

## A. COVER PAGE

<b>Project Title:</b> Commercial Fishing Safety Training and Materials Development	
<b>Grant Number:</b> 1 T03OH012083-01-00	<b>Project/Grant Period:</b> 09/01/2020 - 08/31/2022
<b>Reporting Period:</b> September, 1 2020-August 31, 2022	<b>Date Submitted:</b> 11/14/2022
<b>Program Director/ Principal Investigator</b>  JERRY DZUGAN AMSEA SITKA, AK 99835 Phone: 907-747-3287	<b>Administrative Official Information</b>  JERRY DZUGAN AMSEA SITKA, AK 99835 Phone: 907-747-3287
<b>Change of Contact PD/PI:</b> N/A	
<b>Human Subjects:</b> N/A	<b>Vertebrate Animals:</b> N/A
<b>hESC:</b> N/A	<b>Inventions/Patents:</b> N/A

## B. ACCOMPLISHMENTS

### B.1. What are the major goals of the project?

**Objective 1:** Hold one Marine Safety Instructor-Training (MSIT) workshop in California and one in Washington or Oregon for at least eight people per course, who will train fishermen in Coast Guard required training, such as Drill Conductor courses and Stability courses.

**Objective 2:** Hold 24 Coast Guard-accepted Drill Conductor workshops conforming to 46 U.S.C. 4502 (i) Safety Standards for commercial fishing to train a total of 240 fishermen in California, Oregon, and Washington over two years. Hold 8 stability workshops in California, Washington, and Oregon to train 80 students in stability.

**Objective 3:** Provide Drill Conductor training to high school students already engaged in commercial fishing, in at least 4 different rural Alaska high schools for a total of 40 students in Drill Conductor workshops.

**Objective 4:** Develop a series of 6 to 10 short “how to” instructional videos of the skills covered in Drill Conductor classes. The video clips will each be 3 to 6 minutes in length. The topics will include immersion suit donning, maintenance, and inspection; fire extinguisher use and maintenance, dewatering pump use, life raft storage and launching; emergency radio use, etc.

**Objective 5:** Develop a series of Emergency Drill scenarios that will remind and encourage fishermen to conduct required monthly drills by developing a set of fifty-two drill scenarios that will be printed on a decks of playing cards.

**Objective 6:** Use updated Alaska Fishermen’s Fund and Trauma Registry data to assess risk of injury to fishermen in Alaska. The assessment will include injuries from both trauma and chronic causes. The injury risk in five different Alaska fisheries will be published and interventions to prevent these high risk injuries will be recommended by best practices from fishermen and safety and injury prevention specialists on AMSEA’s staff and board of directors.

**Objective 7:** Develop a pre-trip departure stability checklist. There is a need, noted by safety instructors and commercial fishermen, for a simplified fishing vessel pre-departure checklist to ensure the water tight integrity and stability of the vessel before it leaves for a fishing trip. The checklist will also be a training aid in stability and other workshops.

**Objective 8:** Redesign AMSEA website to be more mobile-friendly, creating an easy-to-use, mobile educational and training resource for commercial fishermen and marine safety instructors. AMSEA will create digital content for commercial fishermen seeking information on best-practices for marine safety, cold-water safety and survival, emergency procedures, and drills. Importantly, the website will serve as a resource for AMSEA instructors to keep current on safety information and training resources. It will also serve as a registration portal for commercial fishermen seeking to register for training courses offered by AMSEA and other organizations and individuals offering AMSEA courses.

**Objective 9:** Revise training manual, *Beating the Odds: A Guide to Commercial Fishing Safety*, with a new layout, updated and revised content, and new photos and graphics. This training manual covers the content of the Drill Conductor course: the use of safety equipment, its maintenance, and how to conduct emergency procedures drills.

**Objective 10:** AMSEA will purchase additional training gear for use by our national network of port based instructors. This will include the purchase a Lion's Bullseye™ digital fire-fighting training simulator, production of 10 table-top fishing vessel stability models, and the purchase of immersion suits, PFDs and smoke generators for use as training aids in fishing vessel drill conductor, vessel stability, and other fishing safety workshops.

## **B.2. What did you accomplish under these goals?**

**Objective 1:** Instructed 1 Marine Safety Instructor-Training (MSIT) workshop in California and 1 in Oregon (100% of objective achieved) to train a total of 14 MSIT trainees (88% of objective achieved).

