STOCKTON UNIVERSITY | MARINE FIELD STATION

Marine Operations Safety and Operational Procedures (MOSOP)

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Stockton University Marine Field Station
30 Wilson Avenue
Port Republic, New Jersey

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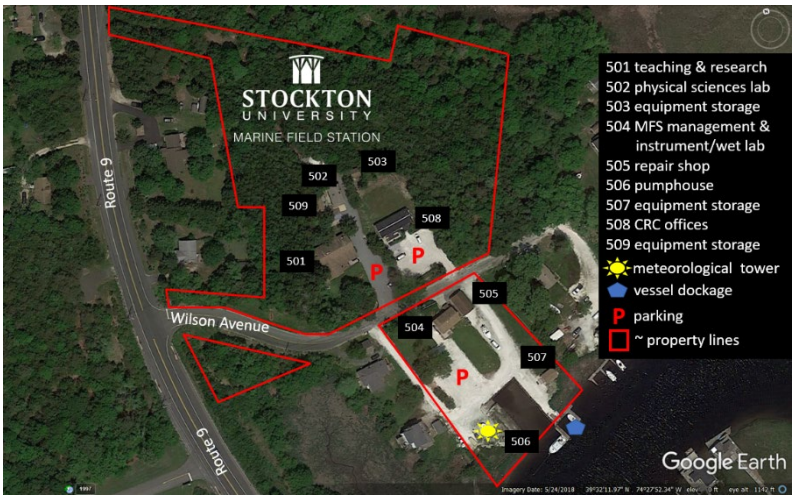
PRIMARY ADDRESSES AND TELEPHONE NUMBERS

Building 504 (Field Station Management)
30 Wilson Ave
Port Republic, NJ 08241
609-652-4486

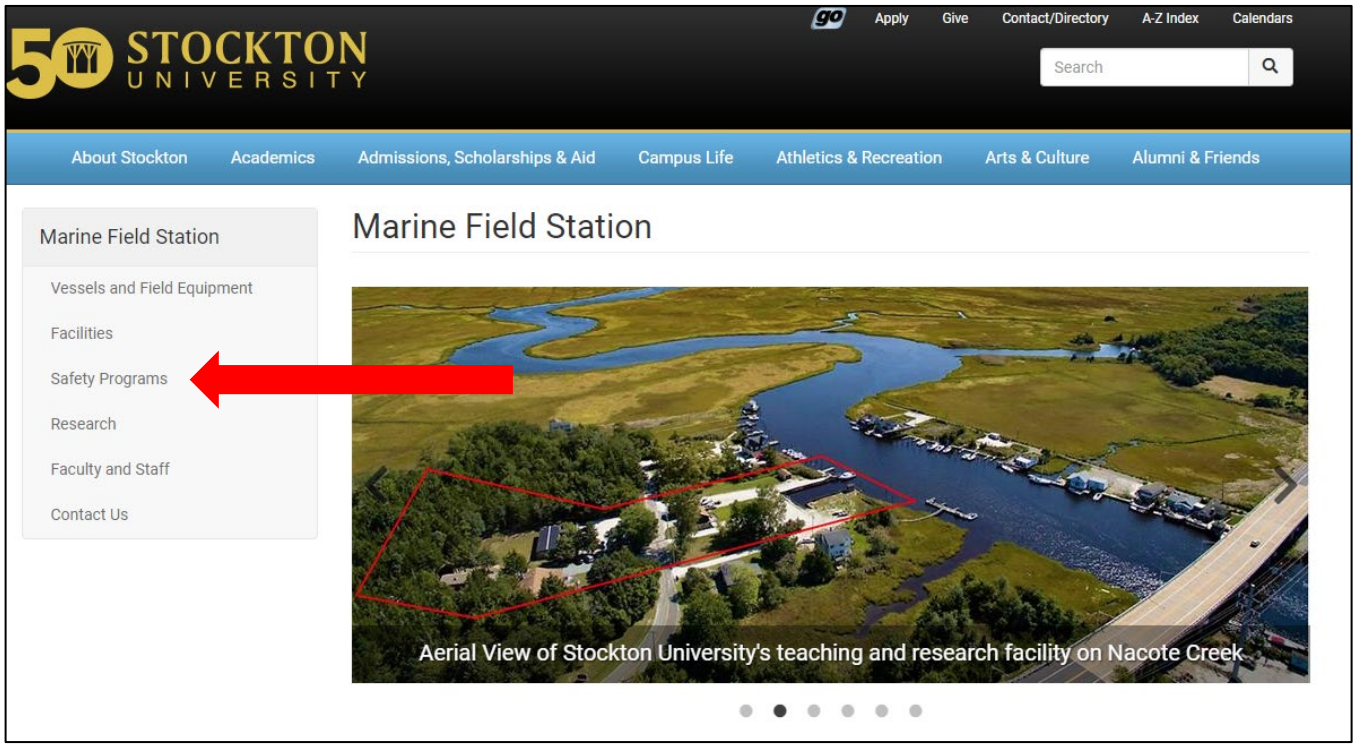
Building 501 (Research and Teaching Lab)
33 Wilson Ave
Port Republic, NJ 08241
609-652-6458

Building 508 (Coastal Research Center)
33 Wilson Ave.
Port Republic, NJ 08241
609-652-4245



Emergency and Fire	**911**
Stockton Campus Police	**609-652-4390**
United States Coast Guard (Atlantic City)	**609-344-6594**
Stockton Wellness Center	**609-652-4701**

Many resources related to the safety of the laboratory and marine operations procedures at the Marine Field Station are located under the Safety Tab.



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I. Faculty and staff

The following staff are associated with the management and daily operations of the Marine Field Station. Individual credentials of the support staff as well as the affiliated faculty can be found by visiting the MFS staff and faculty website.

Steve Evert	Marine Field Station Director steve.evert@stockton.edu 609-652-4486
**********	
Dave Ambrose	MFS Assistant, Professional Services Specialist dave.ambrose@stockton.edu 609-652-4486
Elizabeth Bick Zimmermann	MFS Assistant, Professional Services Specialist elizabeth.zimmermann@stockton.edu 609-652-4486
Nate Robinson	MFS Assistant, Professional Services Specialist nathan.robinson@stockton.edu 609-652-4486

Marine operations and support can be reached by e-mailing MFS@stockton.edu

Business matters for the facility can be reached by e-mailing NAMSbudget@stockton.edu

II. GENERAL DESCRIPTION

The Stockton University Marine Field Station (MFS) is located on an 8-acre parcel in Port Republic, New Jersey and is a support facility for the School of Natural Sciences and Mathematics. The location of the MFS is central to its offerings; less than 15 minutes from the Galloway campus and only 30 minutes from the Atlantic City campus. The facility is located within the Jacques Cousteau National Estuarine Research Reserve, one of the most pristine coastal bay and river systems in the Mid-Atlantic region of the United States. The MFS is unique in its regional location, proximity to campus, primarily undergraduate status and impressive array of physical resources to support the teaching and research programs. The facility plays a significant role in the University's ability to attract top students in the marine and environmental science fields. The MFS programs provide laboratory facilities, professional staff support, research vessels, sampling equipment, and marine technology to fulfill the teaching, research and community service missions of the University in the area of marine science.

In addition to housing the University's marine operations and academic support programs for marine science, the MFS is also the physical site of the Coastal Research Center (CRC). The MFS and the CRC serve similar but distinct roles to the University and the region; the MFS as a primarily academic support program (teaching and research) and the CRC a service-oriented research center for coastal municipalities and the State of NJ. The MFS management team reports directly to the NAMS Administration and has ultimate oversight for the physical facility, including the marine operations via the Marine Operations Standard Operating Procedures (MOSOP) contained in this document. The CRC has direct oversight of CRC safety programs for non-vessel-based field work (i.e. beach and land-based operations).

The Marine Field Station is a compound of several structures located on both sides of Wilson Avenue in Port Republic, NJ (Figure 1).

