> <p>.3 The programs in collaboration with the observer provider deliverable recommended above should consider developing a standard checklist of questions to ask the observer prior to each deployment which may include current medications as well as current state of health at a minimum. The programs or provider may need to seek legal counsel regarding the collection of medication information and which entity would be the most appropriate to collect and store such information.</p>	

No.	Program	Discussion	Review Element(s)
4	SEFSC ROPs	4.7.2.2.2	Practices/Policies
	Finding	<p>The OHS Job Analysis form lists potential physical job requirements and ranks them in terms of frequency of occurrence. The form includes a field to provide a more detailed job description. Overall, the information provided to OHS on the Job Analysis form was similar to the letter to the physician from the contract. However, some descriptions of employment conditions were either missing or lacking in sufficient detail.</p>	
	Recommendations	<p>.1 The SEFSC should request the following additions/modifications be added to the Job Analysis description Riverside submits to OHS to address discrepancies with the current SEFSC contract</p>	

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language pertaining to physical expectations of the job described in the letter to physician.

a. Additions:

- Being at sea with limited medical assistance for 10-30 days at a time.
- Being in heavy seas that could cause chronic motion sickness.
- Having the ability to tolerate stress.
- Lifting baskets up to 50 lb or moving 200 lb carcasses across the deck.
- Ascending and descending steep ladders to and from fishing boats at the docks.
- Climbing across boats, over fishing gear, and atop wheelhouses to get to a docked vessel.
- Perform vessel-to-vessel and vessel-to-platform transfers using a swing line, personnel transfer basket, and stepping across from one vessel to another.
- Having irregular meals, sometimes with non-traditional food, cooked in non-traditional ways.
- Living on a boat with limited sanitary and/or washing facilities and chronic exposure to a variety of infections (*e.g.*, staph).
- Platform Removal Observer Program (PROP) observers must also be able to conduct visual surveys for sea turtles and marine mammals from low flying aircraft at altitudes ranging from 500-700 ft.

b. Modifications

- “Environmental Exposures” section - add both smoke and diesel fumes to “Other” to address “potentially being subjected to cigarette smoke and diesel fumes” in work environment and occasionally within sleeping accommodations.
- “Personal Protective Equipment” section - check “Safety shoes/boots” and “Hearing protection” and add foul-weather gear, anti-bacterial cleansers, bed bug detectors and smoke masks (when requested) to “Other” box.

- .2 The SEFSC should add “Potential chronic exposure to secondhand smoke in the work and sleeping areas” to the

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		bulleted list of physical considerations and health risks in the “Letter to the Physician” provided in the contract (see also section 4.1.2, finding 1, recommendation .5).
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No.	Program	Discussion	Review Element(s)
5	SEFSC ROPs	4.7.2.2.2	Practices/Policies
	Finding	The reviewer was unable to obtain the list of health- and ability-related questions from OHS after repeated requests, and was therefore unable to compare and contrast questions asked in phone interviews with elements in the observer health questionnaire provided in the contract.	
	Recommendation	If an alternate form or list of questions other than the Letter to Physician or Observer Health Questionnaire provided in the contract is used for physical screening purposes, the observer provider should provide the list of health questions to the COR prior to contract award or any time the description or questions provided to a health care provider change. If a physical exam is not carried out in person, the program should take steps to ensure the scope and content of the questions is equivalent to contract language.	

No.	Program	Discussion	Review Element(s)
6	SEFSC ROPs	4.7.2.2.2	Practices/Policies
	Finding	Physical exams for observers were executed by automated phone interview and were not performed in-person by a physician. Program staff noted that the current physical exam screening process may not be effective at alerting the employer or program to potential health risks.	
	Recommendation	See section 4.1.2, finding 1, recommendation .2.	

No.	Program	Discussion	Review Element(s)
7	SEFSC ROPs	4.7.2.2.2	Practices/Policies
	Finding	The language pertaining to limiting deployment of observers showing symptoms of illness is ambiguous and hard to define.	
	Recommendation	The contract should require a description of the procedure that will be utilized to assess whether observers are showing symptoms of illness or who may be contagious as part of the Quality Assurance	

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	Plan. The procedure should include thresholds for determining when observers should not deploy.
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4.7.2.2.3 Compensation

Several observers stated that the hourly compensation scheme in the current contract potentially has a negative impact on safety-related decisions as well as retention. For instance, SEFSC observers are compensated for a minimum of eight hours and maximum of fourteen hours for each sea day, which could influence an observer's decision to work on deck in hazardous conditions to increase their pay for the hours in excess of the minimum. Another artifact of the hourly compensation system is unequal pay for the same hours worked depending on the day of the week a trip begins. For instance, an observer departing on a Sunday for a 14-day deployment may be paid more than \$250 extra compared to the observer who departed on a Wednesday. Theoretically, this would balance out over the course of a year when comparing wages among individuals; however, at the individual level, some observers reported that it's interpreted as lost wages. While not a direct safety impact, the current compensation structure may have an indirect influence on risk of safety incidents and risk by incentivizing poor choices and negatively impacting morale which can further affect observer retention within a program. In discussions with the reviewer, staff noted that high observer turnover increases training costs and risks to the program.

Although not a chronic occurrence, several observers noted there were occasions in the past when they did not get enough work in a month to pay their basic bills. Observers are informed that fishing is seasonal and they should plan their finances during slow times accordingly (*e.g.*, winter months). Regardless, these were stressful events that made them re-evaluate the merits of the job. A few also mentioned that there was little opportunity for career advancement once at the top of the 3-level pay scale, which impacted their job satisfaction. Observers noted that there was no flexibility for alternate work schedules (*e.g.*, 3- or 6-month rotation) or ease of movement among the SEFSC programs. A dissatisfied and/or stressed workforce can have unforeseen consequences in terms of employee health (Cooper 1999, Faragher *et al.* 2005, Kenny *et al.* 2000), which may ultimately impact health and safety at sea.

4.7.2.3 Observer incident reporting and tracking

The Riverside Project Manager updates observers any time there is a change to a company health and safety policy including company health benefits.

Minor illness and injuries while deployed are typically self-treated by the observer. Treatment of a serious illness or injury is incident-dependent, ranging from notifying the observer provider and program and contacting the USCG or triage nurse for treatment advice at sea, returning to

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port for professional treatment, or in the most extreme case, medical evacuation by the USCG. IAP offers a 24/7 triage nurse call-in service and counseling options for their employees.

POP, SGOP and SBLOP observers must report all illness or injuries to both the observer provider and NOAA Fisheries immediately. On return from a trip, observers must supply more details to the Project Manager for completion of the company’s Accident/Illness Report. The form gathers personal information on the observer, facts of the illness/injury (what, when, where, how, cause, fatal?), amount of work time lost, location of the illness/injury (*e.g.*, body part), severity, witness contact information, type/date/time of medical attention, who was notified (*e.g.*, family, insurance, worker’s compensation), and future actions to be taken. Quantitative incident rates were not available from Riverside, but their Project Manager thought that the most commonly reported injuries were caused by fish spines, trips/slips/falls, and cuts.

SOP and RFOP observers must report all illness or injuries to both the observer provider and program as soon as possible. The observer manual states “Upon your return to port you must also fill out an accident report form even if no medical treatment was/is necessary” (NMFS 2016a); this form is provided by IAP but was not made available for review.

No.	Program	Discussion	Review Element(s)
1	SEFSC ROPs	4.7.2.3, 4.7.4.8.1, 4.7.3.8.1, 4.7.5.8.1	Practices/Policies
	Finding	Instructions for reporting accidents and illness to the program and observer provider vary depending on the source.	
	Recommendation	The contract should clarify timelines for reporting illness and injury. Programs should strive to ensure consistent messaging among program and observer provider documents (<i>e.g.</i> , manual, policy, hiring packet).	

4.7.2.4 Response to, and investigation of observer incidents

The current contract states “In the event that an observer falls severely ill or injured at sea, and the vessel must prematurely cease fishing to return the observer to port,” although the legal mechanism for this statement is not cited.

POP, SGOP and SBLOP observers are insured by Riverside for work-related illness or injury using worker’s compensation or through the Federal Employee’s Compensation Act (FECA) process. Riverside also maintains a Maritime Employer’s Liability policy. Once reported, Riverside arranges for any necessary treatment after disembarkation. Riverside’s Human Resource Manager tracks incident status once the Project Manager submits the Accident/Illness Report form to the corporate office.

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Observers are insured by IAP for work-related illness or injury using worker’s compensation. Once reported, IAP arranges for any necessary treatment after disembarkation. IAP tracks incident status using ClaimsDesk software.

The contract does not require the observer providers to supply observer emergency contact information to NOAA Fisheries or to provide observers reasonable assistance when FECA is utilized for an injury claim.

No.	Program	Discussion	Review Element(s)
1	SEFSC ROPs	4.7.2.4	Practices/Policies
	Finding	The current contract states “In the event that an observer falls severely ill or injured at sea, and the vessel must prematurely cease fishing to return the observer to port.” “Severely” is not defined and the statement is not referenced with a supporting regulation or policy that would require the vessel to terminate a trip. The review team is unaware of any regulation requiring a vessel to return to port unless there’s a marine casualty and even then this may be at the discretion of the USCG. In addition, the statement is an incomplete sentence.	
	Recommendation	The validity of the current statement should be reviewed taking into account that the vessel is not party to the contract with NOAA Fisheries. However, if the statement is valid, the contract should refer to the regulation or interpretation that requires a vessel to return to port if an observer “falls severely ill or injured at sea.”	

No.	Program	Discussion	Review Element(s)
2	SEFSC ROPs	4.7.2.4	Practices/Policies
	Finding	The contract language provided to the reviewer(s) did not address minimum insurance requirements or a requirement for certificate of insurance documentation.	
	Recommendation	The SEFSC should modify the observer procurement contract to include a detailed list of minimum insurance requirements for work-related illness/injury and a requirement to provide CO/COR with certificate of insurance on an annual basis.	

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No.	Program	Discussion	Review Element(s)
3	SEFSC ROPs	4.7.2.4, 4.7.3.8	Practices/Policies
	Finding	During a medical emergency in 2016, the POP discovered that observer emergency contact information was either unavailable or out of date. The program addressed the problem by asking Riverside to provide updated emergency contact information for all observers to the program. Providing the programs with emergency contact information is not currently a contractual requirement.	
	Recommendation	The SEFSC should include a deliverable to provide and regularly update (<i>e.g.</i> , monthly, quarterly) emergency contact information to the Program Managers in all future contracts.	

4.7.3 Pelagic Observer Program (POP)

4.7.3.1 Program description

4.7.3.1.1 Program history

The POP began deploying scientific (fisheries) observers on the US Western Atlantic pelagic longline fleet in 1992 as mandated by the US Swordfish FMP and subsequently the Atlantic Highly Migratory Species FMP (Keene 2011, NMFS 2006).

The Western Atlantic pelagic longline fishery is managed by the NOAA Fisheries Sustainable Fisheries, Atlantic Highly Migratory Species Division (HMS) in Silver Spring, MD. In cooperation with an advisory panel, the Atlantic HMS develops and implements FMPs and regulations for tunas, swordfish, sharks and billfish taking into account all domestic and international requirements under the Atlantic Tunas Convention Act, MSA, MMPA, ESA, and the Migratory Bird Treaty Act.⁴⁸ The Atlantic HMS develops regulations based on fishery-dependent and fishery-independent data, as well as recommendations from the International Commission for the Conservation of Atlantic Tunas (ICCAT; see also section 5.3.1). POP data are used to evaluate the harvest and status of pelagic fish stocks as well as determine the effectiveness of management measures to control harvest levels and to mitigate protected species interactions.⁴⁹

In addition to national-level MSA observer health and safety regulations (described in section 3.2), observers in this fishery are subject to Atlantic HMS regulations at 50 CFR 635.7 (Appendix 3). Safety-related items in this section include: 1) requirement of five days' notice of trip

⁴⁸ <http://www.nmfs.noaa.gov/sfa/hms/index.htm>

⁴⁹ <https://www.sefsc.noaa.gov/fisheries/observers/pelagic.htm>

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departure date/location and estimated return date/location; 2) observer accommodation requirements; and 3) observer access requirements to communication and navigation equipment, vessel logs, catch, etc. Each pelagic longline vessel is also required to have a functional vessel monitoring system (VMS), which tracks the vessel's location.

The minimum observer coverage rate is currently set at 8% of gear deployments for the main fleet. Since 2007, there has been an enhanced requirement of up to 100% in certain target fisheries/times/locations (*e.g.*, bluefin tuna spawning season in the GoM). The expanded coverage requirements vary in time and space from year to year (NMFS 2017a). The POP is currently developing a protocol to monitor an experimental pelagic gear project in the GoM and will utilize the POP observer corps for data collection. Annual observer sea days are variable. From 2007-2011, the annual number of deployment days ranged from 1,409 to 2,401 (Keene 2016), and in 2016, there were 1,230 observed hauls during 2,079 observer sea days.

4.7.3.1.2 Regional fisheries

The US Western Atlantic pelagic longline fishery operates from Newfoundland to Brazil as well as in the GoM. Much of the fishing effort occurs outside of the US 200-nm EEZ. Of the >195 permits issued by the Southeast Regional Office (SERO) for directed tuna, swordfish and sharks (SERO 2017), there are approximately 85 active pelagic longline permits (Keene 2011). A vessel typically carries an observer at least once every 3 years. Observers board vessels at the port of the vessel's choice anywhere on the east or Gulf coast. At least one vessel regularly utilizes a port in Trinidad. Vessels range in size from 35-90 feet. Trips can last from 2-45 days (averaging 10 days) and take place throughout the year.

4.7.3.1.3 Program organization

The POP has six staff based at the SEFSC Miami Laboratory - two permanent federal FTE employees (Program Manager, Debriefers), and three full-time contracted Observer Coordinators (Riverside). One full-time Assistant Debriefers (University of Miami) works under a cooperative agreement with the SEFSC. In the past, the POP also employed a federal Observer Coordinator but this position is currently vacant. During the course of this review, the Program Manager position was vacated and is being covered by the SEFSC Branch Chief, and one of the contracted Observer Coordinators left the program and has been replaced. In addition, 15-25 fisheries observers are hired by Riverside to perform at-sea data collection on commercial pelagic longline vessels. In 2016, there were 10 new and 14 experienced observers deployed by the POP. In addition to contracted personnel, the POP relies on both OLE and USCG personnel for both training and at-sea support. The observer's primary points of contact are with the Observer Coordinators and Debriefers (Figure 18).

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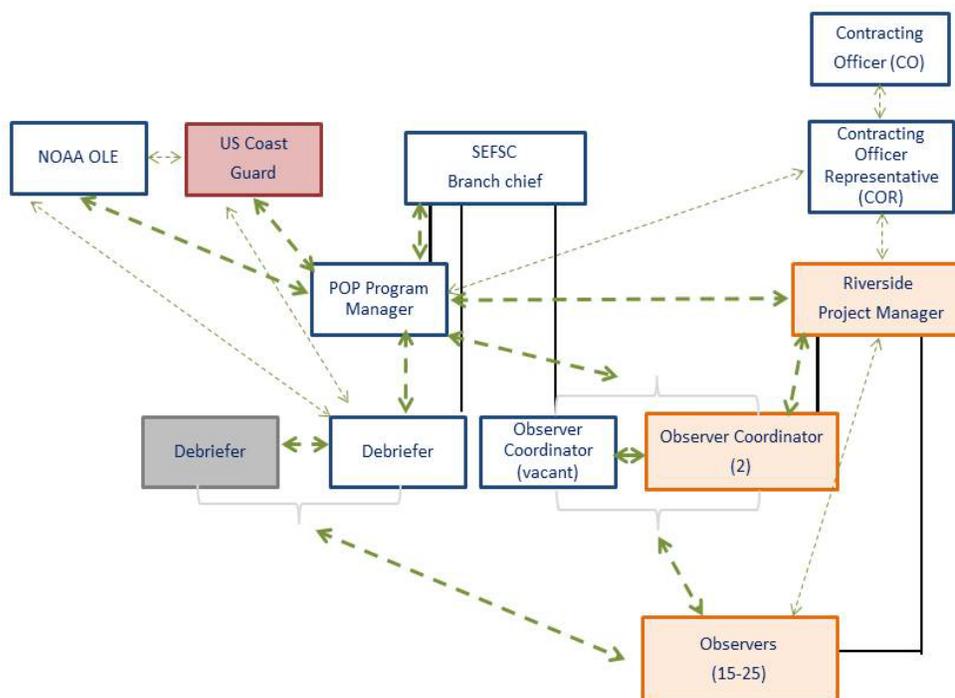


Figure 18 - SEFSC POP hierarchy and predominant communication connections

Heavier weight dotted lines indicate primary communication and lighter weight is secondary. NOAA Fisheries personnel are indicated with white boxes; prime contract personnel are displayed in orange; red indicates USCG and grey University of Miami staff.

4.7.3.2 Observer safety training

4.7.3.2.1 Training program organization

A full observer training course, taught by both NOAA Fisheries and contracted POP staff, was held in January 2017 at the SEFSC Miami Lab and lasted 13 continuous days. The reviewer was informed by program staff that the course included working through the weekends due to Federal Travel Regulations (301-11.21) mandating the agency to determine the most cost effective situation when travel status requires a stay which includes a non-workday. A mixture of new and experienced observers from both the POP (nine new / five experienced) and Panama City observer programs (two new / one experienced) were in attendance. Experienced observers only attended the health- and safety-related modules as part of their refresher requirement. To become a certified POP observer, the trainee must pass with a score of 80% overall; scores are weighted 40% safety (test), 50% sampling protocols and 10% class participation. In addition, students must be able to demonstrate 19 safety skills to the satisfaction of the trainers. All students who completed the course passed the training (Appendix 12).

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4.7.3.2.2 Safety and survival training

The safety component of training lasted 4.75 days for new hires and 4.5 days for experienced observers attending as a refresher. The safety modules were taught by the Program Manager, a long-term AMSEA-certified marine safety instructor, and two recently AMSEA-certified Observer Coordinators; two experienced AMSEA-certified marine safety instructors from the NEFSC FSB were also present. One NEFSC FSB trainer also acted as the certified lifeguard for the pool activity and assisted as needed whereas the other was auditing. Neither NEFSC FSB trainer was assigned specific topics to co-teach in the classroom. It was the reviewers' impression that the program wanted to maximize the teaching experience of the new trainers. All POP trainers have basic first aid/CPR certifications; the Program Manager also has advanced certifications for first aid, first responder, firefighting and hazardous materials. Both new and refresher trainees signed a training liability waiver describing the risk of safety training (Appendix 16) and an acknowledgment form of POP's at-sea safety policies (Appendix 17). A copy of the signed forms is available to the observer upon request.

An OLE Special Agent presented on violation documentation and what to do if harassed. USCG staff presented on MARPOL requirements and Damage Control (DC) fundamentals including pipe patching, plugging, shoring techniques, and a demonstration of the USCG P6 dewatering pump. Operation of the pump would normally be demonstrated and each trainee would be required to start and operate the pump. However, the pump was not operational at this session. All DC instruction was provided in a safe manner with hands on instruction in a DC trainer located at the local USCG base. The USCG did not specifically address commercial fishing vessel safety requirements.

Safety modules generally conformed to the Observer Safety Training Standards (Appendix 10; (NOAA Fisheries 2007a)) although in some cases it was difficult to quantify exact durations by topic due to their inclusion either in a more generalized module or spread over multiple modules. Many supplemental topics were also taught (Appendix 11) and skills demonstrated (Appendix 12). The bulk of safety training occurred in the classroom with the exception of PFD/immersion suit and life raft activities at the pool, firefighting with a Bullex® ITS Extreme system and signal mirrors in the Miami Lab parking lot, and flooding control exercises using the DC trailer at the USCG station. Live flare activities were not conducted due to overhead air traffic limitations. Drills and other related exercises were not performed aboard a vessel due to the lack of fishing vessels based out of Miami.

Overall, health and safety presentations were effective and presented factual information. There were a few instances when audio-visual devices/materials were not ready for use, module objectives did not have specific performance or measurable standards, and information

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was not presented in the most logical sequence. Lesson plans provided to the reviewer do not appear to be updated with current presentation material and, for a few topics, were absent.

No.	Program	Discussion	Review Element(s)
1	POP	4.7.3.2.1	Training
	Finding	The standard training class is performed over 13 consecutive days with only one half day break. Lack of adequate down time can lead to mental fatigue and reduced teaching effectiveness.	
	Recommendation	The POP should allow at least one non-work day per week during training for trainees to rest, absorb the information provided, and tend to personal affairs. All other ROPs include at least one day off per week of training.	

No.	Program	Discussion	Review Element(s)
2	POP	4.7.3.2.2	Training
	Finding	Visiting trainers from the NEFSC FSB were not assigned specific topics to co-teach in the classroom although they did assist with the pool activity/field trip. The NEFSC FSB trainers appeared to be underutilized given their experience base.	
	Recommendation	Appendix 9 includes several questions and suggestions pertaining to the co-teaching requirement included in the Observer Safety Training Standards.	

No.	Program	Discussion	Review Element(s)
3	POP	4.7.2.3 4.7.3.2.2	Training
	Finding	When an injury occurs while deployed, observers typically provide their own treatment, and some report that they are often involved with providing first aid for crew. POP vessels frequently operate more than 24 hours away from medical facilities and in search and rescue (SAR) regions not covered by the USCG.	
	Recommendation	The POP should offer wilderness/marine first aid (as done by PIROP) to supplement basic first aid training. This option may also promote observer retention if offered after a certain number of deployments.	

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No.	Program	Discussion	Review Element(s)
4	POP	4.7.2.2.1 4.7.3.2.2	Training
	Finding	The frequency requirement for first aid/CPR certification is inconsistently presented among various POP documents. The safety policies provided in the observer field manual state “Observers must take First Aid/CPR every three years” (NMFS 2015). The POP Safety Policy sign-off form states “I agree to keep my CPR and First Aid training certifications current, and I will furnish the POP office copies of certification upon completion.” Typical Red Cross or American Heart Association first aid/CPR certification is valid for two years.	
	Recommendation	The POP should provide consistent information regarding frequency requirements (<i>e.g.</i> , two versus three years) for first aid/CPR training in policy documents, the observer procurement contract, and observer manual. The policy should also be identical to information provided by Riverside in the observer hiring packet.	

No.	Program	Discussion	Review Element(s)
5	POP	4.7.3.2.2	Training Communication
	Finding	Observers, new and experienced, must sign off on POP safety policies during training. However, policies may be added at any time, and at least one was added post-training in January. The primary in-person interaction with program staff is during training (<i>i.e.</i> , once every 3 years). In addition, a few safety policies described in the observer field manual are missing from the POP Safety Policy sign-off form. There isn’t a defined protocol regarding how to communicate safety policy changes to observers in the field in real time, which could leave some observers unaware if the only time they learn of new safety policy is at refresher briefing.	
	Recommendations	.1 The POP should include the following policies discussed during training or contained in the manual to the Safety Policy sign-off form: <ul style="list-style-type: none"> ○ I agree to wear closed-toed footwear on deck and understand that bare feet or sandals are absolutely forbidden. ○ I understand that swimming during deployments is prohibited. ○ I agree to report all injuries or illnesses to contract supervisor 	

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		and POP staff immediately (as per January 2017 training instructions). .2 The POP should implement a protocol to routinely communicate safety policies to observers in the field (annually at a minimum) and include a version/date on the Safety Policy sign-off form.
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No.	Program	Discussion	Review Element(s)
6	POP	4.7.3.1	Communications Training
	Findings	All communication systems have limitations. Satellite phones and communicators require a line of sight to the satellite which may require one to be exposed to the elements. VMS is required on all pelagic longline vessels and these systems have email capability. One approved VMS system has an emergency distress function. If warranted, OLE can request an individual VMS unit to report more frequently than the required time. Regional OLE staff can make this request through OLE headquarters and if approved, the vendor is notified to increase reports and charge OLE for the additional cost. This may be done for safety and/or enforcement purposes.	
	Recommendation	The POP should summarize email and emergency capabilities of approved VMS systems as an alternate mode of contact if InReach or other communication systems fail. Observers could be informed regarding which units have an emergency distress feature and trained to send a supplementary distress signal from this particular VMS unit.	

4.7.3.3 Observer equipment and maintenance

Safety-related equipment is issued to observers once they have passed the initial training course (Appendix 14). All gear is provided by the POP except the “bed bug detectors” which are purchased by Riverside if requested by an observer. Bed bugs are a relatively minor problem in the POP and have only been documented on a handful of vessels to date. Issued gear is tracked and updated monthly in a spreadsheet. An Observer Coordinator maintains the inventory, monitors for upcoming expiration dates and records the item, expiration date and observer name on a white board. As part of the debriefing process after each trip, observers complete a resupply form requesting replacement or supplemental gear. Replacement gear is sent directly to the observer prior to their next deployment. If an observer needs to buy a piece of essential safety-related gear in the field, he/she must get authorization from the Riverside Project

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Manager to make a purchase. If an observer leaves the POP, all gear must be returned to the POP except for a few of the expendable items.

While employed, observers are responsible for maintaining and visually inspecting their gear quarterly at a minimum or every trip. There is not a formal documentation procedure for gear maintenance although the observers agree to check all “POP-issued safety gear before each trip or quarterly (whichever is sooner) to ensure correct fit and working condition of each item” when they sign the POP Policy document during training. USCG NVIC 01-08 (USCG 2008) recommends each immersion suit be subjected to an air pressure test “at intervals not exceeding three years or more frequently for suits over ten years of age.” Immersion suit air pressure tests are not performed; however, all suits are retired after five years.

Personal Locator Beacons (PLBs) are registered to the POP by the Observer Coordinator or Program Manager using the NOAA online registration system.⁵⁰ Historically, PLBs are not replaced or updated until an observer experiences an issue or there is a critical hardware/software change. The Program Manager updates software on the issued InReach satellite communicator devices quarterly.

POP staff attempt to keep up to date with the latest technology as it relates to safety and at-sea communication equipment. One of the staff noted that the Program Manager was an “early adopter” of the InReach satellite communicators which have been issued since 2012. Prior to 2012, observers were issued GlobalStar satellite phones which were less reliable in terms of call success and more expensive. POP staff conducted a formal comparison of the cost, practicality, usability, and durability for the Iridium Extreme satellite phone and InReach Explorer (Morrell and Keene 2015). Overall, the InReach was the preferred device; however, there were merits to both technologies (*i.e.*, phone and satellite communicator) and the authors suggested that a hybrid device would be ideal. Observers noted the primary drawback to these devices is that they must be outside “in sight” of a satellite to transmit. There was also an initial learning curve with the InReach devices in terms of ease of use; however, a recent feature is the ability to synchronize with a Bluetooth-enabled smart device so messaging has become much easier. In addition to the InReach, observers are also required by regulation to have access to the vessel’s communication equipment such as satellite phone or radios (both SSB and VHF).

The POP has developed a very detailed safety manual which is issued to new observers and is also available online (NOAA Fisheries n.d.-a). The website also links to several safety-related videos and presentations.

⁵⁰ <https://beaconregistration.noaa.gov/RGDB/index>

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Instructions regarding equipment required on each deployment are inconsistent among various documents. The safety policies provided in the observer field manual state “The following health and safety gear will be issued to all POP observers and must be brought on board for every trip: Immersion suit with strobe and signal mirror, EPIRB, automatic inflatable PFD (may substitute another USCG-approved PFD for the issued PFD upon agreement with POP staff), and First Aid Kit.” The POP Safety Policy sign-off form states “I agree to never deploy on a vessel without having my required POP-issued safety gear in my possession, including an immersion suit, personal PFD, and POP issued EPIRB.”

Although the POP maintained a valise liferaft for vessels with inadequate liferaft capacity in the past, the pyrotechnics in the SOLAS A pack became problematic for shipping so this option was discontinued.⁵¹ Vessels can rent a larger liferaft for a trip (if necessary) in order to carry extra personnel. Some vessels will leave a crewman on shore for a trip to accommodate taking an observer; however, this may interfere with gathering unbiased data of “normal” fishing operations on those vessels.

No.	Program	Discussion	Review Element(s)
1	POP	4.7.3.3	Equipment Practices/Policies
	Finding	Instructions to observers regarding equipment required on each deployment are inconsistent among various documents.	
	Recommendation	The POP should modify all relevant documents to include consistent instructions for required gear for each trip. In addition, the required gear list should be updated to include InReach satellite communicator, foul weather gear and boots.	

4.7.3.4 Vessel selection and notification

Permits are randomly selected for observer coverage every calendar quarter based on the pool of permits that had fishing effort in the previous year during that quarter. Approximately one month before the end of a quarter, the Program Manager generates a list of vessels selected for observer coverage in the subsequent quarter. An Observer Coordinator uses this list to generate vessel selection letters and mails a vessel selection packet via certified mail to the address on record for the permit holder. The vessel selection packet consists of the following items:

⁵¹ However, 49 CFR 173.219 provides shipping exemptions for ground transportation of life saving appliances containing small quantities of hazardous materials.

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- Selection letter for observer coverage, time period coverage will be required, minimum number of sets that must be observed and description of observer requirements;
- Handout “Important information for pelagic longline vessels...” describing the roles of the observer and vessel personnel, liability insurance riders for the vessel paid by POP, the vessel selection process, and how the 8% coverage requirement was determined;
- Response form (with instructions) which includes contact information, vessel location, general vessel characteristics (USCG dockside exam decal number, life raft capacity, communication equipment on board), and estimated date/time/location of departure and return;
- USCG Commercial Fishing Vessel Safety examiner inspector contact list;
- Handout describing “Important things to know about carrying an observer”; and
- Observer Health and Safety regulations (50 CFR 600.746; 2-pages).

Much of this information is intended to be for the vessel operator (captain), but there is no way to confirm if it is passed to the captain if the permit holder and captain are different people. When the permit holder or captain checks in, the Observer Coordinator verifies trip dates and ports, contact information, and adequate liferaft capacity for all on board (including the observer); and generally reviews expectations. If there were safety issues reported by observers on past trips, a there is discussion regarding the status of these issues. In addition, he confirms the vessel’s USCG safety decal is up to date on the Port State Information eXchange (PSIX) system (USCG 2017a). POP office staff does not perform vessel inspections or observer pre-deployment meetings due to the wide geographic distribution of the observed fleets.

Although vessels have the full quarter to check-in, the current Observer Coordinator calls permit holders who fail to respond after the 1-month, 2-month, and 10-week time periods. POP documents all communications with selected permit holders and submits documentation to NMFS OLE if a vessel fails to take an observer during the selection period.

Waivers for observer coverage are not issued unless an observer is not assigned by the POP for a fishing trip and the waiver is consistent with other applicable laws (50 CFR 635.7(d)). Reasons for not having observer coverage might include observer refusal to accept the trip or embark the vessel after completing a PTVSC (see also section 4.7.3.6), inadequate number of observers available to deploy, or observer service provider unwilling to deploy observer personnel to a specific vessel that has had chronic harassment problems. The latter is the observer provider’s right under the contract terms stating “the Contractor may choose not to place an Observer on a vessel if it finds that the facilities for housing the Observer or for carrying out Observer functions are inadequate or unsafe and that the health or safety of the Observer would be jeopardized.”

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No.	Program	Discussion	Review Element(s)
1	POP	4.7.3.4	Practices/Policies
	Finding	The POP's vessel selection letter language regarding the purchase of liability insurance riders for vessels is obsolete.	
	Recommendation	The POP should remove language pertaining to NOAA Fisheries purchasing insurance riders in the vessel selection letter document titled "Important Information for Pelagic Longline Vessels Selected for Observer Coverage."	

4.7.3.5 Observer selection and notification

Observers are selected for a given trip by the Observer Coordinator based on duty roster position, availability, and logistical considerations. The Observer Coordinator strives to assign observers according to their rotational order, location, availability, history and future time-off requests. As a general rule, observers are provided with 2-3 days' notice for a trip which allows for preparation and travel time. Less than 24-hours' notice can occur albeit rarely. At the time of trip notification, the observer is informed of the vessel, port, and estimated trip dates, and is thoroughly briefed on any health or safety issues encountered by the previous 2-4 observers using information provided during debriefing (see section 4.7.3.7). Given the information provided, the observer can either accept or decline the trip. If the observer accepts a trip, the observer takes over coordination of logistics with the vessel for that trip. If the trip is declined for a health, safety or short-notification reason, the observer retains the current roster position. If the trip is declined for personal reasons, the observer moves to the bottom of the rotation. Since there are only 15-25 observers in the POP, getting adequate deployment time is only occasionally an issue and tends to occur when fishing effort declines in the fall.

4.7.3.6 Deployment and at-sea support

Observers drive their personally-owned vehicle (POV) to most deployments although on occasion will need to fly to meet a vessel. Observers leave their POV in the port of embarkation and a few remarked that they do not always feel their car is safe.

Observers must check-in via email/text six times while traveling to and from a vessel; they must report the following in real time:

- When the observer leaves their home;
- When the observer arrives to their hotel or port of departure;
- When the vessel leaves the dock;
- When the vessel arrives back at the dock;

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- When the observer begins travel home; and
- When the observer arrives home.

Once the observer arrives at the vessel, the observer must complete a PTVSC (Appendix 13) which outlines the minimum safety equipment requirements; all items on the POP's PTVSC are considered "no-go" items. The POP provides a thorough list of additional items to keep in mind during the initial tour of the vessel in the Safety Manual (similar to the SGOP/SBLOP list in Appendix 20). If any item is missing or deficient, or for any other reason the observer feels their health or safety could be at risk, the observer is instructed to delay boarding and immediately contact the POP. If the observer finds a no-go deficiency in the checklist (*e.g.*, expired hydrostatic release), the vessel will be required to fix it prior to departure. If the observer finds a deficiency that's not a no-go item and refuses the trip for safety reasons, one of two scenarios may occur: 1) the vessel goes on this trip without an observer and checks-in for next trip, or 2) the vessel delays departure to fix it and calls in again when they are ready to depart. The vessel is considered to be in "non-compliance" in the event of scenario 1, and may be reported to OLE if observer coverage is not achieved during the selected quarter. The latter scenario may require the vessel to wait for a new observer to be assigned.

Once an observer embarks on a trip, weekly check-in via the InReach satellite communicator is required. If an observer fails to check in weekly, an Observer Coordinator will reach out to the observer via InReach to ask how the trip is going. The Observer Coordinator can also ask the Program Manager to check if there is any account activity occurring in their personal messages. If there is activity, the program assumes they are okay. The staff remarked that one observer consistently fails to report weekly using the InReach due to technological skill limitations, and the program more or less assumes the observer is okay. The weekly check-in includes 1) last known position for safety (automatic with the InReach); 2) work status code (Table 5); 3) confirmation of ability to sample; 4) alert lab to an emergency or request assistance; and 5) report work hours. All communications are archived by the program. Since there are not many observers deployed at any single point in time, keeping track of who has or hasn't checked in does not require any sophisticated recording system or a large amount of staff time.

Work Status Code	Definition
0	I'm OK, work OK
1	I'm OK, work rough but workable
2	I'm OK, work not OK but workable
3	I may not be OK, Work not OK
4	I'm not OK, Work not OK

Table 5 - InReach work status codes utilized by the POP

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For work status codes 0, 1 and 2, no immediate action is taken. Code 3 indicates a serious situation that should be well documented by the observer; OLE will likely be included in the debriefing process and if the observer desires, the POP will request OLE presence when the vessel returns to port. If code 3 is used, the observer may be asked to check-in more frequently. Code 4 indicates assault or the feeling that their safety is in jeopardy. This code may initiate an extraction or result in the vessel being ordered to return to port by OLE. Observers are instructed to be very careful with “code 4” and if used, are expected to continue monitoring the InReach device for a response. OLE depends on POP staff to determine if extraction is necessary. OLE will also want to talk to the observer directly but the extraction process is initiated immediately. Once a removal request is made for an observer safety reason (*e.g.*, harassment), OLE prefers to take the lead to activate a USCG extraction.

In response to the reviewer’s questions, POP staff noted that getting both observers and the industry to embrace a safety culture is challenging. Observers report that very few vessels perform drills, station bills are very basic and most of the man overboard incidents reported in section 4.7.3.8.1 were due to lack of crew inexperience. High crew turnover creates greater risk at sea; crew may be inexperienced or not know what to do in case of an emergency. Logistically, the office location is not in a fishing port, therefore there is no opportunity for POP staff to perform any vessel inspections or pre-deployment meetings as is done in some other regions. There is a SEFSC-wide travel cap which limits the POP’s ability to deploy NOAA Fisheries personnel on troublesome vessels. Also, fishery location can be a challenge due to the nature of operating so far offshore. The vessel condition (*e.g.*, lack of maintenance), operational practices (*e.g.*, lack of lookout while adrift, inconsistent wheel watch while on auto-pilot, excessive smoking inside of vessel), very high crew turnover rate (captains fairly stable but crew turns over almost every trip on certain vessels), access to potable water and language barriers on some vessels pose unique challenges for the program. Perceived program strengths included safety training, thorough briefing on vessel history/issues prior to an observer accepting a trip, and availability of coordinators at nearly all hours of the day.

No.	Program	Discussion	Review Element(s)
1	POP	4.7.3.6	Practices/Policies
	Finding	The PTVSC instructions in the Observer Field Manual states that “if the battery expiration cannot be read or is missing, request captain/crew to test the EPIRB” which could be misinterpreted by the observer to go on the trip if the test shows EPIRB is operational. The Program Manager clarified that an actual battery expiration date is required and the observer should contact the office if it’s missing or unreadable.	
	Recommendation	Amend the PTVSC instructions to clarify that the EPIRB battery	

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	expiration must be present either on the EPIRB or safety exam documentation.
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No.	Program	Discussion	Review Element(s)
2	POP	4.7.3.2.2, 4.7.3.6	Training Communications
	Finding	All observers must demonstrate how to use their issued PLBs during training so in an emergency the POP is confident that the observer would correctly activate the PLB. Observers are not required to demonstrate their ability to use the InReach satellite communicators.	
	Recommendation	POP training should include methods to verify all observers are proficient with the primary modes of communication (<i>e.g.</i> , all able to email or text via InReach if that's the primary mode; communicate with cell/smart phone if that's required; have a printer or ability to add digital signature for important documents sent via email, etc). If individuals are not comfortable with a given piece of technology, the program or provider should offer supplemental training until they meet basic competencies.	

4.7.3.7 Debriefing

Upon return from a trip, observers must immediately contact the Miami Lab by email or phone to discuss post-trip details and determine whether an observer should remain on site for a debriefing or return home. After the observer ensures the data are accurate, they make copies of all data forms and send the originals to the POP. Once the data are received, a POP Debriefing contacts the observer by phone to arrange a time for a debriefing. During debriefing, observers are provided feedback on their data collection, data questions are resolved, information is shared, and field supplies are replenished. The Debriefing completes the Debriefing form which includes several questions regarding living and working conditions, general comments about the vessel, problems or issues they want to pass on to the next observer, illness/injury, evidence of staph (*Staphylococcus*) on board, and near miss/close calls. The Debriefing form is filed in a vessel-specific folder and utilized by the Observer Coordinator the next time the vessel is selected for coverage. A trip is not considered complete until the observer returns to their duty station and the data are debriefed.

In response to a 2013 Administrative Inquiry (NOP and NOPAT 2014, U.S. Dept. of Commerce 2013), the SEFSC and OLE developed guidance and priorities for referring observer violations (Beerkircher *et al.* 2013). For each trip the observers complete an incident report asking "Did

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you witness any drug and/or alcohol usage, or other unsafe operations that you feel affected your safety or impeded your duties while offshore?”, “Did you witness any fishery violations?”, and “Did you witness any MARPOL violations?” If the report contains affirmative responses, the debriefer forwards the medium and high priority statements to the appropriate agency (usually OLE or USCG for MARPOL; (Beerkircher *et al.* 2013)). Low priority violations are maintained at the program level and should be forwarded if a violation becomes a chronic issue. All fisheries violations/incidents from SEFSC observer programs are also shared with OLE personnel using a Google Sheet. The Sheet fields include:

- Time stamp
- User name
- Trip, Vessel Name?
- Vessel Documentation Number?
- Date of the report?
- Violation Severity?
- Please provide a brief description of the violation(s) reported;
- NOAA OLE or USCG Violation Report?
- Program name; and
- Was there follow up action taken by an enforcement agency

Affirmative MARPOL incident reports are emailed to USCG personnel in the HMS Enforcement Working Group (using the encryption program—Accellion⁵²). The POP does not receive regular communication regarding status of reported violations from OLE or USCG. Status is available if the POP makes a direct request but otherwise neither POP staff nor the observer are informed regarding what happened to the information reported. OLE staff provided a summary of some incidents reported since 2013 which included four cases of observer intimidation or harassment and one fatality due to illness. Of these, two harassment cases were forwarded to the NOAA Office of General Counsel Enforcement Section (GCES).

4.7.3.8 Observer incidents

4.7.3.8.1 Reporting and tracking procedures

Observers must report any illness/injury that requires medical attention (including first aid) to the Riverside Project Manager upon return from a trip. The Project Manager completes an incident form as described in section 4.7.2.3.

As a result of an observer fatality involving an observer deploying with minor cold symptoms, and an observer who allegedly bumped his head which later resulted in the formation of a blood clot, all incidents must also be reported to the POP immediately using InReach (if at sea)

⁵² <http://www.accellion.com/>

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or cell phone (if assigned but not yet on board). Both incidents involved relatively minor initial events which became severe in a very short time period.

In addition to reporting to the employer and to the POP office, all incidents are reported to the Debriefing and recorded on the Observer Debriefing Form. The illness/injury data are compiled into a spreadsheet by an Observer Coordinator. The POP provided the reviewer with raw illness/injury data for 2011 through the first quarter of 2017. Of the 156 incidents reported by observers to the POP in the last 6 years where the observer declared their personal health was impacted, most were due to injury (49), illness (45) or motion sickness (43; Figure 19). The biting “bugs” category included bed bugs, ants or unidentified arthropods. Observers also noted 75 occurrences of crew infection, typically associated with confirmed staph or staph-like symptoms. Staph (*Staphylococcus*) bacteria are common on the skin and nasal passages. Most of the time, staph is harmless; however, occasionally staph causes skin infections as well as more serious responses (CDC 2011a, Mayo Clinic Staff 2014). Furthermore, there were 26 serious incidents: 8 fires (including 3 leading to lost propulsion), 3 flooding (including 1 sinking), 8 man overboard and 10 lost propulsion events that required towing back to port.

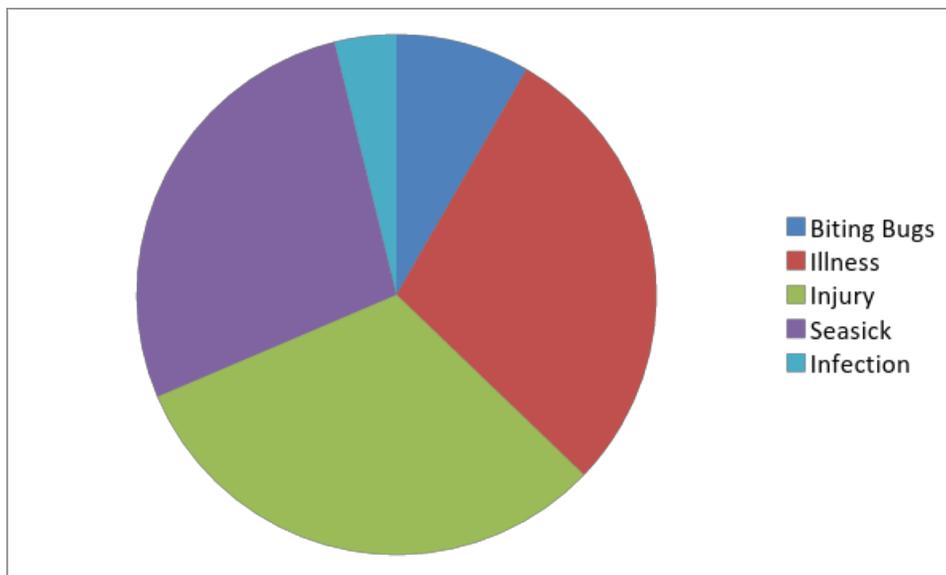


Figure 19 - Proportions of observer illnesses and injuries reported to the POP.
Data for 2011-2017 (Q1) courtesy POP (n=156)

Observers have several options in case of an emergency. They can use one of their satellite devices – InReach or PLB – or one of the vessel’s communication options (satellite phone, VMS email, marine radio). Observers receive training on program-issued equipment and marine radios but use of the vessel’s equipment would require the assistance of the vessel. Observers are not routinely instructed on VMS email capabilities. Of the four VMS units currently approved by NOAA Fisheries, only one has an emergency distress function.

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4.7.3.8.2 Response to, and investigation of observer incidents

Responses to minor incidents are documented on the debriefing form discussed in section 4.7.3.7 and addressed as appropriate.

The POP developed a detailed bed bug protocol, although it has not been formally incorporated into the safety manual due to the contractual vetting process. In general, observers must report bed bug issues to the POP immediately via InReach. If an observer reports bed bugs for a given trip, the POP ships a large pelican case and extra UPS labels to the dock for when the vessel arrives. The observer is instructed to pack all of their POP-issued equipment into the case and send it back to the program where it is placed in a freezer for a minimum of 72 hours, a practice which has been demonstrated to kill 100% of all bed bug life stages (Olson *et al.* 2013). Occasionally, this equipment is sent to the Panama City lab for the freezing process if it's more logistically advantageous. Personal gear is not explicitly included in the POP protocol at this time although the Riverside Project Manager indicated that personal belongings have been included in the freezing procedure in the past.

The observer must also communicate bed bug issues to the observer provider and include information on steps that may be required to keep the bed bugs from spreading when traveling. The observer provider submits a cost estimate to the COR for approval before any preventive measures can be taken.

No.	Program	Discussion	Review Element(s)
1	POP	4.7.3.8.2	Practices/Policies
	Finding	The POP has drafted a detailed bed bug response protocol but it has not been finalized.	
	Recommendation	The POP should finalize the bed bug protocol and formally incorporate it into the POP Safety Manual. Personal belongings should be included in the freezing treatment to minimize the risk of contaminating the observer's own dwelling.	

4.7.3.8.3 Emergency Action Plans/Emergency Notification Plans

4.7.3.8.3.1 EAP/ENP general description

The POP has an Emergency Notification Plan (ENP) which is updated any time there is a change to a contact or their information. The POP also maintains an Emergency Action Plan (EAP) which addresses several emergency types including medical emergencies, fire, flooding, severe weather and natural disasters, other accidents, extended power loss, harassment and intimidation and emergencies that occur during land-based training. Riverside's Project

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Manager is included in the ENP but for the most part the POP Program Manager is the primary point of contact once the ENP/EAP is initiated. The Program Manager updates the EAP at least twice per year.

The POP's ENP/EAP has been initiated twice in the last 24 months. In both cases, the observer was involved in a medical emergency that warranted the vessel contacting the POP, and the POP very quickly deciding to initiate helicopter evacuation by the USCG. Both observers were delivered to a hospital within 10 hours of initial contact with the program. Overall, the Program Manager is satisfied with the response of staff and the USCG; the ENP/EAP functioned as written. Detailed incident notes were maintained as well as a formal Incident Evaluation Report (IER) to the SEFSC. The IER contains a description of incident successes, factors that promoted the success, areas for potential improvement including deficiencies/weaknesses, and lessons learned (Appendix 18). Through use of the ENP/EAP for actual incidents, the program learned that the observers' emergency contacts need to be updated at least yearly.

Despite having an EAP/ENP which primarily addresses incident management, a process for taking detailed incident notes and a formal incident evaluation procedure, there are several essential EAP components which are absent. EAPs should contain three primary elements: incident management, crisis communication, and long-term considerations (Ajango *et al.* (2004a), Ajango (2005)). Incident management should provide immediate aid to the person involved in the incident, clarify leadership roles, identify if rescue (*e.g.*, extraction) is necessary, identify means for initiating and executing a rescue, and address other miscellaneous responsibilities. Crisis communication should identify all of the potential stakeholders and people the incident may impact and describe their roles/duties in as much detail as possible. Stakeholders include but are not limited to the Program Manager and his/her supervisors, provider Project Manager, Observer Coordinators, other program personnel, office/owner of vessel, USCG, medical person in charge on the vessel or captain, doctor/clinic observer is being transferred to, observer's emergency contacts, insurance carrier, NOP and other relevant NOAA Fisheries headquarters staff, POP observers, NOAA Fisheries staff and providers outside of the program, and applicable union or association representatives. Some of the tasks that will need to be accomplished as part of crisis communication are to keep detailed records, compile/preserve all relevant paperwork such as consent and medical history documents that were disseminated to or signed by employees, locate and preserve records of the purchase, maintenance and condition of applicable equipment that was being used at the time of the incident, compile and document information on the training regimen that was used to educate employees, and compile and document information on the supervisor's and trainer's background and credentials. Finally, the long-term considerations should include how the program will provide ongoing and long-term support to the injured party and family members,

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provide ongoing support to uninjured employees and others involved in the incident, conduct an investigation, evaluate effectiveness of the EAP, and draft an incident report to ensure transparency.

4.7.3.8.3.2 EAP/ENP implementation experience

The 2016 fatality of observer Josh Sheldon offers an opportunity to evaluate the ENP/EAP in the context of the Ajango *et al.* (2004a) recommendations. The following chronology was compiled using documents provided by the POP, conversations with POP staff and observers, electronic communications with the observer's family and legal representative, and publicly accessible court documents including the petition for damages (Sheldon v. C & C Fishery LLC and Riverside Technologies Inc. Submitted in 2017). The incident management component functioned well, providing a direct response once the POP was notified of the problem (full ENP/EAP activation occurred 22 minutes after initial notification). The EAP had clearly outlined that the Program Manager was the primary contact who facilitated all decisions and communications. The Program Manager asked the Observer Coordinator to attempt to speak with Mr. Sheldon directly via satellite phone. After learning that Mr. Sheldon was unable or unwilling to talk on the vessel's satellite phone, which was deemed completely out of character, the Program Manager knew exactly who to contact in the USCG Search and Rescue division in order to initiate an extraction. Concurrent with USCG communications, the Program Manager also implemented the ENP so that POP federal and contracted staff, the Riverside Project Manager, SEFSC supervisors and director and the NOP were aware of the incident. The Program Manager assisted the USCG with communications with the vessel's captain and fish house as needed. The USCG provided a direct number to the officer in charge and instructed the Program Manager to call for updates as needed. Due to the vessel's location offshore, the USCG also had to coordinate landing and re-fueling on at least one oil platform. From the time the USCG was notified to the time of pick-up was eight hours, and delivery to the hospital occurred within nine hours of ENP activation. The Program Manager maintained detailed incident notes in terms of who was called by whom and when. Crisis communication with most of the primary stakeholders also worked smoothly. However, notifying the family was somewhat problematic as emergency contact information wasn't readily available to the POP office staff, and relied on the Debriefers' personal contacts to track down the family. Also, ease of contact with the vessel was challenged by the poor quality of the vessel's satellite phone connection. There were language barriers with the vessel's captain which made it uncertain if the USCG instructions to transit to a specific oil platform were understood. However, the Program Manager verified the vessel's movement in the correct direction using the vessel's VMS. Once the helicopter delivered Mr. Sheldon to the Ochsner Westbank Medical Center in Gretna, LA, the Program Manager's role was somewhat reduced as the USCG and later, OLE, became involved. On the fourth or fifth day after hospitalization, the family/medical providers requested additional

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information from the vessel via the Program Manager. The vessel had continued fishing and contacting the vessel was again challenging; no one was entirely satisfied with the information acquired at that time. According to the legal petition, Mr. Sheldon was exposed to methicillin-resistant *Staphylococcus aureus* (MRSA) on the vessel and at the very least, notifying the vessel personnel regarding additional measures they should take to prevent additional MRSA events on the vessel would have been useful. In the State of Louisiana MRSA is a Class C disease and cases must be reported to the Office of Public Health within five business days (LAC 51:II.105). In accordance with established policy, the USCG did not complete a formal investigation because the death was initially deemed to be due to natural causes, and any official OLE report was not available at the time of this report.

Crisis communication with the secondary tier of stakeholders could have been improved. For instance, no formal communication went out to the current POP observers, which left many of them to learn about the medevac and subsequent death of a co-worker through informal channels which may or may not have included accurate information. General information on health status (*e.g.*, stable or critical) could have been communicated to observers and other stakeholders, which would have minimized stress and increased trust in NOAA Fisheries among the observer corps (CDC 2014). One reason posed for the lack of communication outside the immediate chain of command was a fear of violating the HIPAA Privacy Rule. However, this rule only applies to “Covered Entities,” defined by the regulations at 45 CFR 160.103 as: “(1) a health plan; (2) a health care clearinghouse; and (3) a health care provider who transmits any health information in electronic form in connection with a transaction covered by (this) subchapter.” The rule also applies to business associates, “which are vendors that provide services involving personal health information for or on behalf of Covered Entities” (Neuberger and Welle 2017). NOAA Fisheries does not fit the definition of “covered entity.” Beyond immediate crisis communication and incident documentation, the reviewer was unable to confirm whether any of the other tasks recommended by Ajango *et al.* (2004a) and Ajango (2005) were performed.

Finally, the type or the extent to which Riverside’s insurance covered medical expenses as Mr. Sheldon was hospitalized for nearly 10 days before passing are unknown. Additional long-term considerations are also unknown as the family is in litigation with the employer and vessel owner regarding this incident, and none of the parties have been fully forthcoming with information on how the situation could have been handled differently (Sheldon v. C & C Fishery LLC and Riverside Technologies Inc. Submitted in 2017). NOAA Fisheries staff were offered the option to contact a counselor to address any negative impacts of the incident but the Program Manager did not know if the service was utilized. Observer personnel were not offered any formal emotional support vehicles.

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4.7.4 Southeast Gillnet (SGOP) and Shark Bottom Longline Observer Programs (SBLOP)

4.7.4.1 Program description

4.7.4.1.1 Program history

The Southeast Gillnet Observer Program (SGOP) was initially authorized in 1992 under the MMPA due to suspected interactions with the Northern right whale in the shark drift gillnet fishery off Florida and Georgia, but was expanded into other gillnet target fisheries as data needs for shark stock assessment arose (NOAA Fisheries n.d.-e). The Shark Bottom Longline Observer Program (SBLOP) started in 1994 (NOAA Fisheries n.d.-d). Amendment 2 to the Consolidated Atlantic Highly Migratory Species FMP in 2008 implemented a shark research fishery, which allows NOAA Fisheries to select a limited number of commercial shark vessels on an annual basis to collect life history data and catch data for future stock assessments (NMFS 2006, 2008).

The Shark Population Assessment Group within the SEFSC Panama City Laboratory (PC Lab) provides shark stock assessments for NOAA Fisheries, and began deploying scientific (fisheries) observers on the shark bottom longline fleet in 2006 as mandated by the FMP for Sharks in the Atlantic Ocean (NMFS 1993). The PC Lab is now the base for SGOP and SBLOP. Prior to 2006, these observer programs were operated and managed by the Florida Museum of Natural History.

The Western Atlantic and GoM shark fisheries are managed by the Atlantic HMS (as described in section 4.7.3.1.1). The PC Lab also deploys observers to several fisheries on an *ad hoc* basis depending on funding from grants or other NOAA Fisheries divisions or shark stock assessment data needs.

Observers are required pursuant to Atlantic HMS requirements under the MSA codified at 50 CFR 635.7 for federally permitted vessels, South Atlantic snapper/grouper regulations at 50 CFR 622.178, and the MMPA (50 CFR 229.3, 229.7) for state fisheries. Safety-related items in the regulations include: 1) requirement of notice of trip departure date/location and return date/location; 2) observer accommodation requirements; and 3) observer access requirements to communication and navigation equipment, vessel logs, catch, etc. (Appendix 3).

4.7.4.1.2 Regional fisheries

The SGOP currently covers several types of gillnet gear (drift, strike and anchored) in the GoM and South Atlantic coastal states (SAtl), and several target fisheries (small and large coastal sharks, Spanish mackerel, king mackerel, and bluefish). The gillnet fleet includes about 500 federal permit holders (SERO 2017) as well as an undetermined number of state permit holders

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(Table 6). Target observer coverage for federal and state gillnet permit holders is 5-10% of trips; however, coverage rates for state fisheries are challenging to calculate due to insufficient information regarding numbers of active permit holders/vessels and knowledge of fishing effort. In 2015, observers were deployed on 49 federally permitted gillnet vessels (134 trips) and sampled 421 sets (Mathers *et al.* 2016a). Most of these vessels were small (<40') and made day trips only. In 2012-2015, the SGOP deployed observers on 34 state-permitted gillnet vessels in Alabama and Louisiana (Mathers *et al.* 2016b).

The shark bottom longline fishery operates in both the GoM and SATl (primarily off of FL and NC). There are approximately 198 permits in the directed shark fishery and 252 with incidental shark permits (SERO 2017). Target observer coverage for these vessels is 5-10% of trips. In addition, 4-5 vessels are selected each year to operate in a research fishery which requires 100% observer coverage (NMFS 2008). Trip length is typically 1-2 days for the directed shark fishery and 7-10 days for the reef fish vessels with incidental shark permits (Table 6). In 2014, observers were deployed on 8 bottom longline vessels (94 trips) and sampled 126 sets (Enzenauer *et al.* 2015a). The GoM reef fish fishery is primarily observed by the Reef Fish Observer Program (RFOP) based at the Galveston Lab (described further in section 4.7.5). However, the SBLOP also includes the reef fish permits in its selection pool if the vessel has landed sharks using bottom longline gear as incidental catch. The two programs coordinate observer coverage when the same vessel is selected by both programs in the same quarter or selection period.

In 2014-15, the PC Lab also deployed observers on 15 of the nearly 650 vessels with snapper/grouper permits operating in the southeastern Atlantic. These reef fish vessels fished vertical hook-and-line gear which was either trolled or fished in a stationary position (Enzenauer *et al.* 2015b). Trips were short (avg. 2.1 days).

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Fleet (target)	Fishing location	# permits†	Vessel length (range; ft)	Crew size	Trip length (days)	Coverage days (2016)	Observer coverage rate	Frequency of observation (estimates per vessel)
Gillnet (multiple; includes both state & federal fisheries)	SAtl & GoM;	Fed:~500;	Federal: 25-40’;	Fed: 2-3;	1	Fed: 81	5-10% of trips*	Fed: Once every three months if seasons/weather optimal. otherwise, once or twice a year;
	Fed. predom. NC & FL; State: MS, AL, LA	State: Unknown	State: 25-30’	State: 1-2		State: 16		State: Difficult to determine; total effort data incomplete
Bottom Longline (shark)	SAtl & GoM; predom. NC & FL	198 (directed shark permits)	30-40’	2-4	1.9 (avg)	38	5-10% of trips	Regular: once or twice a year
Bottom Longline (shark research)	as above	Select 4-5 of above	30-40’	2-4	1.6 (avg)	87	100% of trips	Once a month
Bottom Longline (reef fish)	GoM; predominately FL west coast	252 (incidental shark permits)	30-40’	2-3	10-14	48	Variable (funding dependent)	Once every three months, when funding allows
Vertical hook & line (snapper-grouper)	SAtl	544 (directed) + 110 (incidental)			2.1 (avg)	0	<10%	MARFIN grant funding for 2014 coverage only

Table 6 - SBLOP and SGOP fleet characteristics

*SAtl=South Atlantic; GoM=Gulf of Mexico; Fed=federal permits; State=State permits; *state coverage rate uncertain due to incomplete effort information. †Number of permits extracted from SERO permit database (SERO 2017). Sources: (Enzenauer et al. 2015a, Enzenauer et al. 2015b, Mathers et al. 2016a, b).*

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4.7.4.1.3 Program organization

The PC Lab has three staff - one permanent full-time NOAA Fisheries employee (Program Administrator) and two full-time contracted staff (Observer Coordinator and Assistant Coordinator) hired by Riverside. Until January 2017, the PC Lab also employed a second Observer Coordinator, but this position is currently vacant. In addition, approximately 10 fisheries observers are hired annually by Riverside to perform at-sea data collection; in 2016, there were 6 prior observers and 2 new observers deployed. The observers' primary contact is with the Observer Coordinators (Figure 20). Since the program is small, there is near immediate response for dealing with issues as well as quick response to initiating new programs.

There has been some recent Observer Coordinator turnover creating a shortage of office staff. The Program Administrator encourages the coordinators to participate in the scientific process (*e.g.*, data analysis and report writing) which he feels decreases office staff turnover. Program staff advised the reviewer that consistent funding has been a weakness, and the Program Administrator supplements the program budget with grant funding from other NOAA Fisheries divisions or semi-governmental organizations when available.

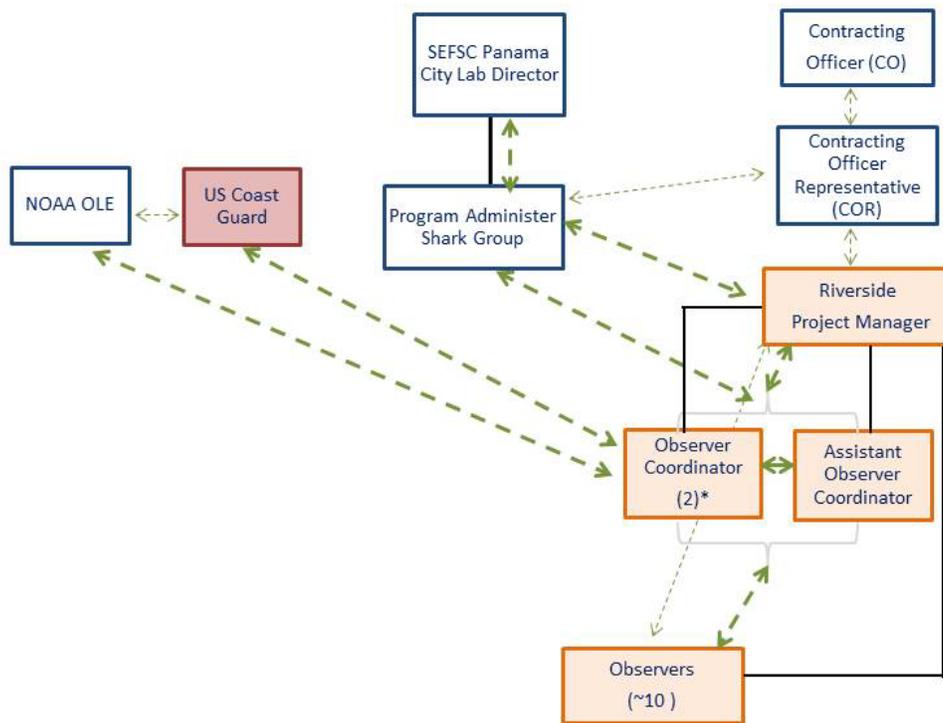


Figure 20 - SBLOP/SGOP hierarchy and predominant communication connections

*Dotted lines (heavier weight indicates primary communication and lighter weight is secondary). NOAA Fisheries personnel are indicated with white boxes; prime contract personnel are displayed in orange; red indicates USCG. *Not all positions currently filled.*

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4.7.4.2 Observer safety training

4.7.4.2.1 Training program organization

The PC Lab Observer Coordinator and Assistant Observer Coordinator are both AMSEA-certified marine safety instructors. The Observer Coordinator attempts to update presentations as new information is acquired through other programs, AMSEA Newsletters, MSIT refresher courses or lessons learned within the program. The SGOP/SBLOP did not perform any observer safety training during the Observer Safety Program Review period of performance; therefore, no direct observations of training at the PC Lab occurred. Training presentations were reviewed for content.

The POP performed a safety training session in January 2017 which included a mixture of new and experienced observers from both the POP and PC Lab observer programs (2 new / 1 prior). The POP training in Miami focused almost exclusively on the pelagic longline fleet which has a different risk profile relative to most of the fleets observed by the SGOP/SBLOP. See POP section 4.7.3.2 for further details.

4.7.4.2.2 Safety and survival training

When safety training is performed at the Panama City lab, it typically lasts five days for new observers and at least three for experienced observers. The PC Lab requires observers to sign a liability waiver for training (similar to the POP waiver in Appendix 16). Safety policies are listed in the observer manual (NMFS 2016b) although observers are not required to acknowledge them individually on a signed form. Panama City does not require a minimum exam score, but does require the demonstration of 16 skills. The PC Lab performs the in-water component of training in the harbor and has access to a vessel to practice more realistic drills. The PC Lab also requires trainees to demonstrate live fire extinguishing and flare and smoke signal skills. The local fire department coordinates the firefighting training using a flash pan fire. The distress signal practical training typically utilizes both smoke signals and hand flares.

USCG support is typically provided for training by use of their damage control trainer and P6 dewatering pump. A USCG fishing vessel safety examiner assists with the hands-on damage control trainer flooding activity while other USCG personnel provide instruction on the dewatering pump.

The PC Lab staff consider their health and safety training as one of the strengths of the program. Low observer turnover decreases training costs and risks to the program (five long-term observers make up more than 60% of current hires).

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No.	Program	Discussion	Review Element(s)
1	SGOP/SBLOP	4.7.4.2	Training
	Finding	OLE personnel provide enforcement-specific training to observers when training occurs at the Miami or Galveston Labs; however, OLE does not participate in training when it occurs at the PC Lab. USCG does not provide any training to this program regarding MARPOL.	
	Recommendation	The SGOP/SBLOP should request OLE and USCG support for training on violations and MARPOL, respectively, when training is performed at the PC Lab.	

No.	Program	Discussion	Review Element(s)
2	SGOP/SBLOP	4.7.4.2.2	Training
	Finding	Observers from the SGOP/SBLOP occasionally attend safety training at one of the other SEFSC programs. The POP training in Miami focused almost exclusively on the pelagic longline fleet which has a different risk profile relative to the fleets observed by the SGOP/SBLOP.	
	Recommendation	When training of SGOP/SBLOP observers occurs at an alternate location, provide program-specific materials pertaining to observed vessel risks or send a coordinator to participate in the training to ensure program-specific vessel safety issues are adequately covered.	

4.7.4.3 Observer equipment and maintenance

Safety-related equipment is issued by the SGOP/SBLOP (Appendix 14). No additional gear related to bed bugs is supplied at this time as bed bugs have not been documented. Issued gear is inventoried and tracked by the Observer Coordinators, and expiration dates monitored using a Google Sheet. Observers are required to inspect their immersion suit, PFD, PLB, personal marker light, and first aid kit, and report CPR/first aid expiration on a quarterly basis, and submit a gear inspection form to the Observer Coordinator. Observers are also asked during debriefing if they have any gear needs. New gear is typically mailed to the observer. In general, issued equipment meets USCG standards and maintenance schedules are appropriate to issued items with the possible exception of immersion suits (USCG 2008). Air pressure tests are not performed; however, all immersion suits are retired after ten years or if they are showing wear/damage.

PLBs are registered to the PC Lab by the Observer Coordinator using the NOAA online registration system. Observers also have a personal log-in option for their PLB so that they can

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modify individual trip information, which functionally becomes a float plan (although it's unknown how many observers take advantage of this option). Satellite phones with texting capability are only issued for longer trips (*e.g.*, 1-2 weeks in reef fish bottom longline).

The SGOP/SBLOP has one valise liferaft fitted with a coastal pack for vessels with inadequate liferaft capacity. It is available on a first come, first served basis and cannot be mailed.⁵³

4.7.4.4 Vessel selection and notification

Federal gillnet permits are randomly selected on a quarterly basis (January, April, July, and October) from a pool of vessels that had reported fishing with gillnet gear during the same quarter in the previous year. Longline permits are randomly selected for coverage if they possessed a valid directed shark permit, and reported fishing with bottom longline gear in the previous year. Approximately one month before the end of a quarter, the Program Administrator generates a list of vessels selected for observer coverage in the subsequent quarter. An Observer Coordinator uses this list to generate vessel selection letters and mails a vessel selection letter via certified mail to the address on record for each associated permit holder. The vessel selection packet consists of the following items:

- Selection letter for observer coverage describing the time period for required coverage, the minimum number of trips required (gillnet only), and a summary of observer health and safety regulations from MSA and MMPA;
- USCG Commercial Fishing Vessel Safety inspector contact list; and
- Fisherman feedback form.

When the permit holder or captain checks in, the Observer Coordinator verifies trip dates and ports, contact information, status of decal, and adequate liferaft capacity for all on board (including the observer).

Although vessels have the full quarter to check-in, the current Observer Coordinator calls permit holders who fail to respond within 1.5 months. If a vessel fails to take an observer when required, the Observer Coordinator forwards the appropriate documentation to OLE. Waivers for observer coverage are not issued unless there is a safety concern. For example, a few vessels are not observed due to space considerations and the ability of the observer to perform the job without compromising observer or crew safety.

⁵³ However, 49 CFR 173.219 provides shipping exemptions for ground transportation of life saving appliances containing small quantities of hazardous materials..

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4.7.4.5 Observer selection and notification

Observers are selected for a given trip by the Observer Coordinator based on duty roster position, availability, and logistical considerations. The Observer Coordinator strives to assign observers according to their rotational order, location, availability, history and future time-off requests. As a general rule, observers are provided with 1-3 days' notice for a trip, which allows for some preparation and travel time. Less than 24 hours' notice can occur, albeit rarely. At the time of trip notification, the observer is informed of the vessel, port, and estimated trip dates. Given the information provided, they can either accept or decline the trip. If the observer accepts a trip, he/she takes over coordination of logistics with the vessel for that trip. If the trip is declined for a health, safety or short-notification (*e.g.*, <24 hrs) reason, the observer retains his/her roster position. If the trip is declined for personal reasons, the observer moves to the bottom of the rotation. Since there are fewer than 10 observers in both programs, getting deployment time is almost never an issue.

4.7.4.6 Deployment and at-sea support

Observer Coordinators do not perform vessel inspections or observer pre-deployment meetings due to the wide geographic distribution of the observed fleets. The SGOP/SBLOP has developed a safety section in the manual which includes a detailed list of questions observers should think about when completing the PTVSC (Appendix 20). All forms are available on the programs' websites but the full manual is not readily available.

Observers must check-in via email or text six times while traveling to and from a vessel as described in section 4.7.3.6.

Once the observer arrives at the vessel, he/she must perform a PTVSC and complete the Vessel Safety Checklist form (Appendix 13). If any item is missing or deficient, or for any other reason the observer feels their health or safety could be at risk, the observer is instructed to delay boarding and immediately contact the Observer Coordinator. If the observer finds a no-go deficiency in the checklist (*e.g.*, expired hydrostatic release), the vessel will be required to fix it prior to departure. If the observer finds a deficiency that's not a no-go item and refuses the trip for safety reasons, one of two options can occur: 1) the vessel goes on this trip without an observer and checks-in for the next trip or 2) the vessel delays departure to fix it and calls in again when they are ready to depart. The latter scenario may require the vessel to wait for a new observer to be assigned.

Once an observer embarks on a trip, weekly check-in via cell or satellite phone is required. Most trips are much shorter than a week so checking in has not been an issue. However, if an observer were to fail to check in weekly on a longer trip, there is currently not a formal

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procedure in place regarding how this observer would be contacted. Observer coordinators are available at nearly all hours of the day.

The Observer Coordinator provided an example of an observer in the king mackerel fishery who was out on a vessel in questionable weather conditions. Due to her experience, she didn't panic, but used her satellite phone to periodically text the vessel's position, and immediately reported in when the vessel returned to port.

The weekly check-in, required on trips longer than a week, should include 1) last known position for safety; 2) work status code; 3) confirmation of ability to sample; 4) alert the lab to an emergency or request assistance; 5) report work hours; and 6) report marine mammal incidental takes. Table 7 defines the work status codes. For code 1, no immediate action is taken. Code 2 indicates a serious situation and should be well documented. OLE may be included in the debriefing process. Code 3 indicates assault or the feeling that their safety is in jeopardy. This code may initiate an extraction or result in the vessel being ordered to return to port. Observers are instructed to be very careful with "code 3" and are expected to maintain regular communication until off the vessel.

Work Status Code	Definition
1	I'm OK, work OK
2	I may not be OK, Work not OK
3	I'm not OK, Work not OK

Table 7 - SGOP/SBLOP work status codes used for weekly observer check-in.

OLE depends on the observer program to determine if extraction is necessary. OLE will also want to talk to the observer directly, but the extraction process can be initiated immediately. Once an extraction request is made for an observer safety reason (*e.g.*, harassment), OLE prefers to take the lead to activate the USCG response.

Staff reported that small vessel size is one of their challenges. On some vessels, there is no safe space to perform observer duties without potentially biasing the data, and some vessels are so small there are no sleeping accommodations. Lack of sleeping accommodation is a relatively minor challenge since most of the observed fleet makes day trips. However, observers are issued a sleeping mat for the times when they must sleep on board. Most vessels do not have operational toilet facilities or showers. There are cleanliness issues (high observation rate of infections) on some vessels.

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No.	Program	Discussion	Review Element(s)
1	SGOP/SBLOP	4.7.4.6	Communication
	Finding	Observers must check-in weekly. If an observer failed to check-in weekly on a longer trip, there is currently not a formal procedure in place to contact the observer directly.	
	Recommendation	The SGOP/SBLOP should develop a formal procedure to address observer failure to check-in. The procedure may include calling the observer's cell phone, coordinating with OLE to access VMS data on vessels with VMS requirements, hailing the vessel on VHF (if in range), calling the vessel's satellite phone, calling the vessel's place of delivery (<i>e.g.</i> , fish house) or contacting the permit holder to see if they've had contact with the vessel.	

4.7.4.7 Debriefing

Upon return from a trip, observers must immediately contact the Observer Coordinator to verify the coverage requirements for a given vessel have been met. Gillnet vessels require three trips to meet coverage requirements during the selection period, and shark bottom longline vessels may also require multiple trips. An observer trip is not considered complete until the observer returns to their duty station and the data are debriefed.

After the observer ensures the data are accurate, copies of all data forms are made and originals are sent to the PC Lab. Upon receipt, the Observer Coordinator contacts the observer to arrange a debriefing time. During debriefing, observers receive feedback on their data collection, data questions are resolved, and field supplies are replenished. The observer Trip Summary form contains detailed information on living and working conditions on board vessels. The Observer Coordinator also asks several questions addressing living and working conditions, general comments about the vessel, observer or crew illness/injury, evidence of staph on board, and observer or crew near miss/close calls which are recorded on the Google Drive debriefing form. The information can be accessed by the Observer Coordinator the next time the vessel is selected for coverage.

For each trip the observers complete the same incident report form as described in section 4.7.3.7. The sheet is currently shared with all SEFSC observer program staff (coordinators, managers, debriefers) and OLE staff, but not the USCG. The SGOP/SBLOP does not receive regular feedback regarding the status of reported violations from OLE. Status is available if the program makes a direct request, but otherwise neither SGOP/SBLOP staff nor the observer are informed regarding what happened to the information reported.

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Observers have the opportunity to participate in a monthly conference call with the Project Manager and coordinators but observers are not paid for this time, creating a disincentive to participate (section 4.7.2.1).

4.7.4.8 Observer incidents

4.7.4.8.1 Reporting and tracking procedures

Observers must report any illness/injury that requires medical attention (including first aid) to the Riverside Project Manager as described in section 4.7.2.3. The observer manual states, “All Accidents and Illness must be Reported within 24 Hours of Occurrence”(pp. 12-15) and “If you are injured, regardless of how minor you may perceive the injury to be you must document the incident in your logbook and report it to your supervisor as soon as possible”(pp. 12-16) (NMFS 2016b).

In addition to the reporting described above, observer and crew illness, injuries and near misses are reported to the Observer Coordinator during debriefing (see section 4.7.5.7). The illness and injury data collected during debriefing have not been summarized quantitatively, but some information is used in training to initiate discussion regarding different types of hazards and accidents that have occurred in the program.

4.7.4.8.2 Response to, and investigation of observer incidents

Responses to minor incidents are documented on the debriefing form discussed in section 4.7.4.7 and addressed as appropriate.

4.7.4.8.3 Emergency Action Plans/Emergency Notification Plans

4.7.4.8.3.1 EAP/ENP General description

The SGOP/SBLOP has an Emergency Notification Plan (ENP) in place which is updated any time a contact changes, and is of similar structure to the POP’s ENP. Riverside’s Project Manager is included in the ENP but for the most part the Observer Coordinators are the primary points of contact once the ENP is initiated. The SGOP/SBLOP does not have a comprehensive Emergency Action Plan (EAP) for at-sea emergencies; however, they are one of the few programs with a basic EAP for training emergencies which addresses emergency scenarios during in-water, firefighting and smoke signal and flare training.

4.7.4.8.3.2 EAP/ENP implementation experience

There have not been any events triggering the ENP in recent history.

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4.7.5 Shrimp (SOP) and Reef Fish Observer Programs (RFOP)

4.7.5.1 Program description

4.7.5.1.1 Program history

The SEFSC Galveston Lab operates two interdependent observer programs – the Shrimp Observer Program (SOP) and Reef Fish Observer Program (RFOP). For 2016, there were 2,174 sea days completed in the SOP and RFOP combined.

The SOP was initiated in 1992 in order to evaluate the impact of shrimp fisheries on finfish bycatch, especially red snapper, *Lutjanus campechanus* (Scott-Denton *et al.* 2012). The initial SOP was voluntary and aimed to estimate bycatch rates of target and non-target catch as well as evaluate the effectiveness of bycatch reduction devices. The program became mandatory for federally permitted vessels fishing in the GoM in 2007 and in the South Atlantic (SAtl) in 2008 through actions of the GoM Fishery Management Council and South Atlantic Fishery Management Council, respectively. In 2004-05, the program deployed observers in the skimmer trawl fishery on a voluntary basis (Scott-Denton *et al.* 2007). The skimmer trawl coverage became mandatory in 2012. Observer coverage of the entire southeastern shrimp fishery ranges between 1-3% of industry effort (nominal days at sea) and is limited by funding (Scott-Denton *et al.* 2012).

The RFOP operated in 1993-95 on a voluntary basis. In 2006, the mandatory RFOP was initiated to monitor the reef fish fishery (mostly groupers, *Epinephelus* spp., and snappers, *Lutjanus* spp.) in the GoM (Scott-Denton *et al.* 2011). The RFOP objectives are to: 1) provide general fishery bycatch characterization for finfish species; 2) estimate managed finfish discard and release mortality levels; and 3) estimate protected species bycatch levels (Scott-Denton and Williams 2013). Coverage levels in this program are approximately 3-5% of fishing days. The RFOP does not cover the SAtl snapper/grouper fishery at this time although the fishery has been intermittently covered by the SBLOP.

Specific to the SOP/RFOP, observers are required pursuant to MSA regulations at 50 CFR 622. Safety-related items in this section include: 1) requirement of not less than 5-days' notice of trip departure date/location and return date/location; 2) observer accommodation requirements; and 3) observer access requirements to communication and navigation equipment, vessel logs, catch, etc. (Appendix 3). Coverage in the state skimmer trawl fisheries is authorized by the Endangered Species Act (50 CFR 222.402).

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4.7.5.1.2 Regional fisheries

Southeast shrimp fisheries occur throughout the GoM and in the southern coastal states to North Carolina (Scott-Denton *et al.* 2012). Currently, there are 1,986 federal permits for shrimp in the GoM (1,327) and SAtl (659) (SERO 2017). Observers are deployed year round; however, peak brown shrimp, *Farfantepenaeus aztecus*, fishing occurs from May through August and white shrimp, *Litopenaeus setiferus*, from August through December.

Skimmer trawls have been documented in the GoM coastal states of Louisiana, Alabama, and Mississippi as well as North Carolina, and this fishery is primarily prosecuted in state waters. Louisiana alone issued 3,667 skimmer trawl permits in 2015 (LDWF 2017). Estimating the observer coverage rate and effort is challenging due to the limited information provided by the states in terms of fishing effort and fisher contact information. The program also continues a voluntary component to evaluate bycatch reduction (BRD) and turtle excluder device (TED) development and evaluation (Scott-Denton *et al.* 2014).

