

**RACE  
REFM**

# **At Sea Safety Manual 2016**



**This is a Draft version and has not been reviewed by AFSC management**

The Draft is an update to the 2014 Manual and is meant to be more useful to biologists doing fieldwork in 2016. Future updates will be reviewed by the AFSC Safety Council.

**Troy Buckley  
Jason Conner  
Peter Cummiskey  
Ben Daly  
Gordon Alford  
Adriana Myers**

**Jerry Hoff  
Caroline Robinson  
Geoff Lang  
Jim Malchow  
Brian Mason  
Susanne McDermott**

**Sandi Neidetcher  
Amie Olsen  
Theresa Smith  
Nate Raring  
Nancy Roberson  
Sarah Stienessen**



**Alaska Fisheries Science Center**

NATIONAL MARINE FISHERIES SERVICE



# Table of Contents

Mission of the At-Sea Safety Manual .....	1
What is a Safety Program? .....	3
Duties of a Safety Leader .....	4
Safety Checklists .....	6
Emergency Information .....	10
Charter Vessel Emergency Procedure Form .....	11
STCW Safety Training .....	12
Additional Emergency Training .....	13
Emergency Calls At Sea .....	14
Special Safety Equipment At Sea .....	15
Cold Water Immersion Suits .....	16
Standard Operating Procedures .....	18
1. Boarding/disembarking vessel.....	18
2. Loading/offloading .....	19
3. Setting up equipment.....	20
4. General on-deck activity .....	22
5. Setting the net .....	22
6. Fishing (sampling) .....	23
7. Haul back.....	23
8. Deploying gear over the side.....	23
9. Weighing catch .....	24
10. Dumping catch onto sorting table/splitting bin .....	24
11. Sorting catch, handling baskets.....	25
12. Weighing baskets .....	25
13. Collection of length-frequency data .....	26
14. Collection of other biological data.....	26
15. Preserving specimens .....	27
16. Entering confined spaces .....	27
17. Personal activities.....	28
18. End of leg cleanup.....	29
Shore Excursion Guidelines.....	30
Float Plan.....	33
Search and Rescue for Shore Excursions .....	35
Voucher Collection Preservation Procedures .....	37
Essential Dangerous Goods Information .....	40
Formaldehyde .....	42
Formalin .....	45

Ethanol .....	47
Glycerine .....	49
Thymol .....	51
Basic First Aid at Sea.....	53
Emergency Care Center Contact Numbers .....	55
Repetitive Motion Injuries & Back Strain .....	56
Tendonitis.....	58
Bursitis .....	62
Carpal Tunnel.....	65
Sciatica.....	68
Lumbar Strain.....	69
Seasickness: Information and Treatment .....	72
Injury, Illness and Near-miss Reporting .....	74
Annual Safety Plan Review Procedure .....	75
<b>Appendix.....</b>	<b>77</b>
Emergency Information Form.....	79
Charter Vessel Emergency Procedure Form .....	81
RACE/REFM Survey Float Plan.....	83
RACE/REFM Email Injury Report Form .....	85
Authorization for Examination or Treatment <b>CA-16</b> .....	87
Instructions for Completing Form <b>CA-16</b> .....	89
Form <b>CA-1</b> : Notice of Traumatic Injury.....	91
Instructions for Completing Form <b>CA-1</b> .....	93
Management of NOAA Small Boats <b>NAO 209-125</b> .....	95
Instructions for Ergonomic Issue Recording Form .....	101
Ergonomic Issue Recording Form.....	103
Safety Evaluation Form .....	105

# MISSION OF THE AT-SEA SAFETY MANUAL

The Resource Assessment and Conservation Engineering (RACE) and the Resource Ecology and Fisheries Management (REFM) Divisions of the Alaska Fisheries Science Center (AFSC) conducts fieldwork in hazardous environments, operating on small vessels in frigid Alaskan waters. The RACE/REFM At Sea Safety Committee was originally formed by sea-going employees to investigate the unique risks and solutions of such field work by the individuals closest to the issue.

The Committee developed this **At-Sea Safety Manual** to nurture safe working practices in the field. The manual identifies unsafe situations and behaviors that workers typically encounter in the performance of their duties at sea. The manual provides guidelines to minimize the occurrence and severity of potentially life threatening situations. Awareness of hazards and following these guidelines will help reduce the chance of injury to you and those around you. The manual will be a “living” document, incorporating suggestions from all who use it.

The Captain of a vessel has the last word in all matters concerned with the safety of all aboard as well as ensuring that all operations aboard are done in the safest manner possible. NOAA Field Party Chiefs are responsible for the safety of our science operations. However, it is ultimately the responsibility of all who go to sea to be aware of hazardous situations and to look after one another. The Safety Committee is committed to supply the information and recommendations necessary to facilitate awareness and sound decision-making while at sea.

This manual is consistent with the requirements of National Oceanic and Atmospheric Administration (NOAA) Administrative Order (NAO) 209-125: Management of NOAA Small Boats, as well as NAO 209-1: NOAA Safety Policy.

---

The Safety Committee welcomes comments and suggestions on this document and any other safety concern. Please contact:

Jason Conner, Committee Chair  
jason.conner@noaa.gov  
(206) 526-4797





## WHAT IS A SAFETY PROGRAM?

A Safety Program is a designed environment where each individual is looking out for the safety and welfare of the entire field party. Consequently, our initial program has been put together by some of the people who use it, and everyone in our workgroup who uses it should shoulder the responsibility of building on and improving the program.

For a Safety Program to be effective:

- Management must be committed to providing the resources and support necessary to carry it out.
- It must refer to the safety philosophy of the organization and clearly state its goals and objectives.
- It must establish the line of responsibility for safety, which should include everyone in the organization at some level. While each one of us has to keep safety issues foremost in our minds, there must be someone in charge to effectively direct the program on the vessel.
- It should establish an organizational structure through which all employees can address and influence how safety issues are resolved. Periodic feedback and revision of procedures is crucial. Periodic audits of the work area and equipment during each leg will further minimize danger.
- It should address all hazardous situations and practices and develop rules and procedures to mitigate danger to employees.
- It should provide for supportive safety experts and safety training for all employees.
- The program has to be clearly communicated to everyone it is intended to protect, which is the express purpose of this Manual. Each member of the field party will be asked to review the Manual at the beginning of the survey leg.
- “Close calls” should really be viewed as incidents. One outcome is just as likely as the other and only chance dictates whether you walk away uninjured or are evacuated to a medical facility. These incidents and the conditions that lead to them must be documented as carefully as the accidents that actually result in an injury. Only then can we improve the procedures that protect us all.

Finally, we must be motivated to take this Safety Program seriously. Our motivation should be that we care about the people we work with. None of us want to see anyone subjected to the pain and suffering resulting from an injury, especially if there is anything we can do to prevent it from happening. All accidents can be prevented, and hopefully this Safety Program will prevent accidents that may have happened had it not been implemented.

## DUTIES OF A SAFETY LEADER

In order to facilitate an increased level of safety awareness aboard survey vessels, the RACE/REFM At-Sea Safety Committee instituted the position of a Safety Leader. This volunteer (preferably someone other than the FPC or Deck Boss) will be responsible for monitoring and reporting safety and hazard concerns during their leg of the survey. While the ultimate responsibility for safety falls on everyone aboard, the Safety Leader is in a unique position to focus on promoting a culture of safety, rather than other mission goals. The Safety Leader helps instruct scientific personnel on safety precautions, maintains safety information (various forms), and alerts the crew to potential hazards.

Volunteering as the Safety Leader for a groundfish survey demonstrates leadership as well as the respectful concern for your fellow shipmates. Though simple, your duties are an important part of establishing a culture of safety aboard the vessel.

Accidents and near-misses may occur at any time, and the better we document these incidents, the better we can prevent them in the future.

### The duties of a Safety Leader are:

#### Safety onboard vessel at beginning of survey leg

1. **Safety Tour:** Commencing a leg of the survey, especially prior to setting up the vessel on the first leg of a charter, the Safety Leader will verify that all crew and science team are aware of the potential hazardous situations on the vessel. This includes giving a Safety Tour of the boat to all scientists upon their arrival and pointing out hazards. Use the Safety Leader Checklist in this Safety Manual to help guide the tour.
2. **Vessel Safety Orientation:** Prior to departing the dock, the Captain will conduct a thorough safety discussion with all members of the science team. The Safety Leader and the FPC should verify that all scientists are in attendance, and that the required Charter Vessel Emergency Procedure Form is signed, which verifies the meeting took place.
3. **Safety Equipment:** The Safety Leader should verify the proper stowage of safety equipment including: medical kits, O<sub>2</sub> kit, AED, survival suits, PFDs, hardhats, the eyewash station, and small boat kits. These locations should be made known and available to all vessel personnel.
4. **Chemicals:** The Safety Leader should coordinate with the FPC and/or Deck Boss to properly secure chemicals on the vessel, with close attention to ignition sources and possible spill responses.

## DUTIES OF A SAFETY LEADER - CONTINUED

### Safety on vessel during the survey leg

1. **Safety Information:** can be found in digital format on any at-sea science computer under RACE Survey App.
2. **Accident Report Forms:** Should an injury, accident, or illness occur, NOAA and the Safety Committee have supplied various forms to be completed after the situation is under control. It will be the Safety Leader's responsibility to verify that all forms have been completed properly and that they get returned to Seattle.
  - a.) RACE/REFM At Sea Email Injury Report Form→ send to [Jim.Malchow@noaa.gov](mailto:Jim.Malchow@noaa.gov)
  - b.) CA-1: Notice of Traumatic Injury/Compensation Claim

Copies of both forms can be found in the Appendix as well as on the RACE Survey App.

3. **Near Miss Incident:** Sometimes a “close call” situation may occur where an injury did not result but the potential was there for a more serious outcome. Please complete the RACE/REFM At Sea Email Injury Report Form and check “Close Call” on form.
4. **Ongoing safety monitoring:** The Safety Leader, the deck boss, and the FPC will communicate with each other regarding any unsafe situations and/or practices during the survey leg and make necessary adjustments to ensure the safety of the vessel personnel.
5. **Shore Excursions:** If a shore excursion occurs, the Safety Leader should complete a float plan and verify that all required equipment is included with the shore excursion party. Please see section on Shore Excursions and Float Plan pp. 30-33.
6. **Ergonomic Issue Recording Form:** use this form to record conditions of science crew not reported on injury forms (i.e. ergonomic injuries, seasickness, etc.) See page 97 in the appendix for form and instructions.

### Safety at completion of survey leg

1. **End of Leg:** At the completion of a survey leg, the Safety Leader will see that all operations follow the guidelines described in Safety Manual. See End of Leg Cleanup (p. 29).
2. **Safety Evaluation:** The Safety Committee has provided a Safety Evaluation form to be completed at the end of the survey leg by the FPC and any other scientist who might have a comment or suggestion to the Safety Committee regarding vessel safety.
3. **Getting safety information to Seattle:** All electronic versions of safety forms (Injury, Near Miss, Float Plan, Evaluation) will be returned to Seattle by the Safety Leader. Documents should be given to Jim Malchow, SECO.



## SAFETY CHECKLISTS

The following safety checklists are meant to be completed by the Safety Leader, but safety is the responsibility of everyone on board. Every member of the scientific party should be familiar with the following equipment and procedures. If you notice a hazard or deficiency, please notify the Safety Leader as soon as possible. These checklists should be printed out and filled for each leg of a survey.

<b>Safety Leader Incoming Checklist</b>		
Upon arriving at the boat for the beginning of a leg, complete the following (this is especially important if this is the first leg of a charter and should be given priority before setting up the vessel):		
✓	Action	Comments
	Locate hard hats for each member of the scientific party.	
	Locate eye protection for power tool use and chemical handling.	
	Set up or locate the eye wash station. If the permanent site is not available, set up at a temporary site.	
	Identify the location of the scientific party's muster station.	
	Ensure scientific personnel has read the safety manual.	
	Ensure captain has updated the station bill.	
	Ensure all scientific personnel have completed the Emergency Information form if they choose to.	
	Ensure a safe embarkation/debarkation environment.	
	Locate Safety Leader packet and reporting forms, some of these are available electronically.	
	Coordinate with the FPC/Deck Boss to conduct a science safety orientation for field party and crew.	

## SAFETY CHECKLISTS - CONTINUED

<b>Safety Leader Outgoing Checklist</b>		
Prior to departing the vessel, complete the following:		
✓	Action	Comments
	Ensure scientific personnel have the opportunity to complete the RACE/REFM Safety Evaluation Form.	
	Collect Ergonomic Reporting Forms, and return them to Jim Malchow in Seattle.	
	Review contents of the First Aid and Trauma kits, and report needed replacements to RSST. Ensure chemicals and samples are correctly labeled.	
	Ensure hard hat and life vest inventory is correct and clean.	

## SAFETY CHECKLISTS - CONTINUED

<b>Safety Tour Checklist</b>		
<p>As soon as practical, conduct a safety tour with the scientific personnel. This tour is separate from the Captain's Safety Orientation and is meant to address work hazards. It is especially important to do this prior to setting up the vessel at the beginning of a charter.</p>		
✓	Action	Comments
	Discuss overhead load hazards and precautions.	
	If possible, familiarize scientific personnel with alarms.	
	Understand operation of doors and hatches.	
	Locate vessel exits forward and aft.	
	Delineate safe working zones on deck. Discuss procedures for working outside these zones.	
	Establish safe embarkation/debarkation methods, determine individual comfort levels.	
	Discuss seasickness and safe procedures for vomiting.	
	Discuss injury and near-miss reporting.	
	Discuss safe lifting methods.	
	Locate and discuss muster stations.	
	Discuss Ergonomic Reporting Forms and distribute.	

## SAFETY CHECKLISTS - CONTINUED

<b>Safety Tour Checklist - Continued</b>		
Additionally, locate the following.		
✓	<b>Safety Equipment</b>	<b>Comments</b>
	Station Bill and assignments	
	Fire Extinguishers	
	Eyewash Station	
	Deck hose and operation	
	Personal Flotation Devices (PFD)	
	Life Rings and retrieval equipment	
	Hazardous Material storage and spill equipment	
	(Material) Safety Data Sheets [(M)SDS]	
	Oxygen Kit	
	Trauma Kit	
	Small First Aid Kit	
	Automated External Defibrillator (AED)	
	Survival Suits	
	Emergency Position Indicating Radio Beacons (EPIRB)	
	Personal Locator Beacons (PLB)	
	Search and Rescue Transponder (SART)	
	Radios and Distress Call instructions	

# EMERGENCY INFORMATION

### RACE/REFM Emergency Information Form

RACE/REFM survey participants:

Completing this form is **voluntary** and **confidential**. However, it is recommended that you fill out as much as you are comfortable with for your well-being at sea. The form will be handled with discretion for your privacy and will be opened only in the event of an emergency. Forms shall be returned to you or disposed of securely upon your request.

**Name**

\_\_\_\_\_  
First Middle Last

**Office #** \_\_\_\_\_ **Home #** \_\_\_\_\_

**Employer** RACE REF M Other \_\_\_\_\_

**Supervisor** \_\_\_\_\_ **Phone #** \_\_\_\_\_

**Emergency Contact** \_\_\_\_\_ **Relationship** \_\_\_\_\_

**Phone #** \_\_\_\_\_ **E-mail** \_\_\_\_\_

**Physician** \_\_\_\_\_ **Phone** \_\_\_\_\_

**Blood Type** \_\_\_\_\_ **Irregular Blood Pressure? Y / N**

**Allergies** \_\_\_\_\_ **Medic Alert Tag? Y / N**

\_\_\_\_\_  
 \_\_\_\_\_

**Current Medications** \_\_\_\_\_

**Relevant Medical Conditions:**

y to  
) to those  
participant  
ation is

ble having this  
native is to  
ntact  
contact who  
edge of

appendix of  
Filebox, or  
ound on the  
ntry  
cating this  
ed Safety

ch individual  
Leader of a  
become  
ed. Privacy  
may choose  
mation.  
rtinent  
ult in higher

# CHARTER VESSEL EMERGENCY PROCEDURE FORM

The following form can be found in several locations: in the FPC Manual, in the Appendix of this Safety Manual, and in the RACE Survey App located on the wheelhouse and catch data entry computers (under Forms - Safety Briefing). At the beginning of each leg, prior to departure, the Captain will conduct a safety briefing with the scientific crew. Safety is a priority on all vessels, and while each member of the field party is responsible for general safety, the Captain has the ultimate authority and accountability for all safety measures and conditions aboard the vessel.

At the Captain's safety briefing, all vessel emergency procedures and safety policies will be discussed. During the briefing, scientists will be required to demonstrate competency in donning survival suits, examining them for deficiencies and storing them properly. Before stowing survival suits, the serial numbers, sizes and Personal Locator Beacon (PLB) serial numbers should be

Page 1 of 2

**CHARTER VESSEL EMERGENCY PROCEDURE FORM**

This form certifies that a formal review of safety systems and emergency procedures aboard the \_\_\_\_\_ on this date \_\_\_\_\_ was performed. The review included, but was not limited to:

- Purpose, location and operations policy for:
  - Vessel EPIRBs
  - Transceivers
  - Survival suits
  - Life jackets
  - Life raft (boat)
  - Fire fighting equipment
  - First aid supplies
- Procedures and duty stations for:
  - Man overboard
  - Abandon ship
  - Fire
  - General alarm
- Other relevant training (list topics):
  - 
  -

The undersigned have participated in the on-board safety review and have read and understand the RACE At-Sea Safety Manual:

Date	Print name of science personnel or participating vessel crew member:	Signature

Signature \_\_\_\_\_ Date \_\_\_\_\_  
 (Captain)  
 Field Party Chief \_\_\_\_\_ Safety Leader \_\_\_\_\_

FPC: Please retain this document in the Haul Log Book and return to RACE safety leader at the end of the survey.

Page 2 of 2

CHARTER VESSEL EMERGENCY PROCEDURE FORM Continued:

Please list all NOAA Survival Suit serial numbers that will be taken aboard on this leg of the survey:

Vessel: \_\_\_\_\_  
 Leg: \_\_\_\_\_  
 Field Party Chief: \_\_\_\_\_

Survival Suit Serial Number:	Size:

Please FAX or mail this form (in pre-addressed / pre-stamped envelopes provided) BEFORE embarking on survey leg.

Send to: \_\_\_\_\_ OR FAX to: \_\_\_\_\_

NOAA / Alaska Fisheries Science Center  
 7600 Sand Point Way NE F/ AKC1  
 Seattle, WA 98110  
 ATTN: Jeff Napp

Jeff Napp  
 (206) 526- 6723

# STCW SAFETY TRAINING



The International Maritime Organization's Convention on STCW (Standards of Training, Certification, and Watchkeeping) sets qualifications and requires that all mariners receive vessel familiarity and Basic Safety Training (BST).

The AFSC has contracted a private vendor to provide a series of personal safety and first aid training classes. This training satisfies the Coast Guard's STCW requirements.

NOAA's policy suggests voluntary compliance with the provisions of STCW, and recommends completing the following modules.

Module 1A	Module 1B	Module 2
<b>Medical Emergencies at Sea 2 Advanced</b>	<b>Medical Emergencies at Sea 1 BASIC</b>	<b>Survival at Sea</b>
Required in 1st year for new hires every 2-3 years for staff.	Recommended every 2 years.	Recommended every 2 years.
A remote-duty 16hr first aid course. Course outline includes treatment of major and minor injuries, treatment of the ill or injured, rescue breathing, O <sub>2</sub> Therapy, CPR and use of AED (Automatic External Defibrillator). Additional advanced techniques in I.V. administration, injections, suture, and advanced O <sub>2</sub> therapy.	An 8hr refresher of Medical Emergencies at Sea course including O <sub>2</sub> Therapy, CPR and AED	A 1.5 day (12 hr) course on surviving a shipboard disaster at sea. Course includes cold-water survival training, man overboard drills, survival suit and life raft training, and abandoning ship skills.

Visiting scientists are encouraged to participate in the training sessions if possible, or attend equivalent training in their respective institutions. For more information on classes and scheduling please contact the RACE Division Director, Jeffrey Napp at (206) 526-4148.