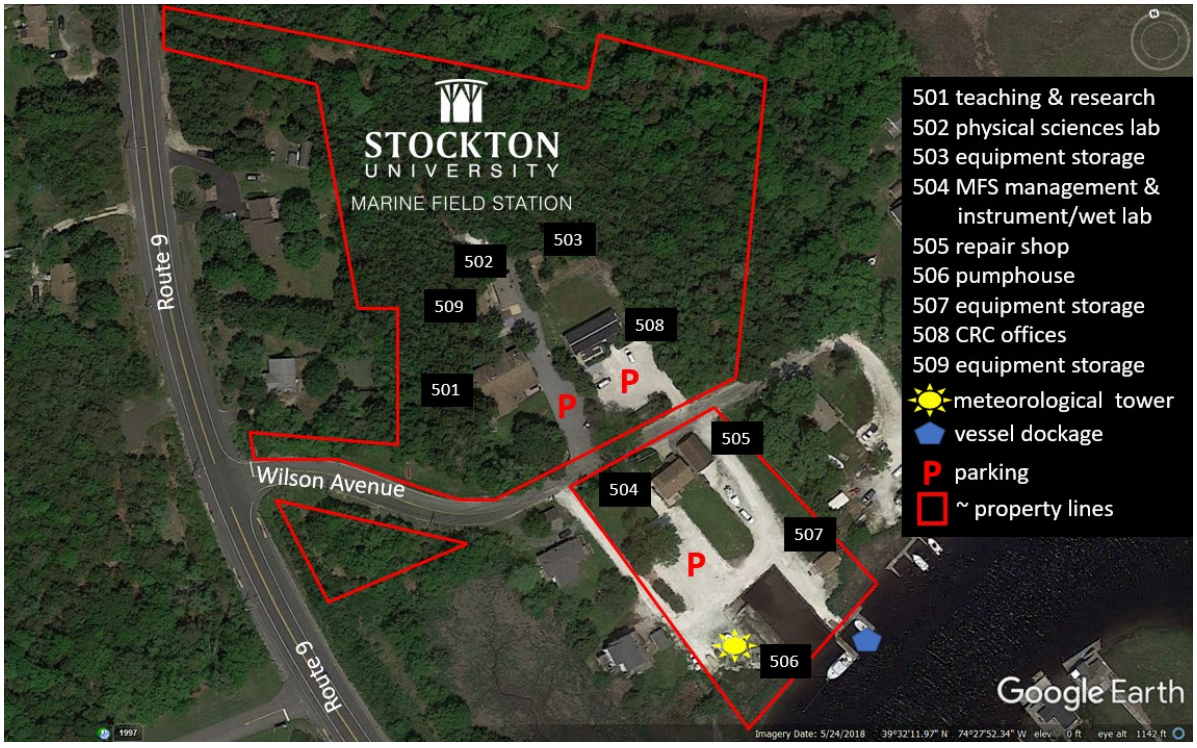


Figure 1. Overall MFS site located at 30 and 33 Wilson Ave. off Route 9 in Port Republic, NJ 08241.

III. MARINE OPERATIONS STANDARD OPERATING PROCEDURES (MOSOP)

Marine operations are defined here as those activities that engage individuals in activities aboard a vessel and within the marine or extended marine environments (tidal rivers). The terms *Master* and *Operator* are used interchangeably and indicate the individual in charge of the marine operations (i.e. captain). Stockton University's Marine Operations Standard Operating Procedures (MOSOP) generally follow, to the extent practical, the recommendations in the SBSA Boating Safety Program Guidelines established for the purposes of guiding safety regulations for non-UNOLS vessels engaged in oceanographic research. The University is a member of the Scientific Safe Boating Association (SBSA) and the University National Oceanographic Laboratories System (UNOLS) however the fleet is not managed under the UNOLS system.

Stockton-owned vessels (>20' LOA) are designated by the United States Coast Guard as Oceanographic Research Vessels (ORV) under the provisions provided by CFR 46 Subchapter U – Oceanographic Research Vessels. All vessels are maintained to the standards set forth for uninspected vessels designated as ORVs and are inspected by the USCG at least every two years.

Additional clarifications to the procedures outlined in the SBSA guidelines and under the provisions of the ORV process are contained in this section and are specific to University resources and programs. Current safety information and on-line briefings for passengers can also be found on the MFS website under the Safety Programs tab.

A. **Operation of University-owned research vessels** is limited to those individuals complying with the following qualifications.

    1) Operator must hold a current USCG Merchant Mariner Credential covering the body of water and vessel being operated or, in the case of educational or research trips operating under the provisions provided by CFR 46 Subchapter U – Oceanographic Research Vessels, have a current USCG Auxiliary Safe Boating License via testing administered by USCG/NJ State Police in fulfillment of the NJ State Boating License Requirement.

    2) Operator must be at least 18 years of age and have documented the experience and physical capability of performing the necessary duties of an individual in charge of the marine operation with special attention to the specifics of that operation (i.e. inland vs. coastal waters, distances from shore and other factors).

    3) Operator must be an authorized faculty or staff member of the University. TES and part time employees can be authorized.
        i. Qualified and approved student workers may be permitted to operate a University owned vessel only when accompanied by authorized faculty or staff, either on the vessel or within the day's flotilla (i.e. on a second vessel traveling in convoy).

4) Operator must satisfactorily complete an on-the-water operators test to demonstrate vessel handling ability and familiarity with the specific University owned vessel. The Field Station Director based on these checks will authorize or restrict vessel usage on a per vessel basis (i.e. operators may be permitted to operate only certain vessels or to engage in only certain operations).

5) Operators must sign for the receipt and understanding of the MOSOP annually.

6) Operators must possess and carry on their person a NJ Boating License (this includes USCG licensed captains as not all activities are operating under the authority of their Merchant Mariner credential).

7) The Field Station Director may revoke operator privileges from any faculty or staff member if that person fails to follow all State, Federal and University regulations and/or fails to enforce regulations on passengers.

B. **Training requirements, documentation and employee responsibilities related to marine operations;**

1) Vessel operation credentials; must meet those found in section A and be on file and current.

2) First Aid/CPR certification requirements; At least one operator within the day's flotilla must hold current First Aid and CPR certification. In the case of a single vessel being operated that operator must be an authorized faculty or staff member and hold a current First Aid/CPR certification.

3) Public Employees Occupational Safety and Health Program; All activities on vessels must follow the guidelines set forth by the University's Department of Risk Management/Environment/Healthy/Safety, including but not limited to;
   i. PEOSHA's Hazard Communication Standard and Globally Harmonized System
   ii. Stockton's Written Hazard Communication Program
   iii. New Jersey's Right to Know program
   iv. Stockton's Bloodborne Pathogen Procedures

4) Any vessel operations requiring the use of chemicals require that the operator in charge and any persons directly handling the chemicals or waste be trained via the University protocols for chemical safety. Type "safety" into the main webpage search engine or contact the NAMS Lab Safety Officer for copies of these regulations.

5) **Employee responsibility;** It is important to remember that safety falls on everyone. It is the marine operations team's responsibility to provide safe work

environment for all employees. It is the responsibility of all employees and passengers to act in the following manner to prevent slips, trips, and falls:

- Take your time and pay attention to where you are going.
- Adjust your movements to a pace that is suitable for the walking surface, the weather conditions and the tasks you are doing.
- Make wide turns at corners.
- Change direction slowly.
- Use installed light sources that provide enough light for your tasks.
- Use a flashlight if you enter a dark area where there is no light.
- Ensure that things you are carrying or pushing do not prevent you from seeing any obstructions, spills, and/or having a hand to hold on to railings.
- Wear appropriate footwear with surface specific traction and job specific protection.
- Use proper lifting techniques.
- Ask the vessel operator or party chief whenever you are unsure of ANYTHING.

6) **Job descriptions and responsibility**; The responsibility of any and all individuals on the crew will be documented in the pre-departure checklist, where their name, responsibility, and operational tasks will be assigned to them. The below standing job descriptions apply to all operations:

   i. **Master;** the master (operator) is responsible for the safe operation of the vessel and for completing all crew familiarization overviews and ensuring that all required safety items are available and current. He or she has the overall responsibility for the safety, health and welfare of all personnel on the vessel as well as the compliance with the legal requirements in accordance with his/her position.

   ii. **Second-in-command**; A second-in-command must be designated and trained to the level necessary to take over if the master is incapacitated. This training must be documented on the pre-departure checklist.
      1. Academic programs travelling in convoy to sheltered water destinations (i.e. our many bay and river sites) are exempt from this requirement.

   iii. **Party chief;** A chief scientist (party chief) shall be designated and is responsible for ensuring the completion of safety documents by the remaining science and field crew. In academic settings this is generally the lead faculty member. The party chief is required to alert the master to any known concerns of the science crew – health, accessibility or other. The party chief is responsible for making sure sampling equipment is aboard the vessel prior to departure and alerting the Master to any concerns prior to and during field excursions.

iv. **Science crew;** The remaining passengers are considered science crew and are responsible for appropriate behavior and adherence to the policies and procedures of the operation as communicated to them in the pre-departure familiarization programs and through related drill procedures. In academic settings the students are the science crew.