The reef fish fishery occurs throughout the GoM with the highest observed coverage in the eastern GoM. Reef fish are targeted using three gear types - bottom longline, vertical line (bandit or handline), and modified buoy gear. As of early 2017, there were 769 GoM reef fish or eastern GoM bottom longline endorsement permits issued (SERO 2017).

Vessels range in size from 23-98 feet. Trips can last from 1-60 days and take place throughout the year. Table 8 provides more specific fishery characteristics by program, fishery and gear type.

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Program	Fishery	Fishing season	Coverage selection times	Minimum observed sea days required per selection period	Coverage Voluntary	Coverage Mandatory	Coverage days	Coverage rate	Permits‡	Trip length (days)	Vessel length (ft)	Crew size
SOP	GoM penaeid shrimp	Year round	Jan-Apr; May-Aug; Sep-Dec	18	92-06	2007	~1120	<2%	1,327	13.8 (1-62)	31-98 (avg 74 in GoM & 64 in SA)	
	SAtl rock shrimp	?	"	11		2008		<2%	207	2.9		
	SAtl penaeid shrimp	Year round	"	6	92? - 07	2008	~280	<2%	452	2.9		
	Skimmer trawl	Brown (May-Aug); white (Aug-Dec)	Variable	5	04-05	2012	145 (2013); 119 (2012)	Unknown†	3,667 (LA)	4.1 (2013); 2.1 (2012)	26-61 (avg ~49- 2013; 37-2012)	1-3
RFOP	Reef fish	Year round	Jan-Mar; Apr-Jun; Jul-Sep; Oct-Dec	7 -LL; 3 - bandit gear; 2 - handline	93-95	2006	1,439 (10-11)	1.4% (06-09); 5.35% (10-11)	769	12.7 (LL); 7.2 (V-LL); 14.7 (MB)	23-69 (LL avg 47.4; V-LL avg 39.7)	2-5 (LL); 1-5 (V-LL); 1-2 (MB)

Table 8 - SOP and RFOP fleet characteristics.

SAtl=South Atlantic; GoM=Gulf of Mexico; LL=bottom longline; V-LL= vertical longline; MB=modified buoy gear; ‡Number of permits extracted from SERO permit database (SERO 2017). †effort estimates uncertain. Sources: (Pulver et al. 2014, Scott-Denton et al. 2011, Scott-Denton and Williams 2013, Scott-Denton et al. 2014).

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4.7.5.1.3 Program organization

The SOP/RFOP have six staff based in the SEFSC Galveston Laboratory - three permanent full-time federal employees (Program Manager and two Observer Coordinators) and three full-time contracted Observer Coordinators (Figure 21). In the past, the program also employed a third federal Observer Coordinator but this position is currently vacant. In addition, approximately 35 fisheries observers are hired by IAP through a subcontract with Riverside to perform at-sea data collection on commercial shrimp and reef fish vessels. The SOP/RFOP relies heavily on both OLE and USCG personnel for training and at-sea support. The observers' primary contacts are with the Observer Coordinators.

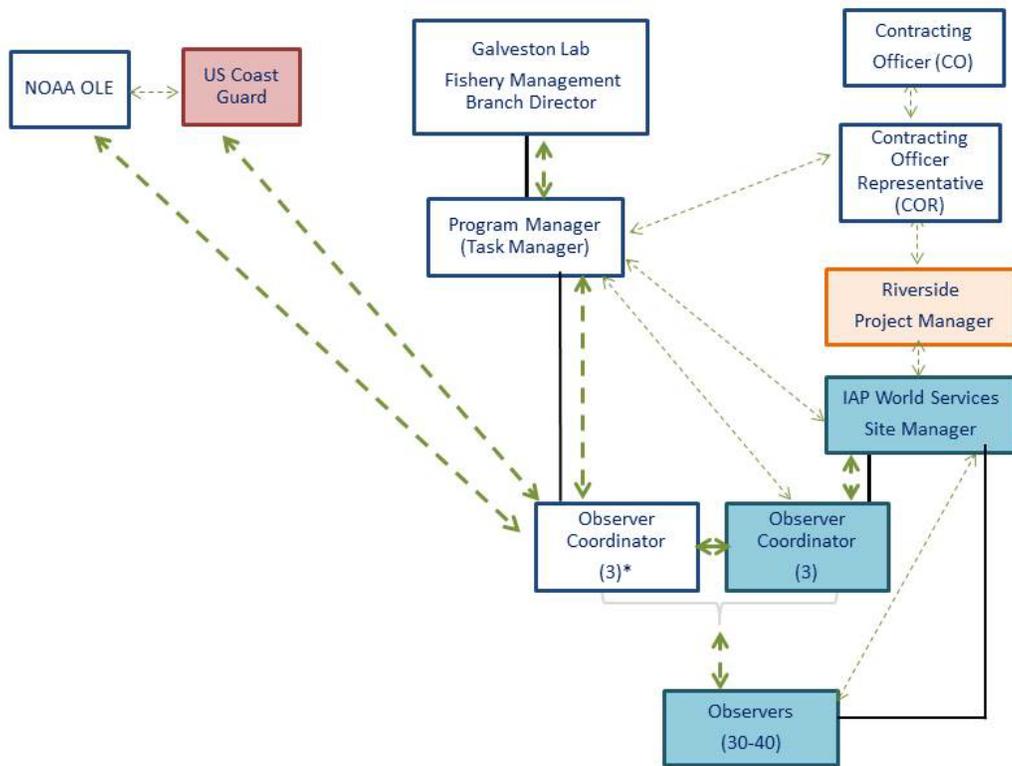


Figure 21 - SOP and RFOP hierarchy and predominant communication connections
Heavier weight indicates primary communication and lighter weight is secondary. NOAA Fisheries personnel are indicated with white boxes; prime contract or subcontract personnel are displayed in orange or turquoise boxes, respectively; red indicates USCG. *Not all positions currently filled.

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4.7.5.2 Observer safety training

4.7.5.2.1 Training program organization

The Galveston Lab has a large, well-equipped conference room which accommodates training course needs, as well as outdoor space for activities such as fire extinguisher training. The facility had a small kitchen with coffee maker, refrigerator and microwave for observers who brought their own meals. Although not necessary for the refresher students since they had previously trained at the Galveston lab facility, no information was provided regarding what to do in case of an emergency, bathroom locations, coffee, etc. The class participated in two field trips: one to the USCG base, and one to the swimming pool for an in-water activity.

4.7.5.2.2 Safety and survival training

All of the Observer Coordinators who taught the December refresher course were up-to-date on their AMSEA marine safety instructor certification (two attended the training or refresher in May 2015, and the other two attended in April 2017). Two of the Observer Coordinators have co-taught in other programs albeit four or more years ago; the SEFSC has a limited travel budget which has impacted travel for this purpose. However, staff from Panama City occasionally co-teach at the Galveston Lab. Experienced observers were tasked with teaching some topics with Observer Coordinator oversight. Each observer was assigned a topic about two weeks before the training and provided with training material from the observer coordinators; alternatively, they could develop their own presentation as long as the essential material was covered. In concept, the use of observers as trainers can reinforce an individual's knowledge of the material, and has the potential to enhance camaraderie and understanding between staff and observers. In general, observers with previous, professional teaching experience performed well (*i.e.*, they knew the material, interacted with the class professionally, practiced presenting in advance, etc.); however, other individuals may have benefited from more structure, practice and/or feedback prior to actually doing the training. This was reinforced by one NOPAT SAC member who commented to the reviewer that allowing personnel who were not certified marine safety instructors to teach was outside of the training/teaching requirements established in the Observer Safety Training Standards (see also Appendix 9).

Regarding the co-teaching requirement, the SOP/RFOP trainers remarked that it was beneficial to observe how other programs teach various topics, and that if an observed module seemed more effective than a current SOP/RFOP module, they would adopt the other program's

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approach. Cross-training may also help to standardize how topics are taught and covered across regions.

The reviewer attended a 4-day refresher training course for current SOP/RFOP observers in December 2016 at the SEFSC Galveston Lab which had 15 experienced observers in attendance. Due to scheduling conflicts, the reviewer was unable to witness all aspects of SOP/RFOP observer safety training. A new trainee course, lasting three weeks, began August 7, 2017, but was not attended by a reviewer. Trainees, new and experienced, must pass the written safety exam with a score of 80%. In addition to the written exam, the experienced observers were required to demonstrate 18 safety skills to the satisfaction of the trainers. All students who completed the refresher course passed the training.

The safety component of training lasted three days, and the safety modules were primarily taught or overseen by the contracted Observer Coordinators. All trainees signed a training liability waiver describing the risk of safety training (similar to the POP training waiver; Appendix 16). A few of the program's safety policies were discussed during training. Observers are not required to formally acknowledge these policies which are imbedded in a variety of locations in the manual.

OLE did not present any material at the refresher training. USCG vessel safety examiners addressed commercial fishing vessel safety requirements and discussed some of the common issues they encounter as examiners. The local USCG Damage Control (DC) trainer was not operational; therefore, no hands-on training for flooding occurred. The USCG P6 dewatering pump was also not operational, but the class was able to look at it and discuss assembly and how to prime and start the motor during a field trip to the Galveston USCG base. The examiners discussed the pump's capabilities and limitations and shared several tips for safe use. USCG staff arranged for a rescue helicopter to fly to the USCG base, a rare event, and then the pilots discussed helicopter rescue techniques and expectations.

Safety modules generally conformed to the topics and minimum times described in the Observer Safety Training Standards (Appendix 10) and also covered many supplemental topics as well as demonstrated skills (Appendix 11 and Appendix 12, respectively). Presentations were factual and informative although a few were out of date. For example, in the "Man overboard" module, fishing fatality statistics are presented from 1981-84; however, NIOSH has data for 2000-2009 available for the GoM (Lincoln and Lucas 2010). More recent and local case studies would also improve the trainer's ability to hold the attention of the trainees.

One of the Observer Coordinators suggested that the program could confer with a medical professional to further develop training materials on staph infections and share with other regions, although this presentation was already well-developed. Another option to optimize

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training staff time could be to coordinate efforts among programs or regions (*e.g.*, SEFSC and PIROP could share talks on staph, bed bugs; other programs could develop talks on sea sickness, etc.).

Instead of the formal presentation on “Stability and Flooding”, the trainers opted to informally discuss the elements that they felt were most important. The discussion focused on observable items that an observer should be aware of such as roll period, free surface effect and watertight integrity. One of the most dangerous times on shrimp vessels occurs when outriggers are adjusted or damaged. With outriggers in the upright position shrimp vessels are considered less stable due to shifts in the center of gravity (Deakin 2001, USCG n.d.).

In the past the program has used the USCG’s Bullex® system for fire extinguisher training; however, it was unavailable in December. The trainers were able to set up a simple and effective fire exercise in the parking lot using a non-explosive liquid fuel (*i.e.*, diesel mixed with kerosene) in a trash can-sized burn pan. Additional Galveston Lab and USCG personnel were present to assist with the exercise. Each student was provided with PPE (gloves, face shields) as required by the Observer Safety Training Standards, and while working in a pair, was required to demonstrate the Alarm-Pull-Aim-Squeeze-Sweep (APASS) technique to extinguish the fire (Figure 22).

Pyrotechnic distress signals were discussed in the classroom during the refresher training; no hands-on live flare demonstrations were performed. All new observer trainings include a live smoke signal and hand flare demonstration where each observer gets to set off a hand flare and/or smoke signal (the exact number depends on availability as these are provided by the local liferaft repacking company). Live flare demonstrations are typically held near the water with assistance from USCG personnel.

Donning of immersion suits in 60 seconds was also performed in the parking lot.

Overall, observers could have received more feedback during the various skills testing. If a task was done incorrectly, it should have to be performed again.

Additional topics discussed during training included cultural challenges and sensitivity. For instance, the Vietnamese communication style involves what many of the observers/trainers may interpret as yelling, so sometimes it’s challenging to know if there’s an emergency or the crew is just having a normal, casual conversation.

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Figure 22 - Fire extinguisher demonstration exercise - SOP/RFOP observer refresher training

Observers deployed to vessels with a single crew are not provided with training on topics regarding what to do if they are suddenly in command of the vessel (*e.g.*, captain becomes incapacitated). Essential skills would include: throttle and gearshift operation; how to start/stop the engine; familiarity with gauges and instruments; how to steer the boat; how to anchor the boat; how to operate mechanical and nonmechanical bilge pumps; etc.



Figure 23 - Matthew T. Doyle Natatorium (Texas City, TX) utilized for in-water safety training

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As per the Observer Safety Training Standards regarding training curricula, the safety skills demonstration list should be posed as items trainees must demonstrate (*i.e.*, action items with measurable outcomes).

In-water practical training was performed at the Matthew T. Doyle Natatorium in Texas City, TX. The facility has an 8-lane 25-meter pool (Figure 23) with two lifeguards on duty. Activities were broken up into groups of five students. There were four instructors in attendance; three in the water. The instructor/student ratio met AMSEA requirements for water exercises. There were three activity stations:

- One Observer Coordinator oversees HELP, HUDDLE, arm/leg interlocking, star-kick, chain swim;
- Two Observer Coordinators manage righting an upside down liferaft; all observers board, discuss comfort and what to do once in the raft;
- One Observer Coordinator discusses near misses (personal and vessel) and hazards; benefits of the refresher course in terms of preparedness.

Bed bugs are not a chronic problem on the fleets observed by the SOP/RFOP; however, there was a full 15 minute discussion on the topic during the refresher briefing.

Emergency calling procedures were discussed, and each student was required to practice a Mayday call. Digital Selective Calling (DSC) procedures were briefly mentioned, but information lacked detail.

Several challenges regarding station bills were discussed by observers during the training which have potential implications for both observer and fisher safety. These include:

- Emergency instructions (*e.g.*, station bill) are frequently absent on board (although required for the decal; 46 CFR 28.265). Regardless of presence, observers are instructed to have a discussion with the captain about who is assigned to the various duties during common emergency types and document these tasks on a provided station bill template;
- Language challenges on a few vessels (*e.g.*, station bill may not be in English);
- High turnover of crew in some fleets results in lack of crew knowledge of the vessel or understanding of what to do in an emergency.

Station bill quality also impacts the quality of a vessel's emergency drills. The observer's role in a vessel drill is typically limited to mustering in the wheelhouse and performing tasks as instructed. During training, observers noted that they have rarely witnessed onboard drills

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within the observed fleets. As a postscript to the station bill exercise, trainees were asked to participate in a mock drill. Drill practice is inherently challenging in a classroom setting. Effective drills should 1) be realistic; 2) be spontaneous; 3) be hands-on; 4) be progressive; 5) build teamwork; 6) be safe; 7) be positive (not punitive); and 8) always include a debrief session.

No.	Program	Discussion	Review Element(s)
1	SOP/RFOP	4.7.5.2	Training
	Finding	During the immersion suit donning exercise, many observers started without extraneous clothing and shoes; the immersion suit donning activity could have been more realistic by starting with shoes and extra clothing on.	
	Recommendation	Ensure students start the timed immersion suit activity with shoes and extra clothing on to simulate a more realistic scenario.	

No.	Program	Discussion	Review Element(s)
2	SEFSC Programs	4.7.5.2	Training
	Finding	The reviewer had the following comments and concerns pertaining to the observed in-water practical exercise: .1 A few PFDs were not adequately fastened (<i>i.e.</i> , some PFDs could have easily slipped upward and off); .2 While the facility was excellent overall, acoustics were poor which made it difficult to hear instructors; .3 It was a challenge to keep the liferaft in the center of the pool during the liferaft “righting” activity.	
	Recommendation	.1 A trainer or observer “buddy” should verify PFDs are properly fastened to avoid slipping off upon initial pool entry; .2 A more detailed preview of the pool activity should be provided prior to going to the pool so that students are prepared in the event that they cannot hear at the facility; .3 Take additional measures to maintain the liferaft in the center of the pool during the liferaft “righting” activity.	

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No.	Program	Discussion	Review Element(s)
3	SOP/RFOP	4.7.5.2, 4.7.5.6	Training Practices/Policies
	Findings	<p>.1 Detailed instructions for the PTVSC are not included in the observer training manual, although explicit instructions were discussed and expectations articulated for certain elements during refresher training. Prior to departure, all observers must send/email photos of the PTVSC, and new observers must also send a photo of the liferaft/hydrostatic release set-up to the program staff, but the observer manual does not reflect this policy. Lack of line item instructions may play a role in the high error rate noted on this form.</p> <p>.2 Training discussion regarding components of the PTVSC was included in at least three different training modules (fire, EPIRB, Station Bills), but was not presented as a comprehensive unit despite staff having clear issues with how the form was being completed by observers. Several challenges were noted regarding vessel station bills and drills.</p>	
	Recommendations	<p>.1 Update the manual to clarify or enhance the following regarding the Safety Check-off form (or PTVSC):</p> <ul style="list-style-type: none"> a. Provide explicit instructions for completing the form including the different policies for required photos prior to deployment for all versus new observers; b. Provide an example form illustrating the level of detail the observer should provide; c. A photo of the vessel could be a reasonable addition to the PTVSC or Vessel Information form to address the vessel description deficiencies noted during refresher training; d. Additional information could be collected regarding inspection status of fire extinguishers in the comments; e. Add options to explicitly define which high-water alarms were tested; and f. Add fields to Ovatek check-off regarding presence of cracks or holes, age of raft, and general appearance/maintenance (fresh wax, lubricated rubber seals, etc.). <p>.2 The SOP/RFOP should consider creating a training module</p>	

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		<p>specific to the Safety Check-off form for refresher training. The module could:</p> <ol style="list-style-type: none"> a. Utilize real examples of deficient Safety Check-off forms to emphasize recent issues with their completion (<i>e.g.</i>, ask the observers to identify problems with the forms) and encourage discussion regarding why an observer may have incorrectly completed the form; b. Add more detail to station bill drill scenario to encourage effectiveness of drill performance/practice. <p>.3 The SOP/RFOP should replace “Wheel watch while underway requirement has been explained by observer and is understood” with “Every vessel shall maintain a proper lookout at all times has been explained by observer and is understood” on the captain’s portion of the PTVSC. See also section 3.3, national finding/recommendation 2.</p>
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No.	Program	Discussion	Review Element(s)
4	SOP/RFOP	4.7.5.2.2	Training
	Finding	Bed bugs have been documented but are not a chronic problem on the fleets observed by the SOP/RFOP. Considerable discussion about bed bugs occurred during refresher safety training although this was not an explicit training topic.	
	Recommendation	The SOP/RFOP should consider including a formal training module specific to bed bugs. The POP, PIROP, or local university extension programs have bed bug training presentations that could easily be adapted to the Galveston programs. In addition, the SEFSC labs could coordinate efforts to share freezer space if a SOP/RFOP observer’s gear became contaminated, or programs could potentially facilitate cold storage at a fish house.	

4.7.5.3 Observer equipment and maintenance

Health- and safety-related equipment is issued to observers once they have passed the initial training course (Appendix 14). All items are provided by NOAA Fisheries except the “bed bug detectors” and smoke inhalation masks which are purchased by IAP if requested by an observer. The latter are not currently a reimbursable expense. Bed bugs are a minor problem in this program; however, cigarette smoke exposure is chronic on board many vessels in the observed fleet.

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Observer Coordinators are tasked with keeping an inventory as well as tracking gear location and various expiration dates as described above. PLBs are registered to the SOP/RFOP by one of the Observer Coordinators using the NOAA online registration system; contacts include the main program phone number and two personal cell phone numbers of observer coordinators. Individual observers do not have access to the registration. Issued satellite phones have texting capability but this is rarely, if ever, used as data transmission is cost prohibitive. The observers are encouraged to use voice only unless an emergency would necessitate text as the better option.

Issued gear and inventory stored in Galveston is checked by an Observer Coordinator who tracks upcoming expiration dates. If observers need a piece of equipment, they email this coordinator directly to make a request. Requested gear is mailed directly to the observer within one day of request. If an observer leaves the SOP/RFOP, all gear must be returned to the program except for a few of the expendable items.

While employed, observers are responsible for maintaining and visually inspecting their gear. PLBs must be tested and immersion suits inspected monthly, and the log form submitted quarterly. The form is then updated by an Observer Coordinator in a Google Sheet. Issued equipment meets USCG standards and maintenance schedules are appropriate to issued items with the possible exception of immersion suits. USCG NVIC 01-08 (2008) recommends each suit be subjected to an air pressure test “at intervals not exceeding three years or more frequently for suites over ten years of age”. Air pressure tests are not performed; however, all immersion suits are retired after 10 years or sooner if funding allows.

Observers also have access to the vessel’s communication equipment such as satellite phone or radios (both SSB and VHF).

The SOP/RFOP does not currently issue valise rafts for vessels with inadequate life raft capacity. The coverage area is too large to make the valise logistically feasible. Vessels that have inadequate life raft capacity must either rent/purchase a larger raft or leave a crew member at the dock in order to fish legally if selected for observer coverage.

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No.	Program	Discussion	Review Element(s)
1	SOP/RFOP	4.7.5.3	Practices/Policies
	Finding	Two health and safety equipment items (<i>i.e.</i> , bed bug detectors and smoke masks) are supplied by the observer provider without reimbursement.	
	Recommendation	The SEFSC should ensure a contractual mechanism is in place to negotiate reimbursement of additional health and safety equipment deemed necessary to protect observer health and safety which are not currently included in the gear issued to observers.	

No.	Program	Discussion	Review Element(s)
2	SOP/RFOP	4.7.5.3	Practices/Policies
	Finding	Program staff advised the reviewer that there was an occurrence in the past when the satellite phone service subscription expired and the federal acquisitions system was not quick to remedy the situation.	
	Recommendation	The SEFSC should ensure that appropriate procedures are in place to maintain continuity of critical services such as emergency communications.	

4.7.5.4 Vessel selection and notification

Permits are randomly selected for observer coverage every selection period based on the pool of permits with fishing effort in the previous year during that time period. The selection period varies by fishery. The frequency in which a vessel carries an observer is highly variable and is dependent on fishing effort (*e.g.*, a vessel could be picked 3 times in one year or go several years without carrying an observer). Observers board vessels at the port of the vessel's choice.

Federally permitted shrimp vessels are randomly selected based on the previous year of effort stratified by area, depth, and season. Federally permitted shrimp permit selection occurs in three periods: January - April, May - August, and September – December. GoM federal penaeid permit holders are required to carry an observer for a minimum of 18 days during a selection period; the SAtl rock and penaeid shrimp vessels must take the observer for 11 and 6 days, respectively (Scott-Denton *et al.* 2012). State permitted skimmer trawl vessels must carry an observer for a minimum of 5 days. When coverage in the state fishery first started, vessels <23' LOA were removed from the observer selection pool due to "work and safety considerations" (Pulver *et al.* 2012); however, this is no longer the case. Other than some initial exceptions, no observer coverage exemptions have been granted although a small number of vessel

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substitutions have been allowed (*i.e.*, same owner, different vessel, same area; (Scott-Denton *et al.* 2012)).

Federally permitted reef fish vessels in the GoM are randomly selected based on the previous year of effort stratified by area (east and west GoM), gear type and calendar quarter (Scott-Denton *et al.* 2011). The minimum number of days the reef fish vessel must take an observer during a selection period is 7 days for bottom longline, 3 days for bandit gear and 2 days for handline gear.

Approximately one or two months prior to a selection period start date, the Program Manager generates a list of vessels selected for observer coverage in the subsequent selection period. A member of the Galveston Lab office staff uses this list to generate vessel selection letters and mails a vessel selection letter via certified mail to the address on record for the permit holder. The vessel selection packet consists of the following items:

- Notification letter for observer coverage, time period coverage will be required and minimum number of days that must be observed and the requirement to check-in 48 hours prior to departing on each trip during the selection period;
- Marine Safety Bulletin from the USCG describing the requirements for obtaining a safety decal and NOAA Fisheries requirement that decal is current within 2 years;
- USCG Commercial Fishing Vessel Safety inspector contact list;
- Response form that can be faxed in lieu of calling in; and
- Observer evaluation questionnaire.

When the permit holder or captain checks in, the Observer Coordinator verifies trip dates, ports, and contact information.

4.7.5.5 Observer selection and notification

Observers are selected for a given trip by the Observer Coordinator based on duty roster position, availability, and logistical considerations. Observers can view the duty roster at any time as it's stored in a Google Sheet. The Observer Coordinators strive to assign observers according to their rotational order, location, availability, history and future time-off requests. As a general rule, observers are provided with 2-3 days' notice for a trip which allows for some preparation and travel time. Less than 24 hours' notice can occur albeit rarely. At the time of trip notification, the observer is informed of the vessel, departure port, type of trip, and estimated trip dates, and is thoroughly briefed on any health or safety issues encountered by previous observers using information provided on the Observer Feedback Form completed for

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each trip as part of the debriefing process. The form addresses general amenities (food, water, sleeping accommodation, air conditioning, etc.), sampling advice, and close calls and hazards; data are entered into a spreadsheet for future access. Given the information provided, the observer can either accept or decline the trip. If the observer accepts a trip, he/she takes over coordination of logistics with the vessel for that trip. If the trip is declined for a health, safety or short-notification reason, the observer retains his/her roster position. Although a notification time of > 24 hours prior to departure may seem adequate, the observer's duty station may be more than 24-hours away from the port of departure. These logistical considerations are worked out by the observers and Observer Coordinators. If the trip is declined for personal reasons, the observer moves to the bottom of the rotation. Since there are ~35-40 observers in the SOP/RFOP, getting adequate deployment time is only occasionally an issue, and may influence an observer's decision to deploy when maybe s/he shouldn't due to health status (see further discussion in section 4.7.2.2.3).

The manual states observers must report current medications they are taking prior to each trip and the IAP Site Manager confirmed this as a company policy as well. However, both observers and the Observer Coordinators note that this practice is not occurring.

4.7.5.6 Deployment and at-sea support

Observer Coordinators do not perform vessel inspections or observer pre-deployment meetings due to the wide fleet distribution throughout all of the GoM and South Atlantic states.

Observers must check-in via email, phone or text when the vessel leaves and returns to the dock, or if the vessel is delayed from its planned departure schedule. Upon arrival at the vessel, the observer must perform a pre-deployment safety evaluation and complete the PTVSC which documents the minimum safety equipment requirements and indicates which items are required for the observer to board the vessel (*i.e.*, "no-go" items; Appendix 13). If any item is missing or deficient, if the captain refuses to sign the form, or if for any other reason the observer feels their health or safety could be at risk, the observer should not board and must immediately contact the SOP/RFOP. If the observer finds a no-go deficiency in the checklist (*e.g.*, expired hydrostatic release), the vessel will be required to fix it prior to departure. If the observer finds a deficiency that's not a no-go item and refuses the trip for safety reasons, one of two options can occur: 1) the vessel goes on this trip without an observer and checks-in for the next trip or 2) the vessel delays departure to fix it and calls in again when they are ready to depart. Chronic abuse of the first option can lead to enforcement action. The latter scenario may require the vessel to wait for a new observer to be assigned.

The SOP/RFOP uses a 3-page Safety Check-off form as their PTVSC. Page 1 is a checklist of items that should be present, and the absence of any highlighted items trigger a "no-go" trip. Page 2

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requires the observer to complete a station bill, provides an informative summary of USCG safety requirements for various locations and vessel sizes, and includes a place for both the captain and observer to sign the form acknowledging its completion. A few vessels in the observed fleets have Ovatek rigid liferafts, and the program has developed a specific form for these rafts (page 3). Although there wasn't a training module specific to the form, a few items on the PTVSC were clarified during the training. The form asks "Fire Extinguishers charged Y/N" and observers were verbally instructed to circle "Y" if extinguisher is charged (*e.g.*, in green) even if the fire extinguisher inspection has expired. Regarding the "High water alarm tested?" question, the USCG examiners recommended observers ask the captain to test all (typically 3) high water alarms prior to departure.

The PTVSC requires the captain's signature verifying that the captain has been informed about sampling protocols as well as "wheel watch while underway requirement has been explained by observer and is understood." The intent of the latter is to inform the captain that the observer is not allowed to perform "wheel watch" duties. The observers are not there to educate the captain about related navigation rules. A few observers noted that there have occasionally been instances when no one is at the helm (*esp.* at night) and no lookout is posted while drifting or at sea anchor. Observers have voiced uncertainty regarding the vessel's safety under these circumstances. See further discussion of the USCG Navigation Rule 5 regarding lookouts in section 3.3.

Prior to departure, observers must send/email photos of all completed pages of the PTVSC to the program coordinators (NMFS 2016a). New observers must also send a photo of the liferaft/hydrostatic release set-up for the first few trips or as instructed by the Observer Coordinators. Observers should also send photos of the EPIRB setup/battery expiration label or USCG Safety Decal if they have questions or if they are unsure about the validity. The observer manual instructions for the form only address the PTVSC photos. During the 2016 refresher training, Observer Coordinators remarked that vessel descriptions on the PTVSC should be more detailed. While not explicitly quantified, one Observer Coordinator noted that errors are caught on approximately 50% of the trips (mostly new observers) since the photo requirement has been implemented.

Once an observer embarks on a trip, he/she must check-in three times per week (Monday, Wednesday and Friday) via the satellite or cellular phone. The check-in includes the last known position and work status code (Table 9) which is recorded by the Observer Coordinators on a check-in roster form. For codes 001 or 666, no immediate action is taken. Code 666 is used to alert the lab that a situation exists that could lead to possible removal of the observer, but at present is not "life threatening" (*e.g.*, illegal gear operation, observer sick and could get worse,

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or harassment from the crew or captain). Code 999 is used to inform the coordinator of a situation where the observer feels his or her life or personal safety is endangered. Code 999 may initiate an extraction or result in the vessel being ordered to return to port. Observers are instructed to be very careful with “code 999” and are expected to continue monitoring the satellite phone for a response if utilized. Codes 666 and 999 both require additional questions to be asked and the program has developed a checklist of questions for the Observer Coordinators to use to follow-up.

A failure to call-in is handled on a case-by-case basis. Missing a single call-in is fairly common and can occur for a variety of reasons. However, after a second missed call-in, staff take action bearing in mind several factors such as vessel “quality”, observer experience, last reported location, weather, etc. Contact may start by calling the vessel owner if possible. If that doesn't work, they try to contact someone at the port they departed from, and the observer’s cell phone. The observers who failed to check-in have been successfully tracked down using these methods to date.

Work Status Code	Definition
001	All is ok (Self-explanatory)
666	Alert to a bad situation
999	Get observer off the boat "NOW"

Table 9 - Work status codes used for SOP/RFOP observer check-in.

OLE depends on the SOP/RFOP to determine if extraction due to a harassment issue is necessary. OLE will want to talk to the observer directly but the extraction process can be initiated immediately. Once an extraction request is made for an observer safety reason (*e.g.*, harassment), OLE prefers to take the lead to activate a USCG response. There were two observer extractions for harassment in 2016 (cutter) and one extraction due to injury (helicopter). No extractions occurred in 2015.

Observers and trainers noted that on a few occasions in the past, the USCG or state law enforcement boarding party did not fully understand the observer’s role on board.

USCG examiners estimated that about 40% of the commercial fishing vessels in their area of operation had a safety examination decal, and thought that about 20% of vessels may be boarded in a year. The observed fleets have a higher proportion of examined vessels due to the requirement in the observer regulations (50 CFR 600.746(c)(2)) which has had a positive safety impact for these fleets. The examiners also noted challenges they’ve had in terms of commercial fishing vessel compliance with safety regulations. These include:

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- Implementation of new rules mandated under the Coast Guard Authorization Act of 2010 and the Coast Guard and Marine Transportation Act of 2012 has been slow. Proactive policies were developed and implementation guidance distributed, only for the legislation to later change rendering the guidance obsolete. The unfortunate result is that the USCG lost some credibility with and trust of the industry (*e.g.*, initial ruling to mandate “survival craft that ensures that no part of an individual is immersed in water” and exclude life floats and buoyant apparatus as survival craft caused several vessels to purchase liferafts, only to have buoyant apparatus/life floats restored as an option at a later date);
- USCG Commercial Fishing Vessel Exam decal is required for all vessels fishing outside 3 nm but there’s no real penalty if fishing without the decal (*e.g.*, no fine, can’t terminate trip);
- Monthly drills are required but no log is required so no “proof” that they are or aren’t happening;
- Since there are no licensing requirements, operator competency is questionable for some individuals.

USCG personnel provided numerous ideas for promoting collaboration and cooperation as described in the Memorandum of Agreement between NOAA Fisheries and the USCG. USCG personnel suggested that observers could benefit from participating in a joint “inspection” where a USCG examiner does a vessel dockside exam along with an observer performing their pre-deployment safety checks. Each entity can learn from the other. They’ve tried it a couple of times in the Galveston area and thought it was beneficial to all (see recommendation 4.1 in section 3.3). USCG personnel would also benefit from more information on fishing trends (*e.g.*, fleet movements, new fisheries, etc.). NOAA Fisheries could improve outreach to USCG personnel when they are presenting information of this nature. Finally, the examiners noted that the USCG initiates Critical Incident Stress Management (CISM) protocols when USCG staff are exposed to a traumatic event. The system involves peer support through the CISM procedure, and several of the local USCG staff are trained in CISM implementation. They suggested that observer programs may want to partner with other groups for a larger community of support. One examiner was willing to volunteer to be involved in some sort of partnership along these lines. See recommendation 2 in section 3.6 for more discussion of ROP crisis support.

At-sea transfers must be approved by the NOAA Fisheries Program Manager and are only to be performed in extreme cases. If approved, there are extensive instructions in the observer manual that provide guidelines and a requirement to wear a PFD.

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No.	Program	Discussion	Review Element(s)
1	SOP/RFOP	4.7.5.6	Communications
	Finding	USCG or state law enforcement boarding parties occasionally are unaware of the observer’s role on board commercial fishing vessels.	
	Recommendation	NOAA Fisheries, in consultation with the USCG CFSAC liaison, should develop an outreach strategy to engage field boarding personnel from the USCG or state law enforcement so that observers aren’t accidentally compromised while on board a vessel (<i>e.g.</i> , most USCG know it’s inappropriate to question the observer in front of captain/crew, but state law enforcement may not have been briefed on the observer program’s mission).	

4.7.5.7 Debriefing

Upon return from a trip, observers must immediately contact the Galveston Lab by email or landline to discuss post-trip details and determine if the observer should remain on site for a debriefing and reassignment or return home. Observers are asked to review the list of common errors found in the observer manual appendix. After the observer ensures the data are accurate, they make copies of all data forms and send the originals to the SOP/RFOP. Once the data are received, an Observer Coordinator contacts the observer to arrange a debriefing time. During debriefing, observers are provided feedback on their data collection, questions are resolved, information is shared and field supplies are replenished. Observers are not asked a consistent set of questions as part of the debriefing process; questions are at the discretion of the Observer Coordinator and are based on data quality issues identified through data form review. Observers have an “Observer Feedback Form” that allows them to provide information and feedback specific to that vessel and trip. A trip is not considered complete until the observer returns to their duty station and the data is debriefed.

After each trip, the observers complete an incident report as described in section 4.7.3.7. In the last two years (2015-2016), there were only two instances where observers responded in the affirmative regarding “fisheries violations” and both were for harassment in the SOP.

The reviewer was also told that USCG personnel have access to the shared sheet, but the reviewer was informed by staff from another program that no USCG personnel were listed in the shared group. The SOP/RFOP does not receive regular communication from OLE or the USCG regarding the status of reported violations. Status is available if the program makes a direct request, but otherwise the program or observer has no idea what happened to the information reported.

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OLE staff provided the OSPR reviewer with a summary of the most egregious incidents reported since 2013 from all SEFSC programs combined, which included four cases of observer intimidation or harassment and one fatality due to illness. Only two cases were forwarded to NOAA Office of General Counsel Enforcement Section (GCES).

4.7.5.8 Observer incidents

4.7.5.8.1 Reporting and tracking procedures

The observer manual states “All Accidents and Illness Must Be Reported within 24 Hours of Happening”(p. 1-27) although the subsequent paragraphs in that section are a bit ambiguous regarding the timeline and who should be informed (*e.g.*, captain versus supervisor versus Observer Coordinator) (NMFS 2016a). For example, “If you are injured, regardless of how minor you may perceive the injury to be you must document the incident in your logbook and report it to your supervisor **as soon as possible**. If you become seriously injured or ill notify the office **immediately**” (p. 1-28, emphasis added)(NMFS 2016a). IAP has provided supplemental “incident reporting” training for the contracted Observer Coordinators which involved an electronic presentation developed by IAP covering what questions should be asked when an incident occurs. For an injury situation, these include:

- What is the injury (or possible injury)?
- When did the injury occur?
- How serious is the injury?
- Any medication taken or first aid applied?

This presentation was not provided to the reviewer(s); however, it is described as a process similar to the additional question checklist developed by the program for when code 666 or 999 are reported. An incident only initiates the emergency response/notification tree described in the next section if the USCG is needed. An email is sent to all observer coordinators, the Program Manager and Site Manager with details. Updates are sent every time the observer makes contact with the program. The only difference between a NOAA Fisheries and contract Observer Coordinator in this situation is the Site Manager is not on the original email distribution if the communications are initiated by a NOAA Fisheries Observer Coordinator; however, one of the contracted Observer Coordinators forwards the email on to her.

The SOP/RFOP does not quantify or formally summarize reports of observer incidents, illnesses or injuries although the manual states “Slipping, tripping, and falling are the most common sources of observer injury” (NMFS 2016a). Staff noted that the incidence of staph was not documented until about 2009. Subsequently, there were 1-3 observer staph infection cases

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reported per year, but the number of cases has been trending downward for observers in the last few years. The observer provider tracks this information but quantified data were not available to the reviewer(s). Observers report staph infections are fairly common among the crew and may occasionally make note on the "Observer Feedback" form.

The primary SOP/RFOP advice regarding bed bug exposure is to not contaminate one's personal dwelling by bringing exposed gear into one's house after a trip. Observers are advised to put all gear, sampling and personal, in a black plastic bag and put it in their car. Ideally, the bag contents should be sustained at >119°F for several hours to ensure adult, nymph and egg mortality (Kells and Goblirsch 2011). Freezing the gear is thought to be not feasible due to cost, logistics or both.

IAP's insurance provides 24/7 access to a triage nurse who observers can call via satellite or cellular phone. Currently, medical history information is not collected by the program or provider, although the program had collected it in the past in case of a medical emergency. In addition, IAP has an employee assistance program (through Cigna insurance) that allows for free counselling sessions available 24/7 to all employees regardless of whether or not they participate in the employer health plans. This service could be utilized by an observer for harassment-related or other traumatic event (*e.g.*, involvement in vessel sinking).

4.7.5.8.2 Response to, and investigation of observer incidents

Responses to minor incidents are documented on the debriefing form discussed in section 4.7.5.7 and addressed as appropriate.

4.7.5.8.3 Emergency Action Plans/Emergency Notification Plans

4.7.5.8.3.1 ENP/EAP general description

The SOP/RFOP has an Emergency Notification Plan (ENP) which is updated any time a contact changes. The SOP/RFOP also maintains a Delayed Onset Emergency Action Plan (DEAP) which is a flowchart addressing three emergency types including vessel problems, observer illness, and harassment. Riverside's Project Manager and IAP's Site Manager are included in the DEAP, but for the most part the Observer Coordinators are the primary points of contact once the ENP is initiated. The DEAP is fairly new and the program has not developed any formalized entry forms to date.

An after action reporting (AAR) format was recently developed and at present is being fine-tuned; the reviewer did not obtain a copy of the draft format. The SOP/RFOP utilized a template provided by the NOP but is working on a more detailed AAR specific to the program. The Observer Coordinators document and maintain records of every incident which are stored

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on a shared drive. The Program Manager shares the AARs with the appropriate people described in the ENP/DEAP.

4.7.5.8.3.2 ENP/EAP implementation experience

There have not been any events triggering the ENP in recent history.

No.	Program	Discussion	Review Element(s)
1	SOP/RFOP	4.7.5.8.2	Practices/Policies
	Finding	The IAP Site Manager is not always included on the illness/injury reporting communications when initiated by the federal Observer Coordinators; rather, one of the IAP contracted Observer Coordinators forwards the email to her.	
	Recommendation	The IAP Site Manager should be included in all illness/injury coms regardless of whether a federal Observer Coordinator or IAP Observer Coordinator originates the communication.	

4.7.6 Findings and recommendations applicable to multiple SEFSC ROPs

No.	Program	Discussion	Review Element(s)
1	SGOP/SBLOP SOP/RFOP	4.7.4.6, 4.7.5.6	Training
	Finding	Some observed fleets have only one person on board (<i>i.e.</i> , captain) and observers may not be adequately prepared if the captain were to become incapacitated or fall overboard. In addition, the PTVSC is mostly inapplicable to vessels <26 feet (LOA).	
	Recommendations	<p>.1 Offer supplemental training on basic small boat operation skills to prepare observers if they are suddenly in command. Skills may include but are not limited to: knowing how to safely start/stop the engine, maneuver the vessel, knowing how to anchor the vessel, and knowing how to operate electric and manual bilge pumps. The Alaska Marine Mammal Observer Program Observer Manual includes a detailed section on small boat safety (NOAA Fisheries 2013a) which could be a primary resource in developing this module.</p> <p>.2 A PTVSC or ASEE specific to the <26' size class of vessels as described in section 4.5.7 may be warranted in these programs. Absent development of the above "small vessel" checklist, the</p>	

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	observer could utilize the USCG Checklist Generator ⁵⁴ prior to departure to verify items that are required for the vessel's characteristics.
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No.	Program	Discussion	Review Element(s)
2	POP SOP/RFOP	4.7.3.2.2, 4.7.5.2.2	Training
	Finding	The review team recognizes that hands-on skills testing is a time-consuming component of all observer safety training programs. However, on several occasions students waited more than 20 minutes for others to complete a skill test (<i>e.g.</i> , connecting hydrostatic release/liferaft, righting life raft in pool).	
	Recommendation	Training time could be more efficiently utilized by testing multiple skills concurrently, so students remain actively engaged during skill demonstrations. Some ROPs test multiple skills in a given time slot by rotating students among various skill testing stations (<i>e.g.</i> , donning of PFD, immersion suits, liferaft deployment and hydrostatic release setup, mayday, EPIRB/PLB testing, proper lifting). If it's important to test only a single skill during a particular training module, where practicable, additional equipment for a given skill could be purchased (<i>e.g.</i> , hydrostatic release components).	

No.	Program	Discussion	Review Element(s)
3	NOP SEFSC ROPs	4.7.3.2.2, 4.7.4.2.2, 4.7.5.2.2	Training
	Finding	Training modules among SEFSC programs covered many similar topics and some programs presentations were more effective than others.	
	Recommendation	The NOPAT SAC should consider a review of training presentations/lesson plans among ROPs with a view to standardization of the "best" materials available.	

⁵⁴ <https://www.uscg.mil/d13/cfvs/test/1ChecklistCover.html>

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No.	Program	Discussion	Review Element(s)
4	SEFSC ROPs	4.7.3.2, 4.7.5.2	Training
	Finding	Some training material provided to the reviewer prior to observed trainings was not consistent with the content actually taught during the observed trainings. In addition, some training material developed by the POP may be of interest to other programs as it contained supplemental information not typically used by AMSEA-certified marine safety instructors (<i>e.g.</i> , RACE procedure for emergency response to fire which complements the A-PASS procedure for firefighting taught in the MSIT curriculum).	
	Recommendations	<p>.1 The POP and SOP/RFOP should date all training materials to minimize issues with version control. See also Appendix 9 for additional suggestions regarding sharing training materials among programs as part of the Observer Safety Training Standard.</p> <p>.2 All programs should develop a procedure for program managers to review all training materials when substantive changes are made to presentation or lesson plan content.</p>	

No.	Program	Discussion	Review Element(s)
5	SEFSC ROPs	4.7.3.2, 4.7.4.2, 4.7.5.2	Training
	Finding	Overall, observed trainings conformed to the Observer Safety Training Standards and were generally consistent among SEFSC programs and with the AMSEA training manual (AMSEA 2012); however, a few training topics could be enhanced.	
	Recommendation	<p>The reviewer's suggestions to enhance training⁵⁵ include:</p> <ol style="list-style-type: none"> 1. Allow program-specific observers access to all training presentations and reference material for future review. POP already provides some of its safety-related training material online; 2. Request feedback from observers on safety training quality and content at multiple time intervals (<i>e.g.</i>, immediately after training, after first few deployments and after a year) to assess 	

⁵⁵ The reviewers acknowledge that several of these suggestions are currently incorporated into the typical SGOP/SBLOP training.

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		<p>training strengths and weaknesses in terms of long-term retention;</p> <ol style="list-style-type: none">3. Utilize quantitative annual injury/illness/close call summary data in training to discuss types of incidents and trends with trainees (especially experienced observers attending refresher training);4. Supplemental or additional topics:<ul style="list-style-type: none">○ The POP should revisit use of live flare training (<i>e.g.</i>, by utilizing an overhead cover to mitigate airplane safety concerns, or an alternate location such as the PC lab). If live flares aren't an option, develop an experiential learning module for flare training (<i>e.g.</i>, product data sheets, spent flare "demo" or "mock-up" flares in hand and have each observer demonstrate how to use);○ Investigate additional options to provide more realistic pre-trip vessel safety checklist and drill exercises (<i>e.g.</i>, for POP, the University of Miami research vessel F.G. WALTON SMITH or a small USCG cutter based out of Sector Miami). If a non-fishing vessel is selected, it may require setting up the vessel to "mimic" the gear an observer might encounter on a fishing vessel (<i>e.g.</i>, sample decal, EPIRB, etc.; see also section 4.2.3.2, finding/recommendation 3);○ When logistically possible, coordinate with the USCG to include support of a rescue helicopter or rescue helicopter pilot to discuss the helicopter evacuation process. Even if staff are not available, props such as a rescue basket or litter could be useful for discussion of this topic;○ The POP and SGOP/SBLOP should incorporate a presentation on drug (and alcohol) awareness including identifying signs of use and dealing with withdrawal symptoms. The SOP/RFOP utilizes a presentation developed by the NEFSC FSB. Alternately, the topic could be outsourced to a hospital or other health care professional;○ Incorporate a practical exercise for documenting harassment incidents into the OLE or Conflict Resolution training modules;○ See also recommendations in Appendix 9 regarding the Observer Safety Training Standards.
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	<p>5. Suggestions to enhance current training materials include:</p> <ul style="list-style-type: none"> ○ The table of VHF Marine Radio Channels needs to be updated in the SGOP/SBLOP manual;⁵⁶ ○ Since grouper (fish) spines cause a fair number of reported injuries in the SGOP/SBLOP, add “grouper” to the dangerous marine organisms slide in the “Health and Safety at Sea” presentation.
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No.	Program	Discussion	Review Element(s)
6	SEFSC ROPs	4.7.3.2, 4.7.4.2, 4.7.5.2	Training
	Findings	The POP Safety Manual contains a wealth of health and safety information and is a great resource for observers. Minor drawbacks to the POP Safety manual as well as the other SEFSC observer training and field manuals are the lack of an index and ease of access (<i>e.g.</i> , online availability).	
	Recommendations	SEFSC programs should add an index to all existing observer manuals and post the most recent versions as a single document online.	

No.	Program	Discussion	Review Element(s)
7	SEFSC Programs	4.7.5.2.2	Training
	Finding	Digital Selective Calling (DSC) procedures were briefly mentioned during the observed SEFSC trainings but the information lacked sufficient detail. DSC procedures are not well described in the observer manuals.	
	Recommendation	The SEFSC programs should add additional information to training material and observer manuals to accurately reflect current USCG doctrine favoring DSC distress calling procedures (see section 4.5.3.2, finding/recommendation 3).	

⁵⁶ See USCG updates at <https://www.navcen.uscg.gov/?pageName=mtvhf>

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No.	Program	Discussion	Review Element(s)
8	SEFSC ROPs	4.7.3.3, 4.7.4.3, 4.7.5.3	Practices/Policies, Equipment
	Finding	In general, equipment issued by SEFSC observer programs meets USCG standards and maintenance schedules are appropriate to issued items with the possible exception of immersion suits.	
	Recommendation	SEFSC ROPs should perform air pressure tests on immersion suits as described in the AMSEA pamphlet (AMSEA 2010) every three years as per the USCG recommendation described in NVIC 01-08 (USCG 2008). This testing could easily coincide with the refresher safety training requirements which are also on a three year cycle. If repairs were deemed necessary, the immersion suit could be sent to a commercial facility for repair and alternative suits issued to the observer.	

No.	Program	Discussion	Review Element(s)
9	SEFSC ROPs	4.7.5.3	Practices/Policies
	Finding	Observers report that chronic exposure to secondhand smoke is a disquieting aspect of the job and some employ additional personal protective equipment (<i>e.g.</i> , NIOSH-approved N100 particulate respirator) to minimize exposure.	
	Recommendation	The SEFSC observer programs should supply appropriate respirators to protect observers from chronic smoke and fumes when deployed to vessels with persistent issues (especially in sleeping areas) or upon request of the observer.	

No.	Program	Discussion	Review Element(s)
10	SEFSC ROPs	4.7.3.4, 4.7.4.4, 4.7.5.4	Communications
	Findings	<p>.1 Information provided to Southeast Region permit holders in vessel selection packets varies widely in detail among the programs. The supplemental information POP includes with the observer coverage vessel selection letter may be useful to other programs.</p> <p>.2 Southeast Region permit holders may not be the vessel operator on board the vessel, and information regarding observer requirements may not always get transferred to the vessel operator/captain.</p>	
	Recommendations	.1 SEFSC ROPs should explore the merit of standardizing	

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		<p>supplemental information provided in the observer coverage vessel selection letter packets across the region so that messaging is consistent among the programs. There may also be a benefit to coordinating outreach efforts with the SERO permit office which may be able to reinforce observer coverage requirements and expectations during the annual renewal process.</p> <p>.2 SEFSC ROPs should specify in vessel selection letters that all of the information must be provided to the vessel operator (captain). An alternative or supplemental option would be to issue the observers with a regulatory information support packet similar to those provided by the NEFSC FSB.</p>
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No.	Program	Discussion	Review Element(s)
11	SEFSC ROPs	4.7.3.6, 4.7.4.6, 4.7.5.6	Communications
	Finding	Weekly check-in codes may not cover the full suite of scenarios and each program has a different number of code levels (current range 3-5 levels). There is not a code to address a minor health or injury issue that exists but one is still able to perform essential job duties (<i>e.g.</i> , “I may not be okay, work rough but workable.”).	
	Recommendation	SEFSC ROPs should consider including codes to accommodate more options.	

No.	Program	Discussion	Review Element(s)
12	SEFSC ROPs	4.7.3.6, 4.7.4.6, 4.7.5.6	Practices/Policies
	Finding	SEFSC observer programs do not have common criteria to determine “unobservable” vessels and fishers may be unaware of how these decisions are made.	
	Recommendation	SEFSC ROPs should implement a consistent policy to determine unobservable vessels and communicate this policy to fishers as per the Management Control Review recommendations (NMFS 2000).	

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No.	Program	Discussion	Review Element(s)
13	SEFSC ROPs	4.7.3.7, 4.7.4.7, 4.7.5.7	Practices/Policies
	Finding	The observer debriefing form (POP), trip summary (SGOP/SBLOP), and feedback form (SOP/RFOP) contain detailed information on living and working conditions on board vessels. If summarized at the program level, it could be utilized to inform health and safety policy decisions.	
	Recommendation	Quantify the various observer feedback forms regarding living and working conditions and utilize for health and safety policy decisions. This may require the rewording of some questions so that quantification is possible (<i>e.g.</i> , yes/no or multiple choice directed questions rather than broad open-ended questions).	

No.	Program	Discussion	Review Element(s)
14	SEFSC ROPs	4.7.3.7, 4.7.4.7, 4.7.5.7	Practices/Policies
	Finding	Experienced SEFSC observers in training and in one-on-one conversations report that alcohol and drug use is common on board Southeast fishing vessels but few (if any) report that the use results in unsafe conditions or impedes observer work on the incident form submitted to OLE. Training in some but not all programs includes a module on drug and drug use recognition.	
	Recommendations	<p>.1 Collect baseline data on presence/absence of drug/alcohol use on board observed trips (<i>e.g.</i>, add a question to debriefing process “did you witness any drug and/or alcohol use while on board?”)</p> <p>.2 Use baseline presence/absence data to fine-tune training topics and inform outreach strategy to the captains/permit holders if warranted.</p>	

No.	Program	Discussion	Review Element(s)
15	SEFSC ROPs	4.7.3.8.3.1, 4.7.4.6, 4.7.4.8.3.1, 4.7.5.8.3.1	Communications
	Finding	Each SEFSC program has an EAP; however, each focuses on different aspects of an observer’s employment (<i>e.g.</i> , training versus at-sea deployment), and all lack several critical elements.	
	Recommendation	Each SEFSC program should develop a comprehensive EAP containing all the elements described in section 3.6,	

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		finding/recommendation 1. For programs deploying observers to vessels with VMS, the EAPs should also add content reflecting the program’s ability to directly access VMS to monitor a vessel’s position and the types of events that may trigger the program to request OLE increase the VMS duty cycle.
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No.	Program	Discussion	Review Element(s)
16	SEFSC ROPs	4.7.3.8.1, 4.7.4.8.1, 4.7.5.8.1	Practices/Policies
	Finding	Illness and injury reporting procedures vary among employers and ROPs, reporting triggers are not clearly defined, and reporting elements lack sufficient detail or quantification to inform policy decisions.	
	Recommendations	<p>.1 Develop a consistent illness and injury reporting policy specifying what triggers a report to each entity (employer or agency), notification time frame (<i>e.g.</i>, immediately, within 12 hours, upon return to port), what information is shared between entities, etc. Reporting should include sufficient detail regarding illness or injury so that information can be summarized quantitatively (<i>e.g.</i>, calculate incident rates per deployed day) and be used for training as well as to assess program effectiveness and inform future policy decisions. At a minimum, elements in Riverside’s current accident reporting form should be included as it is fairly comprehensive. A summary of incidents should be reported back to observers on an annual basis.</p> <p>.2 Due to the high frequency of observed staph or staph-like infections on board pelagic longline vessels, the POP should consider including a question pertaining to crew health in terms of presence of highly contagious disease in the conversation with the permit holder or captain prior to assigning an observer to a vessel. If present, the observer would have the opportunity to bring extra preventive supplies.</p>	

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No.	Program	Discussion	Review Element(s)
17	SEFSC ROPs	4.7.3.8.2	Safety Reporting
	Finding	The role of a vessel crew's response in an emergency is critical to a positive outcome. Both captains in the two recent serious medical incidents called the POP fairly quickly when their observers were either not responsive or behaving erratically; however, captains may not always be comfortable reaching out to the program.	
	Recommendations	<ul style="list-style-type: none"> .1 Create a reward/recognition system for vessels or crew that act appropriately in an emergency (e.g., EPIRB replacement). .2 Develop additional outreach material for vessel selection packets to encourage captains to contact the program in case of a non-emergency or a situation that may develop into an emergency. 	

4.8 Pacific Islands Regional Office - Pacific Islands Regional Observer Program (PIROP)

4.8.1 Pacific Islands Regional Observer Program

4.8.1.1 Program description

4.8.1.1.1 Program history and regional fisheries

The Pacific Islands Regional Observer Program (PIROP) began in 1994 due to the public's concerns about high fishing effort targeting tuna and swordfish by the pelagic longline fleet, and the incidental take of endangered sea turtles. From 1994-2000, observer coverage was relatively low (3.6-5.5%)(Forney and Kobayashi 2007). In 2000, observer coverage increased to 20% due to a court order, and in 2005, NOAA Fisheries required 100% observer coverage for the shallow set (swordfish) fishery. Twenty percent observer coverage is required for longline vessels permitted with either a Hawaii longline permit or an American Samoa longline permit. Authorization and requirements for observer coverage can be found at 50 CFR 665.808 (Appendix 3). Current coverage levels are 20% for deep set (tuna) longline, and remain at 100% for shallow set (swordfish) longline.

The Hawaii tuna and swordfish fleet consists of approximately 400 vessels that primarily operate out of Honolulu, HI, at Pier 17 and Pier 38. There are also 6-8 other longline vessels with Hawaii pelagic longline permits that fish off the US West Coast out of San Francisco, Long Beach, and San Diego, California. Forty-two vessels are permitted to fish out of American Samoa (AS), and typically 4-6 observers observe the AS fleet. The average trip duration for a Hawaii-based tuna (deep set) is 24 days, and trip duration for American Samoa trips is 40 days.

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Swordfish (shallow set) trips average 33 days in duration. In 2016, 60 observers amassed 8,523 sea days in the PIROP (Table 2).

In 2017, the fishery and the observer program are fairly stable regarding the size of the fleet, number of permits, and fishing locations. Currently there are no pending actions to revise the permit structure (*e.g.*, catch shares) of the fishery, or alter the requirements of the observers or other critical items that could impact the PIROP.

4.8.1.1.2 Program organization

The main PIROP program office with 13 staff is located within the NOAA Fisheries Pacific Islands Regional Office in the Inouye Regional Center (IRC) at Ford Island, Pearl Harbor, HI. The PIROP also has an office in Pago Pago, AS, located in the same building with the USCG and OLE. Five PIROP employees work out of this location. While the AS office is under the umbrella of the PIROP, in many ways these two offices function independently of each other due to geographical separation, and differences between the regulations that apply in Hawaii and AS (*e.g.*, Hawaii seabird requirements). Section 4.8.2 discusses the ASOP in more detail.

In order to gain access to Ford Island, observers, guests and visitors must obtain a security access card at the Joint Base Pearl Harbor-Hickam Air Force Base. Observers, guests and visitors must also be provided a guest pass restricting access to specific areas within the IRC building. These security requirements present a significant logistical burden upon PIROP staff to maintain building access for the large number of new and returning observers required to work at the PIROP office. Observers need to train, brief and debrief their information at the IRC. Due to data confidentiality concerns and internet security requirements, observers are not able to enter data or access files remotely.

The PIROP also has facilities at Pier 38 in Honolulu, including three offices, a large classroom and two computer workstations for fishers to use. Unfortunately, observers cannot access the debriefing program through the database at this facility due to PIRO internet security policies.

At the PIROP-Hawaii office, NOAA federal and contract employees are responsible for all observer training and briefing, data collection support, data quality review, and storing and disseminating the information in a database. The training coordinator, a federal employee, is responsible for drafting the training agenda, coordinating all materials and speakers for each training session, and updating the Hawaii pelagic observer manual. Almost half of the debriefers are employees of Lynker Technologies LLC, a federal contractor. One staff member, the Safety Enforcement Coordinator (SEC), is responsible for tracking all observer incidents and coordinating with other federal agencies (*e.g.*, USCG, OLE) if any observer encounters an

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enforcement or safety incident. See Appendix 2 for a complete list of federal and contractor staff interviewed during this review.

The American Samoa Observer Program office (ASOP) is responsible for drafting and maintaining the ASOP observer manual, conducting placement meetings and assisting with the placement checklist (known as the PTVSC for this review) for ASOP observers, assisting with the placement of WCPFC observer programs, briefing and debriefing observers that deploy out of AS, and maintaining the observer gear shack. No observer training or program management is conducted at the ASOP.

During each of the past 3 years, a trainer from the West Coast Regional Observer Program cross-trained with the PIROP program for the safety training portion. In 2016, a large number of long-term staff left the PIROP. New staff, all former observers, are employed by Lynker Contracting, LLC. When possible, new staff attended the observer training as well as taught small sessions of the training with the supervision of an AMSEA-certified marine safety instructor. Some of the new staff attended MSIT training in the summer and fall of 2017.

4.8.1.2 Procurement of observer services

4.8.1.2.1 Observer provider contracts and regulations

The PIROP is entirely federally funded, including staff, equipment, facilities, and observers. From 1994 until 2000, all observers were term federal employees. Since 2001, observer services are procured through a federal contract with an observer provider. In 2004, fisheries observers elected to be represented by the Seafarer's International Union, AFL-CIO (Union), and remain a union shop.

TechSea International (TSI) was selected as the observer provider through a federal competitive bid process in 2013 (Contract No. AB-133F-13-CQ-0032). The Indefinite Delivery Indefinite Quantity (IDIQ) contract was awarded for an initial one-year duration with an option to extend annually for up to 5 years. The current contract will expire on August 31, 2018.

The contract identifies the requirements of the observer provider, references general federal contracting regulations and guidelines, and the observer health and safety regulations (OHSR) throughout the document. Section H.6 of the contract requires the provider to comply with all applicable state and federal worker's compensation and "occupational disease statutes." In addition to worker's compensation, the observer provider is required to have at least \$100,000 of employment liability insurance, general liability insurance coverage of at least \$500,000 per occurrence, and if necessary, property damage liability insurance coverage of at least \$1,000,000. If automobiles or air transportation are to be used during the course of the contract, the observer provider must provide at least \$200,000 per person and \$500,000 per

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occurrence for bodily injury and \$20,000 per occurrence for property damage. The observer provider must submit a certificate of insurance to the contracting officer no later than 5 days after the contract is awarded.

TSI's responsibilities include, but are not limited to:

- Monitoring daily vessel activity in Honolulu
- Providing a 24-hour toll free number for fishers and observers for vessel departure and arrival information
- Observer recruitment
- Observer employment
- Stocking and maintenance of observer sampling and safety equipment
- Observer transportation to and from their vessel
- Interaction with the fishing fleet especially with respect to bed bug eradication
- Conducting placement meetings and completing the placement checklist (PTVSC)
- Filing insurance claims with the Department of Labor if an observer is injured
- Reimbursement to fishers for observer provisions
- Providing required information to the PIROP (Contract Section F.8)

Observers are employees of TSI, and are trained and debriefed by the PIROP, which owns the data that observers collect. TSI also employs a project manager/contract liaison and three port coordinators. The project manager/contract liaison is required to hold a bachelor's degree from an accredited university with at least one year of experience managing a contract of similar nature. The project manager/contract liaison is the main representative of TSI in Hawaii, and as such manages the port coordinators, provides the required information to the PIROP, and is the liaison between the PIROP and TSI.

The port coordinators are required by the NOAA contract to hold a bachelor's degree in one of the major biological sciences from an accredited university. The port coordinators are responsible for tracking the daily vessel activity in Honolulu, and conducting placement meetings including the placement checklist (PTVSC) with observers.

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No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.2.1	Practices/Policies
	Finding	The three current NOAA Fisheries directives (NOAA Fisheries 2006, 2007a, c) directly related to observer eligibility standards, observer labor classification, and observer safety training standards are not included or referenced in the current PIROP observer provider contract. A contract template was developed by the NOP and approved by the NOPAT and the Department of Commerce Office of Acquisition Management in 2009 (Hurcombe 2009), yet very few of the template elements appear in the PIROP contract.	
	Recommendation	For any future PIROP observer provider contracts, the Contracting Officer should include all NOAA Fisheries directives and national standards relating to observers in the request for proposals (RFP). This would ensure that all future observer provider contracts specifically address the applicable national standards and national policies. The Contracting Officer should also review contracts against the contract template developed by the NOP. (See section 3.1.3, finding/recommendation 4)	

No.	Program	Discussion	Review Element(s)
2	PIROP	4.8.1.2.1	Practices/Policies
	Finding	The observer provider port coordinators are directly involved in placing observers on vessels and assisting with the completion of the PTVSC. While a bachelor's degree in "science" may be useful to a science-based position and understanding the observers' duties, it may be more appropriate for the port coordinator to have specialized training or previous observer experience pertaining to vessel safety, and/or a background in occupational health and safety (Contract Sections C, V, item E).	
	Recommendation	The eligibility requirements for the port coordinator positions should be re-evaluated to ensure the appropriate skill set to carry out the responsibilities of the position. The required skills should include prior observer experience and recent observer safety training, and completion of the USCG Commercial Fishing Vessel Safety Examiner training. Prior observer experience, recent safety training within the past 2 years, and safety examiner training directly relates to the work the port coordinators do when placing observers and providing assistance in completing the placement checklist (PTSV).	

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4.8.1.2.2 Observer recruiting and employment

TSI is responsible for recruiting qualified observer candidates. Observer candidates must meet the Observer Eligibility Standard for education, or have successfully completed the Alu Like (see section 4.8.1.2.2.1 below) training program. Observer candidates can submit an application on-line through the TSI website.⁵⁷ Eligibility requirements are not described on TSI’s website although a link to the PIROP website⁵⁸ describing the program and qualifications is included. Once the application is received and a candidate determined to be eligible, one of the port coordinators conducts an initial interview over the phone to verify the educational, conflict of interest, language and citizenship requirements are met, and to discuss the challenges and risks of the job of an observer. A second interview conducted by the TSI project manager/contract liaison explains the pay and health insurance, and discusses a worst-case scenario of living on board a small vessel possibly infested with bed bugs.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.2.2	Practices/Policies
	Finding	The reviewer interviewed a number of observers who substantiated TSI’s interview process. However, TSI’s interview protocol may be inconsistent at times. One observer said that TSI only asked if they were available to attend training on a certain date, and did not ask whether the observer met the other qualifications or not, or discuss details of the program and fishery.	
	Recommendation	Develop a policy, along the lines of the commonly used “Training Acknowledgement of Risk” form, that prospective observers be clearly informed of, and acknowledge in writing, the potential serious risks associated with working at sea as an observer. NOAA Fisheries could require a document to be signed by the prospective observer acknowledging they have been fully informed of the dangers before they are enrolled in the full 3-week training class. As part of their submission package to NOAA Fisheries, the observer provider would need to submit the form prior to prospective observers being accepted to the training class (see section 4.1.2, finding 3, recommendation 8).	

⁵⁷ <http://www.techsea.com>

⁵⁸ http://www.fpir.noaa.gov/OBS/obs_index.html

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4.8.1.2.2.1 Basic qualifications

There are multiple requirements that must be met before a prospective observer is admitted to the PIROP training per section C, V.A. 1-10 of the observer provider contract. Below is an abbreviated version of the list:

- Possess a Bachelor's degree with a major in one of the biological sciences from an accredited 4 year university
- Be certified by a physician to be physically and medically fit to work as an observer prior to completion of observer training
- Pass the observer training course including safety training
- Be able to work independently
- Be able to get along well with others
- Be able to swim
- Have no direct or indirect financial or political interest in the fishery
- Be a US citizen or be authorized to work in the US
- Be prepared for unexpected and limited response time to depart for sea duty
- Possess a current CPR and First Aid certification prior to training

The PIROP, unique among other US regional observer programs, provides an exception to the requirement of a bachelor's degree "if an observer candidate has acquired the required skills to be considered eligible for observer training through a NMFS authorized alternative training program" (NOAA Fisheries 2007a). The PIROP allows successful graduates of the Alu Like⁵⁹ program to be admitted to observer training. The Alu Like program was originally designed to assist native Pacific Islanders that may not have a college degree but have other skill sets, such as at-sea experience, that are desirable to becoming an observer. The Alu Like program requires a candidate to pass a preliminary three-week training session before being admitted to the PIROP training. Funding for the Alu Like program has been suspended for the past year and currently no observer-related training is being conducted by Alu Like.

TSI is required to submit the following information to PIROP at least seven calendar days in advance of the first day of observer training (Section C of the contract V.D):

- A list of proposed observer candidates to attend training
- A certified copy of the candidate's academic transcript
- A copy of the candidate's resume if substituting specialized experience for marine science or fisheries coursework

⁵⁹ <http://www.alulike.org>

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- A completed “Authorization for Release of Information” form for each candidate
- A copy of the “Security Coversheet for Non-Employees” form for each candidate
- Proof of medical fitness for each candidate
- Proof of CPR and First Aid certification for each candidate
- A written certification from the annual IT security awareness training has been completed by each candidate and they are in compliance with all DOC IT security policies.

4.8.1.2.2.2 Medical and fitness qualifications

The PIROP contract includes an additional “Medical Fitness Requirements” section C V.C. (1-6) that identifies the following program requirements (see also Appendix 6):

- Able to work at sea for extended periods of time without medical restrictions
- Capable of lifting or moving 100 lbs
- Clear distance vision of 20/20 in one eye and at least 20/40 in the other eye
- Able to live in confined quarters with fishers who interests may be different from observers’ duties
- Able to handle potential high psychological stress
- Agree to comply with any USCG request for drug testing

TSI provides the observer with the medical packet including a letter to the physician, a statement for the physician to sign certifying the candidate “does not have any health problems that would jeopardize observer safety or the safety of others while deployed,” and a general health questionnaire. The observer can use any physician of their choice and are not restricted to those recommended by TSI. The medical examination is not always conducted prior to the observer arriving in Hawaii immediately before training.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.2.2.2	Practices/Policies
	Findings	<p>.1 While the PIROP contract generally meets the intent of the Observer Eligibility Standard, there is no explicit reference to the standard. Although it's implied in the contract, there is no stated requirement that the medical examination be completed within the past 12 months or by a “licensed” physician.</p> <p>.2 In the past the PIROP has experienced several challenging medical situations, even though these individuals successfully passed the current medical exam. One observer was a diabetic,</p>	

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		<p>served successfully as an observer for over two years, but ran out of insulin when the vessel decided to stay out to fish longer than originally planned. The USCG was able to deliver the medication to the vessel via helicopter. Another observer had a pacemaker and was medevaced off the vessel when the device malfunctioned. Helicopter operations are both costly to taxpayers and risky to the USCG personnel each time they take flight. In addition, if conditions were not ideal, medications may not have been able to be delivered, increasing the risk to the individual observer as well as the potential economic loss due to lost fishing time for the vessel.</p> <p>.3 Recently, a crew member was diagnosed with tuberculosis (TB) upon returning from a fishing trip with an observer on board. Later the crew member died from the infection. Three observers and one of the port coordinators were tested to see if they had been exposed to TB. Fortunately all were negative.</p> <p>.4 Due to privacy concerns, the reviewer was unable to verify whether current and prior observers met the applicable physical fitness requirements. The physical fitness exam does not include program-specific medical requirements such as ensuring an observer is not color blind (many fish are identified by color in the PIROP fishery), yet no color vision test is required during the medical review by the PIROP program.</p> <p>.5 The PIROP fishing fleet is comprised primarily of crew and captains from foreign countries that travel frequently to Asia. The threat of transmission of Asian-borne highly contagious diseases (such as avian flu) due to close quarters and the generally unhygienic conditions on a fishing vessel operating hundreds of miles offshore from medical facilities presents a high-risk environment to observers.</p>
	<p>Recommendation</p>	<p>The PIROP-approved health form should be reviewed to ensure that all aspects of the job in the PIROP such as identifying fish by color, and any recent health scares (TB screening, diabetes, pacemaker) be addressed in the incorporated into the medical prequalification and health standards (see section 4.1.2, No. 1, findings .4-.5, recommendation .10).</p>

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4.8.1.2.2.3 Compensation

Observers hired by TSI in PIROP are typically employed on a term contract basis. The duration of the term is usually three trips at sea or approximately 90 days. The union agreement governs the compensation observers receive from working as a PIROP observer. Honolulu is considered the point of hire. Observers from the mainland must pay for travel to and from Honolulu. Under the union agreement, there is a pay scale based on the number of sea days an observer has completed. There are five different grade levels ranging from a Grade Level 1 (0-180 days at sea) to a Grade Level 5 (over 2,000 days at sea). The higher the grade level, the higher the pay rate. For example an observer who has completed between 181-420 days at sea is considered a "Grade Level 2" observer and is compensated at a higher hourly rate than a Grade Level 1 observer. The agreement specifies a \$0.50 increase to the observer hourly rate each year.

Observer trainees are paid for 8 hours per day for 3 weeks upon their successful completion of initial observer training. Once assigned to a vessel and after completion of the placement meeting, the observer is paid \$75/day standby pay. Once the vessel is underway, observers are paid for a full sea day if the vessel is at sea for any portion of a day. A sea day is defined as a minimum of 10 hours per day (8 hours of base pay and 2 hours of overtime). The average number of hours an observer works is 11 hours a day per the NOAA contract.

Observers are paid for a minimum of three days during debriefing at the Grade Level 1 hourly rate. If debriefing takes longer than three days, then the observer is compensated for the actual hours. In 2017, assuming the observer worked 10 hours per day at sea, observer compensation would range from \$200/day (Grade 1) to \$263/day (Grade 5). Up to 10 vacation days are paid each year based upon the pro-rated number of sea days completed. Observers are paid double wages for 10 federal holidays, are given a 1.5 % bonus annually, and are encouraged under the agreement to participate in an IRA. If fees or other costs are incurred using an IRA, TSI will reimburse the observer with proper documentation.

The observer provider reimburses observers for excess baggage charges, transportation between vessel and lodging, meals in transit consistent with the FTR, and per diem for all days during training and debriefing.

4.8.1.2.2.4 Housing

During the three-week training session and during the observer's first contract, observers can stay free of charge at the observer bunkhouse provided by TSI. The three-bedroom observer bunkhouse has a "house Mom" who ensures the bunkhouse remains well organized, clean, and quiet. It's located close to downtown Honolulu with frequent bus service. During observer

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training, two rental cars were provided by TSI to transport observers to and from their training locations and to run pre-deployment errands.

4.8.1.2.2.5 Health insurance

TSI provides personal health insurance benefits to its fisheries observers starting the first day the observer is deployed at sea. Kaiser, the insurance provider, requires a co-pay of \$15 for each office visit. The health insurance remains in effect during the observer’s entire contract including in between trips while on land. The coverage continues throughout the last month of an observer’s contract. When the contract period ends, an observer may elect to go on COBRA or terminate the insurance. If the observer is willing to sign a contract to return to work at a future date, TSI will allow the observer to remain on the health plan but will withdraw up to 3 months of the monthly premium from the observer’s future checks to cover the premium while the observer is between contracts. The observer also has the option of adding dental coverage for \$35/month.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.2.2.5	Practices/Policies
	Finding	Delaying medical or dental work can potentially pose a serious medical threat for an observer, and lost fishing opportunity for the vessel if they need to return to port. One observer told the reviewer he had a dental issue that needed attention, but because the dental and health insurance would not go into effect until the first day the observer was deployed, he would wait until he returned to shore before getting attention.	
	Recommendation	The PIROP should consider requiring in any future PIROP contracts that the observer provider’s personal health insurance become effective the first day of employment (<i>e.g.</i> the first day of training), to facilitate preventative medical or dental care if needed prior to deployment.	

4.8.1.3 Observer safety training

4.8.1.3.1 Training program organization

The three week long (15-day) PIROP training is provided on an as-needed basis, usually once per year. Observers must pass the course with an overall score of at least 85% before being deployed. The PIROP requirement to obtain a score of 85% is higher than the 80% score specified in the Observer Eligibility Standard.

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Training for all PIROP observers regardless of where they are deployed (HI, AS, West Coast) is conducted at the PIROP office located on Ford Island and in other local areas around Honolulu. The training coordinator serves as the primary trainer, and is responsible for scheduling various speakers with expertise in specific areas such as the USCG, OLE and scientists from the Pacific Islands Fisheries Science Center (PIFSC) who provide presentations throughout the course. PIROP staff also provides the majority of the training and assists in safety demonstrations as needed.

4.8.1.3.2 Safety and survival training

The initial 3-week observer training was comprised of five major components and associated locations.

1. Classroom Instruction (IRC)
2. Wilderness (Remote) Survival (First Aid) (Magic Island)
3. Hands-On Demonstrations (IRC Parking Lot)
4. In-water activities (Joint Base Pearl Harbor-Hickam Air Force base)
5. Vessel mock placement meeting and drills (Pier 38)

4.8.1.3.2.1 Classroom instruction

All classroom training was held at the IRC in a large classroom which seats and has table space for approximately 30 people. The majority of the information presented was by lecture using PowerPoint presentations and videos to reinforce the information. The screen was large, the sound good, and visual resolution quality was excellent. When the desks were moved back, there was adequate room for hands-on demonstrations and practice by the students (*e.g.*, donning their immersion suits, replacing the CO₂ cartridges in their PFDs; Figure 24). In addition to the large classroom at the PIROP office on Ford Island, classroom space at the PIROP facilities at Pier 38 can accommodate additional training or serve as a replacement.

The topics presented included instruction on:

- Location, testing and deployment of the EPIRB
- Vessel hazards
- Mayday calls
- Type, location and proper use of fire extinguishers
- Type, location and proper use of flares and smoke signals
- Types, maintenance and proper fitting of PFDs
- Safety rules and the 7 steps to survival

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- Liferaft and proper attachment to the vessel
- Maintenance and proper use of immersion suits
- Instruction on the placement checklist (PTVSC) and placement meeting
- Other safety issues such as sleep deprivation, seasickness, and overall health

The PIROP training covered all of the required topics in the Observer Safety Training Standards (Appendix 10) as well as many additional topics (Appendix 11).

The “Observer Safety Training Acknowledgement of Risk” form (similar to Appendix 16) was signed by all observers at the beginning of the training class.



Figure 24 - Observers practice replacing the cartridge on a PFD at the IRC.

4.8.1.3.2.2 Wilderness First Aid

A 2.5-day Wilderness (Remote) Survival (First Aid) class was conducted by a certified National Outdoor Leadership School (NOLS) instructor. The training was held at Magic Island, a park in Downtown Honolulu just off of Ala Moana Boulevard. The instructor provided handouts, presented a variety of different injury scenarios appropriate to what observers may experience

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at sea, and demonstrated proper techniques to care for injuries (Figure 25). He also provided hands-on practice (using dirty pig parts to simulate a large and dirty wound and the challenges of adequate cleaning in a real world scenario) to ensure students understood the proper techniques as well as sequence of care.



Figure 25 - Observers practice use of the butterfly bandage to close a wound.

4.8.1.3.2.3 Hands-on demonstration

A hands-on demonstration of using the correct protocol when fighting a fire was conducted in the parking lot of the IRC. The PIROP instructors utilized a BullEx® Intelligent Training System to simulate a fire and practice fire extinguishing techniques (Figure 26). Trainees were provided with safety goggles and gloves as per the Observer Safety Training Standards checklist for fire extinguishing demonstrations.

In many other observer programs, vessel stability, flooding damage control and dewatering pumps are discussed, but these topics were not covered in the classroom or through hands-on

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demonstration. The USCG donated a damage control training unit to the PIROP in 2015; however, it requires repairs and it currently not in use.



Figure 26 - PIROP observers utilized a BullEx® Intelligent Training System to demonstrate correct fire-fighting techniques

4.8.1.3.2.4 In-water activities

A large swimming pool located on Joint Base Pearl Harbor-Hickam Air Force Base, approximately seven minutes from the PIROP office, was utilized for in-water training and skills testing. Prior to undertaking the skills tests, the trainers identified pool hazards, ensured the trainer to trainee ratio conformed to national standards, ensured that students and trainers had on PFDs at all times while in the water, and had several rescue devices on hand in the case of an emergency. Skills tested included proper water entry techniques wearing an immersion suit and PFD, practicing the HELP and HUDDLE positions, entering a liferaft from the water (with and without assistance), and righting a capsized liferaft (Figure 27; Appendix 12).

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Figure 27 - Observers practice “righting” the liferaft during safety training.

4.8.1.3.2.5 Pier 38 vessel drills

Two typical pelagic longline fishing vessels located at Pier 38 were used to demonstrate the vessel orientation, placement meeting with the captain, and placement checklist (PTSVC) procedures (Vessel 1), and to simulate several safety issues and mock practice drills (man overboard, fire, abandon ship) (Vessel 2). Both vessels were suitable for the exercises and are a key component to simulating real world situations.