## **ADDITIONAL EMERGENCY TRAINING**

### **Dangerous Goods Handling, Storage and Transportation**

According to OSHA Standards (29 CFR), employees exposed to formaldehyde at or above 0.1 ppm are required to take formaldehyde training annually.

No employee should pack or ship dangerous goods unless they have taken DOT training to do so (49 CFR). If you believe you require this training, please work with your supervisor to participate in the next available program.

### **Back Strain and Prevention**

Instructional videotapes featuring proper lifting techniques and back care will be provided on each RACE vessel. Stretching and warm-up exercises by field personnel at sea should be encouraged.

### **Sexual Harassment**

Mental health and well-being is an important part of maintaining a safe working environment. Vessels chartered by the federal government are governed by the same EEO protections for federal workspaces. You may be required to watch a video prior to departure on preventing sexual harassment and its consequences.

## EMERGENCY CALLS AT SEA

When emergency situations arise at sea, it is critical to alert potential rescuers as soon as possible, given the remoteness of the field work and the difficulties in providing assistance. While 911 services are not available, there are several options for communicating your emergency to those with the capability to help you.



The following is a list of various tools for communicating emergency situations at sea. The availability and operation of this equipment may be particular to the vessel you are on, so you should familiarize yourself with its location and use prior to departure. The Captain will instruct you on the location of available equipment and on emergency communication protocols during your safety orientation.

In the event of an emergency, it will be the vessel Captain or crew making the distress call, however you should be able to perform this task if directed to by the Captain.

### 1.) **Radio** Distress Call (MAYDAY)/Coast Guard

- Marine VHF radio channel 16
- Marine Single Sideband radio (SSB) channel 4125 and 2182

### 2.) **Emergency Medical Assistance**

- A 24-hr on-call service is available via satellite phone in case of a medical emergency or if treatment advice is required. In the event of a medical emergency you will be instructed by the Captain how to contact the medical service.

### 4.) **KVH Phone**

- This phone line operates over the satellite internet system and works like a land line.
- The phone number is normally registered in Seattle, so dialing 911 **will NOT work**. Instead dial USCG Rescue directly: **(907) 463-2000**

### 4.) **Satellite Phone** (Inmarsat-C)

- Most vessels are equipped with a satellite transmission phone. If available, the Captain will instruct you on its use for emergency calls during the safety briefing.

### 5.) **Vessel Monitoring System** (VMS)

- If operational, VMS can send a distress signal in case of an emergency.

### 6.) **Emergency Positioning Indicating Radio Beacon** (EPIRB):

- Can be turned on manually or will activate automatically.
- Transmits a continuous signal that can be picked up by search and rescue craft.

## SPECIAL SAFETY EQUIPMENT AT SEA

NOAA and the Safety Committee are constantly in search of the latest technology in safety and emergency equipment available. We introduced two pieces of safety equipment in 2008 that will provide extra assurance and precaution to our seagoing personnel:

### **ACR AquaFix™ 406 GPS Personal Emergency Position Indicating Radio Beacon**

The AquaFix 406 PLB units transmit on 406 MHz via COSPAS-SARSAT satellite system with a registered unique, digitally coded distress signal and 121.5 MHz SAR local homing frequency. When activated, the unique identification code in each PLB is linked to the registration database so that authorities can retrieve valuable information about each individual.

Each unit will be registered with the service per vessel and attached to each personal immersion suit provided for each scientist.

Familiarize yourself with it's operation using the instructions located under the yellow flap.



### **Automated External Defibrillator (AED) by Heartstream**

Automated External Defibrillators provide emergency first responders with an effective means to treat victims in sudden cardiac arrest. This defibrillator is easy to use and lightweight. It has a two-button operation and voice prompts to guide the user through protocol. It evaluates patient ECG and signal quality to determine if shock is appropriate. It automatically optimizes therapy for each patient and runs on long life maintenance free lithium batteries for reliability and performance. Its patented SMART Biphasic waveform is the most patient-friendly technology available today.

## COLD WATER IMMERSION SUITS

### Donning Immersion Suit

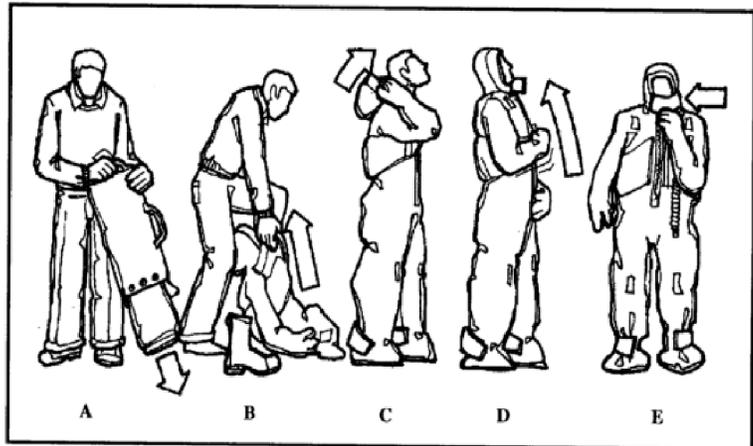
(A) Remove suit from stowage bag by holding bag with snaps down and giving it a sharp tug toward the deck.

(B) Don suit in the same fashion as donning coveralls. It may be easier to step into legs from the seated position, then turn onto knees to finish donning suit.

(C) Don the hood before you zip up the suit. It is recommended you leave one arm out of the sleeve to help pull hood over head - then complete inserting arm into sleeve.

(D) Close the zipper completely. To avoid problems zipping up the suit, arch your body backwards to straighten and align the zipper.

(E) Close the spray shield and inflate the collar for additional flotation before entering water.



### Storing Immersion Suit

- **Stowage bag**
  - Check condition of snaps on bag for ease of operation.
- **Survival suit**
  - Lay out suit on a flat clean surface with front up and arms out.
  - Make sure entry zipper is in the open position; toggle up ~2" from bottom.
  - Roll suit (do NOT fold), feet first, up to chin, making sure not to wrinkle water valves.
  - Fold arms horizontally across roll.
  - Place suit in bag and close snaps.
  - Stow bag with handle exposed.
- **Zipper**
  - Work zipper up and down to check for ease of operation. If zipper is excessively rough, wipe with a soft, clean, lint-free cloth and lubricate with the wax lubricant designed for zippers.
- **Strobe light**
  - Make sure the survival light is operational and has not expired.

## Stowing Immersion Suit

- **Store suit in a dry, well-ventilated locker**, with container handles exposed, or according to manufacturer's directions.
- **Immersion suits are intended for "abandon ship" use.** Stow them so they are readily accessible to the individuals for whom they are intended. This is to prevent searching throughout the vessel to find them in an emergency.
- **Do not stack or sit on suits.** Excessive stacking can compress suits at the bottom of the pile, eventually damaging the buoyant insulating foam. Folds and tears can lead to leaks which may compromise survival for the user.

# STANDARD OPERATING PROCEDURES

The following is a list of Standard Operating Procedures for tasks encountered on a typical groundfish survey. Each box contains a specific task or activity that is performed at least once during a survey and described as the **operation**. The corresponding **hazards** associated with each operation are then identified, followed by the recommended **operating procedures** that should be used in order to minimize the risk of those hazards.

## 1. Boarding/disembarking vessel:

### Hazards:

Falling into water; slipping; bumping into hard items.

### Operating procedures:

- Use gangway when available.
- Use handrails on gangway.
- If gangway is not an option, use extreme caution when crossing and use a PFD if appropriate. Ask someone to observe you cross and be able to provide assistance if necessary..
- Before you leave the boat, communicate your departure, destination, and expected return by informing the captain and/or FPC and completing a Departure Log.
- If you feel unsafe, communicate to the Captain, FPC or crew. There are other methods to get you on and off the vessel. For example: use another person for assistance, use a safety net between the boat and dock.
- Be aware that the boat may move. Ask for assistance and do not cross alone.
- Most embarking/disembarking will be a personal judgement call, remember that you are responsible for your own safety. If conditions are unsafe, do not cross.

## 2. Loading/offloading:

### Hazards:

Overhead hazards such as getting hit by the crane hook; falling into a hatch; tripping hazards; lifting strains; carrying heavy items up and down stairs; use of motor vehicles.

### Operating procedures:

- When overhead loads are being transferred, scientists should remain off-deck or they should wear hard hats until the overhead load is secured.
- The FPC or Deck Boss will designate where the equipment is to be stowed in accordance with the vessel's Captain.
- It is the responsibility of each crewmember to identify and clearly communicate deck hazards (i.e. open hatches) to all. If possible, block traffic around open hatches and other hazardous areas.
- Review proper lifting techniques in the Safety Manual.
- **Do not** lift heavy loads by yourself: get help, break up loads to lighten.
- When operating a motor vehicle around the docks check for possible obstacles around it before departing.
- Before leaving the dock FPC/Deck Boss should check the deck to make sure that everything is stowed and secured properly. Scientists with special collections should conduct similar checks of their gear.

### 3. Setting up equipment:

#### Hazards:

Power tools; electrical shock; chemical burns; heavy loads; improper stowage.

#### Operating procedures:

##### Emergency/ First Aid Equipment:

- Designate an accessible location to store medical case, oxygen kit, AED, eye wash, and drench shower.
- Communicate this location to all scientific crew.

##### Power Tools:

- Ask for training or assistance if you are unfamiliar, inexperienced or uncomfortable with a power tool. Do not operate any tools if you feel unsafe or unsure.
- Always wear eye protection whenever there is a risk of small particles getting into eyes (i.e. sawdust in eyes).
- Protect yourself from electric shock by using a Ground Fault Interrupt (GFI or GFCI) circuit with electrical outlets on deck. Be aware that both fresh and salt water can cause an electrical short, which can cause shock or fire. Watch for water around electrical equipment. Seal all electrical connections that are at risk of getting wet with rubber splicing tape.

##### Chemicals:

- FPC and/or Deck Boss will designate one person responsible for working with chemicals.
- Before working with chemicals, read provided (M)SDS [(Material) Safety Data Sheet] and SOP (Standard Operating Procedures) for each chemical. (M)SDS for all chemicals should be easily accessible for all on board and FPC will designate their location. For Formalin, Ethanol, and Glycerol-Thymol solution also see section on Essential Hazardous Material Information (p. 40).
- Wear Personal Protective Equipment (PPE): impervious protective clothing, including boots, gloves, raingear to prevent skin contact.
- Use chemical safety goggles (vapor proof) and/or a full face shield where splashing is possible. Be familiar with location of eyewash fountain and quick-drench facilities prior to working with chemicals.
- Use provided pumps for transferring chemicals from big to small containers or pour to premarked level on chemical container.
- Always work in a well-ventilated area i.e. open deck.
- For accidental spills or skin contact: consult (M)SDS for particular chemical; also see section on Essential Hazardous Material Information (p. 40) from (M)SDS for specific chemical.
- Communicate your activities to those around you who may or may not be wearing Personal Protective Equipment.

**Setting up Equipment – Chemicals Continued:**

- Educate yourself on the location and use of the eye wash station and drench shower prior to use of chemicals.
- Conduct all transferring and mixing of chemicals when weather/vessel is calm (i.e. at dock, when anchored, when drifting in the evening).
- Chemicals should be stored either on deck, in science lab/shack or other secured areas where flammable liquids may be stored. Never store chemicals or specimen samples below deck or in living quarters.

**Proper Stowage:**

- Keep heavy objects and boxes low to deck to maximize stability.
- Do not stack items high since they may become unstable in rough weather.
- Secure all loose equipment on deck, wheelhouse, office room, science lab and personal items in state rooms by either stowing away, tying to a fixed item, or otherwise securing to prevent rolling and sliding in rough weather.
- Specimen buckets/ barrels should be securely tied down at all times (Ties to the bucket handles are not adequate as buckets may slide and flip over).

## 4. General on-deck activity:

### Hazards:

Slippery deck conditions; noise from vessel engine, loudhailers, bells, alarms.

### Operating Procedures:

- Wear appropriate shoes on deck for slippery/wet conditions, such as rubber boots, deck shoes.
- Keep decks clear of slippery materials; if you see a spill notify crew and clean it up.
- Hose off deck after each tow and at end of day.
- When entering noisy areas (i.e. the engine room) wear ear protection.
- Avoid standing under alarm bells or speakers or wear ear protection if unavoidable.
- Know the difference between the various alarms / bells.

### Orientation:

- The FPC will provide general vessel orientation with scientific personnel to identify all potential hazards.
- The vessel's Captain will also give an orientation addressing emergency procedures and alarm bells.

## 5. Setting the net:

**Hazards:** Slack wires, deploying net instruments.

### Operating Procedures:

- Slack Wires: Scientific crew should remain in designated areas whenever winches are paying out/ hauling in wire.
- Stay clear of wires, net-reels, pulleys and blocks during trawl operations.
- Before venturing out on either the aft decks or bow to deploy or retrieve instruments, notify Captain or crew member in charge of area.
- Wear float coat or life jacket, hardhat and non-skid shoes when going out to aft deck to deploy or retrieve net instruments.
- When carrying instruments up and down stairs use handrails for support or get help.

## 6. Fishing (sampling):

**Hazards:** Wires under tension, doors.

Potential injury from gear malfunctions: broken cables, crossed wires, lost door.

### Operating Procedures:

- During trawl operations, FPC will identify potentially hazardous areas to avoid in case of gear malfunction.
- The science crew is to stay clear of these areas (i.e. under net reels, winches, trawl blocks, main wire, etc) as much as possible during trawl operations.
- Use of hardhats is recommended if science crew needs to continue working on deck outside of shelter deck during trawl operations or when cables are under load.
- In the event of trawl gear malfunctions: science crew should leave deck until deck crew and captain consider conditions safe.

## 7. Haul back:

**Hazards:** Broken cables, wires, and doors; retrieving net mensuration instruments.

### Operating Procedures:

- See SOP #5: Setting the net.
- If FPC needs to view net from aft of boat as it's reeled in: get guidelines from Captain; remain visible; communicate your actions; stay clear of operations.

## 8. Deploying gear over the side (hydrophone, plankton net):

**Hazards:** Lines in the water can be under significant load; leaning out risks falling overboard; lines on deck present tangling/tripping danger, equipment may foul vessel propeller.

### Operating Procedures:

- Always notify captain before deploying gear overboard.
- Utilize PFDs.
- Have someone observe you.
- Be aware of where a line will snap taut (the "bight") if you lose control or it comes under strain.

## 9. Weighing catch:

**Hazards:** Tripping/ Slipping, getting hit / crushed by swinging cod end, carrying the load cell, crane hook. Volumetric measurements: slipping or other injury when in fish bin.

### Operating Procedures:

- Wear appropriate clothing: raingear, gloves, boots, PFD, hard hat.
- Use caution when fish are spilled on deck, the conditions can become more slippery.

### Load Cell (cargo scale):

- To avoid back strain lift with a 2 person team or crane.
- Beware of swinging equipment from ship's motion.

### Volumetric measurements:

- When volumetric estimates of fish bin are necessary, use a wide board laid across the top of the fish catch to stand on when measuring depth of fish in bin; be very cautious of slippery conditions and boat motion.

## 10. Dumping catch onto sorting table or into splitting bin:

**Hazards:** Swinging cod end, splitting net, and totes. Hazardous species (large fish, wolffish, rockfish). Heavy rocks, debris.

### Operating Procedures:

- Stay under the shelter deck until the catch is dumped on the sorting table or into the splitting bin.
- Exercise caution when rocks and debris or thorny fish, large fish, wolffish, or other potentially dangerous organisms are present in catch.
- See Basic First Aid At Sea (p. 53) techniques section for treatment of open wounds from fish spines, fish teeth, etc.

## 11. Sorting catch, handling baskets:

**Hazards:** Repetitive motion problems, back strain, slipping.

### Operating Procedures:

#### Sorting Catch:

- Stretch often, take breaks, switch tasks, and avoid repetitive motions.

#### Lifting:

- **Use two people to lift heavy baskets.**
- Avoid lifting and twisting movements.
- See SOP #2: Loading/Offloading.

#### Dragging baskets:

- Avoid dragging baskets while bent over.
- Use a line or hook to drag baskets.

#### Bin Sorting:

- Bin can be slippery, use caution.
- Always sort with two or more people in bin.
- Use a shovel to help push fish out.

## 12. Weighing baskets:

**Hazards:** Back strain, slipping, dragging baskets, dumping baskets.

### Operating Procedures:

- Use 2 people to lift heavy baskets.
- **Do not** overfill baskets.
- Lift with your legs, not your back.
- Use a line or hook to pull baskets across deck.
- Avoid lifting and twisting movements.
- Watch fingers caught in basket handles when dumping fish.

### 13. Collection of length-frequency data:

**Hazards:** Repetitive motion problems, back strain, scalpel hazards.

**Operating Procedures:**

- Avoid repetitive motion problems and back strain.
- See SOP #1: Sorting catch, handling baskets
- Use Sharps container to change/ dispose of old or broken scalpel blades.
- See Basic First Aid At Sea (p. 53) section to treat minor injuries (cuts, fish spines, etc.)

### 14. Collection of other biological data (otoliths, stomachs, etc):

**Hazards:** Repetitive motion problems, back strain, scalpel and knife hazards, chemical spills.

**Operating Procedures:**

General:

- Avoid repetitive motion problems and back strain.
- See SOP #11: Sorting catch, handling baskets.
- Use Sharps container to change/ dispose of old or broken scalpel blades.
- Use Basic First Aid At Sea (p. 48) techniques section to treat minor cuts.

Chemicals:

- Always keep lids on chemical containers tightened (including all collection containers, buckets, specimen jars, otolith vials, etc.).
- Consult the (M)SDS for the particular chemical. Also see section on Essential Hazardous Material Information (p. 40).

## 15. Preserving specimens:

**Hazards:** Onboard use, storage and shipping of chemicals; chemical spills & splashes. Back strain.

### Operating Procedures:

- Chemical use: See SOP #3: Setting up equipment.
- Chemical spills: consult the (M)SDS for the particular chemical. Also see section on Essential Hazardous Material Information (p. 40).
- Chemical shipping: **Only properly trained individuals should pack and ship Dangerous Goods.**
- Back strain: See SOP #11: Sorting catch, handling baskets.

## 16. Entering confined spaces (i.e. engine room, storage rooms):

### Hazards:

Loud equipment such as engines and heavy machinery can permanently damage hearing; hazardous chemical fumes can build up in machine rooms or small storage rooms; engine room hatch/doors can be heavy, or self closing; slips and head bumps can be common in confined spaces; negotiating entering and exiting can involve challenging ladders or stairs.

### Operating Procedures:

- Communicate to someone before entering a confined space such as an engine room, lazarette, or other confined storage space. Keep water from entering aft lazarettes.
- Always wear ear protection when entering engine room or other loud machinery room.
- Work in teams of 2 to facilitate task and safety
- Keep one hand free for rail use when carrying loads on stairs. Engine/ machinery rooms can be slippery due to oils and grease residue on floors- use caution and use proper foot wear.

## 17. Personal activities (i.e. daily living on the vessel):

### Hazards:

Bunks; stairs on vessels; showers can be slippery; seasickness can become serious if left untreated; fatigue.

### Operating Procedures:

- Bunks can be difficult to negotiate. Choose/ assign bunks with consideration to occupant's height, proneness to seasickness, and ability to climb in and out of top bunks.
- Stairs and ladders are often steep and slippery and can be more dangerous when vessel is rolling and pitching. Use caution and hold on to rails. Find someone to help you carry loads up and down stairs and ladders.
- During rough weather, it is not advised to use the shower facilities due to slipping hazards.
- Seasickness can become serious if left untreated, over medicated, or unsupervised. If prolonged, the person can become dehydrated. See section [Seasickness-Information](#) (p. 72).
- Avoid fatigue; it can lead to reckless behavior and increase hazard potentials; be considerate of the long working hours.

**NOTE:** [Use of personal medication](#): It is advised you assure yourself all your prescription medication (including seasickness prescriptions) are continued on a regular basis as directed by your physician while at sea. Often during long shifts, or night shifts, days can easily be confused and thus cause a falling-off a regular schedule of medication. Be sure to travel with all prescription drugs on you, or in your carry-on. There is a possibility your checked bags may not arrive at your destination with you.