7) **STOP WORK authority;** In most cases Stop Work Authority (SWA) is called on by the master or the party chief but it may be executed at any time a participant, regardless of their rank, feels that conditions or behaviors are threatening danger to person(s), equipment or the environment. It is critical that all persons engaged in the activities understand the reasons for and their ability to execute a stop work authority. Situations that warrant a SWA may include, but are not limited to, the following;

- Change in conditions; personal health, well-being, weather or other
- Changes to scope of work or work plan
- Emergency (injury or health condition, approaching weather, transportation concerns, etc.)
- Improper use of equipment, especially machinery and hydraulics or any over-the-side deployment activities and techniques
- Lack of knowledge, understanding or information
- Near-miss incident – a near-miss incident is due cause for a SWA to until the leads can confer with the team and make sure everyone knows how to proceed safely and learn from any near-miss incidents
- ANY unsafe conditions – wind, weather, tidal concerns, vessel concerns, health concerns or other

Stop Work Authority is a program designed to provide employees with the responsibility and obligation to stop work when a perceived unsafe condition or behavior may result in an unwanted event. Understand your SWA and never hesitate to enact it.

C. **Safety awareness programs for vessel operations;** MFS staff or master shall provide information on safe boating procedures to all persons boarding University-owned vessels. Basic boating safety information is explained in the Safe Boating Procedures and Cold-Water Survival hand-outs (Appendix) and provided in an on-line format available for viewing and electronic signature via the Safety Programs tab on the MFS website. Passengers are required to sign an attendance sheet indicating their understanding of the safety regulations and are further encouraged to inform the party chief or master of any special medical needs, including food or other allergies. The purpose of this notification is to provide the MFS Director or other responsible operator with relevant information in the event of medical difficulties. All persons on University-owned vessels should be made aware that professional medical assistance is generally 30-90 minutes away while engaged in marine operations.

1) If specific allergies or other known medical conditions are known aboard the vessel it is the responsibility of the master and party chief to limit food types and otherwise ensure the safety of the science crew. If it is determined by the master or party chief that the condition cannot be mitigated it is their duty to notify the MFS Director and to postpone the operation until the safety concern is addressed.

2) The faculty member teaching a course (party chief) with a marine operations component is responsible for assuring that all students boarding University vessels have completed the above requirements. Special arrangements for students absent from safety overviews must be coordinated with the MFS Director.

3) In the case of staff-led marine operations not related to course support (i.e. research, survey or other operations), the master leading that operation is responsible for assuring that all science crew have been provided a safety briefing relative to the vessel and the activity that includes;
    a. the importance of disclosing existing medical conditions that could affect the passenger's safety at sea, including the potential for long response times by professional rescuers
    b. Response procedures and practical drills for;
        i. Man Overboard
        ii. Fire onboard
        iii. Taking on water
        iv. Engine loss
        v. Sea sickness
        vi. Working with hydraulics
        vii. Working with overhead equipment
        viii. Severe weather response
        ix. Second person in charge in case of operator incapacitation

D. **Compliance with safety regulations;** Attention to personal safety shall be paramount in all Stockton University activities. All persons will be responsible for warning others when it is believed that they are endangered by known hazards or by their failure to comply with applicable health and safety precautions. <u>Safety and health precautions must never be subordinated or disregarded because of the urgency of a task or associated deadlines for completion</u>.

E. **Use of drugs and alcohol;** Illegal drugs and alcohol are not permitted on University vessels during research, educational or any other standard marine operations. Persons under the influence of drugs or alcohol, as determined by observation of the master or party chief, are not permitted aboard University research vessels.

1) Minimal alcohol use can be permitted for non-operators/deckhands during University-sponsored and Risk Management-approved events for the purposes of entertainment when said event is in the best interest of the University (i.e.

fundraising cruises or other special events). This exception is only permitted when approved in writing from the University's Office of Risk Management and the Field Station Director.

2) The ability to perform sensitive duties can also be compromised by legal drugs. Both over the counter (OTC) as well as prescription medications are known to impair performance. Persons using such legal medications and who will be involved in safety sensitive duties, including vessel operations, are to adhere to the guidelines set forth in each drug information card with the OTC or prescription medication.

F. **Smoking:** there is no smoking or vaping allowed aboard Stockton-owned research vessels

G. **Float plans;** The use of float plans and a contact list in case of an overdue vessel is required. The general float plan book is located at the radio station on the second floor of Bldg. 504 and a more specific float plan including all names aboard is in the waterfront shed of the Port Republic site. For trips extending beyond the Inlet boundaries and for all trips not originating from the Port Republic site a copy of the float plan completed by the master is required to be sent via text message picture or e-mail to a designated shoreside contact.

H. **Communication methods;** Vessel masters are required to ensure that two operating VHF radios are available as well as an adequately charged cellular phone for near-shore operations and a satellite phone for operations beyond 3 nm from shore. A list of important emergency phone numbers is contained in the logbook of each vessel.

1) A pre-departure check of the primary VHF radio is required to be performed. In some areas channels 24, 25, 26, 27, 28 and 84 allow for an automated check feature. Otherwise, utilize standard methods on a working channel.
2) In the event of an emergency the master, at their discretion may choose to communicate with the USCG via VHF radio Channel 16 or directly by cell phone. In all emergency situations, the master should be prepared to provide vessel and GPS information, number of persons aboard and the nature of the situation.
3) In the event of a non-emergency situation requiring vessel assistance the master is to call Sea Tow on Channel 16 and switch to the working channel suggested by Sea Tow response. Examples for use of Sea Tow include vessel groundings where no injuries occur, and no immediate loss of life or property is imminent, mechanical failures or other reasons for requiring non-emergency assistance. Membership information is contained in the logbook for each vessel.

I. **Emergency contacts and response plans;** Marine operations require an emergency contact list and response plan. The Emergency Response Plan (ERP) for marine operations originating from the Port Republic site and staying inside the inlet boundaries is found as an example in the Appendix. All plans shall include;

1) USCG, NJSP and other relevant emergency response contact methods
2) University emergency contact lists
3) Nearest hospital with contact information
4) Emergency landings with contact information

J. **Transfers of personnel;** The transfer of personnel from one vessel to another is an uncommon practice for the University marine operations scope. However, when desired or necessary, transfer should follow these guidelines for any vessels;

1) Only to be conducted in calm seas with winds <10 knots.
2) For small vessels, if possible, use adjacent lands to transfer from vessel-land-vessel.
3) Transfer individuals must have an approved lifejacket donned.
4) Transfer operators should designate crew to assist. Crew should be trained to avoid vessel to vessel contact points and use fenders or extra lifejackets to prevent direct vessel to vessel contact and the associated injury inherent to that (hands and fingers).
5) MOB devices should be identified and ready for use.

K. **General weather procedures;** The master is always required to review the marine and atmospheric weather forecasts, including the evening prior to the activity, the immediate timeframe before departure, and periodically throughout the excursion. Depending on the nature of the work and the waters of operation, these general guidelines apply to the various vessels within Stockton's fleet;

1) Small vessels (less than 26' LOA)
    i. Are to avoid inland or open water operations in winds > 25 kts.
    ii. Regardless of wind conditions are to avoid open water operations in inlets or near-shore areas in sea states > 4' short period seas (< 10 seconds) and 3' long period seas (>10 seconds).
2) Large vessels (>26' LOA). Operating conditions will be specific for each vessel. Currently only the *R/V Petrel* (36' x 14' cabin-forward workboat) falls into this category.
    i. Avoid any operations in winds > 35 kts.
    ii. Avoid any over-board operations in winds >20 kts.
    iii. Avoid heavy-lifting or over-board deployment operations in winds > 15 kts and or >4' short period sea states.
    iv. Regardless of wind conditions, avoid inlet or bar crossing in any seas > 6' and whenever a dangerous seas warning is issued by NWS/NOAA.