**Objective 2:** Instructed 37 Coast Guard-accepted Drill Conductor workshops conforming to 46 U.S.C. 4502 (i) Safety Standards for commercial fishing (154% of objective achieved) to train 75 drill conductors in California, 119 in Washington, and 113 in Oregon to train a total of 307 drill conductors (128% of objective achieved). Held 12 stability workshops in California, Washington, and Oregon (150% of objective achieved) to train 83 students in stability (104% of objective achieved).

**Objective 3:** Provided Drill Conductor training to high school students already engaged in commercial fishing in one rural Alaska high school (25% of objective achieved) with a total of 18 students taught (45% of objective achieved).

**Objective 4:** Developed 4 short "how to" instructional videos of the skills covered in Drill Conductor classes (67% of objective achieved). The video clips are 3 to 6 minutes in length and include instruction in immersion suit donning, maintenance, and inspection, dewatering pump use, and life raft launching.

**Objective 5:** Developed 52 emergency drill scenarios, instructions, or debriefing points on playing cards that will remind and encourage fishermen to conduct required monthly drills. Drill scenarios, instructions, and debriefing points were made into 6,100 playing card decks and are being distributed to new and past Drill Conductor students (100% of objective achieved).

**Objective 6:** Assessed risk of injury to fishermen in Alaska from both trauma and chronic causes using updated Alaska Fishermen's Fund and Trauma Registry data. An overview of injury risk in Alaska fisheries and interventions to prevent these high risk injuries was published on the AMSEA website and made into a PowerPoint to be presented to Mariner's First Aid students and other interested commercial fishermen (100% of objective achieved).

**Objective 7:** Developed a simplified fishing vessel pre-departure stability checklist to ensure the water tight integrity and stability of the vessel before it leaves for a fishing trip (100% of objective achieved). The checklist can be downloaded for free from the AMSEA website and also used as a training aid in stability and other workshops.

**Objective 8:** Redesigned the AMSEA website to be more mobile-friendly, creating an easy-to-use, mobile, educational, and training resource for commercial fishermen and marine safety instructors (100% of objective achieved). Digital content includes information on best-practices for marine safety, cold-water safety and survival, emergency procedures, and drills.

**Objective 9:** Revised training manual, *Beating the Odds: A Guide to Commercial Fishing Safety*, with a new layout, updated and revised content, and new photos and graphics (100% of objective achieved).

**Objective 10:** Purchased a Lion's Bullseye™ digital fire-fighting training simulator, production of 10 table-top fishing vessel stability models, and the purchase of immersion suits, PFDs and smoke generators for use as training aids in fishing vessel drill conductor, vessel stability, and other fishing safety workshops (100% of objective achieved).

<p><b>B.3. Competitive Revisions/Administrative Supplements</b></p> <p>N/A</p>
<p><b>B.4. What opportunities for training and professional development did the project provide?</b></p> <p>New instructors were trained in California, Washington, and Oregon as part of a larger effort to reinforce training infrastructure and address local turnover of long term instructors in those states. Effort was spent on developing new relationships and promoting training to the fishing industry by new AMSEA instructors in these states. In addition, new quality training materials, training equipment, and online resources were provided for instructors and commercial fishermen.</p>
<p><b>B.5. How did you disseminate the results to communities of interest?</b></p> <p>This training used r2p to take commercial fishing research on the causes of injuries and fatalities from NIOSH and other epidemiologists, as well as casualty reports from USCG and National Transportation Safety Board (NTSB) reports and “lessons learned” into all aspects of the curriculum. We also used r2p derived materials on our website and educational publications produced and incorporated r2p into all educational materials.</p>
<p><b>B.6 - What do you plan to do during the next reporting period to accomplish the goals?</b></p> <p>This report marks the end of grant OH0 12083-01, therefore no other income is anticipated on this grant.</p>

### C. PRODUCTS

<p><b>C.1. Publications, conference papers, and presentations</b></p> <p>Revision of training manual, <i>Beating the Odds: A Guide to Commercial Fishing Safety</i></p>
<p><b>C.2. Website(s) or other Internet site(s) – include URL(s)</b></p> <p><a href="https://www.amsea.org/">https://www.amsea.org/</a></p>
<p><b>C.3. Technologies or techniques</b></p> <p>N/A</p>
<p><b>C.4. Inventions, patent applications, and/or licenses</b></p> <p>N/A</p>
<p><b>C.5. Other products and resource sharing</b></p> <p>Fishing Vessel Drill Cards</p>