**Hazards:**

Use of power tools/equipment; hand strain w/ brushes; open hatches; electrical shock; "All Brite" acid wash.

**Operating Procedures:**

- Avoid use of power tools/ electrical equipment without a GFI (Ground Fault Interrupt) on wet deck. See SOP #3: Setting up Equipment.
- Do not perform hand-aggravating action (such as scrubbing) for prolonged period of time. If hand strain develops: switch tasks with someone. Use pressure washer if available for clean up.
- Always use caution during clean-up operations. Vessel crew may also be performing tasks and may inadvertently leave hatches open that are normally closed.
- When using electrical equipment on deck (such as pressure washer, power tools, etc) always use GFI (Ground Fault Interrupt) and use caution around wet decks.
  - Part of vessel cleaning by crew at the end of a leg involves the use of a degreasing chemical (often called "All Brite"). This substance is caustic and a skin and eye irritant. Always request that crew notify scientific crew on deck prior to use. Avoid contact by retreating to indoor duties while crew is using this product. In the event of skin contact rinse affected area with water. If contact is with eyes flush with eyewash for minimum of 15 minutes; see Basic First Aid at Sea Techniques (p. 53) and notify your FPC.

# SHORE EXCURSION GUIDELINES

## Policy:

Shore excursions are a privilege ancillary to the regular operation of the survey, and should be treated with careful consideration. Excursions may be limited or may not occur at all for many reasons. The potential for hazardous conditions (weather, wildlife, etc.) to exist or arise can prevent planned shore excursions as situations evolve.

If conditions are favorable for a shore excursion, the vessel captain will develop a shore excursion plan with input from the FPC and communicate that plan to RACE Division leadership. The captain has full responsibility and authority in this matter and should reject fully, or any part of a proposed plan that they deem unacceptably risky. This responsibility may include excluding those individuals who have not demonstrated adherence to any aspect of a shore excursion plan.

## Hazards and Operating Procedures:

- Shore excursions present inherent hazards much different from work/life aboard the vessels. Typical hazards include: minor/major first aid injuries, inclement weather (e.g., high wind/waves, fog), stranding on shore, lack of food/water, hypothermia, skiff engine trouble, capsizing, wildlife, disorientation, lack of communication and becoming lost.
- Excursions are often in remote, unpopulated locations. Resources for communication and first aid can be limited. Shore excursions should not be taken lightly, and should be treated as any formal mountaineering expedition. A minor injury can quickly become life threatening if left untreated. To minimize mishaps and injuries, precautions should be taken before and during the excursion ashore to ensure the safety of everyone involved.
- Shore excursions are not a given. The FPC & captain will determine whether there will be a shore excursion for scientific personnel. Excursions may be limited or not occur at all for many reasons, including hazardous conditions.
- While the FPC & captain will provide guidance, safety is everyone's responsibility. Each crew member should evaluate the proposed shore excursion & decide if s/he is comfortable with the arrangements. If not, discuss your concerns with the FPC &, if still uncomfortable, remain on the boat.
- Remember that while you are on a break from your duties, you are not at home, nor free to do whatever you like. Your actions will impact other survey members. Expect restrictions on shore activities.
- Be aware that shore excursions are not a necessary part of your job while at sea. If you are injured during a shore excursion, you may be personally liable.
- As per the AFSC small boat safety program, a detailed Float Plan shall be completed before embarkation on a small boat. In addition, the shore party will have a discussion with the FPC and captain concerning the operational details of the excursion (e.g. rendezvous location/time, landing zone, weather, contingency plan, communication, potential hazards, etc.). The following recommendations should serve as a checklist.
- Under no circumstance will a person of the shore party strike out singly. A minimum 2-person "buddy rule" applies.

# SHORE EXCURSIONS - CONTINUED

## **Weather:**

- Only undergo shore excursions when weather permits. Adhere to the discretion of the captain and FPC. Pay attention to weather conditions & return early to the rendezvous point if conditions deteriorate.
- Pack sensibly when going ashore, take a whistle, extra clothing, food and water and rain/wind protection (see list below).

## **Communication:**

- When departing from vessel dockside: science crew and FPCs should use message board to communicate whereabouts of personnel, and update departure & return times.
- FPC will complete an AFSC Small Boat Float Plan before departing mothership. This will include: deployment and shore departure times and locations of beach landings to and from shore; location of base camp; location and operation of VHF radio; location of first aid kit; and intended teams and routes of hiking parties. The captain, FPC and shore party members will discuss plan details during a pre-excursion safety briefing.
- Always establish a contingency plan between the captain of the vessel, its crew members, the FPC, and scientific team before departing to shore.
- Always fully charge and test VHF radios before leaving boat to go ashore.
- Each shore party should have a VHF radio. Familiarize yourself with operating VHF radio, designate a channel for communications with FPC/captain, test radios after arriving on beach, leave radios on at all times. Establish regular check-ins with vessel and other members of shore party to provide location, etc.
- A post-excursion safety debrief will be held to discuss concerns, improvements, etc. to future excursions.

## **Skiff engine trouble or capsizing:**

- Always assure yourself that the skiff operator is experienced and responsible; decline the shore party otherwise.
- It is advised that 2 skiffs be available at any time of a shore excursion (i.e. if 2 vessels are anchored for shore party, each vessel should have an operational skiff).
- Wear a coast guard approved life jacket or survival suit flotation device such as a life jacket, float coat, or Mustang suit when embarking/disembarking “mothership” and traveling in skiff.
- Assure yourself that emergency oars, boat kit, and sea anchor are in skiff and secured before departing in the event of outboard motor malfunction.
- It is advised to use waterproof bags for personal belongings taken to shore, as most items in skiff will get wet.

## **Injuries/First Aid:**

- Take Mini First Aid Kit and Shore Kit on shore excursions. Leave at base camp.

# SHORE EXCURSIONS - CONTINUED

## Stranding:

- Always fully charge and test VHF radios before leaving boat to go ashore.
- Pack survival suits in shore excursion supplies in the event of a prolonged stay onshore.
- Check Shore Kit for survival supplies before leaving vessel.

## Hypothermia:

- Consult first aid manual for prevention and treatment.
- See section on Emergency Contact Numbers for more advice (p. 14).

## Wildlife:

- Communication with shore party is essential. In the event of bear activity in the vicinity all shore party members should be made aware. Make noise to deter an attack, shout, sing, use whistle.
- Stay away from wildlife! Bears, fur seals, walruses, sea lions can be encountered depending on location of shore excursion. They can be dangerous. Do not provoke!
- If in a park, be aware of & obey all park rules concerning collecting souvenirs, entering structures, etc.

## Disorientation:

Prevention is key to a safe and successful excursion. RACE policy states that “under no circumstance will a person of the shore party strike out singly.” Travel with an experienced partner. Take a VHF radio and whistle to alert someone in the event of trouble and keep to the pre-planned route/timetable. Remain within a reasonable distance of the base camp, as established by FPC/Captain.

## Recommended List of Personal Essentials:

<p><b>~Be prepared to spend the night!</b></p> <ul style="list-style-type: none"><li>• Raingear and rubber boots</li><li>• Daypack</li><li>• Whistle</li><li>• Extra clothes with synthetic insulating layer including socks, gloves and a hat!</li><li>• Plastic garbage bags, visqueen, duct tape,</li><li>• Light line or cord</li><li>• Matches in waterproof container</li></ul>	 <ul style="list-style-type: none"><li>8. Fire starter sticks</li><li>9. Waterproof flashlight</li><li>10. Emergency food</li><li>11. Water</li><li>12. Space blanket</li><li>13. Toilet paper, packed in zip lock bag</li><li>14. Personal first aid kit</li><li>15. Knife or Leatherman type tool</li><li>16. Watch</li><li>17. Compass</li></ul>
---	--

# FLOAT PLAN

The following Survey Float Plan and Equipment List complies with the AFSC (Alaska Fisheries Science Center) Small Boat Safety Program requirements. The form is available in the Appendix (p. 83).

A Float Plan needs to be completed before any departure ashore via skiff or other small boat on shore excursions and the items on the equipment list need to be verified. These forms can be found on the Race Survey App provided to survey vessels.

## RACE Survey Float Plan

<b>PAGE 1 of 2</b>	<b>RACE Survey Float Plan</b>																					
National Oceanic and Atmospheric Administration National Marine Fisheries Service Alaska Fisheries Science Center																						
Date: _____ Vessel: _____																						
Name of Captain: _____																						
Name of FPC: _____																						
Name of Safety Leader: _____																						
<b>Names of personnel on shore excursion:</b>	<b>Able to swim?</b>	<b>Departure / Return (Time &amp; Location)</b>																				
	<u>(yes/ no)</u>																					
1. _____	Y N	_____																				
2. _____	Y N	_____																				
3. _____	Y N	_____																				
4. _____	Y N	_____																				
5. _____	Y N	_____																				
6. _____	Y N	_____																				
7. _____	Y N	_____																				
8. _____	Y N	_____																				
9. _____	Y N	_____																				
10. _____	Y N	_____																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Small boat description:</td><td></td></tr> <tr><td>Model:</td><td></td></tr> <tr><td>Length:</td><td></td></tr> <tr><td>Width:</td><td></td></tr> <tr><td>Draft:</td><td></td></tr> <tr><td>Engine type:</td><td></td></tr> <tr><td>Fuel on board:</td><td></td></tr> <tr><td>Boat operator:</td><td></td></tr> <tr><td>Experience level:</td><td></td></tr> <tr><td><u>Additional Information:</u></td><td></td></tr> </table>	Small boat description:		Model:		Length:		Width:		Draft:		Engine type:		Fuel on board:		Boat operator:		Experience level:		<u>Additional Information:</u>		<p style="text-align: center;"><b>Equipment Checklist</b> <b>(Required by U.S. Coast Guard)</b></p> <p>___ PFD's One Coast Guard Approved type I, II, or III life preserver or buoyant vest for each person aboard.</p> <p>___ EPIRB</p> <p>___ Anchor 7 ½ lb. with 6ft chain lead, and anchor line</p> <p>___ Oars or Paddles or other means of secondary propulsion.</p> <p>___ Medical Kit (check shore kit)</p> <p>___ Whistle or Horn One hand, mouth, or power operated whistle or horn, audible at least ½ mile.</p> <p>___ Bilge pump or hand bailer.</p>	
Small boat description:																						
Model:																						
Length:																						
Width:																						
Draft:																						
Engine type:																						
Fuel on board:																						
Boat operator:																						
Experience level:																						
<u>Additional Information:</u>																						

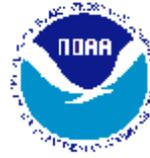
# FLOAT PLAN - CONTINUED

## RACE Survey Float Plan Equipment List

Page 2 of 2

RACE Survey Float Plan Suggested and Recommended  
Equipment List by AFSC:

National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Alaska Fisheries Science Center



Survival suits (not necessary for dockside transport/ only for shore excursions)

Radar reflector/ transponder (SART)

Additional Radios: (frequency monitored: \_\_\_\_\_)

Orange flag w/pole to mark base camp

Hand held EPIRB unit

Fire extinguisher

Extra food

Extra water

AFSC Small Boat (Shore) Kit:

**AF SC Shore Kit Contents:**

1. VHS Radio: verify full charge and Frequency monitored: \_\_\_\_\_
2. Flashlight: take extra batteries
3. Emergency blankets
4. First Aid supplies
5. Scissors
6. Signaling flares
7. Distress flag
8. Signaling mirror
9. Whistle
10. Knife
11. Compass
12. Leatherman tool
13. Fishing hooks and line
14. Toilet paper
15. Fire starters
16. Sterno cooking fuel & stove
17. Boullion cubes
18. Snare Wire
19. 4 MRE (Meals Ready to Eat)
20. Mess kit and utensils
21. Potable water tables.
22. 3L drinking water
23. McMurdo Personal EPIRB

# SEARCH AND RESCUE FOR SHORE EXCURSIONS

## SAR Procedures

- Question all other shore party members
  - When last seen
  - Plans, activity, destination
  - Inform FPC, survey boats of event
  
- Plan hasty search
  - Remind all: **Searchers' safety most important**
  - Designate coordinator of search to remain at rendezvous location
  - Assemble rescue/medical equipment
  - Team up searchers
  - Set time schedule for search teams
  - Teams in visual or sound contact
  - Search likely areas, destinations, routes
  - Use sound search techniques
  - Use boat horn for attraction
  - Shoreline search with skiff, conditions permitting
  - Consider rescue/medical plan
  
- If located, but cannot safely reach
  - Determine physical condition
  - Attempt to get survival gear to person
  - Evaluate rescue possibilities
  - Wait for technical help if needed
  
- If not located on hasty search
  - Re-evaluate situation
  - Alert outside help-Coast Guard
  - Document all actions, times, etc.

# SEARCH AND RESCUE - CONTINUED

## Preventive Practices

- Shore plan- FPC and skipper approved and discussed with shore party members
  - Weather forecast consulted
  - Landing zone identified from survey vessel
  - Rendezvous time established
  - Shore party has personal whistles, small boat kit and survival suits
  - Shore party has at least one working VHF handheld
  - Don't overload skiff
  - Skiff EPIRB equipped
  - General area defined
  - Who is going
  - General individual plans
  - All individuals equipped
  - Shore party wearing flotation devices while embarking/dis-embarking vessel and traveling in skiff
  
- Communications with survey boat
  - Upon reaching shore
  - On time schedule
  - When leaving shore
  - Radios on at all times!
  
- Fog procedure
  - Survey boat lights on
  - Survey boat horn blast periodically
  - Radio communication
  - Skiff operator knows time and direction to boat
  - Skiff compass equipped

## What To Do If Lost

- Don't panic. Stay where you are. Continued walking may only lead you farther from search parties.
- Listen for search party
- At regular intervals, blow your whistle
- Three of anything in the wilderness is a standard distress signal. Make 3 piles of rocks, wood, etc., or make a triangle in the sand. If you can, mark your location in such a way that it's visible from the air.
- If inclement weather or night approaches, consider shelter options
- If you move to find shelter, leave a clear trail

## VOUCHER COLLECTION PRESERVATION PROCEDURES

The RACE/REFM At Sea Safety Committee developed the following instructions to standardize the procedures for preservation of voucher samples collected during RACE surveys and standardize the preparations for shipping these samples back to the AFSC in Seattle. These procedures should help to minimize chemical exposure by reducing the handling of samples and chemicals, and they should also help to reduce the amount of chemicals purchased. Instructions regarding which samples to voucher and data recording requirements for these specimens are described in the Survey Operations Manual.

*Note: Terminology used to describe the various concentrations of Formaldehyde solutions is not yet wholly agreed to among entities within AFSC. In this version of the document, the RACE proposed terminology is use that corresponds to their MSDSs:*

*Formaldehyde = Full strength formalin = 100% formalin = 37% Formaldehyde Solution*

*Formalin = 10% formalin = 3.7% Formaldehyde Solution*

### **Preservation of specimens:**

Typically, fish specimens will be fixed in 10% Formalin (a solution of Formaldehyde and seawater) and invertebrate specimens will be preserved in 95% Ethanol. The 5-gallon DOT certified buckets are the preferred container for collection and shipping. Blue barrels are also provided and should be used especially for specimens that are too large to fit easily into 5-gallon buckets. On the eastern Bering Sea shelf survey, large specimens should be frozen.

**Formalin** – The Formalin (commonly called 10% Formalin) should always be mixed using proper safety procedures for handling formalin (see the summary below and refer to any appropriate training). A 5-gallon bucket should be filled almost half-way with seawater (2.4 gallons or 9 liters is achieved when the water level is at the top of the white plastic handle when it is hanging down against the side of the bucket), then add 1 liter of Formaldehyde Solution.

If large specimens are encountered requiring the use of a blue barrel, add 9 liters of seawater then 1 liter of Formaldehyde Solution and repeat as needed to submerge the specimen. Record the number of liters of Formaldehyde Solution that are added to the blue barrel over time, so the correct number of Neutralex packets can be used (following the written directions) before reaching port at the end of the survey. This information should be passed from deck-boss to deck-boss until the end of the survey.

Dispose of the empty Formaldehyde Solution jugs properly. Empty jugs must be double rinsed prior to disposal or recycling. Do so by filling the bottle with sea water until full, drain the water into the scupper, and repeat. Remove the labeling from the bottle to the best of your abilities and carefully poke several holes in the bottle to prevent the bottle from being re-used. The bottle can then be disposed of or recycled (as allowed by vendor).

## PRESERVATION PROCEDURES - CONTINUED

**Ethanol** – Specimens preserved in 95% Ethanol (often abbreviated as 95% EtOH) should be collected in properly labeled, Department of Transportation approved buckets (with handled, screw-top lid).

### **When buckets/barrels are full:**

Continue placing specimens into the buckets until the level of the solution is about 2" from the rim. The blue barrels are full when they reach 75% capacity. Do not exceed these limits.

**For 10% Formalin buckets**, replace the cut lid with a properly labeled, uncut, DOT approved lid to seal it for storage and transport. Make sure the brand of lid and the brand of bucket are the same. Use a permanent marker to label the uncut lids. It is easiest to write on lids when they are dry and before they are sealed on the buckets. The uncut lid should indicate the type of collection (“voucher”), region, vessel name, year and “10% Formalin.”

**For 95% Ethanol buckets**, make sure the lid is seated properly and is securely (but not overly) tightened.

**Blue barrels** cannot be shipped with Formalin inside, so follow the “End of Survey Preparations” for shipping these specimens back “moist.” If specimens are collected in the blue barrel they must be shipped in a fixed but moist condition, so stop collecting specimens in blue barrels 5 days before reaching the harbor at the end of the survey. This will allow enough time for the tissues to be fixed and reduce the chances of decomposition during shipping. Just before reaching harbor, the specimens will need to be removed and prepared for shipping, and the Formalin will need to be treated with Neutralex and disposed of.

### **End of Survey Preparations:**

All 10% Formalin buckets should have properly sealed and labeled lids. Affix a chemical properties sticker for 10% Formalin to the side of each bucket. Refer to shipping instructions. 10% Formalin is not considered a hazardous material by the DOT, but the use of DOT approved containers is required by NOAA.

All 95% Ethanol buckets should have properly sealed lids. Affix a chemical properties sticker for 95% Ethanol to the side of each bucket. Refer to shipping instructions. 95% Ethanol is considered a hazardous material by the DOT, therefore only use DOT approved containers to prepare for shipping.

**Blue barrel preparations** – Plan to do this in an area where Formalin fumes will be carried away by the wind and stand up wind as much as possible. Before you begin preparations, locate the protective equipment available to you, including eye-wash station, rain gear, new watertight nitrile gloves, and goggles/face shield. Confirm ready access to a deck hose, or other means of rapid high-volume flushing. Notify the deck-boss or FPC when you will be doing this, and have

## PRESERVATION PROCEDURES - CONTINUED

someone, in raingear and gloves, ready to work with you or assist you. Locate long-handled tongs or forceps (for removing specimens from the barrel) and dipping containers (for transferring Formalin into buckets). Use the tools and protective equipment to maximize your safety.

Remove the specimens from the barrel letting the Formalin drain from the bags into the barrel or a bucket. The neutralizing agent (Neutralex) must not come in contact with the specimens, or they will decompose. Specimens near the top of the barrel can be removed with tongs or forceps or by reaching into the Formalin with your waterproof nitrile gloves. If the Formalin level is too high to safely reach all specimens, then some of the Formalin can be transferred out of the barrel and into an empty bucket.

After ALL specimens are removed from the Formalin, add Neutralex powder to the barrel following the written directions. When the Formalin is fully neutralized, dump the solution overboard and rinse the barrel thoroughly to remove any Neutralex residue. Thoroughly rinse all equipment, protective gear and decks that may have been in contact with the Formalin.

Return specimens to the barrel and seal it with a metal ring and duct tape. Do not add fresh or seawater to the barrel. If the barrel is sealed well and the specimens are properly preserved, they will remain moist and undamaged for at least a few weeks.