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No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.3.2	Training
	Findings	<p>.1 The facilities for all aspects of training were ideal. The 15-day initial PIROP safety training was compliant with the Observer Safety Training Standards (NOAA Fisheries 2007b) and covered all topics for the specified durations or longer. The in-water demonstration, pool exercises, and required skill demonstrations by observer trainees were compliant with the Observer Safety Training Standards.</p> <p>.2 The Wilderness (Remote) Survival (First Aid) class was excellent and tailored to at-sea conditions with hands-on survival techniques in remote settings. Due to past experiences where observers have helped injured crew members, much of the training was designed to enable the observer to engage in first response and management of an injured crew member. Several observers suggested that the class could be improved by refocusing some of the training on observer self-treatment rather than only responding to crew injuries.</p> <p>.3 To accommodate some of the outside trainers with scheduling conflicts, the training topics were reorganized on several occasions which created some problems. The most notable was the fact that observers were not instructed in the classroom prior to in-water instruction held at the pool on how to enter the water in an immersion suit, get inside the liferaft, right the liferaft, perform the HELP and HUDDLE positions, or other immersion suit exercises. Once at the pool, instructions and demonstrations were given by an instructor. Presenting training modules out of logical sequence, especially those with a hands-on component, can cause unnecessary safety risks to the trainees.</p> <p>.4 Although not a requirement of the Observer Safety Training Standards, the reviewer noted that a hands-on demonstration of the ignition and proper use of distress flares and smoke signals was not conducted. A presentation on dewatering a vessel, and a hands-on demonstration of dewatering a vessel by assembling and operating a typical dewatering pump were not conducted. While the PIROP has been provided a damage control training unit by the USCG, it requires repair and is not currently in use.</p>	

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		<p>.5 Although two fishing vessels were located and used to conduct safety drills and the mock placement meeting, they were not scheduled until the day before, which caused some confusion and concern on the part of the trainers.</p>
	<p>Recommendations</p>	<p>.1 The Wilderness (Remote) Survival (First Aid) training should be modified to include more instruction on self-medication and self-treatment.</p> <p>.2 Although topics often need to be adjusted when scheduling conflicts occur, a checklist should be created to ensure the key safety training sequence is not interrupted. For safety reasons as well as comprehension, it's critical that observers are fully briefed in class on the challenges of maneuvering in an immersion suit as well as entering, exiting and righting a liferaft before practicing these skills in the pool.</p> <p>.3 The PIROP should investigate if the IRC is suitable for demonstration of, and practice with distress flares and smoke signals, and if not, seek to find a different location where this activity could take place. The HI and AS longline fleets operate very far offshore, and thus training on how to use dewatering pumps and practice damage control techniques using the damage control unit is strongly encouraged and highly recommended.</p> <p>.4 Overall better planning by scheduling vessels well in advance and reviewing the sequence of speakers prior to hands-on demonstrations could improve successful and safe observer training sessions.</p>

4.8.1.3.2.6 Quality of training materials & accuracy of content

The training coordinator is responsible for scheduling, identifying the trainer for each section, updating the training manual, and developing the training lesson plans and presentations. While all the requirements of the Observer Safety Training Standards were nominally met, the quality of safety training and other training topics could be significantly improved.

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No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.3.2.6	Training
	Findings	<p>.1 Presentation objectives and delivery were often not clearly stated.</p> <p>.2 There were a significant number of “observer stories” told that were either not related to or did not reinforce the topic being presented.</p>	
	Recommendation	<p>Training materials should be reviewed and updated to include additional photos, figures and information. Font size within the PowerPoint presentations should be increased and more hands-on practical exercises should be incorporated into the classroom portion of the training. For new trainers or staff, the training coordinator needs to assist them in preparing the material and practicing the delivery of the information. The NEFSC FSB has an excellent training program including logical organization of class materials, logistics, hands-on demonstrations and training props. Cross training with the NEFSC FSB, or having an NEFSC FSB trainer assist the PIROP in the near future could greatly improve PIROP training.</p>	

4.8.1.3.2.7 Observer Manuals

There are two different observer manuals for the PIROP; one for the Hawaii based fishery (version LM.17.02), and one for the American Samoa based fishery (version AS 17.10.00.01). Observers deployed on the West Coast are provided a supplemental contact sheet containing phone numbers and email addresses of observer personnel from other West Coast observer programs that may be able to assist PIROP observers deployed on the West Coast.

The current HI observer manual (version LM.17.02) is fairly comprehensive and straightforward, and contains much of the necessary information for observers to successfully perform their jobs. Chapter 19 of the manual provides information on national and regional observer program requirements for safety training of observers and staff and the successful completion of the 25 hour safety training and demonstration of safety skills every 3 years. Extensive instructions for using the “Placement Checklist” which is analogous to the PTSVC used in other observer programs are also included in this chapter. Chapter 18 discusses the satellite phone, radio reporting and a list of contacts in Honolulu.

The American Samoa Observer Program (ASOP) manual was first drafted in 2006 with the help of the first few ASOP observers. It was modeled on the HI manual, but was significantly reduced because there were fewer data needs. There has been an ASOP manual in place ever since.

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ASOP recently updated their manual as of October 2017. During the revision process ASOP asked the HI PIROP staff for input into the updates and changes.

Because most of the PIROP-HI fishing vessels are staffed by foreign crew and captains, it would be very helpful to have a section on cultural sensitivity including food, lifestyle, and expected appropriate behavior included in the manual. In particular, different cultures often have different expectations or interpretations about how women are to conduct themselves, even in a professional setting. It would be helpful to have a section on “Advice to Women out at sea” such as the information provided in the SEFSC-Galveston manual page 1-24 (NMFS 2016a). Although the diversity of food was covered in training, a written section addressing a number of cultural differences could assist in reminding observers how best to cope in unfamiliar and challenging situations while at sea.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.3.2.7	Training
	Findings	<ul style="list-style-type: none"> .1 The reviewer found the HI version of the manual to have a high number of spelling errors that distracted from the content. .2 While information is cited in the body of the manual, the reference section containing the complete citation is missing. .3 The fire extinguisher and life buoy sections (19-3) were confusing. For example, there is no information provided on the number of life buoys required by vessel length; therefore an observer may need to refer elsewhere to determine whether a vessel is meeting this requirement. Similarly, information is lacking on the USCG regulations requiring the “vessel’s fire extinguishers be of the correct size, type approved for use.” .4 Although provided in a laminated hand-out during gear checkout, a complete list of the speed dial phone numbers on the satellite phone is not included in the manual. .5 Samples of the various forms (specimen log, seabird biological data form, etc.) are not included in the manual. 	
	Recommendations	<ul style="list-style-type: none"> .1 The PIROP should editorially review the HI manual to ensure that it's complete and free of obvious spelling errors. The PIROP should add a section in both the HI and ASOP manuals on cultural awareness and sensitivity focused on Pacific Island and Asian nations’ traditions, including food preferences and other 	

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		<p>practices that may impact observers while at sea. In addition, the PIROP should add a section on notes to women going to sea (see SEFSC-Galveston manual, page 1-24).</p> <p>.2 The PIROP should revise, expand, and clarify the safety information on fire extinguishers and life buoys consistent with the USCG compliance booklets given to the observers. All safety information and evaluation criteria should be included in the observer manual.</p> <p>.3 A complete list of the speed dial phone numbers should be included in the manual.</p> <p>.4 The PIROP should include examples of each form used by observers in the manual.</p>
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4.8.1.3.2.8 Refresher training

The PIROP requires 5 different types and lengths of briefings, refresher training, and full training as follows:

1. 30 days-6 months: Refresher training is provided to an observer who has not been at sea for at least 30 days. The duration (*e.g.*, one hour, one day) of the training is not specified but must cover a review of the most current field manual including any changes that have been made and updates or changes to program policies or circulars. The briefing can be conducted by any PIROP staff member. The staff member reviews the observer's previous evaluation for any deficiencies or other issues to improve the observer's performance on the upcoming deployment. Safety issues are typically not covered unless there has been a recent serious incident that resulted in a policy change.
2. 6 months-1 year: Observers who have not been at sea for at least six months but less than a year are required to attend a three-day refresher training. The training must be completed before the observer is eligible to deploy as an observer. The refresher training includes 2-3 hours focused on safety.
3. 1 year-2 years: Observers who have not served in a PIROP fishery for over one year but less than two years are required to attend a five-day refresher training that includes a two day "hands-on" safety session before the observer is eligible to return to sea.
4. 2 years or more: If an observer has not served as a PIROP observer within the past two years, they are required to attend the full three-week training session including the safety training.

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5. 3 year safety refresher: Once every three years an active observer is required to attend and pass a two-day safety refresher course. Observers are tested using the same skills test as during their initial safety training.

TSI tracks how long it has been since an observer has been deployed and communicates training and briefing needs with the PIROP. TSI also tracks the status of the observers' CPR and First Aid certification because observers are required to maintain their CPR/First Aid certification independent of fulfilling the PIROP briefing and training requirement.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.3.2.8	Practices/Policies
	Finding	The time requirements and lengths of the briefings/refreshers are well documented. However, there is no mention or stated policy whether the observer is required to pass a test or not during the briefing/training sessions. Some current observers had not completed the required 3-year safety refresher course and were being sent back out to sea before going through the class. This does not meet the Observer Safety Training Standards.	
	Recommendation	Training requirements and procedures should be revised to identify if examinations are required during refresher safety trainings. While it's important for the program to meet its coverage goals, adherence to the established safety training standards is critical to NOAA Fisheries' stated commitment to observer safety.	

4.8.1.4 Observer Equipment and Maintenance

PIROP observers are provided with a satellite phone, PLB, PFD, EPIRB, and immersion suit equipped with a strobe light and whistle (Appendix 14). Observers are instructed to test their satellite phones prior to departure, and to turn on the phone once per day while underway to check for messages. Observers are also required to test their PLB and EPIRB prior to each trip.

The observer provider is responsible for maintaining, restocking and organizing the PIROP-purchased observer gear per their contract with NOAA Fisheries. The observer provider is responsible for tracking, inspecting and noting the expiration of batteries or equipment (where applicable, *e.g.*, immersion suits, PFDs and EPIRBs). The observer provider is also responsible for obtaining and staffing a gear storage facility known as the "gear shack" that is available

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24/7, and easily accessible to observers and PIROP staff. In addition to housing the observer safety and sampling gear, the PIROP requires the gear shack to have up to 5 full-size freezers or one walk-in freezer to freeze returning observer gear to prevent the spread of bed bugs to the mainland; a shower; and a washing machine/dryer (Figure 28).



Figure 28 - Walk-in freezer at the PIROP gear shack in Honolulu.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.4	Equipment
	Finding	The PIROP gear shack appeared to be very well organized, including a walk-in freezer, and several other freezers to store specimens and observer gear. The observer provider had a computer workstation	

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		<p>at the gear shack, and provided the reviewer with copies of the maintenance status of important safety gear such as immersion suits. There were ample supplies of a variety of gear that was well labeled and stored on shelves. Observers remarked that TSI has always provided observers with plenty of forms, gear and other supplies. Although recommended during training by staff, the observer provider does not provide antibiotics to observers. The access to the facility and the parking were extremely limited.</p>
	<p>Recommendations</p>	<ul style="list-style-type: none"> .1 Due to the vessels being a long way offshore and the elevated possibility of infection from staph, PIROP should consult with medical experts on what is appropriate to treat infections caused by bed bugs, staph or other disease agents. The PIROP or the observer provider should consider recommending a physician who may prescribe medical prophylactics or treatments before the observer is deployed. The PIROP and the observer provider should consider reimbursing the observer for the extra expense of work related prescribed medications not covered by insurance. .2 The PIROP or TSI should consider providing better antibacterial cleaning supplies (<i>e.g.</i>, hospital grade anti-bacterial wipes), and more training regarding the importance of personal sanitation and other methods to reduce infections. .3 Honolulu is a very expensive city with limited space in close proximity to the fishing piers. The requirements of the PIROP program for the gear shack are extensive with inclusion of a washer/dryer, walk-in freezer and shower facilities. In the future, if an opportunity arises to obtain better facilities with improved access and parking, the PIROP and the current observer provider should consider relocating.

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4.8.1.5 Vessel selection and notification

Vessel operators in possession of a Hawaii or an American Samoa Longline Limited Entry Permit wishing to fish, must notify the Regional Administrator or their designee before each trip at least 72 hours (not including weekends or federal holidays) prior to leaving port. The permit holder or designated agent for a vessel registered for use under a Hawaii longline limited access permit must also provide notification of the trip type (either deep-setting or shallow-setting). Vessels fishing shallow-set type gear (swordfish) are required to carry an observer 100% of the time while fishing, and are not included in the randomized vessel selection scheme utilized for the deep-set trips. The permit holder is required to call into a 24-hour accessible phone line and leave a voice message that includes the name and permit number of the vessel, intended departure date, location of the vessel, operator of the vessel, and name and contact phone number of the agent or operator to arrange for an observer placement meeting, if selected for observer coverage.

The TSI project manager/contract liaison manages vessel selection and observer placement. At the beginning of each calendar year, a PIFSC statistician generates a randomized number table to be used to obtain 20% observer coverage on vessels targeting tuna (deep-set trips). 15% of vessels selected to carry observers are chosen by the call-in log assignment scheme, with the remaining 5% being selected by the observer coordinator. This method provides enough flexibility to maintain coverage levels as close to 20% as possible throughout the year, and to keep the observer pool regularly employed. Once a permit holder calls into the phone line, the vessel is assigned a number in sequential order. A running list comparing the vessel's assigned number with the randomized table is used to determine if observer coverage is required for a particular trip. For example, if the random number table identifies trips #4, #6 and #10 as selected for observer coverage, then the fourth, sixth and tenth trips that call in are required to carry an observer for a single trip. Trips 1-3, 5, and 7-9 are free to fish without an observer on board. Using this method to determine coverage continues throughout the calendar year. On a quarterly basis, observer coverage levels are reviewed by NOAA Fisheries and TSI staff to ensure the 20% observer coverage rate is being achieved.

At present there is only one vessel that is considered unobservable due to an extreme lack of maintenance and a deteriorating wooden hull that does not meet the regulatory requirements for observer safety. The vessel has been tied to the dock for several years and there is no expectation that it will fish again in the near future. Vessels under 40' LOA are categorically excluded from observer coverage.

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4.8.1.6 Observer selection and notification

The union agreement requires that a trained observer who has completed debriefing and who has been on land the longest is the first person to be deployed when a vessel is selected for coverage. The next observer who completes debriefing is added to the bottom of the list and so forth. At the conclusion of an observer's deployment, TSI has created an "End of Deployment Statement" used to identify and plan an observer's future availability. If an observer requests time off, their name is not added to the bottom of the deployment list until they are ready to return to duty. Upon completion of training and passing the class, new observers' names are added to the bottom of the deployment list based on their midterm scores from highest score to lowest score. TSI maintains the Observer Deployment List which determines the sequential order of observer assignment. Observers can access the deployment list from the TSI website⁶⁰.

New observers are technically in a probationary status (Contract Sections C, V, D) until they successfully complete three (approximately 23 days each) vessel assignments. Once they complete debriefing of the three trips, they are then considered "bona fide longline observers."

4.8.1.7 Deployment and at-sea support

Honolulu is the home port for the majority of the Hawaii longline fleet, with 95% of the landings occurring in Honolulu. Six to eight vessels work off the California coast delivering to San Diego, San Francisco and occasionally the Long Beach area. An average of 4-6 observers are deployed or return to port in Pago Pago, AS. Generally, only experienced observers are assigned to the vessels off California or AS due to the increased level of responsibility and risk.

Honolulu is the designated duty station for the PIROP observer program. All travel is arranged by TSI if the observer is deployed from AS, the West Coast of the US, or any other port outside of Honolulu. Travel funds and per diem are provided according to the FTR. For observers who deploy from Honolulu, equipment transportation either to the bunkhouse or to the vessel is provided by TSI. Upon returning to port, TSI picks up the observer and his/her equipment and provides transportation to the gear shack. All gear, with the exception of some electronics, is placed into the freezer for no less than 72 hours to ensure that all life stages of any bed bugs are destroyed (Olson *et al.* 2013). Prior to leaving Honolulu for deployment on a trip, the observer stores a change of clothes at the gear shack to be used upon return. When the observer returns and after showering at the gear shack, the observer changes into the previously provided clothes. His/her dirty clothes are also placed in the freezer to ensure that

⁶⁰ <http://www.techsea.com>

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no bed bugs remain viable. The same process of freezing gear and clothing upon return to shore is used in AS when observers disembark their vessels.

Since the inception of the PIROP, an observer placement meeting and the PTVSC known as the “placement checklist” has been an integral part of ensuring observer safety and is considered a best practice. The placement meeting in the PIROP is particularly important because often the captain and the crew are foreign nationals and may not be fluent in English. With the exception of observers deployed from the West Coast of the US, either the observer provider or ASOP staff schedule and initiate the placement meeting between the observer and vessel captain (or the captain’s designee). A placement meeting form (Appendix 21) and the Placement Checklist (PTVSC) (Appendix 22) are completed during the meeting. These meetings are designed to clarify the role of the observer, the requirements of the vessel in making available bunk space, work area on the deck, access to equipment, and the safety protocols of the vessel. Typically the port coordinator, the observer and the captain meet on board the vessel at least 12 hours before departure, but this could be up to 3 days before departure from the dock. The observer provider introduces the observer to the captain and then proceeds to discuss all the information contained in the placement meeting document. Once the discussion is completed and any questions answered, the observer, the port coordinator, and the captain complete the placement meeting form by each signing the document. Two very critical items are covered during the meeting; is there enough drinking water and food on board for the observer, and are bed bugs present (see section 4.8.1.7.6). Often the captain will ask the observer what food the observer would like to have on board since the captain may be heading to the store. If bed bugs are present or there are recent reports of their presence, the observer provider will conduct an inspection prior to placing the observer. If bed bugs are discovered, fumigation of the vessel will be strongly encouraged prior to the vessel’s departure with an observer. If the vessel does not fumigate, the observer is still required to serve on the vessel unless he/she chooses to refuse the vessel. NOAA Fisheries does not hold the vessel in port if the vessel owners decline to fumigate.

The Placement Checklist (PTSVC) is undertaken by the observer and the port coordinator. A vessel tour is conducted identifying where safety equipment is located, checking to see if it's in good working condition, ensuring that the USCG fishing vessel safety decal is less than two years old, and identifying at least 2 routes to egress from the sleeping area and other living spaces. The checklist includes examining the fire extinguishers, distress signals (flares and smoke signals), EPIRB and liferaft. The liferaft is also checked to ensure that it's installed correctly, with the hydrostatic release unit properly installed so that the raft will float free if submerged. If any component identified as a “NO GO” on the Placement Checklist is failed, the observer will not be deployed on the vessel until the deficiency is corrected.

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The completed placement checklist and placement meeting documents are placed in the observer trip folder and are hand delivered to PIROP staff every one-two days. In the case of an observer being placed on a vessel off the West Coast, the observer texts a photo of the completed placement meeting and placement checklist to TSI. TSI prints a copy and puts it into the appropriate trip folder, and then delivers the trip information to the PIROP.

PIROP staff recently reviewed all the documentation for placement meetings conducted from January 1-March 14, 2017. The review of the placement meeting forms and placement checklist (PTVSC) indicated they were not always fully completed by the port coordinators (Figure 29). Thirty-two percent of the forms were incomplete, with the extent of the discrepancies varying among port coordinators. Initially the PIROP staff thought observers were placed on “NO GO” vessels 13% of deployments based on the documentation. Upon further investigation with the port coordinators, it was established that this only occurred twice. Regardless, any “NO GO” deployment could be a very serious problem if a vessel had a safety issue while out at sea. If there is a serious incident at sea such as the loss of life and vessel sinking, the placement meeting checklist will be one of the most important documents reviewed by the USCG.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.7	Practices/Policies
	Finding	The placement meeting and placement checklist (PTVSC) are critical safety controls that should be conducted and documented consistently recognizing their high importance to observer safety. Since the review, PIROP staff will “shadow” a port coordinator approximately once per quarter to ensure they are meeting the expected standard. If problems are discovered, the PIROP staff conducts a placement refresher with the port coordinators. Due to the results of their review, the PIROP has made a policy change wherein the observer fills out the placement checklist (PTVSC), and then it's reviewed by the port coordinator. Initial feedback indicates that this procedure has improved the completion of the proper paperwork over the past.	
	Recommendation	The PIROP should implement a quarterly review of all placement meeting documents for both Hawaii and American Samoa. If there are oversights or problems, these should be discussed with the relevant personnel and corrected immediately.	

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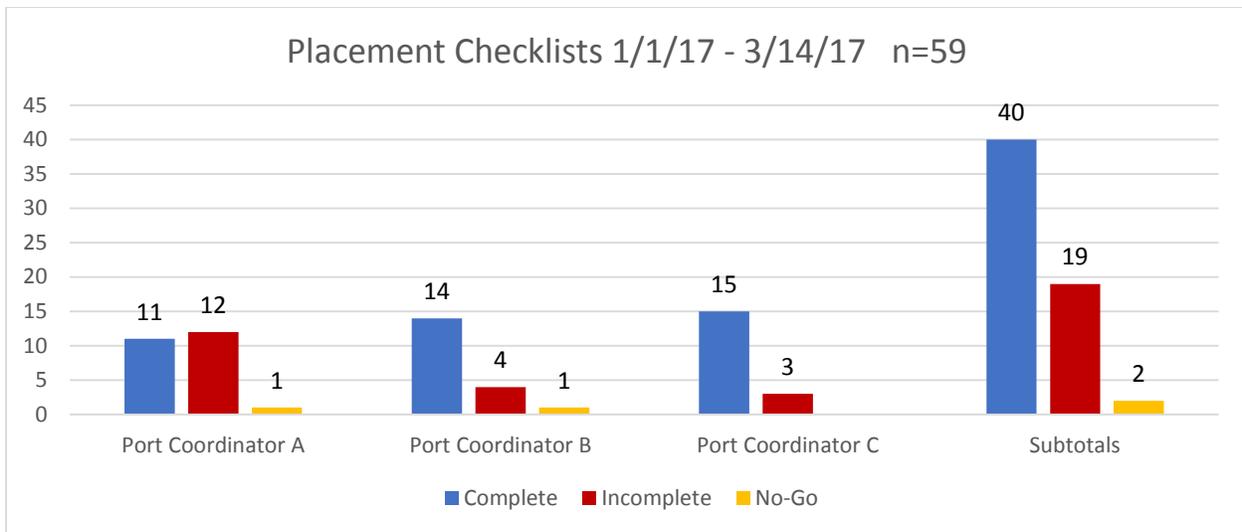


Figure 29 - PIROP review of completion of the placement checklist (PTVSC) by port coordinators

4.8.1.7.1 Vessel refusal

An observer has the right to refuse a vessel due to any safety concerns they may have. Although this occurs infrequently in the PIROP fisheries, if an observer refuses a vessel it's usually due to the presence of bed bugs or their potential recurrence. On rare occasions, a female observer may refuse a vessel due to the lack of reasonable privacy which is afforded within the contract between NOAA Fisheries and TSI and in federal regulations (Appendix 3). TSI informed the reviewer that it has been fairly easy to reassign an observer to a different vessel when this occurs.

4.8.1.7.2 Communication and emergency response

The Hawaii tuna and swordfish fleets typically operate several hundred miles offshore and are equipped with many VHF radios, a SSB radio, cell phones, and often other communication devices. While these communication options are available for use by observers, the primary means of communicating with the PIROP program is through the program-issued Iridium satellite phone. The satellite phone has both voice and text features available. The satellite phone can be used any time as a means of communicating independent of the captain and crew, and has very few dead zone coverage areas. Observers may use the satellite phone to contact family members or significant others during a family emergency on shore; otherwise the phone is used strictly for observer-related communication.

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If an emergency occurs at sea, observers are instructed to call the USCG Sector Command using the speed dial number 1. After speaking with the USCG, observers are required to call the port coordinator and the PIROP staff supervisor. If no one answers, the observer should leave a voice message on the Observer Information Hotline. Someone will call or text the observer back on the satellite phone. If the satellite phone is not working, the observer is instructed to call the USCG Sector Command on the SSB radio.

4.8.1.7.3 Routine check-in

Observers are instructed to turn on their satellite phones once per day to see if there are any text messages from the program. Currently, there are no routine (daily, weekly) check-in procedures between the PIROP, the observer provider, and observers. During the gear check out process, observers are given a list of contacts that are already programmed on the speed dial on the satellite phone. Observers are also required to test that the satellite phone is working correctly by calling from the gear shack and leaving a message at a prescribed phone number listed in the manual.

The PIROP is actively working on establishing a way for observers to enter their data electronically at sea and then transmit the information remotely. Once implemented, the data transmission procedure could also be used to establish daily or every other day check-in procedures with the observer.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.7.3	Practices/Policies, Communication, Equipment
	Finding	In the past, there has been at least one incident where a deployed PIROP observer experienced a serious mental health issue at sea. The observer was eventually restrained by the crew and brought to shore. Apparently the PIROP did not know there was a problem until the observer was in serious crisis and had to be physically restrained. If there had been a routine check-in process with the PIROP or the observer provider, this situation may have been detected earlier or possibly prevented.	
	Recommendation	Although the satellite phone provides a private and independent means of communication with program and observer provider staff, the PIROP should consider requiring regularly scheduled check-in with either TSI or the PIROP. This procedure could be accomplished	

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		<p>by having the observer text a series of codes, or call either the observer provider or the PIROP staff every 3-5 days. Although PIROP observers are not issued InReach satellite communicators like some other programs, the InReach can be pre-programmed using a code to send a daily text message. The PIROP should consider conducting a cost benefit analysis to determine if using an InReach-type device would improve observer safety, meet program objectives, and be financially feasible.</p>
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4.8.1.7.4 Illness/injury reporting while deployed

If an observer is injured or becomes ill at sea, they can immediately seek assistance by calling the USCG Sector Command on the satellite phone or radio. Once the incident is reported and communication with the USCG is established, then the observer is instructed to call either TSI or the PIROP depending upon the type and severity of injury. If the injury is severe enough, the vessel may be advised to proceed to port or if within helicopter range, to have the observer medevaced off. However in many cases, the vessel may be too far offshore for a medevac, and medical attention will have to be provided by the captain or crew. Often the observer has the most medical training of anyone on board.

The number of annual injuries reported ranged from five to nine during 2010-2016 (Figure 30).

4.8.1.7.5 Vessel compensation for carrying an observer

Under 50 CFR 665.808 (i)(1), the Regional Administrator has the authority to compensate vessel owners for observer subsistence. Currently vessels that provide adequate water and food for the observer are reimbursed \$20/day for each day the observer is on board. Upon return to port, the vessel submits an invoice to the observer provider. The observer provider checks with the observer to verify there was enough food and water. If so, the observer provider sends a check to the vessel. If the vessel does not provide adequate food or water for the observer, they are not compensated.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.7.5	Practices/Policies
	Finding	<p>According to many observers, the current procedure for vessel compensation for observer subsistence does not work very well. Some observers suggested that they be given the funds or a portion of the funds to purchase their own food. Many long-term observers spend their personal funds to purchase their own food for up to 3 weeks, and a water filter, because they've had bad experiences in the</p>	

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		<p>past, with only bait fish to eat and contaminated water to drink on board. If there's not adequate food or water, or the observer is unable to eat certain types of food, this can become a health and safety issue. Although the PIROP has a module on dining and food habits (eating together) presented during training, the quantity and type of food remain a regular problem. After complaints about bed bugs, the lack of adequate food and/or American style food was the second most prevalent observer complaint.</p>
	<p>Recommendation</p>	<p>Well in advance of the placement meeting, the observer should create a list of food they would like purchased for them by the vessel. The observer can provide the list to the captain during the placement meeting. The observer provider and PIROP staff should encourage the vessel to purchase the food for the observer. An alternative approach, although it might present some practical challenges, would be to provide some portion of the food budget such as \$10/day to the observer and pay the vessel \$10/day. In this way, the observer would have some funding and some control over the food available on the vessel. On vessels where water quality has been a chronic problem, the PIROP should consider purchasing high quality water filters and providing them to the observer.</p>

4.8.1.7.6 Bed bugs

Bed bugs (*Cimex lectularius*) feed on human blood, usually at night, and have been increasing in prevalence since the 1990s due to resistance to pesticides and increased international travel (Green 2017). Since at least 2005, bed bugs have been a problem for the PIROP and ASOP fishing fleets. Procedures were established (*i.e.*, freezing all gear and personal effects upon return from sea) to prevent infestation of the PIROP offices (Olson *et al.* 2013). The observer provider and observers check for bed bugs during the placement meeting. If found, or if prior observers had reported bed bugs, the vessel is given the contact information of an extermination company and the vessel is fumigated at the vessel's expense. According to staff and observers, the infestation rate dropped dramatically in 2008 until 2012, when bed bug rates increased significantly (Figure 30). An estimated 60% of the vessels currently have a bed bug problem (ranging from minor to severe). Even after fumigation, bed bugs often re-emerge either because the eggs were not completely eliminated, or the vessel crew carried bed bugs from vessel to vessel (Figure 31).

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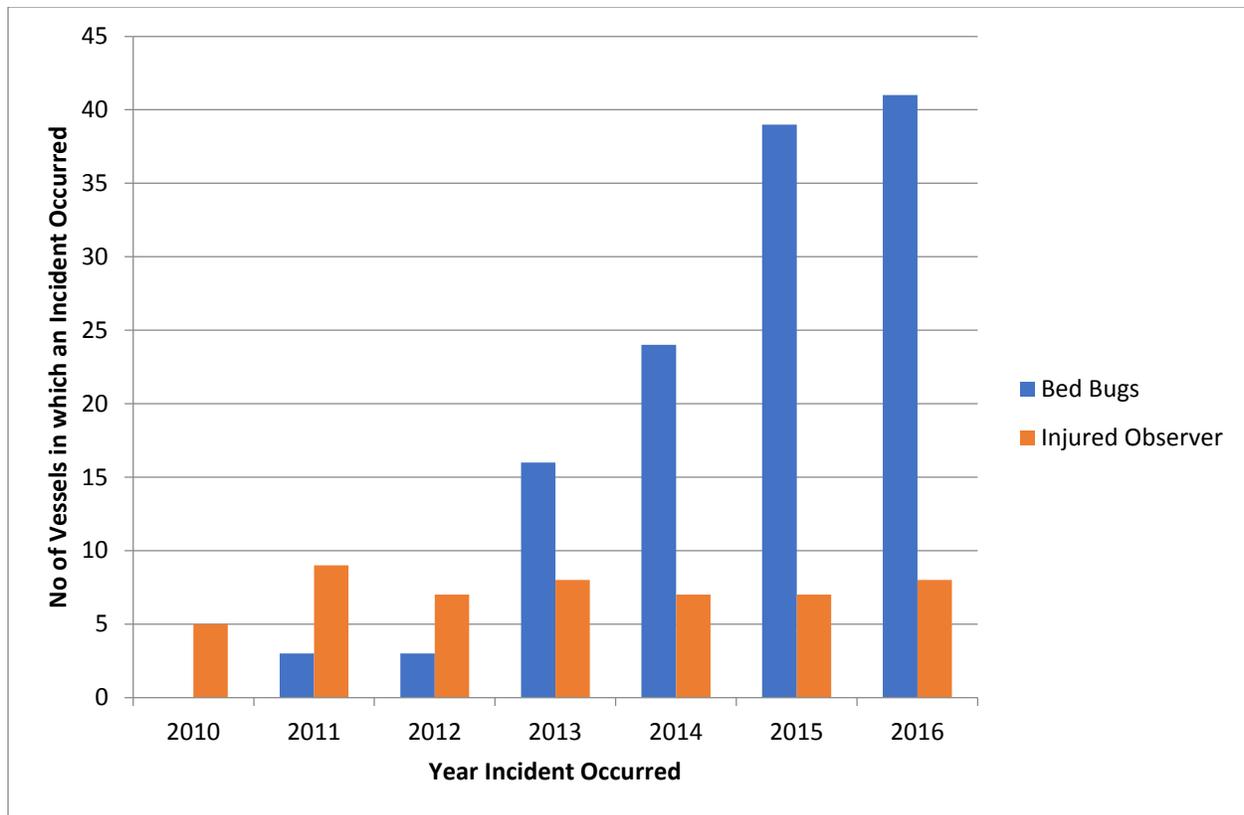


Figure 30 - Number of Reported Observer Injuries and Bed Bug Infestations from 2010-2016.

In the past, the medical community has been of the view that bed bugs do not serve as vectors in the transmission of diseases, but recent experiments demonstrate that bed bugs may be capable of transmitting Chagas disease and could potentially carry up to 45 pathogens (Delaunay *et al.* 2011, Salazar *et al.* 2015).⁶¹

In addition to potential disease transmission, observers have a range of responses to being bitten. Some have reported allergic reactions to the bites with swelling and open wounds that are prime breeding grounds for bacteria such as staph. The bites also interrupt observer sleep. Sleep deprivation can have negative health impacts and potentially increase occupational accidents (USCG 2013).

In almost every interview with staff, observers, and the observer provider, solving the bed bug issue was identified as the number one problem in the program. There appeared to be a sense of frustration since many measures that had been implemented during the past 10 years to

⁶¹ Some recent studies have shown transmission of Chagas disease by bed bugs in the laboratory, but the risk of transmission to humans outside of the lab has not been conclusively established.

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reduce infestations were working initially, but in the past 5 years infestations are substantially increasing.

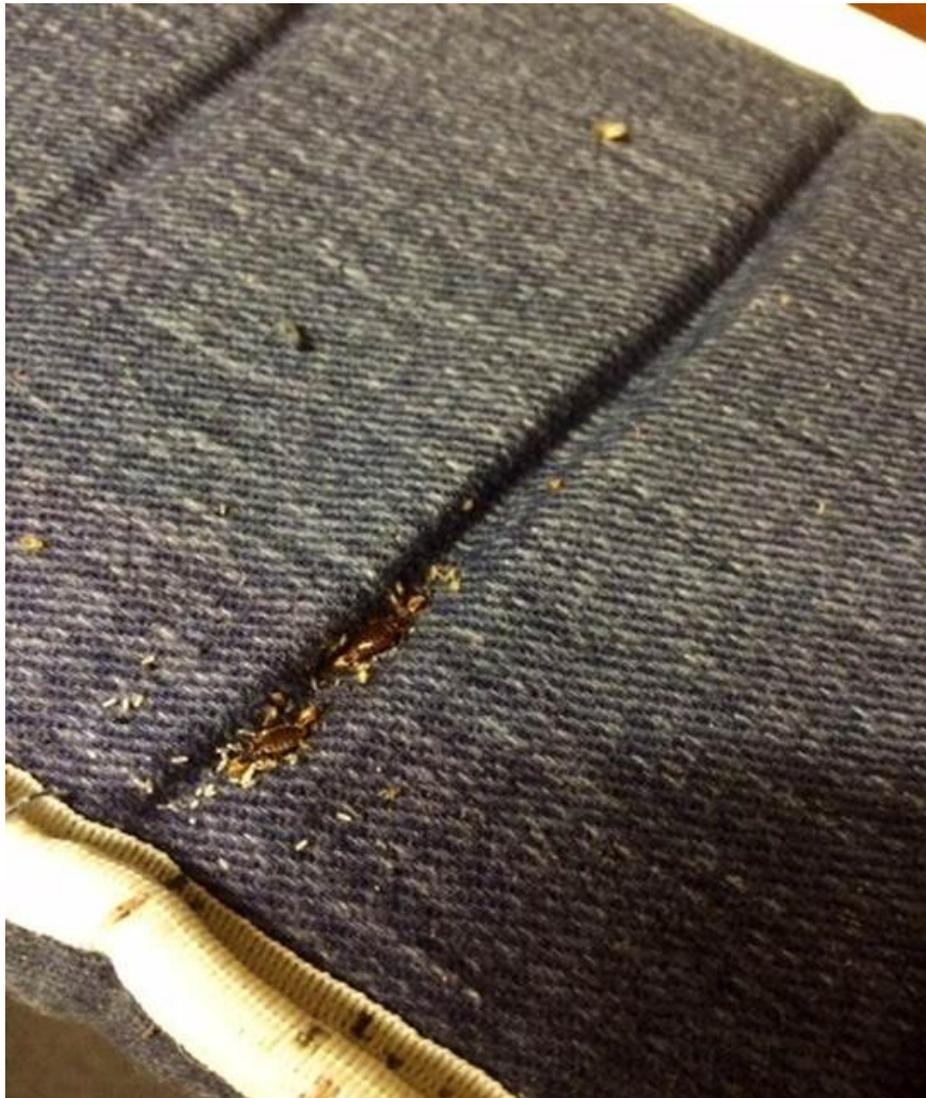


Figure 31 - Bed bugs and eggs on top of a PIROP observer bunk.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.7.6	Practices/Policies
	Finding	While the PIROP program and the observer provider have worked diligently with the fishing fleet and local authorities to reduce and eradicate bed bugs, bed bugs remain a serious problem and were the number one complaint by staff and observers alike. The PIROP has	

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		<p>anecdotal information that using a handheld hot water steam cleaner can be helpful in reducing bed bug prevalence, and is in the process of purchasing a number for issuance to observers. There is anecdotal information that the prevalence of bed bugs is a significant factor in the reasons why observers leave the program.</p>
	<p>Recommendation</p>	<p>The increase in bed bug prevalence is a health issue and should be addressed within a health and safety context instead of as a nuisance. Creating a national policy to ensure that observers, regardless of the fishery in which they are deployed, are no longer subjected to being bitten by bed bugs and potentially exposed to disease transmission from these insects, should significantly improve observer efficiency, morale and possible retention in the PIROP. See also discussion in 1.2.3.</p>

4.8.1.8 Debriefing

When heading into port at the end of a trip, the observer notifies the observer provider of the vessel’s estimated arrival time in port. The observer provider emails the PIROP office to notify the debriefing staff that an observer is headed to port and will need to debrief. A debriefing meeting is scheduled usually the first business day after the observer has returned to port. The observer has three paid days to complete the debriefing process. Prior to starting debriefing, the observer provider will have picked up the observer from the vessel, taken their gear and personal belongings to the gear shack, and stored them in the walk-in freezer to kill any bed bugs. The observer will have showered and replaced their “boat clothing” with the clean set of clothes stored at the gear shack prior to deployment.

The only location where observers can debrief is at the PIROP office on Ford Island, which is not open or accessible on weekends or Federal holidays. Remote access to the observer databases off base or at the NOAA Fisheries Pier 38 facility is not allowed due to PIRO internet security restrictions. The debriefer reviews the observer data for accuracy and the observer then makes any corrections. Once the corrections are completed, the observer enters their data electronically into the Longline Observer Database (LODS). The observer is also required to fill out a standardized post-cruise questionnaire (Appendix 23) in the online Pacific Islands Regional Observer Program System (PIROPS) that covers a wide array of critical elements including the presence of bed bugs relating to the cruise. If the observer indicates by responding “Yes” to questions regarding whether there was an apparent enforcement/MARPOL violation, or an accident or injury, this triggers an email that is sent to the PIROP Safety and Enforcement Coordinator (SEC).

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The SEC then coordinates with the assigned debriefer to interview the observer to see if a report is required. If it is, then the SEC assists the observer in writing up their incidents in PIROPS. Upon completion, the SEC reviews the report and then the observer is asked to electronically sign it. The SEC then distributes the report to the appropriate authority (OLE or USCG) with any supporting information or evidence. Any requested follow-up action from the recipient agencies is coordinated by the SEC with the reporting observer.

4.8.1.9 Observer incidents

4.8.1.9.1 Reporting and tracking procedures and response to an investigation of observer incidents

If there is an incident at sea, the observer is instructed to use the satellite phone to call the USCG, NOAA Fisheries or their employer immediately as appropriate. Depending upon the type and severity of the incident the USCG is usually notified first. If the incident occurs on land, the observer should seek medical treatment immediately and then contact the observer provider.

If an observer is injured or becomes ill at sea and requires further medical follow-up after they return from sea, their employer (TSI) requires them to fill out a company injury form, and a DOL CA-1 (injuries) or CA-2 (illnesses) form for compensation of medical expenses. The observer then sends the completed forms to TSI who submits them to the DOL. During debriefing, observers are required to fill out an incident report if there was a marine casualty, safety concern, injury, illness, MARPOL violation, or any fisheries violations including harassment or tampering with the observer's equipment.

If injured, the debriefing form automatically sends the SEC an email letting them know there was an injury. The SEC then asks the observer to fill out a PIROPS safety incident form that identifies 11 different categories for enforcement concerns and 16 different categories for injury and safety issues. From this form, the SEC tracks these incidents by date, vessel, trip identifier, observer, and incident type (Figure 34) and aggregates the data. The use of PIROPs to track safety incidents and aggregate associated data is considered a best practice and should be considered as a national template to be used by other ROPs. This information is sent to the NOP and regional SECO monthly. Where pertinent, the reports are also passed along to any other appropriate federal authority. Aggregated safety reports are also reviewed in an annual meeting with the PIROP Safety Enforcement Liaison and the local USCG. At present, the PIROP office does not track any follow-up information on whether the observer provider filed the paperwork, or if the observer received compensation and adequate medical treatment.

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From 2010 through 2016, the incidence of observer reported harassment has stayed about level, while the incidence of interference with observers has slightly decreased (Figure 33). Potential fisheries violations are sent to OLE for any further follow-up or action. The MARPOL violations, lack of safety drills, safety concerns, and all crew injury information are sent to the USCG.

From 2010 to 2016, the number of vessels not conducting safety drills has declined dramatically from a high of 44 in 2011 to zero in 2016 (Figure 34). Likewise the number of vessels not standing a wheel watch has decreased from 23 in 2010 to 5 in 2016. Safety equipment concerns were noted on two different vessels that did not carry a sufficient number of immersion suits. The incidence of unsafe conditions has varied yearly but is slightly increasing with 12 reported events in 2016. The list of safety concerns in 2016 included fuel in the drinking water, toxic exposure to chemicals, and vessel listing severely to one side. In general it appears that vessels are operating in a safer manner than in the past, but safety concerns remain in the fleet.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.9.1	Safety Reporting
	Finding	The PIROP observer system for tracking of enforcement, injury, and safety incidents is very good and can be summarized by type of incident, injury, or reported infraction. However, there appears to be no consistent follow-up or tracking by the PIROP regarding whether the observer received adequate or timely compensation or treatment for an injury. In many cases, there is limited tracking on whether an enforcement action was taken against a vessel for a reported infraction.	
	Recommendation	Create a national standardized procedure to track incidents, enforcement actions, insurance claims, timeliness of reporting, treatment and compensation to ensure observers receive adequate medical treatment under law. A procedural directive could be developed to ensure incident tracking occurs consistently in the future (see section 3.2, No. 3, finding .2, recommendations .1-.2).	

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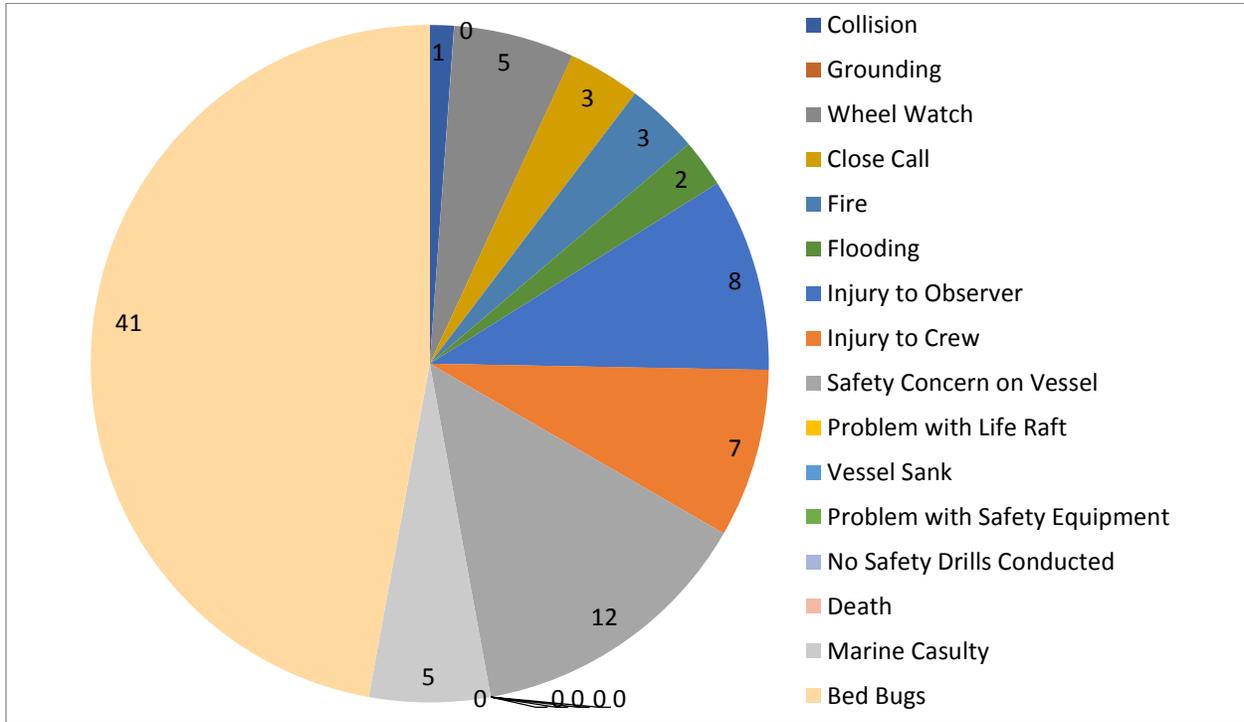


Figure 32 - Observer Reported Injury and Safety Incidence in 2016

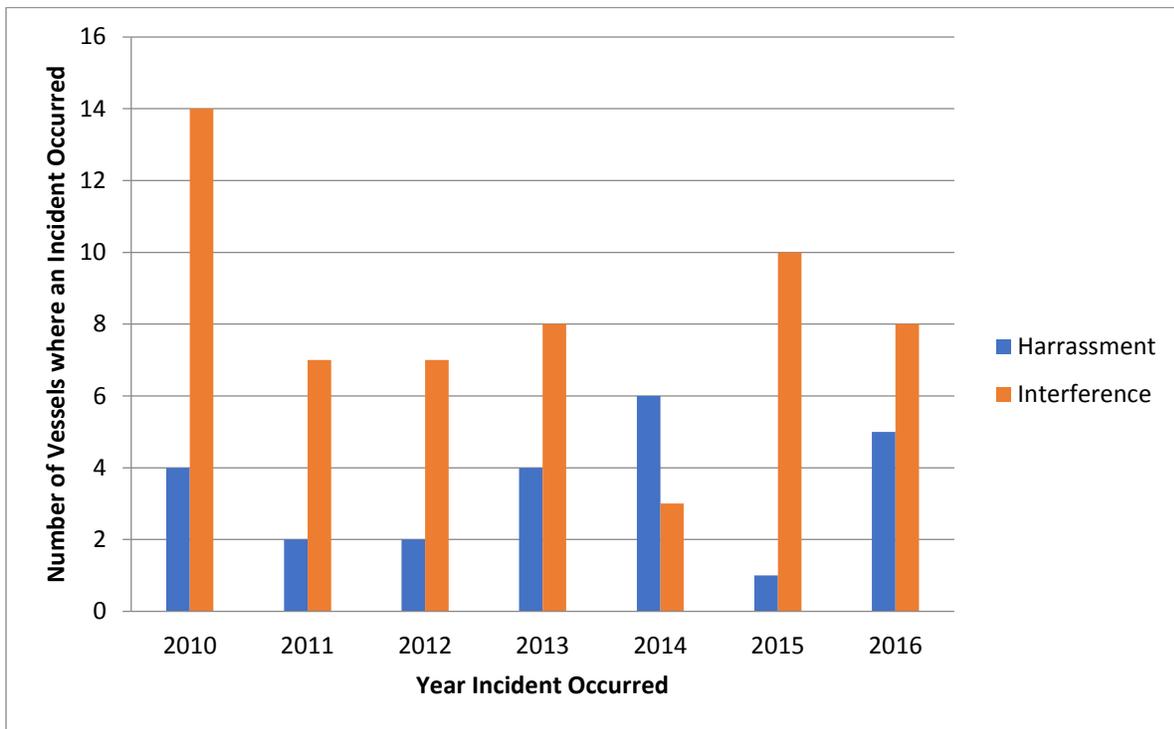


Figure 33 - Incidents of PIROP Observer Reported Harassment and Interference from 2010-2016

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4.8.1.9.1.1 Psychological health

The job of an observer can be extremely stressful given the environment of being at sea on a rocking vessel, close quarters, different cultural environment, and isolation from friends and family. The satellite phone allows communication between the PIROP staff/observer provider and observers when needed, but there is currently no routine schedule. By maintaining this line and reasonable freedom of communication, the PIROP is somewhat able to assess how an observer is doing out at sea. In Hawaii, most vessels return to port after 3 weeks, but the trips are longer out of AS. The PIROP has a relatively liberal attitude about observers taking time off, and TSI echoes that attitude by allowing the observer to stay on TSI's health insurance an additional month after the observer's trip is completed without being charged the premium.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.9.1.1	Practices/Policies
	Finding	Several PIROP observers or staff (Keith Davis was a previous PIROP staff member) have died or been lost at sea while serving as an observer or between contracts. At least one observer has suffered a serious mental issue while out at sea. The crew had to restrain the observer while transiting back to port. No grief counseling was provided for staff or observers.	
	Recommendation	The PIROP should consider adding additional fields to their debriefing survey to assess possible mental stresses experienced by observers out at sea. More frequent communication with the PIROP staff and the observer provider may also alleviate some of the stresses or isolation of being at sea for extended periods. Additional training may help to mitigate or provide better coping strategies for stress and isolation while observers are deployed. If a tragic incident such as the loss of an observer or staff member occurs, the PIROP should consider making appropriate counseling available to observers, staff and observer providers. See section 3.6, National Finding/Recommendation No. 2.	

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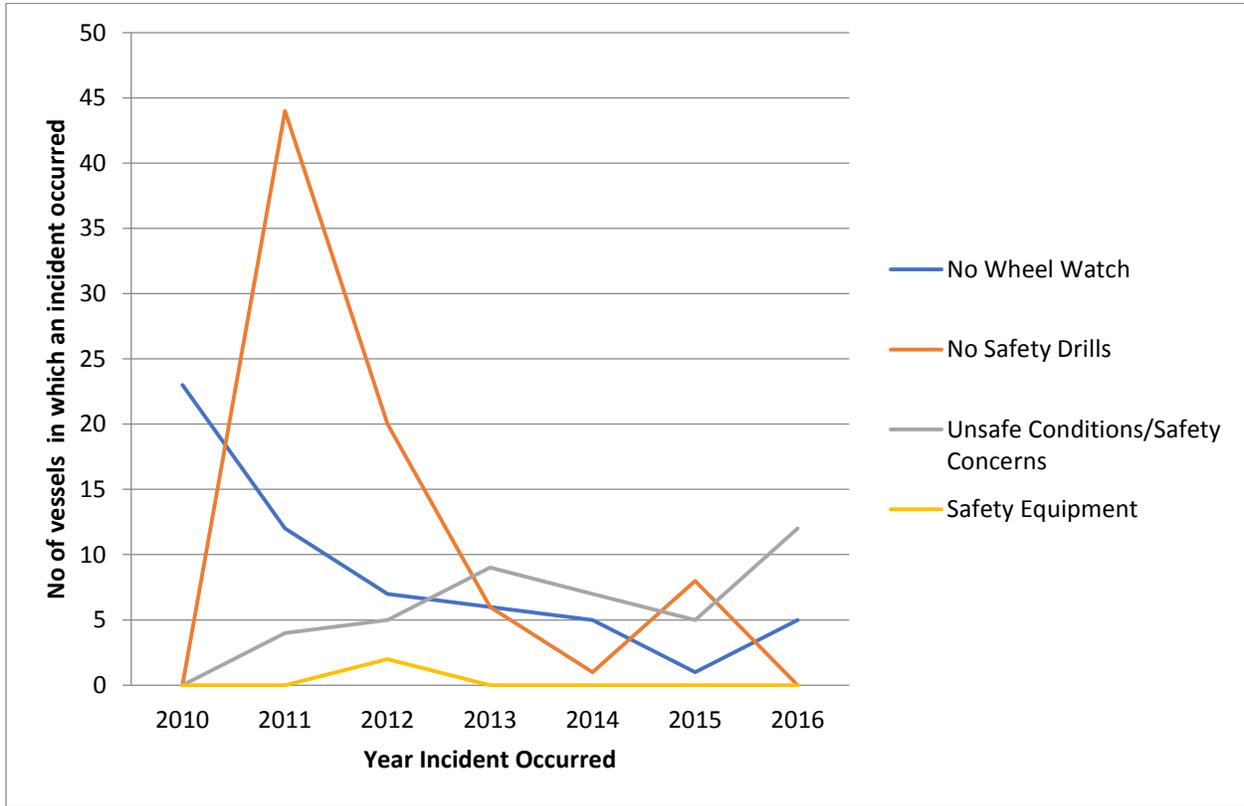


Figure 34 - PIROP observer reported safety incidents by type 2010-2016.

4.8.1.9.2 Emergency Action Plans/Emergency Notification Plans

Currently, the PIROP has an Emergency Notification Plan (ENP) to communicate the outcome to all appropriate parties in the chain of command, the specifics of an incident, the response, and results of the emergency. The program also has a communications template to speak to the public about significant incidents called “Crisis First Response Releases.” It includes templates for vessel collision, fire, sinking, flooding, observer harassment, medical emergency, and “other.”

The PIROP does not have an Emergency Action Plan (EAP). The program has a draft EAP that was developed by a previous observer service provider.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.1.9.2	Practices/Policies
	Finding	The PIROP ENP is well designed and appropriate as an ENP. The public relations document to be used in the case of a significant	

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		incident is a good preparation tool. The draft EAP as a minimum needs substantial editing, although it may be more productive to start a new EAP from scratch, tailored specifically to the HI and ASOP observer programs.
	Recommendation	The PIROP should develop an EAP or EAPs specific to the HI and ASOP observer programs as soon as possible. A comprehensive EAP should address complicated regional issues such as mental health problems, medical crises, or national or international emergencies (<i>e.g.</i> , terrorist attacks, tsunami, or typhoon). See recommendations in section 3.6.

4.8.2 PIROP - American Samoa Observer Program (PIROP-ASOP) Office

4.8.2.1 Program description

The PIROP-American Samoa Observer Program office (ASOP) located in Pago Pago was established in 2006 due to an increase in observer coverage stemming from concern over protected species interactions. The office was originally staffed by a single member of the PIROP. Over the years, as various NOAA staff retired or additional duties were added, the staff at the ASOP has grown to five.

Two staff members are assigned to collect specific data from purse seine vessels at the StarKist tuna plant in Pago Pago. The program was started in 1978 to collect length frequencies from purse seine and longline vessels. The longline data are now collected by the local American Samoa Department of Marine and Wildlife Resources.

The other three staff members support the PIROP and assist with Pacific Islands Forum Fisheries Agency (FFA) Pacific Islands Region Fisheries (PIRFO) observers under the South Pacific Tuna Treaty (section 5.4.2.1 in International WCPFC). All ASOP staff are currently AMSEA-certified marine safety instructors, and conduct the SPC/FFA placement meetings on board US-flagged purse seiners in Pago Pago. They also assist the USCG with providing safety checkups and drills for the US-flagged fishing fleet. These drills are especially important because of the remote nature of fishing in the middle of the Pacific, and the scarce resources available in the event of an emergency. The USCG has an office in the same building as the ASOP, which is staffed by four USCG employees. The USCG in AS only conducts vessel examinations, and does not participate in SAR operations given that American Samoa is in the New Zealand SAR Region. About once a year a USCG cutter or buoy tender is in the area.

OLE also has an office in the same facility as the ASOP, and usually has a staff of two.

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4.8.2.1.1 ASOP Longline Program

Although the ASOP is a sub-unit of the main PIROP office in Honolulu, many of the ASOP procedures are slightly different due to differences in vessel fishing practices and trip lengths, and the limited number of observers stationed in AS. Approximately 4-6 observers are assigned to vessels that commonly use AS as their home port and deliver to the StarKist tuna cannery or offload to a tramper in the Pago Pago harbor. The AS longline vessels typically stay out longer, averaging 40 days per trip, but may continue to fish for 60-90 days. Due to the limited number of observers in AS, if an observer is available and a vessel has called in 72 hours prior to departure, the observer is placed on the vessel. The random number model used by the Hawaii office is not applied to the ASOP vessel selection process.

Upon return to AS after a long trip, it may take the observer 1-2 weeks to complete the debriefing process.

As with the PIROP, if the observer has been on a vessel with bed bugs, their gear and clothing is placed into a freezer for a minimum of 72 hours. Fumigation services in AS are not as robust and have not been as successful in eliminating bed bugs as those in Hawaii. Thus, most of the responsibility for eliminating the bed bugs has fallen to the observers and vessel personnel. The ASOP has loaned several observers a small hand-held steam cleaner that appears to be effective in reducing the pests to tolerable levels. The PIROP is currently purchasing additional steamers and plans to issue them to observers on future AS deployments.

4.8.2.2 Observer equipment and maintenance

Observers that are stationed in AS use the gear from the ASOP gear shack. The gear shack is located fairly close to the ASOP Field Office, is well organized, has plenty of parking with easy access, and is available 24/7. It contains several freezers that are used to store specimens and also freeze the observers' gear and personal clothing from bed bug-infested vessels. Gear is resupplied and maintained by the ASOP staff and the observers currently working on shore. (Figure 32).

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Figure 35 - Gear stored at the ASOP gear shack

4.8.2.3 Placement meeting and Placement Checklist (PTVSC) for US longline vessels

The ASOP staff conducts placement meetings using similar forms and protocols to those used in Honolulu. The ASOP staff coordinates and initiates a meeting with the vessel captain at least 12 hours before leaving port. The observer, captain, and an ASOP staff member review the placement meeting form noting the responsibilities of the vessel, the captain and crew, and the observer. Upon completion of the placement meeting, the ASOP staff and observer tour the vessel to complete the Placement checklist (PTVSC) examining the fire extinguishers, distress signals (flares and smoke signals), EPIRB and liferaft. The liferaft is also checked to ensure that it's installed correctly, with the hydrostatic release unit properly installed so that the liferaft will float free if submerged. If any NO GO component of the placement checklist is failed, the vessel must repair or replace the item prior to departing with an observer on board. If the liferaft servicing decal has expired, the liferaft must be sent off-island to be serviced and usually takes several months before it's returned.

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4.8.2.4 Debriefing of US longline observers

Once an ASOP observer disembarks their vessel, they go through the debriefing process at the ASOP Field Office. One ASOP staff member serves as the debriefer. The observer and the debriefer review all of the observer's data and correct any mistakes. The observer then enters all their data in LODS as well as filling out the ASOP post-cruise report. The post-cruise report asks 10 slightly different questions, due to different regulations, than the PIROP post cruise report. Depending on the length of the cruise, it may take the observer considerably longer, up to two weeks, to debrief than observers returning from a Hawaii-based trip. After 3 debriefing days, the observer's pay schedule is transferred to shoreside support and the observer is paid for 4 hours/day. This protocol ensures the observer is compensated and allowed sufficient time to debrief from a long cruise, and minimizes turnover in a remote port. Once debriefing is completed and there is no shoreside work needed to assist the ASOP office, the observer is asked if he/she is ready to return to sea. If the observer is ready to go back to sea, they are added to the list and await a vessel calling in 72 hours in advance of departing port. If the observer is not ready to return to sea, they are not added to the list and are afforded time off.

4.8.2.5 Assistance with PIRFO observers

Under the South Pacific Tuna Treaty (SPTT) between the US and certain Pacific nations, the US agreed to "facilitate the placement of observers and endeavor to assist with the provisions of the visa and the USG would notify the Observer Coordinator of any difficulties involving the discharge of the duties of the observer."

During the past several decades, the PIROP staff in AS assisted with the placement of Forum Fisheries Agency (FFA) Pacific Islands Region Fisheries (PIRFO) observers deployed on board US-flagged purse seine vessels fishing in the WCPFC convention area (Figure 37). As PIRO staff retired, their duties were transferred to the ASOP staff. Over 30% of ASOP staff time is spent on supporting the PIRFO observers collecting data under the authority of the WCPFC. PIRFO observers are employees of FFA (Figure 36). The Secretariat of the Pacific (SPC) and FFA train PIRFO observers and drafted the SPC/FFA Purse Seine Fisheries Observer Workbook. The ASOP staff picks up and drops off PIRFO observers at the airport, assists PIRFO observers with visas, and transports them to their vessels as well as to and from their hotel or other lodging. If there are any emergencies or other important issues such as visiting a doctor, the ASOP staff transports the PIRFO observer and assists in resolving the problem. At all times, the ASOP staff communicates and updates the PIRFO observer information to the FFA observer coordinator located in Honiara, Solomon Islands. The ASOP staff play a very important role in scheduling and participating in PIRFO observer placement meetings on board their vessels.

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All information gathered by the PIRFO observer to assist in management of WCPFC fisheries is contained in a bound book called the “SPC/FFA Regional Purse-Seine Fisheries Observer Workbook.” On page 3, a form titled “Form SUP-1” (Appendix 25) is filled out in different sections by the Placement Officer (ASOP staff), the vessel captain, and the PIRFO observer. There are 11 items in the section required to be filled out by the Placement Officer and one of those states “Carried out a vessel safety check in the presence of the observer and Captain.”

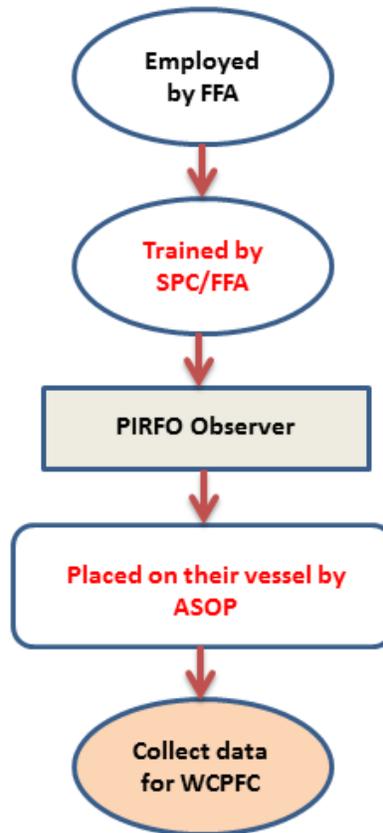


Figure 36 - Flow chart of PIRFO employment, training and deployment

4.8.2.6 Comparison between the ASOP Placement Checklist (PTVSC) and the PIRFO vessel safety checklist

PIRFO observers serve on board US-flagged purse seine vessels in the WCPFC fishery. As such, the Observer Health and Safety Regulations (OHSR) are applicable because the observer is serving on a US-flagged vessel regardless of the fishery management authority, fishing location, or citizenship of the observer. The OHSR require the vessel to have a current USCG Commercial Fishing Vessel Safety Examination Decal issued within the past 2 years at the time the vessel is selected for observer coverage. If the vessel does not have a safety decal, other alternative documentation may be acceptable (50 CFR 600.746(d)(1)). The vessel is required to provide the

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observer a vessel orientation or walk-through “to ensure that no obvious hazardous conditions exist” and to also accompany the observer to check at a minimum the following items:

1. Personal Flotation Devices (PFD)
2. Ring Buoys
3. Distress Signals
4. Fire Extinguishing Equipment
5. Emergency Position Indicating Radio Beacon (EPIRB)
6. Survival craft with sufficient capacity to accommodate the total number of persons including the observer.

Currently the ASOP staff person assisting a PIRFO observer in boarding a vessel does not fill out a PIROP-ASOP placement checklist (PTVSC) or the SPC/FFA observer safety vessel checklist. The PIRFO observer is responsible for completing the SPC/FFA observer safety vessel checklist. Under the current SPC/FFA vessel safety checklist, the PIRFO observer does not check to see if the vessel is in possession of a valid USCG safety decal. However, the observer is required to check to ensure that the 6 items listed above are present. The SPC/FFA checklist does not require the observer to note in the placement meeting record (Form SUP-1; Appendix 25) if the distress signals are within their expiration dates, if the liferaft remains certified and is installed properly, or if the EPIRB is in good working order. An additional form (PS-1; Appendix 26) that is not in the placement meeting record provides space to enter more detailed information on the number of PFDs and if one is provided for the observer, number of liferafts, number of persons on board, inspection dates, types of communications equipment, and number of EPIRB(s) and the expiration date(s) for the batteries.

No.	Program	Discussion	Review Element(s)
1	PIROP-ASOP	4.8.2.6	Practices/Policies
	Finding	The current PIRFO placement meeting procedures between captain, observer and placement officer are an excellent opportunity to introduce the observer to the captain, provide a vessel safety orientation, and remind all parties of their obligations under the SPTT. At present a PIRFO observer is not required to record if the vessel has a valid safety decal. The PIRFO vessel safety checklist in Form SUP-1 is very general, and lacks detail on the quantity of safety equipment and whether its current approval/certification or inspection status is current. The observer is encouraged to complete the vessel safety checklist at some point during the cruise rather than	

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		<p>prior to departure. An additional safety form is provided in the SPC/FFA Workbook-PS-1, but completion is also not required before departure from the dock. The ASOP Placement Checklist (PTSVSC) is not currently in use and is not required to be completed by the placement officer. The vessel safety checklist used by the PIRFO observers is not fully compliant with the OHSR because the checklist does not require the observer to note if the distress signals are within their expiration dates, if the liferaft remains certified and is installed properly, or if the EPIRB is in good working order.</p>
	<p>Recommendation</p>	<p>The ASOP placement checklist (PTVSC) used for observers deployed on US longline vessels should be used during the PIRFO placement meetings and completed before the PIRFO observer departs for sea, as required by the OHSR. Although many of the same elements are present in the SPC/FFA checklist, some are missing, and detail is lacking. The placement officer, a ASOP employee, is very familiar with the ASOP placement checklist (PTVSC) and can assist the PIRFO observer in completing the form. In this manner, NOAA Fisheries can be assured that the vessel is compliant with the OHSR. If they so choose, WCPFC could revise their vessel safety checklist to reflect the ASOP placement checklist (PTVSC) by combining elements from forms SUP-1 and PS-1, and require their completion prior to departure. The USDEL to WCPFC should advocate for such improvements in the relevant WCPFC fora.</p>

4.8.2.7 Loss of Usaia Masibalavu

Usaia Masibalavu, a citizen of Fiji, and a 6-year experienced PIRFO observer was employed by the FFA. He served on board the US-flagged purse seine vessel, F/V WESTERN PACIFIC, collecting fisheries information under the authority of the WCPFC. As noted previously, the ASOP assists in placing PIRFO observers on board US-flagged purse seiners.

An ASOP staff member served as the placement officer during the placement meeting between the captain of the WESTERN PACIFIC and observer Usaia Masibalavu on April 9, 2016. The WCPFC placement meeting form (SUP-1) is similar to the PIROP placement meeting form in that it introduces and reviews the requirements of the vessel and the observer's role and responsibilities while on board, and requires the signatures of the captain, observer and placement officer. In the case of Mr. Masibalavu's placement report, the SUP-1 was incomplete, especially the vessel safety checklist portion which was the responsibility of the PIRFO observer to complete.

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Mr. Masibalavu boarded the WESTERN PACIFIC on April 9, 2016, and the vessel departed Pago Pago on April 23, 2016. He collected observer information until becoming ill about two weeks into the trip. On May 19th, the captain of the WESTERN PACIFIC made the decision to head into port as Mr. Masibalavu's condition appeared to be getting worse. Mr. Masibalavu passed away enroute to Pago Pago on May 20, 2016. Authorities including the USCG, OLE, American Samoa Department of Public Safety (DPS), the coroner, and EMS were contacted and were at the dock when the vessel arrived on May 21, 2016.

The USCG and OLE initially conducted an informal investigation to characterize the cause of death. DPS, USCG and OLE interviewed the captain and crew of the vessel, collected all personal items from Mr. Masibalavu's stateroom, and searched the vessel for any indications of foul play. Due to privacy concerns, details from the USCG and OLE reports cannot be included in this report. However, all parties concluded that Mr. Masibalavu appeared to have died of natural causes from a pre-existing medical condition.

No.	Program	Discussion	Review Element(s)
1	PIROP	4.8.2.7, 1.2.1	Practices/Policies, Safety Reporting
	Finding	While in Pago, Pago AS, the reviewer was invited on board the F/V WESTERN PACIFIC to meet with the owner and port coordinator who assisted in Mr. Masibalavu's return to port and to Fiji. Mr. Masibalavu had served on board the vessel before his last deployment and was respected and liked by the crew and captain. In the absence of an investigative report or press release from NOAA Fisheries, the USCG, or OLE, or a report from the local authorities at DPS, the circumstances surrounding the loss of Mr. Masibalavu while deployed at sea on a US-flagged tuna purse seine vessel remain officially unresolved. While it appears there was no foul play involved, the lack of transparency might be seen as troubling in light of several other reports of PIRFO observers being lost overboard on non-US flagged purse seiners in this fishery ⁶² . In addition, the lack of completion of the vessel safety checklist highlights procedural oversights in the PIRFO observer program.	
	Recommendation	NOAA Fisheries should work with the PIRFO program, WCPFC, and the AS DPS as appropriate to bring a transparent closure to the loss	

⁶² <http://pacificguardians.org/blog/2017/07/01/a-png-fisheries-observer-reported-missing-off-a-chinese-flagged-fishing-vessel/>

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		of Mr. Masibalavu with an appropriate report or press release. Any future observer serious injuries, loss of life or disappearance of observers where NOAA Fisheries or a US-flagged vessel is involved should be investigated and reported in as transparent a manner as soon as possible to avoid public and media speculation, and so that any lessons learned can be applied to future observer safety training and policy development. See also discussion in section 1.2.1.
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The SPTT assistance agreement is ambiguous and lacks detail regarding of the responsibilities of the USG. Following the death of Mr. Masibalavu, ASOP staff notified all the relevant enforcement and medical authorities prior to the vessel returning to shore. The ASOP continued to work with the vessel and local authorities to have an autopsy completed, death certificate issued, and the body returned to Fiji for interment. The SPC/FFA were not directly involved in these actions but were kept informed by the ASOP.

No.	Program	Discussion	Review Element(s)
1	PIROP-ASOP	4.8.2.7	Practices/Policies, Regulations
	Finding	The ASOP staff are placed in a very ambiguous role while serving as the placement officer for the WCPFC. There are no guidelines describing the extent or limitations of ASOP staff assistance to PIRFO observers involving observer conduct, vessel placement decisions, or other deployment-related tasks.	
	Recommendation	Based on experience with the recent loss of Mr. Masibalavu, and the additional duties placed on ASOP staff, the terms of the SPTT agreement should be more detailed and comprehensive with well-defined roles and responsibilities, and clear lines of authority.	

5 INTERNATIONAL OBSERVER PROGRAMS/REGIONAL FISHERIES MANAGEMENT ORGANIZATIONS (RFMO)/REGIONAL FISHERY BODIES (RFB)

5.1 Introduction

One of the first observer programs in the world started with the Inter-American Tropical Tuna Commission (IATTC) in the 1970s. Observers were placed on purse seine vessels to monitor and document dolphin bycatch in the Eastern Pacific tuna fishery. Since that time, over 50 domestic and international observer programs have been created around the world due to the need for critical information collected by observers for compliance, stock assessment and fisheries management purposes.

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The management of highly migratory species such as tuna and swordfish on the high seas is governed by regional fisheries management organizations (RFMOs), Regional Fishery Bodies (RFBs) and other intergovernmental arrangements (*e.g.*, the Commission for the Conservation of Antarctic Marine Living Resources, CCAMLR). RFMOs and RFBs are intergovernmental organizations comprised of many nations (over 50 in some cases) that have an interest in the managed fisheries. The RFMO/RFB process to negotiate, adopt and implement conservation and management measures is long and complex. The United States is only one of many members of such organizations and consequently, its ability to achieve improvements in RFMO/RFB observer programs or establish new programs is highly dependent on the positions and interests of other members, and the ability of US delegations (USDEL) to the organizations to effectively drive consensus for such changes.

Fisheries in most of the world's oceans that are considered "high seas" (*i.e.*, outside the 200 nautical mile exclusive economic zones (EEZ)) are governed by RFMOs/RFBs (Figure 37). In some instances, RFMO/RFB conservation and management measures extend to member territorial waters. On the high seas,⁶³ pursuant to the High Seas Fishing Compliance Act (HSFCA; 16 U.S.C. Ch. 75), US-flagged vessels are subject to RFMO/RFB conservation and management measures even when the US is not a member of the respective RFMO/RFB. The HSFCA applies to all US-flagged vessels operating on the high seas, and provides the authority for NOAA Fisheries to place observers on board US vessels. However, the NOAA Fisheries approach to the HSFCA has been to avoid duplication with existing international and domestic observer programs. As such, no observers have been deployed on US vessels or funded under the authority of the HSFCA to date.

The NOP and NOPAT were established in 1999 to create regional observer programs and a national observer program collaboration process to coordinate consistent policy development, implement best practices for domestic observer programs, and improve management of annual program funding (section 4.1). At the time of the NOPAT's creation, the only US observers deployed in international programs were through CCAMLR, and those deployments were rare. Currently, the Office of International Affairs and Seafood Inspection (F/IS) division does not have a representative on the NOPAT for international observer programs.

⁶³ In the HSFCA, the term "high seas" means the waters beyond the territorial sea or exclusive economic zone (or the equivalent) of any nation, to the extent that such territorial sea or exclusive economic zone (or the equivalent) is recognized by the United States.

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During the past 12 years, many new observer programs have been established to monitor waters of developing coastal states and high seas transshipments.⁶⁴ In some instances, US observer program personnel have assisted in developing new international observer programs by providing training, equipment and technical advice. Many of these programs are small, with fewer than 30 observers deployed each year, consist of a bare bones staff, are intermittent due to fishing activity or seasonality, operate far offshore in international waters, and are new in comparison with more fully developed and well established US domestic observer programs (over 45 years for the NPOP and NEFSC programs). This review of international observer programs was limited to those programs that either deploy US citizens as observers on foreign-flagged or US-flagged vessels, or deploy foreign observers on US-flagged vessels. Table 10 identifies the programs, vessel types, and nationalities that meet these criteria. For example, the review did not include foreign citizen observers on board foreign vessels in the WCPFC fisheries, but did include foreign citizen observers deployed on board US-flagged vessels in WCPFC fisheries. Figure 37 illustrates the geographical coverage of regional fisheries bodies.

5.1.1 Methodology

The international observer programs considered under this review were evaluated against the core elements, protocols and best practices of US domestic ROPs. US ROP core elements and protocols include the following:

- Regulations that require observers to pass an in person medical fitness examination
- Regulations that require observer providers to have insurance for observers while employed
- Conduct observer training in person with extensive hands on demonstrations
- Require observers to complete and pass an in person observer safety training program
- At a minimum, provide an Observer Manual containing personnel contacts, communication procedures, and safety information
- Observers required to conduct a vessel safety inspection and complete a pre-trip vessel safety checklist (PTVSC) inspection prior to deployment
- At a minimum, observer providers update observer program staff weekly, identifying the observers deployed and the vessels to which they are deployed
- At a minimum, weekly communication and at sea support from observer program staff and observer providers to observers
- At the conclusion of an observer's deployment, the observer program conducts an in person or telephone data and safety debriefing.

⁶⁴ Transshipment vessels are large carrier vessels that accept fish products from many different fishing vessels. The carrier vessel then transports the fish products to port.

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In addition to reviewing relevant international agreements, the reviewer contacted RFMO/RFB and F/IS staff, observer providers, and observers, where available, to obtain information on how their particular observer programs are managed, with an emphasis on safety, equipment, communication, insurance, and training procedures. Where a safety or procedural “gap” was identified, recommendations on improving a critical component of that observer program were made.

5.1.2 US insurance, regulation, and policy applicability to international observer programs

Observers working in US domestic fisheries under the authority of the MSA or MMPA are covered by FECA if an injury occurs at sea (section 3.5). While on land, US domestic observers are usually covered by the relevant state worker’s compensation program (described in section 3.5). In the following international programs, neither of these insurance coverage regimes apply to US observers serving on either US- or foreign-flagged vessels under international agreements. In practice, the observer provider usually arranges for alternative insurance coverage to observers working in international fisheries, but in many cases, providing insurance coverage for the observer is not required.

The OHSRs (50 CFR 600.725 and 600.746) apply to all US flagged fishing vessels regardless of where the vessel is fishing or under what authority. The OHSRs require that the vessel have a USCG Commercial Fishing Vessel Safety Examination within the past 2 years, pass a PTVSC conducted by the observer, provide adequate accommodations, prohibit tampering with observer equipment or data, and prohibit interference or intimidation of the observer. However, the OHSRs do not apply to foreign-flagged vessels carrying US observers.⁶⁵

The review team was advised of the NOP Coordinator’s understanding that the NOAA Fisheries Observer Safety Training Standards (NOAA Fisheries 2007c) and NOAA Fisheries Eligibility Standards for Marine Fisheries Observers (NOAA Fisheries 2007a) do not apply to US observers serving on board US-flagged vessels under the authority of an RFMO/RFB.⁶⁶

5.1.3 Limited US government program oversight

Most domestic US ROPs are federally funded, with a few exceptions which are industry funded (NEFSC-industry funded scallop observers and At Sea Monitors, AFSC-NPOP full coverage

⁶⁵ In the context of international observer programs, “US observer” means a US citizen serving as an observer on a US- or foreign-flagged vessel under auspices of an international agreement.

⁶⁶ Email from NOP (Jane DiCosimo) 6/20/17

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sector, WCGOP catch share sector, A-SHOP). Under the industry funded US ROPs, observer services are paid for by the fishing vessels through a direct contract between the observer provider and the fishing vessel requiring observer coverage or through a “sector” consisting of a group of covered vessels. NOAA Fisheries lacks statutory authority to collect funds from fishing vessels to support observer program services. As such, outside of the federally funded programs, NOAA Fisheries has been limited in its ability to exercise oversight through well-established means (*e.g.*, contracted services), and has sought ways to increase the requirements and monitoring of observer providers through an approval, certification or permitting process. The appearance of a conflict of interest between the observer providers and the fishing industry, and lack of program oversight were noted in the Management Control Review as concerns related to industry funded observer programs (NMFS 2000). Two international programs are industry funded, the North Atlantic Fisheries Organization (NAFO) and the CCAMLR. As such, a significant gap in the United States Government’s (USG) oversight and monitoring capabilities may exist in these programs, particularly with respect to ensuring that certain safety measures are implemented: a gap that could be closed through regulations, or a contract between the USG and the observer provider.

The programs reviewed below are grouped according to vessel flag, observer program structure of the regional fisheries body, and observer nationality.



Figure 37 - Location of Regional Fisheries Bodies throughout the world
(FAO, 2013) <http://www.fao.org/fishery/rfb/en>

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RFMO	Vessel Types	Observer Nationality	Flag of Vessel	Primary Observer Duties	Contractor (as of 2017)	Contracting Entity
Northwest Atlantic Fisheries Organization (NAFO)	Trawler, Longliner	US	US	Biological Sampling	AIS	Fishing Vessel and Contractor
Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)	Pelagic Trawler, Longliner	US	US	Biological Sampling	None	Fishing Vessel and Contractor
Bilateral arrangement for international observer		US Foreign	Foreign US			
International Commission for the Conservation of Atlantic Tunas (ICCAT)	Carrier Vessel	US	Foreign	Compliance Product Transfer	MRAG/ CapFish	ICCAT Secretariat
Inter-American Tropical Tuna Commission (IATTC)	Carrier Vessel	US	Foreign	Compliance Product Transfer	MRAG Americas	IATTC Secretariat
Inter-American Tropical Tuna Commission (IATTC) AIDCP Program	Purse Seiner	Foreign	US	Biological Sampling	IATTC	IATTC Secretariat
Western and Central Pacific Fisheries Commission (WCPFC)	Purse Seiner	Foreign	US	Biological Sampling	FFA	FFA

Table 10 - International observer programs reviewed

In observer programs with multiple contractors, only contractors involved in deploying US observers are included.