4 short training skills videos finished and another 4 to be completed  
 Pre-departure Vessel Stability Checklist completed  
 Alaska Injury data information slides posted on website  
 Redesign of website as a more mobile friendly source of fishing safety resource and information sharing

**D. PARTICIPANTS**

**D.1. What individuals have worked on the project?** Please include calendar, academic, and summer months.

Commons ID	S/K	Name	Degrees(s)	Role	Cal	Aca	Sum	Foreign	Country	SS
JDZUGAN		Jerry Dzugan	MS, BA	PD/PI	3.1					
LEANNFAY		Leann Fay	PhD, MS,BA	Trainer/Researcher	2.6					
		Jeff Pearson		Office/Promotions/Tech Manager	1.9					
		Rob Emley		Training Coordinator	2.6					
		Ashley Green	MS, BA	Course Coordinator	1.7					
		Amanda Johnson		Accountant/Training Records	1.8					

**D.2 Personnel updates**

- a. Level of Effort:** 2 years
- b. New Senior/Key Personnel:** Leann Fay as of 12/1/2020
- c. Changes in Other Support:** Previously reported
- d. New Other Significant Contributors:** 25% co-share from non-federal funds as required by grant.

**E. IMPACT**

**E.1 - What is the impact on the development of human resources, if applicable?**

14 new instructors were trained who will train fishermen in Coast Guard required training in California, Washington, and Oregon. This project provided new quality training materials, equipment, delivery by website & mobile device of fishing safety information and instructor resources, and course information and registration. New relationships were made with training promoted to the fishing industry by new AMSEA instructors in these states.

**E.2 - What is the impact the Public Health Relevance and Impact? The investigator should address how the findings of the project relate beyond the immediate study to improved practices, prevention or intervention techniques, legislation, policy, or use of technology in public health.**

Public Health Relevance and Impact should include more frequency in conducting safety orientations and drills, an increase in the number of fishermen who survive or prevent a casualty, and a decrease in the number of fatalities compared to a previous 5-year period average. In the West Coast region of NIOSH data, (California, Washington, and Oregon) there were 32 commercial fishing fatalities between 2012 and 2016 including 18 fatalities from vessel disasters, while in the most recent five-year data, there were 21 commercial fishing fatalities (2017 to 2021) including 10 fatalities from vessel disasters. This is a 34% decrease in commercial fishing fatalities and a 44% decrease in vessel disaster related fatalities.

This project contributes to the NORA Agriculture, Forestry and Fishing objectives that pertain to commercial fishing safety training as follows:

1. Reduce the risk of fatal and non-fatal injuries in the commercial fishing sub-sector. Rationale: Effective training in the use of survival equipment and procedures has been demonstrated to lower the rate and number of fatalities in commercial fishing.
2. Increase safety and health data meshing, information sharing, and collaboration among fishing safety researchers for workers in the fishing sub-sector. Rationale: Collaborate with researchers on both coasts to assist in program design and execution using expertise in fishing vessel safety.

## F. CHANGES

**F.1 – Changes in approach and reasons for change, including changes that have a significant impact on expenditures**

N/A

**F.2 - Actual or anticipated challenges or delays and actions or plans to resolve them**

N/A

**F.3 - Significant changes to human subjects, vertebrate animals, biohazards, and/or select agents**

N/A

## G. Special Reporting Requirements

**G.1 Special Notice of Award Terms and Funding Opportunities Announcement Reporting Requirements**

N/A

**G.2 Responsible Conduct of Research**

N/A
<b>G.3 Mentor's Research Report or Sponsor Comments</b> N/A
<b>G.4 Human Subjects</b>  G.4.a Does the project involve human subjects?  No  G.4.b Inclusion Enrollment Data  N/A  G.4.c ClinicalTrials.gov  N/A  Does this project include one or more applicable clinical trials that must be registered in ClinicalTrials.gov under FDAAA?  No
<b>G.5 Human Subject Education Requirement</b>  Are there personnel on this project who are newly involved in the design or conduct of human subject's research?  No
<b>G.6 Human Embryonic Stem Cells (HESCS)</b>  Does this project involve human embryonic stem cells (only hESC lines listed as approved in the NIH Registry may be used in NIH funded research)?  No
<b>G.7 Vertebrate Animals</b>  Does this project involve vertebrate animals?  No
<b>G.8 Project/Performance Sites</b>  Alaska Marine Safety Education Association DUNS Number: 7983753410000