L. **Adverse weather procedures;** The master is always required to review the marine and atmospheric weather forecasts, including the evening prior to the activity, the immediate timeframe before departure, and periodically throughout the excursion. In the event of adverse weather conditions arising during an excursion the master is to follow these guidelines;

1) Small vessels are to seek shelter immediately in the event of high winds (>25 kts.), lightning or severe marine weather warnings issued for the operating area.
    i. Adjust course and speed as necessary to maintain vessel stability while seeking a course leading to appropriate landside shelter.
    ii. Switch VHF radio to Channel 16 if not already monitoring.
    iii. Check security of deck hatches.
    iv. Secure any heavy or loose objects on deck.
    v. Ensure all persons aboard have lifejackets donned.
    vi. Be aware of PLB, EPIRB and handheld location and ready for deployment.
    vii. Ensure all persons remain low in the vessel, seek cabin shelter if possible.
2) Large vessels operating in inland waters or near-shore waters where shelter is within a distance that makes seeking shelter feasible given the forecasted duration of the weather event are to seek shelter immediately in the event of high winds (>35 kts.), lightning or severe marine weather warnings issued for the operating area .
    i. Follow small vessel procedure (a. sections i. – vii.).
3) Large vessels operating in open ocean waters where seeking immediate shelter is not feasible.
    i. If safe, have a crew member check the watertight integrity of the deck hatches and secure items on deck. Once secured all persons are to stay inside the wheelhouse with the aft door securely closed.
    ii. Ensure all persons aboard have lifejackets donned.
    iii. Remind persons of their responsibilities if the conditions worsen and the ship needs to be abandoned – EPIRB, life raft, ditch bag and immersion suit locations. Consider having stored items brought into the open area for quicker action.
        1. Contact the USCG via VHF Channel 16 if there is any indication that conditions may reach a stage dangerous to the safe operation of the vessel. Be prepared to provide GPS location and number persons aboard, safety gear available and a communication schedule.
        2. Contact nearby vessels via AIS if appropriate. Be aware of other vessels in the area if conditions will likely limit functionality of radar. Be sure to use the rain clutter feature of the radar and appropriate ranges of operation.
    iv. Monitor bilge pumps by observing activation as indicated by red light illumination. Investigate any consistent activation of a pump system.
    v. Adjust course and speed as necessary to maintain vessel stability while seeking a course that minimizes the potential for danger from high seas or other hazards relative to the sea state and vessel. DO NOT use autopilot.
    vi. If appropriate, minimize the time spent in the weather event by transiting through the event (i.e. if you cannot avoid a line of thunderstorms by altering course and speed minimize the dangerous event time by transiting into the weather's approaching direction at a safe speed and vessel direction relative to the sea and wind conditions).

M. **Seasickness procedure;** seasickness is caused by disturbance of the equilibrium of the inner ear. Symptoms include nausea, vomiting, dizziness, sweating, increased saliva production, pale skin and loss of appetite. As miserable as seasickness can be it is not life-threatening but attention to dehydration and falling due to weakness from extended seasickness should be monitored.

1) When a crew member feels seasickness, they should alert the master
2) If safe, always vomit outside of the cabin and preferably over the side
3) To alleviate some of the symptoms you should;
    i. Lay horizontally on a bench or other comfortable area with open air flow
    ii. Relax and take deep breaths
    iii. Close your eyes, take your mind off it by counting backwards to 100 or thinking of other things
    iv. Do not read, smoke or drink alcohol
    v. Eat dry crackers, ginger snap cookies and stay hydrated with water or light non-carbonated drinks
    vi. Avoid any other individual who may be vomiting
4) Individuals that believe they are prone to seasickness should consult a doctor or try to take over the counter medications recommended by a pharmacist. Many of these medications make a person drowsy so extra caution is due if taking seasickness medication.

N. **Safe Navigation Procedure;** The master should at all times adhere to the safe navigation methods of a credentialed mariner, including but not limited to following the rules of the road, keeping abreast of seasonal and daily weather concerns and forecasts, maintaining a clean and functional vessel, ensuring that all safety items are available and current and that all persons aboard are familiar with emergency response procedures. Additional procedures include:

1) Maintain vessel speeds appropriate to the conditions. Slowdown in restricted visibility, in areas of high vessel traffic and when transiting narrow channels.
2) Ensure proper lighting, day shapes and restricted visibility sounds for the vessel's operating status.
3) Use chart plotters, depth sounders and radar navigation instruments regardless of the operating conditions to ensure their proper operation when needed. It is especially prudent to check the target discretion of the radar to ensure proper settings if restricted visibility conditions arise.
4) Carry paper charts and seek local knowledge of waters being operated in. Pay special attention to areas of shifting shoals (i.e. natural inlets, bay and river crossings/mouths). If charted courses indicate shoal waters close to the vessel's minimum draft travel at times of elevated tides only.
5) Always monitor Channel 16 on the VHF radio.

O. **Man Overboard Procedure (MOB);** MOB procedures are to be communicated to the crew prior to departure including stations and locations of life rings, ladders and other recovery tools. Upon a MOB event the immediate reactions of the crew are critical;

1) Call out “Man Overboard” and keep your eyes on the victim.
2) Operator shall push “MOB” button on available GPS systems.
3) If there is any delay in locating the victim report the situation to the USCG via channel 16 and continue search.
4) If available, one crew should keep an eye on the victim while others prepare for recovery and to deploy the life ring. Throw any floatable objects overboard to assist in re-location (including extra PFD, small buoys or even trash).
5) The master should have saved a MOB waypoint on the GPS and prepare the vessel for a safe approach back to the victim. Approach from downwind or down current and be careful to avoid allowing the prevailing wind/current forces to push the boat toward the victim as you near the recovery stage.
6) Retrieve the victim relative to the vessel and the condition of the victim. If the victim is coherent and able, allow them to board via ladder or open transom (vessel specific). If the victim is incapacitated in any way limit the movement of neck and spine during recovery and immediately call the USCG for assistance. Begin any necessary first responder treatments once aboard.
7) Report any significant injuries to the USCG and the University.

P. **Loss of Buoyancy;** loss of buoyancy is a life-threatening situation.

1) Don lifejackets or immersion suits as needed
2) Muster to stations and follow the directions of the master
3) Secure the ditch bag and EPIRB, prepare to abandon ship
4) Follow abandons ship procedures if necessary

Q. **Fire onboard procedures;** All vessels are equipped with Type BC fire extinguishers of 2 to 5lbs. The *R/V Petrel* has multiple handheld 5 lb. extinguishers as well as an engine room halon system activated by topside pull lever at the helm station.
1) In the event of onboard fire, if safe to do so, stop the engine immediately.
2) Muster crew and don lifejackets or immersion suits.
3) All passengers are to exit to an open deck area. The master and designated deckhand will direct actions thereafter.
4) Prepare to abandon ship.
5) If possible, the master will position the vessel so that wind blows fire away from the vessel.
6) Do not open engine hatches if fire is in the engine room (*R/V Petrel*). Block air intakes located just aft of the wheelhouse on the open deck on each outboard interior side, with available materials.

R. **Engine loss and ungrounding procedures;** in the event of engine loss the following actions should take place.
1) Check for other vessels and navigational hazards such as distance to shore or shoaling areas
2) If located in bay, river or inlet areas or if in risk of drifting into a hazard anchor the vessel immediately.

3) Contact Sea Tow on channel 16 or by telephone at 609-266-1984.
4) Exhibit not under command shapes or lights and sounds if available.
5) Soft grounding; defined by a master-determined ability to pole, power or push the vessel to water depths required for mobilization of the boat in lieu of a towing or other assistive service. Typical scenario for these soft groundings is shallow channel edge groundings in coastal bays.
    i. If possible, tilt motor and power vessel to deeper water
    ii. If possible, use boat hook or pole to push vessel to deeper water. Consider shifting weight to aid in ungrounding.
    iii. If deemed safe and necessary by the master, on boats < 26' with outboard powered engine, permit a capable crew member to enter only very shallow water (2' or less) with waders, PFD and tether to the vessel for the purposes of moving the vessel minimally into water depths capable of allowing ungrounding.
    iv. Extreme care should be taken in assuring the assistant can quickly get back on the vessel via ladder, stern-placed step or over-gunwhale approach.
6) Hard grounding: defined by a master-determined inability to pole, power or push the vessel to water depths required for mobilization of the boat and a scenario where towing or other assistive services are required.
    i. Set anchor to prevent further movement into shallow water
    ii. Contact Sea Tow (channel 16 or telephone 609-266-1984) if there are no injuries or immediate danger to the vessel. Contact USCG if injuries or vessel damage exist.
    iii. Monitor conditions and maintain communication with towing service or emergency response vessels.
7) Ungrounding procedures ONLY apply to small (<26' LOA) outboard powered vessels and in waters < 2' depths. All inboard or larger vessels require tow company assistance. Never enter water deeper than 2' for the purposes of ungrounding a small boat.