**Only properly trained individuals may pack dangerous goods and sign the Hazardous Declaration for shipping.**

## ESSENTIAL DANGEROUS GOODS INFORMATION

The following pages contain pertinent information taken from (M)SDS [(Material) Safety Data Sheets] concerning the most often used chemicals during AFSC surveys. These pages are intended to be used for educational purposes only by the scientific crew and should not be used instead of (M)SDS. Read the (M)SDS before working with the chemicals and refer to them in an emergency situation.

### **FORMALDEHYDE and FORMALIN Handling Protocol:**

- Formaldehyde and Formalin contain dangerous chemicals and must be handled appropriately to ensure your safety. You are dealing with a small quantity of Formaldehyde and if these guidelines are followed your exposure will be well below established safe exposure levels.
- Read the Material Safety Data Sheets (MSDS) before using Formaldehyde and Formalin to understand the properties of these solutions.
- ALWAYS wear nitrile gloves, rain gear, and goggles/face shield when using Formaldehyde or Formalin.
- ALWAYS use Formaldehyde and Formalin on an open deck - DO NOT use below decks or in your cabin.
- Avoid handling Formaldehyde and Formalin in rough weather as much as possible.
- Add Formaldehyde to a bucket that is already half-full with seawater, rather than adding seawater to the Formaldehyde. This will ensure that the Formaldehyde is quickly diluted, and will lessen the chance of splashing.
- Use extreme caution when adding Formaldehyde to the bucket, hold the bucket lid over as much of the bucket as possible while pouring the Formaldehyde, creating a 'shield'.
- Inform captain and crew that you have Formaldehyde and Formalin onboard, where they are stored, location of Material Safety Data Sheets (MSDS), potential hazards, and what to do in case of a spill.
- Minimize exposure and impact on other crew members.
- IF spilled - this is a small enough quantity to dilute with water and wash overboard.
- IF Formaldehyde or Formalin comes into contact with your skin or eyes - rinse immediately, and thoroughly, with water for 15 minutes as per MSDS.
- IF ingested - consume large quantities of water, do not induce vomiting, and seek medical attention as soon as possible as per MSDS.
- IF overcome by fumes - move to fresh air, administer oxygen if necessary and available as per MSDS.

### **Where to Keep Formaldehyde and Formalin Onboard?**

- Formaldehyde and Formalin should be stored in a well ventilated space. Formaldehyde should be stored at or above 50°F as much as possible, below this temperature it will lose its potency as a component of the Formaldehyde Solution precipitates from the solution. Formaldehyde is considered a flammable material and should be stored in an appropriate

flammable storage area until it has been diluted as described above. Once diluted to 10% Formalin, it should be stored on a weather deck if possible. It won't freeze.

- It is best to store your buckets securely tied to an immobile object. Leave the buckets in place and carry samples to the buckets after you are done with your sampling. This will avoid the potential of spilling Formalin and will keep the Formalin away from fish processing operations.
- Do not submerge your gloves in the Formalin when you add samples to the bucket. If the samples float, use a pair of forceps or some other sampling tool to submerge the samples. Rinse all equipment with water after Formalin contact.
- Anytime Formaldehyde or Formalin gets spilled and/or inadvertently comes into contact with any object other than your samples, flush the object or area with plenty of water.

# FORMALDEHYDE (100% FORMALIN)



*100% FORMALIN (full strength) = (37% Formaldehyde Solution)*

## Hazards Identification:

- Flammable liquid and vapour
- Harmful if swallowed
- Causes severe skin burns and eye damage
- May cause an allergic skin reaction
- Causes serious eye damage
- Toxic if inhaled
- May cause cancer (Inhalation)
- Toxic to aquatic life

## Potential Health Effects:

The perception of formaldehyde by odor and eye irritation becomes less sensitive with time as one adapts to formaldehyde. This can lead to overexposure if a worker is relying on formaldehyde's warning properties to alert him or her to the potential for exposure.

### Inhalation

*Symptoms:* Runny nose. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Possible oedema of the upper respiratory tract. Possible laryngeal spasm/oedema. Respiratory difficulties. Risk of lung oedema.

*First Aid:* Remove the victim into fresh air. Immediately consult a doctor/medical service.

### Ingestion

*Symptoms:* Nausea. Vomiting. Diarrhoea. AFTER ABSORPTION OF HIGH QUANTITIES: Central nervous system depression. Dizziness. Blood in vomit. Blood in stool. Shock. Disturbances of consciousness. Change in the haemogramme/blood composition. Change in urine composition. Urine discolouration.

*First Aid:* Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre ([www.big.be/antigif.htm](http://www.big.be/antigif.htm)). Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. Do not give chemical antidote. Doctor: gastric lavage.

# FORMALDEHYDE - CONTINUED

## **Skin Contact**

*Symptoms:* Caustic burns/corrosion of the skin.

*First Aid:* Wash immediately with lots of water (15 minutes)/shower. Do not apply chemical neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

## **Eye Contact**

*Symptoms:* Corrosion of the eye tissue.

*First Aid:* Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

## **Chronic Exposure**

Frequent or prolonged exposure to formaldehyde may cause hypersensitivity leading to contact dermatitis. Repeated or prolonged skin contact with formaldehyde may cause an allergic reaction in some people. Vision impairment and enlargement of liver may occur from methanol component. Formaldehyde is a suspected carcinogen (positive animal inhalation studies).

## **Aggravation of Pre-existing Conditions**

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance. Previously exposed persons may have an allergic reaction to future exposures.

## **Spill Release Procedures:**

If spill occurred on outside deck of ship, and quantity of formalin spilled is less than 5 gal you may dilute spill and wash chemical from deck using a water hose. Use caution and avoid splashing and spreading chemical.

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8 of (M)SDS. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible (unless washed from deck). Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer!

## FORMALDEHYDE - CONTINUED

Section 102a of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requires the reporting of hazardous substance spills and releases to soil, water and air in excess of reportable quantities (RQ). In the case of Formaldehyde the RQ is 100 Lbs (45.4Kg), which translates to approximately 12.5 gal. Any spill at sea larger than this amount must be reported.

The toll free number for the US Coast Guard National Response Center is (800) 424-8802. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

### Handling and Storage:

Store in a tightly closed container. Protect against physical damage. Store in a cool (no less than 50° F), dry, well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles such as acids and oxidizers. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be Non Smoking designated areas.

Use non-sparking type tools and equipment. Wear special protective equipment (Sec. 8 MSDS). Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace.

Protect from freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

### Exposure Controls/Personal Protection

#### **Skin Protection:**

Wear impervious protective clothing, including boots, gloves (rubber, neoprene, PVC or equivalent), PVC raingear to prevent skin contact.

#### **Eye Protection:**

Always use chemical safety goggles (vapor proof) and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

#### **Other Formaldehyde Control Measures:**

See OSHA Standard for more information on personal protective equipment, engineering and work practice controls, medical surveillance, record keeping, and reporting requirements. (29 CFR 1910.1048)

# 10% FORMALIN



*10% FORMALIN (diluted) = (3.7% Formaldehyde Solution)*

## Hazards Identification:

- **Combustible liquid**
- **Harmful if swallowed**
- **Causes skin irritation**
- **May cause an allergic skin reaction**
- **Causes serious eye damage**
- **Suspected of causing cancer**
- **Causes damage to organs**

## Precautionary Statements:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and Understood.
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- Wash skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear protective gloves/ protective clothing/ eye protection/ face Protection.
- IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
- IF ON SKIN: Wash with plenty of soap and water.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Immediately call a POISON CENTER or doctor/ physician.
- Rinse mouth.
- If skin irritation or rash occurs: Get medical advice/ attention.
- Take off contaminated clothing and wash before reuse.
- In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for Extinction.
- Store in a well-ventilated place. Keep cool.
- Dispose of contents/ container to an approved waste disposal plant.

## FORMALIN - CONTINUED

### **First Aid:**

#### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### **Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### **Skin Contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### **Eye Contact**

Rinse immediately with plenty of water for at least 15 minutes. Do not apply neutralizing agents. Continue rinsing eyes during transport to hospital.

#### **Ingestion**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.



## ETHANOL (ethyl alcohol) 100%

### Potential Health Effects:

Ethanol is highly flammable. Target organs: eyes, liver, kidneys, nerves. Acute: concentrations below 1,000 PPM usually produce no signs of intoxication. Exposure to concentrations over 1,000 PPM may cause headache, irritation of the eyes, nose, and throat, and if continued for an hour, drowsiness and lassitude, loss of appetite and inability to concentrate.

### First Aid Measures:

#### Eye Contact:

Flush with water for 15 minutes, raising and lowering eyelids occasionally. Get medical attention if irritation persists. See section on Basic First Aid at Sea (p. 53).

#### Skin Contact:

Remove contaminated clothes. Wash exposed skin area thoroughly for at least 15 minutes. Get medical attention if irritation persists. Launder contaminated clothing before reuse.

#### Inhalation:

Move to fresh air. Give oxygen if breathing is difficult. Give artificial respiration if breathing has stopped. Get medical attention.

#### Ingestion:

If conscious, give plenty of water. Get immediate medical attention or call poison control for assistance.

### Exposure Controls/Personal Protection:

#### Protective gloves:

Rubber, neoprene, PVC or equivalent.

#### Eye protection:

Splash proof chemical safety goggles and/or faceshield should be worn at all times.

#### Other protective equipment:

Lab coat, eye wash station and quick drench shower (deck hose).

## ETHANOL - CONTINUED

### **Work hygienic practices:**

Wash hands after handling and before eating, drinking, or smoking. Launder contaminated clothes before reuse.

### **Spill Release Procedures:**

Eliminate all sources of ignition. If spill occurred on outside deck of ship, and quantity of Ethanol spilled is less than 5gal you may dilute spill and wash chemical from deck using a water hose. Use caution and avoid splashing and spreading chemical.

Ventilate area of spill. Contain spilled material (unless otherwise rinsed off). Dilute to nonflammable mixture with water. Contain and collect for disposal.

### **Handling and Storage:**

Store in tightly closed containers. Keep away from heat, sparks, and open flame. Store in a cool, dry, place.

### **Disposal:**

According to the USCG and State of Alaska Department of Environmental Conservation (DEC) requirements, ethanol can be discharged in waters more than 3 miles offshore (dilution not necessary). In waters less than 3 miles offshore, ethanol cannot be discharged and must be retained for proper disposal.



## GLYCERINE (GLYCEROL)

*At sea as 50% Glycerol - 0.5% Thymol Solution*

### Hazards Identification:

**CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.  
MAY AFFECT KIDNEYS.**

### Potential Health Effects

#### **Inhalation:**

Due to the low vapor pressure, inhalation of the vapors at room temperatures is unlikely. Inhalation of mist may cause irritation of respiratory tract.

#### **Ingestion:**

Low toxicity. May cause nausea, headache, and diarrhea.

#### **Skin Contact:**

May cause irritation.

#### **Eye Contact:**

May cause irritation.

#### **Chronic Exposure:**

May cause kidney injury.

#### **Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

### First Aid Measures

#### **Inhalation:**

Remove to fresh air. Get medical attention for any breathing difficulty.

#### **Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

#### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

## GLYCERINE - CONTINUED

### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists. See section on Basic First Aid at Sea (p. 53).

### **Spill Release Measures:**

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8 of (M)SDS. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer!

If spill occurred on outside deck of ship, and quantity of Glycerol-Thymol Solution spilled is less than 5gal you may dilute spill and wash chemical from deck using a water hose. Use caution and avoid splashing and spreading chemical.

### **Exposure Controls / Personal Protection:**

#### **Skin Protection:**

Wear protective gloves and clean body-covering clothing.

#### **Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

### **Handling and Storage:**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances such as strong oxidizers. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

# THYMOL

*At sea as 50% Glycerol - 0.5% Thymol Solution*



**Note:** The AFSC uses Thymol mixed into a solution called Otolith Solution. It is a preservation medium for storing fish otoliths and is comprised of 50% glycerol and trace (0.5%) amount of thymol.

## **Hazards Identification:**

**WARNING! HARMFUL IF SWALLOWED. MAY BE HARMFUL IF INHALED. AFFECTS CENTRAL NERVOUS SYSTEM. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**

## **Potential Health Effects:**

This compound resembles phenol in its systemic actions, but is less toxic because it is almost insoluble.

### **Inhalation**

May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath. May be absorbed into the bloodstream with symptoms similar to ingestion.

### **Ingestion**

Produces abdominal pain, nausea, vomiting, central hyperactivity (e.g., talkativeness), and occasionally convulsions, coma and cardiac and respiratory collapse. Oils and alcohols may promote absorption into the body. May cause kidney and liver damage.

### **Skin Contact**

May cause irritation with redness and pain.

### **Eye Contact**

May cause irritation, redness and pain.

## **First Aid Measures:**

### **Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

## THYMOL- CONTINUED

### **Ingestion:**

Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

### **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists. See section on Basic First Aid at Sea (p. 53).

### **Spill Release Measures:**

Remove all sources of ignition. Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8 of (M)SDS. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

If spill occurred on outside deck of ship, and quantity of Glycerol-Thymol Solution spilled is less than 5gal you may dilute spill and wash chemical from deck using a water hose. Use caution and avoid splashing and spreading chemical.

### **Exposure Controls / Personal Protection:**

#### **Skin Protection:**

Wear protective gloves and clean body-covering clothing.

#### **Eye Protection:**

Use chemical safety goggles and/or faceshield. Maintain eye wash fountain and quick-drench facilities in work area.

### **Handling and Storage:**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.



## BASIC FIRST AID AT SEA

Daily routine activities at sea, associated with biological sampling and routine on-deck activities; incur a certain number of “common” but minor injuries. These injuries are defined as non-life threatening. The following section provides a quick reference for such mishaps. In all cases, regardless how minor they seem initially, maintain a diligent watch over the wound / injury; report to your FPC if injury/wound worsens in condition; seek medical attention should the condition not improve.

### **1. Cuts & wounds:**

Stop the bleeding as soon as possible by applying pressure to the wound with clean, dry gauze. If direct pressure does not stop the bleeding, elevate the affected limb. Continue to apply pressure and continue to apply gauze until the bleeding stops (do not remove blood soaked gauze, but keep applying new gauze on top of old.)

After bleeding stops, clean the wound thoroughly with antiseptic soap such as Hibiclens or hand soap and water. Apply antibiotic ointment such as Neosporin to and around the wound and apply clean dressing gauze. Bandage the wound with clean dry roller gauze and protect the wound from contamination.

Change dressings daily and note any negative change in the wound condition (such as severe pain, redness, swelling, or pus accumulation) to your FPC. Seek medical attention once in port.

### **2. Foreign object in eyes:**

Fish scales are an occasional problem when they get into the eyes, and can be quite painful. Flush the affected eye with the eyewash bottles provided until the scale is out. A small 4-ounce eyewash bottle should be provided to the injured party for follow up flushing. Maintain vigilance that affected eye does not become infected. If persistent irritation does not subside, seek medical attention once in port.

Sawdust: Similar to fish scales, sawdust from power saws can easily get into eyes without proper eye protection. Treatment is the same as above: flush out eyes with eyewash solution.

Chemicals: Any accidental eye contact with chemicals should be immediately flushed with eye wash solution for a minimum of 15 minutes. Acquire the (M)SDS for that particular chemical and follow the first aid measures. If the chemical is formalin continue flushing and contact emergency medical personnel.

Do not stop flushing the eyes; continue with fresh drinking water when eye wash solution runs out. Some chemicals can have a prolonged effect on the eyes; do not underestimate the amount of flushing required. Seek medical attention once in port.

### 3. Reporting Injuries:

Do not conceal work-related injuries, report them to your FPC and get medical attention. A minor injury can turn serious if left unattended, or improperly treated. The Safety Committee is tracking “near misses” by way of the RACE/REFM Injury At Sea Report Form (p. 85) to assess potential hazards at sea and to revise this safety document.

### 4. Additional Information:

Instructions for treating more serious injuries are in the First Aid Manual in your First Aid Kit.

### 5. Injury Report Forms:

The NOAA requirement for filling out injury forms is now digital. Inform the RACE Division Director and follow the Emergency Notification Plan located on the homepage of the RACE Survey App on the catch entry or wheelhouse computer. The AFSC Safety and Environmental Compliance Officer (SECO) **must be** notified of an illness or injury within **8 hours** if it is serious enough to need emergency response or 24 hours at the latest if it is not critical. Email the information detailed on the RACE/REFM Injury At Sea Report Form (p. 85) to the appropriate personnel, and complete form CA-1 (p. 91) to begin filing with the worker’s compensation program.

If treatment is required for a work-related injury or illness, complete the appropriate sections of form CA-16 (p. 89) and present it to the physician for completion of the remaining sections. The FPC should have authorization to approve the CA-16, but if time and communications allow, get the form signed by the employee’s supervisor.

## EMERGENCY CARE CENTER CONTACT NUMBERS

### **Adak**

Adak Volunteer Fire Department  
(907) 592-4145

Adak Clinic (907) 592-8383

### **Akutan**

Akutan First Responders  
(907) 698-2208

24hr dispatch (907) 698-2315

### **Atka**

Atka City EMS  
(907) 839-2214

### **Chignik**

Chignik Bay Subregional Clinic  
(907) 749-2282

### **Cordova**

Cordova Community Medical Center  
(907) 424-8000

### **False Pass**

False Pass First Responders  
(907) 548-2232

False Pass Health Clinic  
(907) 548-2241

Stand-by on VHF ch.6

### **Homer**

South Peninsula Hospital  
(907) 235-8101

### **Ketchikan**

Ketchikan General Hospital  
(907) 225-5171

USCG Base Ketchikan Health Services Clinic  
(907) 228-0320

### **Kodiak**

Kodiak Fire Department  
(907) 486-8040

Providence Kodiak Island Medical Center  
(907) 486-3281

### **Seward**

Seward Volunteer Fire Department  
(907) 224-3445

24hr dispatch (907) 224-3338

### **Sitka**

Sitka Fire Department  
24hr dispatch (907) 747-3245

Sitka Coast Guard Air Station  
Medical Officer (907) 966-5430

### **St. George Is.**

St. George Traditional Clinic  
(907) 859-2254

### **St. Paul Is.**

St. Paul Health Center (907) 546-8300  
24hr Public Safety (907) 546-3130

### **Sand Point**

Sand Point Medical Clinic  
(907) 383-3151

Sand Point Public Safety  
(907) 383-4707

Sand Point Volunteer Fire Department  
(907) 383-3700

### **Unalaska (Dutch Harbor)**

Unalaska Public Safety  
24hr dispatch (907) 581-1233  
Iliuliuk Family and Health Services (907)  
581-1202

### **Yakutat**

Yakutat Volunteer Fire Department  
(907) 784-3544

Yakutat Public Safety  
(907) 784-3206

### **For Emergencies At Sea**

**(907) 463-2000**

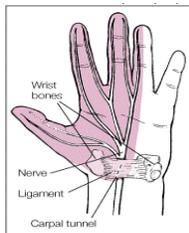
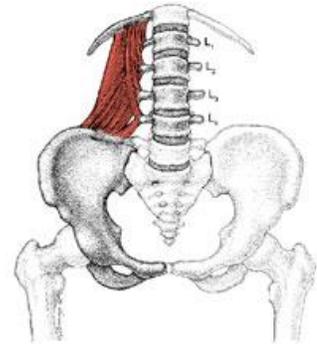
USCG Rescue Coordination  
Center, Juneau  
24-hour Hotline



## REPETITIVE MOTION INJURIES & BACK STRAIN

Repetitive motion and lower back injuries are among the most common injuries in the United States. Repetitive strain injuries make up over 50% of all athletic-related injuries seen by doctors and result in serious loss in terms of cost to the workforce.

Repetitive strain disorders develop because of microscopic tears in the tissue. When the body is unable to repair the tears in the tissue as fast as they are being made, inflammation occurs, leading to the sensation of pain.



The most common types of repetitive motion injuries are tendonitis and bursitis. Lower back injuries as a result from improper lifting techniques are also common. All are predictable and preventable injuries. The following section helps define the injury types and their causes. The section that follows offers some advice on how to prevent these injuries.