5.1.4 Recommendations common to all international observer programs

The review identified similar areas among international observer programs where there were not effective measures in place to ensure a level of safety equivalent to that of US domestic ROPs. The review team was of the view that to the extent practicable, these international programs should incorporate core elements and best practices employed in US ROPs. Increased communication between the USDEL to RFMOs/RFBs and US ROP staff is needed to ensure that changes made to international observer programs reflect core elements and best practices, and are consistent with the policies and standards of the current US domestic observer programs as much as possible. In the past, some collaboration has occurred between the two relevant NOAA Fisheries program offices (F/ST and F/IS) concerning observer requirements and potential changes. In the future, identification of specific points of contact in the respective offices and a clear understanding of roles and responsibilities that are recognized and supported at the office leadership level could ensure that the US continues to advance similar safeguards and best practices in international programs as have been successfully implemented in US domestic programs.

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Although each international observer program is unique, the review team identified several common elements missing from these programs that are present or are recommended in US domestic programs. To close these gaps, NOAA Fisheries through the USDEL to the respective RFMOs/RFBs should pursue implementation of these recommendations through negotiation of appropriate binding measures to be adopted by the RFMOs/RFBs. To avoid duplication in the discussions of individual programs, these common recommendations are listed below.

No.	Program	Discussion	Review Element(s)
1	RFMOs/ International programs	5.1.1 (core elements)	Policy and Procedure
	Finding	The international observer programs do not have a recognized NOAA Fisheries point of contact. There is no ongoing tracking of observer deployment or current status in international programs by the USG. If an incident occurs, there is no immediate POC to engage with the RFMO/RFB, USCG, or other USG agency.	
	Recommendation	<p>NOAA Fisheries should designate a NOAA Fisheries liaison for each international observer program. The liaisons would assist in the development and maintenance of any MOUs between the observer provider and the USG, including collection and maintenance of the information on the observers' locations, PTVSC, medical information and other information specified below. Designation of specific liaisons would help ensure that NOAA Fisheries has up to date information on the location and status of US observers, including the vessel on which an observer is deployed. In each case the observer provider should be required to provide the following information to the liaison:</p> <ul style="list-style-type: none"> <li>i. A copy of the observer's resume and a copy of the medical exam verification; <li>ii. A completed observer PTVSC that identifies any deficiencies or concerns prior to deployment; and <li>iii. The name of the observer, the vessel where they are deployed, vessel call sign, InReach or satellite phone communication information, vessel satellite contact number, PLB Uniform Identification Number (UIN, <i>i.e.</i>, registration number), name of the program staff who would receive notification in the event a PLB is activated, and the anticipated deployment schedule. 	

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No.	Program	Discussion	Review Element(s)
2	RFMOs/ International programs	1.2.6.5, 5.1.4	Policy and Procedures
	Finding	Currently, international observer programs are not represented on the NOPAT.	
	Recommendation	The NOPAT should consider expanding its membership and focus to include a member from F/IS to serve as the international observer program point of contact.	

No.	Program	Discussion	Review Element(s)
3	RFMOs/ International programs	5.1.4	Policy and Procedure
	Finding	Currently, international observer programs do not have a requirement for the observer to be informed of the risk associated with working as an observer long distances offshore.	
	Recommendation	Prior to being hired, observers working in international fisheries should be advised of, and acknowledge the inherent risk associated with working on board fishing vessels great distances offshore with little or no ready rescue resources. US observers serving as international observers on board foreign vessels should also be advised of the extremely limited power of the USG to enforce regulations or direct the vessel and its crew in the event of an emergency. Prior to being hired, observers should be required to sign an "Acknowledgement of Risk" document to ensure they fully understand the inherent occupational risk and the limited ability of the USG to provide rescue operations and investigation in the event of an emergency. See section 4.1.2.8, Finding 1.3, Recommendation .8.	

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No.	Program	Discussion	Review Element(s)
4	RFMOs/ International programs	1.2.6.2, 1.2.5, 3.5, 5.2.1.4	Policy and Procedures
	Finding	With the exception of the CCAMLR, observer providers are not required to provide insurance coverage to observers serving in RFMO/RFB programs.	
	Recommendation	The observer provider should be required to provide insurance coverage for observers similar to or in excess of US domestic observer requirements (see section 3.5, finding/recommendation 1). Coverage should apply to international waters and address treatment and evacuation from the vessel or international ports.	

No.	Program	Discussion	Review Element(s)
5	RFMOs/ International programs	5.1.4, 4.1.4	Policy and Procedures
	Finding	Due to the great distance offshore, isolation on the vessel, lack of prompt SAR, and lack of standardized reporting protocols international observers work in a heightened risk environment.	
	Recommendation	<p>.1 Observers working in international programs, especially those serving on foreign-flagged vessels in remote areas, should be required by policy to carry their PLB on their person at all times.</p> <p>.2 Especially on small vessels, or vessels that operate in remote areas, the review team recommends that observers be required by policy to wear a lifejacket with the PLB attached whenever on deck, or at a minimum in situations where there is a significant risk of a fall overboard. For other observers, the NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should consider requiring observers to wear their PFD with PLB attached when on deck.</p>	

5.2 US-flagged vessels carrying US observers fishing under international agreements

The NAFO and CCAMLR observer programs carry US observers on board US-flagged vessels that collect data for an RFMO/RFB centralized data collection scheme. However, the two RFMOs do not have a centralized contract for observer services, and therefore each member nation is responsible for securing their own observer provider(s). With respect to the NAFO, there are no US regulations governing the requirements of observer services within the RFMO. For the

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CCAMLR on the other hand, NOAA Fisheries has promulgated US regulations (50 CFR 300.111) that are closely aligned with US domestic observer core elements, best practices and protocols (see also discussion in section 1.2.1).

While not actively enforced to date in the NAFO and CCAMLR observer programs, the OHSRs do apply to these observer programs. Although NOAA Fisheries directives relating to US domestic observer safety training and eligibility policies do not apply to international programs, both programs have typically employed experienced observers who had previously trained in other US domestic ROPs. Therefore it is likely that current and past US observers in the NAFO and CCAMLR fisheries have completed observer safety training and met the qualifications of the Observer Eligibility Standard.

5.2.1 Northwest Atlantic Fisheries Organization (NAFO)

5.2.1.1 Program description

The Northwest Atlantic Fisheries Organization (NAFO) Convention Area encompasses an area, including 200-mile EEZs, which stretches from the mid-Atlantic United States (North Carolina), northward to Maritime Canada, St. Pierre and Michelon, southwest Greenland and out to 42 degrees West (Figure 37). Management by the NAFO applies only to the areas outside EEZs. The United States is one of 12 Contracting Parties to the NAFO.⁶⁷

The principal species managed under the NAFO are non-highly migratory species that include Atlantic cod, witch and yellowtail flounder, American plaice, white hake, Greenland halibut, skates and shrimp. The NAFO establishes annual Total Allowable Catch (TACs) allocations to Contracting Parties each year for each major species. Parties are able to transfer quota pursuant to bilateral agreements. US participation in the NAFO regulatory area began in 2012 and currently includes three vessels. Under the NAFO Conservation and Enforcement Measures-Observer Scheme (NAFO-CEM-Observer Scheme), a vessel is required to carry “an independent and impartial observer” 100% of the time. The NAFO does not have an observer manual; however, NAFO observer duties and reporting requirements are identified within the

⁶⁷ Additional information can be found at <http://www.nafo.int>

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General Provisions of the Observer Scheme, and all necessary forms are included in the Annexes of the NAFO Conservation and Enforcement Measures.⁶⁸

The NAFO-CEM-Observer Scheme does not contain any safety protocols (*e.g.*, PTVSC), nor does it require observer safety training. Under the NAFO Scheme, observers are “provided food and accommodation equivalent to that of the crew and allowed access to areas of the vessel deemed necessary to carry out the observer’s duties.”

Beginning in 2012, the US-flagged catcher/processor F/V TITAN began fishing in the NAFO convention area. The vessel primarily fishes for yellowtail flounder using otter trawl fishing gear. The season starts in mid-late May and continues to December most years. The vessel is based in New Bedford, MA, and most often operates out of Louisburg, Nova Scotia (a 2.5- to 3-day steam to the grounds). The vessel usually fishes 10-12 days per trip.

In 2014, the US-flagged longline F/V ALEX MARIE was authorized to fish for yellowtail flounder. Their trips are 20-24 days long out of Nova Scotia. At the end of the season, they drop the crew and the observer off and then steam to Boston for the final offload. Their fishing season is late April through September, they exit the NAFO fishery in October to fish for swordfish, and then resume longline fishing in November and December. In 2017, a third US vessel, the F/V HANNAH BODEN, was authorized to fish in the NAFO area.

5.2.1.2 Procurement of observer services

The NAFO does not regulate or specify observer providers for NAFO fisheries. The staff at the Greater Atlantic Regional Fisheries Office (GARFO), who serve on the USDEL to the NAFO, contacted A.I.S., Inc. (AIS), a US observer provider, to find out how vessels could obtain observer coverage. AIS started providing observers to the F/V TITAN in 2012. The reviewer was told there is a contract between AIS and the vessel owners that includes a daily rate, insurance, and reimbursement of travel-associated costs. However the reviewer was not provided a copy of the contract.

⁶⁸ The complete list of observer requirements can be found at <https://www.nafo.int/Fisheries/MCS/ObserverScheme>.

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No.	Program	Discussion	Review Element(s)
1	NAFO	1.2.6.4, 5.2.1.2	Regulations
	Findings	<p>.1 There are currently no US regulations, contracts between NOAA Fisheries and AIS, permits, certification requirements, or required approval or USG oversight that address observer safety, medical standards or other features consistent with US domestic ROPs for observers serving on US vessels participating in NAFO fisheries.</p> <p>.2 There is no formal or regular communication between AIS and the GARFO that provides information on the name, location or status of the US observer. Without contractual or regulatory obligations, the ability of the USG to effectively ensure the safety of US observers serving in the NAFO fishery is extremely limited.</p> <p>.3 The USG currently has no mechanism to monitor or evaluate the performance of the observer provider or data collected by NAFO observers.</p>	
	Recommendation	NOAA Fisheries should investigate the possibility of developing a Memorandum of Understanding (MOU) or functionally similar agreement between the NAFO observer provider and NOAA Fisheries, or regulations requiring an observer service provider to be permitted or certified (similar to those requirements in the NEFSC or AFSC-NPOP full coverage program) in order to ensure adequate USG oversight, communication and monitoring of observer providers or observer data quality for the NAFO fishery.	

No.	Program	Discussion	Review Element(s)
2	NAFO	1.2.6.2, 5.2.1.2	Practices/Policies
	Finding	AIS carries Worker’s Compensation, Longshore and Harbor Workers Compensation insurance, and Maritime Employer’s Liability for observers in the NAFO fishery, but is not required to do so. FECA does not apply because the observers are not deployed under the authority of the MSA or MMPA.	
	Recommendation	Comply with section 3.5, finding/recommendation 1.	

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5.2.1.3 Observer recruiting and employment

In the NAFO fishery, AIS’s policy is to deploy only experienced observers (most have in excess of 10 years of observer experience) that have current certification by the NEFSC or the NPOP. These observers are familiar with the challenges and hardships of being in cold environments and being out at sea for long periods of time.

To become an AIS observer working on a US flagged vessel in the NAFO convention area, AIS requires the observer be a US citizen, possess a valid driver’s license, and have a valid US passport. The observer must have a BS in Marine Biology or Biology with 30 credits of biology coursework, including at least 6 credits of marine science and a math class. The observer must have current or recent NOAA Fisheries observer certification and must have received survival at sea training within the last 2 years. Observer compensation is \$15/hour and includes AIS-provided health and dental insurance, vacation, sick and holiday benefits. Observers must provide their own transportation.⁶⁹

No.	Program	Discussion	Review Element(s)
1	NAFO	1.2.6.3, 5.2.1.3	Practices/Policies
	Finding	AIS does not require any medical or fitness examination prior to an observer being hired for NAFO observer positions, and relies heavily on previous safety training provided by NOAA Fisheries.	
	Recommendation	NOAA Fisheries should develop policies that require the NAFO observer service provider(s) to comply with the US Observer Eligibility Standard and Observer Safety Training Standards.	

No.	Program	Discussion	Review Element(s)
2	NAFO	5.2.1.3 5.1.1 (ROP core elements)	Practices/Policies
	Finding	NAFO does not have a standardized observer training manual but does provide standardized data collection templates. The lack of a standardized manual could potentially leave a significant void in data collection protocols, safety awareness, and other critical safety features of an observer program. The components and quality of AIS’s training, including safety, could not be thoroughly reviewed based on the limited information provided to the reviewer.	

⁶⁹ <http://aisobservers.com/employment>

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	Recommendation	The USDEL to NAFO should advocate development of a standardized observer training manual and a well-defined training program for all NAFO observers that includes sampling priorities/protocols, reporting requirements, and health and safety information, discusses the EAP, and identifies actions to be taken in the case of an injury, health concern or other emergency situation.
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5.2.1.4 Observer safety training

According to a recent AIS employment announcement, AIS conducts a two day paid training course in Marion, MA, and provides accommodations and meals during the training. The training includes instruction on sampling protocols, gear, fisheries, fish identification, and safety. AIS advised the reviewer that instruction is provided to the observer on vessel-specific best sampling practices developed by AIS and previous observers. AIS also stated that for an observer familiar with the NAFO program protocols, the AIS refresher training is generally four hours long and does not include safety information. It appears that AIS relies largely on the observer's previous safety training conducted by NOAA Fisheries. However it is difficult to fully access AIS's safety training because a syllabus was not provided to the reviewer despite multiple requests.

AIS noted that if they choose to hire an observer in the future that is not currently certified in these observer programs, they would send the observer through NEFOP- or NPOP-equivalent observer safety training.

5.2.1.5 Observer equipment and maintenance

AIS provides all fisheries observers deployed pursuant to the NAFO-CEM-Observer Scheme with sampling and safety equipment. At the start of the season, all fisheries sampling gear and safety gear is placed on the vessel for use by 1 to 3 different observers deployed on the vessel. AIS issues at least 3 sets of the main sampling items for each vessel fishing so if any is lost during a trip, a replacement is available on board. AIS requires the observer to inventory the sampling gear prior to departing the vessel and to inform the project coordinator of any replacement gear needed for the next observer assigned. The AIS gear technician inspects, maintains, and inventories the AIS observer equipment annually. Immersion suits are sent to a third party for inspection annually once they are five years old.

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AIS provides the following equipment to observers:

1. Immersion Suit with signal mirror, whistle and strobe light
2. PFD Type III
3. Safety knife
4. Personal Locator Beacon (ACR PLB ResQLink+, ACR AquaLink, or ACR AquaFix)
5. InReach Explorer (satellite communicator)
6. Foul weather gear
7. Waterproof gloves

The PLBs are registered to AIS, and AIS maintains a database with each PLB Unique Identification Number (UIN) and the identification of the person to whom it is issued.

5.2.1.6 Deployment and at sea support

Fisheries observers are deployed while the vessel is at the dock and are not transferred at sea. Currently, the NAFO does not have any established safety measures that protect observers from unsafe conditions on board. However, the OHSRs apply to all US-flagged vessels regardless of where they are fishing, and include provisions prohibiting interference and requiring safe working conditions for the observer. AIS requires observers to use the NEFSC-FSB's PTVSC to review and inspect safety features prior to deploying on a vessel (described in section 4.5.7).

According to AIS, the F/V TITAN and F/V ALEX MARIE have not been deficient in any of the vessel safety decal or PTVSC requirements upon review by the observer. If any deficiencies were found, AIS stated that they would contact the vessel owners and not deploy an observer until all the essential criteria of the PTVSC were met. However, according to AIS, there is no provision within the contract between AIS and the vessel owners that the vessel must pass the PTVSC prior to departure. No copies of the PTVSC completed by observers serving in the NAFO fishery were provided to the reviewer to verify these vessels passed the NEFSC-FSB vessel safety inspection. The reviewer was not able to interview any NAFO observers for this review.

Observers are required to submit daily catch reports via VMS to the vessel's Contracting Party for subsequent reporting to the NAFO Secretariat. The data are emailed to AIS daily using VMS. AIS reviews the information for any errors, and then sends the data to the GARFO. Within the message to AIS from the observer is a series of codes that correspond to the status of fishing activity, vessel and crew safety, and observer sampling. If AIS does not receive a daily message from its observer, they will try to contact the observer on the InReach communication system. If AIS does not hear from the observer within 24 hours, they contact the vessel using the vessel's satellite system the following day.

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5.2.1.7 Debriefing

At the end of an observer’s tour of duty, the NAFO requires the observer to complete a trip report summarizing the information provided in the daily reports. There appear to be no questions about the vessel safety or safety of the observer while on board. AIS did not provide the reviewer with any information concerning any debriefing process at the end of the observer’s tour.

No.	Program	Discussion	Review Element(s)
1	NAFO	5.2.1.7	Practices/Policies
	Finding	At the end of the observer’s tour of duty, the NAFO requires the observer to complete a trip report summarizing the information provided in the daily reports. There appear to be no questions about the safety of the vessel or safety of the observer while on board. AIS did not provide the reviewer with specific information concerning any debriefing process at the end of the observer’s tour.	
	Recommendation	NOAA Fisheries should advocate through the NAFO for adoption of measures requiring the observer providers or the NAFO to develop a standardized debriefing survey that includes questions about safety, and other concerns that the observer may have had while on board. (See section 3.2, No. 3, Finding .2, Recommendations .1-2)	

5.2.1.8 Emergency Action Plan/Emergency Notification Plan

AIS provided the reviewer an Emergency Action Plan (EAP) that would be used in case of an emergency. However, the EAP is very limited and appears to be more of an Emergency Notification Plan (ENP). The notification protocol is the same one used for the NEFOP program.

No.	Program	Discussion	Review Element(s)
1	NAFO	5.2.1.8, 1.2.6.1	Practices/Policies
	Finding	The current AIS-provided EAP is extremely brief and appears to be an ENP. There has been at least one past occasion when a close relative of an observer passed away and the observer needed to disembark. In that instance, the vessel returned to port and AIS negotiated the costs of the arrangements.	

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	Recommendation	NOAA Fisheries should pursue measures as appropriate to require the development of a comprehensive EAP (See section 3.6, finding/recommendation 1) consistent with national recommendations for use in the NAFO area. The EAP should include an Emergency Notification Plan and should be specific to the NAFO deployed observer.
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5.2.2 Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR)

5.2.2.1 Program description

The Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR) was established in 1982 to respond to concerns associated with the harvesting of krill in Antarctic waters.⁷⁰ The CCAMLR is composed of 24 member states plus the European Union, and oversees conservation and management of all Antarctic living marine resources, such as finfish, mollusks, crustaceans and seabirds found south of the Antarctic Convergence (Figure 37).

The CCAMLR observer program called the CCAMLR Scheme of International Scientific Observation (SISO) was adopted in 1992, and is managed by a team of international scientists serving on the CCAMLR Scientific Committee (SC)(CCAMLR 2013). Vessels fishing for toothfish and icefish are required to have an international observer 100% of the time, and one additional national observer where possible. However, in certain fisheries, such as the exploratory fisheries for toothfish, two scientific observers are required, one of whom must be an international observer and the other a national observer. Vessels fishing for krill are required to have an international or national observer to ensure at least 50% coverage during the 2016/17 and 2017/18 fishing seasons; no less than 75% coverage during the 2018/19 and 2019/20 fishing seasons; and 100% coverage in subsequent fishing seasons. International observers are procured from another CCAMLR member by bilateral arrangement with that CCAMLR member.

Section D (b) of the SISO identifies the protocols and obligations of members who place or receive a scientific observer, and includes the following safety requirements and responsibilities:

“The owner, Master, agent, and crew of a vessel on which a scientific observer is deployed shall not: (i) offer a scientific observer, either directly or indirectly, any gratuity, gift, favour, loan, or anything of monetary value, except for meals,

⁷⁰ <http://www.ccamlr.org>

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accommodations or salary when provided by the vessel; (ii) intimidate, or interfere with the duties of a scientific observer; (iii) interfere with or bias the sampling procedure employed by a scientific observer; (iv) tamper with, destroy, or discard a scientific observer's collected samples, equipment, records, photographic film, papers, or effects without the express consent of the observer; (v) prohibit, impede, threaten, or coerce, an observer from/into collecting samples, making observations, or otherwise performing the observer's duties; or (vi) harass a scientific observer."

US-flagged fishing vessels rarely participate in CCAMLR fisheries, and deployment of US observers on foreign fishing vessels has also been rare. The last US observer deployment on a US-flagged vessel was in 2006, and since then there has been sporadic interest from US fishing companies, but no active participation in the fishery. NOAA's Southwest Fisheries Science Center (SWFSC) is home to the Antarctica Ecosystem Research Division (AERD, also known as AMLR), and is responsible for coordinating observers deployed in CCAMLR fisheries.⁷¹ In the past, an AMLR staff member served as the point of contact for observers and as the US CCAMLR observer coordinator.

In 2008, additional requirements were implemented for the SISO program to be more consistent with US domestic ROPs. SISO obligations are codified in US regulations at 50 CFR 300.111. A final rule to update these regulations, published on January 19, 2017, primarily focused on recent reporting changes to the CCAMLR conservation measures, and did not amend the requirements related to observer deployment (NMFS 2017b).

US CCAMLR regulations apply to deployment of US observers on US-flagged vessels as well as US observers deployed on foreign-flagged vessels under a bilateral arrangement. In addition to implementing SISO requirements, they include provisions generally consistent with US observer eligibility standards by requiring a Bachelor of Science degree, passing a medical examination, having no financial conflicts of interest within the fishery, and maintaining professional standards of observer conduct at all times (NOAA Fisheries 2007a). The regulations also require the observer provider to provide insurance for the observer that is equivalent to the requirements for the NPOP at 50 CFR 679.50. The OHSRs apply to US-flagged vessels, but not to foreign-flagged vessels.

⁷¹ <https://swfsc.noaa.gov/textblock.aspx?Division=AERD&id=5756>

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In order to place a US observer on board a foreign-flagged vessel under the SISO, a bilateral arrangement must be negotiated between the US (called the designating member) and the flag state of the receiving vessel (called the receiving member). US observers who serve on foreign-flagged vessels through a bilateral arrangement are afforded the status of an officer. The SISO B (d) requires the receiving member to “take appropriate action with respect to their vessels to ensure safe working conditions, the protection, security and welfare of scientific observers in the performance of their duties, and to provide them with medical care and safeguard their freedom and dignity in adherence to all pertinent international maritime regulations” (CCAMLR 2013).

5.2.2.2 Procurement of observer services

The last time a US CCAMLR observer was deployed at sea was in 2006. During the past 11 years, new US regulations governing observer procurement, deployment, and other safety requirements have been promulgated in 50 CFR 300.111. If a US-flagged vessel is permitted and decides to fish in the CCAMLR area, or the US engages in a bilateral arrangement with another country, the new measures will be in effect and procedures may have changed from the last CCAMLR US observer deployment in 2006.

In the CCAMLR program, US-flag vessels are required to pay for observer services (*e.g.*, observer salary and all travel expenses) through an observer service provider that has provided observer services to the USG within the past year (50 CFR 300.111(d)). If the USG chooses to provide an international observer under a bilateral arrangement, the USG would pay the observer’s salary including travel and the observer would be hired through an observer provider. Observer services can be obtained from approximately 10 observer providers.⁷² If no qualified observers are available from an observer provider, the Secretary of Commerce can authorize the vessel owner to make alternate arrangements. Most observer providers have experience in providing observers through industry funded programs. While many best practice requirements have been included in the CCAMLR regulations, procedural gaps and omissions involving communication and insurance remain. Currently the USG has no oversight mechanism to monitor or evaluate the performance of the observer provider. Because there is no contractual or permitting process between the observer provider and the USG, any changes or updates requested by the USG to the observer provider are non-binding.

⁷² <http://www.st.nmfs.noaa.gov/observer-home/observerresources/observeremployers/index>

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No.	Program	Discussion	Review Element(s)
1	CCAMLR	5.2.2.2	Practices/Policies
	Finding	The current CCAMLR regulations require the observer provider to provide equivalent insurance to observers serving on board US flagged vessels to those of the NPOP program (50 CFR 679.50). Due to the remote and international nature of the program, the NPOP insurance may be insufficient and potentially not applicable to US observers serving on foreign-flagged vessels through a bilateral arrangement.	
	Recommendation	The USG should investigate whether the current required insurance coverage for CCAMLR observers is adequate and provides coverage and treatment in international waters and ports. See section 3.5, finding/recommendation 1.	

No.	Program	Discussion	Review Element(s)
2	CCAMLR	5.2.2.2, 1.2.6.4	Practices/Policy
	Finding	There are currently no contracts, permits, certification requirements, or required approval or USG oversight between NOAA Fisheries and any future CCAMLR observer provider. Without contractual or regulatory obligations, the ability of the USG to effectively ensure any additional safety requirements, equipment or safety protocols for an observer provider employing US observers serving in the CCAMLR fishery is extremely limited. The USG currently has no mechanism to monitor or evaluate the performance of a CCAMLR observer provider.	
	Recommendation	NOAA Fisheries should investigate the possibility of developing a Memorandum of Understanding (MOU) or functionally similar agreement between the CCAMLR observer provider and NOAA Fisheries, or regulations requiring an observer service provider to be permitted or certified (similar to those requirements in the NEFSC or AFSC-NPOP full coverage program) in order to ensure adequate USG oversight and monitoring of observer providers for the CCAMLR fishery.	

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No.	Program	Discussion	Review Element(s)
3	CCAMLR	5.2.2.2, 1.2.6.6	Practices/Policies
	Finding	<p>For a US observer deployed on a foreign-flagged vessel, vessel safety considerations will need to be agreed to in the bilateral arrangement with the Receiving Member. Bilateral arrangements are required to contain a number of principles specified in the CCAMLR SISO. One related to observer safety states: “Receiving Members shall take appropriate action with respect to their vessels to ensure safe working conditions, the protection, security and welfare of scientific observers in the performance of their duties, and to provide them with medical care and safeguard their freedom and dignity in adherence to all pertinent international maritime regulations.” Past bilateral arrangements with other nations did not contain safety requirements other than those included in the SISO. In October 2017, the CCAMLR adopted measures requiring vessel response and communication procedures in the event an observer was harassed, assaulted, intimidated, disappeared, died or had a serious medical emergency. These requirements are contained in the SISO Annex 2 and are similar to the WCPFC CMM-2016-03.</p>	
	Recommendations	<p>.1 When drafting bilateral arrangements for deployment of a US observer on a foreign-flagged vessel, the USDEL to the CCAMLR should ensure the arrangement conforms to the OHSRs by including the following:</p> <ul style="list-style-type: none"> a. The foreign-flagged vessel should successfully pass a PTVSC inspection by the US observer with no deficiencies before the observer is deployed on board when serving as an international observer; b. Require the observer to provide the completed PTVSC to the CCAMLR liaison and the CCAMLR observer coordinator prior to the observer deploying on the foreign-flagged vessel; and c. Require the observer provider to carry health and liability insurance for a US observer serving on board a foreign-flagged vessel, with provisions to address coverage and evacuation in international waters and from international ports. <p>.2 The USDEL to the CCAMLR should advocate for the adoption</p>	

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		of the above referenced safety recommendations by the CCAMLR as conservation measures or changes to the SISO.
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5.2.2.3 Observer safety training

The CCAMLR Secretariat, with advice from the CCAMLR SC, has developed a CCAMLR scientific observer manual which includes data collection protocols and reporting forms.⁷³ Neither the CCAMLR nor the US-AMLR programs require any training for observers, including safety training, prior to deployment. The last CCAMLR observer provider used observers from the NPOP, so it is highly likely that the observers had completed the 2.5-3-day safety training of the NPOP (see section 4.2.3).

In the past, a prospective CCAMLR observer was provided a copy of the CCAMLR observer manual to read before deployment. The CCAMLR observer coordinator reviewed all portions of the manual with the observer; however, the manual does not contain any information pertaining to health- or safety-related topics.

No.	Program	Discussion	Review Element(s)
1	CCAMLR	5.2.2.3, 1.2.6.3	Practices/Policies
	Finding	Due to the rarity of deployment of US observers in CCAMLR fisheries, only a small number of observers are anticipated to deploy in a CCAMLR fishery, and a stand-alone safety program has not been developed nor is likely to be developed in the future. Current information about the operation of the program is hard to come by since there has been no US involvement in the CCAMLR fishery in over a decade.	
	Recommendations	<p>.1 Prior to deployment, observers serving in a CCAMLR fishery should be required to have completed, within the past year, safety training equivalent to or more rigorous than specified in the US Observer Safety Training Standards. CCAMLR observers could participate in ongoing safety training conducted at NOAA domestic ROPs that address similar climatic conditions.</p> <p>.2 The NOP, through the NOPAT and NOPAT SAC, should develop standards for observer training for CCAMLR finfish and krill programs that address safety risks inherent to the job as well as</p>	

⁷³<http://www.ccamlr.org/en/science/ccamlr-scheme-international-scientific-observation-siso>

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		medical concerns in extremely remote areas. MRAG Americas has developed training materials that may be available to the US AMLR program in lieu of developing their own materials.
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5.2.2.4 Observer equipment and maintenance

The SWFSC AMLR program maintains and issues safety equipment to US CCAMLR observers. In the past, the SWFSC did not provide a PLB to the observer, and the InReach communication system had not been developed. Currently, funds are reported to be available to update or purchase new equipment through internal NOAA Fisheries funds, if needed.

No.	Program	Discussion	Review Element(s)
1	CCAMLR	5.2.2.4	Equipment
	Finding	The US AMLR program does not currently provide an independent means of communication for CCAMLR US observers. Since the disappearance of US observer Keith Davis, many observer providers have started to issue InReach satellite communicators that provide an independent means of communication (<i>i.e.</i> , not dependent on or accessible to vessel personnel). The InReach device has 100% global coverage, and communication is by text message.	
	Recommendation	The US AMLR program should issue US CCAMLR observers a PLB, and a device capable of sending and receiving messages independently of the vessel (<i>e.g.</i> , satellite phone, InReach), particularly when US observers are deployed as international observers on board foreign-flagged vessels under a bilateral arrangement. With the latter, the activity of an individual observer can be checked remotely by the observer provider or USG, depending on who issues the device, and can give an indication of when it was last used, though this is dependent upon the observer activating the unit regularly. The NEFSC-FSB uses preprogrammed codes informing the observer provider of the observer's status.	

No.	Program	Discussion	Review Element(s)
2	CCAMLR	5.2.2.4	Practices/Policies
	Finding	Due to the passage of over a decade since the last deployment of a CCAMLR US observer, the reviewer was unable to assess the extent to which the OHSRs were followed in the CCAMLR program in the past.	

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	Recommendation	The USG should provide advance notice to the operator of a US vessel considering fishing within the CCAMLR convention area to clarify the application of the OHSRs, and ensure compliance with all the requirements of the OHSRs.
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5.2.2.5 Deployment and at sea support

Under 50 CFR 600.746 in the OHSRs, all US-flagged vessels that carry an observer are required to have a USCG Commercial Fishing Vessel Safety Examination within the past two years, and pass a PTVSC conducted with the observer.

Regular communication between the observer and the observer program is critical to ensuring observer safety and support while at sea.

No.	Program	Discussion	Review Element(s)
1	CCAMLR	5.2.2.5, 4.1.4	Practices/Policies
	Finding	The last time a US CCAMLR observer was deployed in 2006, the US AMLR observer coordinator and the observer maintained email communication several times a week. Within their correspondence was a code that provided a means for the observer to indicate the current status on board the vessel. If intervention by the US AMLR observer coordinator was required, the observer had a code that could be included in the message.	
	Recommendations	<p>.1 The US AMLR program and/or the observer provider should establish a daily radio or internet check-in routine with the observer for safety reasons, especially for US observers serving on foreign-flagged vessels under a bilateral arrangement. If the observer provider POC does not receive a message from the observer after a day, appropriate actions as established in the EAP should be taken to confirm that the observer is safe and healthy. The CCAMLR program could adopt similar measures to implement daily text messages concerning the observer’s status and location. The InReach satellite messenger system should be considered to provide independent communication using text and is used by several other international programs.</p> <p>.2 NOAA Fisheries should establish a protocol or regulation whereby when a US citizen is deployed as an international</p>	

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		observer on board a foreign-flagged vessel serving in the CCAMLR area, the observer provider sends weekly updates to the CCAMLR observer coordinator or designated CCAMLR liaison. In the event of an emergency involving the observer, the observer provider should immediately notify the CCAMLR observer coordinator and CCAMLR liaison. The same procedure should be used for US CCAMLR observers on board US-flagged vessels. See section 4.1.4, findings/recommendations 1-3.
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5.2.2.6 Debriefing

At the completion of an observer’s tour of duty, all observer data are sent to the CCAMLR observer coordinator for quality control/quality assurance review, and appropriate corrections made as needed. Once the data are corrected, they are sent by the CCAMLR-observer coordinator to the CCAMLR secretariat.

No.	Program	Discussion	Review Element(s)
1	CCAMLR	3.2, 5.2.2.6	Practices/Policies
	Finding	After past CCAMLR US observer deployments, the CCAMLR conducted both an in person and telephone debriefing. At the time in 2006 and prior, there was no standardized debriefing process. Previous CCAMLR observers were required by the SISO to complete a final report describing their sampling location and other experiences while on board the vessel. The report was sent to the CCAMLR Secretariat and shared with other member nations.	
	Recommendation	The US AMLR observer coordinator should consider developing a debriefing survey that asks questions about safety, and other concerns that the observer may have had while on board. (See section 3.2, finding 3.2, recommendations 1-2)	

5.2.2.7 Observer incidents

No US observer safety incidents have occurred in the CCAMLR observer program to date. However, several vessels, two from South Korea and one from South Africa, with observers on board from other nations, have sunk or had serious safety problems on board (APO 2017). The remote nature and extreme fishing environments common to the CCAMLR fishery, such as ice fields, create an extremely hazardous environment for observers, particularly those deployed on foreign-flagged vessels under a bilateral arrangement because of the lack of a PTSVC and the lack of US jurisdiction.

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In October 2017, the USDEL to CCAMLR introduced a measure similar to the WCPFC measure (CMM 2016-03) that identifies required actions, procedures, and communication protocols by the vessel in the event an observer is missing or dies. This measure also includes required actions by the vessel to protect the observer, resolve the conflict, or facilitate safe disembarkation if the observer is assaulted, intimidated, or harassed, or if their health and safety is at risk. The measure has been incorporated by the CCAMLR as Annex II in the SISO and identified as the Emergency Action Plan.⁷⁴

5.2.2.8 Emergency Action Plan

The US CCAMLR observer program currently does not have an Emergency Action Plan.

No.	Program	Discussion	Review Element(s)
1	CCAMLR	5.2.2.8, 1.2.6.1	Practices/Policies
	Finding	Currently, the US AMLR program which manages the CCAMLR observer program, does not have an Emergency Action Plan (EAP). International observer programs present a complicated jurisdictional situation for incident investigations as well as enforcement actions. In the event of an emergency, response procedures and jurisdictional authority require careful review and collaboration between the various USG agencies and international partners. The new measure recently adopted by the CCAMLR (see 5.2.2.7), while an important step forward, does not contain nation-specific requirements for national emergency response and communication with program administrators, family, etc.	
	Recommendation	NOAA Fisheries or the observer provider should develop and maintain a comprehensive EAP for the CCAMLR observers, including any working under a bilateral arrangement, which conforms to national recommendations of Ajango <i>et al.</i> (2004a). The EAP should include an Emergency Notification Plan and should be specific to the CCAMLR deployed observer while deployed on either a US-flagged vessel or a foreign-flagged vessel. Like the PTVSC, the development of the EAP for a foreign vessel will need	

⁷⁴ https://www.ccamlr.org/en/system/files/e-pt10_0.pdf

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		to be covered in a bilateral arrangement or through other CCAMLR mechanisms (section 3.6, finding/recommendation 1).
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5.3 Foreign-flagged vessels carrying US observers under international agreements

During the past 12 years, five tuna⁷⁵ transshipment observer programs have been implemented to record the transfer of tuna and tuna-like species from fishing vessels to large transshipment or carrier vessels on the high seas. All five programs are managed through their respective RFMO Secretariats. Four programs currently outsource observer services through the MRAG/CapFish Consortium or MRAG Americas, privately held observer service providers. The WCPFC sources observers through an intergovernmental organization called the Forum Fisheries Agency (FFA).

The tuna transshipment observer programs of both the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the IATTC have US observers deployed on foreign flagged carrier vessels. None of the US health and safety policies or US regulations (*e.g.*, OHSRs) apply to these observer programs or vessels. Further, because the observer programs are not authorized under the MSA or MMPA, FECA does not apply to any injury the observer may sustain while engaged in their role as the observer. US Workers' Compensation insurance also does not apply because the observers are working in waters beyond US jurisdiction.

In the event of an accident involving a US observer deployed in one of these programs, jurisdictional and investigative authorities and responsibilities are complex, and the capacity of the USG to intervene is extremely limited. The risk presented to US observers serving in international programs, especially transshipment programs, appears to be significantly greater than in other programs due to the nature of serving on a foreign-flagged vessel, often at a distance offshore of 500 miles or more. Response to an incident may also be impacted by the lack of jurisdictional authority by the US government, and the number of countries that may be involved.

There has been at least one incident where a US citizen observer working in the IATTC transshipment observer program, Keith Davis, disappeared from a transshipment vessel. Davis's disappearance exposed the limited role of the USG in operations of such programs, deficiencies in program communication, delayed communication by the vessel and employer, and slow SAR response time with limited resources. Further, once the vessel was directed to port, US

⁷⁵ Only three of the five tuna transshipment observer programs are reviewed in this document because the Indian Ocean Tuna Commission and Committee for the Conservation of Southern Bluefin Tuna do not have any US citizen observers or US flagged vessels operating in these RFMO/RFBs and are therefore outside the scope of this review.

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investigative efforts were limited because the United States did not have any jurisdictional authority. The case has to date not been officially resolved.

In a recent review on transshipment activities across the globe, Ewell *et al.* (2017) noted, “Transshipment at sea also likely facilitates human trafficking, forced labor, and other human rights abuses because it allows fishing boats to stay out at sea and avoid enforcement and civil society.” Although IATTC achieved the second-best score in the review, the loss of Davis illustrates the hazards and the challenges of communication and recovery efforts for observers serving in the transshipment program. The Pew Foundation⁷⁶ and several other environmental NGOs⁷⁷ have recommended prohibiting transshipment operations. In 2016, the Moss Adams consulting firm completed a performance review of the IATTC-TTOP and Agreement on the International Dolphin Conservation Program (AIDCP). The review noted the loss of the observer, Keith Davis, and questioned whether transshipment should be allowed to continue. They recommended that IATTC “review this practice and the outsourcing contract provisions to ensure that it has in place practices that guarantee a safe working environment for observers at sea. Any vessel involved in an incidence of the loss of life of an observer should never be allowed to operate again in any global fishery” (Moss-Adams LLP 2016).

5.3.1 ICCAT Transshipment Regional Observer Program

5.3.1.1 Program description

The ICCAT⁷⁸ was established in 1969. It currently has 51 members that cooperate in the conservation and management of tuna and tuna-like species in the Atlantic Ocean (Figure 37). Two ICCAT observer programs are implemented centrally through the ICCAT Secretariat; namely, the Regional Observer Program for At-Sea Transshipment (Transshipment ROP) and the Regional Observer Program for eastern Atlantic and Mediterranean bluefin tuna (ROP-BFT). The ROP-BFT was not included in this review because no US citizens to date have been employed as observers in this program, and no US-flagged vessels fish in this fishery. However, there are no prohibitions against possible future participation by US citizens as observers.

⁷⁶ <http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2016/11/recommendations-to-the-13th-regular-session-of-the-western-and-central-pacific-fisheries-commission>

⁷⁷ <http://www.greenpeace.org/new-zealand/en/press/Greenpeace-calls-on-WCPFC-to-ban-FADs-and-high-seas-fishing/>

⁷⁸ <http://www.iccat.int>

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The ICCAT Transshipment ROP was established in 2006 and became operational in April 2007. The program is funded through fees assessed on the fewer than ten ICCAT Parties, primarily located in Asia, who wish to transship ICCAT species. Only large-scale pelagic longliners greater than 24 meters LOA are authorized to transship product to carrier vessels at sea. 100% observer coverage is required at all times during at-sea transshipment operations. Carrier vessels are required to have an operational VMS and must be listed on the ICCAT's carrier vessel record to be authorized to receive transshipments of ICCAT species. The observer is deployed on board the carrier vessel and is responsible for reviewing the catch documentation and confirming the accurate recording of product transferred from the fishing vessel to the carrier vessel.

5.3.1.2 Procurement of observer services

In December 2006, MRAG/CapFish, a consortium between MRAG Ltd., based in London, UK, and CapFish based in Cape Town, South Africa, was awarded a renewable contract through a competitive bid process conducted by the ICCAT Secretariat to provide observer services to support the Transshipment ROP. Fees to support the program are collected by the ICCAT Secretariat from each member who transships, and deposited into a special account. MRAG/CapFish invoices the ICCAT Secretariat for services provided.

A Memorandum of Understanding (MOU) between MRAG/CapFish and each of the carrier vessel owners governs many of the vessel's safety requirements for observers.⁷⁹ The MOU requires the successful completion of a pre-boarding inspection, similar to the US domestic PTVSC, to ensure the observer's safety, and references the safety provisions and obligations of the flag state.

In November 2016, the ICCAT adopted a revised measure on transshipment (Recommendation 16-15; ICCAT (2016)) that contains a provision stating "The flag state shall ensure that captains, crew and vessel owners do not obstruct, intimidate, interfere with, influence, bribe or attempt to bribe the observer in the performance of his/her duties" (Rec. 16-15 Appendix 2, 10(g)). A more detailed proposal by the United States included very specific requirements for equipment and training, among other health and safety issues related to observers in the ICCAT's regional observer programs for transshipment and bluefin tuna, but it did not receive consensus at the 2016 ICCAT meeting (Delegation of the USA (2016a); PWG-408A/2016). The US submitted another proposal to adopt increased safety measures at the 2017 ICCAT meeting ((Delegation of the USA 2017); PWG-407A/2017).

⁷⁹ http://iccat.int/Documents/Other/ROP_MOU.pdf

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No.	Program	Discussion	Review Element(s)
1	ICCAT-ROP	5.3.1.2	Practices/Policies
	Finding	The MOU between MRAG/CapFish and the vessel contains provisions that require the vessel to return to port if the observer is injured or has a medical emergency that warrants departure from the vessel, but does not address requirements for the vessel in the event an observer is missing.	
	Recommendation	The USDEL to the ICCAT should advocate amendments to the MOU between MRAG/CapFish and transshipment vessels to require the vessel to contact MRAG/CapFish immediately if there is an injury, serious illness, or disappearance of an observer. The MOU at Section 2, Item 4 should be amended to require that in the case of a missing observer, the carrier vessel return to port at the direction of the international authorities immediately after exhausting SAR efforts for the observer.	

No.	Program	Discussion	Review Element(s)
2	ICCAT-ROP	5.3.1.2	Practices/Policies
	Finding	There are currently no provisions within the ICCAT requiring an ICCAT authorized fishing vessel delivering to a transshipment vessel involved in a serious incident or disappearance to cooperate with national and international authorities or transit to port if further investigation is required.	
	Recommendation	The USDEL to the ICCAT should work with the ICCAT Secretariat and other member countries to pursue measures requiring that any ICCAT authorized fishing vessel offloading to a transshipment vessel involved in a serious incident including loss of life or disappearance is under obligation to provide access and their full cooperation to the appropriate national and international authorities.	

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No.	Program	Discussion	Review Element(s)
3	ICCAT-ROP	5.3.1.2, 1.2.6.7, 1.2.6.8	Practices/Policies
	Finding	<p>ICCAT Transshipment ROP observers have a much higher risk profile typically than US domestic observers due to the nature of the vessels' operation far offshore, jurisdictional ambiguity, and the lack of clear vessel safety requirements. In the event of an incident involving a US observer deployed in the ICCAT Transshipment ROP, the USG would likely be extremely limited in its ability to respond to the situation (<i>e.g.</i>, by directing the vessel to port, conducting an inspection, or undertaking enforcement action).</p>	
	Recommendations	<ol style="list-style-type: none"> .1 The USDEL to the ICCAT should continue to advocate ICCAT adoption of similar or more extensive measures than those adopted by WCPFC ((WCPFC 2016); CMM 2016-03) to ensure observer safety. .2 If the ICCAT is not able to agree to adoption of safety provisions at least as rigorous as WCPFC resolution CMM 2016-3, the USDEL to ICCAT should support the elimination of the option to transship product from longliners to carrier vessels and require longline vessels to offload in port. .3 The USDEL to the ICCAT should advocate that to enhance observer safety, MRAG/CapFish and the ICCAT should consider placing two ICCAT Transshipment ROP observers on board transshipment vessels, expanding the observer safety training to include personal defense, expanding and strengthening the conflict resolution training, and implementing a daily reporting protocol to identify any potential conflicts or problems on board the vessel. .4 The USDEL to the ICCAT should advocate binding measures that implement penalty provisions excluding the vessel, the crew, and captains of any fishing or transshipment vessel involved in the serious injury or loss of life of an observer at sea resulting from negligence or criminal activity of the captain and crew from being listed as an authorized vessel/person participating in the ICCAT convention area or fishery. 	

5.3.1.3 Observer recruiting and employment

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MRAG/CapFish recruits observers to serve in the ICCAT Transshipment ROP. The ICCAT observers are required to have completed no less than 60 days at sea as an observer, received a favorable health examination within the past year, and be currently certified to perform CPR and First Aid before becoming eligible to participate in the Transshipment ROP. Unlike US domestic observer programs, a college degree is not required to become an ICCAT Transshipment ROP observer, but observers must pass the MRAG/CapFish-provided technical training. MRAG/CapFish considers Transshipment ROP observers to be self-employed and does not withhold taxes. While at sea, observers are covered under the vessel’s Protection and Indemnity insurance. An actively deployed observer that is in transit, in port, or any other place not on the vessel is provided various types of insurance coverage provided by MRAG/CapFish. MRAG/CapFish also carries a policy that will provide payment to the observer in the event of an accident that prevents them from returning to employment.

5.3.1.4 Observer safety training

Training is provided in person either in London, UK, or in Cape Town, South Africa using the ICCAT Transshipment ROP observer manual.⁸⁰ Health and safety information, including a session on conflict resolution, is included in the week-long training. An estimated 6-8 hours is spent on safety related issues during the training. The completion of an approved Survival at Sea course equivalent to that specified in STCW-F (IMO 1995) is a prerequisite for hiring. MRAG/CapFish does not reimburse the observer for the cost of the training nor the time to take and complete the course.

No.	Program	Discussion	Review Element(s)
1	ICCAT-ROP	5.3.1.4, 1.2.6.3	Training
	Finding	If an ICCAT Transshipment ROP observer has completed an MRAG/CapFish-approved safety training within the past 10 years, no refresher training is required. US domestic ROPs require safety training during initial observer training session, and refresher training at least every three years.	
	Recommendation	For consistency with the US Observer Safety Training Standards, the USDEL to the ICCAT should advocate requiring a hands-on and in-water 2-3 day safety training course for ICCAT Transshipment ROP observers who have not completed safety training within the past three years.	

⁸⁰ http://iccat.int/Documents/ROP/ICCAT_Observer_Manual.pdf

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5.3.1.5 Observer equipment and maintenance

MRAG/CapFish provides and maintains safety equipment that includes an immersion suit, PFD, PLB and InReach satellite communicator. The gear is serviced by authorized service centers and checked before issuance to the observer.

5.3.1.6 Deployment and at sea support

ICCAT observers embark on the carrier vessels either alongside the dock or from a launch just offshore from the beach, usually in Cape Town, South Africa. MRAG/CapFish require first time observers to embark at the dock. Prior to deployment, the observer must complete a required PTVSC, per the MOU with the vessel.

The following items are required per the MOU between MRAG/CapFish and the vessel⁸¹ to be present and in sufficient quantities before the observer can deploy:

- a. "Current and valid Safety Management Certificate that does not expire for at least 4 months from the date of embarkation by the observer."
- b. "Life raft(s) with sufficient capacity for all persons on board, including the observer, be within their serviceable date during the time the observer is deployed and be fitted with a hydrostatic release mechanism."
- c. "There must be a total number of IMO-SOLAS LSA⁸² standard life jackets on board, including the observer, that are readily available at the emergency muster stations."
- d. "There must be a total number of IMO-SOLAS LSA immersion suits on board, including the observer, that are readily available at the emergency muster stations."
- e. Vessel must be GMDSS compliant according to its tonnage.

The review is very similar to the US PTVSCs except that it does not include testing the EPIRB or checking whether the battery is within its expiration date, and does not include checking if the hydrostatic release unit (HRU) is installed properly. If any components on the list are outdated or not present, the vessel must correct these deficiencies before the observer is authorized to deploy.

⁸¹ https://www.iccat.int/Documents/Other/ROP_MOU.pdf

⁸² Indicates approved to the SOLAS requirements in accordance with the IMO Life-Saving Appliances (LSA) Code

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To date, the ICCAT Transshipment ROP observers have not been deployed through a transfer at sea, although there are provisions in the MOU and in ICCAT Recommendation 16-15 (and its predecessor instruments) allowing the Transshipment ROP to transfer an observer at sea in the case of an emergency when an observer may need to return to shore immediately.

ICCAT Recommendation 16-15 (paragraph 6.3 in Appendix 2) and its predecessor instruments require the observer to develop a daily data report. However, it was decided by the ICCAT that observers would only report the daily information to the ICCAT on a 5-day basis. Accordingly, the reports are sent by the observers to MRAG/CapFish, where they are collated and then submitted as a summary report to the ICCAT every 5 days. If an observer has not reported on schedule, MRAG/CapFish follows-up by calling the vessel.

Prior to the transshipment of product, the observer is required to transfer from the carrier vessel to the fishing vessel to review and document relevant information on the fishing vessel's activities, and the master of the fishing vessel is required to allow the observer to carry out his/her duties. The masters of the carrier and fishing vessels are to ensure all necessary assistance is provided to the observer to ensure safe transport between the carrier and fishing vessels. The observer or the captain of the carrier vessel may decide, however, that a transfer is not feasible or advisable due to weather issues or other safety concerns. In such cases, the transshipment operations can still be carried out with the observer staying on board the carrier vessel and having the paperwork transferred from the fishing vessel to the observer.

No.	Program	Discussion	Review Element(s)
1	ICCAT-ROP	5.3.1.6	Communications
	Finding	Since the introduction of the InReach satellite communicators, the activity of an individual observer can be checked remotely from the MRAG/CapFish office and can give an indication of when the unit was last used, though this is dependent upon the observer activating the unit regularly. There are methods to program the InReach device to send a pre-coded message that provides a status update such as is done by the NEFSC-FSB.	
	Recommendation	The USDEL to the ICCAT should advocate for a requirement for the observer provider to establish a daily radio or internet check-in routine for the ICCAT Transshipment ROP observers. Other programs, such as the NEFSC-FSB, use pre-programmed codes on InReach satellite communicators to inform the observer provider of the observer's status. MRAG/CapFish could easily adopt similar measures to monitor the daily status and ensure the well-being of the ICCAT Transshipment ROP observers. See section 4.1.3, findings/recommendations 1-3.	

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5.3.1.7 Debriefing

At the completion of the ICCAT observer’s tour, the observer is required to draft a final report containing information on how and where they sampled and other important information about the vessel.

No.	Program	Discussion	Review Element(s)
1	ICCAT-ROP	5.3.1.7	Practices/Policies
	Finding	ICCAT Transshipment ROP observers are required to complete a final report describing their sampling location and other experiences while on board the vessel. The report is sent to the ICCAT Secretariat and shared with other member nations. MRAG/CapFish did not provide the reviewer with specific information concerning any debriefing process at the end of the observer’s tour.	
	Recommendation	In addition to drafting the ICCAT report, the USDEL should advocate for the development of a standardized debriefing survey that asks questions about safety, and other concerns that the observer may have had while on board. (See section 3.2, finding 3.2, recommendation 1-2)	

5.3.1.8 Observer incidents

According to MRAG/CapFish, there have been no health and safety problems encountered by MRAG/CapFish or their observers in the ICCAT Transshipment ROP to date. However, the risk profile for an observer serving on a transshipment vessel is considerably higher than on domestic vessels due to operating hundreds of miles offshore, the lack of a USCG safety examination, the lack of USG jurisdiction, safety or SAR resources, and investigative authority. No ICCAT Transshipment ROP observers were interviewed or made available for comment during this review.

5.3.1.9 Emergency Action Plan

MRAG/CapFish has developed an EAP that identifies procedures in the case of an emergency. The plan details the different response levels of an emergency (*e.g.*, minor injury, life threatening, death) and appropriate communication tree. The EAP includes procedures on documenting an injury or health problem, and notification to the MRAG/CapFish-ICCAT program manager and the insurance company.

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No.	Program	Discussion	Review Element(s)
1	ICCAT-ROP	5.3.1.9, 1.2.6.1	Practices/Policies
	Finding	<p>In a serious life threatening emergency, MRAG’s EAP procedures are first to ensure the observer’s safety and to gather necessary information. The second step is to inform the RFMO/RFB if the incident has the “potential to impact deployment”. If the incident involves serious life threatening injury or death, the next step is to inform the next of kin. If a serious emergency involving a US citizen observer occurred, in practice, MRAG would inform the ICCAT secretariat who would then inform the head of the US ICCAT delegation. From this point forward, it is unknown how the USG would proceed because it has not been tested.</p>	
	Recommendation	<ol style="list-style-type: none"> 1. The USDEL to the ICCAT should advocate establishment of a protocol to enable members to receive regular status reports from the observer provider when one of their nationals is deployed as an observer in the ICCAT-Transshipment ROP, as well as direct notification in the event of an emergency involving the observer. For the US, the ICCAT observer liaison should be the primary recipient of updates from the observer provider and should track the observers’ status while deployed. .2 The USDEL to the ICCAT should advocate revision of the MOU between the vessel and the observer provider, or adopt measures that require the vessel to immediately notify the observer provider, the ICCAT secretariat, and the SAR authorities in the area where the vessel is located when an observer is missing or has a serious injury. 	

5.3.2 IATTC Transshipment Observer Program

5.3.2.1 Program description

The Inter-American Tropical Tuna Commission (IATTC), located in La Jolla, CA, was established in 1949. The IATTC currently includes 21 member nations that govern tuna or tuna-like species in the Eastern Pacific Ocean, east of 150°W longitude. The IATTC manages three different observer programs, a transshipment observer program (IATTC-TTOP), a large scale purse seine observer program established under the Agreement on the International Dolphin Conservation Program (AIDCP), and a longline observer program that only deploys national observers

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(observers from the same flag state as the vessel).⁸³ In the 1970s a large number of dolphins were killed in the purse seine fishery that fishes in association with dolphins in the Eastern Pacific. The AIDCP observer program will be discussed later (section 5.4.1).

The IATTC-TTOP was established in 2008 under IATTC Resolution C-08-02 (later revised by Resolutions C-11-09 and C-12-07; IATTC (2008, 2011, 2012)), and requires observer coverage on all transshipment vessels. Current participants are China, Japan, Korea, Chinese Taipei, Vanuatu, and Panama. Each nation transships their fish using carrier vessels where 100% observer coverage is required at all times. Other nations that have participated in the transshipment program infrequently in the past are Belize, Indonesia and Peru. Carrier vessels are required to have an operational VMS and must be authorized by the IATTC to accept transshipments in the IATTC Convention Area. In 2015, 65 carrier vessels from 10 different countries, primarily registered in Liberia and Panama, were authorized to receive fish products from IATTC vessels. On average, the number of IATTC Transshipment sea days is approximately 2,000 each year, with 2,626 sea days in 2016 the highest amount since establishment of the program (IATTC 2017). The highest number of transfers occurs from February-April and August-September (MRAG Americas 2013).

5.3.2.2 Procurement of observer services

In December 2008, MRAG Americas was awarded a contract through a competitive bid process by the IATTC Secretariat to provide observer services. MRAG Americas' contract was renewed in 2016 for an additional three-year period expiring at the end of 2019, unless extended. The IATTC allows large scale pelagic longliners authorized to fish in the IATTC Convention Area to offload product to carrier vessels. The program was designed to monitor transshipments at sea by large scale tuna longliners consistent with the catch report in the IATTC transshipment declaration.

IATTC Resolution C-12-07 identifies the general rules, provisions and responsibilities of each party involved in the transshipment observer program. Annex 3, item 9(a-e) of the resolution identifies the obligations of the flag state with respect to a carrier vessel, noting that observers will have accommodations equal to that of an officer, access to location and communication equipment and adequate space to work. Under 9(e) "The flag state shall ensure that captains, crew and vessel owners do not obstruct, intimidate, interfere with, influence, bribe or attempt to bribe an observer in the performance of his/her duties."

⁸³ <http://www.iattc.org>

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A Memorandum of Understanding (MOU) between MRAG Americas and the carrier vessel owners governs the vessels' safety requirements for observers. The MOU requires the successful completion of a pre-boarding inspection, similar to the US domestic PTVSC, to ensure the observer's safety, and references the safety provisions and obligations of the flag state set forth in C-12-07.

No.	Program	Discussion	Review Element(s)
1	IATTC-TTOP	5.3.2.2	Practices/Policies
	Finding	The MOU contains provisions that require the vessel to return to port if the observer is injured or has a medical emergency that warrants departure from the vessel. However, there is no provision to address a situation where the observer is missing.	
	Recommendation	The USDEL to the IATTC should work with the IATTC Secretariat to take appropriate action to update the MOU between an IATTC-TTOP vessel and MRAG Americas. The revised MOU should require the vessel to immediately contact MRAG if there is an injury or serious illness involving the observer, or if the observer is missing. The MOU at Section 2, Item 4 should be amended to require that in the case of a missing observer, the carrier vessel return to port immediately after exhausting SAR efforts for the observer.	

No.	Program	Discussion	Review Element(s)
2	IATTC-TTOP	5.3.2.2	Practices/Policies
	Finding	There are currently no provisions within the IATTC requiring an IATTC authorized fishing vessel delivering to a transshipment vessel involved in a serious incident or disappearance to cooperate with national and international authorities or transit to port if further investigation is required.	
	Recommendation	The USDEL to the IATTC should work with the IATTC Secretariat and other member countries to pursue measures requiring that any IATTC authorized fishing vessel offloading to a transshipment vessel involved in a serious incident including loss of life or disappearance of an observer is under obligation to provide access and their full cooperation to the appropriate national and international authorities.	

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5.3.2.3 Observer recruiting and employment

IATTC observers are recruited by MRAG Americas' Anchorage, Alaska office. Most of the United States IATTC-TTOP observers are former US domestic observers that previously worked for the PIROP. The IATTC-TTOP observers are required to have completed no less than 60 days at sea as an observer, and passed a health examination within the past year. Although not required by the IATTC, most observers serving as IATTC-TTOP observers hold college degrees and have in excess of 1,000 sea days from past observer experience. The majority of the IATTC TTOP observers are employees of MRAG Americas, although foreign observers (observers who are not US citizens), are considered subcontractors.

While at sea, observers are covered under Maritime Employers Liability insurance as the primary coverage, as well as the vessel's Protection and Indemnity insurance. While in transit, in port, or any other place while actively deployed but not on the vessel, MRAG Americas has coverage provided by ACE International Advantage. MRAG Americas can provide a confidential means to relay information to a doctor if vessel communications cannot or should not be used to transmit such information.

No.	Program	Discussion	Review Element(s)
1	IATTC-TTOP	5.2.2.3	Practices/Policies
	Finding	Most IATTC-TTOP observers have obtained PIROP observer safety training in the past. However, there are no requirements under the IATTC for initial or refresher safety training.	
	Recommendation	The USDEL to the IATTC should advocate that IATTC-TTOP require a USCG-approved or equivalent hands-on and in-water 2-3-day safety training for observers consistent with the US Observer Safety Training Standards and policy.	

5.3.2.4 Observer safety training

MRAG Americas requires IATTC-TTOP observers to pass and complete 5-day-long observer training. Approximately 8 hours of the course is spent on safety issues including PFD and immersion suit training, hazard identification, conflict resolution, marine fire safety, and emergency distress signals. In the past, MRAG Americas staff led the IATTC observer training with assistance from the PIROP, who conducted the standard PIROP observer safety training. The last training session was held in February 2016 in Honolulu, HI, and no training is expected to occur in 2017 due to very little observer turnover. Observers are compensated for their time

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spent during training including First Aid and CPR training that may have been obtained separately.

No.	Program	Discussion	Review Element(s)
1	IATTC-TTOP	5.3.2.4	Communications
	Finding	IATTC-TTOP observers prepare daily reports, however, it was decided by the IATTC that observers would transmit information only every 5 days. The reports are sent via the vessel's email to MRAG Americas, where they are collated and then submitted as a summary report to the IATTC every 5 days. If an observer has not reported on schedule then MRAG Americas follows up by trying to contact the observer through the InReach system. If MRAG Americas is not successful in contacting the observer, they will then call the vessel owner. Since the introduction of the InReach units, the activity of an individual unit can be checked remotely from the MRAG Americas office and can give an indication of when it was last used, though this is dependent upon the observer activating the device regularly.	
	Recommendation	The USDEL to the IATTC should advocate that the IATTC require the observer provider to establish a daily communication routine. The InReach device can be pre-programmed for the observer to send a daily message communicating their status on board the vessel. If the observer provider does not receive a message from the observer after a day, appropriate actions should be taken to ensure the observer is OK. See section 4.1.4, findings/recommendations 1-3.	

5.3.2.5 Observer deployment and at sea support

Observers embark on the carrier vessels either alongside the dock (about 60% of the time), or deploy from a launch anchored in the harbor. First-time IATTC-TTOP observers are only allowed to embark at the dock. Prior to deployment, the observer must inspect the vessel's required safety equipment and complete a required pre-boarding inspection (Appendix 28; (IATTC 2012)). Review elements include:⁸⁴

⁸⁴ MOU, IATTC-ROP/MOU/1/1/09

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- a. "Current and valid Safety Management Certificate that does not expire for at least 4 months from the date of embarkation by the observer."
- b. "Life raft(s) with sufficient capacity for all persons on board, including the observer, be within their serviceable date during the time the observer is deployed and be fitted with a hydrostatic release mechanism."
- c. "There must be a total number of IMO-SOLAS LSA standard life jackets on board, including the observer, that are readily available at the emergency muster stations."
- d. "There must be a total number of IMO-SOLAS LSA immersion suits on board, including the observer, which are readily available at the emergency muster stations."
- e. Vessel must be GMDSS compliant according to its tonnage.

The review is very similar to the US PTVSC except that it does not include testing the EPIRB or checking whether the battery is within its expiration date, and does not include checking if the HRU is installed properly.

If any components on the list are outdated or not present, the vessel must correct these deficiencies before the observer is authorized to deploy. Since the program's inception, MRAG advised the reviewer that there have been three instances where vessels were found to have safety deficiencies and were required to correct those problems before departing from port with an observer on board.

To date, observers have not been deployed through a transfer at sea, although there are provisions in the MOU and IATTC resolution for such an action in the case of an emergency when an observer may need to return to shore immediately.

If an observer has a question or a concern, they can send a text message to MRAG/CapFish using the provided InReach device. IATTC recommendation 06-11, Annex 2, 5.b requires the observer to develop a daily report.

5.3.2.6 Observer equipment and maintenance

MRAG Americas maintains and provides safety equipment that includes an immersion suit, PLB, PFD, and InReach satellite communicator. The gear is serviced by authorized service centers and checked before issuance to the observer. After returning from a trip, the returning observer will take their gear home or arrange replacement items with the Anchorage office.

5.3.2.7 Debriefing

At the completion of the observer's tour, the observer is required to draft a final report containing information on how and where they sampled and other important information

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about the vessel. MRAG Americas also performs a phone interview with each observer after disembarking.

No.	Program	Discussion	Review Element(s)
1	IATTC-TTOP	5.3.2.7	Practices/Policies
	Finding	IATTC-TTOP observers are required to complete a final report describing their sampling location and other experiences while on board the vessel. The report is reviewed by MRAG and then sent to the IATTC Secretariat. Upon returning home, the MRAG project manager conducts a debriefing interview over the phone with the observer. The phone call is primarily regarding any data issues, but it is an opportunity for the observer to share any concerns or events that took place when out at sea.	
	Recommendation	The USDEL to the IATTC should advocate for the development of a standardized debriefing survey that asks questions about safety and other concerns that the observer may have had while on board a vessel. (See section 3.2, No. 3, finding .2, recommendations .1-.2.)	

5.3.2.8 Observer incidents

In September 2015, Keith Davis, a very experienced observer, went missing from the IATTC-TTOP carrier vessel VICTORIA 168 (Chinese operated, Panamanian flagged) 500 nm off the coast of Peru. The carrier vessel had been receiving fish from a longline vessel, F/V CHUNG KUO NO. 39, when Davis was discovered missing. After conducting an unsuccessful search for the missing observer, the VICTORIA 168 was directed to proceed to Panama by the Panamanian authorities; however, it took the vessel ten days, usually a 6-day transit, before she arrived in Panama. The FBI, USCG, and representatives from MRAG Americas met the vessel upon arrival. The Panamanian authorities initiated an investigation and shared limited information with the FBI. After three months, the VICTORIA 168 was cleared to return to sea. MRAG Americas considered placing two observers on board the vessel but decided not to do so because the entire crew had been replaced. MRAG Americas fully informed the observer replacing Keith Davis of Davis's disappearance during the previous trip, provided the new observer with an InReach satellite communicator, and implemented daily communication protocols.

A detailed timeline was presented at the 8th International Fisheries Observer and Monitoring Conference (IFOMC) regarding Keith Davis's disappearance (Kennelly 2016). The findings noted significant communication delays throughout the process, from the vessel, to the owner of the

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company, to the observer employer (12-hour delay), and finally to Peru’s SAR authorities (17 hours after Davis went missing), who did not have the capabilities to conduct timely aeronautical or maritime SAR 500 nm off Peru’s coast.

To date, Keith Davis has not been found and is generally assumed to be deceased, although a death certificate has not yet been issued. Despite the fact that investigations were conducted by the Panamanian authorities, the FBI, and USCG Investigative Services, the case has not been resolved (Appendix 27). In response to a FOIA request from the review team to the FBI, the only information that was provided was that the FBI cannot release any information on an open investigation which technically remains a missing person case.

For many individuals familiar with Keith Davis and the duties of an IATTC-TTOP observer, his disappearance appears very suspicious. At the October 2016 IATTC meeting, the USDEL proposed increased safety measures for observers (IATTC-90 PROP I-1A USA, (Delegation of the USA 2016b)). Unfortunately these measures were not adopted by the IATTC due to members’ cost concerns with implementation in the AIDCP program. The reviewer was advised that the US intended to again propose safety measures at IATTC and AIDCP observer program meetings in 2017, but has not yet received a report of the outcome.

The reviewer interviewed MRAG Americas staff and IATTC observers, who both raised concerns about the effect on observer safety of cultural differences that may exist between vessel owners, operators, and crew from various countries in the IATTC-TTOP program. In general, they were of the view that there is a lack of safety awareness, safety equipment, and safety culture on some of these vessels, most notably Chinese-operated vessels. In the past, crews on these vessels have sometimes been reported to be violent and disruptive. The current observer safety protocols and training, where they exist, do not adequately address these differences or the hazards and the risk they may pose.

No.	Program	Discussion	Review Element(s)
1	IATTC-TTOP	5.3.2.8, 1.2.6.7, 1.2.6.8	Practices/Policies
	Finding	Several IATTC observers have reported witnessing fights among crew members on both carrier vessels and fishing vessels. In at least one instance the crew from the offloading fishing vessel jumped overboard to seek asylum on the carrier vessel. These incidents and the loss of Keith Davis illustrate the continued elevated risk for US citizens serving as observers on board transshipment vessels.	
	Recommendations	.1 The USDEL to the IATTC should continue to advocate for the IATTC adoption of similar or more extensive measures than	

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		<p>those adopted by the WCPFC (CMM-2016-03).</p> <p>.2 If the IATTC is not able to adopt safety provisions as rigorous as WCPFC CMM-2016-03, the USDEL should consider proposing or supporting the elimination of the option to transship product from longliners to carrier vessels and require longline vessels to offload in port.</p> <p>.3 MRAG Americas and the IATTC should consider placing two IATTC-TTOP observers on board transshipment vessels to better ensure their safety, and expanding the observer safety training to include personal defense, expanding and strengthening the conflict resolution module, and implementing a daily report to ensure awareness of involved parties of any potential conflicts or problems on board the vessel.</p> <p>.4 The USDEL to the IATTC should advocate binding measures that implement penalty provisions excluding the vessel, the crew, and captains of any fishing or transshipment vessel involved in the serious injury or loss of life of an observer at sea resulting from negligence or criminal activity of the captain and crew from being listed as an authorized vessel/person participating in the IATTC convention area or fishery. Such provisions may serve as a deterrent to any future observer safety threats and create a safer working environment.</p>
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5.3.2.9 Emergency Action Plan

MRAG Americas has developed an Emergency Action Plan (EAP) that identifies procedures in the case of an emergency. The plan details the different levels of an emergency (*e.g.*, minor injury, life threatening, death), appropriate communication and response trees, procedures for documenting injuries, and notification to the program manager and insurance company. The EAP was developed before Keith Davis's disappearance and may be revised in the near future. An analysis of how the EAP worked in the Davis incident has not been provided by MRAG Americas. However, based on the timeline assembled by Mitchell for the 8th IFOMC (Mitchell 2016), the EAP could use significant improvement in the event of a serious observer-related incident by implementing the following measures through the MOU process:

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- a. The carrier vessel immediately notifying the observer provider, the RFMO/RFB, and the IATTC delegation of the observer’s home country; and
- b. The immediate notification of the SAR authorities for the area where the vessel is located.

No.	Program	Discussion	Review Element(s)
1	IATTC-TTOP	5.3.2.9, 1.2.6.1	Practices/Policies
	Finding	<p>In a serious life-threatening emergency, MRAG’s procedures are first to ensure the observer’s safety and to gather necessary information. The second step is to inform the RFMO if the incident has the “potential to impact deployment,” that is, if there are problems in providing observers. If the incident involves serious life threatening injury or death, the next step is to inform the next of kin. When a serious emergency involving a US observer occurred, MRAG informed the IATTC secretariat who then informed the head of the US IATTC delegation. In light of the Keith Davis incident, the current procedures are deficient because the vessel’s communications to MRAG Americas, the IATTC and the SAR authorities were significantly delayed.</p>	
	Recommendation	<p>.1 The USDEL to the IATTC should advocate establishment of a protocol to enable members to receive regular status reports from the observer provider when one of their nationals is deployed as an observer in the IATTC-TTOP, as well as direct notification in the event of an emergency involving the observer. For the US, the IATTC observer liaison should be the primary recipient of updates from the observer provider and should track the observers’ status while deployed.</p> <p>.2 The USDEL to the IATTC should advocate revision of the MOU between the vessel and the observer provider, or adopt measures that require the vessel to immediately notify the observer provider, the IATTC secretariat, and the SAR authorities in the area where the vessel is located when an observer is missing or has a serious injury.</p>	

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5.3.2.10 Interactions with WCPFC observers

In 2012, the WCPFC began placing observers from the WCPFC Regional Observer Programme on board transshipment vessels operating in the WCPFC Convention Area. In many cases, there are now two transshipment observers (IATTC and WCPFC) on board a single large carrier vessel.

No.	Program	Discussion	Review Element(s)
1	IATTC-TTOP	5.3.2.10	Practices/Policies
	Finding	On vessels with both IATTC and WCPFC observers deployed, there has reportedly been conflict stemming from confusion and competition at times over which observer was supposed to or allowed to sample transferred product from a fishing vessel. It was reported to the reviewer that this has led to several conflicts which could have potential to escalate. Some of these conflicts appear to stem from a lack of clarity of who is responsible for collecting information when transshipment occurs in the “overlap” area. In 2011, a Memorandum of Cooperation (MOC) was signed between the IATTC and the WCPFC to work cooperatively together and to cross-endorse IATTC and WCPFC observers on board transshipment vessels that receive fish from both convention areas. While the MOC was a productive instrument and a good platform for further discussion, outstanding issues as to how to improve cooperation between WCPFC and IATTC observers remain.	
	Recommendation	The USDEL to the IATTC and the WCPFC should advocate pursuing appropriate means to improve collaboration and resolve conflicts in the overlap area in cases where both IATTC and WCPFC observers are on board a carrier vessel. This could include the development of clear guidance on which observer has priority for sampling a particular transfer, improved training, improved observer professionalism/standards of conduct, and fostering a collaborative rather than competitive atmosphere by all parties.	

5.4 US flagged vessels carrying foreign observers under international agreements

The US-flagged tuna purse seine fleet operating in the Pacific is capped by the IATTC at 40 vessels, and is currently estimated to consist of 37 vessels. Many of these vessels have traditionally fished in either the Eastern Pacific Ocean (EPO) under the jurisdiction of the IATTC-

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AIDCP program, or in the Western Pacific under WCPFC jurisdiction. In the past 2 years, many US-flagged tuna vessels have moved to the EPO to fish. These vessels appear to move back and forth between jurisdictional areas much more frequently than in the past. Currently there are no US observers serving on US-flagged purse seine fishing vessels in the IATTC-AIDCP program or the WCPFC fishing area. However, because the vessels are US-flagged, the OHSR provisions apply regardless of the observer’s nationality.

5.4.1 IATTC-AIDCP observer program

5.4.1.1 Program description

The Agreement on International Dolphin Conservation Program (AIDCP) entered into force in 1999. It is a binding agreement administered by the IATTC and applies to large purse seine vessels (greater than 363 metric tons carrying capacity). The main purpose of the AIDCP program is monitoring the incidental catch of dolphins in the purse seine fishery for tunas. The data collected are the basis for determining whether a Dolphin Mortality Limit has been exceeded, and are also used for scientific and research purposes, as well as for monitoring compliance with IATTC management and conservation measures. The AIDCP observer program is centrally managed by the IATTC Secretariat. Since 1995, 100% of trips by large purse seine vessels are covered by observers. The cost of the observer program is paid for by assessment of a well volume fee paid to the IATTC by the large purse seine vessels required to carry observers. As of 2016, the United States had 26 purse seine vessels listed on the Active Purse Seine Vessel Capacity Register, 17 of these with well sizes large enough to require 100% observer coverage. IATTC-AIDCP observers are hired, trained, and deployed for at least 50% of the time on board member nations’ vessels by the IATTC Secretariat. The remaining observer coverage is provided by the vessel’s flag nation, with the exception of the US which uses only IATTC-AIDCP observers. No PTVSC is required by the IATTC-AIDCP observer program; it is left up to the flag nation to determine if a safety inspection or review is conducted.

No.	Program	Discussion	Review Element(s)
1	IATTC-AIDCP	5.4.1.1	Practices/Policies
	Finding	At least 17 US-flagged large purse seine vessels require 100% observer coverage provided by IATTC observers coordinated by the IATTC secretariat. The OHSRs apply to US-flagged vessels, including a requirement for a PTVSC. However, this requirement is not currently being applied by the IATTC-AIDCP observer program.	
	Recommendation	NOAA Fisheries should discuss with the IATTC-AIDCP observer program manager how to implement the PTVSC and inspection prior to observer deployment. Prior to departing for a trip, the	

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		observer should send the signed and completed checklist to the appropriate NOAA Fisheries staff or the IATTC program manager to ensure safe conditions for the observer on board. Further, NOAA Fisheries should consider recommending a change to the IATTC-AIDCP requiring all AIDCP observers to conduct a PTVSC prior to deployment. These inspections would increase the safety of all observers, not just observers serving on US-flagged vessels.
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5.4.2 WCPFC regional observer program-purse seine

5.4.2.1 Program description

The WCPFC was formed in 2004 to manage highly migratory fisheries in the WCPFC convention area (Figure 37). The United States ratified its membership in 2007 and joined the 25 other countries as members of the WCPFC. In 2007, the WCPFC established a regional observer programme (ROP). The ROP consists of WCPFC-accredited programs in many WCPFC member countries including the United States. In 2008, the WCPFC adopted a measure that required 100% observer coverage on purse seine vessels starting in 2010. Recently it adopted measures requiring 5% observer coverage on longline vessels. The PIROP and ASOP manage observer coverage on US-flagged longline vessels (section 4.8). In the past six years, six observers serving in the WCPFC tuna purse seine fishery have been lost at sea. In 2016, the WCPFC adopted observer safety and vessel response requirements in the event of an observer serious injury or emergency (CMM 2016-03; (WCPFC 2016)). Despite these measures, and new awareness of the dangers faced by observers, another Papua New Guinea observer went missing in June 2017.⁸⁵

5.4.2.2 Procurement of observer services

The Forum Fisheries Agency (FFA⁸⁶) located in Honiara, Solomon Islands recruits observers from Pacific Island nations that are party to the Pacific Islands Forum. There is high unemployment in many of these countries, and becoming an observer is perceived to be a long term and stable job. The PIRFO observers are not required to have a college degree but must pass the 2-month observer training. The Secretariat of the Pacific Community (SPC) and FFA train the observers to collect consistent data sets across the national and ROP programs. The training consists of

⁸⁵ <http://pacificguardians.org/blog/2017/07/01/a-png-fisheries-observer-reported-missing-off-a-chinese-flagged-fishing-vessel/>

⁸⁶ <http://www.ffa.int>

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standardized protocols, forms and procedures captured in the observer workbook. According to the FFA, the organization has been “placing observers on US fishing vessels since 1988 under the US Treaty Observer Program.” The US Treaty Observer Program is a provision in the South Pacific Tuna Treaty (SPTT). Under the original SPTT, 20% observer coverage was required on US-flagged purse seine vessels. In 2010, the WCPFC began requiring 100% observer coverage on the purse seine fleet, and the 100% observer coverage requirement is now part of the SPTT. Under the WCPFC, a vessel must carry an observer from any ROP (WCPFC-accredited observer program); and the US purse seine fleet has contracted service through the FFA to provide ROP observers to meet the coverage requirement.

No.	Program	Discussion	Review Element(s)
1	WCPFC	5.4.2.2	Practices/Policies
	Finding	<p>The US-flagged purse seine fleet is required to carry a fisheries observer 100% of the time. If the vessel fishes in the WCPFC convention area, the FFA provides the observer and is often assisted with the deployment of the observer by the NOAA Fisheries ASOP if deployment occurs in American Samoa. If the vessel is fishing in the IATTC Convention area, the observer is provided by the IATTC-AIDCP program. If the vessel fishes in the overlap area (both WCPFC and IATTC areas during the same trip), the vessel may carry a cross-endorsed observer or two observers. In all cases, the observer is a non-US citizen deployed on a US-flagged vessel. The OHSRs apply to US-flagged vessels including a requirement for a PTVSC examination. Currently this protocol is not being applied in the WCPFC Convention area. See comparison between current SPC/FFA PS-1 vs. PTSVC (section 4.8.2.6)</p>	
	Recommendations	<p>.1 NOAA Fisheries (ASOP, or USDEL to WCPFC as appropriate) should discuss with the FFA observer program manager any options available for the observer to conduct a PTVSC inspection prior to deployment. Prior to departing for a trip, the observer should send a signed and completed checklist to the appropriate NOAA Fisheries staff, the WCPFC liaison, and the FFA observer program manager coordinator to ensure safe conditions for the observer on board. If the observer is boarding in American Samoa, NOAA Fisheries staff could assist the FFA observer in completing the PTVSC.</p> <p>.2 The USDEL to the WCPFC should consider recommending an amendment to the WCPFC measures requiring all FFA observers to conduct a PTVSC prior to deployment. These inspections</p>	

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		would increase the safety of all the observers, not just observers serving on US-flagged vessels.
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6 FINDINGS, RECOMMENDATIONS, AND BEST PRACTICES

This section contains a complete compilation of all of the findings and recommendations identified elsewhere in this report, sorted by program (domestic or international), priority, and review element (*e.g.*, Regulations, Practices/Policies, etc.). Findings and recommendations related to domestic national and regional observer programs are contained in section 6.1, and findings and recommendations related to international observer programs are contained in section 6.2. For ease of reading and reference, some closely related separate findings and recommendations have been combined into consolidated findings and recommendations here. All of the findings and recommendations are numbered sequentially in this section to allow for unique identification by finding number. All of the findings and recommendations are cross-referenced and hot linked to the sections of the report from which they were extracted. Section 6.3 contains a summary of best practices identified in this review.