S. **Abandon Ship procedure;** the decision to abandon ship is made by the master only, or in the case of master incapacitation the designated Second in Command.
1) All persons shall don lifejackets in lieu of work vests and in cold environments they shall don immersion suits.
    i. In controlled situations immersion suits can be put on leaving the dominant arm out until the final call to abandon ship is made. This allows some additional capability to prepare for abandoning ship or help others don immersion suits.
2) Secure the ditch bag, EPIRB and if available satellite phone.
3) A trained deckhand, or if needed another individual, shall pull approximately 50' of painter line from the life raft and secure it to a vessel cleat on the upwind side of any vessel drift. Canister life rafts shall be left ready to deploy and valise rafts in reach in the open deck area.
4) If the master indicates abandon ship is imminent secure immersion suits into the full on-position.

5) If the master calls to abandon ship a capable individual shall launch the raft and the crew should expect raft inflation approximate 30-50' from the vessel. Pull the raft to the vessel and board carefully.
    i. Be prepared to help others aboard the raft and if the vessel sinks or becomes dangerous to the raft (i.e. fire) cut the painter line.
    ii. If no raft is available or the raft does not function secure yourselves together with ropes from the ditch bag and/or any available strapping. Use any vessel flotsam to help you stay together, afloat and remain as large a target as possible.
    iii. If the vessel does not sink make attempts to stay with the vessel.
6) Be sure to activate the EPIRB and if possible continue making MAYDAY calls with VHF handheld radio.
    i. Be prepared to signal to rescue teams. Do not begin signaling unless you believe there are rescue vessels nearby.
7) Remain positive and help your vessel mates, attend to any injuries.

T. **Personal Flotation Devices;** United States Coast Guard-approved PFD's appropriate to the activity and the operating waters shall be worn by all individuals according to the following;
    1) On any person working on a vessel of less than 26' LOA
    2) At all times when a person is on an open deck working with equipment or handling over-board lines on any vessel
        i. except in cases where persons approved for water entry and wearing other means of floatation (SCUBA or wetsuit gear for shallow water) are transiting in and out of the vessel during on-site work time.
    3) Anytime while on the open deck of any vessel at night. All vessels with non-enclosed cabins are entirely open deck.
    4) At all times while engaged with equipment in the water from land, pier or dock.

    A PFD is a USCG-approved floatation device or Approved Automatic Inflatable Life Jacket device (APFD) or an approved float jacket or suit. Manually inflated devices do not meet this requirement. All APFDs are inspected annually and maintained per the manufacturer's instructions. Records of inspections are kept on file.

U. **Antiexposure suits** (type V PFDs) are available to those operating in high risk situations such as extreme cold weather/water conditions. Antiexposure suits shall be worn on open vessels whenever water temperatures are below 50°F (10°C).

V. **Immersions suits** (USCG approved) are available to all cold-water operations and are required to be aboard (one per person) vessels operating beyond the demarcation line (inlet boundaries) when average water temperatures are below 60°F. All persons operating in these conditions should be familiar with the donning of an immersion suit and cold-water survival techniques. A list of trained staff and passengers is kept on file.

W. **Hard hats and other PPE;** It is the responsibility of the master to identify the need for additional personal protection equipment (PPE) relative to the activity.

1) Hard hats are to be worn by all individuals working around overhead lifting equipment (gantries and davits) when the item being lifted, or the strain on a lifting line or cable, potentially exceeds 50 lbs. Examples include, but are not limited to, buoy and bottom mount deployments, oyster dredges, patent tongs, bottom grabs, otter trawls and towed sensors.
2) Appropriate work gloves are to be worn by all individuals assisting with lifting operations and with special attention to those with moving parts (i.e. bottom grabs and patent tongs).
3) Special attention to loose clothing, PFDs or other potential "snag" hazards during overboard deployments should be exercised.
4) Knives and other means of freeing equipment or individuals for lines or cables shall be readily available on the deck of the operation.

X. **EPIRBS or PLBs** must be carried by all research vessels. The master is responsible for making sure an operating emergency locating device is available that is appropriate to the scope of work and the waters of operation. As a rule of thumb, the following applies;
    1) The *R/V Osprey*, *R/V Petrel* and *R/V Rudy G. Arndt* have individually registered and hydrostatically activated EPIRBS mounted to the topside of the cabin. Additional PLBs are available to be worn by deck workers in nighttime or higher MOB risk operations.
    2) The smaller vessels that are limited to sheltered waters (<26' LOA, *R/Vs Skimmer, Scoter and Zostera*) have ACR ResQLink 406 MHz personal locator beacons stored in the orange safety box under the console.
        i. When required by the operating situation or by the HSE standards of a contracting organization the PLB is to be carried on the person of the operator in charge. If needed the PLB shall be activated by the operator in addition to other safety notification measures (i.e. USCG calls via VHF, DSC activations)

Y. **Life rafts;** Any vessel operating beyond 10 nm from shore is required to have a currently certified and hydrostatically released canister life raft aboard. Vessels operating in sheltered waters or within 10 miles of shore may utilize valise style rafts where mounting a canister raft is not practical.

Z. **Signatures and copies of required credentials** are required to be on file in the MFS Director's office for all authorized operators. The signature page indicates receipt/understanding of these policies and a commitment to their enforcement.

AA. **Additional operator and management responsibilities;** The safe operation of a University owned vessel is the sole responsibility of the master at that time. It is their responsibility to ensure that the vessel has the required safety gear and that all State, Federal and University policies and regulations are followed. Marine Field Station personnel are responsible for the general maintenance of the vessels and assisting the

day's master in checking vessels and safety gear. When in doubt, ask Marine Field Station staff for assistance prior to departure.

1) Illness or injury at sea; it is the responsibility of the master to determine if a passenger requires medical assistance or if it is in their best interest due to seasickness or injury to return to port.

2) The safe operation of a University vessel as it relates to the sea and atmospheric conditions at that time is the responsibility of the master. When an authorized master is engaged in marine operations on University-owned vessels it is their responsibility to determine if conditions allow for safe work.

3) It is the responsibility of the master to ensure that persons aboard the vessel follow all State, Federal, and University regulations.

4) It is the responsibility of the master to determine whether a specific situation requires assistance from the USCG or from a commercial towing agency.

5) It is the responsibility of the master to manage all waste according to State and Federal regulations. All garbage on all vessels shall be bagged and returned to shore for proper disposal. Human waste is to be handled as appropriate to the vessel and may include the use of portable toilet systems and/or the return to land for use of proper facilities (i.e. when conducting close to land work). The large vessels are equipped with holding tanks. It is the responsibility of the master to be sure holding tanks have the capacity relative to the duration of the excursion.

6) It is the responsibility of the MFS staff to maintain updated letters of USCG Oceanographic Research Vessel designation and any applicable State and Federal scientific collecting permits for all research vessels. However, as in all cases, it is the responsibility of the master to ensure the presence of said permits and to conduct activities within the regulations contained in them.

7) Masters are required to document vessel usage through logbook entries for each boat used and each field trip conducted. Logbooks serve as an important tool for recording the vessel operator, date, time, field trip destination, and boat engine hours. Logbooks are kept on file in the Management Office.

8) Masters are required to complete a float plan to be left at Field Station headquarters before excursions depart from the Field Station (see section G). In addition, operators shall monitor an appropriate VHF frequency (in addition to VHF channel 16) to maintain radio contact with Marine Field Station personnel when operating in local waters.

9) Upon completion of daily activities at the Field Station, any individual acting as a radio operator for field headquarters must attempt to notify vessel operators that they are departing for the day.