### When to seek medical attention:

#### When to call the doctor:

- Pain with movement of arms and legs.
- Tenderness over a joint or where a tendon connects. Redness and increased warmth over joint.
- Pain that wakes you from sleep.
- Inability to sleep on affected side.
- Inability to carry on normal activities of daily living (such as brushing your teeth or taking a shower).

#### When to go to the hospital:

- Certain signs and symptoms may mean that you have an infection and should be seen by a doctor immediately.
- Joint pain or tenderness that is associated with fever, chills, nausea, or vomiting.
- If more than 1 joint is involved at the same time or the joint pain migrates from 1 joint to another.
- Any severe joint pain also needs a visit to your hospital's emergency department.

# Repetitive Motion Injuries Treatment and Prevention

## Self-Care at Home

- Home care for a painful or swollen joint should include: “RICE”= Rest, ice, compression, and elevate injured limb. Ice can be used for relief of pain and swelling but never direct contact (wrap in cloth).
- Most authorities recommend icing 2-3 times a day for 20-30 minutes each time.
- Wrap ice or a bag of frozen vegetables in a towel and place it on the area.
- If your shoulder is involved, you should not keep it immobile for more than 24-48 hours because your shoulder may become frozen and have decreased range of motion.
- Tendonitis is best treated with immobilization and ice during the early phase and moist heat during the long-term phase.
- Nonsteroidal anti-inflammatory drugs (NSAIDs, such as aspirin, naproxen, or ibuprofen) may be used to reduce the inflammation. All NSAIDs should be taken with meals to avoid stomach upset.
- You should begin graduated range-of-motion exercise once your symptoms begin to improve.

## Prevention

- The prevention of tendonitis and bursitis is similar in most respects.
- Do adequate warm-up and cool-down maneuvers (crucial to proper tendon and bursae health).
- Avoid activity that makes your injury flare up. This will speed healing of both tendonitis and bursitis.
- Practice range-of-motion exercises, especially in tendonitis. These are important to ensure minimal decrease in function.
- Use splints or bands to decrease the strain on a tendon that occurs with sporting activities, such as tennis and golf. These devices may be bought over-the-counter or obtained from your doctor.

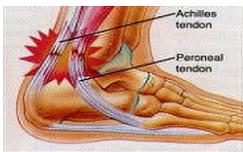
# TENDONITIS

The most common symptom associated with tendonitis is pain over the site involved. Tendonitis is made worse by active motion of the inflamed tendon. The skin overlying the inflamed tendon may be red and warm to the touch.

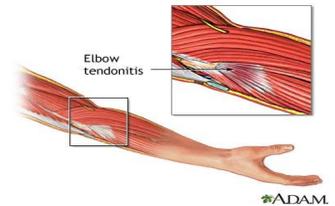
- **Biceps:** The painful spot is usually in the groove where the arm meets the shoulder. You can reproduce the pain by flexing your elbow at 90° and trying to turn your hand palm up (called supination) against resistance.
- **Tennis elbow:** This pain is in the elbow and is reproduced by cocking your wrist back (extending the wrist) as if you are bringing a tennis racket back to hit the ball.
- **Golfer's elbow:** This pain also occurs in the elbow but is made worse by flexing the wrist forward as if you are hitting a golf ball.
- **Rotator cuff:** Raising your arm out to the side reproduces this pain. The painful area is usually over the affected shoulder.
- **Achilles Tendonitis:** Begins as a mild ache in the back of the leg or above the heel.
- **Posterior Tibial Tendonitis:** Sharp pain in the arch of the foot, sore to the touch.

## How Tendonitis Occurs

A tendon is the end part of a muscle that attaches the muscle to the bone. The normally very elastic and soft muscle tapers off at the end to form the much more dense and stiff tendon. While this density makes the tendons stronger, the lack of elasticity of the tendon and the constant pulling on its attachment to the bone with



movement, makes it much more susceptible to a low level of tearing at a microscopic level. This tearing will produce the inflammation and irritation known as tendonitis. Tendonitis is usually seen after excessive repetitive movement with which the tendon gradually becomes tighter until the fibers start to tear.



**Tendonitis Treatment:**

Tendonitis treatment must begin by avoiding aggravating movements. This may mean taking a break from the aggravating activity for a period of time, but this is a necessary step to allow the inflamed tendon to heal. It is also recommended in tendonitis treatment to try alternative activities.

With proper care for the area, the pain in the tendon should lessen over three weeks, but it should be noted that the healing of the area continues and doesn't even peak until at least six weeks following the initial injury. This is due to scar tissue formation, which initially acts like the glue to bond the tissue back together. Scar tissue will continue to form past six weeks in some cases and as long as a year in severe cases.

It is important to minimize any inflammation. This can be done topically if a pain reliever has the ability to penetrate the skin barrier and contains anti-inflammatory agents. A topical formula that contains natural menthol will not only relieve pain, but also dilate the blood vessels. This allows for relief of the tendonitis, without causing any stiffening of the tissue. Ice can relieve inflammation, but will constrict the blood vessels and further stiffen the tendon. Cortisone injections can reduce inflammation, but unfortunately are very caustic and can cause a weakening of the tendon structure and create more scar tissue.

After the scar tissue has begun to accumulate, it will be important to perform procedures that help break down the scar tissue in the tendon tissue. While exercise is appropriate for breaking down scar tissue once the area has healed, it may further irritate the area during the initial stages. Therefore, other methods that can be performed by your healthcare provider, such as ultrasound and massage, may be safely used to accomplish this early on in the injury. Light stretches may also be performed if they do not cause any further irritation to the area.

**Tendonitis Prevention:**

Prevention of this condition requires stretching the muscle on a regular basis and thereby lengthening the tendon connection. This will allow less pulling on the tendon attachment to the bone. When tendonitis does occur, it is important to treat it immediately, and thereby prevent it from reaching a stage that is more severe.

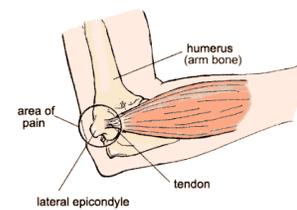
The key to avoiding problems such as tendonitis and bursitis is to slowly increase the intensity of your exercise, vary the types of activities you perform, and try not to cycle between periods of activity and inactivity. People who tend to experience tendonitis are seasonal exercisers, who focus too much on one activity. When you begin to experience early symptoms of tendonitis, back off from the aggravating activity, and try something new.

If you do experience tendonitis, you are more likely to have symptoms again down the road, but with an intelligent approach to your exercise or activity routine, this problem can often be avoided.

## What is Tennis Elbow?

Tennis elbow, or lateral epicondylitis, is the most common injury in patients seeking medical attention with the complaint of elbow pain. Exactly what causes tennis elbow is unknown, but it is thought to be due to small tears of the tendons that attach the muscles of the forearm to the arm bone at the elbow joint. The muscle group involved, the wrist extensors, function to cock the wrist back.

Lateral Epicondylitis (Tennis Elbow)



Copyright © 2002 McKesson Health Solutions, LLC. All rights reserved.

## What are the symptoms of tennis elbow?

- Patients with the tennis elbow syndrome experience pain on the outside of the elbow that is worsened by grasping objects and cocking back the wrist.
- The pain associated with tennis elbow usually has a gradual onset, but may also come on suddenly.

## What is the problem occurring in tennis elbow?

No one knows for certain, but there are several ideas. It is known that tennis elbow is not simply an "inflammation" of the tendons around the elbow. Rather, the problem is thought to be more of a degenerative process either the result of aging, or repetitive use. The symptoms may be the result of an incomplete healing response in an area that does not have good blood flow, and therefore difficulty accessing nutrition and oxygen necessary for healing. This leads to degeneration of the tendon causing small tears and ruptures.

## How do you treat tennis elbow?

There are several available treatments for tennis elbow. These usually start off conservatively, and work to more involved treatments. Non-operative treatment is successful in over 90% of patients.

- **Lifestyle Modification**  
Lifestyle modification is important if tennis elbow does not resolve or if it recurs. With athletes, often an improvement in technique (for example, fixing your tennis swing) can resolve the problem.
- **Anti-inflammatory Medications**  
Anti-inflammatory medications are often used to help control pain and inflammation. The oral forms of these medications are easy to take, and often help control the inflammation as well as manage the pain associated with tennis elbow.
- **Cortisone Injections**  
If these conservative measures fail, a steroid (cortisone) injection is a reasonable option.

- **Elbow Brace**

An elbow orthosis, called an elbow clasp, can be worn. The theory behind using this elbow clasp is that the brace will redirect the pull of misaligned muscles. Patients often find relief of pain when using the clasp during activities.



- **Exercises**

Some simple exercises can also be helpful in controlling the symptoms of tennis elbow. These exercises should not cause pain, and if they do the exercises should not be done until the pain resolves. By strengthening the muscles and tendons involved with tennis elbow, you can help prevent the problem from returning.

1.) **Finger Extension.** Place a rubber band around all five fingertips. Spread fingers 25 times, repeat 3 times. If resistance is not enough, add a second rubber band or use a rubber band of greater thickness, which will provide more resistance.

2.) **Ball Squeeze.** Place rubber ball or tennis ball in palm of hand, squeeze 25 times, and repeat 3 times. If pain is reproduced squeeze a folded sponge or piece of foam.

For both exercises perform 10 repetitions 3-5 times a day until you feel fatigue. Use pain as your guide - all exercises should be pain free.

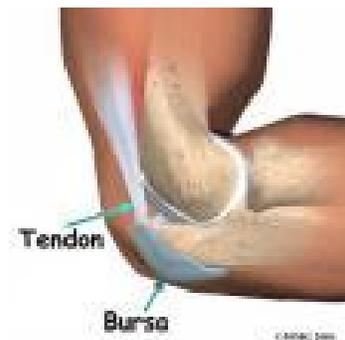
# BURSITIS

Common symptoms include pain, tenderness, and decreased range of motion over affected area. Redness, swelling, and a crunchy feeling when the joint is moved (crepitus) may also be found.

- **Knee:** This condition involves swelling over the bottom part of the kneecap that is red and warm to the touch. Usually, the range of motion of the knee will be less because of the pain that bending and straightening the knee causes.
- **Elbow:** Pain, swelling, and redness are found over the elbow. The pain gets worse when you flex and extend your arm at the elbow.
- **Hip:** Your pain is increased by walking or by lying on the affected side. Bringing your leg away from and toward the midline of the body can also reproduce the pain.

## What is a bursa?

Every person has hundreds of bursa scattered throughout the body. The function of a bursa is to decrease friction between two surfaces that move in different directions. You tend to find a bursa at points where muscles and tendons glide over bones. Without the bursa between these surfaces, movements would be painful.



## What is bursitis?

Bursitis is the inflammation of a bursa. Normally, the bursa provides a slippery surface that has almost no friction. A problem arises when a bursa becomes inflamed. The bursa loses its gliding capabilities, and becomes more and more irritated when it is moved.

When the condition called bursitis occurs, the normally slippery bursa becomes swollen and inflamed. The added bulk of the swollen bursa causes more friction within an already confined space. Also, the smooth gliding bursa becomes gritty and rough. Movement of an inflamed bursa is painful and irritating.

## What causes bursitis?

Bursitis usually results from a repetitive movement or due to prolonged and excessive pressure. Patients who rest on their elbows for long periods or those who bend their elbows frequently and repetitively can develop elbow bursitis.

Another cause of bursitis is a traumatic injury. Following trauma, such as a car accident or fall, a patient may develop bursitis. Usually a contusion causes swelling within the bursa. The bursa, which had functioned normally up until that point, now begins to develop inflammation, and bursitis results. Once the bursa is inflamed, normal movements and activities can become painful.

### **How is bursitis diagnosed?**

Bursitis is almost always diagnosed on physical examination. Findings consistent with bursitis include:

- Tenderness directly over the bursa
- Pain with movement of overlying muscles and tendons
- Swelling of the bursa

### **Treatment:**

Below is some advice for bursitis treatment and avoiding recurrences of this problem. As with any treatment program, talk with your doctor before you begin bursitis treatment.

### **Rest and Protect The Area**

The first steps of bursitis treatment are to keep pressure off of the affected area, and try to limit your activity of that joint. Some individuals benefit from placing an elastic bandage (Ace wrap) or immobilizing brace around the joint until the inflammation subsides. Movement and pressure of the inflamed area will only cause exacerbation and prolongation on symptoms.

- **Apply an Ice Pack**  
Icing the area of inflammation is an important aspect of bursitis treatment. The ice will help to control the inflammation and decrease swelling. By minimizing inflammation and swelling, the bursa can return to its usual state and perform its usual function.
- **Anti-Inflammatory Medications**  
Nonsteroidal anti-inflammatory medications include a long list of possibilities such as Ibuprofen, Motrin, and many others. Bursitis treatment can be improved by these medications that will decrease pain and swelling. Be sure to talk to your doctor before starting these medications.
- **Cortisone Injections**  
If the symptoms of bursitis are persistent, an injection of cortisone may be considered. Cortisone is a powerful anti-inflammatory medication, but instead of being given by mouth, it is injected directly to the site of inflammation. This can be extremely helpful for situations that are not improved with rest.

### **Prevention:**

- **Strengthening and Physical Therapy**  
Proper strengthening technique can help you avoid bursitis by using your muscles in a safe, more efficient manner. For example, patients with shoulder bursitis can learn ways to move the shoulder that will not cause inflammation. *Do not begin exercises until the inflammation of bursitis has resolved!*

- **Take Breaks**

Alternate repetitive tasks with breaks to relieve pressure. Don't perform one activity continuously for hours at a time.

- **Cushion Your Joints**

If your work involves an activity such as prolonged kneeling, use protective cushions. These can be purchased at hardware stores--ask for roofers pads.

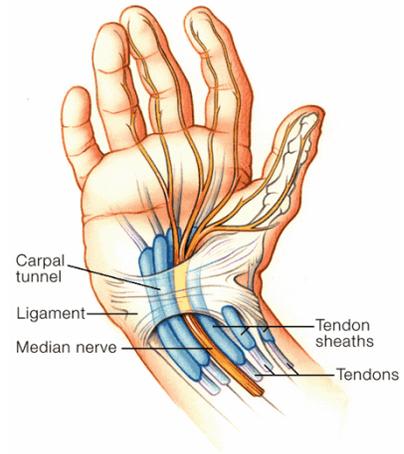
# CARPAL TUNNEL

A commonly occurring consequence of repetitive movement with hands and wrists. Caused by pressure on the median nerve. Symptoms may include:

- **Numbness and tingling** in the hands, especially when these symptoms occur at night and after use of the hands.
- **Decreased sensation** in your thumb, index, and long finger.
- **Recurrence** of these symptoms by holding your wrists in a bent down position for one minute.

## What is Carpal Tunnel Syndrome?

At the base of the palm is a tight canal or “tunnel” through which tendons and nerves must pass on their way from the forearm to the hands and fingers. The nerve that passes through this narrow tunnel to reach the hand is called the Median Nerve. The bottom and sides of this tunnel are formed by wrist bones and the top of the tunnel is covered by a strong band of connective tissue called a ligament. This tunnel also contains nine tendons that connect muscles to bones and bend your fingers and thumb. These tendons are covered with a lubricating membrane called synovium, which may enlarge and swell under some circumstances. If the swelling is sufficient it may cause the median nerve to be pressed up against this strong ligament which may result in numbness, tingling in your hand, clumsiness or pain described above.



## What causes Carpal Tunnel Syndrome?

Anything that causes swelling, thickening or irritation of the synovial membranes around the tendons in the carpal tunnel can result in pressure on the median nerve.

- repetitive and forceful grasping with the hands
- repetitive bending of the wrist
- broken or dislocated bones in the wrist which produce swelling.
- arthritis, especially the rheumatoid type
- thyroid gland imbalance
- sugar diabetes

## What is the treatment for carpal tunnel syndrome?

Most importantly, discontinue - as much as you can - whatever is causing it. If the activity is a hobby or sport that you can avoid entirely for a while, that may be all that is needed.

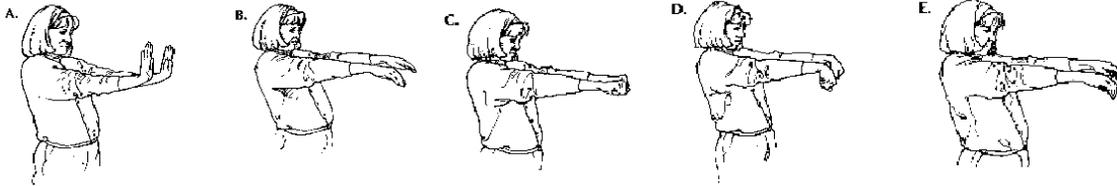
If you must continue to use your wrist in your work:

- Try to let your arm and shoulder share in the stress.
- Use both hands to lift things.
- Keep your wrist straight as much as you can.
- Wearing a wrist splint, especially at night, may be helpful.
- Take frequent breaks to rest or shake your hand, and massage the palm and back of the hand.
- Cut down on caffeine and smoking, which reduce blood flow to the hand.
- Take anti-inflammatory drugs or corticosteroids as instructed to reduce swelling.
- Carpal tunnel can be treated by stretching and strengthening exercises (see below).
- In more severe cases, your doctor may  
This medicine spreads around the swollen tendons and shrinks them, and, in turn, relieves
- In patients who do not gain relief from the above, surgery may be performed. The site of the operation is injected either into the wrist and hand or into the forearm. This is called a "release" - cutting the ligament that forms the tunnel and relieves the pressure on the median nerve. The surgery is generally not required to

## Carpal Tunnel Syndrome Exercises



Hold each hand position for a count of 5. Repeat 10 times, then hang arms loosely at side and shake them.



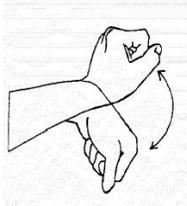
**Active Forearm Supination/Pronation**  
Tuck elbow against side of body; turn forearm palm up; turn forearm palm down.

## Sore Wrist Exercises



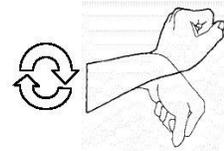
**Wrist Extension Passive Stretch (alternative method)**

Press palms together in "prayer position"; Pull hands downward keeping palms together.



**Active Wrist Flexion/Extension**  
With a loosely closed fist, bend wrist forward and backward.

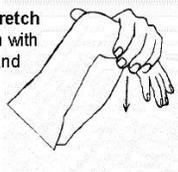
**Active Wrist Composite Motions**  
Make circles with wrist in both directions.



**Active Wrist Radial and Ulnar Deviation**

Place hand flat on table; Bend wrist toward thumb side; Wrist motion should be side to side only.

**Wrist Flexion Passive Stretch**  
Bend wrist forward; stretch with other hand; hold position and remove other hand.



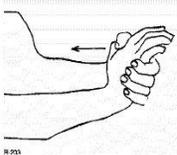
Place hand flat on table; Bend wrist toward little finger side; Wrist motion should be side to side only.



**Active Radial Abduction**  
Pull thumb away from side of hand.

**Active Thumb Palmar Abduction/Adduction**

Pull thumb away from palm.



**Wrist Extension Passive Stretch**  
Bend wrist back; stretch with other hand; hold position and remove other hand.



**Active Opposition**

Touch thumb tip to each fingertip alternately.

\* Please do not use this handout as sole treatment. If you are experiencing any possible symptoms of carpal tunnel syndrome, seek medical attention ASAP! \*

**These exercises are not to be the sole treatment. If you are experiencing any possible symptoms of carpal tunnel syndrome seek medical attention.**

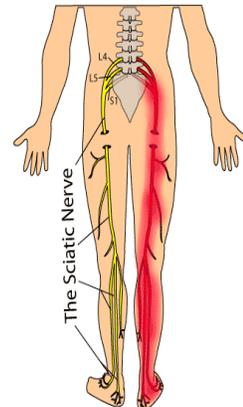
# SCIATICA

The sciatic nerve runs from the lower spine to the buttocks and down through the legs and into the feet. It supplies sensation and strength to leg and foot muscles. The nerve can become irritated if it gets “pinched” from a tight muscle (such as the piriformis muscle in the buttocks) or a herniated or bulging disc in the back.