6.1 National and regional programs

6.1.1 High priority

6.1.1.1 Practices/Policies

No. 1	Program: NOP/National programs	Discussion: 4.7.3.8.3.2, 4.8.2.7, 5.3.2.8 See: 1.2.1
	Finding	The NOAA Fisheries National and Regional Observer Programs currently lack a systematic process for following up on significant incidents and casualties involving observers. As a prime example, despite the passage of well over a year (over two years in the case of Keith Davis) since the three observer losses which were the impetus for this review, the causes (or even facts) of death remain inconclusive. While two appear to have stemmed from natural causes, there remain many outstanding questions about the nature and effectiveness of the communications protocols and actions taken in response to these fatalities. The establishment of this review is a significant step forward, however it remains troubling that three observers (two of whom were trained by NOAA

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		<p>Fisheries) were lost in the line of duty over the space of a year, yet there has to date been no official closure or systematic analysis of lessons learned with respect to any of them. In the case of Keith Davis, this information vacuum has fed media speculation in several investigative reports. In informal interactions with observers during their field visits, the review team found that many were not aware of the fact that three of their colleagues lost their lives on the job in the course of a single year. Past casualties can and should generate useful lessons for incorporation in observer safety training. While aware that NOAA Fisheries is not an investigative agency, and that jurisdictional and geographical issues were very complex in two of the three cases, the review team believes that more could have been done in cooperation with other agencies involved to pursue more comprehensive and transparent closure of these tragic incidents.</p>
	<p>Recommendation</p>	<p>The National Observer Program (NOP), in consultation with the NOP Advisory Team (NOPAT) and the NOPAT Safety Advisory Committee (NOPAT SAC) as appropriate, should, as a high priority, work to develop and maintain a robust, timely, and transparent process for incident reporting and After Action Reporting. Particularly in cases of incidents involving serious injury or death of an observer, the agency should ensure that all necessary resources are brought to bear so that the root causes can be identified, appropriate actions can be taken to prevent or mitigate the consequences of a recurrence, and lessons learned can be applied to future safety training and policy development. In cases where NOAA Fisheries does not possess the necessary investigative authority, resources, or jurisdiction, the agency should identify and seek support and expertise of other agencies who do, at as high a level as necessary to break any administrative logjams. The review team was of the view that since observers are working on behalf of (and in most cases funded, if indirectly, by) NOAA Fisheries, NOAA Fisheries has an important responsibility to ensure that casualties involving those observers are thoroughly and conclusively investigated. The results of investigations of the most serious incidents should be cleared through and endorsed at the highest level of the agency, and applied as resources to inform future safety training and policy development.</p>

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<p>No. 2</p>	<p>Program: NOP/National programs</p>	<p>Discussion: 3.2</p>
	<p>Finding</p>	<p>.1 Although “observer assault, harassment, or interference violations” is consistently at the top of the list of stated OLE enforcement priorities, lack of feedback to observers and program staff regarding the status of incidents reported to OLE or the USCG was reported by some to be frustrating, and sometimes interpreted as no action being taken. This in turn may provide incentive for observers to not report, and program staff to underemphasize this component of the observer’s duties. The review team itself found that obtaining abstracts of incidents involving observer assault, harassment, or interference violations from OLE’s outdated Law Enforcement Accessible Database System (LEADS) was challenging, at least in part because it is not well configured to code such incidents for identification and retrieval. The team understands the follow-on Trident Case Management System has improved capabilities to code observer-related incidents by several additional types, which could facilitate analysis of such incidents in the future.</p> <p>.2 For ROPs that track safety incidents, MARPOL violations, enforcement concerns and other at sea concerns such as bed bugs, the definitions, reporting thresholds and tracking procedures for these incidents are inconsistent.</p>
	<p>Recommendation</p>	<p>.1 NOAA Fisheries OLE should consider development of a consistent (<i>e.g.</i>, quarterly) feedback protocol to the ROPs and observers regarding the nature and status of reported violations program-wide, particularly those involving observer health and safety. Another option to improve communication between OLE, program staff and observers could be for OLE to provide an annual summary of the types of issues reported by observers during the refresher briefings, with brief analysis of trends and possible emerging problem areas.</p> <p>.2 Develop a consistent methodology, incident descriptions, reporting thresholds, and tracking procedure for safety incidents, injury, illness, MARPOL violations, enforcement actions and other at sea concerns to be used by all ROPs and</p>

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		<p>where applicable use by international observer programs. The definition of an incident should be harmonized or be coordinated with the USCG, OLE and NIOSH. ROPs and international observer programs should be required to provide information regarding safety-related incidents at least annually to the NOP and these data included in the NOP Annual Report.</p>
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No. 3	Program: NOP/National programs	Discussion: 3.5, 4.7.2.4
	Finding	<p>Correspondence between Alaskan Observers Inc. (AOI), an observer provider, and the NPFMC in 2014 illustrated the continuing disparity between regional regulations requiring different insurance types and amounts. A two-day workshop to again review and discuss the subject of observer insurance was conducted in November 2016. The report of this workshop is a useful starting point for future work, but does not provide specific recommendations to address the longstanding issues.</p>
	Recommendation	<p>The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should convene a working group of insurance experts, observer providers, observer program staff, and observers (and perhaps appropriate legislative affairs staff if a follow-up to FOCA is envisioned), to develop specific proposals for suitable harmonized national observer insurance standards that could apply within state, federal and international waters to compensate observers in the event of work-related illness, injury, disability from a work-related injury, or death. Once established, compliance with such national insurance standards should be required within each observer provider contract with NOAA Fisheries, and incorporated in national and/or regional regulations for application to observer providers who provide observers in industry funded programs.</p> <p>Standardization of observer insurance coverage would provide a more predictable cost to both industry and the federal government, and eliminate it as a competitive factor within the federal contracting system.</p>

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<p>No. 4</p>	<p>Program: NOP/National programs</p>	<p>Discussion: 3.1.3, 4.7.2.1</p>
	<p>Findings</p>	<p>.1 The Non-Personal Services Statement in the SOW for the SEFSC, and likely other ROPs, is worded in a way that could complicate appropriate response to emergency health and safety incidents. The bifurcated chain of command (Figures Figure 18, 20 and 21 in sections 4.7.3.1.3, 4.7.4.1.3, and 4.7.5.1.3, respectively) and lack of explicitly defined roles and responsibilities among personnel could result in indecisiveness among personnel. Observer program staff, regardless of employment status (federal or contracted), must work as a unified team, but technically, the contract type does not always accommodate this practice. Uncertainty about the ability of federal program managers to direct the activities of contracted staff in the event of an emergent situation could create confusion and slow response times. The 2013 Office of Inspector General (OIG) Administrative Inquiry report (U.S. Dept. of Commerce 2013) made a recommendation related to this topic, “Action #9: SEFSC Observer Program in conjunction with NOAA Acquisition personnel shall develop a list of clear responsibilities for SEFSC Observer Program staff, and a list of duties for managers of contract observers.” NOAA Fisheries stated these would be developed as a response to the inquiry (NOP and NOPAT 2014). Other than program-specific EAP/ENPs, no documentation clarifying specific roles and responsibilities of NOAA Fisheries or observer provider personnel in terms of emergency response was provided for review (<i>e.g.</i>, which entity is responsible for contacting the USCG or OLE, which entity is responsible for contacting the observer’s family, which entity is responsible for writing a press release in case of a catastrophic event). The reviewer was told that this OIG action item was identified in the SOWs; but while the SEFSC SOWs list some duties of contracted managers and observers, they lack a detailed “list of clear responsibilities” for both parties (federal and contracted personnel).</p> <p>.2 Current observer procurement practices appear to meet</p>

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		several of the tests for determining whether the contract is “personal” in nature. However, personal services contracts are barred by statute and regulation, unless specifically authorized by Congress, and are not allowed to exceed one year (5 U.S.C. 3109, 48 CFR 37.104).
	Recommendations	<p>.1 The NOP, in consultation with the NOPAT, should work with NOAA’s Acquisition and Grants office to evaluate the different contracting vehicles (including personal service or combination firm-fixed price contracts) to determine if more appropriate contracting types are available for procuring observer services than are currently in use. Increased communication among programs about the types of observer procurement contracts (including how payment schemes are defined) that already exist would benefit the Contracting Officers (CO) and CORs who facilitate observer service contracts nationwide.</p> <p>.2 The NOP, in consultation with the NOPAT and NOAA’s Acquisition and Grants office, should review the potential impact of “nonpersonal services” contract language (or ProTech Task Order language, as applicable) on the ability of mixed federal/contract staffs to promptly and effectively respond to emergency situations which may require direction of observer provider staff by federal management personnel (<i>e.g.</i>, after hours, etc.).</p>

No. 5	Program: NOP/National programs	Discussion: 3.1.3, 4.7.2.1
	Finding	Some observer procurement contracts do not contain adequate provisions to exclude individuals with chronic performance issues.
	Recommendation	Contracts/task orders should be written so that Program Managers have input on when an individual is no longer allowed to work in a program as an observer due to work performance issues. For example, individuals whose chronic seasickness compromised their work for more than a certain number of trips (determined by the Program Manager), or resulted in multiple vessels terminating trips to return a seasick observer to port for medical attention should be deemed unfit for at-sea observer duty by the program. See Section H.10 of 2009 Fisheries Observer Solicitation Template (Hurcombe

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		2009) for sample language, and the Department of Commerce Acquisitions website ⁸⁷ for detailed guidance for writing more effective performance work statements (PWS) in contracts.
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No. 6	Program: NOP/National programs	Discussion: 3.1.3
	Finding:	Several observer provider contracts do not explicitly reference or contain language consistent with the national observer eligibility and safety training standards.
	Recommendation	All observer contracts should explicitly reference or contain language consistent with national standards to ensure consistent application and compliance.

No. 7	Program: NOP/National programs	Discussion: 4.1.2, 4.7.2.2.2, 4.8.1.2.2.2 See: 1.2.4
	Findings	.1 Physical and medical eligibility requirements are specified by NMFS' Observer Eligibility Standard. The physical exam requirement is two-tiered: 1) "A licensed physician must certify not more than 12 months prior to the end of the observer training that the observer candidate is physically capable of serving as an observer"; and 2) "Documentation must be provided to the program prior to the observer candidate's completion of training." This policy language lacks specificity and has been subject to differing interpretations. With respect to the first tier, there is disparity among ROPs regarding whether the physical examination requirement applies to only new trainees, or to veteran observers who continue to work long-term. All programs have first time observers complete the physical examination prior to the end of training, whereas the frequency of examinations for continuing observers ranges from every 12 months to every 3 years; and in recent history in at least one

⁸⁷ <http://www.ago.noaa.gov/acquisition/solicitation.html>

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		<p>program there was no requirement at all for experienced observers. In addition, currently not all examinations are performed in-person with a physician. The review team is of the view that a telephone consultation with a physician is not sufficient to accurately assess the capability of a potential observer to handle the physical rigors of the job. Finally, although providing documentation from the physician that the individual is “physically capable of serving as an observer” is a national requirement, this is not a specified deliverable in all observer provider contracts with NOAA Fisheries nor is documentation being provided to some programs.</p> <p>.2 Current observer provider contracts or regulations require that physicians performing physical examinations in support of certification of observers be provided with a form letter or ROP-developed pamphlets describing the observer occupation are provided to ensure they have sufficient information to make a medical assessment of fitness to do the job. However, the materials as currently drafted may not be providing enough information for a physician to adequately assess fitness requirements and risk to the observer's health. Physicians are not required to test any functional abilities as part of the current “physical evaluation” process. Several observers have been hired who had medical conditions which required a USCG emergency response (one extraction and one drop of extra medication). Several program managers felt physical ability should be addressed prior to acceptance into training and should be performed by a professional. The NOAA OMAO requirements for deployments on NOAA vessels, which are generally less physically stressful than deployment as an observer on a fishing vessel, are far more stringent than the current observer physical requirements.</p> <p>.3 Although observers must sign an “acknowledgment of risk” for training, they are not asked to acknowledge the risk of the actual job duties once deployed which is considerably more dangerous than training.</p> <p>.4 Recently, a crew member was diagnosed with tuberculosis (TB) upon returning from a fishing trip with an observer on board. Later the crew member died from the infection. Three observers</p>
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		<p>and one of the port coordinators were tested to see if they had been exposed to TB. Fortunately all were negative.</p> <p>.5 The PIROP fishing fleet is comprised primarily of crew and captains from foreign countries that travel frequently to Asia. The threat of transmission of Asian-borne highly contagious diseases (such as avian flu) due to close quarters and the generally unhygienic conditions on a fishing vessel operating hundreds of miles offshore from medical facilities presents a high-risk environment to observers.</p>
	<p>Recommendations</p>	<p>.1 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should clarify the intent of the physical/eligibility requirements regarding whether physical examinations should be required only upon initial hire, or on a regular basis for all observers. The review team is of the view that the policy should include a frequency requirement for currently employed observers and this should be specified in the regulatory or contract process. Due to the physical rigors of the observer occupation, the review team recommends that all observers have an in-person physical examination both upon initial hire and every 12-18 months thereafter using guidelines such as those provided in recommendation .5 below.</p> <p>.2 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should enhance the physical/medical examination requirement in the Observer Eligibility Standard to specify that the physical examination must be performed in-person by a licensed physician.</p> <p>.3 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should take appropriate steps to ensure that the physical examination documentation requirement is included in all observer provider contracts, and that copies of the physician statements at a minimum are provided to the programs (with appropriate handling to protect medical confidentiality). In connection with this, acceptable types of “documentation” should be clarified. To avoid wasted resources, the review team recommends that the physical examination be completed and a copy of the physician statement be provided to the program at</p>

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		<p>least 14 calendar days prior to the first day of training.</p> <p>.4 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a national template of minimum information to provide to physicians performing observer physical examinations. A suggested example “Letter to Physician” is included in Appendix 7.</p> <p>.5 The NOP should initiate consultation with appropriate medical professionals to evaluate a variety of disqualifying medical conditions or medications that may pose increased health risks to an observer or unnecessary economic risk or undue hardship to a vessel if they must terminate a trip due to an observer’s pre-existing medical condition. The review team has developed a draft based on the NOAA OMAO requirements, as a starting point for further development in consultation with OMAO or other appropriate medical professionals (Appendix 8). ILO/IMO guidelines for mariners (ILO/IMO 2013) may be another resource.</p> <p>.6 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should review the physical (functional) requirements for observers, and seek occupational therapy expertise from NOAA OMAO or other agencies such as NIOSH to design an appropriate skills test or functional capacity evaluation to be conducted as part of the physical evaluation process.</p> <p>.7 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should include in policy or practice methods to ensure that before each deployment, an observer has sufficient and extra supplies of prescribed medication(s) to address the possibility of an unanticipated extension of a deployment. A potential practice may be to include a checkbox on each pre-trip vessel safety checklist where the observer must confirm having sufficient and extra medication if applicable.</p> <p>.8 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop and implement a national standard requiring observers to sign an “acknowledgment of deployment risk” prior to acceptance into training. The NOP should work with NOAA GC to provide content and correct legal language as this may be an employer responsibility rather than NOAA.</p> <p>.9 The NOP, in consultation with the NOPAT and the NOPAT SAC as</p>
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		<p>appropriate, should develop a suitable policy to ensure that observer medical history information can be made available 24/7 to appropriate medical response personnel in the event of a medical emergency.</p> <p>.10 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a policy similar to OMAO's requirement for annual TB screening of observers, especially those working in ROPs with potentially high-risk crew demographics. In addition, certain vaccinations (such as hepatitis) prior to deployment may be appropriate where infectious diseases are found to be prevalent or emerging.</p>
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No. 8	Program: NOP/National programs	<p>Discussion: 3.6, 4.2.9.3.1, 4.4.9.3.1, 4.5.9.3, 4.6.9.3, 4.7.3.8.3.1, 4.7.4.6, 4.7.4.8.3.1, 4.7.5.8.3.1, 4.8.1.9.1.1, 4.8.1.9.2</p> <p>See: 1.2.2</p>
	Finding	<p>The requirements for provider EAP/ENPs are non-existent or vague, and their implementation varies widely between providers. The most common EAP/ENP is an Emergency Notification Plan that is basically a phone tree, identifying information flow in the event of an emergency. Such plans generally do not address actual steps to be taken to manage an emergency, other than notifying involved parties up the chain of command. A few observer providers, on the other hand, have well-developed Emergency Action Plans which spell out immediate, short-, and long-term actions to take in the event of an at-sea emergency, including incident management, crisis communication, support to victims, family members, and other stakeholders, and development of after action reports, for a variety of possible emergency situations. The review team views such comprehensive Emergency Action Plans as a best practice.</p> <p>Templates and considerations for development of such plans have been suggested in earlier reviews for the national observer program, most notably Development of a Comprehensive and Effective Emergency Action Plan for NMFS Observer Programs, Phase II (October 2004) (Ajango <i>et al.</i> 2004a).</p>
	Recommendation	.1 Each ROP and its current observer providers, as well as the NOP,

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		<p>should develop and maintain coordinated EAPs that not only specify notification protocols, but also address appropriate substantive actions identifying responsible entities in response to an at-sea or other on-duty emergency or crisis with an observer, including, but not limited to, serious injury, illness, death, harassment, or intimidation. EAP development should take into account consideration of processes to periodically test and assess the effectiveness of the EAP. The review team was of the view that the EAP developed by the Fish Sampling Branch (FSB) of the Northeast Fisheries Science Center (NEFSC) represents a best practice that could be used as a conceptual model for development of EAPs by other ROPs (section 4.5.9.3.1 and Appendix 5). In addition, an outline of recommended EAP contents based on Ajango <i>et al.</i> (2004a) can be found in Appendix 4, and other EAPs such as those developed and implemented by observer providers (<i>e.g.</i>, MRAG Americas and Saltwater, Inc. in the North Pacific Observer Program) also contain useful examples of suitable EAP content. ROPs should ideally collaborate with observer providers in their regions to ensure that their EAPs complement each other. For smaller programs, EAPs may need to be scaled as appropriate to the size of the program. For very small programs (<i>e.g.</i>, the WCROP), the review team recommends consideration, as a minimum, of incorporation of example communications such as those in the NEFOP FSB EAP for use in the rare event of a serious incident involving a major response or media interest. Guidance in that document for reporting a major incident up the chain to the NOP could also be useful.</p> <p>.2 For programs deploying observers to vessels with VMS, the EAPs should also add content reflecting the program’s ability to directly access VMS to monitor a vessel’s position and the types of events that may trigger the program to request OLE increase the VMS duty cycle.</p> <p>.3 A comprehensive EAP should address complicated regional issues such as mental health problems, medical crises, or national or international emergencies (<i>e.g.</i>, terrorist attacks, tsunami, or typhoon).</p> <p>.4 If a tragic incident such as the loss of an observer or staff</p>
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		member occurs, the EAP should include making appropriate counseling available to observers, staff and observer providers.
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No. 9	Program: NOP/National Programs	Discussion: 3.3
	Finding	Although the COLREGS and related USCG regulations are clear and unequivocal concerning the maintenance of a lookout at all times, in practice they are not always followed by commercial fishing vessels, especially at night, and additional measures may be warranted to ensure the safety of observers as well as fishers.
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should consider development of a national policy to address the issue of fishing vessels not maintaining a lookout at all times while underway. Such a policy development could consider measures such as adding an entry to PTVSCs to discuss lookout procedures with a vessel before boarding, development of outreach material included with fishing permits, and possible steps to take in cases of non-compliance with the relevant USCG regulations.

No. 10	Program: NOP/National programs	Discussion: 4.8.1.7.6 , 4.7.5.2, 4.7.5.6 , 4.7.3.3 See: 1.2.3
	Finding	While the PIROP program and the observer provider have worked diligently with the fishing fleet and local authorities to reduce and eradicate bed bugs, bed bugs remain a serious problem and were the number one complaint by staff and observers alike. The PIROP has anecdotal information that using a handheld hot water steam cleaner can be helpful in reducing bed bug prevalence, and is in the process of purchasing a number for issuance to observers. There is anecdotal information that the prevalence of bed bugs is a significant factor in the reasons why observers leave the program.
	Recommendation	The increase in bed bug prevalence is a health issue and should be addressed within a health and safety context instead of as a nuisance. Creating a national policy to ensure that observers, regardless of the fishery in which they are deployed, are no longer

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		subjected to being bitten by bed bugs and potentially exposed to disease transmission from these insects, should significantly improve observer efficiency, morale and possible retention in the PIROP.
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6.1.1.2 Equipment

No. 11	Program: NOP/National programs	Discussion: 4.4.4, 4.7.3.6
	Finding	The use of an “Equipment Test Checklist” is considered by the review team to be a best practice, as a means of ensuring observer familiarity with and attention to maintenance of all their assigned equipment.
	Recommendation	Observer programs should consider the use of an “Equipment Test Checklist” similar to that employed in the WCGOP, as a minimally burdensome means of ensuring that observers inspect and test all of their issued safety equipment at least monthly.

6.1.2 Medium priority

6.1.2.1 Regulations

No. 12	Program: NOP/National programs	Discussion: 3.2
	Findings	<p>.1 Appendix 3 illustrates that the OHSRs in 50 CFR 600, and the regional observer regulations in various parts 50 CFR 222, 50 CFR 229, and 50 CFR 622-697, all identify important employment requirements related to the well-being and safety of observers, but neither the OHSRs nor the regional regulations address all of the important safety-related requirements in a consolidated, user-friendly location.</p> <p>.2 Consolidation of regulations would result in consistent observer requirements nationwide, minimize redundancy, and would also be consistent with recent Executive Order 13771 <i>Reducing Regulation and Controlling Regulatory Costs</i>, dated January 30, 2017, which mandates an elimination of two regulations for each new one, and EO 13777 <i>Enforcing the Regulatory Reform Agenda</i>, dated February 24, 2017, which mandates the elimination of “unnecessary” regulations.</p>

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Recommendations	<p>.1 To the extent allowed by enabling legislation, consolidate all of the regulations relating to observer health and safety in 50 CFR 600 and remove duplicated national and regional regulations pertaining to observers in parts 50 CFR 222, 50 CFR 229, and 50 CFR 622-697. Programs using observers could refer to the consolidated regulations for safety and working conditions for observers on fishing vessels.</p> <p>.2 Regulations applicable for observer providers would apply to certified, permitted, or approved providers, and should be explicitly referenced in contracts for contracted observer providers.</p>
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No. 13	Program: NOP/National programs	Discussion: 3.2
	Finding	<p>All regional fisheries regulations (<i>i.e.</i>, 50 CFR parts 229, 285, 300, 600, 622, 635, 648, 660, 665, 679, and 697) include requirements for vessels to provide accommodations and food that are equivalent to those provided to the crew. However, water is not explicitly addressed as a regulatory requirement. Observers in several ROPs report that a few vessels do not carry an adequate supply of potable (fresh) water on board for drinking or sanitation purposes. Lack of an adequate supply of potable water is a substantial health and safety risk to the observer and crew, especially on prolonged trips.</p>
	Recommendation	<p>Add language to 50 CFR 600.746 and each of the applicable individual regional regulations (although see no. 11 above), as well as observer provider contract solicitations/task orders, that requires a sufficient minimum amount of potable fresh water on board per person for drinking and sanitation purposes (<i>e.g.</i>, handwashing prior to meals), appropriately scaled to size of the operation. Alternatively, language could be added referring to applicable USCG regulation implementing this requirement for all fishing vessels.</p>

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6.1.2.2 Practices/Policies

No. 14	Program: NOP/National programs/RFMOs/ International programs	Discussion: 4.1.4, 5.1.4
	Finding	Due to the great distance offshore, isolation on the vessel, lack of prompt SAR, and lack of standardized reporting protocols international observers work in a heightened risk environment.
	Recommendations	<p>.1 Observers working in international programs, especially those serving on foreign-flagged vessels in remote areas, should be required by policy to carry their PLB on their person at all times.</p> <p>.2 Especially on small vessels, or vessels that operate in remote areas, the review team recommends that observers be required by policy to wear a lifejacket with the PLB attached whenever on deck, or at a minimum in situations where there is a significant risk of a fall overboard. For other observers, the NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should consider requiring observers to wear their PFD with PLB attached when on deck.</p>

No. 15	Program: NOP/National programs	Discussion: 3.1.3
	Finding:	Several observer provider contracts state that the recruitment and retention of fully qualified observers is essential to successful performance under the contract, and a few specify retention rate requirements. Program staff report that they have limited staff time and budget to provide safety training for new and current observers beyond those currently accommodated. Low retention may increase training costs and may result in higher safety risks due to lack of at-sea experience.
	Recommendations	<p>.1 Recruitment and retention requirements should be more explicitly defined and included in contract PWS.</p> <p>.2 Contracts or regional policies should include exit interviews of departing observers performed by NOAA Fisheries staff and</p>

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		<p>use responses to inform future policy regarding retention and/or training of observers.</p> <p>.3 The NOP should review data on observer retention/turnover across programs and consider a quantitative longitudinal study comparing retention versus payment systems, working conditions including safety culture on observed fleets, contract types, eligibility requirements, etc. Study design should be informed by the NOP 2016 retention survey (Wang, unpublished data).</p>
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No. 16	Program: NOP/National programs	Discussion: 3.1.3
	Finding	The ProTech solicitation appears to be a potentially significant change in the contracting process for observer procurement. However, it is too early to determine whether there may be negative unintended consequences for the quality of observer services as a result of the change.
	Recommendation	The NOP should evaluate the effectiveness of the ProTech process with respect to observer programs after ProTech contracts have been in place for a period of time, perhaps two years.

No. 17	Program: NOP/National programs	Discussion: 3.3, 3.6
	Findings	<p>.1 The NOAA Fisheries/USCG MOA on Observer Safety reflects the mutual interest of NOAA and the USCG in fishing vessel safety and observer safety. However, the MOA has not been reviewed, revised, or evaluated since it was established in 2004. As a result, some of the information in it is obsolete, and there is a need to revisit its provisions to ensure they are up to date, and to reflect subsequent discussions between NOAA and the USCG on several matters of mutual interest.</p> <p>.2 The MOA addresses information exchange and notification procedures for OHSRs and marine casualty/safety incidents, but does not address procedures for sharing information</p>

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		regarding other USCG regulations (<i>e.g.</i> , navigation rules, MARPOL).
	Recommendations	<p>.1 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should work with the USCG through the Commercial Fishing Safety Advisory Committee (CFSAC) liaison to initiate a review of the 2004 NOAA Fisheries/USCG MOA to ensure that organizational information is up to date; to reflect more recent discussions between the parties with respect to data and other information sharing; to consider ways in which the USCG marine investigation process might better address issues important to the observer program in casualties involving fisheries observers; to explore options to partner with the USCG to include ROPs in Critical Incident Stress Management (CISM) protocols (Mitchell 1983); and to consider measures to facilitate joint agency participation in dockside vessel safety examinations.</p> <p>.2 The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should include all relevant USCG regulations in the information exchange guidelines among MOA parties.</p>

No. 18	Program: NOP/National programs	Discussion: 3.3, 4.7.5.6, 4.8.1.7
	Finding	Some USCG examiners have included observer program personnel (PIROP-ASOP) or observers (SEFSC SOP/RFOP) when performing commercial fishing vessel dockside safety exams. At times, the PIROP has supported staff cross-training on the USCG vessel safety exam procedures. These practices have benefited both entities by enhancing the ROP's understanding of the exam process and by increasing awareness of the USCG of observer program needs related to the PTVSC.
	Recommendations	<p>.1 The NOP, in consultation with the NOPAT and NOPAT SAC, should consider incorporating a policy within the NOAA Fisheries/USCG MOA on Observer Safety to encourage joint agency participation in dockside vessel safety exams.</p> <p>.2 NOAA Fisheries should consider requiring federal and contracted ROP personnel who are directly involved in placing observers on board vessels or assisting with the completion of</p>

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		PTVSCs to attend the USCG commercial fishing vessel safety examiner training. For contracted ROP personnel, such a training requirement should be considered for inclusion in future observer procurement contracts.
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No. 19	Program: NOP/National programs	Discussion: 3.3
	Finding	The USCG regulations requiring float-free installation of certain inflatable liferafts and EPIRBs on commercial fishing vessels do not adequately address potential failure modes due to rigging and other obstructions typical on such vessels, which could result in failure of this vital safety equipment to reach the surface in the event of the vessel sinking.
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, and through engagement with the CFSAC, should consider the development of appropriate NOAA Fisheries and USCG policy guidance and training materials to address the need to carefully evaluate the stowage locations of float-free lifesaving equipment to maximize the likelihood that it will operate as intended in the event of a fishing vessel sinking.

No. 20	Program: NOP/National programs	Discussion: 3.5, 4.5.2.1
	Finding	In some programs, an observer is not an employee of the observer provider, but considered an independent contractor. It is unclear if the observer provider's insurance (as required through regulation or contract) would apply in the event of an accident or injury to the independent contractor.
	Recommendation	Absent a comprehensive approach as recommended above, the NOP, in consultation with the NOPAT and the NOPAT SAC, and with advice from the OGC as appropriate, should consider development of suitable policy or regulation which would require observer providers to provide injury, illness, liability, and

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		accidental death insurance for observers regardless of whether they are classified as employees, or as independent contractors or subcontractors.
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No. 21	Program: NOP/National programs	Discussion: 3.5
	Finding	Some but not all observer providers (or their contracted insurance brokers) facilitate the submission of FECA documentation on the observer's behalf.
	Recommendations	.1 The NOP should take appropriate steps through policy or regulation to ensure that all observer provider contracts or regulations include a requirement for observer providers to facilitate observers' FECA documentation, and to annually, at a minimum, report status of FECA and other injury claims. .2 All ROPs should include processes for the completion and submission of FECA forms in their EAPs.

No. 22	Program: NOP	Discussion: 4.1.1
	Finding	The NOP appears to have resolved some longstanding staffing shortfalls and is now fully staffed. However, the lack of line authority over the regional programs, coupled with the lack of a structured strategic planning process as recommended in 2004 by the OIG, complicates the establishment of priorities and accomplishment of objectives. The current process of reviewing items from meeting to meeting appears more tactical than strategic.
	Recommendation	The NOP should take appropriate actions to accomplish the intent of the recommendations made by the OIG in their 2004 report, in particular establishment of effective and transparent <u>strategic</u> planning processes and performance metrics for both the NOP and the NOPAT. These processes should include identification, prioritization, and tracking of progress on NOP and NOPAT initiatives and specific action items, and ensure specific accountability for their timely completion. Something as simple as a spreadsheet to track action items (and perhaps sub-items),

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		ideally establish linkages to higher level organizational objectives, assign responsibilities, establish timelines and priorities, and monitor progress would be a significant improvement.
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No. 23	Program: NOP/National programs	Discussion: 4.1.3
	Finding	The current format for revision of directives such as the Observer Safety Training Standards does not provide for transparency with respect to revisions. The nature of revisions, and the reasons for them, are not addressed with any specificity in the Summary of Revisions.
	Recommendation	To provide for transparency and traceability, and to avoid misunderstanding of the nature and intent of revisions to NOAA Fisheries directives relating to observer safety, the NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should consider appropriate means to clearly and specifically identify such revisions on the transmittal page of the directive, and provide a brief but thorough synopsis of the rationale for the revisions.

No. 24	Program: NOP/National programs	Discussion: 4.1.3
	Finding	The team identified a number of both editorial and substantive issues in the current Observer Safety Training Standards (Appendix 9).
	Recommendation	In the course of finalizing the pending changes to the NMFS Observer Safety Training Standards directive, the NOP, in consultation with the NOPAT and NOPAT SAC as appropriate, should consider the editorial and substantive issues identified by the review team (Appendix 9).

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No. 25	Program NOP	Discussion: 4.1.4
	Finding	Several ROPs and international observer programs do not have a routine check in procedure for observers in place. Some programs use pre-programmed codes with InReach communicators for observers to report their status, or facilitate emergency extraction.
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a policy requiring that at a minimum, the observer provider or NOAA Fisheries establish a weekly check in procedure with observers deployed at sea. The use of codes such as those implemented by the NEFSC FSB (section 4.5.4) could facilitate successful and consistent observer status updates while deployed, with minimal effort required on the part of the observer or the program.

No. 26	Program: Regional Programs	Discussion: 4.4.3.2.1
	Finding	While PTVSC forms for the various ROPs have certain common elements, they are all slightly different (see Appendix 13), likely in keeping with the characteristics of the observed fleets. In the case of the WCGOP PTVSC form, there are items (<i>e.g.</i> , fire extinguisher location) where it appears that the space provided to complete the form could be insufficient for many vessels with multiple fire extinguishers.
	Recommendation	PTVSC forms should be carefully reviewed either on a regional basis, or at the national level through the NOPAT and NOPAT SAC, to ensure that the appropriate information is sought, that it is laid out in a logical manner, and that sufficient space is provided for it. A more consistent “look and feel” would also facilitate use by observers who may move from region to region.

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6.1.2.2.1 Specific to SEFSC

No. 27	Program: SEFSC	Discussion: 4.7.2.1
	Finding	Currently, contracted and NOAA Fisheries staff in some of the SEFSC observer programs are not functioning well as a team. Program Managers have little to no control over the work performance of federal or contracted staff. There is evidence that past SEFSC observer contracts contained “Performance Work Statements” (PWS) addressing observer non-performance (U.S. Dept. of Commerce 2004) but it is unclear why, if currently present, the PWS were not invoked for the poor work performance examples described in section 4.7.2.1 (see also section 3.1.3, finding/recommendation 2)
	Recommendation	Program Managers or their supervisors should review PWS to ensure Program Managers can effectively address work performance of federal or contracted personnel including controls to address situations where an observer’s health or safety may be a heightened risk as well as data quality issues. The NEFSC contract provides payment for “successful” sea days which may be a potential approach for addressing poor work performance issues in a timely manner.

No. 28	Program: SEFSC	Discussion: 4.7.2.1
	Finding	Several program management personnel reported that the contract as currently executed (<i>i.e.</i> , Time and Materials/Nonpersonal Services) is not working very well, and the federal contracting process is not always responsive to observer program needs. Examples included: <ul style="list-style-type: none"> ● Observer participation in regular monthly or quarterly conference calls with observer provider staff (Program Managers and Observer Coordinators) to address health and safety issues is not currently allowed as a billable hours. The result is a disincentive to participate since observers are not paid for that time. At least one SEFSC program has

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		<p>discontinued regular calls due to lack of participation; however, lack of participation may have been due to lack of observer pay for the time required for the call;</p> <ul style="list-style-type: none"> ● Observers note that they are occasionally faced with a decision to either work in unsafe conditions or forfeit hours of pay while deployed. Federal personnel deployed under similar conditions (<i>e.g.</i>, research vessels) do not have to make this choice as they are paid an hourly or sea day rate regardless of whether actual work is occurring while deployed; ● Program and observer provider staff remarked that at times the relationship with the COR is “adversarial” and it’s unclear what recourse managers or observer providers have to address issues, including safety, as they arise; ● Effective program operation likely requires many elements of a personal service contract (see 48 CFR 37.104(d), criteria #2-6).
	<p>Recommendations</p>	<ol style="list-style-type: none"> 1. See section 3.1.3, national findings/recommendations 1 as they pertain to contract type. 2. The SEFSC should modify the current observer procurement contract to address monetary incentives observers may have to work in unsafe conditions unnecessarily and disincentive to participate in processes that may enhance their health and safety.

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No. 29	Program: SEFSC	Discussion: 4.7.2.2.2
	Finding	<ul style="list-style-type: none"> .1 OHS stores responses to the health and medical history questions but this information may not be available in a timely manner in the event of a medical emergency. .2 The SGOP/SBLOP and SOP/RFOP manuals both state, “You will be required to complete a Report of Medical History (Standard Form 93) to be held in a confidential file and reviewed only in the event of a medical emergency at sea” (NMFS 2016a, b). However, the programs no longer utilize this form due to privacy concerns. .3 Observers and Observer Coordinators in the SGOP/SBLOP and SOP/RFOP confirm that current medication information is not reported prior to each trip contrary to the current policies of the programs and IAP. Their manuals state “You must inform the Program Manager, in writing, of any medical condition or situation, including medications being taken, prior to departing on a vessel.”
	Recommendations	<ul style="list-style-type: none"> .1 Implement the collection of health and medical history information as per recommendation 1.9 in section 4.1.2 and update all observer manuals to reflect current practices. .2 The SEFSC should add a contract deliverable to require observer providers to describe the procedure for collecting and storing protected health information including current medications as well as ensure appropriate medical personnel involved in an emergency response can have access to the health and medication information 24/7 in case of a medical emergency (see section 4.1.2, recommendation 1.9) . .3 The programs in collaboration with the observer provider deliverable recommended above should consider developing a standard checklist of questions to ask the observer prior to each deployment which may include current medications as well as current state of health at a minimum. The programs or provider may need to seek legal counsel regarding the collection of medication information and which entity would be the most appropriate to collect and store such information.

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<p>No. 30</p>	<p>Program: SEFSC</p>	<p>Discussion: 4.7.2.2.2</p>
	<p>Finding</p>	<p>The OHS Job Analysis form lists potential physical job requirements and ranks them in terms of frequency of occurrence. The form includes a field to provide a more detailed job description. Overall, the information provided to OHS on the Job Analysis form was similar to the letter to the physician from the contract. However, some descriptions of employment conditions were either missing or lacking in sufficient detail.</p>
	<p>Recommendation</p>	<p>.1 The SEFSC should request the following additions/modifications be added to the Job Analysis description Riverside submits to OHS to address discrepancies with the current SEFSC contract language pertaining to physical expectations of the job described in the letter to physician.</p> <p>a. Additions:</p> <ul style="list-style-type: none"> ○ Being at sea with limited medical assistance for 10-30 days at a time. ○ Being in heavy seas that could cause chronic motion sickness. ○ Having the ability to tolerate stress. ○ Lifting baskets up to 50 lb or moving 200 lb carcasses across the deck. ○ Ascending and descending steep ladders to and from fishing boats at the docks. ○ Climbing across boats, over fishing gear, and atop wheelhouses to get to a docked vessel. ○ Perform vessel-to-vessel and vessel-to-platform transfers using a swing line, personnel transfer basket, and stepping across from one vessel to another. ○ Having irregular meals, sometimes with non-traditional food, cooked in non-traditional ways. ○ Living on a boat with limited sanitary and/or washing facilities and chronic exposure to a variety of infections (<i>e.g.</i>, staph). ○ Platform Removal Observer Program (PROP) observers must also be able to conduct visual surveys for sea turtles and marine mammals from low flying aircraft at altitudes ranging from 500-700 ft.

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		<p>b. Modifications</p> <ul style="list-style-type: none"> o Environmental Exposures’ section - add both smoke and diesel fumes to “Other” to address “potentially being subjected to cigarette smoke and diesel fumes” in work environment and occasionally within sleeping accommodations. o “Personal Protective Equipment” section - check “Safety shoes/boots” and “Hearing protection” and add foul-weather gear, anti-bacterial cleansers, bed bug detectors and smoke masks (when requested) to “Other” box. <p>.2 The SEFSC should add “Potential chronic exposure to secondhand smoke in the work and sleeping areas” to the bullet list of physical considerations and health risks in the “Letter to the Physician” provided in the contract (see also section 4.1.2, recommendation 1.5).</p>
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No. 31	Program: SEFSC	Discussion: 4.7.2.2.2
	Finding	The reviewer was unable to obtain the list of health- and ability-related questions from OHS after repeated requests, and was therefore unable to compare and contrast questions asked in phone interviews with elements in the observer health questionnaire provided in the contract.
	Recommendation	If an alternate form or list of questions other than the Letter to Physician or Observer Health Questionnaire provided in the contract is used for physical screening purposes, the observer provider should provide the list of health questions to the COR prior to contract award or any time the description or questions provided to a health care provider change. If a physical exam is not carried out in person, the program should take steps to ensure the scope and content of the questions is equivalent to contract language.

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No. 32	Program: SEFSC	Discussion: 4.7.5.3
	Finding	Observers report that chronic exposure to secondhand smoke is a disquieting aspect of the job and some employ additional personal protective equipment (<i>e.g.</i> , NIOSH-approved N100 particulate respirator) to minimize exposure.
	Recommendation	The SEFSC observer programs should supply appropriate respirators to protect observers from chronic smoke and fumes when deployed to vessels with persistent issues (especially in sleeping areas) or upon request of the observer.

No. 33	Program: SEFSC	Discussion: 4.7.2.1
	Finding	Hiring packets include health and safety policies/procedures and health insurance benefit options and are provided upon initial hire. Policy modifications are communicated to the observers as they occur. However, in the course of discussing health and safety policies with observers they do not appear to be consistently informed regarding company policies, safety or otherwise. For example, observers report a lack of clarity regarding personal health insurance options.
	Recommendations	.1 Observers should be routinely informed by their ROP and employer regarding health and safety policies and requirements (<i>e.g.</i> , a policy checklist that must be acknowledged annually and is linked to deployment eligibility). .2 The contract should also require the provider to annually review health insurance options and other provider health/safety policies with observer personnel.

No. 34	Program: SEFSC	Discussion: 4.7.2.2.1
	Finding	Although the observer position is advertised with a first aid/CPR certification requirement and at least one SOW contains certification requirement language, the contract deliverable is vague.
	Recommendation	The SEFSC should include a contract deliverable requiring the observer provider to supply a copy of each observer's CPR and first

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	aid certificate to the Program Manager seven days before new observer training and upon renewal thereafter.
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No. 35	Program: SEFSC	Discussion: 3.1.2, 4.1.2, 4.7.2.1, 4.7.2.2.2
	Finding	The review of SEFSC contract strengths and gaps relative to observer health and safety was complicated by limited access to the full contract language. Many elements common to other ROP contracts and SOWs (<i>e.g.</i> , NEFOP contract) appear to be missing or lack sufficient detail.
	Recommendation	<p>The SOW and other contracting documents should be reviewed by the NOAA Acquisitions and Grants office at headquarters to verify all necessary elements are included and include sufficient detail and standardize elements among all ROPs. Observer procurement contracts should include the elements in the NOAA Fisheries Observer Solicitation Template. At a minimum, the following currently missing items should be included in future RFPs, SOWs and Task Orders and observer provider contract as appropriate:</p> <ol style="list-style-type: none"> a. Detailed list of current programmatic health and safety policies including standards of observer conduct appropriate to each program plus a statement that these policies may be modified at the program’s discretion; b. All programmatic regulatory references especially those specifically related to observer health and safety (<i>e.g.</i>, 50 CFR 622; more in Appendix 3); c. Detailed description of location of work on commercial fishing vessels including a description of working conditions and potential risks that may be encountered; d. Information regarding NOAA Fisheries and observer provider roles and responsibilities especially during emergency situations (see also section 3.6, finding/recommendation 1); e. Requirement for the observer provider or observer to supply an observer’s primary contact and emergency contact information to the applicable observer program manager and a timeline for periodic updates; f. A mechanism for medical personnel to access an observer’s

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		<p>medical condition and history questionnaire in the event of a medical emergency (see section 4.1.2, No.1, recommendation 9);</p> <p>g. If not already included, provide a detailed schedule of performance-based deliverables (with expected frequency parameters) as well as special contract requirements.</p> <p>h. Develop a Performance Work Statement (PWS) describing methods to assess observer performance and agency rights when performance is inadequate (see section 3.1.3, finding/recommendation 2);</p> <p>i. Detailed description of process NOAA Fisheries will utilize to evaluate data collected by the contracted observers and how this evaluation will impact an observer’s ability to continue working in the applicable program;</p> <p>j. Add (or verify inclusion) of the following deliverables:</p> <ul style="list-style-type: none"> ● Provide resumes and transcripts for each candidate 30 days prior to new observer training; ● Provide documentation and notification of any emergency to the Program Manager within 12 hours of incident; ● Copies of documents / memos sent to observers by the observer provider must be provided to Program Managers within 24 hours of sending; and ● Notice to Program Manager that an observer has been subject to disciplinary action within 24 hours of action.
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No. 36	Program: SEFSC	Discussion: 4.7.2.2.2
	Finding	The language pertaining to limiting deployment of observers showing symptoms of illness is ambiguous and hard to define.
	Recommendation	The contract should require a description of the procedure that will be utilized to assess whether observers are showing symptoms of illness or who may be contagious as part of the Quality Assurance Plan. The procedure should include thresholds for determining when observers should not deploy.

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No. 37	Program: SEFSC	Discussion: 4.7.2.4
	Finding	The current contract states “In the event that an observer falls severely ill or injured at sea, and the vessel must prematurely cease fishing to return the observer to port”. “Severely” is not defined and the statement is not referenced with a supporting regulation or policy that would require the vessel to terminate a trip. The review team is unaware of any regulation requiring a vessel to return to port unless there’s a marine casualty and even then this may be at the discretion of the USCG. In addition, the statement is an incomplete sentence.
	Recommendation	The validity of the current statement should be reviewed taking into account that the vessel is not party to the contract with NOAA Fisheries. However, if the statement is valid, the contract should refer to the regulation or interpretation that requires vessels to return to port if an observer (“falls severely ill or injured at sea”).

No. 38	Program: SEFSC	Discussion: 4.7.2.3, 4.7.3.8.1, 4.7.4.8.1, 4.7.5.8.1
	Finding	Instructions for reporting accidents and illness to the program and observer provider vary depending on the source.
	Recommendation	The contract should clarify timelines for reporting illness and injury. Programs should strive to ensure consistent messaging among program and observer provider documents (<i>e.g.</i> , manual, policy, hiring packet).

No. 39	Program: POP	Discussion: 4.7.3.4
	Finding	POP’s vessel selection letter language regarding the purchase of liability insurance riders for vessels is obsolete.
	Recommendation	The POP should remove language pertaining to NOAA Fisheries purchasing insurance riders in the vessel selection letter document titled “Important Information for Pelagic Longline Vessels Selected for Observer Coverage.”

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No. 40	Program: POP	Discussion: 4.7.3.6
	Finding	The PTVSC instructions in the Observer Field Manual states that “if the battery expiration cannot be read or is missing, request captain/crew to test the EPIRB” which could be misinterpreted by the observer to go on the trip if the test shows EPIRB is operational. The Program Manager clarified that an actual battery expiration date is required and the observer should contact the office if it’s missing or unreadable.
	Recommendation	Amend the PTVSC instructions to clarify that the EPIRB battery expiration must be present either on the EPIRB or safety exam documentation.

No. 41	Program: POP, SOP, RFOP	Discussion: 4.7.3.8.2, 4.7.5.2, 4.7.5.3
	Finding	.1 Two health and safety equipment items (<i>i.e.</i> , bed bug detectors and respirator) are supplied by the observer provider without reimbursement. .2 The POP has drafted a detailed bed bug response protocol but it has not been finalized.
	Recommendation	.1 The SEFSC should ensure a contractual mechanism is in place to negotiate reimbursement of additional health and safety equipment deemed necessary to protect observer health and safety which are not currently included in the gear issued to observers. .2 The POP should finalize the bed bug protocol and formally incorporate it into the POP Safety Manual. Personal belongings should be included in the freezing treatment to minimize the risk of contaminating the observer’s own dwelling.

No. 42	Program: SEFSC ROPs	Discussion: 4.7.2.4, 4.7.3.8
	Finding	During a medical emergency in 2016, the POP discovered that observer emergency contact information was either unavailable or out of date. The program addressed the problem by asking Riverside to provide updated emergency contact information for all

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		observers to the program. Providing the programs with emergency contact information is not currently a contractual requirement.
	Recommendation	The SEFSC should include a deliverable to provide and regularly update (e.g., monthly, quarterly) emergency contact information to the Program Managers in all future contracts.

6.1.2.2.2 Specific to PIROP

No. 43	Program: PIROP	Discussion: 4.8.1.2.1
	Finding	The observer provider port coordinators are directly involved in placing observers on vessels and assisting with the completion of the PTVSC. While a bachelor's degree in "science" may be useful to a science-based position and understanding the observers' duties, it may be more appropriate for the port coordinator to have specialized training or previous observer experience pertaining to vessel safety, and/or a background in occupational health and safety (Contract Sections C, V, item E).
	Recommendation	The eligibility requirements for the port coordinator positions should be re-evaluated to ensure the appropriate skill set to carry out the responsibilities of the position. The required skills should include prior observer experience and recent observer safety training, and completion of the USCG Commercial Fishing Vessel Safety Examiner training. Prior observer experience, recent safety training within the past 2 years, and safety examiner training directly relates to the work the port coordinators do when placing observers and providing assistance in completing the placement checklist (PTSVC).

No. 44	Program: PIROP	Discussion: 4.8.1.7
	Finding	The placement meeting and placement checklist (PTVSC) are critical safety controls that should be conducted and documented consistently with their high importance to observer safety. Since the review, PIROP staff will "shadow" a port coordinator approximately once per quarter to ensure they are meeting the

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		<p>expected standard. If problems are discovered, the PIROP staff conducts a placement refresher with the port coordinators. Due to the results of their review, the PIROP has made a policy change wherein the observer fills out the placement checklist (PTVSC), and then it's reviewed by the port coordinator. Initial feedback indicates that this procedure has improved the completion of the proper paperwork over the past.</p>
	Recommendation	<p>The PIROP should implement a quarterly review of all placement meeting documents for both Hawaii and American Samoa. If there are oversights or problems, these should be discussed with the relevant personnel and corrected immediately.</p>

No. 45	Program: PIROP	Discussion: 4.8.1.7.5
	Finding	<p>According to many observers, the current procedure for vessel compensation for observer subsistence does not work very well. Some observers suggested that they be given the funds or a portion of the funds to purchase their own food. Many long-term observers spend their personal funds to purchase their own food for up to 3 weeks, and a water filter, because they've had bad experiences in the past, with only bait fish to eat and contaminated water to drink on board. If there's not adequate food or the observer is unable to eat certain types of food, this can become a health and safety issue. Although the PIROP has a module on dining and food habits (eating together) presented during training, the quantity and type of food remain a regular problem. After complaints about bed bugs, the lack of adequate food and/or American style food was the second most prevalent observer complaint.</p>
	Recommendation	<p>Well in advance of the placement meeting, the observer should create a list of food they would like purchased for them by the vessel. The observer can provide the list to the captain during the placement meeting. The observer provider and PIROP staff should encourage the vessel to purchase the food for the observer. An alternative approach, although it might present some practical challenges, would be to provide some portion of the food budget such as \$10/day to the observer and pay the vessel \$10/day. In this way, the observer would have some funding and some control over</p>

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		the food available on the vessel. On vessels where water quality has been a chronic problem, the PIROP should consider purchasing high quality water filters and providing them to the observer.
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No. 46	Program PIROP-ASOP	Discussion: 4.8.2.6
	Finding	<p>The current PIRFO placement meeting procedures between captain, observer and placement officer are an excellent opportunity to introduce the observer to the captain, provide a vessel safety orientation, and remind all parties of their obligations under the SPTT. At present a PIRFO observer is not required to record if the vessel has a valid safety decal. The PIRFO vessel safety checklist in Form SUP-1 is very general, and lacks detail on the quantity of safety equipment and whether its current approval/certification or inspection status is current. The observer is encouraged to complete the vessel safety checklist at some point during the cruise rather than prior to departure. An additional safety form is provided in the SPC/FFA Workbook-PS-1, but completion is also not required before departure from the dock. The ASOP Placement Checklist (PTSVC) is not currently in use and is not required to be completed by the placement officer. The vessel safety checklist used by the PIRFO observers is not fully compliant with the OHSR because the checklist does not require the observer to note if the distress signals are within their expiration dates, if the liferaft remains certified and is installed properly, or if the EPIRB is in good working order.</p>
	Recommendation	<p>The ASOP placement checklist used for observers deployed on US longline vessels should be used during the PIRFO placement meetings and completed before the PIRFO observer departs for sea, as required by the OHSR. Although many of the same elements are present in the SPC/FFA checklist, some are missing, and detail is lacking. The placement officer, an ASOP employee, is very familiar with the ASOP placement checklist and can assist the PIRFO observer in completing the form. In this manner, NOAA Fisheries can be assured that the vessel is compliant with the OHSR. If they so choose, WCPFC could revise their vessel safety checklist to</p>

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		reflect the ASOP placement checklist by combining elements from forms SUP-1 and PS-1, and require their completion prior to departure. The USDEL to WCPFC should advocate for such improvements in the relevant WCPFC fora.
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No. 47	Program: PIROP-ASOP	Discussion: 4.8.2.7
	Finding	The ASOP staff are placed in a very ambiguous role while serving as the placement officer for the WCPFC. There are no guidelines describing the extent or limitations of ASOP staff assistance to PIRFO observers involving observer conduct, vessel placement decisions, or other deployment-related tasks.
	Recommendation	Based on experience with the recent loss of an observer, and the additional duties placed on ASOP staff, the terms of the SPTT agreement should be more detailed and comprehensive with well-defined roles and responsibilities, and clear lines of authority.

6.1.2.3 Training

No. 48	Program: NOP/National programs	Discussion: 4.1.4
	Finding	Since the observer program owns the InReach communicators, all usage is reported to the program with the billing. There have been instances of excessive personal use, and communicating difficult work situations to friends and family before contacting the program or observer provider. The Northeast FSB has had one experience where an observer sent an ambiguous trouble message to multiple recipients including friends and family, who then deluged the USCG and the FSB with requests for assistance.
	Recommendation	When InReach satellite communicators are issued to observers, training programs should incorporate a lesson on their proper use, including policy on acceptable personal use, and whom to contact in difficult or crisis situations.

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No. 49	Program: NOP/National programs	Discussion: 4.5.3.2, 4.7.5.2.2
	Finding	Rather than the traditional Mayday-Mayday-Mayday call on channel 16, the USCG now prefers to receive a digital distress message generated automatically on channel 70 by the red DSC distress button on newer VHF radios. Once the message is acknowledged by a USCG shore station, the radio switches to channel 16 to allow voice communication between the shore station and the distressed vessel. If no acknowledgment is received, then the conventional mayday call should be made on channel 16. Similar functionality is provided on modern SSB radios. Observer training does not yet consistently include this procedure as part of the curriculum.
	Recommendation	Observer radio distress call training should be reviewed to ensure it addresses the DSC alert procedure in addition to the traditional Mayday call procedure.

No. 50	Program: NOP/National programs	Discussion: 4.2.3.2, 4.4.3.2.1, 4.5.3.2, 4.6.3.2, 4.7.3.2.2, 4.7.4.2.2, 4.7.5.2.2
	Finding	While hands-on fire-fighting exercises and use of pyrotechnic distress signals are not currently required by the Observer Safety Training Standards, the review team is of the view that such training is potentially extremely valuable to observers. Some programs have used BullEx® systems for firefighting training to avoid smoke or flame production at locations where it would be a problem.
	Recommendation	Whenever practicable, regional observer training programs should include opportunities for hands-on training with all emergency equipment, including pyrotechnic distress signals and fire extinguishers used on live fires. Where there are practical challenges with the production of flame or smoke at training facilities, programs should seek to partner with local fire departments and fire training facilities as necessary to identify suitable options. Even if such skills have not been necessary in past

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	casualties involving observers in a particular region, it pays to be proactive and prepared for unknown potential future casualty scenarios. Although observers in programs with generally large vessels like the NPOP are not expected to actively participate in fighting (<i>e.g.</i>) an engine room fire, there may be scenarios like a galley fire or a fire in a trash can where experience in activating and using a fire extinguisher on a live fire can be of great benefit.
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No. 51	Programs: NOP/National programs	Discussion: 4.2.3.2, 4.4.3.2, 4.5.3.2, 4.6.3.2, 4.7.3.2.2, 4.7.4.2.2, 4.7.5.2.2, 4.8.1.3.2
	Finding	The USCG can sometimes support observer training by sending personnel with equipment such as a helicopter rescue basket, a dewatering pump, and/or their damage control training trailer. These are important added elements of the survival training because a fishing vessel crew may not have had this kind of training. Fishers may have little or no experience or hands-on training with this equipment, where a well-trained observer could be an important asset in an emergency situation, even if only to advise others on appropriate procedures. Some USCG offices may also have a fishing vessel stability model and demonstration tank for practical demonstration of stability theory. ⁸⁸ Such training could help observers recognize a developing stability issue.
	Recommendation	<ol style="list-style-type: none"> .1 Training programs should incorporate rescue basket, dewatering pump, hands-on damage control procedures and practical fishing vessel stability training, leveraging existing USCG resources for the purpose as available. .2 Observer training facilities should consider obtaining their own dewatering pumps and a helicopter rescue basket (or reasonable facsimile) for times when USCG training support is not available. .3 Observer training programs should consider obtaining their own version of a damage control training device (storage space permitting) in the event USCG support with a damage control training trailer is not available. A scaled-down simulator could

⁸⁸ <http://www.fishsafewest.info/PDFs/StabilityModel.pdf>

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		<p>be fabricated with valves and PVC pipe glued together with materials available from plumbing supply houses or home centers. Such a simulator would be smaller and lighter than the USCG trailer mounted unit and might have to operate at lower (garden hose) pressures and flow rates. However, it could be useful when the USCG trainer is not available.</p> <p>.4 The USCG stability model and demonstration tank may not be available in all locations, but other computer-based stability training resources are available.⁸⁹</p>
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No. 52	Programs: NOP/National programs	Discussion: 4.2.3.2, 4.4.3.2.1, 4.5.3.2, 4.6.3.2, 4.7.5.2.2
	Finding	Conducting mock drills and pre-deployment checks in the classroom, rather than on an actual vessel, forfeits a valuable opportunity for exposure of the trainees to the environment in which they will soon be living and working, for engagement of the observer program with the fishing fleet, and for an opportunity for observers to walk the docks with knowledgeable observer program staff for familiarization with various types of vessels and fishing gear.
	Recommendation	Whenever practicable, regional programs should identify and utilize actual fishing vessels in their respective areas as platforms for carrying out mock drills and pre-deployment checks during initial observer training programs.

6.1.2.3.1 Specific to SEFSC

No. 53	Program: POP	Discussion: 4.7.3.2.1
	Finding	The standard training class is performed over 13 consecutive days with only one half day break. Lack of adequate down time can lead to mental fatigue and reduced teaching effectiveness.
	Recommendation	The POP should allow at least one non-work day per week during

⁸⁹ <http://www.fishharvesterspecheurs.ca/professional-development/safety/stability-simulator>

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		training for trainees to rest, absorb the information provided, and tend to personal affairs. All other ROPs include at least one day off per week of training.
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No. 54	Program: POP	Discussion: 4.7.3.2.2
	Finding	Visiting trainers from the NEFSC FSB were not assigned specific topics to co-teach in the classroom although they did assist with the pool activity/field trip. The NEFSC FSB trainers appeared to be underutilized given their experience base.
	Recommendation	Appendix 9 includes several questions and suggestions pertaining to the co-teaching requirement included in the Observer Safety Training Standards.

No. 55	Programs: POP, SOP/RFOP	Discussion: 4.7.3.2.2, 4.7.5.2.2
	Finding	The review team recognizes that hands-on skills testing is a time-consuming component of all observer safety training programs. However, on several occasions students waited more than 20 minutes for others to complete a skill test (<i>e.g.</i> , connecting hydrostatic release/liferaft, righting liferaft in pool).
	Recommendation	Some ROPs test multiple skills in a given time slot by rotating students among various skill testing stations (<i>e.g.</i> , donning of PFD, immersion suits, liferaft deployment and hydrostatic release setup, mayday, EPIRB/PLB testing, proper lifting). If it's important to test only a single skill during a particular training module, where practicable, additional equipment for a given skill could be purchased (<i>e.g.</i> , hydrostatic release components).

No. 56	Program: POP	Discussion: 4.7.2.3, 4.7.3.2.2
	Finding	When an injury occurs while deployed, observers typically provide their own treatment, and some report that they are often involved with providing first aid for crew. POP vessels frequently operate more than 24 hours away from medical facilities and in search and rescue (SAR) regions not covered by the USCG.
	Recommendation	The POP should offer wilderness/marine first aid (as done by PIROP)

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	to supplement basic first aid training. This option may also promote observer retention if offered after a certain number of deployments.
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No. 57	Program: POP	Discussion: 4.7.3.2.2
	Finding	Observers, both new and experienced, must sign off on POP safety policies during training. However, policies may be added at any time, and at least one was added post-training in January. The primary in-person interaction with program staff is during training (<i>i.e.</i> , once every 3 years). In addition, a few safety policies described in the observer field manual are missing from the POP Safety Policy sign-off form. There isn't a defined protocol regarding how to promptly communicate safety policy changes to observers in the field, which could leave some observers unaware if the only time they learn of new safety policy is at refresher briefing.
	Recommendation	<p>.1 The POP should include the following policies discussed during training or contained in the manual to the Safety Policy sign-off form:</p> <ul style="list-style-type: none"> ○ I agree to wear closed-toed footwear on deck and understand that bare feet or sandals are absolutely forbidden. ○ I understand that swimming during deployments is prohibited. ○ I agree to report all injuries or illnesses to contract supervisor and POP staff immediately (as per January 2017 training instructions). <p>.2 The POP should implement a protocol to routinely communicate safety policies to observers in the field (annually at a minimum) and include a version/date on the Safety Policy sign-off form.</p>

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No. 58	Programs: SGOP/SBLOP	Discussion: 4.7.4.2.2
	Finding	Observers from the SGOP/SBLOP occasionally attend safety training at one of the other SEFSC programs. The POP training in Miami focused almost exclusively on the pelagic longline fleet which has a different risk profile relative to the fleets observed by the SGOP/SBLOP.
	Recommendation	When training of SGOP/SBLOP observers occurs at an alternate location, provide program-specific materials pertaining to observed vessel risks or send a coordinator to participate in the training to ensure program-specific vessel safety issues are adequately covered.

No. 59	Programs: SGOP/SBLOP SOP/RFOP WCGOP NEFOP FSB	Discussion: 4.7.4.6, 4.7.5.6
	Finding	Some observed fleets have only one person on board (<i>i.e.</i> , captain) in addition to the observer, and observers may not be adequately prepared if the captain were to become incapacitated or fall overboard. In addition, the PTVSC is mostly inapplicable to vessels <26 feet (LOA). Small vessels in this category operate in the Southeast programs (SGOP/SBLOP/SOP/RFOP), the WCGOP, and the the NEFOP (and perhaps others).
	Recommendations	<p>.1 Programs where small vessels operate with only a single person aboard in addition to the observer should consider offering supplemental training on basic small boat operation skills to prepare observers if they are suddenly in command. Skills may include but are not limited to: knowing how to safely start/stop the engine, maneuver the vessel, knowing how to anchor the vessel, and knowing how to operate electric and manual bilge pumps.</p> <p>.2 A PTVSC specific to the <26' size class may be warranted. Absent</p>

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		development of the above “small vessel” checklist, the observer could utilize the USCG Checklist Generator ⁹⁰ prior to departure to verify items that are required for the vessel’s characteristics.
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No. 60	Program: SOP/RFOP	Discussion: 4.7.5.2
	Finding	During the immersion suit donning exercise, many observers started without extraneous clothing and shoes; the immersion suit donning activity could have been more realistic by starting with shoes and extra clothing on.
	Recommendation	Ensure students start the timed immersion suit activity with shoes and extra clothing on to simulate a more realistic scenario.

No. 61	Program: SOP/RFOP	Discussion: 4.7.5.2
	Finding	The reviewer had the following comments and concerns pertaining to the observed in-water practical exercise: <ol style="list-style-type: none"> 1. A few PFDs were not adequately fastened (<i>i.e.</i>, some PFDs could have easily slipped upward and off); 2. While the facility was excellent overall, acoustics were poor which made it difficult to hear instructors; 3. It was a challenge to keep the liferaft in the center of the pool during the liferaft “righting” activity.
	Recommendation	<ol style="list-style-type: none"> 1. A trainer or observer “buddy” should verify PFDs are properly fastened to avoid slipping off upon initial pool entry; 2. A more detailed preview of the pool activity should be provided prior to going to the pool so that students are prepared in the event that they cannot hear at the facility; 3. Take additional measures to maintain the liferaft in the center of the pool during the liferaft “righting” activity.

⁹⁰ <https://www.uscg.mil/d13/cfvs/test/1ChecklistCover.html>

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No. 62	Programs: SEFSC	Discussion: 4.7.3.2, 4.7.5.2
	Finding	Some training material provided to the reviewer prior to observed trainings was not consistent with the content actually taught during the observed trainings. In addition, some training material developed by the POP may be of interest to other programs as it contained supplemental information not typically used by AMSEA-certified marine safety instructors (<i>e.g.</i> , RACE procedure for emergency response to fire which complements the A-PASS procedure for firefighting taught in the MSIT curriculum).
	Recommendation	<p>.1 The POP and SOP/RFOP should date all training materials to minimize issues with version control. See also Appendix 9 for additional suggestions regarding sharing training materials among programs as part of the Observer Safety Training Standard.</p> <p>.2 All programs should develop a procedure for program managers to review all training materials when substantive changes are made to presentation or lesson plan content.</p>

No. 63	Programs: SEFSC	Discussion: 4.7.3.2, 4.7.4.2, 4.7.5.2, 4.7.6
	Finding	Overall, observed trainings conformed to the Observer Safety Training Standards and were generally consistent among SEFSC programs and with the AMSEA training manual (AMSEA 2012); however, there were a few training topics that the reviewer thought could be enhanced
	Recommendations	<p>The reviewer's suggestions to enhance training include:</p> <ol style="list-style-type: none"> 1. Allow program-specific observers access to all training presentations and reference material for future review. POP already provides some of its safety-related training material online; 2. Request feedback from observers on safety training quality and content at multiple time intervals (<i>e.g.</i>, immediately after training, after first few deployments and after a year) to assess training strengths and weaknesses in terms of long-term retention; 3. Utilize quantitative annual injury/illness/close call summary data in training to discuss types of incidents and trends with

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		<p>trainees (especially experienced observers attending refresher training);</p> <p>4. Additional suggestions to enhance training can be found in 4.7.6.</p>
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6.1.2.3.2 Specific to PIROP

No. 64	Program: PIROP	Discussion: 4.8.1.3.2
	Findings	<p>.1 The facilities for all aspects of training were ideal. The 15-day initial PIROP safety training was compliant with the Observer Safety Training Standards (NOAA Fisheries 2007b) and covered all topics for the specified durations or longer. The in-water demonstration, pool exercises, and required skill demonstrations by observer trainees were compliant with the Observer Safety Training Standards.</p> <p>.2 The Wilderness (Remote) Survival (First Aid) class was excellent and tailored to at-sea conditions with hands-on survival techniques in remote settings. Due to past experiences where observers have helped injured crew members, much of the training was designed to enable the observer to engage in first response and management of an injured crew member. Several observers suggested that the class could be improved by refocusing some of the training on observer self-treatment rather than only responding to crew injuries.</p> <p>.3 To accommodate some of the outside trainers with scheduling conflicts, the training topics were reorganized on several occasions which created some problems. The most notable was the fact that observers were not instructed in the classroom prior to in water instruction held at the pool on how to enter the water in an immersion suit, get inside the liferaft, right the liferaft, perform the HELP and HUDDLE positions, or other immersion suit exercises. Once at the pool, instructions and demonstrations were given by an instructor. Presenting training modules out of logical sequence, especially those with a hands-on component, can cause unnecessary safety risks to the trainees.</p>

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		<p>.4 Although not a requirement of the Observer Safety Training Standards, the reviewer noted that a hands-on demonstration of the ignition and proper use of distress flares and smoke signals was not conducted. A presentation on dewatering a vessel, and a hands-on demonstration of dewatering a vessel by assembling and operating a typical dewatering pump were not conducted. While the PIROP has been provided a damage control training unit by the USCG, it requires repair and is not currently in use.</p> <p>.5 Although two fishing vessels were located and used to conduct safety drills and the mock placement meeting, they were not scheduled until the day before, which caused some confusion and concern on the part of the trainers.</p>
	<p>Recommendations</p>	<p>.1 The Wilderness (Remote) Survival (First Aid) training should be modified to include more instruction on self-medication and self-treatment.</p> <p>.2 Although topics often need to be adjusted when scheduling conflicts occur, a checklist should be created to ensure the key safety training sequence is not interrupted. For safety reasons as well as comprehension, it's critical that observers are fully briefed in class on the challenges of maneuvering in an immersion suit as well as entering, exiting and righting a liferaft before practicing these skills in the pool.</p> <p>.3 The PIROP should investigate if the IRC is suitable for demonstration of, and practice with distress flares and smoke signals, and if not, seek to find a different location where this activity could take place. The HI and AS longline fleets operate very far offshore, and thus training on how to use dewatering pumps and practice damage control techniques using the damage control unit is strongly encouraged and highly recommended.</p> <p>.4 Overall better planning by scheduling vessels well in advance and reviewing the sequence of speakers prior to hands-on demonstrations would better ensure successful and safe observer training sessions.</p>

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No. 65	Program: PIROP	Discussion: 4.8.1.3.2.6
	Findings	<p>.1 Presentation objectives and delivery were often not clearly stated.</p> <p>.2 There were a significant number of “observer stories” told that were either not related to or did not reinforce the topic being presented.</p>
	Recommendation	<p>Training materials should be reviewed and updated to include additional photos, figures and information. Font size within the PowerPoint presentations should be increased and more hands-on practical exercises should be incorporated into the classroom portion of the training. For new trainers or staff, the training coordinator needs to assist them in preparing the material and practicing the delivery of the information. The NEFSC FSB has an excellent training program including logical organization of class materials, logistics, hands-on demonstrations and training props. Cross training with the NEFSC FSB, or having an NEFSC FSB trainer assist the PIROP in the near future could greatly improve PIROP training.</p>

6.1.2.4 Equipment

6.1.2.4.1 Specific to SEFSC

No. 66	Program: POP	Discussion: 4.7.3.3
	Finding	<p>Instructions to observers regarding equipment required on each deployment are inconsistent among various documents.</p>
	Recommendation	<p>The POP should modify all relevant documents to include consistent instructions for required gear for each trip. In addition, the required gear list should be updated to include InReach satellite communicator, foul weather gear and boots.</p>

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No. 67	Programs: SEFSC	Discussion: 4.7.3.3, 4.7.4.3, 4.7.5.3
	Finding	In general, equipment issued by SEFSC observer programs meets USCG standards and maintenance schedules are appropriate to issued items with the possible exception of immersion suits.
	Recommendation	SEFSC ROPs should perform air pressure tests on immersion suits as described in the AMSEA pamphlet (AMSEA 2010) every three years as per the USCG recommendation described in NVIC 01-08 (USCG 2008). This testing could easily coincide with the refresher safety training requirements which are also on a three year cycle. If repairs were deemed necessary, the immersion suit could be sent to a commercial facility for repair and alternative suits issued to the observer.

6.1.2.4.2 Specific to PIROP

No. 68	Program: PIROP	Discussion: 4.8.1.3.2.7
	Findings	<ul style="list-style-type: none"> .1 The reviewer found the HI version of the manual to have a very high number of spelling errors that distracted from the content. .2 While information is cited in the body of the manual, the reference section is missing. .3 The fire extinguisher and life buoy sections (19-3) were confusing. For example, there is no information provided on the number of life buoys required by vessel length; therefore an observer may need to refer elsewhere to determine whether a vessel is meeting this requirement. Similarly, information is lacking on the USCG regulations requiring the “vessel’s fire extinguishers be of the correct size, type approved for use.” .4 Although provided in a laminated hand-out during gear checkout, a complete list of the speed dial phone numbers on the satellite phone is not included in the manual. .5 Samples of the various forms (specimen log, seabird biological data form, etc.) are not included in the manual.
	Recommendations	.1 The PIROP should editorially review the HI manual to ensure that it's complete and free of obvious spelling errors. The PIROP should add a section in both the HI and ASOP manuals on cultural awareness and sensitivity focused on Pacific Island and Asian nations’ traditions, including food preferences and other

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		<p>practices that may impact observers while at sea. In addition, the PIROP should add a section on notes to women going to sea (see SEFSC-Galveston manual, page 1-24).</p> <p>.2 The PIROP should revise, expand, and clarify the safety information on fire extinguishers and life buoys consistent with the USCG compliance booklets given to the observers. All safety information and evaluation criteria should be included in the observer manual.</p> <p>.3 A complete list of the speed dial phone numbers should be included in the manual.</p> <p>.4 The PIROP should include examples of each form used by observers in the manual.</p>
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6.1.2.5 Communications

No. 69	Program: NOP/National programs	Discussion: 3.6, 4.7.2.3, 4.8.1.9.1.1
	Finding	<p>The nature of the observer position is both physically and psychologically isolating. Observers have a very different mission than fishers while working on board vessels. Unlike a job in an office environment, observers do not have peer support near their work environment as they live remotely as well (<i>e.g.</i>, observers in some areas are spread out by more than 1,000 miles). Observers who experience traumatic events (<i>e.g.</i>, harassment, vessel sinking or other marine casualty) are rarely provided with any mental health support options (with the exception of professional counseling services accessible to SOP/RFOP observers through IAP World Services). Agency managers may not be adequately trained or prepared to respond appropriately to a traumatic incident impacting the workplace (Tyler 1996). For example, in recent years several observers or staff have died (<i>e.g.</i>, Keith Davis, previous PIROP staff member) or been seriously injured while serving as an observer or between contracts. Grief or post-traumatic stress disorder (PTSD) counseling was rarely offered or available to staff or observers for any of these incidents.</p>
	Recommendations	.1 The NOP, in consultation with the NOPAT and NOPAT SAC,

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		<p>should explore national-level options to ensure availability of professional mental health support when an observer or other ROP personnel are exposed to a traumatic event. One option may be to partner with the USCG (via the MOA) to include ROPs in Critical Incident Stress Management (CISM) protocols (Mitchell 1983). “CISM is a “package” of crisis intervention tactics that are strategically woven together to: 1) mitigate the impact of a traumatic event; 2) facilitate normal recovery processes in normal people, who are having normal reactions to traumatic events; 3) restore individuals, groups and organizations to adaptive function; and to 4) identify people within an organization or a community who would benefit from additional support services or a referral for further evaluation and, possibly, psychological treatment” (Mitchell 2009). Another option may be to allow observers and other non-federal ROP personnel to access to the NOAA Employee Assistance Program (NOAA 2017a) although this may require a modification to the MSA similar to the allowance of FECA access for observers.</p> <p>.2 Regardless of the method pursued above, future observer procurement contracts should include a provision stating observer providers must ensure access to professional mental health services in the event of a critical incident.</p>
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No. 70	Program: NOP/National programs	Discussion: 4.1.4, 4.5.4, 4.6.4, 4.7.3.3, 4.7.3.6, 4.7.3.8.1
	Finding	<p>Satellite communicators such as the InReach appear to be an effective tool to provide observers confidential communication capability while at sea. Some observers are already issued satellite phones. These can address part of the issue, but voice communications are not private on a small vessel, especially with satellite equipment that must be used in the open to connect with the satellite. Satellite phones can also have call quality problems that may not affect an installed satellite communication system with a more powerful transmitter and a better antenna. Text communications are generally more reliable because they typically use a system that repeats message segments so that a full message</p>

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		is received even if some parts are lost in an initial transmission. If issued satellite phones do not have a text or Email function, then a supplemental satellite text communicator such as the InReach may be appropriate.
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should develop a policy that requires that observers that are deployed beyond cell phone coverage, or that are on trips that may exceed 24 hours, be provided with satellite text communication capabilities independent of the vessel's equipment. An allowance should be made for a certain amount of personal communication. Pre-set coded text messages should be included to use in urgent situations.

No. 71	Programs: NOP/National programs	Discussion: 4.1.4, 4.5.4, 4.7.3.6, 4.7.4.6
	Finding	Several programs have used InReach pre-set text message options for observers to select from, so that they can quickly send messages in difficult or urgent situations by selecting the pre-loaded recipient and then entering the code number of the message they want to send.
	Recommendation	Regional programs should consider using pre-set message codes in satellite communicators to allow observers to quickly and economically send check-in messages to the program or the observer provider concerning the working situation and their well-being.

6.1.2.5.1 Specific to SEFSC

No. 72	Program: POP	Discussion: 4.7.3.2.2, 4.7.3.6
	Finding	All observers must demonstrate how to use their issued PLBs during training so in an emergency the POP is confident that the observer would correctly activate the PLB. Observers are not required to demonstrate their ability to use the InReach satellite communicators.

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	Recommendation	POP training should include methods to verify all observers are proficient with the primary modes of communication (<i>e.g.</i> , all able to email or text via InReach if that's the primary mode; communicate with cell/smart phone if that's required; have a printer or ability to add digital signature for important documents sent via email, etc). If individuals are not comfortable with a given piece of technology, the program or provider should offer supplemental training until they meet basic competencies.
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No. 73	Programs: SEFSC	Discussion: 4.7.3.6, 4.7.4.6, 4.7.5.6
	Finding	Weekly check-in codes may not cover the full suite of scenarios and each program has a different number of code levels (current range 3-5 levels).
	Recommendation	SEFSC ROPs should consider including codes to accommodate more options.

No. 74	Program: POP	Discussion: 4.7.3.1
	Finding	All communication systems have limitations. Satellite phones and communicators require a line of sight to the satellite which may require one to be exposed to the elements. VMS is required on all pelagic longline vessels and these systems have email capability. One approved VMS system has an emergency distress function.
	Recommendation	The POP should summarize email and emergency capabilities of approved VMS systems as an alternate mode of contact if InReach or other communication systems fail. Observers could be informed regarding which units have an emergency distress feature and trained to send a supplementary distress signal from this particular VMS unit.

No. 75	Programs: SGOP/SBLOP	Discussion: 4.7.4.6
	Finding	Observers must check-in weekly. If an observer failed to check-in weekly on a longer trip, there is currently not a formal procedure in place to contact the observer directly.
	Recommendation	The SGOP/SBLOP should develop a formal procedure to address

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		observer failure to check-in. The procedure may include calling the observer’s cell phone, coordinating with OLE to access VMS data on vessels with VMS requirements, hailing the vessel on VHF (if in range), calling the vessel’s satellite phone, calling the vessel’s place of delivery (<i>e.g.</i> , fish house) or contacting the permit holder to see if they’ve had contact with the vessel.
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6.1.3 Lower priority

6.1.3.1 Regulations

No. 76	Program: Regional programs	Discussion: 3.4, 4.7.2.1
	Finding	Observer procurement contracts include requirements to comply with OSHA rules. However, the NAICS industries for observer procurement contracts may be exempted, or OSHA may have limited, if any, jurisdiction to “assure safe and healthful working conditions” for observers on board uninspected commercial fishing vessels, and reporting requirements are uncertain.
	Recommendations	.1 NOAA Fisheries should work with OSHA and the USCG to establish a clear mutual understanding if/when OSHA reporting requirements apply to observers and observer providers, and obtain clarity regarding which entity, OSHA or USCG, has jurisdiction over working conditions for fisheries observers on uninspected commercial fishing vessels. .2 If OSHA rules do not apply, NOAA Fisheries should exclude OSHA requirements from observer procurement contracts. If OSHA rules do apply , NOAA Fisheries should include clarifying guidance and appropriate deliverables in future SOW/contract language (<i>e.g.</i> , if applicable, provide copies of all Accident Reports and OSHA illness/injury reporting forms to the Program Manager within 7 days of an incident and 10 days of submission to OSHA, respectively).