10) Vessel operators must communicate with the USCG via VHF channel 16 in case of an emergency. If there are students involved, once the situation is contained and there is no immediate danger to life or property Campus Police must also be notified of an emergency at the Field Station or onboard a research vessel.

11) All safety related incidents or accidents involving faculty, staff and students must be immediately reported to the Field Station Director and the Laboratory Safety Officer. An incident form must be completed as soon as possible.

    i. Any accident causing loss of the vessel, damage over $2,000, requiring medical treatment beyond first aid, or loss of life shall be reported to the U.S. Coast Guard and state authorities as prescribed by the Code of Federal Regulations, 33CFR, 173, sub part C.

BB. **SCUBA Diving;** All diving operations conducted from Stockton University vessels must, at a minimum, comply with the standards of the American Academy of Underwater Sciences and the Stockton University-specific AAUS Diving Safety Manual. OSHA defines scientific diving in 29 CFR 1910.402 as "diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks..."

Whenever diving is conducted from a Stockton University vessel, the diving occurs under Stockton University auspices and the diving activity (SCUBA) must be noted on the vessel's float plan. The designated lead diver will oversee all diving operations. A Stockton University vessel operator must always remain onboard during diving operations. Under no circumstances should diving operations be conducted from University vessels without prior approval from the University Dive Safety Officer (DSO).

CC. **Non-diving shallow water operations;** Non-diving shallow water operations are defined as in-water operations including snorkeling or breath-holding meeting the following criteria;

- water depths < 1.5m with bottom types that allow an individual to stand with head above water's surface at any time
- individuals are temporarily placing heads under water for the purpose of making visual observations or quickly collecting samples
- individuals are not using compressed gases
- the activities are not governed by AAUS auspices

1) **Competency and training requirements;**

i. Individuals shall be in appropriate physical condition for the activity. Fully approved in-water field crew (field crew throughout this document includes the party chief) must be able to demonstrate the following skills:
    1. Enter and exit water from land and from vessel via ladder
    2. Float or tread water for at least one minute
    3. Turnover and turn around in the water
    4. Walk/swim/make forward progress of at least 25 yards in the maximum water depth of 1.5m
    5. Use the dive belts quick release mechanism

ii. Field crew with swimming or treading-water challenges are required to utilize an individually-attached life ring and wear a submersible manually inflatable PFD.

iii. All field crew will be trained by the party chief on proper wetsuit donning methods to include the safe management of a quick release dive belt. In-person training will include a discussion on required wetsuit thicknesses, proper fits and proper weighting.

iv. Shallow water blackout (SWB) prevention awareness – SWB is a dangerous risk to any in-water activities that involve breath-holding. All field crew are to review the SWB resources available at the Stockton MFS safety page and complete the SWB quiz with a grade of 80% or higher.

v. Hypothermia training – all field crew are to review the hypothermia resources on the MFS safety page and complete the hypothermia quiz with a grade of 80% or higher.

vi. Emergency response training; In addition to the vessel safety drills covered in the MOSOP all field crew must also complete the on-site and in-water emergency response training exercise. This training is led by the vessel master, other marine operations staff and the party chief and includes;
    1. procedures on caring for an unresponsive swimmer in water
    2. methods for removing victims from the water
    3. recognizing and treating hypothermia
    4. implementing the Emergency Response Plan

2) **Personal protective equipment;**
    i. Field crew entering the water shall be protected by wetsuits of a thickness appropriate to the water and air temperatures and the duration of the operation and must always, regardless of water temperature, have foot covering.
        1. 70-80F core covering of 3mm

2. 60-70F full body covering of 3mm plus core covering addition to total 5mm or more in the core area. Hood required.
3. 50-60F full body covering of 5mm plus core covering to total 7mm or more in the core area. Hood required.
4. < 50F full body covering =>7mm. Hood required.

ii. High visibility rash guards are required to be worn by all in-water field crew.
iii. Whistles are to be worn by all in-water field crew for the purposes of alerting the vessel master and others of an emergency.

3) **General health and well-being;** Field crew are to recognize and acknowledge that daily health and well-being can have a large effect on an individual's response to exertion and in-water operations, especially cold water. Dehydration and exhaustion can lead to lowered core temperatures and other negative health effects. It is recommended to eat well, get a good night's rest and avoid alcohol use the night prior to in-water operations.
   i. Field crew that do not feel well prior to departure are to alert the vessel master for a decision, based on reported symptoms, to either continue and stay topside that day or cancel their participation. Field crew always maintain the right to cancel their participation for any reason.
   ii. Field crew are to alert the master if they do not feel well during the activity for any reason. The master will decide on appropriate actions to include coming out of the water and/or returning to port.

4) **In-water, check-in and rest/warming time ratios**; exact determinations for the need of warming or stop work are dependent on a variety of factors including individual health (daily or other) and weather considerations that include air temperature, cloud cover and wind speeds. The below is a general guideline based on water temperatures as measured by the vessels' instrumentation. The vessel master and party chief have full authority to require a warming period or stop work of any field crew.

   i. The below general guideline is based on appropriate protective gear thickness (see section 2)
      1. 70-80F 120/30 minutes (in/out)
      2. 60-70F 90/30 minutes (in/out)
      3. 50-60F 30/30 minutes (in/out)
      4. < 50F 30 minutes one time daily
   ii. Individual body types greatly affect their endurance and ability to work in cool and cold conditions. When water or air temperatures are below 70F in-water crew is required to check in with the vessel master the first 30 minutes by returning to the vessel for a short conversation. Any individual

exhibiting signs of mild or advanced hypothermia will be removed and treated accordingly.

iii. Individual's own stop-work authority – all participants are informed that they have their own stop-work authority and are encouraged to cease working at the first signs of hypothermia or for any other reason.

5) **Vessel flag display and manning;**
   i. The vessel master must remain on board and provide an active lookout for marine traffic. An air horn must be available to alert marine traffic and in-water persons to an emergency including marine traffic encroachment.
   ii. Support vessels must display a diver down flag at a height of at least 6' above the water and in-water crew must stay within 100 m of the vessel.
   iii. A 30" life ring or similar device for floatation equipped with a whistle and displaying a rigid dive flag must in the water at all times. The floating dive flag device shall be attached to a 2.5 m anchor line to a 5 lb. mushroom anchor. The rescue assist life ring shall be always kept within 100 m of the in-water team.

6) **Party chief responsibilities.**
   i. Prior to departure the party chief shall confirm to the vessel master that the field crew intending to enter the water have appropriate protective equipment as well as completion of any training and drill requirements.
   ii. The party chief shall assist with daily safety talks to include in-water goals, anticipated durations, physical demands and to remind all field crew they always have their own stop work authority.

7) **Emergency response equipment;**
   i. The vessel shall have aboard a hypothermia kit to include dry towels, thick head covering, heavy blankets and warming packs. The vessel master(s) and all field crew must participate in hypothermia and the treatment procedures training.
   ii. The vessel shall have aboard an AED.
   iii. The vessel shall have aboard a life sling to assist an incapacitated person up over the freeboard of the vessel. If an individual cannot be safely boarded the crew should implement the Emergency Response Plan and call for on-site assistance.

8) **Vessel and crew management on site;**
   i. The vessel master is responsible for safe management of the support vessel.
   ii. No lone working – a minimum of two people are required to be in the water as a buddy team at all times and in addition to the on-board vessel operator (minimum field team 3 people).
   iii. Prior to water entry the vessel must be anchored, the flag displayed, the keys removed from the ignition and the motor turned in a direction away from the dive ladder.

iv. Prior to vessel motor start-up the vessel master must:
    1. Verbally announce to the field crew their intentions.
    2. Wait for the party chief to agree/confirm that all are on board and the vessel can be started.
    3. Take down the dive flag and lift the dive ladder.

9) **In-water working hours:** All in-water work must occur during daylight hours and must conclude a minimum of one hour prior to sunset.

IV. USE OF VESSELS IN NON-TIDAL WATERS

There are certain safety precautions that must be taken when operating on inland non- tidal waters such as lakes, ponds and creeks. For the purposes of this section vessels include canoes, kayaks, small aluminum “jon boats” and any other watercraft. University staff and faculty must meet the following requirements and adhere to the following safety procedures in order to operate University-owned vessels on non-tidal waters:

A. Operation of all University-owned vessels on non-tidal waters is limited to those individuals complying with all the following qualifications:

    1) Operator must be an authorized faculty or staff member of the University. TES and part time employees can be authorized.
        i. Qualified and approved student workers may be permitted to operate a University owned vessel only when accompanied by authorized faculty or staff, either on the vessel or within the day’s flotilla (i.e. on a second vessel traveling in convoy).