- **Shooting pains** from the buttock, down the leg.
- **Tingling** or pins-and-needles sensations in the legs and thighs.
- **Burning sensations** in the thigh. In addition, patients with sciatica may notice a worsening of their symptoms with maneuvers such as squatting or coughing.
- **Sudden onset** that may be attributed to overexertion or a back injury.

## What are the causes of sciatica?

The most common cause of sciatica is a herniated spinal disc. When this happens, the normal cushion between the vertebra of your spine ruptures. This causes the disc to push out into areas normally occupied by these nerves. The nerves are compressed and people then experience the symptoms of pain, weakness, and numbness.



## What treatments are available for sciatica?

Treatment is initially aimed at addressing the inflammation associated with sciatica. Rest, anti-inflammatory medications (such as Motrin or Ibuprofen), and muscle relaxers are often good places to start. Some patients require a more powerful anti-inflammatory treatment and are given oral steroids (often called a Medrol Dose-Pak).

Once the pain subsides, exercises and physical therapy are helpful. Many people find that heat packs and ice packs soothe the muscles that are painful in sciatica.

## Will I get better from sciatica?

This is the good news. Most people (80-90%) fully recover from sciatica without surgery. In most cases the nerve is not permanently damaged, and individuals recover in the 3-week to 3-month time frame. Sciatica is not a medical emergency. However, if you experience difficulty with bowel or bladder function, decreased sensation around the genitals, or progressive leg weakness, *contact your doctor or go to the emergency room immediately.*

# LUMBAR STRAIN

Muscle strains and lumbar sprains are the most common causes of low back pain. A low back muscle **strain** occurs when the muscle fibers are abnormally stretched or torn. A lumbar **sprain** occurs when the ligaments, the tough bands of tissue that hold bones together, are torn from their attachments. Differentiating a strain from a sprain can be difficult, as both injuries will show similar symptoms. In general, it doesn't matter what you call the problem because the treatment and prognosis for both back strains and sprains is the same.

## Common symptoms

- **Pain** around the low back and upper buttocks.
- **Muscle spasm** in the lower back.
- **Aggravated** by activity and generally **relieved** with rest.

## Severe symptoms

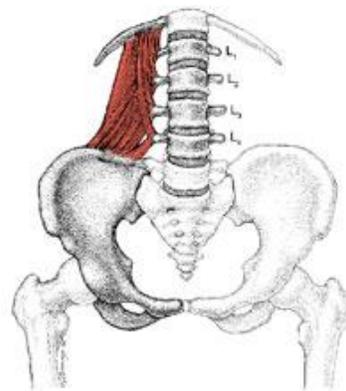
- Loss of control of bladder or bowels.
- Progressive lower extremity weakness.
- Severe, constant pain.

## What causes these symptoms of low back pain and spasm?

When the lumbar spine is strained or sprained, inflammation of the soft-tissues results. This inflammation causes pain and can cause muscle spasm. People are often surprised at how painful and debilitating a lumbar strain or sprain can be--these are not small injuries. They often force patients to remain in bed for a day or two, and can cause intermittent symptoms for weeks. That said, over 90% of patients are completely recovered from an episode of lumbar muscle strain or sprain within one month.

Some well-known factors that contribute to low back pain include:

- Poor conditioning
- Obesity
- Smoking
- Improper use/lifting technique



**If you have persistent problems with your lumbar spine, consider these issues. If you smoke, are overweight, or do not perform regular back strengthening exercises, then you have steps that you can take to help control your symptoms.**

## **What is the appropriate lumbar muscle strain treatment?**

It is important that if you are not sure of the cause of low back pain, that you are evaluated by a physician. There are low back conditions that require immediate treatment.

- **Step 1: Rest:**

The first step in the treatment of a lumbar muscle strain is to rest the back. This will allow the inflammation to subside and control the symptoms of muscle spasm.

- **Step 2: Medications:**

Two groups of medications are especially helpful in treating the acute symptoms of a lumbar back strain.

1.) Anti-inflammatory medications. These medications help control the inflammation caused by the injury, and also help to reduce pain.

2.) Muscle relaxing medications. Again, there are several options that you may discuss with your doctor. These medications are often sedating, so they need to be used with care.

- **Step 3: Physical Therapy / Exercises:**

Proper conditioning is important to both avoid this type of problem and recover from this injury. By stretching and strengthening the back muscles, you will help control the inflammation and better condition the lumbar back muscles. The exercises should not be painful.

It is also important to understand that even if you are "in good shape," you may have weak low back muscles. When you have a low back muscle injury, you should perform specific exercises that stretch and strengthen the muscles of the low back, hips and abdomen. These exercises are relatively simple, do not require special equipment, and can be performed at home.

- **Step 4: Further Evaluation**

If your symptoms continue to persist despite treatment, it is appropriate to return to your doctor for further evaluation. Other causes of back pain should be considered.

## How To Lift Properly:

- **Plan ahead before lifting.** what you're doing and going will prevent you from awkward movements while something heavy. Clear a lifting something with person, make sure both of on the plan.



Knowing where you're making holding path, and if another you agree

- **Lift close to your body.** stronger, and more stable object is held close to your body rather than at the end of your reach.

You will be a lifter if the

- **Feet shoulder width apart.** A solid base of support is important while lifting. Holding your feet too close together will be unstable, too far apart will hinder movement. Keep the feet about shoulder width apart and take short steps.
- **Bend your knees and keep your back straight.** Practice the lifting motion before you lift the object. Focus on keeping your spine straight--raise and lower to the ground by bending your knees.
- **Tighten your stomach muscles.** Tightening your abdominal muscles will hold your back in a good lifting position and will help prevent excessive force on the spine.
- **Lift with your legs.** Your legs are many times stronger than your back muscles--let your strength work in your favor. Keeping your eyes focused upwards helps to keep your back straight.
- **If you're straining, get help.** If an object is too heavy, or awkward in shape, make sure you have someone around who can help you lift.

### Tips:

1. **Never bend your back to pick something up.** It's just not worth the damage that improper lifting technique can cause.
2. **Hold the object close to your body.** You are a much more stable lifter if you're not reaching for an object.
3. **Don't twist or bend.** Face in the direction you are walking. If you need to turn, stop, turn in small steps, and then continue walking.
4. **Keep your eyes up.** Looking slightly upwards will help you maintain a better position of the spine.

# SEASICKNESS: INFORMATION AND TREATMENT

When the human body is put into motion, be it in a boat, car, or airplane, motion sickness can be a side effect. The cause of motion sickness and its associated unpleasant symptoms are not well understood. Most medical information explains the symptoms as a result of the brain experiencing sensory confusion when the signals your brain receives from your sense of balance contradict what your eyes are seeing. The vestibular system of the inner ear sends messages to the brain about the body's position, but the changing position of the body contradicts the information relayed by the eyes. Over time most people adjust to the motion that is making them sick, once the brain determines that the confused sensory signals are the "norm" and it shuts down the nausea, cold sweats, drowsiness, and other symptoms.

The more you move around, the sooner you become accustomed to the motion of the boat. Lying down does not help you adapt, even though it may allow you to feel better temporarily. Doing anything that requires close visual focus such as reading will make symptoms worse and should be avoided.

There are many remedies for seasickness, some tried and true, others more eclectic. How a specific drug either over-the-counter or prescription will affect you is unpredictable- what works for some people may not work for others. The only way to know for sure is to try it. Start with a non-prescription drug because they usually have less drowsiness side effects. If the non-prescription drugs are not effective see your doctor and request a prescription drug.

Most of the anti-nausea medication should be taken 1-2 hours before leaving the dock. Like all drugs seasick preventatives can have side effects. If you have a history of drug side effects be sure to consult your family doctor, and if possible try the drug on land before you use it at sea.

The following is a list of some of the more tested seasick remedies:

## **Natural Remedies:**

Ginger: Raw ginger, ginger tea (made from fresh slices of ginger), pills or tablets (available in health food stores), ginger ale, ginger candy, and ginger snaps. Ginger has a natural anti-nausea effect, which seems to alleviate some of the symptoms.

Calm Seas™: Contains natural ingredients including ginger.

## **Chemical Remedies:**

Bonine: Over the counter Meclizine.

Scopolamine: Marketed as a transdermal patch worn behind the ear.

Dramamine: Over the counter Dimenhydrinate; comes in non-drowsy formulas.

Coast Guard Cocktail: Prescription combination of 25mg each of Ephedrine and Promethazine. Also prescribed as 25mg Promethazine and 60mg Pseudoephedrine. Promethazine (also called Phenergan) is an antihistamine that prevents the motion sickness, and pseudoephedrine acts as a stimulant that counteracts the side effect of drowsiness.

### **Physical Remedies:**

Minimize motion of boat: keep to the middle of the boat. If you have a window or view try to keep your vision focused on the horizon.

Sea Bands <sup>TM</sup>: Wristbands available in nautical stores, naturopathic health stores, and some pharmacies. They work on acupuncture nausea points on the wrists (called the neikuan point).

### **Food:**

An empty stomach actually makes most people feel worse. However, try not to fill your stomach with anything you wouldn't want to see again! Ginger ale and saltine crackers or toast seem to be benign.

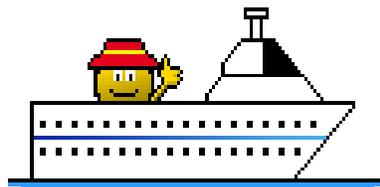
### **Added Precautions:**

The need to vomit is a common symptom of being nauseated. Sometimes people feel much better after doing so. Keep in mind that if you need to go out on deck or to the rail to vomit, **let someone know you are going outside!**

Although seasickness is not life threatening, if left untreated it can become serious. A few people will simply not recover from the constant nausea. Dehydration is a side effect that should be taken into account. If a person has been seasick for over 3 days, has vomited constantly, and has not eaten or drank they should be encouraged to take in fluids as much as possible. It may be necessary to get this person off the boat and to medical attention.

Seasickness is a normal consequence of putting the body into unnatural motion, and it happens to almost everybody. Keep that in mind. In most cases it does get better after a few days at sea, and symptoms lessen each time you venture out on a boat.

## ***Smooth Sailing!***



# INJURY, ILLNESS, AND NEAR-MISS REPORTING

When an injury or serious illness occurs at-sea, it is the responsibility of the FPC and Safety Leader to work together to report the incident in an accurate and timely manner. Phone calls should be made as soon as possible according to the Emergency Notification Plan. The following information is required to be submitted Seattle by e-mail within **24 hrs** of an injury and within **8 hrs** of a serious or critical injury. Additionally, a CA-1 form (p. 93) may be required if worker's compensation is likely to be pursued. Recording this information as timely as possible ensures details are not forgotten or distorted.

**RACE / REFM AT SEA EMAIL INJURY REPORT FORM**

Mishap and Illness report: Email this information within 24hrs:

- The following report should be filled out any time an accident or near miss occurs whether or not it resulted in injury. Please fill out all applicable fields and send to [jm.malchow@noaa.gov](mailto:jm.malchow@noaa.gov)
- In the event of an accident that involves injury the form must be sent within 24 hours.
- A hard copy of this report should also be printed and put into the safety documents envelope on the boat.
- Names of those involved will remain confidential at all times.

The purpose of this report is to fulfill government wide requirements of injury and illness reporting as well as meet Groundfish Assessment's goal of maintaining a database of mishaps (injury related or otherwise) in order to address safety in the field by understanding relative hazards.

---

1. Reason for Report:                     Accident w/ injury  
     Near miss or Accident w/out injury  
     Illness

2. Name:  
3. Date/Time of Accident/Illness:  
4. FPC on board:  
5. Vessel captain:  
6. Location/ Vessel where incident occurred:  
7. Description of Incident:  
8. Extent of Injury or Illness and Body Parts Affected:  
9. Description/identification of damaged property and extent of damage.  
    a. Include estimate of monetary damage:  
10. Preventative Actions implemented in Response to Mishap  
11. Date/Time form completed/submitted:  
12. Medical supplies used:  
13. Describe medical treatment applied:  
14. Amount of work time lost:

This form may be found on p. 85 in the Appendix.

# ANNUAL SAFETY PLAN REVIEW PROCEDURE

After each cruise leg, it is the Safety Leader's responsibility to solicit the completion of the Safety Evaluation Form and to return these as well as any Ergonomic Issue Reporting Forms to the AFSC SECO in Seattle. These data will be compiled anonymously and will be used in assessing the efficacy of the Safety Program.

After the completion of the field season, the Safety Committee will meet with the SECO and discuss the summarized results. An online questionnaire will be administered to all fieldwork participants and those results will be summarized. All of these resources will be presented by the Safety Committee at the Post-Cruise Safety Debriefing.

Major liabilities will be identified through this process, which will direct the agenda of the Safety Committee for the next field season, or as needed.

Your cooperation in establishing and maintaining a safe work environment is critical to the future of RACE/REFM fieldwork, and not only helps to preserve the workforce, but also enhances the continuity of survey data and our ability to collect it effectively.

**Remember: Safety First!**



# APPENDIX

## **List of Forms:**

Emergency Information Form

Charter Vessel Emergency Procedure Form

RACE/REFM Survey Float Plan

RACE/REFM At-sea e-mail Injury Report Form

Authorization for Examination or Treatment **CA-16**

Instructions for completing **CA-16**

Report of Injury, Illness, Accident or Fatality Form **CA-1**

Instructions for completing Form **CA-1**

Management of NOAA Small Boats **NAO 209-125**

Instructions for Ergonomic Issue Recording Form

Ergonomic Issue Recording Form

Safety Evaluation Form







**RACE / REFM Survey Float Plan**

National Oceanic and Atmospheric Administration  
 National Marine Fisheries Service  
 Alaska Fisheries Science Center



Date: \_\_\_\_\_ Vessel: \_\_\_\_\_

Name of Captain: \_\_\_\_\_

Name of FPC: \_\_\_\_\_

Name of Safety Leader: \_\_\_\_\_

<u>Names of personnel on shore excursion:</u>	<u>Able to swim?</u> <u>(yes/ no)</u>	<u>Departure / Return (Time &amp; Location)</u>
1. _____	Y N	_____
2. _____	Y N	_____
3. _____	Y N	_____
4. _____	Y N	_____
5. _____	Y N	_____
6. _____	Y N	_____
7. _____	Y N	_____
8. _____	Y N	_____
9. _____	Y N	_____
10. _____	Y N	_____
11. _____	Y N	_____

<b>Small Boat</b>	
<b>Description:</b>	
<b>Model:</b>	
<b>Length:</b>	
<b>Draft:</b>	
<b>Width:</b>	
<b>Engine type:</b>	
<b>Fuel on board:</b>	
<b>Boat operator:</b>	
<b>Experience level:</b>	

**Additional Information:**

**Equipment Checklist**  
**(Required by U.S. Coast Guard)**

\_\_\_\_\_ **PFD's**  
 One Coast Guard Approved type I, II, or III life preserver or buoyant vest for each person aboard.

\_\_\_\_\_ **EPIRB**

\_\_\_\_\_ **Anchor**  
 7 ½ lb. with 6ft chain lead, and anchor line.

\_\_\_\_\_ **Oars or Paddles**  
 or other means of secondary propulsion.

\_\_\_\_\_ **Medical Kit** (check inside boat kit)

\_\_\_\_\_ **Whistle or Horn**  
 One hand, mouth, or power operated whistle or horn, audible at least ½ mile.

\_\_\_\_\_ **Bilge pump**  
 or hand bailer.

**RACE / REFM Survey Float Plan Suggested and Recommended  
Equipment List by AFSC:**



National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Alaska Fisheries Science Center

**Survival suits** (not necessary for dockside transport/ only for shore excursions)

**Radar reflector/ transponder** (SART)

**Additional Radios:** (frequency monitored: \_\_\_\_\_)

**Orange flag w/pole to mark base camp**

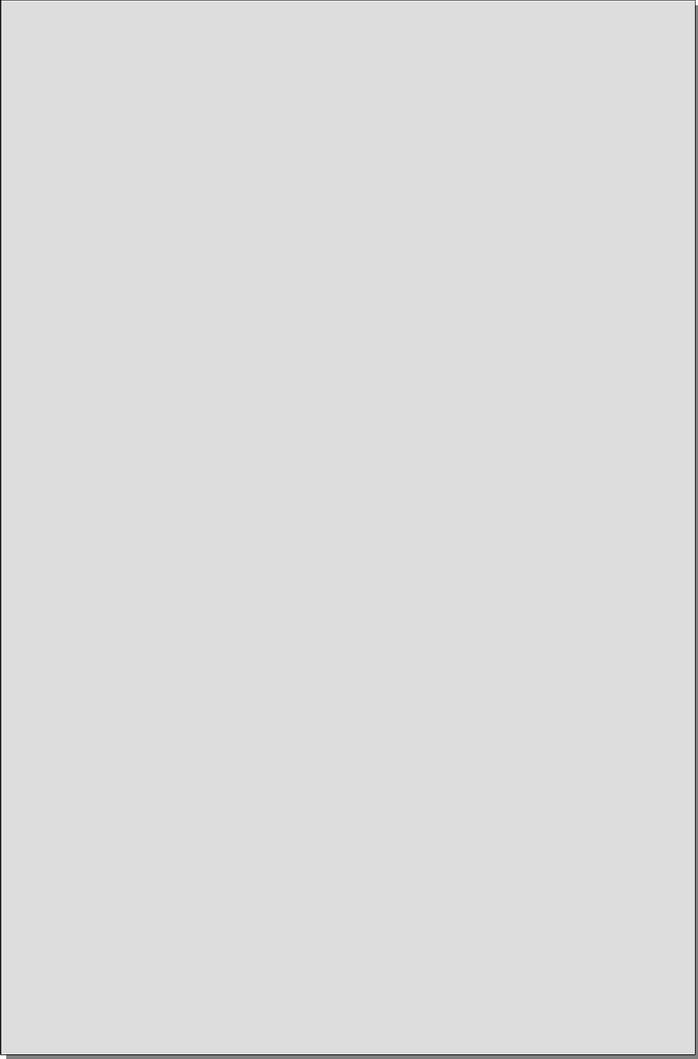
**Hand held EPIRB unit**

**Fire extinguisher**

**Extra food**

**Extra water**

**AFSC Small Boat (Shore) Kit:**





Please list all NOAA Survival Suit serial numbers that will be taken aboard on this leg of the survey:

Vessel:

Leg:

Field Party Chief:

<b>Survival Suit Serial Number:</b>	<b>Size:</b>

**Please FAX or mail this form (in pre-addressed / pre-stamped envelopes provided) BEFORE embarking on survey leg.**

**Send to:**

**NOAA / Alaska Fisheries Science Center  
7600 Sand Point Way NE F/ AKC1  
Seattle, WA 98110  
  
ATTN: Jeffrey Napp**

**OR**

**FAX to:**

**Jeffrey Napp  
(206) 526- 6723**

# RACE / REFM AT SEA EMAIL INJURY REPORT FORM

## **Mishap and Illness report: Email this information within 24hrs:**

- The following report should be filled out any time an accident or near miss occurs whether or not it resulted in injury. Please fill out all applicable fields and send to Jeff.Napp@noaa.gov.
- **In the event of an accident that involves injury the form must be sent within 24 hours.**
- A hard copy of this report should also be printed and put into the safety documents envelope on the boat.
- Names of those involved will remain confidential at all times.

The purpose of this report is to fulfill government wide requirements of injury and illness reporting as well as meet Groundfish Assessment's goal of maintaining a database of mishaps (injury related or otherwise) in order to address safety in the field by understanding relative hazards.

- 
- 1. Reason for Report:**  
 Accident w/ injury  
 Near miss or Accident w/out injury  
 Illness
  - 2. Name:**
  - 3. Date/Time of Accident/Illness:**
  - 4. FPC on board:**
  - 5. Vessel captain:**
  - 6. Location/ Vessel where incident occurred:**
  - 7. Description of Incident:**
  - 8. Extent of Injury or Illness and Body Parts Affected:**
  - 9. Description/identification of damaged property and extent of damage.**
    - a. Include estimate of monetary damage:**
  - 10. Preventative Actions implemented in Response to Mishap**
  - 11. Date/Time form completed/submitted:**
  - 12. Medical supplies used:**
  - 13. Describe medical treatment applied:**
  - 14. Amount of work time lost:**



**Authorization for Examination  
And/Or Treatment**

**U.S. Department of Labor**  
Employment Standards Administration  
Office of Workers' Compensation Programs



The following request for information is required under (5 USC 8101 et. seq.). Benefits and/or medical services expenses may not be paid or may be subject to suspension under this program unless this report is completed and filed as requested. Information collected will be handled and stored in compliance with the Freedom of Information Act, the Privacy Act of 1974 and OMB Cir. No. A-108.