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No. 77	Program: NOP	Discussion: 3.5
	Finding	Section 403(c) states: OBSERVER STATUS.—An observer on a vessel and under contract to carry out responsibilities under this Act or the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361 <i>et seq.</i>) shall be deemed to be a Federal employee for the purpose of compensation under the Federal Employee Compensation Act (5 U.S.C. 8101 <i>et seq.</i>)." Two substantial loopholes currently exist in the current MSA language regarding application of FECA to observers. 1) the FECA coverage only applies to observers deployed to vessels and has been interpreted to vessels "at-sea"; and 2) Fisheries observers authorized by exclusively by ESA authority are excluded as are any on-land work situations of all fisheries observers.
	Recommendation	NOAA Fisheries should recommend the following modifications to Section 403(c) during future legislative changes to MSA: .1 Add fisheries observers authorized by ESA and any other applicable Act to MSA language in section 403. .2 Strike "on a vessel" and replace with "deployed" to cover all fisheries observer work scenarios.

No. 78	Program: NOP	Discussion: 4.7.5.6
	Finding	USCG or state law enforcement boarding parties occasionally are unaware of the observer's role on board commercial fishing vessels.
	Recommendation	NOAA Fisheries, in consultation with the USCG CFSAC liaison, should develop an outreach strategy to engage field boarding personnel from the USCG or state law enforcement so that observers aren't accidentally compromised while on board a vessel (<i>e.g.</i> , most USCG know it's inappropriate to question the observer in front of captain/crew, but state law enforcement may not have been briefed on the observer program's mission).

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6.1.3.1.1 Specific to ADF&G

No. 79	Program: ADF&G	Discussion: 4.3
	Finding	While recognizing that they are both very small programs with minimal staffing, serving small numbers of observers, the reviewer found that neither ADF&G program was very well documented with respect to observer training policies and procedures. It was very challenging to track down specific information about the respective training programs, generally requiring outreach to the third-party trainers for details. The high turnover in both programs is a potential source of concern. Nevertheless, both programs have in recent years had excellent safety records with respect to observers.
	Recommendation	ADF&G should seek to improve documentation of the crab and scallop observer programs, such as by providing access to documentation like manuals, training schedules, etc. online. The programs recognize that there are issues with observer retention and are already exploring measures to address that, perhaps through provisions in contracts with observer providers, although nothing definitive had been developed as of the time of the reviewer's visit.

6.1.3.1.2 Specific to SEFSC

No. 80	Programs: SOP/RFOP	Discussion: 4.7.5.3
	Finding	Program staff advised the reviewer that there was an occurrence in the past when the satellite phone service subscription expired and the federal acquisitions system was not quick to remedy the situation.
	Recommendation	The SEFSC should ensure that appropriate procedures are in place to maintain continuity of critical services such as emergency communications.

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No. 81	Programs: SOP/RFOP	Discussion: 4.7.5.8.2
	Finding	The IAP Site Manager is not always included on the illness/injury reporting communications when initiated by the federal Observer Coordinators; rather, one of the IAP contracted Observer Coordinators forwards the email to her.
	Recommendation	The IAP Site Manager should be included in all illness/injury coms regardless of whether a federal Observer Coordinator or IAP Observer Coordinator originates the communication.

No. 82	Programs: SEFSC	Discussion: 4.7.3.7, 4.7.4.7, 4.7.5.7
	Finding	Experienced SEFSC observers in training and in one-on-one conversations report that alcohol and drug use is common on board Southeast fishing vessels but few (if any) report that the use results in unsafe conditions or impedes observer work on the incident form submitted to OLE. Training in some but not all programs includes a module on drug and drug use recognition.
	Recommendation	.1 Collect baseline data on presence/absence of drug/alcohol use on board observed trips (e.g., add a question to debriefing process “did you witness any drug and/or alcohol use while on board?”) .2 Use baseline presence/absence data to fine-tune training topics and inform outreach strategy to the captains/permit holders if warranted.

No. 83	Programs: SEFSC	Discussion: 4.7.3.6, 4.7.4.6, 4.7.5.6
	Finding	SEFSC observer programs do not have common criteria to determine “unobservable” vessels and fishers may be unaware of how these decisions are made.
	Recommendation	SEFSC ROPs should implement a consistent policy to determine unobservable vessels and communicate this policy to fishers as per the Management Control Review recommendations (NMFS 2000).

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6.1.3.1.3 Specific to PIROP

No. 84	Program: PIROP	Discussion: 4.8.1.2.2.2
	Findings	<p>.1 While the PIROP contract generally meets the intent of the Observer Eligibility Standard, there is no explicit reference to the standard. Although it's implied in the contract, there is no stated requirement that the medical examination be completed within the past 12 months or by a "licensed" physician.</p> <p>.2 In the past the PIROP has experienced several challenging medical situations, although these individuals successfully passed the current medical exam. One observer was a diabetic, served successfully as an observer for over two years, but ran out of insulin when the vessel decided to stay out to fish longer than originally planned. The USCG was able to deliver the medication to the vessel via helicopter. Another observer had a pacemaker and was medevaced off the vessel when the device malfunctioned. Helicopter operations are both costly to taxpayers and risky to the USCG personnel each time they take flight. In addition, if conditions were not ideal, medications may not have been able to be delivered, increasing the risk to the individual observer as well as the potential economic loss due to lost fishing time for the vessel.</p> <p>.3 Recently, a crew member was diagnosed with tuberculosis (TB) upon returning from a fishing trip with an observer on board. Later the crew member died from the infection. Three observers and one of the port coordinators were tested to see if they had been exposed to TB. Fortunately all were negative.</p> <p>.4 Due to privacy concerns, the reviewer was unable to verify whether current and prior observers met the applicable physical fitness requirements. The physical fitness exam does not include program-specific medical requirements such as ensuring an observer is not color blind (many fish are identified by color in the PIROP fishery, yet no color vision test is required during the medical review by the PIROP program). [</p> <p>.5 The PIROP fishing fleet is comprised primarily of crew and captains from foreign countries that travel frequently to Asia.</p>

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		The threat of transmission of Asian-borne highly contagious diseases (such as avian flu) due to close quarters and the generally unhygienic conditions on a fishing vessel operating hundreds of miles offshore from medical facilities presents a high-risk environment to observers.
	Recommendation	The PIROP-approved health form should be reviewed to ensure that all aspects of the job in the PIROP such as identifying fish by color, and any recent health scares (TB screening, diabetes, pacemaker) be addressed in the incorporated into the medical prequalification and health standards. (See section 4.1.2, No. 1, findings .4-.5, recommendation .10.)

No. 85	Program: PIROP	Discussion: 4.8.1.2.2.5
	Finding	Delaying medical or dental work can potentially pose a serious medical threat for an observer, and lost fishing opportunity for the vessel if they need to return to port. One observer told the reviewer he had a dental issue that needed attention, but because the dental and health insurance would not go into effect until the first day the observer was deployed, he would wait until he returned to shore before getting attention.
	Recommendation	The PIROP should consider requiring in any future PIROP contracts that the observer provider's personal health insurance become effective the first day of employment (<i>e.g.</i> the first day of training), to facilitate preventative medical or dental care if needed.

6.1.3.2 Training

No. 86	Program: NOP/National programs	Discussion: 4.7.3.2.2, 4.7.4.2.2, 4.7.5.2.2
	Finding	Training modules among SEFSC programs covered many similar topics and some programs presentations were more effective than others.
	Recommendation	The NOPAT SAC should consider a review of training presentations/lesson plans among ROPs with a view to standardization of the "best" materials available.

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6.1.3.2.1 Specific to SEFSC

No. 87	Programs: SEFSC	Discussion: 4.7.3.2, 4.7.4.2, 4.7.5.2
	Finding	The POP Safety Manual contains a wealth of health and safety information and is a great resource for observers. Minor drawbacks to the POP Safety manual as well as the other SEFSC observer training and field manuals are the lack of an index and ease of access (<i>e.g.</i> , online availability).
	Recommendation	SEFSC programs should add an index to all existing observer manuals and post the most recent versions as a single document online.

No. 88	Program: SGOP/SBLOP	Discussion: 4.7.4.2
	Finding	OLE personnel provide enforcement-specific training to observers when training occurs at the Miami or Galveston Labs; however, OLE does not participate in training when it occurs at the PC Lab. USCG does not provide any training to this program regarding MARPOL.
	Recommendation	The SGOP/SBLOP should request OLE and USCG support for training on violations and MARPOL, respectively, when training is performed at the PC Lab.

No. 89	Program: POP	Discussion: 4.7.2.2.1, 4.7.3.2.2
	Finding	The frequency requirement for first aid/CPR certification is inconsistently presented among various POP documents.
	Recommendation	The POP should provide consistent information regarding frequency requirements (<i>e.g.</i> , two versus three years) for first aid/CPR training in policy documents, the observer procurement contract, and observer manual. The policy should also be identical to information provided by Riverside in the observer hiring packet.

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No. 90	Program: POP	Discussion: 4.7.5.2.2
	Finding	Bed bugs have been documented but are not a chronic problem on the fleets observed by the SOP/RFOP. Considerable discussion about bed bugs occurred during refresher safety training although this was not an explicit training topic.
	Recommendation	The SOP/RFOP should consider including a formal training module specific to bed bugs. The POP or PIOP have bed bug training presentations that could easily be adapted to the Galveston programs. In addition, the SEFSC labs could coordinate efforts to share freezer space if a SOP/RFOP observer's gear became contaminated, or programs could potentially facilitate cold storage at a fish house.

No. 91	Program: SOP/RFOP	Discussion: 4.7.5.2, 4.7.5.6
	Finding	<p>.1 Detailed instructions for the PTVSC are not included in the observer training manual, although explicit instructions were discussed and expectations articulated for certain elements during refresher training. Prior to departure, all observers must send/email photos of the PTVSC, and new observers must also send a photo of the liferaft/hydrostatic release set-up to the program staff, but the observer manual does not reflect this policy. Lack of line item instructions may play a role in the high error rate noted on this form.</p> <p>.2 Training discussion regarding components of the PTVSC was included in at least three different training modules (fire, EPIRB, Station Bills), but was not presented as a comprehensive unit despite staff having clear issues with how the form was being completed by observers. Several challenges were noted regarding vessel station bills and drills.</p>
	Recommendation	<p>.1 Update the manual to clarify or enhance the issues identified for the Safety Check-off form (or PTVSC).</p> <p>.2 The SOP/RFOP should consider creating a training module specific to the Safety Check-off form for refresher training. The SOP/RFOP should replace "Wheel watch while underway requirement has been explained by observer and is understood" with "Every vessel shall maintain a proper lookout</p>

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		at all times has been explained by observer and is understood” on the captain’s portion of the PTVSC. See also section 3.3, national recommendation 2.
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6.1.3.2.2 Specific to PIROP

No. 92	Program: PIROP	Discussion: 4.8.1.3.2.8
	Finding	The time requirements and lengths of the briefings/refreshers are well documented. However, there is no mention or stated policy whether the observer is required to pass a test or not during the briefing/training sessions. Some current observers had not completed the required 3-year safety refresher course and were being sent back out to sea before going through the class. This does not meet the Observer Safety Training Standards.
	Recommendation	Training requirements and procedures should be revised to identify if examinations are required during refresher safety trainings. While it's important for the program to meet its coverage goals, adherence to the established safety training standards is critical to NOAA Fisheries’ stated commitment to observer safety.

6.1.3.3 Equipment

6.1.3.3.1 Specific to PIROP

No. 93	Program: PIROP	Discussion: 4.8.1.4
	Finding	The PIROP gear shack appeared to be very well organized, including a walk-in freezer, and several other freezers to store specimens and observer gear. The observer provider had a computer workstation at the gear shack, and provided the reviewer with copies of the maintenance status of important safety gear such as immersion suits. There were ample supplies of a variety of gear that was well labeled and stored on shelves. Observers remarked that TSI has always provided observers with plenty of forms, gear and other supplies. The access to the facility and the parking were extremely limited.

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	Recommendations	<p>.1 Due to the vessels being a long way offshore and the elevated possibility of infection from staph, PIROP should consult with medical experts on what is appropriate to treat infections caused by bed bugs, staph or other disease agents. The PIROP or the observer provider should consider recommending a physician who may prescribe medical prophylactics or treatments before the observer is deployed. The PIROP and the observer provider should consider reimbursing the observer for the extra expense of work related prescribed medications not covered by insurance.</p> <p>.2 The PIROP or TSI should consider providing better antibacterial cleaning supplies (<i>e.g.</i>, hospital grade anti-bacterial wipes), and more training regarding the importance of personal sanitation and other methods to reduce infections.</p> <p>.3 Honolulu is a very expensive city with limited space in close proximity to the fishing piers. The requirements of the PIROP program for the gear shack are extensive with inclusion of a washer/dryer, walk-in freezer and shower facilities. In the future, if an opportunity arises to obtain better facilities with improved access and parking, the PIROP and the current observer provider should consider relocating.</p>
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6.1.3.4 Communications

6.1.3.4.1 Specific to SEFSC

No. 94	Programs: SEFSC	Discussion: 4.7.3.4, 4.7.4.4, 4.7.5.4
	Finding	<p>.1 Information provided to Southeast Region permit holders in vessel selection packets varies widely in detail among the programs. The supplemental information POP includes with the observer coverage vessel selection letter may be useful to other programs.</p> <p>.2 Southeast region permit holders may not be the vessel operator on board the vessel, and information regarding observer requirements may not always get transferred to the vessel operator/captain.</p>
	Recommendation	<p>.1 SEFSC ROPs should explore the merit of standardizing supplemental information provided in the observer coverage</p>

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		<p>vessel selection letter packets across the region so that messaging is consistent among the programs. There may also be a benefit to coordinating outreach efforts with the SERO permit office which may be able to reinforce observer coverage requirements and expectations during the annual renewal process.</p> <p>.2 SEFSC ROPs should specify in vessel selection letters that all of the information must be provided to the vessel operator (captain). An alternative or supplemental option would be to issue the observers with a regulatory information support packet similar to those provided by the NEFSC FSB.</p>
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6.1.3.5 Safety Reporting

No. 95	Programs: Regional programs	Discussion: 4.7.3.8.2
1	Finding	The role of a vessel crew's response in an emergency is critical to a positive outcome. Both captains in the two recent serious medical incidents called the POP fairly quickly when their observers were either not responsive or behaving erratically; however, captains may not always be comfortable reaching out to the program.
	Recommendations	<p>.1 Create a reward/recognition system for vessels or crew that act appropriately in an emergency (<i>e.g.</i>, EPIRB replacement).</p> <p>.2 Develop additional outreach material for vessel selection packets to encourage captains to contact the program in case of a non-emergency or a situation that may develop into an emergency.</p>

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6.2 International programs

6.2.1 High priority

6.2.1.1 Practices/Policies

No. 1	Program: CCAMLR	Discussion: 5.2.1.8, 5.2.2.8, 3.6 See 1.2.6.1
	Finding	Currently, the US AMLR program which manages the CCAMLR observer program, does not have an Emergency Action Plan (EAP). International observer programs present a complicated jurisdictional situation for incident investigations as well as enforcement actions. In the event of an emergency, response procedures and jurisdictional authority require careful review and collaboration between the various USG agencies and international partners.
	Recommendation	NOAA Fisheries or the observer provider should develop and maintain a comprehensive EAP for the CCAMLR observers, including any working under a bilateral arrangement, which conforms to national recommendations of Ajango <i>et al.</i> (2004a). The EAP should include an Emergency Notification Plan and should be specific to the CCAMLR deployed observer while deployed on either a US-flagged vessel or a foreign-flagged vessel. Like the PTVSC, the development of the EAP for a foreign vessel will need to be covered in a bilateral arrangement or through other CCAMLR mechanisms.

No. 2	Program: RFMOs/ International programs	Discussion: 3.5 See: 1.2.6.2
	Finding	With the exception of the CCAMLR, observer providers are not currently required to provide insurance coverage to observers serving in RFMO/RFB programs.
	Recommendation	The observer provider should be required to provide insurance coverage for observers similar to or in excess of US domestic observer requirements (see section 3.5). Coverage should apply to international waters and address treatment and evacuation from the vessel or international ports.

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No. 3	Program: NAFO, CCAMLR	Discussion: 5.2.1.2, 5.2.2.2 See: 1.2.6.4
	Findings	<p>.1 There are currently no US regulations, contracts between NOAA Fisheries and AIS or CCAMLR, permits, certification requirements, or required approval or USG oversight that address observer safety, medical standards or other features consistent with US domestic ROPs for observers serving on US vessels participating in NAFO or CCAMLR fisheries.</p> <p>.2 There is no formal or regular communication between AIS and GARFO that provides information on the name, location or status of the US observer. Without contractual or regulatory obligations, the ability of the USG to effectively ensure the safety of US observers serving in the NAFO fishery is extremely limited.</p> <p>.3 The USG currently has no mechanism to monitor or evaluate the performance of the observer provider or data collected by NAFO or CCAMLR observer.</p>
	Recommendations	NOAA Fisheries should investigate the possibility of developing a Memorandum of Understanding (MOU) or functionally similar agreement between the NAFO or CCAMLR observer provider and NOAA Fisheries, or regulations requiring an observer service provider to be permitted or certified (similar to those requirements in the NEFSC or AFSC-NPOP full coverage program) in order to ensure adequate USG oversight, communication and monitoring of observer providers or observer data quality for the NAFO or CCAMLR fishery.

No. 4	Program: RFMOs/ International programs	Discussion: 5.1, 5.1.4 See: 1.2.6.5
	Finding	Currently, international observer programs are not represented on the NOPAT.
	Recommendation	NOPAT should consider expanding its membership and focus to include a member from F/IS to serve as the international observer program point of contact.

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<p>No. 5</p>	<p>Program: CCAMLR</p>	<p>Discussion: 5.2.2.2 See: 1.2.6.6</p>
	<p>Finding</p>	<p>For a US observer deployed on a foreign-flagged vessel, vessel safety considerations will need to be agreed to in the bilateral arrangement with the Receiving Member. Bilateral arrangements are required to contain a number of principles specified in the CCAMLR SISO. One related to observer safety states: “Receiving Members shall take appropriate action with respect to their vessels to ensure safe working conditions, the protection, security and welfare of scientific observers in the performance of their duties, and to provide them with medical care and safeguard their freedom and dignity in adherence to all pertinent international maritime regulations.” Past bilateral arrangements with other nations did not contain safety requirements other than those included in the SISO. In October 2017, CCAMLR adopted measures requiring vessel response and communication procedures in the event an observer was harassed, assaulted, intimidated, disappeared, died or had a serious medical emergency. These requirements are contained in the SISO Annex 2 and are similar to the WCPFC CMM-2016-03.</p>
	<p>Recommendations</p>	<p>.1 When drafting bilateral arrangements for deployment of a US observer on a foreign-flagged vessel, the USDEL to CCAMLR should ensure the arrangement conforms to the OHSRs by including the following:</p> <ul style="list-style-type: none"> a. The foreign-flagged vessel should successfully pass a PTVSC inspection by the US observer with no deficiencies before the observer is deployed on board when serving as an international observer; b. Require the observer to provide the completed PTVSC to the CCAMLR liaison and the CCAMLR observer coordinator prior to the observer deploying on the foreign-flagged vessel; and c. Require the observer provider to carry health and liability insurance for a US observer serving on board a foreign-flagged vessel, with provisions to address coverage and evacuation in international waters and from international ports (see 1.2.6.2). <p>.2 The USDEL to CCAMLR should advocate for the adoption of the</p>

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		above referenced safety recommendations as conservation measures or changes to the SISO.
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No. 6	Program: RFMOs/ International programs	Discussion: 5.2.2.7, 5.3.1.2, 5.3.2.8 See 1.2.6.7, 1.2.6.8
	Finding	Working as an observer in fisheries such as the IATTC-TTOP, ICCAT-ROP or CCAMLR, either as a national or international observer, presents a high-risk situation due to the remote locations, jurisdictional ambiguity, the lack of clear vessel safety requirements and potentially extreme environments associated with the fishing operations. In the event of an incident involving a US observer, the USG would likely be extremely limited in its ability to respond to the situation (<i>e.g.</i> , by directing the vessel to port, conducting an inspection, or undertaking enforcement action). The lack of robust safety review protocols and inspections for observers deployed on foreign-flagged vessels under a bilateral arrangement may increase the safety risk.
	Recommendations	.1 The USDEL to the IATTC and the ICCAT should advocate for adoption of similar measures as those in WCPFC (CMM 2016-03) to ensure observer safety, especially for US citizens considered international observers on foreign-flagged vessels deployed under a bilateral arrangement, due to the lack of PTVSC review or USCG examination, and the lack of US jurisdiction in the case of an incident. .2 The USDEL to ICCAT, IATTC and CCAMLR should advocate binding measures that implement penalty provisions excluding the vessel, the crew, and captains of any fishing or transshipment vessel involved in the serious injury or loss of life of an observer at sea resulting from negligence or criminal activity of the captain and crew from being listed as an authorized vessel/person participating in the respective RFMO/RFB convention area or fishery.

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6.2.1.2 Training

No. 7	Program: RFMOs/ International programs	Discussion: 5.1.1 (core elements), 5.2.1.3, 5.2.2.3, 5.3.1.4,5.3.2.3 See: 1.2.6.3
	Finding	Of the five international programs examined under this review, only three of the programs (NAFO, CCAMLR, IATTC-TTOP) appear to apply safety training requirements similar to those of US domestic observer programs, largely due to historic or continued participation of their observer providers in US domestic observer programs, or by regulation. Rigorous safety training and refresher training requirements can help to lessen risks to fisheries observers whether on a small fishing vessel or a large transshipment carrier. The review team was advised of the NOP Coordinator’s understanding that the NOAA Fisheries Observer Eligibility Standard and Observer Safety Training Standards do not apply to US observers working in international fisheries.
	Recommendation	The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should take necessary action, including seeking statutory authority if necessary and working with the relevant international programs, to require the application of the Observer Eligibility and Safety Training Standards (or equivalent ones) to US observers in international fisheries.

6.2.2 Medium priority

6.2.2.1 Regulations

No. 8	Program: CCAMLR	Discussion: 5.2.2.4
	Finding	Due to the passage of over a decade since the last deployment of a CCAMLR US observer, the reviewer was unable to assess the extent to which the OHSRs were followed in the CCAMLR program in the past.
	Recommendation	The USG should provide advance notice to the operator of a US vessel considering fishing within the CCAMLR convention area to clarify the application of the OHSRs, and ensure compliance with all the requirements of the OHSRs.

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No. 9	Program: IATTC-AIDCP	Discussion: 5.4.1.1
	Finding	At least 17 US-flagged large purse seine vessels require 100% observer coverage provided by IATTC observers coordinated by the IATTC secretariat. The OHSRs apply to US-flagged vessels, including a requirement for a PTVSC. However, this requirement is not currently being applied by the IATTC-AIDCP observer program.
	Recommendation	NOAA Fisheries should discuss with the IATTC-AIDCP observer program manager how to implement the PTVSC and inspection prior to observer deployment. Prior to departing for a trip, the observer should send the signed and completed checklist to the appropriate NOAA Fisheries staff or the IATTC program manager to ensure safe conditions for the observer on board. Further, NOAA Fisheries should consider recommending a change to the IATTC-AIDCP requiring all AIDCP observers to conduct a PTVSC prior to deployment. These inspections would increase the safety of all observers, not just observers serving on US-flagged vessels.

No. 10	Program: WCPFC	Discussion: 5.4.2.2
	Finding	The US-flagged purse seine fleet is required to carry a fisheries observer 100% of the time. If the vessel fishes in the WCPFC convention area, the FFA provides the observer and is often assisted with the deployment of the observer by NOAA Fisheries ASOP if deployment occurs in American Samoa. If the vessel is fishing in the IATTC Convention area, the observer is provided by the IATTC-AIDCP program. If the vessel fishes in the overlap area (both WCPFC and IATTC areas during the same trip), the vessel may carry a cross-endorsed observer or two observers. In all cases, the observer is a non-US citizen deployed on a US-flagged vessel. The OHSRs apply to US-flagged vessels including a requirement for a PTVSC examination. Currently, this protocol is not being applied in the WCPFC Convention area. See comparison between current SPC/FFA PS-1 vs. PTSVC (section 4.8.2.6).

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	Recommendations	<p>.1 NOAA Fisheries (ASOP, or USDEL to WCPFC as appropriate) should discuss with the FFA observer program manager any options available for the observer to conduct a PTVSC inspection prior to deployment. Prior to departing for a trip, the observer should send a signed and completed checklist to the appropriate NOAA Fisheries staff, the WCPFC liaison, and the FFA observer program manager coordinator to ensure safe conditions for the observer on board. If the observer is boarding in American Samoa, NOAA Fisheries staff could assist the FFA observer in completing the PTVSC.</p> <p>.2 The USDEL to the WCPFC should consider recommending an amendment to the WCFPC measures requiring all FFA observers to conduct a PTVSC prior to deployment. These inspections would increase the safety of all the observers, not just observers serving on US-flagged vessels.</p>
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6.2.2.2 Practices/Policies

No. 11	Program: RFMOs/ International programs	Discussion: 5.1.4
	Finding	<p>The international observer programs do not have a recognized NOAA Fisheries point of contact. There is no ongoing tracking of observer deployment or current status in international programs by the USG. If an incident occurs, there is no immediate POC to engage with the RFMO/RFB, USCG, or other USG agency.</p>
	Recommendation	<p>NOAA Fisheries should designate a NOAA Fisheries liaison for each international observer program. The liaisons would assist in the development and maintenance of any MOUs between the observer provider and the USG, including collection and maintenance of the information on the observers' locations, PTVSC, medical information and other information specified below. Designation of specific liaisons would help ensure that NOAA Fisheries has up to date information on the location and status of US observers, including the vessel on which an observer is deployed. In each case the observer provider should be required to provide the following information to the liaison:</p> <ul style="list-style-type: none"> • A copy of the observer's resume and a copy of the medical

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		<p>exam verification;</p> <ul style="list-style-type: none"> • A completed observer PTVSC that identifies any deficiencies or concerns prior to deployment; and • The name of the observer, the vessel where they are deployed, vessel call sign, InReach or satellite phone communication information, vessel satellite contact number, PLB Uniform Identification Number (UIN, <i>i.e.</i>, registration number), name of the program staff who would receive notification in the event a PLB is activated, and the anticipated deployment schedule.
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No. 12	Program: RFMOs/ International programs	Discussion: 5.1.4, 4.1.2
	Finding	Currently international observer programs do not have a requirement for the observer to be informed of the risk associated with working as an observer long distances offshore.
	Recommendation	Prior to being hired, observers working in international fisheries should be advised of, and acknowledge the inherent risk associated with working on board fishing vessels great distances offshore with little or no ready rescue resources. US observers serving as international observers on board foreign vessels should also be advised of the extremely limited power of the USG to enforce regulations or direct the vessel and its crew in the event of an emergency. Prior to being hired, observers should be required to sign an "Acknowledgment of Risk" document to ensure they fully understand the inherent occupational risk and the limited ability of the USG to provide rescue operations and investigation in the event of an emergency. See section 4.1.2, Finding 1.3, Recommendation .8.

No. 13	Program: NAFO, CCAMLR, ICCAT-ROP, IATTC-TTOP	Discussion: 5.2.1.7, 5.2.2.6, 5.3.1.7, 5.3.2.7
	Finding	At the end of the observer's tour of duty, the respective RFMO requires the observer to complete a trip report summarizing the information provided in the daily reports.
	Recommendation	The USDEL to the respective RFMOs should advocate for the development of a standardized debriefing survey that asks

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		questions about safety, and other concerns that the observer may have had while on board. See section 3.2, finding 3, item 2, recommendations 1-2.
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6.2.2.2.1 Specific to ICCAT-ROP and IATTC-TTOP

No. 14	Program: ICCAT-ROP IATTC-TTOP	Discussion: 5.3.1.2, 5.3.2.2
	Finding	The MOU between MRAG/CapFish and the vessel contains provisions that require the vessel to return to port if the observer is injured or has a medical emergency that warrants departure from the vessel, but does not address requirements for the vessel in the event an observer is missing.
	Recommendation	The USDEL to ICCAT and IATTC should advocate amendments to the MOU between MRAG/CapFish and MRAG, respectively, and transshipment vessels to require the vessel to contact the observer provider immediately if there is an injury, serious illness, or disappearance of an observer. The MOU at Section 2, Item 4 should be amended to require that in the case of a missing observer, the carrier vessel return to port at the direction of the international authorities immediately after exhausting SAR efforts for the observer.

No. 15	Program: ICCAT-ROP IATTC-TTOP	Discussion: 5.3.1.2, 5.3.2.2
	Finding	There are currently no provisions within the ICCAT or IATTC requiring an authorized fishing vessel delivering to a transshipment vessel involved in a serious incident or disappearance to cooperate with national and international authorities or transit to port if further investigation is required.
	Recommendation	The USDEL to the ICCAT and IATTC should work with the ICCAT and IATTC Secretariat and other member countries to pursue measures requiring that any authorized fishing vessel offloading to a transshipment vessel involved in a serious incident including loss of life or disappearance is under obligation to provide access and

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		their full cooperation to the appropriate national and international authorities.
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No. 16	Program: ICCAT-ROP, IATTC-TTOP	Discussion: 5.3.1.2, 5.3.2.8
	Finding	Transshipment ROP observers have a much higher risk profile typically than US domestic observers due to the nature of the vessels' operation far offshore, jurisdictional ambiguity, and the lack of clear vessel safety requirements. In the event of an incident involving a US observer deployed in any Transshipment ROP, the USG would likely be extremely limited in its ability to respond to the situation (<i>e.g.</i> , by directing the vessel to port, conducting an inspection, or undertaking enforcement action).
	Recommendations	The USDEL to the ICCAT and IATTC should advocate that to enhance observer safety, MRAG/CapFish and the ICCAT and IATTC should consider placing two transshipment observers on board transshipment vessels, expanding the observer safety training to include personal defense, expanding and strengthening the conflict resolution training, and implementing a daily reporting protocol to identify any potential conflicts or problems on board the vessel.

No. 17	Program: ICCAT-ROP IATTC-TTOP	Discussion: 5.3.1.9, 5.3.2.9
	Finding	In a serious life-threatening emergency, MRAG's EAP procedures are first to ensure the observer's safety and to gather necessary information. The second step is to inform the RFMO/RFB if the incident has the "potential to impact deployment." If the incident involves serious life-threatening injury or death, the next step is to inform the next of kin. If a serious emergency involving a US citizen observer occurred, in practice, MRAG would inform the ICCAT or IATTC secretariat who would then inform the head of the US ICCAT or IATTC delegation. From this point forward, it is unknown how the USG would proceed because it has not been tested.

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	Recommendation	<p>.1 The USDEL to the ICCAT or IATTC should advocate establishment of a protocol to enable members to receive regular status reports from the observer provider when one of their nationals is deployed as an observer in the ICCAT-Transshipment ROP or IATTC-TTOP, as well as direct notification in the event of an emergency involving the observer. For the US, the ICCAT or IATTC observer liaison should be the primary recipient of updates from the observer provider and should track the observers' status while deployed.</p> <p>.2 The USDEL to the ICCAT or IATTC should advocate revision of the MOU between the vessel and the observer provider, or adopt measures that require the vessel to immediately notify the observer provider, the ICCAT or IATTC secretariat, and the SAR authorities in the area where the vessel is located when an observer is missing or has a serious injury.</p>
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6.2.2.2.2 Specific to IATTC-TTOP

No. 18	Program: IATTC-TTOP	Discussion: 5.3.2.10
	Finding	<p>On vessels with both IATTC and WCPFC observers deployed, there has reportedly been conflict stemming from confusion and competition at times over which observer was supposed to or allowed to sample transferred product from a fishing vessel. It was reported to the reviewer that this has led to several conflicts which could have potential to escalate. Some of these conflicts appear to stem from a lack of clarity of who is responsible for collecting information when transshipment occurs in the "overlap" area. In 2011, a Memorandum of Cooperation (MOC) was signed between the IATTC and the WCPFC to work cooperatively together and to cross-endorse IATTC and WCPFC observers on board transshipment vessels that receive fish from both convention areas. While the MOC was a productive instrument and a good platform for further discussion, outstanding issues as to how to improve cooperation between WCPFC and IATTC observers remain.</p>
	Recommendation	The USDEL to the IATTC and the WCPFC should advocate pursuing

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		appropriate means to improve collaboration and resolve conflicts in the overlap area in cases where both IATTC and WCPFC observers are on board a carrier vessel. This could include the development of clear guidance on which observer has priority for sampling a particular transfer, improved training, improved observer professionalism/standards of conduct, and fostering a collaborative rather than competitive atmosphere by all parties.
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6.2.2.3 Training

6.2.2.3.1 Specific to NAFO

No. 19	Program: NAFO	Discussion: 5.2.1.3, 5.1.1 (core elements)
	Finding	The NAFO does not have a standardized observer training manual but does provide standardized data collection templates. The lack of a standardized manual could potentially leave a significant void in data collection protocols, safety awareness, and other critical safety features of an observer program. The components and quality of AIS's training, including safety, could not be thoroughly reviewed based on the limited information provided to the reviewer.
	Recommendation	The USDEL to the NAFO should advocate development of a standardized observer training manual and a well-defined training program for all NAFO observers that includes sampling priorities/protocols, reporting requirements, and health and safety information, discusses the EAP, and identifies actions to be taken in the case of an injury, health concern or other emergency situation.

6.2.2.4 Equipment

6.2.2.4.1 Specific to CCAMLR

No. 20	Program: CCAMLR	Discussion: 5.2.2.4, 4.1.4
	Finding	The US AMLR program does not currently provide an independent means of communication for CCAMLR US observers. Since the

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		disappearance of US observer Keith Davis, many observer providers have started to issue InReach satellite communicators that provide an independent means of communication (<i>i.e.</i> , not dependent on or accessible to vessel personnel). The InReach device has 100% global coverage, and communication is by text message.
	Recommendation	The US AMLR program should issue US CCAMLR observers a PLB, and a device capable of sending and receiving messages independently of the vessel (<i>e.g.</i> , satellite phone, InReach), particularly when US observers are deployed as international observers on board foreign-flagged vessels under a bilateral arrangement. With the latter, the activity of an individual observer can be checked remotely by the observer provider or USG, depending on who issues the device, and can give an indication of when it was last used, though this is dependent upon the observer activating the unit regularly. The NEFSC-FSB uses preprogrammed codes informing the observer provider of the observer's status. See section 4.1.4, findings/recommendations 1-3.

6.2.2.5 Communications

6.2.2.5.1 Specific to CCAMLR

No. 21	Program: CCAMLR	Discussion: 5.2.2.5, 4.1.4
	Finding	The last time a CCAMLR observer was deployed in 2006, the CCAMLR observer coordinator and the observer maintained email communication several times a week. Within their correspondence was a code that provided a means for the observer to indicate the current status on board the vessel. If intervention by the CCAMLR observer coordinator was required, the observer had a code that could be included in the message.
	Recommendations	.1 The US AMLR program and/or the observer provider should establish a daily radio or internet check-in routine with the observer for safety reasons, especially for US observers serving on foreign-flagged vessels under a bilateral arrangement. If the observer provider POC does not receive a message from the observer after a day, appropriate actions as established in the EAP should be taken to confirm that the observer is safe and

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		<p>healthy. The CCAMLR program could adopt similar measures to implement daily text messages concerning the observer’s status and location. The InReach satellite messenger system should be considered to provide independent communication using text and is used by several other international programs.</p> <p>.2 NOAA Fisheries should establish a protocol or regulation whereby when a US citizen is deployed as an international observer on board a foreign-flagged vessel serving in the CCAMLR area, the observer provider sends weekly updates to the CCAMLR observer coordinator or designated CCAMLR liaison. In the event of an emergency involving the observer, the observer provider should immediately notify the CCAMLR observer coordinator and CCAMLR liaison. The same procedure should be used for US CCAMLR observers on board US-flagged vessels. See section 4.1.4, findings/recommendations 1-3.</p>
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6.2.2.5.2 Specific to ICCAT-ROP

No. 22	Program: ICCAT-ROP	Discussion: 5.3.1.6, 4.1.4
	Finding	<p>Since the introduction of the InReach satellite communicators, the activity of an individual observer can be checked remotely from the MRAG/CapFish office and can give an indication of when the unit was last used, though this is dependent upon the observer activating the unit regularly. There are methods to program the InReach device to send a pre-coded message that provides a status update such as is done by the NEFSC-FSB.</p>
	Recommendation	<p>The USDEL to the ICCAT should advocate for a requirement for the observer provider to establish a daily radio or internet check-in routine for the ICCAT Transshipment ROP observers. Other programs, such as the NEFSC-FSB, use pre-programmed codes on InReach satellite communicators to inform the observer provider of the observer’s status. MRAG/CapFish could easily adopt similar measures to monitor the daily status and ensure the well-being of the ICCAT Transshipment ROP observers. See section 4.1.4, finding/recommendation 1.</p>

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6.2.2.5.3 Specific to IATTC-TTOP

No. 23	Program: IATTC-TTOP	Discussion: 5.2.2.4, 4.1.4
	Finding	IATTC-TTOP observers prepare daily reports, however, it was decided by the IATTC that observers would transmit information only every 5 days. The reports are sent via the vessel's email to MRAG Americas, where they are collated and then submitted as a summary report to the IATTC every 5 days. If an observer has not reported on schedule then MRAG Americas follows up by trying to contact the observer through the InReach system. If MRAG Americas is not successful in contacting the observer, they will then call the vessel owner. Since the introduction of the InReach units, the activity of an individual unit can be checked remotely from the MRAG Americas office and can give an indication of when it was last used, though this is dependent upon the observer activating the device regularly.
	Recommendation	The USDEL to IATTC should advocate that the IATTC require the observer provider to establish a daily communication routine. The InReach device can be pre-programmed for the observer to send a daily message communicating their status on board the vessel. If the observer provider does not receive a message from the observer after a day, appropriate actions should be taken to ensure the observer is OK. See section 4.1.4, finding/recommendation 1.

6.3 Best practices

6.3.1 Core safety-related elements and protocols

In the course of its work, the review team identified a number of core safety-related elements and protocols that are common to most domestic ROPs, and which have been demonstrated through many years of experience to establish a robust baseline for effective observer safety programs:

- Regulations/contracts that require observers to pass an in person medical fitness examination;
- Regulations/contracts that require observer providers to have insurance for observers while employed;

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- Require observers to complete and pass an in-person observer safety training program, including hands-on demonstrations of all issued safety equipment;
- At a minimum, programs provide Observer Manual(s) which include personnel contacts, communication procedures, and safety information;
- Observers required to conduct a vessel safety review, and complete a PTVSC inspection prior to deployment;
- In programs where the observer provider makes deployment decisions, observer providers update observer program staff weekly at a minimum, identifying their deployed observers and the vessels to which they are deployed;
- At a minimum, weekly communication and at sea support from observer program staff and/or observer providers to observers; and
- At the conclusion of an observer's deployment, the observer program conducts an in-person or telephone data and safety debriefing.

6.3.2 Identification of best practices

In addition to these core elements and protocols, the team identified a number of best practices currently applied only in certain ROPs reviewed in this project, which it felt had particular merit and should be considered as a high priority for implementation by other ROPs and international observer programs where they are not currently in use or well defined. This is not intended to be an all-encompassing list of best practices (see also CCROP-HS (2013) and CCROP-SR (2013)), but rather highlights those practices discussed elsewhere in this report that the review team saw as particularly noteworthy:

1. **Observer insurance.** Adequate insurance in contracts and regulations in the case of approved, permitted, or certified observer providers, to cover injury, liability, and accidental death for observers during their period of employment (including during training), and Worker's Compensation and Maritime Employer's Liability insurance to cover the observer, vessel owner, and observer provider, regardless of where an observer is deployed, was identified as a best practice.
2. **Emergency Action Plans.** The EAP developed by the Fish Sampling Branch (FSB) of the Northeast Fisheries Science Center (NEFSC) represents a best practice that could be used as a conceptual model for coordinated EAPs, appropriately scaled to the size and characteristics of the program, that address appropriate responses (beyond just notifications up the chain of command) to an on-duty emergency or crisis with an observer.

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3. **Satellite Communicators.** The NEFOP FSB and some other programs already use InReach communicators to provide observers with a means of communication independent of the vessel's communication equipment, to report their status to the program. However, the use of InReach satellite communicators with pre-loaded status messages as employed by the NEFOP FSB was identified by the review team as a current best practice to facilitate efficient observer reporting for both observers and programs.
4. **Equipment Test Checklist.** A requirement for observers to complete an "Equipment Test Checklist" on a monthly basis at a minimum, as currently implemented by several ROPs, was considered by the review team to be a best practice, as a means of ensuring observer familiarity with and attention to maintenance of all their assigned safety equipment on a regular, documented basis.
5. **Physical examinations.** Requirements for observer physical examinations carried out in person by a physician, which are well-defined, with consistent criteria across observer programs, and designed to address the potential unique medical risks that observers face when deployed, was identified as a best practice.
6. **Pre-trip vessel safety inspections.** Pre-trip vessel safety inspections appropriate to widely varying classes of vessels, and PTVSC forms to inform and document them, is a best practice for regions where standard PTVSC forms may not be applicable to all classes of vessels (*e.g.*, very small vessels with limited safety equipment requirements).
7. **Observer reference folder.** An observer reference folder containing reference materials that may be useful not only to the observer, but the vessel as well, as the NEFOP FSB currently provides to each observer before deployment as a means of ensuring that observers have all background and reference information they may need prior to a deployment, is a best practice.
8. **Post cruise questionnaire.** Observers in several ROPs must complete a post-cruise questionnaire after each deployment which requires them to answer a variety of questions about their working conditions and personal safety on each vessel. The use of such a questionnaire to compile data concerning vessel conditions and incidents which can be reviewed by programs and observers prior to deployment is a best practice.
9. **Incident Reporting and Analysis.** Consistent incident reporting methodology including harmonized incident descriptions, reporting thresholds, and tracking procedures for

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safety incidents, injury, illness, violations, enforcement actions and other at sea concerns as well as annual analysis of incidents is a best practice. The PIROP employs a comprehensive and consistent reporting system during debriefing that allows for information to be easily distributed to other agencies (*e.g.*, USCG, OLE).

10. **Placement Meeting.** A placement meeting between the captain, observer, and port coordinator (where practicable) prior to observer deployment is a best practice used by the PIROP. During the placement meeting a review of the regulations, policies, and roles of the captain and observer are reviewed, and the PTSVC is conducted.
11. **At sea vessel training trips for new observers.** The NEFSC charters two vessels, a trawler and a gill net vessel, during the initial training class to allow observers to practice collecting data and experiencing real world safety concerns. New observer training which includes at-sea training trips on vessels with gear of the types where they may be deployed is a best practice.

7 SELF-EVALUATION TOOLS – METRICS FOR OBSERVER HEALTH AND SAFETY

7.1 Introduction

The Statement of Work for this review states that:

“the results of this review will be used to make recommendations that would allow for the development of flexible self-evaluation tools that would adapt to changing safety concerns as they evolve. While minimum observer safety training requirements have been standardized nationally, safety practices and policies are governed by USCG regulations and the Magnuson-Stevens Act, as well as additional regionally-specific requirements. The identification of regional, national, and industry “best practices” along with the ability to continually monitor changing safety standards will ensure the safety of our observer community.”

NOAA as an organization has recently promoted a systematic approach to risk management which is intended to be formalized as a new NOAA Handbook 209-30 on Risk Management in the estimated late 2018-early 2019 time frame. A recent NOAA SECO publication (Duran 2016) outlined six steps of risk management:

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1. Perform an operational analysis and identify hazards
2. Assess the risks
3. Analyze risk control measures
4. Accept the risks at the appropriate authority level
5. Implement risk controls
6. Supervise and seek feedback on the results

The risk management process operates as a cycle, which continuously seeks improvements by identifying new hazards and reevaluating risks. A flexible self-assessment tool would allow ROPs to identify new and emerging hazards, and reevaluate risks, to adapt to changing safety concerns as they evolve.

Consistent with the cited NOAA SECO publication, recent work by NIOSH, USCG, NMFS, and the Councils have illustrated that the fishery management process can more explicitly address safety by analyzing information about the adverse outcomes (*e.g.*, fatalities, non-fatal injuries, vessel losses, and vessel casualties) that have occurred in a fishery, learning from them, and implementing policies that may facilitate increases in safety. A recent NOAA Technical Memorandum (TM; (Lambert *et al.* 2015)) was prepared to provide guidance on methods to evaluate safety within fisheries when designing or making changes to fisheries management measures. It describes two specific tools: a safety checklist and a risk assessment. It envisions the use of risk assessments by fishermen, fishery managers, and safety professionals to develop solutions for reducing risks and improving safety.

While there are some operational risks unique to fisheries observers, in general observers are subject to most of the same risks as the commercial fishing industry. Lambert *et al.* (2015) specifically addresses two items directly related to fishery observers in the context of consideration of new fishery management measures:

- Will the proposed management measure deploy an observer where the facilities of the vessel for quartering an observer or for carrying out observer functions would be so inadequate or unsafe that the health or safety of the observer would be jeopardized? For example, data collection areas may pose an extreme hazard to an observer, or an observer may be deployed into a sector with comparatively high safety risk.
- Will the proposed management measure cause the addition of an observer to a vessel which would impact the safe operation of the vessel? For example, increasing the number of persons on board would require additional liferaft capacity, or exceed the vessel weight capacity.

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While these are useful criteria for assessing the risks associated with changes in fisheries management measures, they do not directly address the assessment of ongoing observer programs in light of operational experience. Nevertheless, the principles of a safety checklist approach to risk assessment are sound, as a basis for regional and national program self-assessment tools.

7.2 Safety checklist approach

7.2.1 Establishment of criteria

With input from some observer program staff, the review team considered areas specific to observer work which would be well-suited to a periodic “Checklist” safety assessment approach to risk assessment:

Training

- Lesson plans and class planning address current safety considerations, *e.g.*, updates to safety policies
- Skill evaluation tasks have a current risk assessment
- Safety content is current and updated annually
- Training injury reporting and tracking mechanisms in place
- High risk tasks including recent safety incidents are briefed and debriefed with co-trainers and students

Reporting and Tracking

- Observer injury and illness reports submitted to ROPs
- Reports forwarded to NOP, NOAA SECO as appropriate
- Safety incident reports analyzed at least annually to identify regional safety trends

Policies and Practices

- Policies up to date
- Oversight confirm practices are adhering to policies
- Method developed for rectifying policy compliance issues

NOPAT Safety Advisory Committee

- Participation represents region’s needs

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7.2.2 Self-assessment checklist development

A shortcoming of the US ROPs overall with respect to such a process is the lack of a consistent and reliable data set of observer-related incidents, and a meaningful, systematic analysis of relevant program metrics at the regional or national level. As discussed elsewhere in this report, ROP metrics at the national level focus predominantly on fisheries management issues, not on observer safety-related issues. The review team is of the view that a necessary first step in developing a structured safety self-assessment protocol at either the regional or national level has to be consensus on reporting thresholds (severity, periodicity), and a consistent algorithm for analysis of likely future risks in light of past incident experience.

To that end, the NOP should consider development and implementation of suitable policy measures to ensure that each program conducts a standardized, consistent self-assessment review annually. A model checklist containing recommended program elements to be included in such a review is provided below (Table 11). Proposals for detailed metrics for items 7 and 8 in the checklist can be found in Appendix 30 to this report.

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Model Checklist for Annual Program Risk Self-Assessment		
1		Review and ensure all training staff are MSIT trained and currently certified for the following year, and have completed professional development and maintenance requirements.
2		Ensure that all national policies or procedures have been updated and incorporated into current contracting vehicles (including task orders) and implemented within the program.
3		Conduct a review of the placement meeting (if applicable) or pre-trip vessel safety checklist to ensure completeness of documentation and observers have not been placed on a vessel with inadequate safety equipment.
4		Review and update ENP/EAP annually (at a minimum).
5		Ensure that the observer training manual(s) are compliant with the Observer Safety Training Standards and ENP/EAP.
6		Update the manual(s) (including safety component) based on observer and/or staff feedback, and relevant incident experience.
7		Create an annual report summarizing injuries, enforcement actions.
8		Update any tracking of observer injuries and illness (including fatalities), treatment, outcome, coverage by FECA, WC.
9		Review observer injuries, illnesses, and revise contracts, regulations, policies or training as needed.
10		If there are fishery changes in a region such as different vessels, fishing in different areas, different crew nationalities/background, or different gear, conduct a risk evaluation review.
11		If a new contractor is selected, a new risk evaluation should be conducted.
12		Evaluate safety equipment condition to ensure that ongoing test, inspection, and maintenance processes are effective.
13		Review whether safety and communication equipment is sufficient for current program operations, and if gaps are found, take appropriate measures to obtain different or additional safety or communication equipment.
14		Review safety and communication protocols for consistency with EAPs and ensure all procedures and codes are included in the manual(s).

Table 11 - Model Checklist for Annual Program Risk Self-Assessment

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Appendix 1 - Summary of dates and locations of the review team's field visits.

Program	Location	Date(s)	Reviewer(s)
Marine Safety Instructor Training (MSIT)	Southeast Fisheries Science Center (SEFSC) Panama City, FL	10-14 Apr 2017	Robert Markle
Northeast Fishery Observer Program (NEFOP), At-Sea Monitor Program (ASM), Industry Funded Scallop Program (IFS)	Northeast Fisheries Science Center Fish Sampling Branch (FSB) Falmouth, MA	5-16 Dec 2016 4-7 Apr 2017 2 Jun 2017	Robert Markle
Pelagic Observer Program (POP)	SEFSC Miami, FL	23-31 Jan 2017	Kim Dietrich Robert Markle
		23-24 Feb 2017	Kim Dietrich
Southeast Gillnet and Shark Bottom Longline Observer Programs (SGOP, SBLOP)	SEFSC Panama City, FL	16 Mar 2017	Kim Dietrich
Shrimp and Reef Fish Observer Programs (SOP, RFOP)	SEFSC Galveston, TX	13-16 Dec 2016	Kim Dietrich
West Coast Regional Observer Program (WCROP) - Southwest Region	NOAA Fisheries offices Long Beach, CA	15-18 May 2017	Robert Markle
Pacific Islands Regional Observer Program (PIROP)	Pacific Islands Regional Office Honolulu, HI	11-27 Feb 2017	Teresa Turk
Pacific Islands Regional Observer Program (PIROP) American Samoa Office	Pacific Islands Regional Office Pago Pago, AS	27 Feb - 5 Mar 2017	Teresa Turk
North Pacific Observer Program (NPOP)	Alaska Fisheries Science Center Seattle, WA	28 Nov - 10 Dec 2016	Kurt Heinz
NPOP Field Office	Anchorage, AK	27-28 Apr 2017	Kurt Heinz
NPOP Field Office	Kodiak Fisheries Research Center Kodiak, AK	28 Apr - 2 May 2017	Kurt Heinz
NPOP Field Office	Dutch Harbor, AK	2-5 May 2017	Kurt Heinz
West Coast Groundfish Observer Program (WCGOP)	Northwest Fisheries Science Center, Newport Research Station, Hatfield Marine Science Center Newport, OR	11-19 May 2017	Kurt Heinz
Alaska Department of Fish & Game (Shellfish)	ADF&G Management Field Office Kodiak, AK	1 May 2017	Kurt Heinz

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Appendix 2 - Individuals contacted via email or interviewed on the phone or in person / affiliations listed by region, program, position and affiliation.

Name	Position	Affiliation
National		
Jerry Dzugan	Director	AMSEA
Todd C. Dubois	Assistant Director	NOAA Office of Law Enforcement
Jane DiCosimo	NOP Coordinator	NOP
Lee Benaka	By-Catch	NOP
Jim Patterson	Detaillee	NOP
Dale Jones		NOAA Fisheries Office of Science & Technology
Debra Lambert		NOAA Fisheries Office of Sustainable Fisheries
Jack Kemerer	Commercial Fishing Vessel Safety	USCG HQ
Jonathan Wendland	Commercial Fishing Vessel Safety	USCG HQ
Tim Farley	Investigations and Analysis	USCG HQ
LCDR Jason Franz	Investigations and Analysis	USCG HQ
North Pacific		
Jaclyn Smith	OLE Special Agent	OLE - Anchorage
Mike Vechter	Anchorage Field Staff	AFSC
Alex Perry	Kodiak Field Staff	AFSC
Sarah Neumeyer	Kodiak Field Staff	AFSC
Elaine Herr	Field Supervisor	Alaskan Observers Inc.
Jo Ann Alvarez	Field Supervisor	Saltwater Inc.
Brian Mason	Observer Services Training Program Manager	AFSC
Thomas Piecuch	Dutch Harbor Field Staff	AFSC
Mark Stichert	Groundfish & Shellfish Management	ADF&G
Bo Whiteside	Crab Observer Program - Kodiak	ADF&G
Ryan Burt	Scallop Observer Program - Kodiak	ADF&G
Joe Chaszar	Scallop Observer Safety Trainer	Observer Training Services (OTS)
Greg Morgan	Crab Observer Safety Trainer	AMSEA
Luke Szymanski	Vice President	AIS, Inc.
Chris Rilling	FMA Director	AFSC
Liz Chilton	Observer Field Supervisor	AFSC

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Name	Position	Affiliation
David Edick	General Manager	Alaskan Observers Inc.
Lisa Thompson	FMA Deputy Director	AFSC
Stacey Hansen	Operations Manager	Saltwater, Inc.
Jennifer Cahalan	Statistician	PSMFC (NPOP)
Bryan C. Belay	Alaska Operations Manager	MRAG Americas
Troy D. Quinlan	Managing Director	Techsea International Inc.
Gwynne Schnaitticher	Operations Management	AFSC
Julie Blair	Information & Monitoring Technologies PM	AFSC
Amie Olson	Lead trainer	AFSC
Adriana Myers	Head trainer	AFSC
Nick Thom	Trainer	AFSC
Matt Kemp	Trainer	AFSC
Steph Jones		OLE
Troy Rentz	USCG Safety Trainer	USCG
West Coast Groundfish		
Jon McVeigh	Program Manager	West Coast Groundfish Observer Program
Steve Kee	F/V Damage control/stability trainer	USCG Portland, OR
Mike Rudolph	F/V Damage control/stability trainer	USCG Portland, OR
SA Sean Stanley	Special Agent	NOAA Fisheries OLE
SA Stuart Cory	Special Agent	NOAA Fisheries OLE
Ryan Shama	Lead Debriefeer	WCGOP
John LaFargue	Observer Coordinator	Observer Coordinator
Scott Leach	Trainer/Debriefeer	WCGOP
Jason Eibner	Trainer/Debriefeer	WCGOP
Toby Mitchell	Trainer/Debriefeer	WCGOP
Christa Colway	Conflict Resolution trainer	WCGOP
Erica Westly	Field coordinator	Saltwater, Inc.
Terry Hillman	Field coordinator	Alaskan Observers Inc. (AOI)
Tom Holland	A-SHOP trainer	WCGOP
Cassandra Donovan	A-SHOP	WCGOP
Jim Benante	WCGOP Program Manager	Pacific States Marine Fisheries Commission

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Name	Position	Affiliation
Lori Jesse	Catch Monitor program	Pacific States Marine Fisheries Commission
NEFSC Fisheries Sampling Branch		
Amy Martins	Branch Chief	FSB
Tom Gaffney	Special Agent	NMFS Office of Law Enforcement
Charles Keith	IFS Lead	FSB
Erin Kupcha	Electronic Data Collection	FSB
Tania Lewandowski	Training Lead	FSB
Katherine McArdle	Groundfish & ASM Lead	FSB
Jennifer O'Connell	Supervisory, Program and Mgt. Analyst	FSB
Nichole Rossi	EMS Lead/NEFOP COTR	FSB
Mike Tork	Mid-Atlantic Lead	FSB
Sara Weeks	NE Area Lead	FSB
Cate Dodge	Technician	Integrated Statistics
Kara Gibbons	Data Editor/Trainer	Integrated Statistics
Kristy Gustafson	NE Area Lead Assistant/Trainer	Integrated Statistics
Maggie Heinichen	PTNS Coordinator/Trainer	Integrated Statistics
Cheryl Kitts	Communications Specialist/EAP	Integrated Statistics
Alex (Charles) Post	Data Editor/Trainer	Integrated Statistics
Jack Wilson	Trainer/NEFOP IFS ASM	Integrated Statistics
Kit van Metre	Dispute resolution trainer	Independent contractor
Kenneth Keene	Program Mgr (on cross training)	SEFSC POP (now moved to FSB)
Jenna Rockwell	Trainer/Observer coordinator	Fathom Technologies
David Cangarl	Trainer	Fathom Technologies
Lauren Wahl	Observer coordinator	AIS
Lucas Curci	Observer coordinator	AIS
Danielle Kane	Observer program manager	MRAG Americas
Karl Cygler	Observer coordinator	EWTS
Ted Harrington	District Fishing Vessel Safety Coordinator	USCG
West Coast Region		
Charles Villafana	Program Director	WCROP
Jody Van Niekerk	Safety trainer, Debriefeer	WCROP (PSMFC)
Scott Casey	Observer coordinator, Debriefeer	Frank Orth & Assoc

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Name	Position	Affiliation
Jessica Casey	Observer coordinator, Debriefeer	Frank Orth & Assoc
SEFSC Observer Programs - General		
Chad Lefferson	Project Manager (POP, SGOP/SBLOP & oversight of IAP subcontract)	SEFSC Pascagoula Lab / Riverside Technology
Brenda Lewis	Site Manager (SOP/RFOP)	SEFSC Pascagoula Lab / IAP World Services
Ed Poole	President	OHS Health & Safety Services, Inc.
James Randolph	Contracting Officer Representative (Lead for all programs but shares duties with other CORs in Panama City)	SEFSC Galveston Lab
Kelly Kalamus	Special Agent (Primary other SE programs)	NMFS Office of Law Enforcement
Matt Walia	VMS Agent	NMFS Office of Law Enforcement
Marie Maguire	Special Agent (Primary POP)	NMFS Office of Law Enforcement
Matt Clark	Special Agent (Primary shrimp & reef fish)	NMFS Office of Law Enforcement
SEFSC POP		
Jerry Swindell	Contracting Officer Representative	SEFSC Panama City Lab
Larry Beerkircher	Branch Chief	SEFSC Fisheries Statistics Division, Fisheries Sampling Branch
Kenneth Keene	Program Manager	SEFSC POP
Katie Herrera	Observer Coordinator	SEFSC POP / Riverside
Thomas Morrell	Observer Coordinator	SEFSC POP / Riverside
Samuel Young	Observer Coordinator	SEFSC POP / Riverside
Benjamin Mann	Observer Coordinator (past)	SEFSC POP
Sascha Cushner	Debriefeer	SEFSC POP
Stephen Davies	Debriefeer	SEFSC POP / U. of Miami
Alex Macar		US Coast Guard
Walter Hoppe		US Coast Guard
Alex (Charles) Post	Data Editor/Trainer (on cross-training)	Integrated Statistics
Jenna Rockwell	Trainer/Observer Coordinator (on cross-training)	Fathom Technologies
SEFSC SOP/RFOP		
Elizabeth Scott-Denton	Program Manager	SEFSC Galveston Lab
Michael Harrelson	Observer Coordinator	SEFSC Galveston Lab

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Name	Position	Affiliation
Pat Cryer	Observer Coordinator	SEFSC Galveston Lab
Matt Duffy	Observer Coordinator	SEFSC Galveston Lab / IAP
Andrew Whatley	Observer Coordinator	SEFSC Galveston Lab / IAP
Ben Duffin	Observer Coordinator	SEFSC Galveston Lab / IAP
Jeff Pulver	Observer Coordinator (past)	SEFSC Galveston Lab
Jim Nance	Galveston Lab Director (previous Program Manager)	SEFSC Galveston Lab
Wally Cutchin	Safety examiner	US Coast Guard
Todd Whitecotton	Safety examiner	US Coast Guard
SEFSC SGOP / SBLOP		
Janice Hamm	Contracting Officer Representative (new)	SEFSC Panama City Lab
John Carlson	Program Administrator	SEFSC Panama City Lab Sharks, Protected Species Assessment Research
Alyssa Mathers	Observer Coordinator	SEFSC Panama City Lab / Riverside
Michael Enzenauer	Observer Coordinator (past)	SEFSC Panama City Lab / Riverside
Bill Evert	Safety examiner	US Coast Guard
PIROP - Hawaii and American Samoa		
John D. Kelly	PIRO program manager	NMFS/PIRO-Honolulu
Kevin Busscher	Contract Administrator and Staff Supervisor	NMFS/PIRO-Honolulu
Joe (Stuart) Arceneaux	Training Coordinator	NMFS/PIRO-Honolulu
Richard Kupfer	Debriefer/Safety and Enforcement Coordinator	NMFS/PIRO-Honolulu
Johua Lee	Debriefer/COR Assistant-Electronic Reporting POC	NMFS/PIRO-Honolulu
Eric Forney	Database Manager	NMFS/PIRO-Honolulu
Jamie Marchetti	Biologist/Debriefer/PR species TRT, importation and permits	NMFS/PIRO-Honolulu
Sarah VanGent	Biologist/Debriefer/Circular Updates	Lynker-Contractor/PIRO-Honolulu
Morgan Miller	Biologist/Debriefer/Turtle Reports and Protected Species Information	Lynker-Contractor/PIRO-Honolulu
Lynn Rassel	Biologist/Debriefer/Assistant Property Manager	Lynker-Contractor/PIRO-Honolulu

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Name	Position	Affiliation
Josee Vincent	Project Manager/Contract Liaison	Techsea International Inc.
Forest O'Neill	Port Coordinator	Techsea International Inc.
Ed Phillips	Port Coordinator	Techsea International Inc.
Cheree Smith	Port Coordinator	Techsea International Inc.
John Barylusk	Assistant SA in charge	NOAA Fisheries-Office of Law Enforcement
Brandon Jim-On	Special Agent	NOAA Fisheries-Office of Law Enforcement
Paul Buechner	Trainer	NOLS Wilderness Medicine
International		
WCPFC		
Tom Graham	Foreign Affairs Specialist	NOAA Fisheries-Pacific Islands Regional Office
Jeffrey Moustacas	Vessel Manager, F/V WESTERN PACIFIC	Island Tuna Management, Western Pacific
Stuart Chikami	Owner, F/V WESTERN PACIFIC	Island Tuna Management, Western Pacific
Danny Yoon	Assistant Manager, Fish Coordination	Starkist Tuna Co.
Frank Thomsen	Branch Chief	USCG-American Samoa
Edward Seui	Enforcement Officer	NOAA Fisheries-Office of Law Enforcement
Steve Kostelnik	Operations Coordinator	NMFS/PIRO-American Samoa
Michael Marsik	Alternate Operations Coordinator	NMFS/PIRO-American Samoa
Derek Kuda	Fisheries Biologist	NMFS/PIRO-American Samoa
IATTC		
Ricardo Belemontes	Fishery Management and Policy-IATTC TS Coordinator	IATTC
Kristin Rusello	Foreign Affairs Specialist	NOAA Fisheries-F/IS
Rachael Wadsworth	Fishery Policy Analyst	NOAA Fisheries-West Coast Region
Bryan Belay	Director, Fisheries Monitoring Division	MRAG, Americas
CCAMLR		
Christopher Jones	Research Fisheries Biologist	NOAA Fisheries-Southwest Fisheries Science Center
Mi Ae Kim	Foreign Affairs Specialist	NOAA Fisheries-F/IS
NAFO		
Rick Usher	Operations Manager	AIS

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Name	Position	Affiliation
Pat Moran	Foreign Affairs Specialist	NOAA Fisheries- F/IS
ICCAT		
Patrick Nugent	Program Manager, ICCAT Regional Observer Program	MRAG International
James M. Clark	Program Manager, ICCAT Regional Observer Program	MRAG International
Kimberly Blankenbeker	Foreign Affairs Specialist	NOAA Fisheries- F/IS

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Appendix 3 - Summary of health- and safety-related regulatory requirements listed by primary acts and among regions.

Requirement	ESA 50 CFR 222	MMPA 50 CFR 229	MSA 50 CFR 600	CARIBBEAN GULFS. ATLANTIC 50 CFR 622	ATLANTIC HMS 50 CFR 635	NE USA 50 CFR 648
Observer accommodations	222.401 refers to 600.746(c)(1)	229.7(c)(4)(i)	600.746(c)(1)	622.27(c)(1) 622.52(c)(1) 622.178(c)(1) 622.204(c)(1) 622.244(c)(1) 622.300(c)(1)	635.7(e)	648.11(d)
Observer food		229.7(c)(4)(i)		622.27(c)(1) 622.52(c)(1) 622.178(c)(1) 622.204(c)(1) 622.244(c)(1) 622.300(c)(1)	635.7(e)	648.11(d)
Potable water						
Observer toilet, bathing		229.7(c)(4)(i)				
At least 1 crew aboard in port when observer aboard						
Observer allowed use of communication equipment		229.7(c)(4)(iv)		622.27(c)(2) 622.52(c)(2) 622.178(c)(2) 622.204(c)(2) 622.244(c)(2) 622.300(c)(2)	635.7(e)	648.11(d)
Safe embarkation and debarkation for observer		229.7(c)(4)(ii)	600.730(c)(3), (4), (5)		635.7(e)	648.11(d)
Conditions for transfer at sea						

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Requirement	WEST COAST 50 CFR 660	WESTERN PACIFIC 50 CFR 665	WCPFC 50 CFR 300	ALASKA EEZ 50 CFR 679	SHELLFISH ALASKA EEZ 5 AAC 39	ATLANTIC COASTAL 50 CFR 697
Observer accommodations	660.140(h)(2)(i) 660.150(j)(2)(i) 660.160(j)(2)(i) 660.216(e)(1) 660.316(e)(1)	665.808(h)	300.215(v)	679.51(e)(1)(i)	39.645(i)(4)	697.7(c)(1)(xx) 697.12(d)
Observer food	660.140(h)(2)(i) 660.150(j)(2)(i) 660.160(j)(2)(i) 660.216(e)(1) 660.316(e)(1)	665.808(h)	300.215(v)	679.51(e)(1)(i)	39.645(i)(4)	697.12(d)
Potable water						
Observer toilet, bathing						
At least 1 crew aboard in port when observer aboard	660.140(h)(2)(xi) 660.150(j)(2)(xi) 660.160(j)(2)(xi)			679.52(b)(7)(iv)		
Observer allowed use of communication equipment		665.808(f)(3)	300.215(l)(ii)	679.51(e)(1)(iii)(A)	39.645(i)(8)	697.12(d)
Safe embarkation and debarkation for observer						697.12(d)
Conditions for transfer at sea	660.140(h)(2)(x) 660.150(j)(2)(x) 660.160(j)(2)(x)				39.645(i)(7)	

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Requirement	ESA 50 CFR 222	MMPA 50 CFR 229	MSA 50 CFR 600	CARIBBEAN GULFS. ATLANTIC 50 CFR 622	ATLANTIC HMS 50 CFR 635	NE USA 50 CFR 648
Safe sampling station						648.11(m)(3)(i) 648.11(n)(2)(i)
Provide reasonable assistance to observer			600.725(u)(1)	622.13(aa)	635.7(f)(2)	
Waive observer requirement if inadequate or unsafe condition	222.404(b)	229.7(c)(3)				648.11(c) 648.11(h)(5)(viii)(B)
Vessel prohibited from fishing if inadequate or unsafe condition		229.7(c)(1) 229.36(d)(1)	600.746(i)			
Failing to maintain safe condition for observers unlawful			600.725(w)			
Failure to provide info, assistance or accommodation unlawful			600.725(u)(1)			648.14(e)(3)
Unlawful to oppose or harass observer or authorized officer	229.3(b)	229.3(b)	600.725(t)			648.14(e)(1)

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Requirement	WEST COAST 50 CFR 660	WESTERN PACIFIC 50 CFR 665	WCPFC 50 CFR 300	ALASKA EEZ 50 CFR 679	SHELLFISH ALASKA EEZ 5 AAC 39	ATLANTIC COASTAL 50 CFR 697
Safe sampling station	660.140(h)(2)(ix) 660.150(j)(2)(ix) 660.160(j)(2)(ix) 660.216(f) 660.316(f)			679.28(d)	39.645(i)(6)	
Provide reasonable assistance to observer	660.12(f)(7) 660.140(h)(2)(viii) 660.150(j)(2)(viii) 660.160(j)(2)(viii) 660.216(e)(8) 660.216(e)(8)	665.808(f)(1-7)		679.51(e)(1)(viii)		
Waive observer requirement if inadequate or unsafe condition						697.12(c)
Vessel prohibited from fishing if inadequate or unsafe condition						
Failing to maintain safe condition for observers unlawful	660.140(h)(2)(ii)(A) 660.150(j)(2)(ii)(A) 660.160(j)(2)(ii)(A) 660.216(e)(2) 660.216(e)(2)			679.51(e)(1)(ii)		
Failure to provide info, assistance or accommodation unlawful				679.7(g)(4)		697.7(c)(2)(viii)
Unlawful to oppose or harass observer or authorized officer	660.12(e)(1) 660.12(f)(1)			679.7(g)(1)	39.645(l)(4)	697.7(c)(2)(vi)

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Requirement	ESA 50 CFR 222	MMPA 50 CFR 229	MSA 50 CFR 600	CARIBBEAN GULFS. ATLANTIC 50 CFR 622	ATLANTIC HMS 50 CFR 635	NE USA 50 CFR 648
Unlawful to oppose, impede, impair, influence or interfere	229.3(b)	229.3(b)	600.725(t) 600.725(u)(1)	622.13(z)	635.71(a)(12)	648.14(e)(1)
Sexual harassment unlawful	229.3(b)	229.3(b)	600.725(o)			
Unlawful to assault, harm	229.3(b)	229.3(b)	600.725(t)	622.13(z)	635.71(a)(12)	648.14(e)(1)
Unlawful to tamper with or destroy observer equipment		229.3(d)	600.725(u)(2)			
Requiring observer to do crew duties prohibited						
USCG safety examination or equivalent			600.746(c)(2) 600.746(g) 600.725(p, q)			
Info or examination of safety equipment or accommodation			600.746(e)			
Pre deployment exam			600.746(f)			

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Requirement	WEST COAST 50 CFR 660	WESTERN PACIFIC 50 CFR 665	WCPFC 50 CFR 300	ALASKA EEZ 50 CFR 679	SHELLFISH ALASKA EEZ 5 AAC 39	ATLANTIC COASTAL 50 CFR 697
Unlawful to oppose, impede, impair, influence or interfere	660.12(e)(1) 660.12(e)(2) 660.12(3)(4)(ii) 660.12(3)(4)(iii) 660.12(f)(1) 660.12(f)(2) 660.12(f)(4)(ii) 660.12(f)(4)(iii) 660.12(f)(5) 660.12(f)(6)		300.215(v)(2)	679.7(g)(1) 679.7(g)(2)	39.645(l)(1)-(2)	697.7(c)(2)(vi)
Sexual harassment unlawful	660.12(e)(4)(i) 660.12(f)(1) 660.12(f)(4)(i)			679.7(g)(1)	39.645(l)(4)	
Unlawful to assault, harm	660.12(e)(1) 660.12(f)(1)			679.7(g)(1)		697.7(c)(2)(vi)
Unlawful to tamper with or destroy observer equipment	660.12(e)(3) 660.12(f)(1)			679.7(g)(3)	39.645(l)(3)	
Requiring observer to do crew duties prohibited	660.12(e)(7) 660.12(f)(8)			679.7(g)(8)		
USCG safety examination or equivalent	660.140(h)(2)(ii)(B) 660.150(j)(2)(ii)(B) 660.160(j)(2)(ii)(B) 660.216(e)(2) 660.216(e)(2)			679.51(e)(1)(ii)(B)(1)	39.645(i)(10)	
Info or examination of safety equipment or accommodation						
Pre deployment exam						

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Requirement	ESA 50 CFR 222	MMPA 50 CFR 229	MSA 50 CFR 600	CARIBBEAN GULFS. ATLANTIC 50 CFR 622	ATLANTIC HMS 50 CFR 635	NE USA 50 CFR 648
Vessels must provide trip notification as specified by NMFS (e.g., 48 hrs prior to trip)		229.7(c)(2)		622.27(b) 622.52(b) 622.178(b) 622.204(b) 622.244(b) 622.300(b)		
Notify observer in timely fashion when fishing operations to begin					635.7(e)(6)	
Observer trainees must complete a basic CPR/first aid course						648.11(h)(5)(vi)
Compensation of observers						648.11(h)(3)(viii)
(\$1M)(\$5M) min coverage for injury, liability, and accidental death						648.11(h)(3)(vii)
Providers submit EAP with application for approval						648.11(h)(3)(x)
Providers have Emergency Action Plan						648.11(h)(3)(x) 648.87(b)(4)(i)(J)
Providers have 24 hr on call assistance available for observers						648.11(h)(5)(v)
Providers have Emergency Action Plan						648.11(h)(3)(x) 648.87(b)(4)(i)(J)
Observers pass physical exam						

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Requirement	WEST COAST 50 CFR 660	WESTERN PACIFIC 50 CFR 665	WCPFC 50 CFR 300	ALASKA EEZ 50 CFR 679	SHELLFISH ALASKA EEZ 5 AAC 39	ATLANTIC COASTAL 50 CFR 697
Vessels must provide trip notification as specified by NMFS (e.g. 48 hrs prior to trip)		665.808(a)		679.51(a)(1)(ii)(B)		
Notify observer in timely fashion when fishing operations to begin						
Observer trainees must complete a basic CPR/first aid course						
Compensation of observers						
(\$1M)(\$5M) min coverage for injury, liability, and accidental death	660.17(f)(vii)(B) 660.140(h)(5)(xi)(C) 660.150(j)(4)(xi)(B)(3) 660.160(j)(4)(xi)(B)(3)			679.52(b)(11)(vi)		
Providers submit EAP with application for approval						
Providers have Emergency Action Plan						
Providers have 24 hr on call assistance available for observers				679.52(b)(10)		
Providers must report observer incidents w/in 24 hr				679.52(b)(11)(x)(A)		
Observers pass physical exam	660.17(f)(vii)(A) 660.140(h)(5)(xi)(B) 660.150(j)(4)(xi)(B)(3) 660.160(j)(4)(xi)(B)(3)			679.52(b)(11)(iii)		

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Requirement	ESA 50 CFR 222	MMPA 50 CFR 229	MSA 50 CFR 600	CARIBBEAN GULFS. ATLANTIC 50 CFR 622	ATLANTIC HMS 50 CFR 635	NE USA 50 CFR 648
Conduct of observer						
NMFS will reimburse vessel for lost fishing time arising from a seriously injured or seriously ill observer.						
Female observer provided adequate privacy						
Unlawful to impede observer from using VMS						
Various requirements for provider employment of observers/monitors						
Jurisdiction (State, Federal, High seas)	State, Federal	State, Federal, High seas	Federal	Federal	Federal, High seas	Federal

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Requirement	WEST COAST 50 CFR 660	WESTERN PACIFIC 50 CFR 665	WCPFC 50 CFR 300	ALASKA EEZ 50 CFR 679	SHELLFISH ALASKA EEZ 5 AAC 39	ATLANTIC COASTAL 50 CFR 697
Conduct of observer	660.17(f)(viii)(2)			679.52(b)(3)	39.143(j)	
NMFS will reimburse vessel for lost fishing time arising from a seriously injured or seriously ill observer.		665.808(i)(2)(ii)				
Female observer provided adequate privacy		665.808(j)				
Unlawful to impede observer from using VMS		665.15(s)		679.28(f)(3)(v)		
Various requirements for provider employment of observers/monitors	660.17-various 660.140(h)(5) 660.150(j)(4) 660.160(j)(4)			679.52(b)	39.144 39.645(j)	
Jurisdiction (State, Federal, High seas)	Federal	Federal, High seas	High Seas	Federal	State, Federal	Federal

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Appendix 4 - Recommended EAP contents as per Ajango *et al.* (2005, 2004a).

EAP needs:

1. Clear guidance from upper management on what the agency's role should be in the EAP (*e.g.*, primary facilitator of information gathering and actions or secondary documenter of information and action as instructed by primary entity).
2. Clear instructions regarding when the EAP should and should not be initiated (*i.e.*, what triggers the EAP).
3. EAPs of agency and observer providers should be coordinated.
4. EAP should be available to all involved parties.
5. Plan to ensure all personnel understand what their roles are during a variety of emergency situations including harassment, serious injury, death, ...).
6. Reporting structure must be understood by all parties (*e.g.*, who does observer call first, second, third in an emergency situation). There's a need to recognize that different personnel will have different priorities in terms of who they contact (*e.g.*, observer may call program, vessel may call USCG or their own home office, etc.).
7. Practice EAP response with realistic examples annually at a minimum. Observers and fishers are trained that drills are important to reacting effectively (correctly) in an emergency situation; the same concept holds true for EAPs.
8. Revise/revisit EAP annually.

EAPs should address the following:

1. Incident management (immediate)
 - a. Provide immediate aid to the person involved in the incident
 - b. Clarify leadership roles – who's responsible for doing what – include captain/crew, 2nd observer if applicable,
 - c. Is rescue (*i.e.*, extraction) necessary and who makes this decision (ROP, OLE, USCG)?
 - d. Identify means of initiating a rescue – who's initiating rescue, who's coming
 - e. Address miscellaneous responsibilities – dealing with the "uninjured"; employee response; if incident is fatal, what are state-specific requirements on things to do or not to do;
2. Crisis communication
 - a. Clarify roles (who's doing each of the below)
 - i. From site of injury/illness to provider supervisor, office of vessel, & USCG (if applicable)
 - ii. From medical person in charge to doctor/clinic

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- iii. Notify emergency contacts/next of kin
- iv. Notify insurance carrier
- v. Notify key constituents – NMFS in affected region, other service providers in affected region, industry reps?
- vi. Notify union or association (maybe as part of “media”?)
- vii. Provide information to uninjured employees/programs/providers/observers in other regions
- b. Keep detailed records (whose task is this?)
 - i. Compile/preserve all relevant paperwork , consents & medical history documents that were disseminated to or signed by employees
 - ii. Locate and preserve records of the purchase, maintenance and condition of relevant equipment that was being used at the time of the incident
 - iii. Compile and document information on the training regimen that was used to educate employees
 - iv. Compile and document information on the supervisor’s and trainer’s background and credentials
- 3. Long-term considerations
 - a. Provide ongoing and long-term support to the injured party and family members
 - b. Provide ongoing support to uninjured employees & others involved in incident
 - c. Conduct an investigation (what triggers an investigation? Which entity is responsible for an investigation under various circumstances?)
 - d. Educate key personnel and test the EAP
 - e. Evaluate EAP regularly
 - f. Generate an after accident report for program purposes, and make key findings public to ensure transparency and communicate incident status.

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Appendix 5 - Table of contents from the NEFSC Fishery Sampling Branch EAP.