    2) Operator must be at least 18 years of age and have documented the experience and physical capability of performing the necessary duties of an individual in charge of the operation with special attention to the specifics of that operation (i.e. distances from shore and other factors).

    3) Operator must hold current First Aid, CPR certification.

    4) Operator must sign for the receipt and understanding of these procedures.

B. All inland and non-tidal vessels are prepared for use by the operator. The operator is responsible for ensuring that the vessel is in safe operating condition. The MFS staff will assist when needed.

C. Personal Flotation Devices (PFDs) must always be worn by all individuals while on the open deck of any University-owned vessel. While life vests (type III PFDs) are normally worn throughout much of the year during warm weather periods, antiexposure suits (type V PFDs) should be worn when the air or water temperatures provided an increased risk of cold exposure. As a rule of thumb, antiexposure suits shall be worn on inland waters from late November through late March.

D. Operators are responsible for obtaining and obeying any site-specific rules or regulations. Examples include but are not limited to waters where gas powered engines are not permitted. Other restrictions may also be in place and it is the responsibility of the operator to be aware of these restrictions, if any.

E. Operators are required to carry a cellular phone for use in the event of an emergency.

F. Operators are required to have site specific information available to others aboard and on the field team that includes; name of body of water, town, and nearest address or meeting point for emergency response. In the event of an emergency the 911 system is to be used. Do not contact the USCG.

G. Operators are required to leave a note on the vehicle which transported them to the site. This note should include the name of the persons on board, the time of departure, the expected time of return and the phone number for campus police (609-652-4390). Should dusk fall and the vehicle be found without the persons returned yet from the water this note could be used to notify emergency personnel.

V. REFUELING PROCEDURES AND FUEL STORAGE

A. All fuel at the Field Station must be stored in OSHA/UL approved containers. UL approved plastic containers may be used to acquire fuel for immediate filling of vessels or equipment. Notify the MFS Director or Director of Academic Laboratories at once if a fuel spill occurs.

B. Normally, boats in the water are refueled at Chestnut Neck Boatyard (near Parkway Bridge on the Mullica River), while trailered boats are refueled at the roadside gas stations. Procedures for refueling are as follows:

1) Be sure ignition switches and all electronics are turned off before attempting to refuel.
2) NO SMOKING
3) Open aft deck plate and monitor for fuel and/or fumes.
4) When available fuel with only mid to high grade fuel (89-93 octane, NOT roadside 87 octane).
5) Check with MFS staff if unsure of oil requirements. All motors over 100 hp DO NOT have oil reservoirs or require pre-mixing. DO NOT add oil to any fuel without knowledge of ratios and requirements.
6) Proceed with filling of tanks. Monitor fuel gauges and listen at air vent to confirm tank is full. Pump fuel SLOWLY and DO NOT OVERFILL.
7) Avoid “topping off” of tanks when refueling – a gallon or two less is better than a few ounces in the water or roadside.
8) Spills require you to provide containment as best as possible. If significant and dangerous to the environment or life and property notify the Field Station Director and if deemed necessary, call emergency response at 911.

VI. Appendices on the following pages include:

- Safe Boating for Passengers Handout
- Cold Water Survival Handout
- Emergency Response Plan for Port Republic inland waters
- Crew pre-departure familiarization checklist
- Vessel pre-departure checklist
- Float Plan, Crew Assignments and Master Certifications checklist

To access this document electronically use the QR code below

APPENDICES

Safe Boating Guideline for Passengers

I. Your safety

***** when engaged in marine field studies you are 30-90 minutes away from professional medical help. If you have a known medical condition consider discussing it with the Manager or operator for the day – arrangements for your safety will be made.***

A. Inform your instructor and vessel operator of any special medical conditions
B. Wear your PFD at all times and remain seated while underway.
C. Step onto the boat, DO NOT JUMP.
D. Wear closed toed shoes – old sneakers or boat shoes are good.
E. Remain wary of obstructions on the deck while working, such as anchors and other equipment.
F. When vessels are beached do not get off the boat until the operator indicates that it is safe to do so.
G. Do not jump into the water, marsh or beach. Carefully slide off the side of the boat.
H. Ask for help if you feel uncomfortable about any aspects of the trip.
I. When approaching a dock, do not fend off unless asked to do so by the operator.
J. Keep hands and feet in the boat while underway and when approaching docks.

II. Your comfort

A. Dress sensibly – conditions on the water tend to be extreme
    1. Light colored long sleeve t-shirts during buggy season (May – October)
    2. Waders and other rain gear when appropriate.
B. Eat sensibly the day of a trip, especially when the weather is hot.
C. Bring water to drink, especially when the weather is hot.
D. Wear sunblock, even on overcast days.
E. Bring bug spray on the trip.

III. Your experience

A. Get involved, learn and experience each piece of equipment and sampling technique.
B. Ask questions, your instructors and operators have a wealth of knowledge to share.
C. Know where you are in the estuary or coastal zone.
D. Consider your latest classroom knowledge as you travel through the marine environment.
E. Form partnerships with your classmates.
F. Record data carefully and in pencil.

Field experience is one of the best parts of your chosen course of study, do not lose your boating and field trip privileges by acting irresponsibly. Your grade and academic reputation will suffer should you have these privileges revoked.

Cold Water Survival

You are not helpless in cold water. You can survive long periods of time in cold water. Body heat loss is a gradual process. Your body will constrict your blood vessels at the skin surface and keep valuable body heat from being lost too rapidly. The rate of body heat loss depends on water temperature, the protective clothing worn, and the manner in which the survivor conducts himself.

An abnormally low body core temperature can be recognized by a variety of symptoms. Very early during exposure, the body tries to combat the excessive heat loss both by constricting the surface blood vessels (to reduce heat transfer by blood to surface) and by shivering (to produce more body heat). If exposure is severe, the body is unable to conserve or produce enough heat. The body core temperature begins to fall, creating a condition known as hypothermia. As the body cores temperature approaches 95F (35C), it starts to fall more rapidly. By then discomfort, tiredness, poor coordination, numbness, impaired speech, disorientation and mental confusion appear. As the internal temperature decreases into the 80's (below 32.2C) unconsciousness may result, as well as bluishness to the skin, collapse of the veins in the skin, and enlargement of the pupils. The heartbeat becomes irregular and the pulse is barely detectable. Although death may occur whenever the core temperature is below 90F (32.2C), it is very difficult to be sure if the patient is alive or dead when the body core temperature is below 85F (29.4C). Death is then defined as failure to revive on rewarming.

Your chances of survival are much greater if you are well prepared before you abandon ship. Even in worst cases, it usually takes 15 to 30 minutes to fully submerge a vessel. Put on as much warm clothing as possible, making sure to cover head, neck, hands and feet. Put on a life jacket and be sure to secure it correctly. If lifeboats are available, board lifeboat by ladder or rope. Unless it is unavoidable, do not jump from higher than 16 feet (5 meters) into the water. Try to minimize the shock of sudden cold immersion. Rather than jumping into cold water, try to lower yourself gradually. A sudden plunge into cold water can cause rapid death or an uncontrollable rise in breathing rate. If you must jump, keep your elbows at your sides, cover your nose and mouth with one hand while holding the wrist or elbow firmly with the other hand. Once in the water, orientate yourself to the boat and other people or objects. If unable to prepare yourself before entering the water, button up clothing now. In cold water, you may experience violent shivering and great pain. These natural body reflexes are not dangerous. While afloat in water, do not attempt to swim unless it is to reach a nearby craft, a fellow survivor or floating object. Unnecessary swimming will increase the rate of body-heat loss. It is important to remain as still as possible in cold water. This can be painful. Pain will not kill you, heat loss can.

The body position you assume in the water is also very important in conserving heat. Float as still as possible with your legs together, elbows close to your sides and arms folded across the front of your life jacket. This position minimizes the exposure of the body surface to the cold water. Try to keep your head and neck out of the cold water. If other people are in the water, huddle closely together to conserve body heat. Try to shorten your immersion time by boarding a raft or floating object, if possible. Keep a positive attitude while waiting to be rescued.