OMB No.: 1215-0103  
Expires: 10-31-99

Persons are not required to respond to this collection of information unless it displays a currently valid OMB control number.

**PART A - AUTHORIZATION**

1. Name and Address of the Medical Facility or Physician Authorized to Provide the Medical Service:

2. Employee's Name (last, first, middle)

3. Date of Injury (mo. day, yr.)

4. Occupation

5. Description of Injury or Disease:

6. You are authorized to provide medical care for the employee for a period of up to sixty days from the date shown in item 11, subject to the condition stated in item A, and to the condition indicated either 1 or 2, in item B.

A. Your signature in item 35 of Part B certifies your agreement that all fees for services shall not exceed the maximum allowable fee established by OWCP and that payment by OWCP will be accepted as payment in full for said services.

B.  1. Furnish office and/or hospital treatment as medically necessary for the effects of this injury. Any surgery other than emergency must have prior OWCP approval.

2. There is doubt whether the employee's condition is caused by an injury sustained in the performance of duty, or is otherwise related to the employment. You are authorized to examine the employee using indicated non-surgical diagnostic studies, and promptly advise the undersigned whether you believe the condition is due to the alleged injury or to any circumstances of the employment. Pending further advice you may provide necessary conservative treatment if you believe the condition may be to the injury or to the employment.

7. If a Disease or Illness is Involved, OWCP Approval for Issuing Authorization was Obtained from: (Type Name and Title of OWCP Official)

8. Signature of Authorizing Official:

9. Name and Title of Authorizing Official: (Type or print clearly)

10. Local Employing Agency Telephone Number:

11. Date (mo., day, year)

12. Send one copy of your report: (Fill in remainder of address)

13. Name and Address of Employee's Place of Employment:

**U.S. DEPARTMENT OF LABOR**  
Employment Standards Administration  
Office of Workers' Compensation Programs

Department of Agency

Bureau or Office

Local Address (including ZIP Code)

**Public Burden Statement**

We estimate that it will take an average of 5 minutes to complete this collection of information, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection of information, including suggestions for reducing this burden, send them to the Office of Workers' Compensation Programs, U.S. Department of Labor, Room S-3229, 200 Constitution Avenue, N.W., Washington, D.C. 20210.

**DO NOT SEND THE COMPLETED FORM TO THIS OFFICE**

**PART B - ATTENDING PHYSICIAN'S REPORT**

14. Employee's Name (last, first, middle)

15. What History of Injury or Disease Did Employee Give You?

16. Is there any History or Evidence of Concurrent or Pre-existing Injury, Disease, or Physical Impairment? (If yes, please describe) <input type="checkbox"/> Yes <input type="checkbox"/> No	16a. IDC-9 Code _____
--	--------------------------

17. What are Your Findings? (Include results of X-rays, laboratory tests, etc.)	18. What is Your Diagnosis? 18a. IDC-9 Code _____
---	---

19. Do You Believe the Condition Found was Caused or Aggravated by the Employment Activity Described? (Please explain your answer if there is doubt)  
 Yes       No

20. Did Injury Require Hospitalization? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, date of admission (mo., day, year) Date of discharge (mo., day, year)	21. Is Additional Hospitalization Required? <input type="checkbox"/> Yes <input type="checkbox"/> No
--	---

22. Surgery (If any, describe type)	23. Date Surgery Performed (mo., day, year)
-------------------------------------	---

24. What (Other) Type of Treatment Did You Provide?	25. What Permanent Effects, If Any, Do You Anticipate?
---	--

26. Date of First Examination (mo., day, year)	27. Date(s) of Treatment (mo., day, year)	28. Date of Discharge from Treatment (mo., day, year)
--	---	---

29. Period of Disability (mo., day, year) (If termination date unknown, so indicate) Total Disability: From _____ To _____ Partial Disability: From _____ To _____	30. Is Employee Able to Resume <input type="checkbox"/> Light Work      Date: _____ <input type="checkbox"/> Regular Work      Date: _____
--	--

31. If Employee is Able to Resume Work, Has He/She been Advised?       Yes       No      If Yes, Furnish Date Advised

32. If Employee is Able to Resume Only Light Work, Indicate the Extent of Physical Limitations and the Type of Work that Could Reasonably be Performed with these Limitations.

33. General Remarks and Recommendations for Future Care, if Indicated. If you have made a Referral to Another Physician or to a Medical Facility, Provide Name and Address.

34. Do You Specialize?       Yes       No      (If yes, state specialty)

35. SIGNATURE OF PHYSICIAN. I certify that all the statements in response to the questions asked in Part B of this form are true, complete and correct to the best of my knowledge. Further, I understand that any false or misleading statement or any misrepresentation or concealment of material fact which is knowingly made may subject me to felony criminal prosecution.	36. Address (No., Street, City, State, ZIP Code)
	37. Tax Identification Number      39. Date of Report
	38. National Provider System Number

**MEDICAL BILL:** Charges for your services should be presented to the AMA standard "Health Insurance Claim Form" (AMA OP 407/408/409; OWCP-1500a, or HCFA 1500). Service must be itemized by Current Procedural Terminology Code (CPT 4) and the form must be signed.

## INSTRUCTIONS FOR AUTHORIZING OFFICIAL FOR COMPLETION OF PART A

### SELECTION OF PHYSICIAN

- A Federal employee injured by accident while in the performance of duty has the initial right to select a physician of his/her choice to provide necessary treatment. The supervisor shall immediately authorize examination and appropriate medical care by use of Form CA-16 issued to either a United States medical officer/hospital or any duly qualified physician/ hospital of the employee's choice.

If the employee elects to be treated by a private physician, a copy of the American Medical Association standards billing form (AMA OP 407/408/409; OWCP-1500a) should be supplied together with Form CA-16.

A physician who is debarred from the FECA program as provided at 20 CFR 10.450-457 may not be authorized to examine or treat an injured Federal employee.

Generally, 25 miles from the place of injury, employing agency, or the employee's home is a reasonable distance to travel for medical care; however, other pertinent factors must also be considered.

### PERIOD OF AUTHORIZATION

- Form CA-16 is valid for up to sixty days from date of issuance, and may be terminated earlier upon written notice from OWCP to the provider. It should not be used to authorize a change of physicians after the initial choice is exercised by the employee.

### FEDERAL MEDICAL FACILITIES

- U.S. medical facilities include Public Health Service, Military, or VA hospitals. Federal health service facilities (health units) established under 5 USC 7901 are not U.S. medical facilities as used herein (see 20 CFR 10.400).

### DEFINITION OF INJURY

- The term "injury" includes damage to or destruction of medical braces, artificial limbs and other prosthetic devices. Eyeglasses and hearing aids are included only if the damages were incidental to a personal injury which required medical services. Treatment for illness or disease should not be authorized unless approval is first obtained from OWCP.

### DEFINITION OF PHYSICIAN

- The term "physician" includes doctors of medicine (MD), surgeons, podiatrists, dentists, clinical psychologists, optometrists, chiropractors and osteopathic practitioners within the scope of their practice as defined by State law. The reimbursable services of chiropractors under the FECA are limited by statute to physical examination, related laboratory tests and X-rays to diagnose a subluxation of the spine; and treatment consisting of manual manipulation of the spine to correct a subluxation demonstrated by X-ray.

### FORM COMPLETION

- Part A shall be completed in full by the authorizing official. The authorization is not valid unless the name and address of the physician or hospital is entered in Item 1 and the signature of the authorizing official appears in Item B. Check B1 or B2 or Item 6, whichever is appropriate. In case of illness or disease, only Box B2 may be checked.

Show the address of the proper OWCP Office in Item 12. Send original and one copy of Form CA-16 to the medical officer or physician. If issued for illness or disease, a copy must also be sent to OWCP.

### ADDITIONAL INFORMATION

- See 20 CFR and/or Chapter 810, Federal Personnel Manual (FPM).

## INFORMATION . JR PHYSICIAN

### YOUR AUTHORIZATION

- Please read Part A of Form CA-16. You are authorized to examine and provide treatment for the injury or disease described in Item 5, for a period of not more than 60 days from the date of issuance, subject to the conditions in Item 6. A physician who is debarred from the FECA program as provided at 20 CFR 10.450-457 may not be authorized to examine or treat an injured Federal employee. Authorization may be terminated earlier upon written notice from OWCP. For extension of the authorization to treat beyond the 60 day period, apply to the office shown in Part A, Item 12.

### USE OF CONSULTANTS AND HOSPITALS

- You may utilize consultants, laboratories and local hospitals, if needed. Authorize semi-private accommodations unless a private room is medically necessary. Ancillary treatment may be provided to a hospitalized employee as necessary.

### REPORTS

- After examination, complete items 14 through 39, of Part B, and send your report, together with any additional narrative or explanatory material, to the address listed in Part A, item 12. If the employee sustained a traumatic injury and is disabled for work, reports on Form CA 17, "Duty Status Report" may be required by the employing agency during the first 45 days of disability. If disability continues beyond 45 days, monthly reports should be submitted. Reports from all consultants are also required. Delay in submitting medical reports may delay payment of benefits.

### RELEASE OF RECORDS

- Injury reports are the official records of OWCP. They shall not be released to anyone nor may any other use be made of them without the approval of OWCP.

### BILLING FOR SERVICES

- OWCP requires that charges be itemized using the AMA standard "Health Insurance Claim Form" (AMA OP 407/408/409; OWCP-1500, or HCFA-1500). Each procedure must be identified, in Column 24 C of the form, by the applicable Current Procedural Terminology (4th edition) Code CPT 4). A copy of the form may be supplied by the employee at the time treatment is sought.

- Payment for chiropractic services is limited to charges for physical examinations, related laboratory tests, and X-rays to diagnose a subluxation of the spine; and treatment consisting of manual manipulation of the spine to correct a subluxation demonstrated by X-ray.

### TAX IDENTIFICATION NUMBER

- The provider's Tax Identification Number (TIN) is an important identifier in the OWCP system. To speed processing and to reduce inaccuracy of payment, the provider's TIN (Employer Identification Number or SSN) should be shown on all reports and billings submitted to OWCP. If possible, providers should decide on a single TIN - either corporate or personal - which is used consistently on OWCP claims.

### ADDITIONAL INFORMATION

- Contact the OWCP shown in Item 12 of Part A.

**Please Remove These Instructions Before Submitting Your Report.**

**Federal Employee's Notice of Traumatic Injury and Claim for Continuation of Pay/Compensation**

**U.S. Department of Labor**  
 Employment Standards Administration  
 Office of Workers' Compensation Programs

**Employee: Please complete all boxes 1 - 15 below. Do not complete shaded areas.**

**Witness: Complete bottom section 16.**

**Employing Agency (Supervisor or Compensation Specialist): Complete shaded boxes a, b, and c.**

**Employee Data**

1. Name of employee (Last, First, Middle)				2. Social Security Number	
3. Date of birth Mo. Day Yr.	4. Sex <input type="checkbox"/> Male <input type="checkbox"/> Female	5. Home telephone	6. Grade as of date of injury Level Step		
7. Employee's home mailing address (Include city, state, and ZIP code)				8. Dependents <input type="checkbox"/> Wife, Husband <input type="checkbox"/> Children under 18 years <input type="checkbox"/> Other	

**Description of Injury**

9. Place where injury occurred (e.g. 2nd floor, Main Post Office Bldg., 12th & Pine)

10. Date injury occurred Mo. Day Yr.	Time <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	11. Date of this notice Mo. Day Yr.	12. Employee's occupation
---	--	--	---------------------------

13. Cause of injury (Describe what happened and why)

14. Nature of injury (Identify both the injury and the part of body, e.g., fracture of left leg)	a. Occupation code	
	b. Type code	c. Source code
	OWCP Use - NOI Code	

**Employee Signature**

15. I certify, under penalty of law, that the injury described above was sustained in performance of duty as an employee of the United States Government and that it was not caused by my willful misconduct, intent to injure myself or another person, nor by my intoxication. I hereby claim medical treatment, if needed, and the following, as checked below, while disabled for work:

b. Continuation of regular pay (COP) not to exceed 45 days and compensation for wage loss if disability for work continues beyond 45 days. If my claim is denied, I understand that the continuation of my regular pay shall be charged to sick or annual leave, or be deemed an overpayment within the meaning of 5 USC 5584.

a. Sick and/or Annual Leave

I hereby authorize any physician or hospital (or any other person, institution, corporation, or government agency) to furnish any desired information to the U.S. Department of Labor, Office of Workers' Compensation Programs (or to its official representative). This authorization also permits any official representative of the Office to examine and to copy any records concerning me.

**Signature of employee or person acting on his/her behalf** \_\_\_\_\_ **Date** \_\_\_\_\_

Any person who knowingly makes any false statement, misrepresentation, concealment of fact or any other act of fraud to obtain compensation as provided by the FECA or who knowingly accepts compensation to which that person is not entitled is subject to civil or administrative remedies as well as felony criminal prosecution and may, under appropriate criminal provisions, be punished by a fine or imprisonment or both.

**Have your supervisor complete the receipt attached to this form and return it to you for your records.**

**Witness Statement**

16. Statement of witness (Describe what you saw, heard, or know about this injury)

Name of witness	Signature of witness	Date signed
Address	City	State ZIP Code

**Official Supervisor's Report: Please complete information requested below:**

<b>Supervisor's Report</b>	
17. Agency name and address of reporting office (include city, state, and zip code)	OWCP Agency Code
	OSHA Site Code
ZIP Code	

18. Employee's duty station (Street address and ZIP code)

19. Employee's retirement coverage  CSRS  FERS  Other, (identify)

20. Regular work hours From: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m. To: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	21. Regular work schedule <input type="checkbox"/> Sun. <input type="checkbox"/> Mon. <input type="checkbox"/> Tues. <input type="checkbox"/> Wed. <input type="checkbox"/> Thurs. <input type="checkbox"/> Fri. <input type="checkbox"/> Sat.
--	--

22. Date of Injury Mo. Day Yr.	23. Date notice received Mo. Day Yr.	24. Date stopped work Mo. Day Yr. Time: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
--------------------------------	--------------------------------------	---

25. Date pay stopped Mo. Day Yr.	26. Date 45 day period began Mo. Day Yr.	27. Date returned to work Mo. Day Yr. Time: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
----------------------------------	--	---

28. Was employee injured in performance of duty?  Yes  No (If "No," explain)

29. Was injury caused by employee's willful misconduct, intoxication, or intent to injure self or another?  Yes (If "Yes," explain)  No

30. Was injury caused by third party? <input type="checkbox"/> Yes <input type="checkbox"/> No (If "No," go to item 32.)	31. Name and address of third party (Include city, state, and ZIP code)
--	---

32. Name and address of physician first providing medical care (Include city, state, ZIP code)	33. First date medical care received Mo. Day Yr.
	34. Do medical reports show employee is disabled for work? <input type="checkbox"/> Yes <input type="checkbox"/> No

35. Does your knowledge of the facts about this injury agree with statements of the employee and/or witnesses?  Yes  No (If "No," explain)

36. If the employing agency controverts continuation of pay, state the reason in detail.	37. Pay rate when employee stopped work \$ Per
--	--

**Signature of Supervisor and Filing Instructions**

38. A supervisor who knowingly certifies to any false statement, misrepresentation, concealment of fact, etc., in respect of this claim may also be subject to appropriate felony criminal prosecution.

I certify that the information given above and that furnished by the employee on the reverse of this form is true to the best of my knowledge with the following exception:

Name of supervisor (Type or print)

Signature of supervisor Date

Supervisor's Title Office phone

39. Filing instructions  No lost time and no medical expense: Place this form in employee's medical folder (SF-66-D)  
 No lost time, medical expense incurred or expected: forward this form to OWCP  
 Lost time covered by leave, LWOP, or COP: forward this form to OWCP  
 First Aid Injury

## Instructions for Completing Form CA-1

Complete all items on your section of the form. If additional space is required to explain or clarify any point, attach a supplemental statement to the form. Some of the items on the form which may require further clarification are explained below.

### Employee (Or person acting on the employees' behalf)

#### 13) Cause of injury

Describe in detail how and why the injury occurred. Give appropriate details (e.g.: if you fell, how far did you fall and in what position did you land?)

#### 14) Nature of Injury

Give a complete description of the condition(s) resulting from your injury. Specify the right or left side if applicable (e.g., fractured left leg: cut on right index finger).

#### 15) Election of COP/Leave

If you are disabled for work as a result of this injury and filed CA-1 within thirty days of the injury, you may be entitled to receive continuation of pay (COP) from your employing agency. COP is paid for up to 45 calendar days of disability, and is not charged against sick or annual leave. If you elect sick or annual leave you may not claim compensation to repurchase leave used during the 45 days of COP entitlement.

### Supervisor

At the time the form is received, complete the receipt of notice of injury and give it to the employee. In addition to completing items 17 through 39, the supervisor is responsible for obtaining the witness statement in Item 16 and for filling in the proper codes in shaded boxes a, b, and c on the front of the form. If medical expense or lost time is incurred or expected, the completed form should be sent to OWCP within 10 working days after it is received.

The supervisor should also submit any other information or evidence pertinent to the merits of this claim.

If the employing agency controverts COP, the employee should be notified and the reason for controversion explained to him or her.

#### 17) Agency name and address of reporting office

The name and address of the office to which correspondence from OWCP should be sent (if applicable, the address of the personnel or compensation office).

#### 18) Duty station street address and zip code

The address and zip code of the establishment where the employee actually works.

#### 19) Employers Retirement Coverage.

Indicate which retirement system the employee is covered under.

#### 30) Was injury caused by third party?

A third party is an individual or organization (other than the injured employee or the Federal government) who is liable for the injury. For instance, the driver of a vehicle causing an accident in which an employee is injured, the owner of a building where unsafe conditions cause an employee to fall, and a manufacturer whose defective product causes an employee's injury, could all be considered third parties to the injury.

#### 32) Name and address of physician first providing medical care

The name and address of the physician who first provided medical care for this injury. If initial care was given by a nurse or other health professional (not a physician) in the employing agency's health unit or clinic, indicate this on a separate sheet of paper.

#### 33) First date medical care received

The date of the first visit to the physician listed in item 31.

#### 36) If the employing agency controverts continuation of pay, state the reason in detail.

COP may be controverted (disputed) for any reason; however, the employing agency may refuse to pay COP only if the controversion is based upon one of the nine reasons given below:

- a) The disability was not caused by a traumatic injury.
- b) The employee is a volunteer working without pay or for nominal pay, or a member of the office staff of a former President;
- c) The employee is not a citizen or a resident of the United States or Canada;
- d) The injury occurred off the employing agency's premises and the employee was not involved in official "off premise" duties;
- e) The injury was proximately caused by the employee's willful misconduct, intent to bring about injury or death to self or another person, or intoxication;
- f) The injury was not reported on Form CA-1 within 30 days following the injury;
- g) Work stoppage first occurred 45 days or more following the injury;
- h) The employee initially reported the injury after his or her employment was terminated; or
- i) The employee is enrolled in the Civil Air Patrol, Peace Corps, Youth Conservation Corps, Work Study Programs, or other similar groups.

### Employing Agency - Required Codes

#### Box a (Occupation Code), Box b (Type Code), Box c (Source Code), OSHA Site Code

The Occupational Safety and Health Administration (OSHA) requires all employing agencies to complete these items when reporting an injury. The proper codes may be found in OSHA Booklet 2014, "Recordkeeping and Reporting Guidelines."

#### OWCP Agency Code

This is a four-digit (or four digit plus two letter) code used by OWCP to identify the employing agency. The proper code may be obtained from your personnel or compensation office, or by contacting OWCP.