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Associated documents:

- Template (example) for Initial Email Distribution List
- Sample Wrap Up Email Following an Incident
- NEFOP EAP After-Action Report template
- EAPs for all service providers
- Hurricane preparedness supplement
- Emergency contact scenario matrix

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Appendix 6 - Summary of medical/physical criteria among ROPs

†Yes, if assigned to a vessel fishing out of Trinidad (yellow fever required)

Region / Science Center	Observer Eligibility Standard	NEFSC	SEFSC	WCRO	PIRO	NWFSC	AFSC			
Item / Program		NEFOP / ASM / IFS	POP	SGOP / SBLOP	SOP / RFOP	WCROP	PIROP	WCGOP	A-SHOP	NPOP
Is a pre-employment physical exam required?	Yes	Yes; must have prior to training; done by personal physician and paid for by observer	Yes; must have prior to training; done by personal physician and paid for by observer (or WorkFit interview)			Yes; No cost to observer if done at provider's designated clinic.	Yes	Yes	Yes	Yes
Is a physical exam required for experienced observers?	-	Yes	WorkFit interview			Yes	Yes	Yes	Yes	Yes
Frequency requirement for physical exam?	-	Same cycle as refresher training (1.5 - 2 yr)	Not required in the contract; provider policy is on same cycle as refresher training (3yr max)			Annual	Annual	Annual	Annual	Annual
Are a position description & physical expectations provided to doctor/examiner? If yes, what risks & physical requirements are provided?		Yes; Made aware of the duties and the dangerous, remote, and rigorous nature of the work	Yes; however, info in NMFS contract may be slightly different than what is provided to WorkFit contractor			Yes; moving 200 lb carcass, strenuous, long hours, rolling, pitching, mental stress, confined living, isolation	Yes; seasickness, slippery deck, rough seas	Yes, NOAA Fisheries material provided	Yes, NOAA Fisheries material provided	Yes, NOAA Fisheries material provided

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Region / Science Center	Observer Eligibility Standard	NEFSC	SEFSC	WCRO	PIRO	NWFSC	AFSC			
Item / Program		NEFOP / ASM / IFS	POP	SGOP / SBLOP	SOP / RFOP	WCROP	PIROP	WCGOP	A-SHOP	NPOP
Is proof of physical required to be submitted to NMFS in the contract or permit process?	Yes	Yes-NEFOP; No-ASM, IFS	No	No	No	Yes	Yes	Yes	Yes	Yes
Who is above submitted to?		COR-NEFOP; Provider maintains document-ASM, IFS	Provider maintains document			Certification provided to program.	COR/ Operations Director	Program staff		Program staff
Vaccinations required or recommended? If so, which ones?		No	No†	No	No	No	No	No	No	No
Drug testing required? (Yes, No)		Must agree to employer random testing	No for pre-employment; Yes, may be required for injury/accident on board			Yes	Yes	No	No	No
Frequency of above? (Annual, Biennial, Random, Other: specify)		N/A				Pre-employment	If requested by USCG			Post-accident or for cause

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Appendix 7 - Example letter to physician describing the observer position, and physician statement certifying observer fit for duty.

Observer safety both while at sea and on land is the number one priority for NOAA Fisheries. Fatalities and injuries encountered while working on board commercial fishing vessels makes commercial fishing the third most dangerous occupation. While at sea, routine medical care is non-existent and there is limited emergency medical care available which can be days away. The crew depends on everyone on board, including the observer, to be able to respond to emergency situations. Therefore, we must ensure that observers are able to safely perform the essential functions of their work, and do not pose an unnecessary risk to the safe operation of the vessel.

The attached physician statement form is to certify that the patient is physically fit to work as an Observer on commercial fishing vessels serving offshore. The physician is expected to review the Fisheries Observer Health Questionnaire* and the document describing physical requirements and disqualifying conditions, and perform a physical exam. Ultimately, the physician will use the information from the observer's questionnaire and exam to determine an individual's ability to perform the essential functions of the job with or without accommodations.

Observers live and work in close proximity to fishers who may live in a foreign country or who do not follow a healthy lifestyle. Routine vaccinations for diseases that spread by person-to-person contact (*e.g.*, diphtheria, pertussis, measles, mumps, rubella, chicken pox, flu, etc.) are highly recommended. [Some programs may require an annual tuberculosis skin test.] In addition, vessels may be at sea for extended periods of time. Therefore, prescription medication may need to be purchased for a minimum of 90 days.

Additional risks include: potential chronic exposure to secondhand smoke or fuel fumes in the work and sleeping areas, long and irregular work hours, exposure to extreme temperatures (both hot and cold), and living on a moving platform.

In order to be considered fit for sea duty, observers must be able to meet the following physical guidelines, which enable them to meet the conditions and essential functions of their job:

1. Ability to repetitively properly lift and carry 50 pounds and occasionally drag 200-lb carcasses across the deck where appropriate.
2. Ability to step over a 24" high door sill.
3. Ability to swim 100 meters (tested during safety training)
4. Ability to swim 25 meters in an immersion suit (tested during safety training)
5. Ability to tread water for three minutes (tested during safety training)

*Standardized form supplied by the ROP and completed by the observer

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6. Ability to don an immersion suit in 60 seconds or less (tested during safety training)
7. Ability to perform various water survival skills i.e. boarding life raft, cold water skills, etc. (tested during safety training)
8. Ability to ascend and descend steep ladders to and from fishing boats at the docks and on board.
9. Ability to manage chronic motion sickness
10. Ability to live and work in confined quarters for extended periods.
11. Ability to climb across boats, over fishing gear, and atop wheelhouses to get to a docked vessel.
12. Ability to tolerate irregular meals, sometimes with non-traditional food, cooked in non-traditional ways.
13. Ability to tolerate irregular or unpredictable work and sleep schedules
14. Ability to tolerate living on a boat with limited sanitary and/or washing facilities.
15. Ability to tolerate being subjected to cigarette smoke and diesel fumes in the working and sleeping areas.
16. Ability to repetitively bend and stoop
17. Ability to work continuously while standing
18. Being at-sea for up to two months at a time.

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Example physician statement certifying observer fit for duty

The purpose of this statement is to confirm that I, a licensed physician in the state of _____ examined _____, an employee of _____ on the date noted below.

Prior to the examination, I was made aware of the physical requirements and duties of the observer and the dangerous, remote and rigorous nature of the job. I was provided with a health questionnaire completed by the employee and have read the document "PHYSICAL STANDARDS FOR OBSERVERS" which includes disqualifying conditions.

He/she does not have any health problems or conditions that would jeopardize his/her safety or the safety of others while deployed as an observer. He/she does not have any health problems or conditions that would prevent him/her from performing his/her duties satisfactorily.

Physician's Signature

Date

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Appendix 8 - Example physical standards for observers (modified from NOAA guidelines for ship going personnel including scientists on research vessels (OMAO 2003)).

Disclaimer: No medical professionals participated in the development of these physical standards. Any part or version of the document to be utilized would require review by medical professionals prior to adoption.

Example

PHYSICAL STANDARDS FOR OBSERVERS

- 1) General..... X
- 2) Authority for Standards X
- 3) Disqualifying Conditions X
- 4) Disqualifications..... X
- 5) Functional Requirements..... X

NOTE: These standards apply to seagoing observers and personnel with similar duties such as monitors and sea samplers regardless of their official position title.

1) GENERAL

- a) Medical standards are provided for the uniform interpretation of qualifications for: initial entry, retention, and assignment to observer duties under NOAA authority. No person shall be employed for shipboard duties until physically examined by a licensed physician not more than 12 months prior to the end of the observer training and found to be physically capable of serving as an observer. Documentation must be provided to the program prior to the observer candidate's completion of observer training (NOAA Fisheries, 2007; 2.4).
- b) These standards are intended to preclude acceptance of individuals who would be unable to perform assigned tasks or whose conditions are likely to be aggravated by sea duty.

2) AUTHORITY FOR STANDARDS

NMFS has developed these standards through comprehensive review of functional requirements and environmental factors associated with fisheries observers. These standards are subject to change to meet the needs of NOAA.

3) DISQUALIFYING CONDITIONS

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Causes for disqualification are listed unless otherwise specified:

a) Temporary Condition

- i) Pregnancy in 2nd or 3rd trimester. For first trimester, determination for fitness of duty made by physician.

b) Chronic Condition

- i) Any chronic condition which affects job performance, is progressive, or in the physician's opinion may be worsened by the individual's employment; any condition which poses a threat to the health and safety of the individual, others on board, or the vessel.
- ii) Conditions which require treatment beyond the capability of the facilities and personnel aboard the vessel.
- iii) Communicable Diseases. The presence of a communicable disease may not, in itself, be disqualifying. The physician's determination of the likelihood of the transmission to other crew members will govern fitness for duty.
- iv) Immunizations. Observers must be vaccinated for tetanus, influenza and other communicable diseases as determined by the observer program.
- v) Other Factors. Consideration will be given to the individual's suitability in terms of the vessel's operating area (*e.g.*, climate, length of trip, distance offshore).

c) Infections and Parasitic Diseases

- i) Fungus Infections. Fungus infections, systemic or superficial, if extensive and not amenable to treatment (*e.g.*, *Mycotic infections of internal organs including coccidiomycosis, histoplasmosis and actinomycosis*).
- ii) Hepatitis. Hepatitis within the preceding 6 months or persistence of symptoms after a reasonable period of time with impaired liver function.
- iii) Hansen's Disease. Active Hansen's Disease or residuals that preclude functional performance.
- iv) Parasitic Infestations. Amebiasis, schistosomiasis, trypanosomiasis, hookworm associated with anemia, malnutrition and other similar worm or animal parasitic infestations including their carrier states until treated.

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- v) Residuals. Residuals of tropical fevers and various parasitic or protozoal infestations which, in the opinion of the medical examiner, preclude the satisfactory performance of job requirements.
- vi) Tuberculosis: All observers must have a test for tuberculosis every 12 months.
 - (1) Active Tuberculosis. Active tuberculosis in any form or locations and of any degree or extent.
 - (2) Pulmonary Tuberculosis. A history of pulmonary tuberculosis clinically active within the past 3 years. Evidence of reinfection active or inactive.
- vii) Sexually Transmitted Diseases:
 - (1) Active Infections. Any active sexually transmitted infection, acute or chronic or any resulting active infection process.
 - (2) Residuals. Complications and permanent residuals of sexually transmitted disease, if progressive or if such nature as to interfere with the satisfactory performance of duty.
- viii) Vermin Infestation. As a general rule, applicants who are extensively infested with vermin and filthy in person and clothing shall be rejected.
- ix) Other. Any communicable disease in its communicable or carrier stage is disqualifying until treated and no longer communicable.

d) Malignant Diseases

- i) Benign Tumors. Benign tumors which interfere with the functional job requirements or which would be aggravated by job required protective clothing.
- ii) Malignant Diseases and Tumors:
 - (1) Diseases. Current malignant diseases of all kinds in any location.
 - (2) Tumors. History of malignant tumors chemically or surgically treated will be determined by the physician for Fitness for Duty.

e) Endocrine Nutritional and Metabolic Diseases

- i) Addison's Disease
- ii) Adiposogenital Dystrophy. Froehlich's Syndrome.
- iii) Diabetes Insipidus and inappropriate antidiuretic hormone (ADH) Syndrome.

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- iv) Adult Onset Diabetes Mellitus unless well controlled with diet and/or medication, as determined by the physician with information from the program on potential diet limitations onboard fishing vessels.
 - v) Active Pituitary or Adrenal Dysfunction
 - vi) Goiter. Toxic goiter, thyrotoxicosis, simple goiter with pressure symptoms or thyroid adenoma with pressure symptoms. Untreated hypothyroidism or hyperthyroidism.
 - vii) Gout. Recurrently symptomatic.
 - viii) Hyperinsulinism. Symptomatic hyperinsulinism.
 - ix) Parathyroidism. Hyperparathyroidism and hypoparathyroidism when the diagnosis is supported by adequate laboratory studies.
 - x) Hypopituitarism. Severe hypopituitarism.
 - xi) Nutritional Deficiency. Nutritional deficiency diseases (including sprue, beriberi, pellagra and scurvy) and vitamin disorders.
 - xii) Pancreatitis. Current or prior history of pancreatitis.
- f) Diseases of Blood and Blood Forming Organs**
- i) Anemia. Decreased Hematocrit, Hemoglobin, RBC count or morphology and RBC indices
 - ii) Blood Loss Anemia. Blood loss anemia until both condition and basic cause are corrected.
 - iii) Iron Deficiency Anemia. Iron Deficiency anemia until both condition and basic cause are corrected.
 - iv) Untreated Pernicious Anemia
 - v) Active Hemolytic Anemia. Abnormal destruction of RBCs, faulty RBC construction. hereditary hemolytic anemia, thalassemia major, and sickle cell anemia.
 - vi) Refractory Anemia. Primary refractory anemia, aplastic anemia or DiGuglielmo's syndrome.
 - vii) Hemorrhagic States. Hemorrhagic states due to changes in coagulation system (hemophilia, etc.), platelet deficiency, or vascular instability.

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- viii) Leukopenia. Chronic or recurrent leukopenia associated with increased susceptibility to infection.
- ix) Myeloproliferative Disease. Myeloproliferative disease (including leukemia, myelofibrosis, megakaryocytic myelosis, polycythemia vera and DiGuglielmo's disease)
- x) Splenomegaly.
- xi) Thromboembolic conditions unless well controlled with medication, as determined by the physician with information from the program.
- xii) Purpuras. Other than benign with no underlying disease.
- xiii) Hemoglobinopathies. Waldenstroms, Heavy Chain Disease, immunological dysfunction and other dyscrasia.

g) **Mental Disorders**

- i) Drug Addiction. Physiological or psychological addiction, untreated or treatment failure. Refer to RDHS for final determination.
- ii) Use of Prescription Drugs. Being under the influence of an unprescribed narcotic, barbiturate, amphetamine, hallucinogen or alcohol at the time of examination.
- iii) Use of Controlled Substances. Having used an unprescribed controlled substance, Schedule 1 or 2, other than marijuana within the preceding year.
- iv) Substance Abuse. Having a pattern of using a drug or chemical substance including marijuana or alcohol.
- v) Current Use of Prescribed Medications. Current use of or need to use the following medications:
 - (1) Methadone. Methadone or a related drug.
 - (2) Antabuse. Disulfiram (Antabuse) or a related drug.
- vi) Medical Conditions Requiring Mood Modifiers. Any diagnosis requiring the continued use of any of the following medications:
 - (1) Neuroleptic Drugs. Phenothiazines, butyrophenones and related drugs.
 - (2) Antidepressants. Tri-cyclics, MAO inhibitors, lithium and related drugs unless well controlled, as determined by the physician with information from the program.

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- (3) Anti-anxiety Drugs. Barbiturates, benzodiazepines and related drugs
 - (4) Psychotropic Drugs. Any psychotropic drugs.
 - vii) Lost Time Due to Psychiatric Illness. Any lost time due to psychiatric illness shall be considered disqualifying unless adequate documentation supports the transient and nonrecurring nature of the illness.
 - viii) Affective Disorders. History of schizophrenic or major affective disorder or psychotic disorder.
 - ix) Somnambulism. Sleepwalking after age 12.
 - x) Mental Retardation. Obvious mental retardation as evidenced by inability to comprehend and/or execute the ordinary activities of the physical examination.
 - xi) Disturbances of Personality. Demonstrated by gross inappropriate behavior during the course of the physical examination and/or socially unacceptable behavior displayed toward the examining personnel (*i.e., unwarranted hostility, aggressive behavior, abusiveness or withdrawal (in group setting)*).
 - xii) Previous Aggressive Behavior. Evidence of previous aggressive behavior (*i.e., multiple knife or gunshot wounds*) without satisfactory explanation.
 - xiii) Conversion Disorders. Hysteria, Globus hystericus, etc.
 - xiv) Bed Wetting. Enuresis, habitual and persistent.
 - xv) Stress Related Incapacitation.
 - xvi) Suicidal Behavior. Suicidal behavior or attempts.
 - xvii) Eating Disorders. Anorexia, bulimia or addiction.
 - xviii) Deterioration of Brain Function. Evidence of deterioration of brain function in any of its spheres (*intelligence, judgment, perception, behavior, motor control, sensory function, etc.*).
- h) Diseases of the Nervous System and Sense Organs**
- i) Degenerative Disorders. Degenerative disorders (*multiple sclerosis, encephalomyelitis, athetosis, muscular atrophies and dystrophies of any type, cerebral arteriosclerosis, ALS, etc.*).

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- ii) Paroxysmal Convulsive Disorders. Any convulsive disorder resulting in an altered state of consciousness, regardless of control by medication including blackouts, seizures, delirium tremens, drug abuse-induced and other mental syndromes associated with alcoholism or alcohol related nutritional deficiencies (*e.g, Wernicke-Korsakoff syndrome*). All forms of partial complex seizures or history there of except for seizures associated with toxic states or fever during childhood up to the age of 12. Grand mal, petit mal and partial complex seizures, syncope or narcolepsy regardless of control. An individual who has been seizure-free without medication for 2 years may qualify if fitness for observer duty is determined by the physician.
- iii) Headaches. Severe cluster headaches and migraine headaches if determined to be disqualifying by the physician.
- iv) Peripheral Nerves. Peripheral nerve disorder (*chronic or recurrent neuritis or neuralgia*) of such intensity that it is periodically incapacitating.
- v) Neuralgia and Paralysis. Persistent recurrence of incapacitating neuralgia or paralysis.
- vi) Sciatica. Pain in lower back or leg which is intractable and disabling to the degree of interfering with walking, running and weight bearing.
- vii) Thoracic Outlet Syndromes. Cervical ribs if symptomatic, scalenus anticus, etc if determined to be disqualifying by the physician.
- viii) Residual Effects of Infection. Residual effects of infection, trauma or paralysis that clearly impairs the individual's ability to perform shipboard duties efficiently and safely.
- ix) Spontaneous Subarachnoid Hemorrhage. History of spontaneous subarachnoid hemorrhage, unless cause has been determined as unlikely to recur and there is no residual neurological deficit.
- x) Cerebrovascular Disorders and Diseases.

i) The Eyes

The following guidelines provide a reference to evaluate an individual's ability to effectively and safely perform the visual tasks of a position without endangering him/herself, the crew, or the safety of the ship and to be able to function under all shipboard emergency conditions.

- i) Corrections. Correction will be made with standard eye glasses. A degree of refractive error in excess of over a plus or minus 8.00 is disqualifying. In addition to these limitations, the difference in the refractive errors in any meridian of the two eyes (*anisometropia*) may not exceed 3.5 diopters.

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- ii) Monocular Vision. Individuals presenting with monocular vision will meet the minimum standard of 20/30 best corrected vision in the good eye and undergo complete ophthalmological evaluation prior to initial employment and as part of all periodic physical examination. Fitness determination is on a case-by-case basis. Evidence of monocular depth perception and matters related to safety are of particular concern.
- iii) Color Perception. Applicants will be tested for color perception using either Farnsworth Lantern Test or Pseudo-Isochromatic plates (*Dvorine*) PIP. Any deficiency may be disqualifying as determined by the program.
- iv) Disqualifying Diseases/Conditions. The following eye conditions are disqualifying.
 - (1) Glaucoma, Primary or secondary. A diagnosis of glaucoma requires definitive treatment and will be evaluated on a case-by-case basis. Untreated narrow angle glaucoma is a cause for rejection.
 - (2) Chronic Conjunctivitis or Xerophthalmia.
 - (3) Pterygium. Encroaching the cornea and decreasing visual acuity or visual field.
 - (4) Abnormalities of the Eyelids. Including complete or extensive destruction of the eyelids, disfiguring cicatrices, adhesions of the lids to each other or to the ocular globe, scars, inversion or eversion of the eyelids, lagophthalmos, trichiasis, ptosis, blepharospasm, or chronic blepharitis.
 - (5) Abnormalities of the Tear Ducts. Including epiphora, chronic dacryocystitis or lachrymal fistula.
 - (6) Abnormalities of the Corneas. Including chronic keratitis, ulcers of the cornea, staphyloma or corneal opacities encroaching on the pupillary area and reducing the visual acuity below the standard.
 - (7) Abnormalities of the Iris. Including irregularities in the form of the iris or anterior or posterior synechiae sufficient to reduce the visual acuity below the standard. Extensive coloboma of the choroid or iris, absence of pigment (albino), recurrent iritis or extensive or progressive choroiditis of any degree.
 - (8) Cataracts. Opacities of the lens (cataracts) or its capsule sufficient to reduce visual acuity below standard or progressive cataract of any degree.
 - (9) Persons who have aphakia as a result of cataract surgery.

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- (10) Abnormalities of the Retina. Retinitis, macular degeneration, detachment of the retina, neuroretinitis, optic neuritis, atrophy of the optic nerve or a history of detached retina.
 - (11) Abnormalities of Muscle Control of the Eyes. Including loss or disorganization of either eye, pronounced exophthalmos, pronounced nystagmus or well-marked strabismus.
 - (12) Diplopia. Including any abnormal condition of the eye due to disease of the brain
 - (13) Malignant Tumors. Including malignant tumors of lids or eyeballs.
- j) The Ears**

i) External Ears and Auditory Canal

- (1)** Abnormalities of the External Canal. Including atresia or severe stenosis of the external auditory canal, if complicated by hearing loss and frequent infections; severe recurrent external otitis either acute or chronic and tumors of the external auditory canal.
 - (2)** Abnormalities of the Mastoids. Including mastoid fistula, acute or chronic mastoiditis.
- ii) Abnormalities of the Middle Ear.** Including the following conditions:

- (1)** Meniere's Syndrome
- (2)** Otitis Media. Including recurrent, acute or chronic serous otitis media indicated by grayish, thickened drum(s) and recurrent acute or chronic suppurative otitis media.
- (3)** Adhesive Otitis Media. Adhesive otitis media associated with hearing loss by audiometric test of 25 dB or more average loss for the speech frequencies (*500, 1000 and 2000 cycles per second*) in either ear, regardless of the hearing level in the other ear, until condition resolves.
- (4)** Abnormalities of the Tympanic Membrane. Including open marginal or central perforations of the tympanic membrane, otic perforation in which cholesteatoma is present or suspected and severe scarring of the tympanic membrane associated with hearing loss below entry standard of hearing.
- (5)** Motion Sickness. Recurrent, chronic motion sickness rendering the individual incapable of performing his/her duties.

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- iii) Hearing Standards. Table 1-1 contains the minimum acceptable pure tone air audiometric hearing levels for employment.

TABLE 1-1

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

Frequency (HZ)	Decibel (dB)
500	Maximum average level in these three frequencies not greater than 30 dB, with no level greater than 35 dB.
1000	
2000	
3000	45
4000	65

Note: Marginal cases may require testing by masking.

k) **Diseases of the Circulatory System.**

- i) Diseases or Defects. Any disease or defect resulting in an American Heart Association (AHA) classification of II, III or IV is considered disqualifying. Class I is disqualifying if determined by the physician. The satisfactory completion of a standard stress test without symptoms or signs is considered equivalency of functional capability. Circulatory diseases will be evaluated against the following standards.
- (1) Class I. The patient has cardiac disease but no resulting limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea or angina pain.
 - (2) Class II. The patient has cardiac disease resulting in slight limitation of physical activity. The patient is comfortable at rest and in the performance of ordinary, light, daily activities. Greater than ordinary physical activity, such as heavy physical exertion, results in fatigue, palpitation, dyspnea or angina pain.
 - (3) Class III. The patient has cardiac disease resulting in marked limitation of physical. The patient is comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea or angina pain.
 - (4) Class IV. The patient has cardiac disease resulting in inability to carry on any physical activity without discomfort. Symptoms of inadequate cardiac output, pulmonary congestion, systemic congestion or of angina syndrome may be present, even at rest. If any physical activity is undertaken, discomfort is increased.

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- ii) Abnormalities. Minor asymptomatic abnormalities are acceptable. Small intraventricular and atrial septal defects may be considered on a case-by-case basis.
 - iii) Aneurysm.
 - iv) Arrhythmias. Major cardiac arrhythmia or irregularity; history of paroxysmal tachycardia or atrial fibrillation or flutter; electrocardiographic evidence of atrial tachycardia, flutter or ventricular tachycardia or fibrillation, regardless of control by medication or insertion of a pacemaker.
 - v) Circulatory Instability. Marked circulatory instability as indicated by orthostatic hypotension, persistent tachycardia, severe peripheral vasomotor disturbances and sympathetic atonia.
 - vi) Claudication. Intermittent claudication.
 - vii) Adverse History. History or evidence of pericarditis, endocarditis, myocarditis, valvular heart disease (including patient with prosthetic heart valves), angina pectoris, coronary occlusion or coronary atherosclerosis, except for history of a single acute idiopathic or coxsackie pericarditis with no residuals.
 - viii) Hypertension. Arterial hypertension, essential hypertension or pulmonary hypertension (hypertensive vascular disease).
 - (1) Diagnosis. Hypertension evident by preponderant (majority) readings of 140 mm or more systolic or a preponderant diastolic pressure of over 90 mm is cause for rejection. Pressure may be taken periodically for 3 days to determine if readings are consistent.
- NOTE: It is essential that the blood pressure readings be taken with the proper width cuff. The thick, very muscular arm as well as an obese arm will render a falsely elevated blood pressure reading if a wider cuff is not used.
- (2) Controlled Hypertension. Hypertension controlled over a 3-month period to 140/90 or under commonly available, low dose medication with no evidence of eye ground changes, cardiac enlargement or kidney involvement may be considered not disqualifying.
 - ix) Hypertrophy. Hypertrophy or dilation of the heart. Care should be taken to distinguish abnormal enlargement from increased diastolic filling as seen in the well-conditioned subject with a sinus bradycardia.
 - x) Cardiomyopathy.
 - xi) Hypotension. Arterial hypotension if it is causing or has caused symptoms (*i.e.*, recurrent syncopal episodes).

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- xii) Vascular Abnormalities. Congenital or acquired lesions of the aorta and major vessels including syphilitic aortitis, demonstrable atherosclerosis which interferes with circulation, congenital or acquired dilation of the aorta and pronounced dilation of the main pulmonary artery.
 - xiii) Rheumatic Fever. History of rheumatic fever or chorea.
 - xiv) Cardiac Surgery. Any cardiac surgery within 1 year other than pericardial and correction of congenital atrial ventricular septal defects. (Review operative summary.)
 - xv) Tachycardia. History of paroxysmal tachycardia. Persistent tachycardia with a resting pulse of 100 or more, regardless of cause.
 - xvi) Thrombophlebitis. History of thrombophlebitis with persistent thrombus or evidence of circulatory obstruction or deep venous incompetence in the involved veins. Recurrent thrombophlebitis.
 - xvii) Varicose Veins. Varicose veins, if more than mild or if associated with edema, skin ulceration or residual scars from ulceration.
 - xviii) Vascular Diseases. Peripheral vascular disease including Raynaud's erythromelalgia, arteriosclerotic and diabetic vascular diseases; acrocyanosis. Special tests should be employed in doubtful cases.
- l) Diseases of the Respiratory System (The Nose, Sinuses, Pharynx)**
- i) Deformities. Loss of the nose, malformation or deformities interfering with speech or breathing, extensive ulcerations affecting use of respiratory protection equipment and atresia or stenosis of choana if symptomatic.
 - ii) Obstruction. Nasal obstruction due to septal deviation, hypertrophic rhinitis or other causes particularly if sufficient to produce mouth breathing, require chronic care and/or interfere with the wearing of respiratory protection equipment.
 - iii) Perforation. Perforated nasal septum causing local pathology/symptoms or likelihood of doing so, associated with interference of function, ulceration or crusting and when progressive.
 - iv) Inflammation. Atrophic rhinitis, Sjogrens Syndrome, acute or chronic inflammation of the accessory sinuses; acute allergic rhinitis, if in the opinion of the examiner, it is considered incapacitating, associated with hyperplastic sinusitis, nasal polyps or a history thereof, and is likely to frequently recur or cause more than minimal loss of time from duty.

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- v) Laryngeal Paralysis. Laryngeal paralysis, sensory or motor, due to any cause, with history of recurrent aspiration pneumonitis or aphonia.
 - vi) Pharynx. Organic disease such as neoplasm, polyps, granuloma, ulceration and chronic laryngitis/pharyngitis not amenable to therapy.
 - vii) Sinusitis. Chronic sinusitis if evident by chronic purulent nasal discharge, large nasal polyps, hyperplastic changes of the nasal tissues, other signs and symptoms.
 - viii) Anosmia. If unable to detect fumes and smoke.
 - ix) Tonsils. Diseased and or enlarged tonsils
 - x) Trachea. Current tracheostomy or tracheal fistula.
 - xi) Sleep Apnea
- m) **The Bronchi**
- i) Bronchitis. Acute bronchitis until the condition is cured. Chronic bronchitis with evidence of pulmonary function disturbance or if more than mild and does not respond to therapy (FEV = 70).
 - ii) Asthma. Asthma or history of asthma including "childhood" asthma, unless there is a trustworthy history of freedom from attacks since the age of 12 and provided that attacks prior to that time were not severe or prolonged and did not require extensive therapy.
 - iii) Documented Bronchiectasis
 - iv) Fistula. Untreated bronchopleural fistula.
- n) **The Lungs and Pleura**
- i) Abscess. Chronic abscess of the lung.
 - ii) Bleb Formation. See section 5.3(m)(14).
 - iii) Calcification. Extensive calcification, evident by x-ray, of the pleura, lung parenchyma or hilum, of questionable stability or of such size and extent as to interfere with pulmonary function.
 - iv) Fistula. Untreated bronchopleural fistula.
 - v) Chronic Obstructive Pulmonary Disease (COPD)/Emphysema. Complicated and pulmonary function tests (PFTs) below limits.

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- vi) Cysts. Cystic disease of the lung. Hydatid or echinococcus cysts of the lung.
 - vii) Foreign Body. Foreign body in the lung or mediastinum causing symptoms or active inflammatory reaction.
 - viii) Hydrothorax or Hemothorax. Current or history of hydrothorax or hemothorax determined on a case-by-case basis.
 - ix) Infiltration. Pulmonary infiltration of undetermined origin.
 - x) Lobectomy. History of lobectomy for a non-tuberculous, nonmalignant lesion with residual pulmonary disease. Removal of more than one lobe is disqualifying regardless of the absence of residuals.
 - xi) Pleurisy. Acute or chronic pleurisy; pleurisy with effusion of undetermined origin or a history within the preceding 5 years. Acute fibrinous pleurisy associated with acute nontuberculous infection.
 - xii) Pleuritis. Chronic fibrinous pleurisy sufficient to interfere with pulmonary function or obscure the lung field in an x-ray. X-ray evidence of fibrous or serofibrinous pleurisy, except moderate diaphragmatic adhesions with or without blunting or obliteration of the costophrenic angle.
 - xiii) Pneumoconiosis. Pneumoconiosis; extensive pulmonary fibrosis from any cause, producing dyspnea on exertion; includes asbestosis.
 - xiv) Pneumothorax. Recurrent spontaneous pneumothorax within the preceding 3 years, lacking pulmonary evaluation and/or having evidence of blebs on x-ray.
 - xv) Pulmonary Functions. If less than 70 pulmonary function parameter and/or blebs on x-ray will require full evaluation showing acceptable saturations and compensated function.
 - xvi) Sarcoidosis. Symptomatic compromised pulmonary function and less than 3 years since successful treatment.
- o) **The Chest Wall and Breast**
- i) Contractions. Pronounced contractions or markedly limited mobility of the chest wall following pleurisy or empyema.
 - ii) Empyema. Acute or chronic empyema, residual sacculation or unhealed sinuses of the chest wall following surgery. Scars of old operations for empyema unless the

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- examiner is assured that respiratory function is entirely normal and condition is not expected to recur
- iii) Foreign Body. Foreign body of the chest wall causing any symptoms.
 - iv) Fractures. Recent fracture of ribs, sternum, clavicle or scapula; malunion or non-union that compromises functional requirements.
 - v) Lesions. Traumatic lesions of the chest or its contents.
 - vi) Mastitis. Acute mastitis; chronic cystic mastitis, if more than mild or new mass in breast until defined and evaluated under benign or malignant tumor specifications.
 - vii) Pneumonia. Acute non-tuberculous pneumonia.
 - viii) Sinuses. Unhealed sinuses of the chest wall.
- p) **Conditions of the Mouth and Esophagus**
- i) The Teeth and Jaws. Any dental condition which will incapacitate the individual. The individual must be able to subsist on regular fare.
 - (1) Malocclusion. Malocclusion that interferes with satisfactory incisal and/or masticatory function or proper phonation.
 - (2) Oral Tissues. Infections or chronic disease of the soft tissue of the oral cavity.
 - (3) Perforation. Perforations from the oral cavity into the nasal cavity or maxillary sinus.
 - (4) Periodontoclasia. Advanced and extensive dental caries or degeneration of the periodontum sufficient to preclude mastication.
 - (5) Prosthesis. Failure to have satisfactory prosthesis and restorations for suitable mastication of regular fare.
 - (6) Subluxation. Chronic subluxation of the mandible associated with pain not amendable to treatment.
 - (7) Temporomandibular Joint (TMJ) Syndrome. Chronic or recurrent, requiring constant medication.
 - ii) Conditions of the Soft Tissues of the Mouth and Throat:
 - (1) Adenoids. Adenoids interfering with respiration or associated with middle-ear disease.

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(2) Sleep Apnea

(3) Deformities

- (a) Lip. Harelip, unless adequately repaired; loss of the whole or large part of either lip; mutilations of the lips from wounds, burns or disease that interferes with speech and normal eating.
- (b) Palate. Perforation or extensive loss of substance or ulceration of the hard or soft palate to the pharynx paralysis of the soft palate.
- (c) Pharynx. Malformations or deformities of the pharynx of sufficient degree to interfere with function.
- (d) Tongue. Malformation, partial loss, atrophy or hypertrophy of the tongue; split or bifid tongue or adhesions of the tongue to the sides of the mouth interfering with mastication, speech, swallowing or which appears to be progressive.
- (e) Stomatitis. Marked stomatitis, ulcerations or severe leukoplakia
- (f) Salivary Fistula
- (g) Esophagus. Ulcerations, varices, achalasia or peptic esophagitis and other conditions of the esophagus if confirmed by appropriate x-ray or gastric examination. Hiatal hernia with history of significant symptoms.

q) **The Abdomen and Viscera**

- i) Abdominal Walls. Wounds, injuries, cicatrices or muscular ruptures of the abdominal wall sufficient to interfere with function. Sinuses of the abdominal wall.
- ii) The Liver, Spleen, and Pancreas:
 - (1) Cholecystectomy. Sequelae of cholecystectomy such as post operative stricture of the common bile duct; reforming of stones in hepatic or common bile ducts; incisional hernia or post-cholecystectomy syndrome when symptoms are so severe as to interfere with normal job performance or require medical attention.
 - (2) Cholecystitis. Acute, chronic or recurrent with or without cholelithiasis.
 - (3) Cirrhosis. Cirrhosis, regardless of the absence of manifestations such as jaundice, ascites or known esophageal varices; abnormal liver function tests with or without history of chronic alcoholism. (See sections 5.3b(2), Hepatitis and

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5.3p(2)(g), Jaundice.) Includes Gauchers, Hemochromatosis and Von Gierke's and Wilsons diseases.

- (4) Enlargement. Chronic enlargement of the liver or the spleen, if marked, until proven idiopathic.
 - (5) Fistula. Fistula or sinuses from visceral or other lesions.
 - (6) Diseases. Acute and chronic diseases of the liver and spleen.
 - (7) Jaundice. History of current jaundice.
 - (8) Splenectomy. Splenectomy (except when performed as the result of trauma or causes unrelated to disease of the spleen), hereditary spherocytosis or diseases involving the spleen at least 2 years post-operative.
 - (9) Pancreatitis. History of Pancreatitis.
- iii) The Stomach and Intestines:
- (1) Gastritis. Chronic severe hypertrophic gastritis.
 - (2) Ulcer. Symptomatic ulcer of the stomach or duodenum.
 - (3) Hernia. Hernia of any external variety. History of operation for hernia within the past 90 days.
 - (4) Diseases. Acute and chronic diseases of the stomach or intestine or a history thereof, including such diseases as regional ileitis, amyloidosis, Krohn's Disease, ulcerative colitis and diverticulitis, megacolon, regional enteritis, malabsorption syndromes, symptomatic diverticulosis and adult celiac disease. Irritable bowel with more than mild intensity and symptoms.
 - (5) Obstruction. Intestinal obstruction or history of more than one episode if either occurring during preceding five (5) years if resulting condition remains producing significant symptoms or requiring treatment.
 - (6) Peritonitis. Chronic peritonitis or peritoneal adhesions.
 - (7) Resections. Gastric or bowel resection, resection of peptic ulcer, gastroenterostomy with chronic sequelae and if less than 6 months, ileal bypass surgery.
 - (8) Scars. Abdominal scars, regardless of cause, which show hernial bulging or which interfere with movements. Scar pain, if severe or causing persistent or recurring

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complaints or is associated with disturbance of function of abdominal wall or contained viscera.

(9) Multiple Abdominal Surgeries. Including the lysis of adhesions.

iv) The Anus and Rectum:

(1) Fissure. Severe fissure of the anus or pruritus ani.

(2) Fistula. Fistula in ano, ischiorectal abscess.

(3) Hemorrhoids. External hemorrhoids sufficient size to produce marked symptoms. Internal hemorrhoids if large, accompanied by hemorrhage or protruding intermittently or constantly.

(4) Incontinence. Incontinence of feces.

(5) Proctitis. Chronic or recurrent.

(6) Stricture. Stricture or prolapse of the rectum.

r) **The Genitourinary System**

i) Female Genitourinary Conditions:

(1) Cysts. Current ovarian cysts if persistent and likely to require medical attention.

(2) Dysmenorrhea. Incapacitating to a degree which necessitates recurrent absences from routine activities.

(3) Endometriosis. Endometriosis or history thereof likely to require medical or surgical attention.

(4) Infections. Recurrent Bartholinitis, cervicitis, manifested by leukorrhea, oophoritis, salpingitis or skenitis.

(5) Menstrual Cycle. Irregularities of the menstrual cycle including menorrhagia, metrorrhagia, polymenorrhea, amenorrhea or severe menopausal symptoms.

(6) Uterus:

(a) Cervical Defects. Uncorrected or untreated cervical polyps or cervical ulcer.

(b) Endocervicitis. Endocervicitis if more than mild.

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(c) Uterine Dysplasia. Any PAP Smear results other than Class I. Any Class II or higher must be assessed by biopsy; a class II result is acceptable so long as the diagnosis is benign.

(7) Vagina. Acute or chronic vaginitis. Vaginal dysplasia, mucosal leukoplakia until biopsied and benign report. Cystocele, rectocele or procidentia.

(8) Vulva. Acute or chronic vulvitis. Leukoplakia, until biopsied and benign report.

ii) Genitourinary Defects of Males:

(1) Epispadias. Epispadias or hypospadias, if accompanied by recurrent or chronic infection of the urinary tract.

(2) Infantile Organs. Infantile genital organs, if interferes with urinary functions.

(3) Penis. Amputation of the penis, if the resulting stump is not sufficient to permit normal micturition without infection.

(4) Prostate. Hypertrophy, abscess or chronic infection of the prostate gland, with systemic symptoms and gross urinary retention.

(5) Testicles:

(a) Enlargement. Undiagnosed enlargement or mass of testicle or epididymis.

(b) Undescended Testicles.

(c) Orchitis. Chronic orchitis or epididymitis.

(d) Varicocele. Varicocele or hydrocele, if symptomatic.

iii) Genitourinary Defects Common to Both Sexes:

(1) Albuminuria. Proteinuria under normal activity (at least 48 hours post-strenuous exercise) if greater than 160 mg per 24 hours until assessed as not indicative of kidney or bladder disease.

(2) Calculi. Cystic or Renal calculi formation within the preceding 12 months.

(3) Cystitis. Acute or chronic cystitis.

(4) Hematuria. Hematuria, cylindruria or hemoglobinuria with other findings indicative of urinary tract disease.

s) Renal Conditions

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- i) Anomalies. Absence of one kidney or horse shoe kidney.
- ii) Renal Failure
- iii) Cystic. History of polycystic kidneys or pyonephrosis.
- iv) Hydronephrosis. Hydronephrosis or pyonephrosis.
- v) Nephritis. Acute or chronic nephritis.
- vi) Pyelitis. Pyelitis; pyelonephritis.
- vii) Porphyria. Methemoglobinuria.
- viii) Pyuria
- ix) Reiter's Syndrome
- x) Urethral Strictures
- xi) Urethritis. Acute or chronic urethritis.
- xii) Urinary Fistula
- xiii) Enuresis
- t) **Conditions of the Skin**
 - i) Acne. Severe pustular-cystic acne which would interfere with the wearing of protective clothing.
 - ii) Allergic Dermatoses. Severe or incapacitating.
 - iii) Cysts:
 - (1) Non-Pilonidal. Cysts, other than pilonidal, of such a size or location as to interfere with the normal wearing of protective clothing.
 - (2) Pilonidal. Symptomatic pilonidal cyst or sinus without surgery or with a history of prior surgical failure.
 - iv) Dermatitis:
 - (1) Atopic Dermatitis. History of incapacitating episodes of atopic dermatitis.
 - (2) Dermatitis Factitia

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- (3) Dermatitis Herpetiformis
 - v) Eczema. Severe eczema of long standing or which is resistant to treatment; allergic dermatosis, if severe.
 - vi) Epidermolysis Bullosa. Epidermolysis bullosa or pemphigus.
 - vii) Furunculosis. Extensive, recurrent or chronic furunculosis.
 - viii) Ichthyosis. Severe ichthyosis.
 - ix) Impetigo. Chronic impetigo, sycosis or carbuncle.
 - x) Lesions. Lupus vulgaris or other tuberculous skin lesions.
 - xi) Leukemia Cutis. Leukemia cutis, mycosis fungoides or Hodgkin's Disease.
 - xii) Lichen Planus. Chronic lichen planus if on a weight bearing surface.
 - xiii) Lupus Erythematosus. Lupus erythematosus or any other dermatosis aggravated by sunlight.
 - xiv) Psoriasis. Extensive psoriasis or history thereof.
 - xv) Scars. Scars which are so extensive, deep or adherent that they interfere with muscular movements or the wearing of safety equipment or show a tendency to break down and ulcerate
 - xvi) Scleroderma. Diffuse types of scleroderma
 - xvii) Tumors. Skin malignancies, melanoma, basal and squamous cell epitheliomas, nevi, vascular and other tumors if extensive, disfiguring or exposed to constant pressure or irritation. Benign tumors of such a size or location as to interfere with the normal wearing of safety equipment.
 - xviii) Recurrent Urticaria
 - xix) Warts. Plantar warts on weight-bearing areas that interfere with job function.
 - xx) Xanthoma. Xanthoma if disabling.
- u) **Musculoskeletal Conditions**
 - i) Orthopedic Hardware of Surgical Implants. Plates, pins, screws, etc., used in the body for the correction of fractures and congenital defects are not disqualifying if otherwise suitable; excludes medicinal and radiation emitting device implants.

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ii) The Head:

- (1) Abnormalities. Abnormalities which are apparently temporary in character resulting from recent injuries until a period of 6 months has elapsed. These include severe contusions and other wounds of the scalp and cerebral concussion.
- (2) Deformities. Deformities of the skull including depressions, exostosis, etc., of a degree which would prevent the wearing of safety headgear.
- (3) Depressions. Depressed fractures near central sulcus. Other depressed fractures or depressions, unless the examiner determines the defect is slight and the likelihood of aggravation is slight.
- (4) Loss of Bony Substance. Loss or congenital absence of the bony structure of the skull unless the examiner is certain the defect is slight and will cause no future trouble. The following are disqualifying:
 - (a) Area exceeds 25 square centimeters and overlies the motor, cortex or dural sinus; unless covered with a permanent suitable, practical plate or protective device
 - (b) There is evidence of bone degeneration, disease or other complications of such a defect.
- (5) Ossification. Imperfect ossification of the cranial bones or persistence of the anterior fontanelle.

iii) Maxillary Bones and Mandible:

- (1) Fractures. Nonunion fractures of the maxillary bones.
- (2) Deformities. Deformities of either maxillary bone interfering with mastication or speech.
- (3) Cysts. Extensive exostosis, necrosis or osseous cysts.
- (4) Arthritis. Chronic arthritis of the temporomandibular articulation.
- (5) Dislocations. Badly reduced or recurrent dislocations of the mandible; ankylosis complete or partial, precluding a suitable degree of mastication.

iv) Conditions of the Neck:

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- (1) Adenitis. Cervical adenitis of other than benign origin, etc.
 - (2) Fistula. Fistula or chronic draining of any type. Tracheal openings, thyroglossal or cervical fistulae.
 - (3) Motility. Significantly restricted range of motion.
 - (4) Torticollis. Chronic torticollis, non-spastic contraction of the muscles of the neck to the extent that it interferes with wearing equipment. Chronic and persistent spastic contractions of the muscles of the neck.
- v) The Extremities:
- (1) Amputation. Amputation of any portion of a limb or resection of a joint or absence of the toes which would preclude the ability to run, walk or balance.
 - (2) Ankylosis. Complete or partial ankylosis, that interferes with required function or has residual, incapacitating symptoms.
 - (3) Arthritis. Active or subacute arthritis.
 - (4) Atrophy. Atrophy of the muscles of any part, contracture or muscle paralysis if progressive or of sufficient degree to interfere with function.
 - (5) Bone Curvature. Excessive curvature of a long bone, which precludes normal job performance.
 - (6) Joint Derangement. Chronic synovitis; floating or torn cartilage; osteochondritis dissecans or other internal derangement in a joint.
 - (7) Dislocations. Old dislocations, unreduced or partially reduced. Reduced dislocations with incomplete restoration of function. History of recurrent dislocations of major joints with incomplete restoration of function. History of current dislocations of major joints. Related articular ligaments permitting frequent voluntary or involuntary displacement (Instabilities-Subluxation).
 - (8) Osteomyelitis. Active or recurrent osteomyelitis of any bone. History of a single attack of osteomyelitis unless successfully treated 3 or more years previously without subsequent recurrence of/or disqualifying sequelae as demonstrated by both clinical and x-ray evidence. History of an attack of hematogenous osteomyelitis.
 - (9) Injury. Injury of a bone or joint within the preceding 6 weeks with fracture or dislocation of more than a minor nature. Healed injury of the upper or lower extremities with residual weakness or symptoms; severe sprains.

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- (10) Fractures. Ununited fractures, malunited fractures and fractures with shortening or callus formation; united fractures with incomplete restoration of function.
 - (11) Hand and Fingers. Any condition of sufficient severity to limit the ability to perform assigned duties.
 - (a) Absence or Loss. Absence of a hand or any portion thereof. Must have ability to grasp ladder rungs and tie life jackets, etc.
 - (b) Flexion. Permanent flexion or extension of one or more fingers, as well as irremediable loss of motion of these parts.
 - (c) Mutilation. Mutilation of either thumb to such an extent as to produce material loss of flexion, apposition or strength of member and ability to grasp.
 - (12) Lower Extremities. Any condition severe enough that would or could prevent the fulfillment of job requirements including walking, climbing, lifting or carrying.
- vi) The Spine and Other Musculoskeletal:
- (1) Abscess. Abscess of the spinal column or its vicinity.
 - (2) Arthritis. Active arthritic processes from any cause, partial or complete.
 - (3) Ankylosing Spondylitis
 - (4) Chronic Coccydynia. Coccydynia of a chronic type associated with acute angulation of the coccyx.
 - (5) Curvature. Deviation or curvature of spine from normal alignment. Congenital malfunction of structure or function (scoliosis, kyphosis or lordosis, spondylolisthesis, spondylolysis, etc.). Include angulation and ROM measurements in exam report. Curvature must affect the following:
 - (a) . Mobility and weight bearing power is poor.
 - (b) Function. Normal function is impaired or has a high likelihood of being impaired.
 - (c) Symptomatic

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- (6) Myositis. Severe, chronic myositis or fibrositis.
 - (7) Surgery. Surgical procedures involving joints unless at least 6 months since the operation, full function has been restored and the joint is clinically stable.
 - (8) Fractures. Fracture or dislocation of the vertebrae, presenting with adverse residuals including significant wedging, malalignment or abnormal neurological findings to a degree which, preclude satisfactory performance of occupational requirements at the determination of the examiner.
 - (9) Abnormal Gait. Abnormal gait that precludes functional requirements.
 - (10) Low Back Pain. History of chronic recurrent low-back pain, especially when intractable and disabling to the degree of interfering with walking, running and weight-bearing or the ability to perform functional job requirements.
 - (11) Pelvis
 - (a) Deformities. Malformation and deformities of the pelvis sufficient to interfere with function. Healed fracture of the pelvic bones with associated symptoms which preclude the satisfactory completion of job requirements.
 - (b) Sacroiliac. Diseases of the sacroiliac or lumbosacral joints of a chronic type and associated with pain referred to the lower extremities, muscular spasm, postural deformities and/or limitation of motion in the lumbar region of the spine.
 - (12) Surgery. Any surgery of vertebral column or spinal cord if there are residual symptoms.
 - (13) Congenital Anomalies. Congenital malformation, including spina bifida, if associated with neurological manifestations and meningocele.
- v) **Injury and Systemic Poisoning**
- i) Allergic Manifestations. Bonafide history of severe systemic, (as opposed to local) allergic reaction to insect bites or stings. Bonafide history of severe general reaction to common foods (*i.e.*, milk, eggs, beef and pork).
 - ii) Chemical Intoxication. Industrial solvent and other chronic chemical intoxication, including carbon bisulfide, trichloroethylene, carbon tetrachloride and methyl cellosolve. (Consult Toxic Chemical Manual and see poisoning and radiation exposure below.)

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- iii) Poisoning. Chronic metallic poisoning, especially beryllium, manganese and mercury. Undesirable residuals from lead, arsenic or silver poisoning. (Also see chemical intoxication and radiation, ionizing and exposure.)
- iv) Radiation. Ionizing radiation exposure, lifetime accumulation of combined whole body dose equivalent shall not exceed 5(N-18) REMS, where N=chronological age.(Health Protection of Radiation Workers, Thomas Publishers, 1975, Ed.)
- v) Pyrexia. Residual from heat pyrexia (heat stroke) or evidence of predisposition (includes disorders of sweat mechanism and previous serious episode), recurrent episodes requiring medical attention and associated injury including cardiac, cerebral, hepatic and renal involvement.
- vi) Cold Injury. Residuals of cold injury (frostbite, chilblain, immersion foot or trench foot) such as deep-seated ache, paresthesia, hyperhidrosis, easily traumatized skin, cyanosis or ankylosis at the determination of the examiner.

w) Additional/Special Requirements

- i) Pregnancy. Each pregnancy shall be handled individually, giving consideration to the ship assignment, the woman's medical history, her physical condition, and her ability to perform satisfactorily in her assigned position. It is the woman's responsibility to notify the Regional Director of Health Services or similar upon discovery of pregnancy.
- ii) Repatriation. Any condition which results in an individual being removed twice from a vessel is disqualifying.

4) DISQUALIFICATIONS

- a) Disqualification. The examining practitioner will use the medical condition and physical requirements as a basis to determine qualification for individual selection or retention. A disqualification for medical reasons may not, however, be based on non-medical risks of future liability arising from conditions of employment. Disqualification is required when physical examination and review of the medical documentation reveals the individual's health presents an unacceptable likelihood that the following situations may occur.
 - i) Unacceptable Risk. The mariner's health presents an unacceptable risk when the examining practitioner has reason to believe that the medical condition may:
 - (1) Present a high probability of repatriation. OR

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- (2) Cause an emergent disruption of ship's operating schedule or diversion from ship's mission. OR
 - (3) Interfere with safe and efficient job performance of the mariner himself/herself or other members of the crew. OR
 - (4) Result in death from conditions at sea.
- ii) Acute or Subtle Incapacitation. Persons with progressive conditions which require treatment will be denied employment when medical facilities and personnel aboard ship are not capable of providing required care.
 - iii) Aggravation of an Existing Condition. If conditions at sea would aggravate an existing condition and/or result in further health impairment, the individual is disqualified.
 - iv) Communicable Diseases. The presence of a communicable disease may not with the exception of TB, in itself, be disqualifying. The examiner's determination of the likelihood of the transmission to other crewmembers will govern qualification.
- b) Environmental Factors. In making determinations involving appointments overseas and aboard ship, consideration will be given to the individual's suitability, not only in terms of the medical conditions involved, but in terms of climate, altitude, isolation, nature of available food and housing, availability of medical, dental and surgical services and to the capacity of the individual to adjust to the new environment.
 - c) Chronic, Stabilized Conditions. When, after review of the medical documentation and examination, the examiner determines the individual's medical condition is well-stabilized or static with respect to performance capability, there exists no medical basis for disqualification for selection or retention. If review of the medical documentation indicates that the individual's condition is static or well-stabilized, will not likely be aggravated by work, exposure or activities or that the individual will not likely endanger themselves in the performance of, or interfere with their duties, the mariner's supervisor is responsible for assessment of performance ability. Documentation of a service deficiency (inability to fully perform duties assigned) must be provided by the supervisor.
 - d) Notification. If review of the medical documentation indicates that the individual's medical conditions are disqualifying, the examining practitioner will explain the medical basis for the disqualification and the medical contra-indications for performance of specific duties.
 - e) Appeals. To be developed by the NOP and NOPAT SAC.

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5) FUNCTIONAL REQUIREMENTS

All observer candidates must be certified by a licensed physician to be physically fit to work as an observer. The physician must understand the observers' job and working conditions.

Physical considerations include, but are not limited to:

1. Ability to repetitively properly lift and carry 50 pounds and occasionally dragging 200-lb carcasses across the deck where appropriate
2. Ability to step over a 24" high door sill

Program/Contractor Assessment:

1. Ability to swim 100 meters (tested during safety training)
2. Ability to swim 25 meters in an immersion suit (tested during safety training)
3. Ability to tread water for three minutes (tested during safety training)
4. Ability to don an immersion suit in 60 seconds or less (tested during safety training)
5. Ability to perform various water survival skills *i.e.*, boarding liferaft, cold water skills, etc. (tested during safety training)
6. Ability to ascend and descend steep ladders to and from fishing boats at the docks and on board
7. Ability to manage chronic motion sickness
8. Ability to live and work in confined quarters for extended periods
9. Ability to climb across boats, over fishing gear, and atop wheelhouses to get to a docked vessel
10. Ability to tolerate irregular meals, sometimes with non-traditional food, cooked in non-traditional ways
11. Ability to tolerate irregular or unpredictable work and sleep schedules
12. Ability to tolerate living on a boat with limited sanitary and/or washing facilities
13. Ability to tolerate being subjected to cigarette smoke and diesel fumes
14. Ability to repetitively bend and stoop
15. Ability to work continuously while standing

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Appendix 9 - Substantive and editorial comments on NOAA Fisheries Observer Safety Training Standards.

(July 2014 version with drafted revisions April 2015; (NOAA Fisheries 2007c))

Substantive comments/recommendations:

The NOP, in consultation with the NOPAT and the NOPAT SAC as appropriate, should:

- Clarify the intent of policy requirement for first aid/CPR. Is the certification course required to be hands on or would an online course be sufficient (*e.g.*, Red Cross, AHA)?
- Develop goals and objectives and add module for flooding/damage control. All programs cover flooding/damage control in some form already; therefore, adding to the topic to national standard list will not cause any major operational changes;
- Develop goals and objectives and add module for hyperthermia (primarily applicable to SEFSC and PIROP fisheries);
- Consider requiring supplemental training module for programs that deploy observers on single-crewed vessels. Observers need the skills to be able to save the captain (or themselves) if they find themselves suddenly in command. The Alaska Marine Mammal Observer Program Observer Manual includes a detailed section on small boat safety (NOAA Fisheries 2013a) which could be a primary resource in developing this module. In addition, the pre-trip vessel safety checklist is mostly inapplicable to vessels <26 feet (LOA) and a checklist specific to this fleet may be warranted.
- Discuss roles of ROP “training coordinators.” Identify which programs have this position.
- Create a national shared drive for training materials (presentations, lesson plans, videos, etc.) that is made accessible to all safety training personnel and updated annually with most recent versions utilized. It would be useful to have the drive indexed and organized with a consistent file naming convention so that when files are updated, the new version replaces the previous version. Older versions should be archived at the program level.
- Clarify policies and practices pertaining to Observer Safety Trainers’ Professional Development and Maintenance Requirements including but not limited to:
 - National-level records of MSIT certification status and co-teaching experience are maintained in a Google sheet although current versions are incomplete. Each program is responsible for completion. Recommend individual regional program staff be assigned responsibility for updating information for their ROP on a quarterly basis.
 - Expectations regarding experience at sea requirement are not defined. Clarify language in policy to address types of at-sea experience, minimum days, and frequency requirements. For example, would recreational boating or cruise ship experience apply toward the at-sea requirement for trainers? Should experience

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- be on certain types of vessels (*e.g.*, fishing or research)? Would a five-day observer trip count? Should trainers have to go back to sea periodically?
- Policy states that safety trainers must teach or co-teach one safety topic per year. Clarify how this is verified and tracked.
 - NOPAT SAC should provide policy guidance for inclusion of non-MSIT certified safety trainers (*e.g.* new staff and/or observers performing training). Can experienced observers teach training topics or not?
 - The NOPAT SAC should develop specific guidance pertaining to safety trainer professional development and co-teaching expectations in other regions. The review team recommends that co-training should involve active participation in the visited program's training (*e.g.*, fulfill a need for training module development, present the program's material as developed, etc.). Visiting trainers should also write a report to be shared with their supervisor as well as the NOP. Additional co-teaching requirements could include an option to assist with new trainee professional development by providing evaluation of at least one training topic using objective criteria similar to those used by AMSEA in MSIT training (Appendix 9.1) and be willing to be evaluated using same criteria;
 - The NOPAT SAC should develop guidelines for evaluating new and current trainers. The review team observed several instances during observer trainings which diverged from AMSEA MSIT teaching principles and requirements to maintain AMSEA certification. AMSEA, as the certifying entity, can revoke or not reissue the MSIT certification given documented, chronic performance deficiencies.
 - Current policy states 24 refresher hours are required every two years. The policy contains a list of (non-MSIT) options which would be useful but to the reviewers' knowledge are not being utilized. The NOPAT SAC should revisit the list and determine methods to encourage their use. The NOPAT SAC should consider USCG commercial fishing vessel safety examiner training as an option to meet the 24 hour training requirement for personnel who are involved with observer placement.
 - Clarify funding policies (*e.g.*, location and availability of funds) for refresher training requirement and communicate process to receive funding at the ROP-level to the trainers. Does funding apply to federal employees only or also contracted training staff? Does NOP refresher training funding only apply to MSIT courses or could funding be used for alternative yet applicable educational

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opportunities? Since funding is limited, decisions should be made to maximize benefit to multiple programs.

Editorial comments - listed by primary topic in the Table of Contents.

Most recent version is dated April on the cover page and May 2015 in another location. Ensure revised date is consistently presented in the document.

Table of Contents

- Appendix B is missing from TOC.
- Consider organizing the document by initial observer training, refresher observer training and trainer training. These topics are currently intermixed.
- Consider moving trainer training requirements/policies to front of document.
- Indent Transportation checklist and water skills checklist under the “safety checklists” section.

Safety Training Curriculum – comments by topic

First aid (p2)–

- In italicized note, clarify that these topics are the minimum;
- Suggest modifying topic title to “First aid / CPR” as one of the bullets is related to CPR
- Last bullet “describe the program’s reporting requirements for injuries” is more of a policy or scope of duties topic – see “scope of duties” comment below.

Survival kit (p4) – Consider adding “& ditch bag” to goal since ditch bags are part of most (if not all) program’s survival kit presentations.

Scope of duties (p4) – Consider adding “safety policies and living conditions” to title to be more inclusive of current objectives.

Drug/Alcohol Issues (p6) - Ensure all observers are aware about drug testing requirements for observers. On 27 March, 2015 the USCG Drug and Alcohol Program Manager issued an internal memorandum clarifying regulations pertaining to “Drug testing requirements for fisheries observers.” It stated that an observer would not normally be subject to drug testing requirements since they are not crewmembers and do not serve in a safety-sensitive position. However, if an observer was determined to be directly involved in a marine casualty, the observer may be subject to Post-Accident chemical testing requirements per 46 CFR §4.03-4 or §4.05-12.

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Appropriate clothing (p6) – Consider adding “identify items that must be worn on deck (*e.g.*, PFD, boots)”. Alternatively, this item could be in scope of duties if policy language is included in that topic.

Embark/Disembark (p7) - add objective to address observers’ rights with respect to embarkation/disembarkation. For example, in some programs the observer has “authority” to request that the vessel move or provide “safer” boarding option.

Liferaft/hydrostatic release (p13) –

- Consider the additional objective “identify any other hydrostatic release issues (*e.g.*, counterfeits, recalls)”
- Hammar is a brand name and should be capitalized.

Flares (p15) - Consider the addition of “(or demonstrate)” to the first three objectives. For example:

- Describe (or demonstrate) the safe and proper steps for firing the parachute type flare.
- Describe (or demonstrate) the safe and proper steps for firing handheld flares and smoke pyrotechnic devices.
- Describe (or demonstrate) the safe and proper steps for disposing pyrotechnic devices.

Frequency and Content of Observer Refresher Safety Training (p17)

Regarding “At a minimum, active observers shall be required to attend a hands-on marine safety training course within three years,” consider providing clarifying guidance regarding how many additional hours are required for observer refresher training.

Fires & fire extinguisher checklist (p20) – Bullet stating “Trainees made aware that they can opt out of exercise” is contrary to skills checklist “Describe (or if possible, demonstrate) the steps in the proper use of a fire extinguisher.” How can one opt-out if it’s a required skill?

Personal safety equipment (p21)

All programs provide the required life-saving equipment as per the National Safety Training Standards policy directive; however, not all programs supply foul weather gear such as jackets, pants, boots or gloves (Appendix 14). Most programs provide equipment so that the observer has an independent communication method while deployed (*e.g.*, satellite communicator, satellite phone, password protected messaging via data entry program). As per recommendations described in section 4.1.4, the NOPAT SAC should consider including a

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requirement for an independent communication option in the list of mandatory equipment.

The optional items in the policy are provided by only a few programs. The NOPAT SAC should consider adding more specific recommendations for first aid kit contents. For instance, some programs provide fairly extensive first aid kits and applicable supplemental material whereas other program kits are somewhat minimal. There are a wide range of additional health- and safety-related “equipment” issued by various programs that are not included on the optional list which may be useful to include in the policy document (*e.g.*, respirators to protect against chronic smoke inhalation; Appendix 14).

Additional considerations (p22) – Consider moving the following items to mandatory rather than “optional”:

- “Developing brochures or placards that summarize common sources of injuries on board fishing vessels” –Illness/injury records must be tracked in order to have data to “summarize”. Consider changing “Developing a database and procedures for tracking of injuries and close calls during training as well as observer deployments” to a mandatory national policy.
- Regarding “Having observers’ employers explain the status of observers during training and what type of insurance (if any) may cover them” - Require that a NOAA Fisheries representative be present so that NOAA Fisheries is aware of the insurance process for observers. This policy may act as a double check for observer provider contract requirements.
- Regarding “Having observers sign “Assumption of Risk” forms prior to participating in safety training, preferably at the start of the observer training course or even before training (during recruitment).” Currently, all programs have observers sign a training liability form. Recommend moving to a mandatory national safety training policy.
- Add “review training presentations every 3 years (at a minimum) and update (as needed).”
- Add “to the extent practicable, training should be hands-on for fire, flares, dewatering and damage control”. There are additional opportunities for partnering with other entities (*e.g.*, local fire departments) to enhance training which have not been fully explored. USCG resources have been invaluable and there are likely additional ways the USCG can support training goals.
- Regarding “Preparing a regional EAP in event of an emergency during training” - Expand to include a comprehensive programmatic EAP as described in Ajango *et al.* (2004b) and sections 3.6 and 1.2.6.1.

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Appendix A – NMFS Observer Safety Skills Checklist (p24)– add “Appendix A” to title

- Add HUDDLE to “Demonstrate the HELP position with a PFD on and in the water.” All programs include as part of the in-water exercises.
- Mandatory skills are listed in BOLD in main body of document. Add the following skills which appear in bold but are currently missing from Appendix A:
 - Demonstrate “rafting” of injured person....(p13)
 - Demonstrate righting of capsized liferaft...(p13)
- Consider further development of skills descriptions which should be more explicit (examples below) and develop performance checklists for each skill (see Appendix G in Ajango *et al.* (2004a) for examples).

Current	Suggested (<i>change in italics</i>)
Demonstrate oral inflation of flotation collar or bladder	Demonstrate oral inflation of flotation collar or bladder <i>on immersion suit and PFD (if type with bladder issued)</i>
Demonstrate proper lifting techniques	Demonstrate proper lifting techniques <i>using realistic work-related items (e.g. baskets or scales). If applicable to program, demonstrate technique to move heavy (>150 lbs) objects</i>
Demonstrate the proper technique for activating an EPIRB	Demonstrate the proper technique for activating an EPIRB <i>and program-issued PLB</i>
Describe (or if possible, demonstrate) the steps in the proper use of a fire extinguisher	Remove “describe” replace with “demonstrate”. Even with the most rudimentary equipment, the trainees should be able to demonstrate this skill
Demonstrate proper donning of an immersion suit within 60 seconds	Demonstrate proper donning of an immersion suit <i>in 8 steps within 60 seconds starting with shoes on. For further challenge to refreshers, add donning with shoes on and/or include turning on signal light within the 60 seconds.</i>

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Appendix B (p25) – reorganize as a simple list of topics (no matrix) OR rewrite “topics” into the demonstrated skill format (similar to appendix A) that must be tested during refresher by each trainee. Add “cover page” similar to Appendix A.

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Appendix 9.1. Example instructor evaluation form developed by AMSEA. *Reprinted with permission.*

Name instructor being reviewed _____ Date _____

Instructor Evaluation Criteria	YES/NO
1. Introduces subject.	
2. State a need to know.	
3. Lists objectives: each must be a <i>specific performance</i> , have a <i>measurable standard</i> and state the <i>condition</i> performance will have.*	
4. Speaks so all students can hear.*	
5. Demonstrates skills so all can see.	
6. Has A/Vs ready and working.	
7. Uses more than one sense in presentation. (board/lecture; demo and lecture; etc.).	
8. Includes students in presentation by asking questions, eliciting information, etc.	
9. Presents factual information.*	
10. Summarizes talk.	
11. Covers objectives.*	
12. Presents information in a logical sequence.	
13. Interacts with students in a positive manner.*	

*Student must complete all of the * items as well as 6 of the remaining items to pass.*

COMMENTS:

Reviewed by _____

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Appendix 10 - Summary of training topics discussed during monitored observer trainings and required by the Observer Safety Training Standards (NOAA Fisheries 2007c).

*Unobserved training sessions are not included in the checklist. Y- topic was presented formally or discussed informally during training. N- topic was not presented. ? indicates reviewer not sure due to time conflicts or unclear notes. †The observed SOP/RFOP training was a refresher briefing; therefore, not all topics were required. ‡The observed SWROP training was an in-house training for training staff and other sea-going NOAA Fisheries personnel. While not observer training per se, relevant observer training modules and lesson plans were used. *Topic taught outside of NMFS training. For first aid, Red Cross or equivalent CPR/First Aid is a requirement of employment. * CPR/First aid required and taught outside of NMFS training for partial coverage observers but not required for Full coverage observers.*

Required Training Topics	NEFSC	SEFSC	PIRO	NWFSC	AFSC	WCRO	
	NEFOP, ASM, IFS	POP	SOP, RFOP†	PIROP	WCGOP	NPOP	WCROP‡
General Health & Safety							
First Aid	N*	N*	N*	Y	N*	N*	N*
Harassment	Y	Y	Y	Y	Y	Y	Y
Conflict resolution	Y	Y	Y	Y	Y	Y	Y
Infections	N	Y	Y	Y	Y	Y	Y
Survival Training							
Seven steps to survival	Y	Y	Y	Y	Y	Y	Y
Survival kit	Y	Y	Y	Y	Y	Y	Y
In-water practical	Y	Y	Y	Y	Y	Y	Y
Safety concerns on commercial fishing vessels							
Scope of duties	Y	Y	N†	Y	Y	Y	Y
Seasickness	Y	Y	Y	Y	Y	Y	Y
Fatigue/sleep deprivation	N	Y	N†	Y	Y	Y	Y
Drug/alcohol issues	Y	?	Y	Y	Y	Y	Y
Appropriate clothing	Y	?	N†	Y	Y	Y	Y
Hypothermia	Y	Y	Y	Y	Y	Y	Y
Cold water survival	Y	Y	Y	Y	Y	Y	Y
Embark/disembark	Y	Y	Y	Y	Y	Y	?
Sampling Safety	Y	?	N†	Y	Y	Y	Y
Hazardous marine organisms	N	Y	N†	Y	Y	Y	Y
Vessel & rigging hazards	Y	Y	Y	Y	Y	Y	Y
Gear hazards	Y	Y	Y	Y	Y	Y	Y
Falls & slips	Y	Y	Y	Y	Y	Y	Y
Man overboard	Y	Y	Y	Y	Y	Y	Y
Abandon ship	Y	Y	Y	Y	Y	Y	Y
Safety regulations & USCG procedures							

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Required Training Topics	NEFSC	SEFSC	PIRO	NWFSC	AFSC	WCRO	
	NEFOP, ASM, IFS	POP	SOP, RFOP [†]	PIROP	WCGOP	NPOP	WCROP [‡]
USCG Boardings	Y	?	Y	Y	Y	Y	Y
Commercial fishing vessel safety regulations	Y	?	Y	Y	Y	Y	Y
USCG helicopter evacuations	Y	Y	Y	Y	Y	Y	Y
Safety Orientation							
Pre-trip vessel safety checklist	Y	Y	Y	Y	Y	Y	Y
Simulated orientation or dockside tour	Y	Y	N [†]	Y	Y	Y	Y
Safety Equipment							
Personal flotation devices (incl. immersion suits)	Y	Y	Y	Y	Y	Y	Y
Life raft / hydrostatic release	Y	Y	Y	Y	Y	Y	Y
SOLAS kits	Y	Y	Y	Y	Y	Y	Y
EPIRBs	Y	Y	Y	Y	Y	Y	Y
Fires & fire extinguishers	Y	Y	Y	Y	Y	Y	Y
Communication equipment & Mayday calls	Y	Y	Y	Y	Y	Y	Y
Flares	Y	Y	Y	Y	Y	Y	Y
Signaling devices	Y	Y	Y	Y	Y	Y	Y
Safety policies							
Acknowledgement of safety training risk (signed forms)	Y	Y	Y	Y	Y	Y	Y

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Appendix 11 - Summary of supplemental training topics discussed during monitored observer trainings.

Unobserved training sessions are not included in the checklist. Y- topic was presented formally or discussed informally during training. N- topic was not presented. ? indicates reviewer not sure due to time conflicts or unclear notes. †The observed SOP/RFOP training was a refresher briefing; therefore, not all topics were required. ‡The observed SWROP training was an in-house training for training staff and other sea-going NOAA Fisheries personnel. While not observer training per se, relevant observer training modules and lesson plans were used.

Supplemental Training Topics	NEFSC	SEFSC	PIRO	NWFSC	AFSC	WCRO
	NEFOP, ASM, IFS	POP	SOP, RFOP†	WCGOP	NPOP	SWROP‡
Proper lifting / ergonomics	Y	Y	Y	Y	Y	Y
Hyperthermia	N	Y	Y	Y	N	N
Nutrition	N	Y	N	Y	N	N
Hydration & dehydration	N	Y	?	Y	N	Y
Sanitation	Y	Y	Y	Y	?	Y
Personal medications/health issues	N	Y	Y	Y	Y	Y
Psychological health	N	?	N	N	Y	Y
Cultural awareness	Y	Y	Y	Y	Y	Y
Stability	Y	Y	Y	N	Y	N
Hazardous materials	N	Y	N	N	Y	Y
Positioning equipment - location, how to read a GPS	N	?	Y	Y	N	N
Alarms (general, emergency, radar/watch, engine, or high water)	N	?	Y	Y	N	N
Flood control kit / USCG Damage control trailer demo	Y	Y	N	N	Y	N
Dewatering pump assembly & operation	Y	Y	Y	N	Y	N
Station Bills	Y	Y	Y	Y	Y	Y
Drills	Y	Y	Y	Y	Y	Y
Bed bugs	Y	Y	Y	Y	N	N
In-water practical debrief	Y	Y	Y	?	Y	Y
Program safety policies	Y	Y	Y	Y	Y	Y

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Appendix 12 - Summary of skills demonstrated during monitored observer trainings and required by the Observer Safety Training Standard (NOAA Fisheries 2007c).

Unobserved training sessions are not included in the checklist. Y- skill was performed during training. N- skill was not performed during training. ? indicates reviewer not sure due to time conflicts or unclear notes. *Topic taught outside of NMFS training. †The observed SOP/RFOP training was a refresher briefing; therefore, not all topics were required. ‡The observed SWROP training was an in-house training for training staff and other sea-going NOAA Fisheries personnel. While not observer training per se, relevant observer training modules and lesson plans were used.

Region / Science Center	NEFSC	SEFSC	WCRO	PIRO	NWFSC	AFSC	
Item / Program	NEFOP, ASM, IFS	POP	SOP, RFOP†	WCROP‡	PIROP	WCGOP	NPOP
Demonstrate at least one conflict resolution technique	Y	Y	?	N	Y	Y	Y
Demonstrate proper lifting techniques	Y	Y	Y	N	Y	Y	Y
Complete a pre-trip safety checklist on board a vessel (or simulate completion of a checklist if a vessel is not available)	Y	Y (simulate)	N	Y	Y	Y	Y (simulated)
Perform and/or participate in a vessel (or simulated) orientation	Y	Y (simulate)	N	Y	Y	Y	Y (simulated)
Demonstrate the correct use and adjust the fit of a PFD	Y	Y	Y	Y	Y	Y	Y
If your program issues Type II, III, or V PFD, demonstrate how to inflate the PFD	Y	Y	Y	Y	Y	Y	Y
Demonstrate proper donning of an immersion suit within 60 seconds	Y	Y	Y	Y	Y	Y	Y
Demonstrate how to inspect, maintain, and stow an immersion suit while underway	Y	Y	Y	Y	Y	Y	Y
Demonstrate oral inflation of floatation collar or bladder	Y	Y	Y	Y	Y	Y	Y
Demonstrate proper water entry techniques wearing an immersion suit	Y	Y	Y	Y	Y	Y	Y

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Region / Science Center	NEFSC	SEFSC	WCRO	PIRO	NWFSC	AFSC	
Item / Program	NEFOP, ASM, IFS	POP	SOP, RFOP+	WCROP‡	PIROP	WCGOP	NPOP
Demonstrate the HELP position with a PFD on in the water	Y	Y	Y	Y	Y	Y	Y
Demonstrate the HUDDLE position with a PFD on in the water	Y	Y	Y	Y	Y	Y	Y
Demonstrate swimming on your back while wearing an immersion suit	Y	Y	Y	Y	Y	Y	Y
Demonstrate tandem and chain swimming while wearing an immersion suit in the water	Y	Y	Y	Y	Y	Y	Y
Demonstrate “rafting” an injured person while wearing an immersion suit in the water	Y	?	?	Y	Y	Y	Y
Demonstrate the proper securing and release of the Hammar type hydrostatic release and identify last service date.	Y	Y	Y	Y	Y	Y	Y
Demonstrate the proper technique to deploying a life raft from a vessel.	Y	Y	Y	N	Y	Y	Y
Board a life raft from the water (with or without assistance)	Y	Y	Y	Y	Y	Y	Y
Demonstrate righting a life raft	Y	Y	Y	Y	Y	Y	Y
Demonstrate the function of equipment in a SOLAS A kit.	Y (students demonstrate different devices)	Y (students demonstrate different devices)	Y (students demonstrate different devices)	Y	Y	Y	Y (N pyro)
Demonstrate the proper technique for activating an EPIRB	Y	Y (testing)	Y-PLB	Y	Y	Y	Y
Describe (or if possible, demonstrate) the steps in the proper use of a fire extinguisher	Y	Y (demo)	Y (demo)	Y (demo)	Y	Y	Y (describe)
Demonstrate a proper MAYDAY call	Y	Y	Y	Y	Y	Y	Y

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Appendix 13 - Summary of items on pre-trip vessel safety checklists used by ROPs.