2924 Halibut Point Rd.  
 Sitka, AK 99835  
 Congressional District: AK-001

**G.9 Foreign Component**  
 N/A

**G.10 Estimated Unobligated Balance**

None

G.10.a Is it anticipated that an estimated unobligated balance (including prior year carryover) will be greater than 25% of the current year's total approved budget?

No

**G.11 Program Income**

Is program income anticipated during the next budget period?

No- end of this grant.

\$11,505 in project income realized in this project.

Source: student tuition

**G.12 F&A Costs**

Is there a change in performance sites that will affect F&A costs?

No

**I. OUTCOMES**

The outcome of this project includes 307 fishermen trained in conducting Emergency Procedures Drills, 83 fishermen trained in Fishing Vessel Stability Awareness, and 14 new marine safety instructors, all within California, Oregon, and Washington. Additional outcomes include 18 high school students trained in conducting Emergency Procedures Drills in rural Alaska, production and distribution of new and updated educational information online and in print, production and distribution of new digital training video content, and the production or purchase of new and innovative training equipment to support training classes.

Results of evaluating the project plan are as follows:

1. A process evaluation measured the number of individuals trained and courses held: 2 MSIT trainings for 14 new instructors, 37 Drill Conductor workshops for 307 new drill conductors, 12 stability workshops for 83 trained in stability, and one high school drill conductor class for 18 students already engaged in commercial fishing.

2. NIOSH data was used to compare the number of fatalities in the previous 5-year period to the most recent 5-year period. In the West Coast region of NIOSH data, (California, Washington, and Oregon) there were 32 commercial fishing fatalities between 2012 and 2016 including 18 fatalities from vessel disasters. In the most recent five-year data, there were 21 commercial fishing fatalities (2017 to 2021) including 10 fatalities from vessel disasters. This is a 34% decrease in fatalities. At least 5 vessel casualties occurred during the project period, with 12 people who survived a vessel sinking or person overboard. 8 of those who survived were trained in this program. As one trained crew who helped rescue a person in the water stated, "Thank goodness for the safety training." From our randomly selected email survey asking past students if they have used the skills learned in an AMSEA class to prevent or manage an emergency at sea, one respondent said, "my shipmate had fallen overboard and because of the amsea course I was able to quickly and calmly assess the situation and get the life ring out and pull him back aboard to safety."
3. Post course evaluations for Drill Conductor classes included 196 respondents. 100% of participants said they would recommend the course to others. 175 respondents provided examples for how the course will change their safety practices on the water (i.e., "I will be more mindful of situational awareness and my duties in a given safety agenda," "Make monthly drills a priority to be prepared for a real emergency," "Corrected bad habits," "Will be prepared for emergency. Know where safety equipment is. Best practices for drills," etc.). When asked to rate the quality of the instructor, 96% of respondents rated their instructor as "excellent" and the remaining 4% rated their instructor as "good."
4. All new instructors met all criteria in the Instructor Evaluation Criteria Checklist. Knowledge gain from MSIT training completion was assessed using pre and post tests for all new MSIT trainees with pre test scores averaging 70% and post test scores averaging 94%. Knowledge gain from the stability workshops was assessed using pre and post tests with pre test scores averaging 50% and post test scores averaging 91%.
5. Randomly selected email surveys assessed the increase in and usefulness of training materials produced and distributed in this project. 29 respondents asked to rate on a scale of 1 to 5, with 1 as the lowest rating and 5 as the highest rating, "how would you rate the usefulness of the book, *Beating the Odds*, that you may have received in your class?" The average rating was 4.2 with four respondents who said they haven't used the book. When asked "How would you rate the usefulness of the *Emergency Instructions & Drill Manual* that you may have received in your class?" the average rating was 4.5 with two respondents who said they haven't used the manual. When asked, "how would you rate the usefulness of the information on the AMSEA website," the average rating out of 16 respondents was 4.6 with 13 respondents who said they haven't used the website.