**Benefits for Employees under the Federal Employees' Compensation act (FECA)**

The FECA, which is administered by the Office of Workers' Compensation Programs (OWCP), provides the following benefits for job-related traumatic injuries:

- (1) Continuation of pay for disability resulting from traumatic, job-related injury, not to exceed 45 calendar days. (To be eligible for continuation of pay, the employee, or someone acting on his/her behalf, must file Form CA-1 within 30 days following the injury and provide medical evidence in support of disability within 10 days of submission of the CA-1. Where the employing agency continues the employee's pay, the pay must not be interrupted unless one of the provision's outlined in 20 CFR 10.222 apply.
- (2) Payment of compensation for wage loss after the expiration of COP, if disability extends beyond such point, or if COP is not payable. If disability continues after COP expires, Form CA-7, with supporting medical evidence, must be filed with OWCP. To avoid interruption of income, the form should be filed on the 40th day of the COP period.
- (3) Payment of compensation for permanent impairment of certain organs, members, or functions of the body (such as loss or loss of use of an arm or kidney, loss of vision, etc.), or for serious defringement of the head, face, or neck.
- (4) Vocational rehabilitation and related services where directed by OWCP.
- (5) All necessary medical care from qualified medical providers. The injured employee may choose the physician who provides initial medical care. Generally, 25 miles from the place of injury, place of employment, or employee's home is a reasonable distance to travel for medical care.

An employee may use sick or annual leave rather than LWOP while disabled. The employee may repurchase leave used for approved periods. Form CA-7b, available from the personnel office, should be studied BEFORE a decision is made to use leave.

For additional information, review the regulations governing the administration of the FECA (Code of Federal Regulations, Chapter 20, Part 10) or pamphlet CA-810.

**Privacy Act**

In accordance with the Privacy Act of 1974, as amended (5 U.S.C. 552a), you are hereby notified that: (1) The Federal Employees' Compensation Act, as amended and extended (5 U.S.C. 8101, et seq.) (FECA) is administered by the Office of Workers' Compensation Programs of the U.S. Department of Labor, which receives and maintains personal information on claimants and their immediate families. (2) Information which the Office has will be used to determine eligibility for and the amount of benefits payable under the FECA, and may be verified through computer matches or other appropriate means. (3) Information may be given to the Federal agency which employed the claimant at the time of injury in order to verify statements made, answer questions concerning the status of the claim, verify billing, and to consider issues relating to retention, rehire, or other relevant matters. (4) Information may also be given to other Federal agencies, other government entities, and to private-sector agencies and/or employers as part of rehabilitative and other return-to-work programs and services. (5) Information may be disclosed to physicians and other health care providers for use in providing treatment or medical/vocational rehabilitation, making evaluations for the Office, and for other purposes related to the medical management of the claim. (6) Information may be given to Federal, state and local agencies for law enforcement purposes, to obtain information relevant to a decision under the FECA, to determine whether benefits are being paid properly, including whether prohibited dual payments are being made, and, where appropriate, to pursue salary/administrative offset and debt collection actions required or permitted by the FECA and/or the Debt Collection Act. (7) Disclosure of the claimant's social security number (SSN) or tax identifying number (TIN) on this form is mandatory. The SSN and/or TIN, and other information maintained by the Office, may be used for identification, to support debt collection efforts carried on by the Federal government, and for other purposes required or authorized by law. (8) Failure to disclose all requested information may delay the processing of the claim or the payment of benefits, or may result in an unfavorable decision or reduced level of benefits.

**Note: This notice applies to all forms requesting information that you might receive from the Office in connection with the processing and adjudication of the claim you filed under the FECA.**

**Receipt of Notice of Injury**

This acknowledges receipt of Notice of Injury sustained by (Name of injured employee)

Which occurred on (Mo., Day, Yr.)

At (Location)

Signature of Official Superior

Title

Date (Mo., Day, Yr.)



# MANAGEMENT OF NOAA SMALL BOATS NAO 209-125

NAO 209-125

Eff: 4/23/08; Iss: 5/12/08

## NOAA SMALL BOAT SAFETY PROGRAM

### SECTION 1. PURPOSE.

.01 The National Oceanic and Atmospheric Administration (NOAA) has a responsibility to provide a safe working environment for its workforce and for partners who are exposed to the risks associated with using small boats owned and/or operated by NOAA. This is consistent with NOAA Administrative Order (NAO) 209-1, NOAA Safety Policy. The purpose of this Order is:

- a. to make small boat safety the number one priority for all small boating operations;
- b. to ensure small boats meet NOAA's seaworthiness and operational safety standards;
- c. to establish a comprehensive NOAA Small Boat Standards and Procedures Manual (hereafter, "the Manual");
- d. to establish a NOAA Small Boat Safety Board (SBSB);
- e. to establish a Small Boat Program (SBP);
- f. to foster and facilitate collaboration within NOAA and with outside partners having a common interest in safe, efficient, and environmentally sound small boat operations; and
- g. to encourage a corporate culture that values the skilled small boat operator, encourages the distribution of information, seeks a quality approach, shares commitment, and seeks to manage operational risk.

.02 This is a complete revision and update to NAO 217-103, Management of NOAA Small Boats. Significant changes in this Order include: re-titling and renumbering of the Order to place it in the NAO Series' chapter on safety; revising and updating the policies for small boat safety; and introducing and authorizing issuance of the NOAA Small Boat Standards and Procedures Manual and prescribing that its contents will expand upon safety issues covered in this Order and will cover the non-safety matters previously addressed in NAO 217-103.

### SECTION 2. SCOPE.

This Order applies:

- a. to all NOAA small boats as defined in Section 6.01 of this Order;
  - b. to all NOAA personnel who operate any small boat in the performance of their official duties;
- and

c. to all individuals who operate NOAA small boats.

### SECTION 3. POLICY.

.01 The NOAA Small Boat Standards and Procedures Manual (the Manual) will consist of a broad programmatic core manual having NOAA-wide application and by Supplemental Small Boat Policy (SSBP) and Small Boat Operating Manuals (SBOMs) developed by NOAA Programs (defined herein) to address their peculiar program and/or mission requirements.

a. Issuance of the Manual is in compliance with NAO 200-3, The NOAA Administrative Order Series.

b. The Manual augments and supplements the policies, procedures, and guidelines in this Order and is intended to maximize the efficiency and effectiveness of NOAA's SBP by providing for the timely development and issuance of programmatic materials to the small boat community.

c. The core elements of the Manual apply to all individuals and Programs involved with NOAA's small boats and has the same force, effect, and authority as this Order. These core elements shall be developed and maintained by the SBSB. An electronic edition of these elements will be available for viewing at the link to the Small Boat Program found on the Office of Marine and Aviation Operations (OMAO) webpage at <http://www.oma.noaa.gov/>.

d. The Supplemental Small Boat Policy (SSBP) and Small Boat Operating Manuals (SBOMs) also have the same force, effect, and authority as the core Manual; however, they are developed by NOAA Programs and are applicable only to their specified Program and/or mission.

.02 At a minimum, all small boats and their required inventories shall be inspected annually and, additionally, in accordance with individual requirements developed under the Manual and/or by NOAA Programs under the SSBP and/or SBOM.

.03 All operators of NOAA small boats shall be trained and certified based on small boat size, engineering complexity, nature of operations, and operating area. NOAA-wide training requirements are defined in the core of the Manual; Program- and mission-related requirements are defined in the SSBP and/or the SBOM.

.04 NOAA small boats shall be operated in a safe and environmentally conscious manner.

.05 NOAA small boats shall be maintained in a seaworthy condition and be fit for the mission intended.

.06 Appropriate safety training and life saving equipment resources shall be provided to personnel operating or embarked on NOAA small boats.

.07 NOAA small boats shall be used only for official government purposes.

.08 Any incident or near-miss concerning a NOAA small boat must be reported in accordance with NAO 209-1, NOAA Safety Policy, and any additional requirements in the Manual.

.09 NOAA small boats shall conform to the visual identification and registration requirements provided in the Manual.

.10 A waiver is a written authorization that permits temporary deviation from provisions of this Order for strategic or compelling operational requirements. Any Request for Waiver to provisions of this Order shall be presented in writing to the SBSB. The SBSB will provide

guidance to the Director, OMAO, who is the approval authority for all waivers to provisions of this Order. See the Manual for additional coverage of Requests for Waiver.

#### SECTION 4. BACKGROUND.

.01 Operating small boats in support of NOAA missions involves unique associated risks. NOAA relies on small boats to achieve mission requirements. There are numerous regulatory standards that address small boat safety, but little guidance or few regulations tailored specifically to the special mission of small boats or research vessels less than 300 gross tons. Current marine standards are derived from international conventions, lessons learned from casualties, and advances in technology. As such, the body of regulatory information continues to grow and change. Toward this end, this Order seeks to establish a NOAA Small Boat Program that is sufficiently fluid to meet varying small boat requirements on a national, regional, and local level.

.02 As steward of the Nation's oceans and atmosphere, it is NOAA's intent to comply with, or exceed, all applicable regulatory and industry standards and to foster a management culture committed to safe and environmentally sound small boat operations based upon the principles of risk management.

#### SECTION 5. RESPONSIBILITY.

.01 The Director, Office of Marine and Aviation Operations (OMAO), shall broadly administer NOAA's Small Boat Program and shall provide support and resources, and shall recommend additional funding sources for its operations. The Director, OMAO, is the final administrative authority for all matters pertaining to the NOAA Small-Boat Safety Program and its policies, procedures, and standards and shall review the contents of the Manual and any subsequent updates prior to their issuance. Concurrence will be indicated by signature of the Director on the sequentially numbered Transmittal Sheets that will accompany each issuance or update to the Manual. The Director may request prior review and concurrence by the Deputy Under Secretary for Oceans and Atmosphere prior to authorizing potentially controversial updates.

.02 The Small Boat Safety Board (SBSB).

a. The composition of the SBSB is as follows.

1. Board Members:

- (a) Small Boat Program Manager (SBPM) - SBSB Coordinator;
- (b) National Marine Fisheries Service representative(s);
- (c) National Ocean Service representative(s);
- (d) Oceanic and Atmospheric Research representative(s) (also representing National Weather Service);
- (e) Office of Marine and Aviation Operations (OMAO) representative(s);
- (f) NOAA Safety and Environmental Compliance Office (SECO) representative(s); and
- (g) NOAA Law Enforcement (from various Line Offices) representative(s).

2. Each organization identified in Section 5.02a.1.(b) through (g) of this Order may designate one additional board member to the SBSB; however, for voting purposes, each of these organizations is entitled to cast a single vote (Oceanic and Atmospheric Research/National Weather Service also is entitled to one vote).

b. The SBSB serves in an advisory capacity to the Director, OMAO, and is the technical authority for matters pertaining to small boats. The SBSB shall:

1. develop, maintain, review, and approve this Order;
2. prepare, clear, issue, maintain, and distribute the NOAA Small Boat Standards and Procedures Manual (the Manual). The SBSB shall review and revise the Manual, as necessary, in order to keep it current with applicable policies and regulations and to maintain the ability to adapt to changes involving technology and/or safety within the marine community. The Manual, and its future updates, will be issued via sequentially numbered Transmittal Sheets;
3. develop, evaluate, and maintain a set of basic qualifications standards for small boat operators and crew;
4. approve basic small boat training requirements and approve all policies, standards, and operating procedures developed under the Manual (including all SSBP and SBOMs);
5. establish criteria and tools for small boat operational risk assessments;
6. identify and promote “best in class” safety practices for boat operations;
7. establish minimum criteria for SSBPs and SBOMs;
8. determine reciprocity or substitution of small boat operator and crew qualifications with similar qualifications of other agencies, organizations, or training programs;
9. serve as a policy and implementation advisor to the Small Boat Program;
10. evaluate data and trends gathered from operational, inspection, and incident reporting statistics and initiate appropriate actions;
11. address other boating-related matters as requested by NOAA management and/or as deemed appropriate by the SBSB;
12. inform NOAA management of significant small boat management issues;
13. maintain a compilation of small boat inventory and compliance records;
14. provide subject matter expertise for issues relating to the small boat community;
15. provide guidance to the Director, OMAO, regarding Requests for Waivers to the provisions of this Order and of the Manual;
16. respond to questions and concerns raised by the small boat community; and
17. review boating incident/accident reports and initiate appropriate actions.

.03 NOAA Programs. NOAA Programs that own, operate, and/or maintain small boats shall comply with this Order and the Manual and are responsible for the following:

- a. the safe operation, inspection compliance, life cycle management, and material condition of their small boats;

- b. developing and maintaining SSBP and SBOMs which are directly related to their unique program and mission requirements in order to augment the Manual;
- c. conducting and recording Operational Risk Assessments; and
- d. designating SBSB representatives and providing adequate time and resources for their participation on the SBSB.

## SECTION 6. DEFINITIONS.

.01 NOAA Small Boat. A small boat, as defined in Section 6.06 of this Order, owned, operated, or maintained by NOAA. The term includes boats leased, loaned, bare boat chartered (also referred to as demise chartered), or operated under any cooperative agreement with other government agencies, universities, or scientific organizations by or from NOAA, but does not include boats time chartered by NOAA.

.02 NOAA Program. As used in this Order, the term refers to and is synonymous with NOAA Line Offices, Staff Offices, and any of their subordinate entities.

.03 NOAA Small Boat Standards and Procedures Manual. A compilation of instructions, procedures, regulations, and guidelines derived from operational risk assessments and best management practices applicable to NOAA Small Boats.

.04 Operational Risk Management. A process approach to understanding and dealing with the elements of risk associated with operations. Implementing Operational Risk Management involves performing risk assessments and implementing corresponding risk controls. Risk management is a decision making process that enhances operational capability. The process helps the decision maker in identifying hazards, assessing risks, and implementing controls to reduce the risk associated with any operation.

.05 Operational Risk Assessment. A process involving identification of risks associated with a NOAA small boat's operations and consideration of actions to reduce those risks. Supervision, communication, and overall support, operating area, operator experience level, personnel physical and mental fitness, weather, and complexity of mission may be factors in the assessment.

.06 Small Boat (or Vessel). As used in this Order, includes every description of watercraft less than 300 gross tons capable of being used as a means of transportation of persons on water. The SBSB will classify vessels by size, nature of operations, and engineering complexity.

.07 Small Boat Inspections. Documented, formal evaluations of a small boat's material condition, inventory, and compliance for which inspection criteria, frequency, and format are defined in the Manual.

.08 Small Boat Operating Manual (SBOM). A compilation of instructions, procedures, and guidelines specific to each small boat, its mission, and its operating area.

.09 Small Boat Operator (Operator or Coxswain). As used in this Order, any person who operates a NOAA small boat as defined in Section 6.01 of this Order.

.10 Supplemental Small Boat Policy (SSBP). A compilation of instructions, procedures, regulations, and guidelines derived from operational risk management and best management practices conducted by a NOAA Program for specific small boat operations.

#### SECTION 7. REFERENCES.

The following reference sources are listed in descending order of hierarchy.

- a. NAO 209-125, NOAA Small Boat Program.
- b. NOAA Small Boat Standards and Procedures Manual.
- c. Supplemental Small Boat Policy (SSBP).
- d. Small Boat Operating Manual (SBOM).

#### SECTION 8. EFFECT ON OTHER ISSUANCES.

This Order supersedes and revokes NAO 217-103, Management of NOAA Small Boats, dated January 21, 2003, as amended.

## **Ergonomic Issue Recording Form**

RACE and REFM would like to continue improving communication about at-sea injuries, illnesses and other conditions that affect scientists in the field. The purpose of the Ergonomic Issue Recording Form is to collect information that might otherwise go unreported or dismissed as not serious enough to file an accident form. Also, knowing when these physical ailments do not occur is just as valuable, so if you have no complaints, please fill out the header of the form and leave the reporting section blank or report "No Issues." This information will only be submitted to the AFSC Safety and Environmental Compliance Officer (SECO), who will summarize them anonymously and report to the RACE/REFM At-Sea Safety Committee. While the recording of such injuries/illnesses is voluntary, your participation is necessary for establishing a dataset which we can use to improve the work environment in the field. As we continue to evaluate different methods (training, new or modified equipment, etc.) for reducing the occurrence of repetitive motion injuries, this dataset will be referenced to monitor their efficacy.

This form does not replace the RACE/REFM E-Mail Injury Report Form for at-sea injuries; neither the SECO nor the Divisions will use this form to report injuries. The RACE/REFM E-Mail Injury Report Form must still be filled out and submitted in a timely manner for at-sea injuries. However, you may also record an injury on the Ergonomic Issue Recording Form to track that injury and any ancillary effects. Recording an issue on this form does not preclude submission of the RACE/REFM E-Mail Injury Report Form at a later date if the condition escalates, as is often the case with ergonomic injuries.

Use this form to record physical conditions of a member of the scientific party that may affect their ability to perform at-sea duties, including ergonomic injuries and increased fatigue due to loss of sleep from an injury or sea sickness.

The Safety Leader should check with each member of the science crew periodically for conditions they would like to record, keeping the FPC & Deck Boss informed of any problems the crew may be having. The Safety Leader should deliver all forms to the SECO at the end of each cruise leg.

You may also request a copy of the form for your records, should you need to pursue remedies after the conclusion of the field work.

Thank you for your cooperation,

The RACE/REFM At Sea Safety Committee

**Example #1**

**Safety Leader's At Sea Personnel Recording Form**

This form does not replace the RACE/REFM E-Mail Injury Report Form. Use this form to record conditions not reported on Injury Form.

Examples include ergonomic injuries, sea sickness, etc.

Note if condition is affecting performance of duties, including increased fatigue from loss of sleep.

Name: Billy

Safety Leader:

FPC:

Vessel:

Location:

Cruise #:

Deck boss:

Date	Injury Form?	Complaint/report	Most likely cause	Severity & Effect	Action taken by Deck Boss or FPC
8/7/2010	No	waking up thru out night w numb right hand	Specific task unknown	Doesn't interfere w specific tasks, but affects sleep, so fatigued	Offered to rotate out of certain tasks to see if alleviates problem
8/8/2010	No	still. No difference from prev night	unknown	same	Didn't sex fish 8/2; did otoliths instead
8/9/2010	No	still. No difference from prev night	unknown	same	Didn't sex fish 8/3; did otoliths instead
8/10/2010	No	still. No difference from prev night	unknown	same	Sexed fish, moved from side to end of sorting table (less picking up of fish & more scooping off table)
8/11/2010	No	still. No difference from prev night	unknown	same	Sexed fish, moved from side to end of sorting table (less picking up of fish & more scooping off table)
8/12/2010	No	still, but may have woken up fewer times in night.		same	
8/13/2010	Yes	still, but not as bad as initially noted	Suspect lifting fish over table boards.	Doesn't interfere w specific tasks, sleeping better, but still fatigued	Billy at end of sorting table.
		etc			

**Example #2**

**Safety Leader's At Sea Personnel Recording Form**

This form does not replace the RACE/REFM E-Mail Injury Report Form. Use this form to record conditions not reported on Injury Form.

Examples include ergonomic injuries, sea sickness, etc.

Note if condition is affecting performance of duties, including increased fatigue from loss of sleep.

Name: Jenny

Safety Leader:

FPC:

Vessel:

Location:

Cruise #:

Deck boss:

Date	Injury Form?	Complaint/report	Most likely cause	Severity & Effect	Action taken by Deck Boss or FPC
8/6/2010	No	very sore lower back	Shoveling catch in bin	Can't work in bin today, sleep affected	No bin work until 2 days post-back pain
8/7/2010	No	resolved		No bin work, slept well	
8/8/2010	No	back OK		No bin work, slept well	
8/9/2010	Yes	pulled muscle in back	Shoveling catch in bin	Worked in bin	No bin work for remainder of cruise.
8/10/2010		sore lower back		Pain considerable; Jenny can't lift baskets, shovel, bend over.	





**SAFETY COMMITTEE SAFETY EVALUATION FORM**



**Name:**

**Date:**

**Vessel:**

**Do you have any safety concerns not addressed in the Safety Manual?**

**How can we improve safety during the survey?**

**How can we improve the Safety Manual?**

**Please list any injuries, accidents, near misses or hazards you encountered during this leg:**

**Did you file an electronic Injury or Near-Miss Form?**

**Additional comments:**