*X indicates that item is included in checklist; NG represents an item is identified as a “no-go” item. **PIROP includes many additional items in the vessel placement meeting checklist. *EPIRB may only be category I. †Count Type I only. ‡ Must be SOLAS A pack. ***Also check for emergency power source. EVIC stands for EPIRB Visual Inspection Card (See NEFSC FSB section 4.5.7 for more details).*

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
Date examined	X	X	X	X	X	X	X	X	X	X	X
Unique vessel identifier (e.g., permit, license)	X	X	X	X	X	X	X	X	X		
Trip identifier (assigned at program level)	X	X	X	X	X	X		X	X		
USCG Vessel Safety Exam Decal											
Must be present if vessel >26'	NG	NG	X	NG	X	NG	NG	NG	NG	NG	NG
Decal #	NG	NG	X	NG		X	X	X	X	NG	NG
Decal expiration (or issuance date)	NG	NG	X	X	X	NG	X	X	X	NG	NG
Vessel distance from coastline (check box or provide distance)		X	X	X	X		X	X	X	X	X
Is decal valid/current (Y/N)	NG	NG			X	X	NG	NG	NG	NG	NG
EPIRB											
Present (Y/N) or location indicated	NG	NG*	X	NG	X	NG	NG	X	X	NG	X
Category I/II		NG*	X								
Located in CG approved location?								NG	NG		

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
Stowed in a float-free location (Y/N)			X			NG	NG			NG	X
Registration or expiration date	X	NG	X	NG	X	NG	NG	X	X	NG	X
Registered to vessel or who is EPIRB registered to?	X		X	NG	X		NG	NG	NG	X	X
Alphanumeric code on registration decal matches code on EPIRB	X						NG	NG	NG	X	X
Hydrostatic release expiration date	X	NG	X	NG	X	NG	NG	NG	NG	NG	X
Battery expiration date	X	NG	X	NG	X	NG	NG	NG	NG	NG	X
EPIRB expirations verified by observer or EVIC system	X										
Signal tested (or asked to see station log in wheelhouse for most recent test. Signal should be tested monthly):							NG	NG	NG	NG	X
Visual inspection only: instructed that only captain/crew are to handle EPIRB or housing		X									
Distress signals (flare, smoke)											
Present (Y/N)					X						
Counts by type (hand, smoke, parachute)	NG	NG	X		X	NG	NG				

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
# flares (total, not listed by type)								X	X	X	X
Expiration of individual flares recorded			X	NG		NG	X				
Expiration dates checked (Y/N)	NG	NG	X			NG	NG	X	X	X	X
Location		NG		X			X	X	X	X	X
PFDs & Immersion Suits (excluding observer equipment)											
PFD / Immersion suits present					X						
PFD for each person on board? Y/N	NG		X	NG			X				
# PFDs		NG [†]	X			NG					
PFD location(s)				X			X				
Immersion suit for each person on board? [required in federal waters above 32N latitude (46 CFR 28.110)]	NG		X	NG	X		NG	NG	NG	NG	X
# Immersion suits		NG	X		X	X (depends on fishing location)	X				
Immersion suit location							X	X	X	X	X
Fire Fighting Equipment											
Fire extinguishers present	NG				X		NG	X	X	X	X

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
# Fire extinguishers (in general)		NG				NG	NG				
Fire extinguishers charged (y/n)		NG		NG	X	X	NG	X	X	X	X
Current inspection (Y/N)								X	X	X	X
Extinguisher type (USGC approved, Marine rated, Mounted in proper brackets)						X					
For individual extinguishers:		up to 3			X						
Location		NG	X	NG	X		X				X
Type			X								
Service/Manufacture date			X								
Charged? Y/N		NG									
Expiration:		NG									
Throwable Flotation Devices											
Orange ring buoy w/ line attached (Y/N)			X	NG	X (no specifics on line)						
How many rings? #					X		X	X	X	X	X
How many slings? #		NG				NG	X	X	X	X	X
Number of flotation devices appropriate for vessel size?	NG	NG					NG	NG	NG	NG	
Easily accessible?							X	X	X	X	X

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO		PIRO		NWFSC		AFSC		ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop			
Name of vessel displayed on each								X	X	X	X			
Location (s)				X			X	X	X	X	X			
Survival Craft														
Life raft type (inflatable, IBA, Ovatek)				NG	X		X							
Manufacturer		NG												
Rigid life float (Y/N)			X		X		X							
Inflatable life raft (Y/N)	NG		X		X	X	X	X	X	X	X			
Life raft capacity for all persons on board? Y/N	X		X				NG	NG	NG	NG	X			
Life raft capacity (#)	X	NG	X	NG	X	NG	NG	X	X	X	X			
Total # POB		X		NG	X	X	NG	X	X	X	X			
Raft repack service or expiration date	X	NG	X	NG	X	NG	NG	NG	NG	NG	X			
Survival craft stowed correctly					X	NG	X	NG	NG	NG	X			
Life raft configured correctly	X		X			NG		X	X	X	X			
Location		X												
SOLAS pack rating		NG‡					X							
Hydrostatic release exp. date	X	NG	X	NG	X	NG	NG	NG	NG	NG	X			
Hydrostatic release configured correctly	X	NG		NG	X	NG					X			

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
Hydrostatic release - 5 fabrication marks present on Hammar (Y/N)			X								
Hydrostatic release - Upper fabrication mark toward rope (Y/N)	X		X								
Which craft is observer assigned to (if more than one)		N/A	N/A	N/A		N/A		X	X		X
Ovatek-specific form with expiration of SOLAS contents such as flares, first aid kit, rations, seasick meds				X							
Safety Orientation											
Did observer participate in a drills upon embarking the vessel?								X	X		
Did captain use a checklist to complete the required vessel safety orientation?								X	X		
Did the captain/crew conduct a safety orientation with the observer prior to departing the dock? (checkbox on form)	NG					NG		X	X		

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO		PIRO		NWFSC		AFSC		ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop			
Who gave the orientation?						placement officer and crew/capt		X	X					
Describe what was covered in the orientation								X	X					
General alarm activation/tested Y/N				X	X		NG	X	X	X	X			
High water alarm tested Y/N				X	X		NG							
Bilge pump					X									
Engine on/off, steering, gear selection tested Y/N				X										
Did observer identify two exit routes from sleeping quarters and working area? Entrapment exit routes? Y/N				X			NG							
During orientation by captain/crew were hazardous situations identified (e.g. hatched, winches, machinery, lines, slippery areas, stability concerns, etc.)?				X		discussed during orientation								
Drills (post cruise information)														
Fire drill date								X	X	X	X			
Abandon ship drill date								X	X	X	X			

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
Man overboard drill date								X	X	X	X
Vessel flooding / stabilization drill date								X	X	X	X
Donning immersion suits								X	X	X	X
Radio / visual distress signals	X							X	X	X	X
Were the drills hands-on involving actual gear?								X	X	X	X
Did you participate in the drills?								X	X	X	X
# of certified drill instructors						X					
First Aid Materials											
Present?	X			NG	X	X	X			X	X
Location		NG		X	X		X	X	X	X	X
Is an individual trained in CPR/First aid on board		NG				asked during orientation	X	X	X	X	X
If Yes to above, who?		X					X	X	X	X	X
Other											
Did vessel have a ditch bag?				X							
Station bill details (copy or discuss and record responses)				X				X	X		
Station bill posted (Y/N)			X			NG	X			X	X
Onboard drills logged (Y/N)			X			X					

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
Watertight doors - do they close properly?							NG	X	X	X	X
Are hatches/passageways unobstructed?							NG	X	X	X	X
Were safe places to work on deck/factory discussed?								X	X	X	X
Were refrigerant leak procedures discussed?								X	X	X	X
Type of refrigerant used								X	X	X	X
Discussed reporting/identifying inoperative alarm/fire systems								X	X	X	X
Did you hear the general alarm?							NG	X	X	X	X
Where will you go during emergencies?							X	X	X	X	X
Did vessel maintain or arrange a watch/lookout at all times while under way?							NG	X	X		
If no above, who was informed?								X	X		
Detailed vessel description				X							
Were there any stability concerns?	X										

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
Communication equipment											
Radios present (Y/N)	X				X***		NG				X
# SSB radios				X	X	X	X	X	X	X	X
# VHF radios				NG	X	X	X	X	X	X	X
Are emergency call instructions posted?								X	X	X	
Were procedures for making an emergency call discussed?								X	X		
Vessel call sign				X		X					
Vessel satellite phone #				X		X					
Vessel cell phone #				X		X					
Observer's PPE											
Personal locator beacon (ID #)								NG	NG		
PLB NOAA registration decal expiration date								X	X		
Immersion suit w/ strobe light & battery?								NG	NG	X	X
Immersion suit serial #								X	X		
PFD with strobe light & battery?								NG	NG		X
Observer signature & date	X	X	X	X	X	X	X	X	X	X	X
Owner/operator signature & date		X	X	X		X		optional	optional		

Observer Safety Program Review

Region / Science Center	NEFSC		SEFSC		WCRO	PIRO	NWFSC		AFSC	ADF&G	
Item / Program	NEFOP, ASM, IFS	POP	SGOP, SBLOP	SOP, RFOP	WCROP	PIROP**	WCGOP	A-SHOP	NPOP	Crab	Scallop
Q for captain: Sampling protocol has been explained by observer and is understood				X		X					
Q for captain: "Wheel watch" while underway requirement has been explained by observer and is understood				X		X					
Did vessel request a copy of checklist?								X	X		
Was copy provided?								X	X		
"No Go" items clearly indicated on checklist		All items		X		X	X	X	X	X	USCG decal only
Version used to populate table	v1-7-2016	v11-2015	v1-2016	v11-2015	v2012	Not marked	10/31/18	Not marked	Not marked	09-16	

Observer Safety Program Review

Appendix 14 - Summary of equipment issued to observers by ROPs.

†Mustang Type II/V; ‡Mustang Type II/V and fanny pack PFDs issued; *use and monitor lithium batteries; \$Observer supplies but reimbursed or provided with gear allowance; ^Issued as needed (trips > ~7 days); *Observers expected to assemble and supply; †Issued to non-catch share observers deployed to small vessels; ✕InReach satellite communicator has built-in GPS capabilities

Region / Science Center	NEFSC			SEFSC		WCRO	PIRO	NWFSC		AFSC
Item / Program	NEFOP, ASM	IFS	POP	SGOP, SBLOP	SOP, RFOP	SWROP	PIROP	WCGOP	A-SHOP	NPOP
Required (as per Observer Training Standard)										
Operational PFD + whistle	X†	X†	X†	X	X‡	X	X	X	X	X
Immersion suit + strobe + whistle	X	X	X	X	X	X	X	X	X	X
Personal Locator Beacons	X	X	X	X	X	X	X	X	X	X
Weather jacket & pants	X	X	X	X	X	X	X	\$	\$	\$
Boots	X	X	X	X	X	X	X	\$	\$	\$
Gloves	X	X		X	X	X	X	\$	\$	\$
Batteries for strobe	X	X	X	X	X	X	X	X*	X*	X*
Optional (as per Observer Training Standard)										
Personal survival kit	*	*	*	*	*	*	*	*	*	*
Ear plugs	X			X		X	X		X	X
Protective eyewear				X	X		X			
Back support belt										
Wrist brace										
First aid kits			X	X	X		X	X		
Hard hats							X		X	X
Other										
Satellite phone				X^	X		X			
Cellular phone										

Observer Safety Program Review

Region / Science Center	NEFSC			SEFSC		WCRO	PIRO	NWFSC		AFSC
	NEFOP, ASM	IFS	POP	SGOP, SBLOP	SOP, RFOP	SWROP	PIROP	WCGOP	A-SHOP	NPOP
Satellite communicator (InReach)	X	X	X			X				
GPS – handheld	✘	✘	✘	X		X	X	X**		
VHF – handheld								X**		
EPIRB (Category II)								X**		
Strobe light	X	X	X		X	X	X		X	X
Personal marker light (PML)	X			X		X				
Replacement CO2 cartridges for PFD			X		X					
Dye marker (α) or rescue streamer (σ)				X(α)		X(σ)		σ		
Flashlight				X	X	X	X			
Signal mirror	X	X	X		X					
Sampling stool					X					
Antiseptic/antibacterial hand wipes (e.g., RelyOn)			X	X	X		X			
Clorhexidine (topical antiseptic-Hibistat wipes or Hibicens)				X	X		X			
Hand sanitizer (e.g., Germ-X)			X	X	X		X			
Carbon Monoxide detector				X	X					
Smoke/fume masks					X					
Sunglasses (UV protection)			X		X					
Bed bug detector					X					

Observer Safety Program Review

Region / Science Center	NEFSC			SEFSC		WCRO	PIRO	NWFSC		AFSC
	NEFOP, ASM	IFS	POP	SGOP, SBLOP	SOP, RFOP	SWROP	PIROP	WCGOP	A-SHOP	NPOP
Air mattress / sleeping pad			X	X		X	X			
Sunscreen wipes				X						
Dramamine				X						
Sting relief				X						
Warming blanket				X						
Instant cold pack				X						

Observer Safety Program Review

Appendix 15 - WCGOP Gear Maintenance Check form – an example of best practice.

Equipment Test Checklist

Observers should maintain program-issued safety equipment on a monthly basis to ensure it's working properly. If any item does not pass the examination, notify the gear coordinator or your debriefer immediately so it may be replaced. Check your equipment a minimum of once per month. Check off only those items that pass.

Inspection date #1: _____ Inspection date #2: _____

406 EPIRBs	1	2	Comments
No physical damage? (cracking corrosion, ect.)	<input type="checkbox"/>	<input type="checkbox"/>	_____
Tested PLB?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Battery expiration date?	<input type="checkbox"/>	<input type="checkbox"/>	Exp. date: _____
Registration expiration date?	<input type="checkbox"/>	<input type="checkbox"/>	Exp. date: _____
No antennae damage? (cracks, washer at base)	<input type="checkbox"/>	<input type="checkbox"/>	_____

Beacon ID: _____

PLB	1	2	Comments
No physical damage? (cracking, corrosion, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	_____
Tested PLB?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Battery expiration date?	<input type="checkbox"/>	<input type="checkbox"/>	Exp. date: _____
Registration expiration date?	<input type="checkbox"/>	<input type="checkbox"/>	Exp. date: _____
No antennae damage? (bent, poor rotation, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	_____

Beacon ID: _____

Immersion Suit	1	2	Comments
No rips/tears/holes in Neoprene?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Seam thread and inner seal glue intact?	<input type="checkbox"/>	<input type="checkbox"/>	_____
No grease/oil stains/ mildew?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Zipper seams in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Zipper waxed? (if necessary)	<input type="checkbox"/>	<input type="checkbox"/>	_____
Strobe attached securely?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Strobe tested?	<input type="checkbox"/>	<input type="checkbox"/>	Exp. date: _____
Whistle securely attached?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Whistle tested?	<input type="checkbox"/>	<input type="checkbox"/>	_____

Observer Safety Program Review

Inflatable PFD	1	2	Comments
No rips/tears/holes?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Seams in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Straps and clips in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Strobe attached securely?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Strobe tested?	<input type="checkbox"/>	<input type="checkbox"/>	_____
CO2 indicator green?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Hydrostatic release date current?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Complete manual inflation test?	<input type="checkbox"/>	<input type="checkbox"/>	Test date: _____

Workvest PFD	1	2	Comments
No mildew?	<input type="checkbox"/>	<input type="checkbox"/>	_____
No foam shrinkage?	<input type="checkbox"/>	<input type="checkbox"/>	_____
No foam water-logging?	<input type="checkbox"/>	<input type="checkbox"/>	_____
No rips/tears/holes?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Seams in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Straps and clips in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Strobe attached securely?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Strobe tested?	<input type="checkbox"/>	<input type="checkbox"/>	Exp. Date _____

Marel Scale Inspection

Check all parts of scale for cleanliness. All parts should be free of mud and scales. If dirt is dried on, soak scale in tub for 20 min and scrub with a brush or sponge. (Use on a sponge on face plate) Rinse with a garden hose or shower.

Scale serial number: _____

Clean and rinsed inside and out?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Cables: no holes, appear secure?	<input type="checkbox"/>	<input type="checkbox"/>	_____
No debris under load cells?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Weight pan straight?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Battery tube threads cleaned and lubed?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Buttons function correctly?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Rust removed?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Display lights all working?	<input type="checkbox"/>	<input type="checkbox"/>	_____
No condensation in face plate?	<input type="checkbox"/>	<input type="checkbox"/>	_____
Current 90 day overload test?	<input type="checkbox"/>	<input type="checkbox"/>	Test date: _____

Observer Safety Program Review

Appendix 16 - Training liability waiver signed by POP trainees.

Font sizes modified to fit to one page. All ROPs require observers to sign a similar document.

Cold Water Safety and Survival Program Assumption of Risk & Waiver & Release

I, _____ (printed name of Participant) recognize the activity in which I desire to participate involves a risk of injury and death. I am aware and accept the risks involved, which may include but are not limited to: joint, bone or soft tissue injuries from falls related to walking over uneven, heavily vegetated, slippery terrain or vessels, cardiac arrest, ventricular fibrillation, venomous or non-venomous insect or animal bites and stings and anaphylactic shock, wildlife encounter injuries, striking objects when entering vessels or water, inadvertent gasping and inhalation of water, sudden drowning syndrome or drowning from other causes, hypothermia, muscular/skeletal and eye injuries, lacerations and other injuries which may occur due to the use of safety and survival equipment such as visual distress flares, liferafts, personal flotation devices, dewatering pumps, fire extinguishers etc. as well as walking and working around docks, harbors, shipyards, haulout facilities, and vessel fabricators. I hereby execute this release as a condition of and in partial consideration for being allowed to participate in all or a portion of the cold-water training program conducted by the NOAA Pelagic Observer Program (aka POP). I am familiar with the activities and events that will be included in this training and I have read a copy of the schedule of activities in which I am to participate. I have read and voluntarily signed this release, waiver of liability and indemnity agreement, intending legally to be bound, and I further agree that no oral representations, statements or inducements apart from those contained in this release have been made to me. I hereby release, discharge and covenant not to sue the POP, its agents, employees, representatives, officers, directors, members and all other persons acting for POP and all instructors, participants and advertisers (hereinafter called "Releasees") from all liability to me, my personal representatives, heirs, assigns, and next of kin, for any and all loss or damage, and any claim or demands thereof on account of injury to my person or property or my death, whether caused by the negligence of the Releasees or otherwise, as the result of my having participated in any portion of the program. I hereby agree to indemnify and save and hold harmless the Releasees from any loss, liability, damage or cost I might incur due to my participation in the survival program in any manner and assume responsibility for, and the risk of, bodily injury, death or property damage due to the negligence of Releasees or otherwise, resulting from my participation in the program. I agree that if any portion of this agreement is found to be void or unenforceable, the remaining portion shall remain in full force and effect. I acknowledge that my health and physical condition will allow me to perform the activities in this training and I have been cleared by a physician to participate.

IN WITNESS THEREOF, I have executed this release on _____ (date)

X _____ (Releasor signature)

In case of an emergency, who should NOAA/NMFS POP contact on your behalf?

Contact's name: _____

Relationship to you: _____

Home phone: _____ Work phone: _____ Cell phone: _____

Current physical location of contact:

Release for use of photographs: The POP often takes photographs during training for use in educational and publicity materials. By signing below, you agree with the following: I consent to being photographed by the POP and grant the POP the right to use, publish, distribute and exhibit my name, picture and likeness in all media in perpetuity for the purposes of education in the subject of marine safety and survival and promotion of same. I agree that all photographs are owned by the POP and that they may copyright material containing the same.

Signature: X _____

Observer Safety Program Review

Appendix 17 - POP safety policies which must be acknowledged (*i.e.*, initialed and signed) before the first deployment post-training.

I _____ (print name) understand that while employed as a certified fisheries observer for the Pelagic Observer Program (POP) , or any program for which the Pelagic Observer Program has the responsibility for training and certification, I agree to adhere to all the POP's safety requirements and policies. These policies include (but are not limited to):

Initial each item:

_____ I agree to never deploy on a vessel that does not possess a current USCG Commercial Fishing Vessel Decal (or proof that such a decal has been issued and is current).

_____ I agree to never deploy on board a vessel without first conducting a safety examination checklist as detailed in the POP safety manual; I will not deploy on the vessel unless the vessel meets minimum requirements.

_____ I understand that the POP's policy allows me to refuse to board any vessel for health and/or safety concerns without repercussion.

_____ I agree to never deploy on a vessel without having my required POP-issued safety gear in my possession, including an immersion suit, personal PFD, and POP issued EPIRB.

_____ I agree to check all my POP-issued safety gear before each trip or quarterly (whichever is sooner) to ensure correct fit and working condition of each item.

_____ I agree to maintain all safety gear and data collection gear as recommended during training by the POP. This includes cleaning, servicing, and contacting the office immediately when problems exist.

_____ I agree to wear my PFD while on deck during fishing operations and when on deck alone.

_____ I agree to never work as a deckhand or crewman, and I will refuse all forms of compensation that may be offered from the vessel/captain/crew/owner/permit holder.

_____ I agree to keep my CPR and First Aid training certifications current, and I will furnish the POP office copies of certification upon completion.

_____ I agree to keep all of the collected observer data confidential as stated in the Magnuson-Stevens Act and NOAA Administrative order 216-100. This includes written, verbal, photographic, and all other forms of data and information collected from trips where an observer is contracted by the government to observe.

_____ I am aware that drug (non-prescription) and alcohol use is prohibited for observers aboard vessels.

I understand that working on commercial fishing vessels is by its nature a hazardous occupation. I further understand that my safety is a shared responsibility between my employer, my trainers, and myself. I also realize that violations of any of the aforementioned policies can result in immediate dismissal and may incur civil penalties and/or criminal prosecution.

_____ (signature)

_____ (date)

Observer Safety Program Review

Appendix 18 - Incident Evaluation Report form used by the POP

March 2015

DOC NOAA NMFS Internal Use Only



Incident Evaluation Report (IER)

Report Date

Incident Title:

Incident Start Date Incident End Date

Preparer's Name	<input type="text"/>		
FMC	<input type="text"/>		
Address	<input type="text"/>		
Address (cont'd)	<input type="text"/>		
City	<input type="text"/>	State <input type="text"/>	Zip Code <input type="text"/>
Phone Number	<input type="text"/>	Extension	<input type="text"/>
E-mail Address	<input type="text"/>		

Names and titles of all persons involved: (titles only if PII is a concern)

--

List the successes if the incident	
Description	Factors that Promoted this Success

Turn Over

Observer Safety Program Review

List areas of potential improvement along with improvement strategies:

Category	Incident Deficiencies/Weaknesses	Lessons Learned

Notes:

Additional Documents Available

Print Form

Submit by Email

Observer Safety Program Review

Appendix 19 - POP debriefing form
Modified blank spaces to fit to two pages.

Pelagic Longline Observer Program
Miami Laboratory
Observer Debriefing Form

TRIP _____ VESSEL NUMBER _____ QTR/YEAR _____

Living & Working Conditions

(A) Berthing Area (include number of persons on board, number of total bunks)

(B) Facilities available (Head, shower, galley, cleanliness, etc)

GOOD _____ ADEQUATE _____ FAIR _____ POOR _____

(C) Sampling Area (Roominess, lighting, etc)

GOOD _____ ADEQUATE _____ FAIR _____ POOR _____

(D) Crew Cooperation

GOOD _____ ADEQUATE _____ FAIR _____ POOR _____

General Comments (Food, crew's understanding of English, Smoking, etc)

Anything else the observer would like to discuss about this trip, or anything that would be helpful for the next observer that deploys on this vessel:

Observer Safety Program Review

Appendix 20 - Additional items SGOP/SBLOP observers should be aware of during the pre-deployment Vessel Safety Check (from Observer Safety Manual; NMFS 2016).

- Does the vessel seem well maintained? Is it neat, clean and being run by a crew that is careful and prepared?
 - Any visible hydraulic leaks?
 - Is the vessel being used for the purpose it was originally designed? Have significant changes been made?
 - Do obvious hazards exist? Note potentially hazardous areas/conditions.
 - Identify the watertight doors (interior and exterior). Can they be secured in case of heavy weather or emergencies?
 - Are any hatches or passageways blocked or difficult to get to?
 - Does deck gear appear to be in good working order and are there safety concerns with the setup? Are there wires that run overhead? Are shackles and blocks worn excessively?
 - Is vessel overdue for a haul-out (excessive growth at waterline or hull paint in poor condition)?
 - How often is the bilge pump going on?
 - How high off of the deck is the fish hold hatch and is it in good condition? Are there any other openings on deck and are they covered with hatches?
 - Would anything prevent you from abandoning ship from the living quarters?
 - What are the escape routes from every part of the vessel you might find yourself?
- Visualize egress for all possible scenarios (fire, flooding, capsized, dark, etc.) and mentally note landmarks.
- What are the most combustible items on board and where are they stored?
 - Are there any exposed exhaust pipes/manifolds that might pose burn hazards?
 - While you are at sea note the roll period. Generally a boat with a quick, snappy roll is more stable than a boat that has a slow or sluggish roll period. A boat that seems to hesitate on its side before righting could be unstable.
 - Does the vessel list excessively?
 - Is there heavy equipment on deck that is not lashed down?
 - Are there any exposed drive chains, pulleys or belts?
 - Where is the life raft located? Would it be hard to get to if conditions were icy or the house was on fire?
 - Are there rust stains between wood planks? Do any planks protrude or are there inconsistencies in the hull? Is wood rot present? Remember, if you can see wood rot it is likely worse in areas that you can't see.
 - Are there safety issues involved with boarding?
 - Is there a sufficient amount of scuppers and are they large enough to be effective? Do they become plugged during fishing operations?
 - Is there a station bill posted and is your role clear during all shipboard emergencies?

Did the captain give a safety orientation, explaining:

- Survival craft embarkation stations and assignments
- Fire/emergency/abandon ship signals
- Procedures for rough weather/sea
- Procedures for recovering person overboard
- Procedures for fighting a fire
- Essential actions required of each person in an emergency?

Observer Safety Program Review

Appendix 21 - PIROP post-training feedback form for trainees (modified format to fit to one page).

NMFS Pacific Islands Region
Observer Program

Post Training Evaluation-Longline

1. Please identify sections or subjects, if any, you found to be especially helpful.

2. Please identify sections or subjects, if any, you found not to be helpful.

3. Regarding the testing schedule, do you think there were too many quizzes, an adequate number, or not enough? If not enough, how often would you recommend quizzes be given?

4. Please identify sections & material, if any, not covered well enough or too much.

5. Did you have enough time to prepare for the tests?

6. What was your least enjoyable part(s) of training?

7. What would you recommend to make the part(s) of the training better?

8. Would you be willing to assist with future observer training classes, if you were available?

9. Identify any apprehensions you may have about working as an observer in the Hawaii based pelagic longline fishery?

Observer Safety Program Review

Appendix 22 - PIROP placement meeting questions

Placement Meeting

Observers are to:

1. Collect objective data on fishing activity, the take of target and non-target species and selected specimen samples.

This means the observer will need to see everything that is caught on the line. The observer will also write down latitudes and longitudes from the GPS, measure fish, collect data on protected species, and collect samples.

2. Perform their duties in a way that minimizes interference with fishing operations.

Again, the observer must see everything that is caught on each hook. This means that you may need to slow the vessel down so the observer can identify everything that is caught on the line. Do not cut the line until the observer has seen it and tells you it is OK to cut the line. For example, if it is a shark, they need to identify it to species, including the different species of thresher sharks and brown sharks.

3. Keep open communication with vessel personnel by informing them about observer duties and collected data.

The observer will let you know what they are doing and you are welcome to look at the data they are collecting.

4. Obtain permission from the vessel captain before using any boat equipment.

The observer will ask you before they use the SSB or any other boat equipment. The observer will also abide by the house rules of the vessel.

5. Collect specimens as instructed by NMFS and clean up thoroughly afterward.

After the observer is done collecting samples they will clean up their mess and wash the remaining fish guts over the side of the vessel.

6. Use work cameras only for photographing specimens.

If you catch a turtle, marine mammal or unidentified fish the observer will need to take pictures of these. However, they are not to take pictures of the crew or anything that will identify the vessel.

7. Bring issued rain gear, boots, life jackets, survival suits and EPIRB.

8. Ask the captain about emergency procedures and familiarize themselves with the locations of life rafts, fire extinguishers and first aid kits.

Observer Safety Program Review

Note: The observer accompanies the Logistics Coordinator during the safety meeting so the observer will already be familiar with the location of the safety equipment.

9. Remain aboard their vessels until the vessel returns to port to unload their catch.

For example, if you stop in Kauai or another port, but return to Honolulu to unload fish, the observer will remain onboard the vessel until you return to Honolulu. If you land at another port and unload your fish, the observer will get off the vessel there and arrangements will be made for the observer to return to Honolulu.

10. Share housekeeping routines such as dishes and general clean up with the crew.

If the crew takes turns washing dishes or cleaning up, the observer will take their turn as well. However, the observer is not to be the designated person for this job during the cruise.

Observers are not to:

1. Dictate procedures or direct fishing operations.

The observer will not tell you how or where to fish.

2. Be involved with crew responsibilities such as standing watch or helping with fishing.

The observer is not to drive the boat or help with actual fishing operations.

3. Keep personal diaries in any form.

4. Bring aboard personal recording devices or personal cameras of any type.

5. Compromise data or record extemporaneous or personal comments.

6. Conduct personal research of any kind.

What this means is the observer is collecting data for NMFS only, they are not working for anyone else. In addition, the observer is to record only what he/she sees, they will not write down any assumptions or opinions.

7. Keep specimens or edible fish of any kind.

If the crew eats fish every day, that is OK. The observer eats what the crew eats. However they cannot take any fish home from the cruise.

8. Discuss boat business from one vessel to another or to any fisherman shoreside.

You don't have to worry about the observer telling anyone about your fishing secrets.

Captains are to:

1. Cooperate with the observer in the performance of the observer's duties.

Observer Safety Program Review

Allow the observer to do his/her job. If you catch a turtle or any other protected species you will need to stop the vessel and assist the observer to get the turtle onboard the vessel.

2. Provide living quarters comparable to a full crew member.

Note: The captain is asked to designate a bunk for the observer during the safety meeting.

3. Provide the same meals, snacks and amenities provided to crew members.

Often the observer will have a list of additional food items. Is that OK for the observer to give you a list? The vessel will get reimbursed \$20 for every day the observer is onboard the vessel. We also request that you get bottled water for the observer.

4. Allow the observer access to areas of the vessel necessary to conduct observer duties.

Allow the observer to go to the pilot house to obtain GPS positions, or store specimens in the ice hold, or any other areas of the vessel necessary to do his/her job.

5. Allow the observer access to communications and navigation equipment, as necessary to perform observer duties.

The observer will need to get the latitude and longitude from the GPS. The observer will also need to call in using the SSB radio at least once a week.

6. Notify the observer when commercial fishing operations are to begin and end.

For example, if the observer is sleeping make sure you let them know when you are about to set or haul the gear.

7. Provide true vessel locations by latitude and longitude upon request by the observer.

Let the observer go to the pilothouse to get the position from the GPS.

8. Bring aboard sea turtles and marine mammals killed during fishing operations that are readily accessible to crew members, if requested by the observer.

If a turtle is caught the observer will need cooperation of the captain and crew in order to complete his/her duties. If the turtle is dead the observer will need to bring the turtle on board, take samples, measurements and photos of the turtle, wrap the turtle in plastic bags and store it in the ice hold or freezer until the vessel returns to port. If the turtle is dead and too large to bring onboard the observer will need to take samples and photos before the observer gives the OK to release the turtle. If the turtle is live and too large to bring onboard the vessel the observer will need to take samples and photos before the observer gives the OK to release the turtle. The observer will make the decision as to whether the turtle is too large to bring onboard the vessel or not. If the turtle can be brought onboard the vessel, the observer will bring the turtle onboard the vessel with the turtle net (with the assistance of the crew) take samples, photos, and measurements and attach a satellite transmitter to the turtle before releasing the turtle.

Observer Safety Program Review

9. Provide refrigerated bait well storage space for observer collected specimens.

The observer may need to store specimens in the ice hold or freezer.

10. Record personal statements on the back of the observer's original forms, if there is a disagreement with the observer's collected data.

For example, if the observer writes a fish down as a Blue Marlin and you say it is a Striped Marlin, then you can write on the back of the observer's form that it is a Striped Marlin.

11. Comply with other guidelines, regulations or conditions that NMFS may provide in writing to ensure the effective use of observers.

Captains are not to:

1. Ask observers to stand watch or help with fishing operations.

You cannot ask the observer to drive the vessel or help with the actual fishing operations.

2. Forcibly, assault, harass or sexually harass, intimidate or attempt to influence observers, interfere with or impede observer duties.

If the observer has any questions or problems during the cruise he/she will address these with you (the Captain). If you (the Captain) have any questions or problems concerning the observer during the cruise he/she should feel free to address the observer with these concerns.

3. Fish without an observer on board the vessel after the owner or agent of the owner has been directed by NMFS to make accommodations available for an observer.

Now that the observer is going fishing with the vessel you cannot leave port without the observer.

Captain, do you understand that the \$20 a day paid to the boat at the end of the trip is provided for food and water for the observer AND if the observer doesn't receive adequate supplies, money can be withheld from reimbursement?

YES/NO

Captain, was enough food bought for the trip to provide the observer with adequate meals for the duration of the trip?

YES/NO

Has enough water been bought, if the water tank isn't adequate, to provide the observer with enough water for the duration of the whole trip?

YES/NO

Captains are to operate the vessel safely and according to established US Coast Guard safety regulations. This includes conducting proper wheel watches at all time while the vessel is underway.

Observer Safety Program Review

I certify that the above responsibilities of the Captain and observer have been read and discussed with me. I acknowledge that I am responsible for understanding the roles of the captain and the observer during this fishing trip.

Vessel Operator Name

Vessel Operator Signature

Observer Name

Observer Signature

Port Coordinator Name

Port Coordinator Signature

Observer Safety Program Review

Appendix 23 - PIROP pre-trip vessel safety checklist

PLACEMENT CHECKLIST			
Trip Number:	Observer:		
Vessel Name:	Permit Number:		
Vessel LOA:	ft		
Call sign:			
<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p style="text-align: center;">Placement Meeting</p> <p>Date: _____ Time: _____</p> <p>Captain _____ Phone Number: _____</p> <p>Owner/Agent: _____</p> <p>Others: _____</p> </td> <td style="width: 50%; vertical-align: top;"> <p style="text-align: center;">Placement Meeting Participants</p> </td> </tr> </table>		<p style="text-align: center;">Placement Meeting</p> <p>Date: _____ Time: _____</p> <p>Captain _____ Phone Number: _____</p> <p>Owner/Agent: _____</p> <p>Others: _____</p>	<p style="text-align: center;">Placement Meeting Participants</p>
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Highlighted information effects observer deployment
For tallies, circle total
For multiple Exp dates record shortest
If vessel has Safety Orientation Log, have observer sign

V.03.2015
OMB Control No. 0648-0593
exp. 11/30/2015

Observer Safety Program Review

Port Coordinator Departure Checklist

Trip no: _____ Observer _____

- Select Vessel
- If shallow-set trip, send LLTPS to Kevin Busscher
- Assign Trip Number
- Setup Placement Meeting
- Travel Pouch Papers**
- Y / N Company phone protocols
- Placement**
- Check out/ Replenish gear Test fit DNA corer to sampling pole
- EPIRB test Observer departs
- Survival suit Practice Update Longline Trip Log

Place/ No Place list

<u>Communication gear</u>	Place	No-place	<u>Liferaft</u>	Place	No-place
Functioning VHF&SSB/ or SAT	x		Capacity		x
Signals			Service		x
Quantity smoke		x	Hydrostatic date		x
Quantity hand		x	Hydrostatic installation		x
Quantity rocket		x	Raft installation		x
Dates on all		x			
Fire Extinguishers		x	EPIRB		
Quantity		x	Testing		x
Charge gauge		x	Battery date		x
Service tag/documents		x	Registration	x	
Ring Buoys			Installation		x
Quantity		x	Hydrostatic release date		x
Serviceability		x			
Mounting (not tied down)		x	CFVSE Decal		x
1 w/ 90' rope		x			
PFD/Immersion suits					
Quantity		x			
light/sound devices	x				
Serviceability	x				
First aid/CPR					
1 1st aid	x				
1 CPR	x				
1st aid manual w/ first aid kit (stocked)	x				
Station bill					
posted and filled out		x			
Drills/Orientation					
Monthly drill	x				
Safety orientation		x			

Observer Safety Program Review

Appendix 24 - PIROP standardized post-trip debriefing questionnaire

2/24/2017 PIROPS: Post Cruise

NOAA FISHERIES SERVICE PACIFIC ISLANDS REGION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION OBSERVER PROGRAM SYSTEM (P.I.R.O.P.S.)

Home Trip Search Red Pencil Green Pencil Reports/Mgt Photos Users Vessel Log IAR PMS 89 mins Aloha Rich!

Trip Overview

POST CRUISE

1.) Please explain information about your vessel assignment such as food, sanitation, sleeping conditions, disposition of the crew, ventilation or temperature inside the vessel, general safety conditions, and anything else that would be helpful to the next observer assigned to this vessel. Cramped boat. Very leaky roof. Food not so great. Bucket boat with shower on deck. Captain and crew friendly and helpful.

2.) Did you collect required specimens? N/A

2a.) Explanation why required specimens were not collected:

3.) Did you experience any problems with your observer gear (malfunction, loss, etc.)? No

3a.) Explanation of problems experienced with observer gear:

4.) Did any vessel personnel perform your observer duties at any time? No

4a.) Explanation of observer duties performed by vessel personnel:

5.) Could you see the mainline and hooks come out of the water from your observing location? Yes

5a.) Explanation regarding observing location:

6.) How did you obtain your hook count? Before/After

6a.) Explanation of 'Other' hook count method:

7.) Was any data given to the captain? Yes

7a.) Explanation regarding data given to the captain: Numbers and species of sharks caught on each haul

8.) Was any data obtained from the captain (excluding reported fields)? No

8a.) Explanation regarding data obtained from the captain:

9.) Were there any interactions with sea turtles, marine mammals or sea birds? No

9a.) Explanation of protected species interaction(s):

10.) Were meals provided in adequate quantity? Yes

10a.) Explanation of inadequate meals:

11.) Did the vessel use the dehooking equipment to remove hooks from bycatch species other than turtles? No

11a.) Explanation of dehooking bycatch:

12.) Were there any times when you were not on deck during the haul or the first hour of the set including bathroom breaks, lunch, etc? Yes

12a.) Explanation regarding times when you were not on deck during the haul or the first hour of the set: Occasional bathroom breaks

13.) Did you wear your PFD at all times on deck? Yes

13a.) Explanation regarding times PFD was not worn on deck:

14.) Did you try on your survival suit prior to this trip? Yes

14a.) Explanation as to why you did not try on your survival suit prior to this trip:

15.) Did you check the turtle (biopsy) pole prior to leaving on this trip including screwing the cover on the threading? Yes

15a.) Explanation as to why you did not test the Turtle (biopsy) pole prior to leaving on this trip:

16.) Did you have enough time prior to departing on this trip to check your gear at gear shack to make sure you had everything and it worked properly? Yes

Update Status

Trip Status: INITIAL

Last Update: 2/22/2017 12:01:14 PM

Last Update By: Rich Kupler

Update

<https://aysan/PIROPS/Trip/PostCruise.aspx> 1/3

Observer Safety Program Review

2/24/2017

PIROPS: Post Cruise

16a.) Explanation as to why you did not check your gear prior to departing on this trip:	
17.) Did you have any seabird interactions that involved recovered or retrieved bird tags?	No
18.) Did crew action prevent positive ID of any catch (sharks, other animals, etc) during this trip?	No
19.) Were you encouraged or offered to go to sleep or go inside while the vessel was hauling gear?	No
20.) Did you observe times without posted wheel watches?	No
21.) Do you feel that your safety was compromised during the trip?	No
22.) Were there any injuries, deaths, or medical problems on your trip? (Includes yourself, captain, and the crew.)	No
23.) Were there any floatlines that were less than 20 meters?	
24.) Did you notice any baskets with less than 15 hooks?	
25.) Were there any "Reportable Marine Casualty" issues on this trip (flooding, fire, loss of propulsion, steering, grounding, etc) that would affect the vessel's seaworthiness?	No
26.) If trip was longer than 30 days, did you witness any vessel safety drills being conducted?	No
27.) Did the vessel have the minimum number of immersion suits (1 per person) on board north of 32 degrees?	Yes
28.) Were all the required seabird mitigation measures performed?	Yes
29.) Did any of the vessel safety or other required equipment that was observed at the placement meeting change during the trip?	No
30.) Were you allowed access to all areas of the vessel necessary to conduct your duties?	Yes
31.) Did the captain from your placement meeting run the boat?	Yes
32.) Did you experience any harassment, intimidation and/or interference on this trip?	No
33.) Were there any MARPOL issues, including lost gear?	No
34.) Did the vessel receive/transfer additional crew members or passengers during the trip?	No
35.) Did you notice any bedbugs and/or were you bitten by bedbugs?	Yes
36.) Were any fins removed from sharks?	No
37.) What method did you use to obtain tuna measurements?	Fork Length
38.) What method did you use to obtain shark measurements?	Fork Length
39.) For sharks and tunas that were not landed, did you record total length or fork length for approximate lengths?	Total Length
40.) Did you observe any transfer of fish between vessels?	No
41.) Did you rinse and soak the digital cameras?	Yes
42.) Did you test your EPIRB and PLB before you departed on trip?	Yes
43.) Did you check your satellite phone daily?	Yes
44.) Did you sight any marine mammals during this trip?	Yes
45.) How many lobster phytosoma samples did you collect on this trip?	0
46.) Were any scalloped hammerheads caught on this trip?	No
47.) Did vessel haul another vessel's gear (or vice-versa)?	No

<https://layers/PIROPS/TripPostCruise.aspx>

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Observer Safety Program Review

Appendix 25 - SPC/FFA observer placement meeting record (Form SUP-1; SPC/FFA 2016).

SPC/FFA REGIONAL OBSERVER OBSERVER PLACEMENT MEETING RECORD				FORM SUP-1 (pg1)	
REV DEC. 2016					
TRIP DETAILS					
OBSERVER NAME		TRIP START LOCATION		TRIP START DATE (YY/MM/DD)	
OBSERVER TRIP ID NUMBER		ESTIMATED TRIP END LOCATION		VESSEL GEAR	
VESSEL NAME		FLAG	CALIPER SERIAL NUMBER	LVI and / or IRCS	
VESSEL SIZE: <small>circle to indicate</small>		< 15 metres	15-25 metres	25-39 metres	> 65 metres
Personal Lifesaving Beacon (PLB) Y / N	PLB Make:	PLB Model:		Comments	

OBSERVER PLACEMENT CHECKLIST

A Fisheries Authority Representative/Placement Officer is to assist the observer, before and during boarding, as well as over see that information is recorded and actions taken as prescribe in this form. Please initial the space at the left of each number item to show it has been

<i>Initial :</i>		<i>Placement Officer to initial when they have:</i>	
1	_____	Set up the placement meeting	
2	_____	Assisted the observer with their personal requirements before boarding	
3	_____	Checked that the observer has been assigned appropriate accommodation and an area to store their equipment	
4	_____	Carried out a vessel safety check in the presence of the observer and Captain	
5	_____	Ensured that the Captain receives and understands the attached description (check-list) of standard observer duties and vessel obligations	
6	_____	Ensured that both parties are informed of their rights and responsibilities under CMM 2008-01 (Show and, if necessary, supply copy)	
7	_____	Reminded the observer that there is no obligation to do extra duties, but it is very much appreciated if they can help out when appropriate.	
8	_____	Reminded the Captain and Observer of importance of cooperation	
9	_____	Supplied or informed the Captain of the "Vessel on Observer Report" form	
10	_____	Informed the Captian and Observer than an observer-debriefing meeting will take place immediately upon return to port at completion of trip	
11	_____	Ensured observer's compulsory 2-way communication device is tested and working.	
<i>Initial :</i>		<i>Observer to initial when they have:</i>	
12	_____	Clearly described any special sampling requirements to the Vessel Captain	
13	_____	Has been present at the Vessel Safety Check and have agreed to board the vessel	
14	_____	Confirmed that they are medically fit, informed the Captain of any special medical issues (prescription medication etc); and supplied contact details for their next-of-kin	
15	_____	Understood that they must report all gifts in their trip report.	
16	_____	Understood that in line with their Observer Code of Conduct they should not drink alcohol at any point during the entire trip.	
17	_____	Ensured observer's compulsory 2-way communication device is tested and working.	
<i>Initial :</i>		<i>Vessel Captain to initial when they have:</i>	
18	_____	Read and understood the "Obligations of the Vessel Operators to Observers"	
19	_____	Shown the observer all current and valid license certificates	
20	_____	Shown the observer the location of their life jacket	
21	_____	Informed the observer of all safety regulations, procedures and muster stations	
22	_____	Shown the observer which electronic bridge equipment is used and which is not used	
23	_____	Shown the observer how to obtain position and UTC time and date from the onboard GPS and plotter to which they have access to during the trip	
24	_____	Understood that offering excessive alcohol to observers may interfere with their work duties and general conduct; and be aware that many observers are required by their programmes' Code of Conduct not to drink alcohol at any time while onboard the vessel	
25	_____	Ensured observer's compulsory 2-way communication device is tested and working.	

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Notes for the VESSEL CAPTAIN on the OBSERVER PLACEMENT

An observer's primary function is to collect and report reliable and accurate information for scientific, management and compliance. Observers collect data on any fish, including catch and effort, size composition, position, fishing methods, fisheries interactions, environmental impact, processing and distribution (including discards) and any other matter that may assist fisheries managers verify information for purpose of administering fisheries regulations, license requirements and access agreements. The observer duties and their obligations, along with the obligations of the vessel operator to the observers are described below. A thorough understanding of these by both the vessel operator and the observer will help ensure an effective working arrangement while on board.

→ Vessel Captain please read and initial when the obligations of both parties is understood

Capt. Initials

OBSERVER'S DUTIES AND OBLIGATIONS	
1	Must promptly report any harassment they were subjected to (including a written report to their fisheries authority representative or when not available the nearest Police station) 1
2	May take, measure and retain samples or specimens of any fish 2
3	May observe and record details of any incidental take, including the recording of set position information 3
4	May record position, activity and identification details of other vessels sighted 4
5	May use communications and other equipment of the vessel but should get permission from the Captain before using it 5
6	Should not be involved in the fishing operations but may assist in normal vessel housekeeping duties 6
7	Should not stand watch on the vessel 7
8	May take photographs of the fishing operations, including fish, gear, equipment, documents, charts and records, and remove from the vessel such photographs or film as was taken or used onboard 8
9	Observers should not drink alcohol at any point during the trip in accordance with Observer Code of Conduct. 9
10	Observer must sign for and report any gifts they have received from the vessel during the trip. 10
OBLIGATIONS OF THE VESSEL OPERATORS TO THE OBSERVER (CMM 2008-01)	
11	Ensure vessel personnel do not assault, obstruct, resist, refuse boarding to, delay, intimidate or interfere with an observer performing observer duties 11
12	Allow access to the bridge, communications and navigation equipment 12
13	Instruct observer on use of vessel communications equipment to receive and transmit message with the shore, Fishery Authority and other vessels 13
14	Assist observer as requested, in recording accurate vessel position using vessel navigation and positioning equipment 14
15	Provide access to areas where fish are held, processed, weighed or stored 15
16	Allow observer access to document and records, including all logbook for purpose of inspection and copying 16
17	Allow observer to remove samples 17
18	Ensure vessel personal do not assault, obstruct, resist, refuse boarding to, delay, intimidate or interfere with an observer performing observer duties 18
19	Show the observer appropriate vessel safety procedures and location of various safety equipment (life rafts, life jackets, etc) and how to use such equipment in the event of an emergency 19
20	Advise the observer of dangerous work areas and instruct the observer on how to minimise exposure (e.g. hard hat) to danger yet still do their work 20
21	Provide the observer with food, clean bunk space large enough for a national observer and any necessary medical facilities and treatment in the course of the observer trip and up to two full days after landing in port. 21
22	Provide appropriate space for the storage of observer equipment, supplies and samples 22
23	Vessel operators and owners should be fully aware that any instance of reported observer harassment will be fully investigated and, if warranted, legal action will follow, which may include civil and criminal penalties 23
24	Inform vessel Captain of where he can get a copy of the Vessel Report on the Observer 24

Observer Safety Program Review

SPC/FFA REGIONAL OBSERVER OBSERVER PLACEMENT MEETING RECORD	FORM SUP-1 (pg2)
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<small>REV DEC. 2016</small>		
OBSERVER NAME	VESSEL NAME	OBSERVER TRIP ID NUMBER

VESSEL SAFETY CHECK

	CIRCLE ONE	COMMENTS
1 VESSEL SURVEY DOCUMENTATION (Current)	Yes No	
2 CORRECT SIZE PERSONAL FLOATATION DEVICES AVAILABLE	Yes No	
3 APPROVED LIFERAFT OR LIFEBOATS UNDER CURRENT SURVEY AND ADEQUATE FOR NUMBER OF CREW	Yes No	
4 EPIRBs (Current Survey)	Yes No	
5 DISTRESS SIGNALS AND FLARES	Yes No	
6 FIRE FIGHTING EQUIPMENT IN GOOD ORDER	Yes No	
7 FIRE EXTINGUISHERS (Current Checked)	Yes No	
8 MARINE RADIO HF SSB or SUBSTITUTE COMMUNICATIONS	Yes No	
9 NAVIGATION LIGHTS / VESSEL LIGHTS (Working Order)	Yes No	
10 SOUND PRODUCING DEVICES OR BELL	Yes No	
11 REGISTRATION DOCUMENTATION IN ORDER	Yes No	
12 OTHER WORK RELATED VESSELS ON BOARD THAT COULD BE UTILISED IN CASE OF EMERGENCY	Yes No	
13 NAUTICAL CHARTS AND NAVIGATION AIDS (GPS/RADAR)	Yes No	
14 FIRST AID EQUIPMENT	Yes No	
15 SANITATION	Yes No	
16 PHONE	Yes No	
17 EMAIL / FAX	Yes No	
18 INSURANCE FOR OBSERVER WHILST ON BOARD	Yes No	
19 VESSEL INSURANCE	Yes No	
20 ROOM FOR CREW AND OBSERVER TO WORK SAFELY	Yes No	

<p>THE OBSERVER WAS PRESENT FOR THE VSC AND AGREES TO BOARD THE VESSEL YES / NO <small>(If no: record the reasons here and continue on to another attached page if necessary)</small></p> <div style="height: 60px; border: 1px solid black;"></div>
--

ACKNOWLEDGED (Observer Placement Meeting Record - page 1 and page 2, front and back read/ initialed/ accepted)

OBSERVER	NAME	SIGNATURE	DATE
VESSEL CAPTAIN	NAME	SIGNATURE	DATE
FISHING MASTER <small>(if any)</small>	NAME	SIGNATURE	DATE
FISHING AUTHORITY REPRESENTATIVE	NAME	SIGNATURE	DATE
INTERPRETER <small>(if any)</small>	NAME / POSITION	SIGNATURE	DATE
FISHING AUTHORITY REPRESENTATIVE	POSITION	SIGNATURE	DATE

Observer Safety Program Review

EXPLANATION ON VSC REQUIREMENTS

The fields in this form may be used to check safety, on whether an observer is safe to board the vessel.

1. **VESSEL SURVEY DOCUMENTATION CURRENT** Fishing Vessels and support vessels operating in the WCPFC must comply with their Flag State regulations and/or the Code of Practice for Safety. Ship surveys including condition, safety and security aspects of hull, machinery and on board safety equipment must be available to be viewed.
2. **CORRECT SIZE PERSONAL FLOATATION DEVICE AVAILABLE** Life Jackets must be approved types and in good serviceable condition. Life Jackets of suitable sizes must be readily accessible for the observer and all crew. Life jackets will not be stored away or locked in cupboards or rooms.
3. **APPROVED LIFE** -Life rafts must be currently in survey and be adequate to carry the amount of crew and observer.
4. **EPIRBS** International Standard 406 MHz EPIRB. The signal frequency (406 MHz) has been designated internationally for use only for distress. Check to see the frequency number and position of these EPIRBS, a few vessels may have the older relatively common type of 121.5/243 MHz emergency beacons, these became obsolete in late 2008.
5. **DISTRESS SIGNAL AND FLARES.** Vessels should have on board appropriate pyrotechnics devices that will suitably operate in both day and night emergency situations.
6. **FIRE FIGHTING EQUIPMENT** Fire fighting must be readily available, be able to work and be currently serviceable. Note that some small vessels may only have fire extinguishers on board.
7. **MOUNTED FIRE EXTINGUISHER,** Fire extinguishers must be readily available and be of the correct type. Portable extinguishers require periodic maintenance therefore the last inspection date when last tested or refilled should be available. All must be currently serviceable and if possible should be checked to ensure extinguishes have not been fully or partially discharged.
8. **MARINE RADIO HF SSB(WORKING ORDER)** Marine SSB (Single Side Band) is a means of communications for many fishing vessels. The radio must be capable of transmitting and receiving frequencies used for emergency marine communications as agreed by the International Telecommunication Union (ITU) or by the Flag State of the vessel.
9. **NAVIGATION LIGHTS AND VESSEL LIGHTS** Vessels must be able to display international standard navigation lights between sunset and sunrise and in conditions of reduced visibility. Internal and external vessel lighting must be fully operational. In the case of power failure, battery operated safety lights must be appropriately placed to ensure a safe exit from the vessel.
10. **SOUND PRODUCING SIGNALS OR BELLS** Vessels must carry a sound producing device (whistle, horn, siren or bell) capable of a prolonged blast or ringing for distress signaling purposes.
11. **REGISTRATION DOCUMENTATION IN ORDER** Flag State Registration documentation papers must be on board and available to be viewed and must show registration number, boats name, country and port of registration.
12. **OTHER WORK RELATED VESSELS** Many vessels have auxiliary vessels that can be used in emergency situations. Note these.
13. **.NAUTICAL CHARTS AND NAVIGATION AIDS** Vessel must have a set of appropriate, up to date nautical charts. Check to ensure that the Radar, GPS and any other navigational equipment is in good order and functioning.
14. **FIRST AID EQUIPMENT** The vessel must have adequate first aid facilities with current "use by dates" on all apparatus, drugs, dressings and other first aid paraphernalia.
15. **SANITATION** The vessel should have clean, well maintained sanitation and bathing facilities. Depending on the size of the vessel, observers may experience a lack of these facilities on board.
16. **PHONE** if the vessel has a satellite phone note the number for future reference.
17. **EMAIL/FAX** If the vessel has Fax or Email system note the numbers for future reference or emergencies.
18. **INSURANCE FOR OBSERVERS ON BOARD** - Observers must be covered by insurance before making a boarding
19. **VESSEL INSURANCE** – Check if vessel has insurance
20. **ROOM FOR OBSERVER AND CREW TO WORK SAFELY.** There must be adequate room on board the deck for the Observer and Crew to work in such a manner, so as to not hinder each other in their respective work duties.

Observer Safety Program Review

Appendix 26 - SPC/FFA general information (Form PS-1).

OBSERVER PROGRAM ME:		SPC/FFA REGIONAL PURSE SEINE GENERAL INFORMATION						FORM PS-1 (pg 1)		
REV. DEC 2016										
TRIP DETAILS										
OBSERVER	NAME			TRIP START LOCATION			TRIP START (SHIP'S DATE AND TIME)			
	NATIONALITY		TRIP ID NUMBER	TRIP END LOCATION			TRIP END (SHIP'S DATE AND TIME)			
	VESSEL NAME		FISHING PERMIT / LICENSE No s			VESSEL DEPARTURE PORT		VESSEL DEPARTURE DATE		
VESSEL CHARACTERISTICS										
VESSEL OWNER			COUNTRY REG No.	IRCS	UVI	FLAG	LENGTH	M	GT (circle one)	
No. of SPEED BOATS	No. of OTHER ONBOARD AUXILIARY BOATS	Do OTHER TENDER BOATS WORK with CATCHER	Y / N	MAKE	POWER	VESSEL CRUISING SPEED:	kts			
HELICOPTER CHARACTERISTICS		MAKE	MODEL	REGISTRATION NUMBER	EFFECTIVE RANGE	KM	COLOUR	No. of VESSELS that the HELICOPTER SERVICES: (including this vessel)	DD	
FISHING GEAR										
POWER BLOCK		MAKE	MODEL	PURSE WINCH	MAKE	MODEL	BRAIL	TYPE	LIVE FISH BRAIL: Y	
NET - MAX. DEPTH	M	NET - MAX. LENGTH	F	Metres Yards Fathoms	NET - No. of STRIPS	NET - MESH SIZE (of mainbody)	CM	IN	TYPE	
BRAIL TYPE CODES	LH - LONG HANDLE	HF - HEAVY FRAME	SP - SPANISH TYPE	JP - JAPANESE TYPE	BRAIL CHANGE COMMENTS			TYPE	LIVE FISH BRAIL: Y	
ELECTRONICS										
GPS	Y / N	TRACK PLOTTER	Y / N	DEPTH SOUNDER	Y / N	SST GAUGE	Y / N	USAGE	COMMENTS	
ADV in TEC.	EQUIPMENT TYPE	Y / N	EQUIPMENT TYPE	Y / N	BIRD RADAR	Y / N	SONAR	Y / N	GPS BUOYS	
VMS SYSTEMS	ECHO SOUNDING BUOY	Y / N	NET DEPTH INSTRUMENTATION	Y / N	DOPPLER CURRENT METER	Y / N	AIS	Y / N	1	
COMMUNICATION SERVICES	PHONES	SATellite	Y / N	Phone #	MOBILE/ CELL PHONE:	Y / N	Phone #	OTHER	FACSIMILE: Y / N	
INFORMATION SERVICES	WEATHER WEBSITES	WEATHER FAX:	Y / N	WEATHER SATELLITE MONITOR:	Y / N	EMAIL:	Y / N	Email address:	SEA HEIGHT	
	PHYTOPLANTION	Y / N	SST	Y / N	SEA HEIGHT	Y / N	www.	www.	www.	
OBSERVATIONS / COMMENTS / OTHER GEAR / UNUSUAL USE OF GEAR (w rite brief notes here and a full description in trip report)						USAGE CODES				
						ALL - used all the time in fishing TRA - used only in transit OIF - used often in fishing SIF - used sometimes in fishing RAR - rarely used BRO - broken now but used normally NOL - no longer ever used OTH - other please specify N.B. - fishing can be searching, setting, retrieving, deploying, investigating, etc.				

Observer Safety Program Review

GENERAL INFORMATION

Notes on FORM PS-1 (pg 1)

REV. DEC. 2016	N.B.: Wherever there is a Y/N (yes or no) option for an item, either the "Y" or the "N" must be circled	
A complete fishing trip is defined as 'from one full or partial unloading to the next full /partial unloading'. If not a complete fishing trip explain reasons why in trip report - also see "Partial trips" below.		
TRIP DETAILS		
OBSERVER	NAME and NATIONALITY	First and family names must be in full and in correct order (e.g. "John Masa" not "Masa, John"). Nationality as passport.
	TRIP ID No.	Print number issued by the authority sending you on this trip. (E.g.: John H. Masa, on his third trip in 1996 might be issued Trip ID Number: "JHM 96-03")
	TRIP START (SHIP'S DATE and TIME)	} Print date using "year year/ month month / day day" format. USE SHIP'S TIME (and DATE) } Print time using 24 hour "hour hour : minute minute" format. (e.g. Five past one on the afternoon on 3rd of January, 1996 as "96/01/03 - 13:05")
	TRIP END	
	TRIP START LOCATION / TRIP END LOCATION / VESSEL DEPARTURE PORT:	Record in all three boxes even if the same port. N.B.: Observer trip officially starts and ends only when the vessel on which the catch is actually observed is boarded and disembarked. If boat met at sea "Trip Start Date and Time" is day of transfer from transit vessel to observed boat. "Trip Start Location" is "At sea". If transferred off host vessel to another to return to port "Trip End Date and Time" is day of transfer. Trip End Location is "At sea". In each case 'at sea' should be followed by a position in degrees and minutes - If observing catch on 2 (or more) boats, each new observed boat must be a new trip with separate observer trip ID No.
Partial trips		
Multiple		
VESSEL NAME	Full name with no abbreviations. (The name "Captain Paul John Smith" should not be abbreviated to Capt. P.J. Smith.)	
FISHING PERMIT / LICENSE NUMBERS	Record all numbers of current fishing licenses on board. This may include more than one license. There should be at least one on board if the vessel fishes in any EEZ waters. Note country the license comes from in brackets alongside number.	
VESSEL CHARACTERISTICS		
VESSEL OWNER	Name of Company or Person who owns the vessel. This should be in the Registration Papers.	
COUNTRY	Number given by the Country (Flag State) to where the vessel is registered.	
REGISTRATION NUMBER	This can be found in the registration papers of the vessel. Do not confuse this with FFA Regional Registration Number.	
VESSEL FLAG	"Country where vessel is registered." E.g.: Japanese purse seiners are usually registered in Japan so their Flag State is Japan.	
IRCS	Series of numbers and letters painted on the side of the boat, must be either in black lettering on a white background or white on black.	
UVI - Unique Vessel Identifier	WCPFC requires all vessels over 100 Gross Tonnage to have a UVI after 1st Jan 2016. Generally the UVI is the International Marine Organization number or may be the Lloyd's Register (LR) no.	
NO OF SPEED BOATS	Number of speed boats. Don't count towboats, or a boat that looks like a speed boat but is only used as a tow boat.	
NO OF AUXILIARY BOATS	Count only the tow boats and light boats that the vessel keeps <u>onboard</u> . Don't count a speed boat if it is already counted.	
DO OTHER TENDER BOATS WORK with CATCHER ?	Boats (ranger boats, light boats, reefers, etc.) not carried on board but work with the catcher boat as a regular part of the fishing strategy.	
NET SKIFF ENGINE MAKE / POWER	Brand of engine used in net skiff and the power (horsepower - hp). Get this from the skiff driver. E.g.: Caterpillar 3408 (400hp)	LENGTH GROSS TONNAGE
VESSEL CRUISING SPEED	Ask the captain for the cruising speed of the vessel (not top speed).	
HELICOPTER MAKE/MODEL	Brand name and model of the helicopter. Ask the pilot if you need to.	The place to find vessel's length overall (LOA) and gross tonnage is on registration papers. Be alert for any signs that suggest there has been a change to length and/or gross tonnage. Note in report.
REGISTRATION NO.	Registration No. of helicopter. Written on side or pontoons or ask pilot.	
EFFECTIVE RANGE	Distance helicopter can go and return safely, without running out of fuel.	
COLOR OF HELICOPTER	Main colour or colours of the helicopter	
FISHING GEAR		
POWER BLOCK - Make - Model	Brand of main power block on the vessel. The model of the block.	If these cannot be seen, ask the captain, engineer or winch driver. Only fill in this information if sure it is correct.
PURSE WINCH (Make, Model)	Brand of main purse winch on the vessel. The model of the winch.	If unsure, record the information in your written report only, with a note.
MAX. NET DEPTH	Deepest depth of the net wall when it has been set.	M = Metres; Y = Yards; F = Fathoms.
MAX. NET LENGTH	The length of the net when it has been set.	Make sure you circle the correct unit used on the vessel for net measurements.
NET - No OF STRIPS	Each net is made up of strips of netting sewn together to create the depth of the net (e.g.: if the depth of net is to be 300 metres then 30 strips of 10 metre wide net are required to make the net depth (adding strips deepens the net, removing strips makes it shallower).	
NET MESH SIZE OF MAIN SECTION	The mesh is a different size in different parts of the net. Record the mesh size of the main body of the net. Make sure the units are recorded in "CM" (centimetres) or "IN" (inches). Ask the Deck Boss.	
BRAIL: TYPE, CAPACITY, LIVE FISH BRAIL	Starting with Brail 1 (the brail with the largest capacity), use the new brail type codes to indicate what type of brail it was (see notes and drawing at the start of the workbook - 'Changes to PS workbook'). Then record the capacity of the brail in metric tonnes. This will help estimate the total catch. Remember to identify the same brail (brail 1) in the same way (brail 1) on the PS-4 form. If there is a second type of brail record the information for Brail 2. If the vessel intentionally brails live fish onboard with any of the brails and processes these tuna differently mark Yes. Record any changes to brail capacity (new panel inserted etc) by recording a new brail number (i.e. Brail 2 or Brail 3) and then recording all the brail details and specifying the type, new capacity and whether the brail is used for live fish brailing. Provide brief comments on the brail change (like date, reason etc) in this data field.	
Brail change comments		
ELECTRONICS - YES / NO	If vessel has a device, circle "Y" (yes); if it does not have the device circle "N" (no). You must circle "Y" or "N" for every use codes (bottom front of form) to show how much each piece of equipment, for which "Y" is circled, is used.	
USAGE		
NEW TECH	Only record new types of equip. or major upgrades to technology here. Not to be used to record old or unlisted equip. i.e. radio. Give a full description of any new equipment or new capability (through upgrades technology) in the journal etc.	
AIS	Automatic Identification System: Transponding unit that will be attached to VHF Antenna, but maybe located inside.	
MAKE AND MODEL	Name of company and model (name or number) of each device listed. Don't mix up make and model. E.g.: for a "JRC, JMA - 7790": "JRC" is the brand (make); "JMA - 7790" is the model.	
VMS System: INFORMATION	Record the manufacturer's name (e.g.: Trimble, Thrane and Thrane, Furumo, etc.) and the model of the MTU unit.	
SERVICES	Vessels may access "Fishery information services" to get instant information on oceanographic features.	

OBSERVATIONS / COMMENTS, OTHER GEAR, UNUSUAL USE OF GEAR

Make notes if there is anything special about this boat compared to others. Comment if equipment is not working, not used or used in unusual way. Describe fishing gear if different to equipment you see on other purse seiners and record make, model, special characteristics and usage of new gear.

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GENERAL INFORMATION

Notes on Form PS-1 (pg.2)

REV. DEC 2016

OBSERVER NAME	Print your name in full. Put your first name, or Christian name, first and your last name, or surname, last.
VESSEL NAME	Print the vessel's name in full as stated on its fishing licence. Don't use any abbreviations.
OBSERVER TRIP ID NO.	Fill in your trip identification number as supplied by your programme before departure - exactly as on PS-1 (pg.1) and elsewhere.

CREW

NAME	<p>For each of the listed positions enter the name of the crew person who works in this position. This information should be available on the crew list that must be given to immigration when a vessel visits port. Record first name first and last name last. Be certain of the spelling.</p> <p>If a person holds more than one position write "same as (the other position they hold)". E.g.: if Joe Flyer is both helicopter pilot and helicopter mechanic, write "Joe Flyer" next to "Helicopter Pilot" and write "same as helicopter pilot" next to "helicopter mechanic".</p> <p>Another common double position is the Captain and Navigator/Master. If the vessel does not have anyone in the position indicated write "Vacant" in the "Name" column.</p> <p>If the vessel has a specialist position that is not listed here try to squeeze the name of that position followed by a dash (-) and the name of the person holding the position in one of the "Crew" rows below. Be sure to describe this position in the written trip report.</p>
YEARS EXPERIENCE (YRS.EXP)	<p>For each crew member not working in a specialist position correctly record the name, number of years of experience and the nationality in the lower crew sections.</p> <p>Record the number of years experience the crew member or officer has <u>in this position</u>. E.g.: if the Captain has been fishing on purse seine vessels for 20 years but has only been a Fishing Captain on purse seine vessels for five years write in "5".</p>
NATIONALITY	Nationality should be available on the crew list. Pay special attention to the nationality of any Pacific Islanders amongst the crew.
COMMENTS	Record any information about the crew in this column. Any relevant information may be useful.
TOTAL NUMBER OF CREW (include Captain and officers)	<p>Examples could include: name of boat previously worked; name of Fishery College attended; famous fishing family connection, etc.</p> <p>To be recorded if readily available but not necessary if obtaining it will in any way hinder other observer activities on board. If licence is not available then try to obtain other identification document types (e.g passport) and their document numbers.</p> <p>Add up all the crew. Include the Captain, listed positions and other crew. But be very careful not to count any of the crew twice.</p> <p>This is an easy mistake to make in situations where one crew person has two different positions. Be Careful!</p>

WASTE DISPOSAL SYSTEM	<p>Circle "Y" or "N" (yes or no) to show if the vessel has equipment and / or follows standard procedures to manage fish offal or other waste.</p> <p>Examples of equipment of equipment include incinerators, crushers, shredders, compacters, balers, meal plants, etc.</p> <p>Example of procedures might be keeping all plastic waste until the end of the trip. If present describe how these are used and how effectively they are used in your trip report. (i.e., what pollution control processes does the vessel have?)</p>
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SAFETY EQUIPMENT (obtain as much information as possible)	
LIFE JACKET	<p>If observer has their own (or a fisheries) life jacket (LJ), the "O" must be circled.</p> <p>Otherwise circle the "Y" or "N" to show if the vessel showed the observer a L J that they could use in an emergency. Also circle the "Y" or "N" to show if the LJ the vessel offered was a suitable size. Circle "easy" if the allocated L.J was easily available, "moderate" if not so easy to get to, or "hard" if it would be very hard to find in an emergency.</p>
EPIRBs	Count all EPIRBs together (with or without expired batteries). Then count only those with expired batteries.
LIFEBUOYS / LIFE RINGS	Only record information for EPIRBs that are easily accessible (not found in liferaft etc). Count all lifebuoys and life rings that can be found
LIFE RAFTS	Find info on labels on life-rafts. If, after a careful check, dates are not found, record "ND" for 'dates not displayed'.

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Appendix 27 - News Stories on Keith Davis's Disappearance.

1. Knudson T. 2017. He was supposed to protect the sea. Then he vanished from his ship. Reveal News. February 15, 2017. <https://www.revealnews.org/tag/keith-davis/>
2. Tory S. 2017. The Mysterious Disappearance of Keith Davis. Hakai Magazine. January 4, 2017. <https://www.hakaimagazine.com/article-long/mysterious-disappearance-keith-davis>
3. Grube N. 2015. Mysterious Disappearance Exposes Dark Side Of The Fishing Industry. Huffington Post. October 9, 2015. http://www.huffingtonpost.com/entry/keith-davis-fisheries-observer-disappearance_us_560c944ce4b0dd85030ace9e
4. Glover S. 2015. FBI, Coast Guard investigate disappearance of American off coast of Peru. CNN. September 21, 2015. <http://www.cnn.com/2015/09/21/politics/coast-guard-investigate-american-peru-disappearance/>
5. Wagner D. 2017. Arizona dad ponders son's fate in lost-at-sea mystery. The Arizona Republic republished by USA Today Network. March 4, 2017. <http://www.usatoday.com/story/news/nation-now/2017/03/04/arizona-dad-ponders-sons-fate-lost--sea-mystery/98759060/>
6. HRAS. 2017. Investigative Report and Case Study: Fisheries Abuses and Related Deaths at Sea in the Pacific Region. Havant, UK: Human Rights at Sea. <https://www.humanrightsatsea.org/report-fisheries-abuses-and-related-observer-deaths-in-the-pacific-region/>

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Appendix 28 - IATTC PTVSC

FORM T3: PRE-SEA INSPECTION CHECKLIST I

Carrier Vessel Details

Inspected by:

Observer / Co-ordinator		Date		Signature	
Vessel Agent/Agency		Date		Signature	
Port / Position					

Vessel Details:

Vessel Name			
Captain Name			
Call Sign			
Flag			
Size GRT			
LOA			
Number of Crew			
-----Vessel contact Number	Telephone		
	Fax		
	Inmarsat (A/C/M) & No.		
Vessel Agents	Name		
	Telephone		
	Fax		
	Mobile		

Safety Equipment:

Valid Safety Certificate (Y/N)		Issuing Authority		
Life Boats				
Type	Number	Capacity	Launch method Gravity Davit or Free Fall	
Life Rafts				
Type	Number	Capacity	Hydrostatic release Yes / No	Date Service Due

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Life Jackets			
Type Inflatable/Packed	Number	Location Cabin /Muster Station/ Both	SOLAS Approved Yes/ No
Immersion Suits			
	Number	Location Cabin/Muster Station/ Both	SOLAS Approved Yes/ No
Life Buoys			
	Number	Free Release Yes / No	Light/SART Attached
Flares: Location		If checked No. / Exp Date	
First Aid Materials Location		Certified Medical Officer	
Fire Extinguishers			
Positioned in main corridor's (Y/N)		Charge seals intact (Y/N)	
Positioned on bridge (Y/N)		Charge seals intact (Y/N)	

GMDSS Requirements:

Radio Equipment	HF Operational yes or no	MF Operational yes or no	VHF Operational yes or no	INMARSAT Operational yes or no	NAVTEX Operational yes or no
EPIRBs					
Type	Number	Location	Release manual / float free		
SARTs	Number	Location	Release manual / float free		

Accommodation:

Single Cabin or Sharing	Comment
Vessel Emergency Evacuation and Muster Stations Lists – Displayed (Y/N)	

General Comments:

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Appendix 29 - WCPFC Conservation and Management Measure 2016-03

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COMMISSION
THIRTEENTH REGULAR SESSION
Denarau Island, Fiji
5 – 9 December, 2016

CONSERVATION AND MANAGEMENT MEASURE FOR THE PROTECTION OF WCPFC
REGIONAL OBSERVER PROGRAMME OBSERVERS

Conservation and Management Measure 2016-03

The Western and Central Pacific Fisheries Commission (WCPFC):

In accordance with the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (the Convention);

Recalling Article 28(7) of the WCPF Convention, which requires the Commission to develop procedures and guidelines for the operation of the Regional Observer Programme (ROP);

Further recalling that Annex III, article 3 of the Convention expressly requires that the vessel operator and each member of the crew shall allow and assist any person identified as an observer under the ROP to carry out all duties safely and that the operator or any crew member shall not assault, obstruct, resist, delay, refuse boarding to, intimidate or interfere with observers in the performance of their duties;

Committing to the implementation of conservation and management measure (CMM) 2007-01, which clearly states the rights of observers shall include, *inter alia*, the freedom to carry out their duties without being assaulted, obstructed, resisted, delayed, intimidated or interfered with in the performance of their duties;

Recognizing that observers play a critical role in supporting effective management outcomes and therefore it is critical that measures are in place to ensure their safety while undertaking their duties;

Noting that CMM 2007-01 specifies that the responsibilities of vessel operators and captains shall include, *inter alia*, ensuring that ROP observers are not assaulted, obstructed, resisted, delayed, intimidated, interfered with, influenced, bribed or attempted to be bribed in the performance of their duties;

Further Recognizing the commitments in Articles 98 and 146 of the United Nations Convention on the Law of the Sea (UNCLOS), to render assistance and protect human life, and the

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International Convention on Maritime Search and Rescue, as amended and overseen by the International Maritime Organization, which outlines the responsibilities of governments related to search procedures including the organization and coordination of actions, cooperation between States, and operating procedures for vessel operators and crew;

Further Noting the commitment in Article 94(7) of UNCLOS, regarding the duty of a flag State to cause an inquiry to be held into any loss of life or serious injury to nationals of another State which has been caused by a marine casualty or incident of navigation and involved a ship flying its flag;

Adopts the following conservation and management measure in accordance with the Article 10 of the Convention:

1. This CMM applies to WCPFC ROP observers on fishing trips operating under the WCPFC ROP¹.
2. Nothing in this measure shall prejudice the rights of relevant CCMs to enforce their laws with respect to the safety of observers consistent with international law.
3. In the event that a WCPFC ROP observer dies, is missing or presumed fallen overboard, the CCM to which the fishing vessel is flagged shall ensure that the fishing vessel:
 - a. immediately ceases all fishing operations;
 - b. immediately commences search and rescue if the observer is missing or presumed fallen overboard, and searches for at least 72 hours, unless the observer is found sooner, or unless instructed by the flag CCM to continue searching²;
 - c. immediately notifies the flag CCM;
 - d. immediately alerts other vessels in the vicinity by using all available means of communication;
 - e. cooperates fully in any search and rescue operation
 - f. whether or not the search is successful, return the vessels for further investigation to the nearest port, as agreed by the flag CCM and the observer provider;
 - g. provides the report to the observer provider and appropriate authorities on the incident; and

¹ It is recognized that Japan is subject to domestic legal constraints, such that it is not able to meet all of the obligations contained in this CMM until such constraints are overcome. Until such constraints are overcome, Japan shall make utmost effort to implement all the provisions. If Japan has not implemented a provision contained in this CMM, such non-implementation shall not constitute non-compliance with this provision. However, Japan is obliged to explain to TCC which specific obligations are not being implemented and explain to TCC and WCPFC the reason for such non-implementation, as well as steps being taken to overcome these constraints. Notwithstanding these constraints Japan considers the issue of observer safety to be of paramount importance and will work to prevent incidents affecting observer safety.

² In the event of force majeure, flag CCMs may allow their vessels to cease search and rescue operations before 72 hours have elapsed.

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- a. takes action to preserve the safety of the observer and mitigate and resolve the situation on board as soon as possible;
 - b. notifies the flag CCM and the observer provider of the situation as soon as possible; and
 - c. cooperates fully in all official investigations into the incident.
9. If any of the events in paragraphs 3 – 7 occur, port CCMs, shall facilitate entry of the fishing vessel to allow disembarkation of the WCPFC ROP observer and, to the extent possible, assist in any investigations if so requested by the flag CCM.
10. In the event that, after disembarkation from a fishing vessel of a WCPFC ROP observer, an observer provider identifies—such as during the course of debriefing the observer—a possible violation involving assault or harassment of the observer while on board the fishing vessel, the observer provider shall notify, in writing, the flag CCM and the Secretariat, and the flag CCM shall:
 - a. investigate the event based on the information provided by the observer provider and take any appropriate action in response to the results of the investigation;
 - b. cooperate fully in any investigation conducted by the observer provider, including providing the report to the observer provider and appropriate authorities of the incident; and
 - c. notify the observer provider and the Secretariat of the results of its investigation and any actions taken.
11. CCMs shall ensure that their national observer providers:
 - a. immediately notify the flag CCM in the event that a WCPFC ROP observer dies, is missing or presumed fallen overboard in the course of observer duties;
 - b. cooperate fully in any search and rescue operation;
 - c. cooperate fully in any and all official investigations into any incident involving an WCPFC ROP observer;
 - d. facilitate the disembarkation and replacement of a WCPFC ROP observer in a situation involving the serious illness or injury of that observer as soon as possible;
 - e. facilitate the disembarkation of a WCPFC ROP observer in any situation involving the assault, intimidation, threats to, or harassment of that observer to such an extent that the observer wishes to be removed from the vessel, as soon as possible; and
 - f. provide the flag CCM with a copy of the observer report on alleged violations involving that provider's observer upon request, pursuant to the WCPFC Rules and Procedures for Protection, Access to, and Dissemination of Data Compiled by the Commission and Rules and Procedures for the Protection, Access to, and Dissemination of High Seas Non-Public Domain Data and Information Compiled by the Commission for the Purpose of Monitoring, Control or Surveillance (MCS) Activities and the Access to and Dissemination of High Seas VMS Data for Scientific Purposes.

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12. Notwithstanding paragraph 1 CCMs shall ensure that any authorized High Seas Boarding and Inspection vessels flying their flag cooperate, to the greatest extent possible, in any search and rescue operation involving an observer. CCMs shall also encourage any other vessels flying their flag to participate, to the greatest extent possible, in any search and rescue operations involving a WCPFC ROP observer.

13. Where requested relevant observer providers, and CCMs shall cooperate in each other's investigations including providing their incident reports for any incidents indicated in paragraphs 3 through 8 to facilitate any investigations as appropriate.

14. The Technical and Compliance Committee and the Commission will review this conservation and management measure no later than 2019 and periodically thereafter. Notwithstanding this provision CCMs may submit a proposal to amend this CMM at any time.

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Appendix 30 - Potential metrics to compare/contrast national incident rates among ROPs

Occupational health and safety practitioners define two types of indicators (metrics) for the purposes of tracking employee health and safety practices – lagging and leading. Lagging indicators measure the end result of occupational health & safety processes, policies and procedures. They're a record of things that have already happened. Since they record things after the fact, they inform a reactive health and safety culture (Government of Alberta 2015). Leading indicators, on the other hand, focus on future health and safety performance with the intent of continuous improvement. They are a signal and monitor of what is being done on an ongoing basis to prevent worker illness and injury (Government of Alberta 2015). Both types have merit.

The review team has initiated a draft of potential lagging and leading indicators which may be used to develop benchmark metrics and for annual reporting of observer injuries and illnesses (including fatalities). Partnering with other agencies (*e.g.*, NIOSH) that are more familiar with calculating and tracking health and safety statistics in order to fine tune the indicators would be beneficial.

Lagging indicators include:

1. Time elapsed between incident and when reported
 - a. Calculate average time elapsed for each fishery and/or vessel type.
 - b. Calculate average time elapsed for each observer provider.
 - c. Annually evaluate if reporting requirements are meeting needs
2. Time elapsed between when reported and response
 - a. calculate average time elapsed by incident type (illness, injury, vessel casualty, harassment, etc.) and responder (observer provider, program, USCG, OLE)
3. Annually quantify the number of incidents (safety, harassment, etc) per observer deployment day for each ROP
4. Quantify, and track by program, type of treatment rates per illness/injury. Treatment types could include: none, observer self-treatment, vessel intervention, professional medical attention upon return to port, medevac, etc.
5. For illness/injury incident type:
 - a. Calculate number of employee injuries per detailed body part
 - b. Calculate illness rate by broad categories (seasick, minor cold/flu, major cold/flu, etc.)
 - c. Calculate illness and injury rate by severity (minor, moderate, serious, severe, critical, not survivable)
 - d. Calculate injury rates by cause (*e.g.*, lifting, slipping, etc)
 - e. Calculate injury rate by activity type (*e.g.* vessel boarding, actively sampling, etc.)

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- f. Calculate illness rate by program (# / deployment day)
- g. Calculate injury rate by program (# / deployment day)
- h. Calculate fatality rate by program (# / deployment day)
6. Lost training days due to incident (days missed / total person days per program).
7. Lost sea days (or “data collection days”) due to incidents.
 - a. Calculate a rate for each program (# lost sea days/total deployed days)
 - b. Calculate a rate for each fishery and/or vessel type
8. Number of OSHA recordable incidents (if these were required) by program
9. Calculate rates by location of where injury occurred (*e.g.*, on vessel/in factory, on vessel/on deck, on vessel/in galley, off vessel/on dock...)
10. Quantify corrective actions and outcomes
11. Quantify enforcement actions by type and outcome (*e.g.*, not pursued, referred to GCES, notice of violation action issued, etc.). Quantify number of actions not pursued due to deficient information.
12. Calculate percent of deployments made by observers who were up-to-date on safety refresher training requirements (minimum every 3 years). If not 100%, new tracking measures may need to be implemented.

Leading indicators, obtained through audits, attitude surveys, or inspections, include:

1. Frequency of safety training (how up to date is workforce)
2. Frequency of PFD use (is there a strong safety culture that manifests in appropriate behavior?)
3. Frequency of proper lifting techniques
4. Frequency of successful (illness/injury) treatment outcomes

Regardless of the indicators selected, a well-designed and comprehensive data collection protocol would be necessary (see 3.2, Finding No.3, Recommendation .2) and be compliant with Department of Commerce requirements in the NOAA Manual 209-10 ((NOAA 2017b)).