Common sense says dress appropriate for the weather, but some care in selection of clothes can make a difference in survival. If possible, wear many layers of clothing, including a waterproof outer layer. Make certain that the neck, wrist and ankle portions of the clothing are snugfitting. Woolen clothes are better insulators that cotton, especially when wet. Wear an outer garment that is bright in color.

The treatment for hypothermia will depend on both the conditions of the survivor and the facilities available. If the person is rational and capable of recounting his/her experiences, although shivering severely, remove all wet clothes, replace with dry clothes or blankets and have the victim rest in a warm environment. If the person is semi-conscious, unconscious or apparently dead, contact should be made as soon as possible with Emergency Medical Services (EMS). Administer first-aid care while waiting for help to arrive. Remove the victim from the cold and check for the presence of breathing and heartbeat. If the victim is not breathing and has no heartbeat, immediately begin cardiopulmonary resuscitation (CPR). Remove the victim's clothes with a minimum of body movement. Cut away the clothes, if necessary. Do not massage the victim. Lay the unconscious or semi-conscious victim in a level, face-up position. If vomiting occurs, turn the victim's head to one side. Be sure to check the victim's breathing and heartbeat frequently. Insulate the victim from further heat loss by wrapping the victim in a blanket. Do not attempt to aggressively rewarm the unconscious victim. Definitive rewarming should be attempted in a hospital. Do not give the victim alcohol.

Hopefully, you will never experience these situations but advanced planning, preparation and thought on your part can be the most significant factor in your successful struggle with cold water immersion.

Reference: A Pocket Guide to Cold Water Survival by US Coast Guard

For more information on Cold Water Survival visit:

http://www.mustangsurvival.com/education/

EMERGENCY RESPONSE PLAN QUICK REFERENCE GUIDE

To be used for operations originating from the Port Republic site

EMERGENCY LANDINGS; all at-sea emergencies should utilize first responder and marine operations training of the crew. In cases where advanced medical care is potentially needed the vessel operator shall designate a landing site and communicate that to the individual coordinating the advanced medical care arrangements (i.e. USCG and/or 911 local emergency for the purposes of mobilizing EMT to a landing site). The following landing sites are to be utilized as determined by the vessel operator:

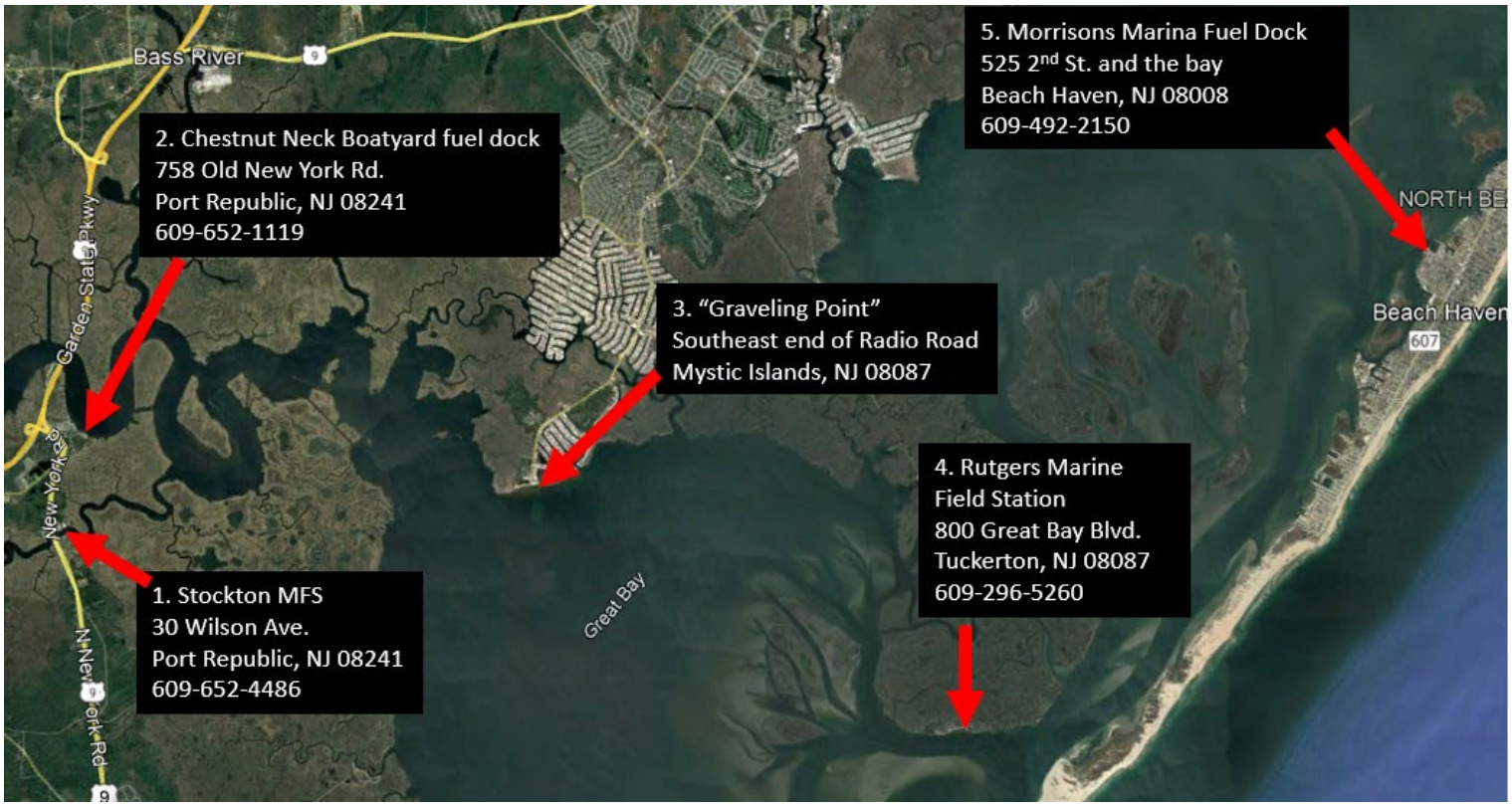
1. Stockton University Marine Field Station (home base) ***any boat**
   30 Wilson Avenue
   Port Republic, NJ 08241 609-652-4486

2. Chestnut Neck Boatyard "fuel dock" ***any boat**
   758 Old New York Rd.
   Port Republic, NJ 08241 609-652-1119

3. Gravelling Point parking lot and beach @ end of Radio Road ****not R/V Petrel***
   Mystic Island, NJ 08087
   Public area no phone number

4. Rutgers University Marine Field Station ***any boat**
   800 great Bay Blvd., "@ end of Great Bay Blvd."
   Tuckerton, NJ 08087 609-296-8338

5. Morrisons Marina fuel dock ***any boat**
   525 2nd St. and the bay, "at the fuel dock"
   Beach Haven, NJ 08008 609-492-2150



EMERGENCY RESPONSE PLAN QUICK REFERENCE GUIDE

To be used for operations originating from the Port Republic site

Scenario #1: Individual(s) need(s) medical attention and vessel and Master are operational - a land-based meeting location coordinated through the 911 system will be most effective.

Scenario #2: An at-sea emergency such as vessel taking on water, person overboard or other vessel emergency threatening life and vessel seaworthiness – a USCG response coordinated through VHF Channel 16 will be most effective.

Emergency when transport to land-based response team is best; 911

Provide nature of emergency and meeting location using the address on the back side

Emergency when at-sea assistance is required; VHF Channel 16

Coast Guard Station Atlantic City	609-344-6594
NJ State Police Marine Bureau Atlantic City	609-441-3586

Additional contact numbers

SEA TOW ATLANTIC CITY	609-266-1984 OR Channel 16 VHF
MARINE FIELD STATION OFFICE	609-652-4486
MARINE FIELD STAFF	609-618-1891 (first) 609-412-5457 (second) 609-742-3084 (third) 609-290-1850 (fourth)
UNITED STATES COAST GUARD, 5th DISTRICT	
SECTOR DELEWARE BAY	215-271-4940
STOCKTON UNIVERSITY CAMPUS POLICE	609-652-4390
LOCAL HOSPITAL	609-652-1000
AtlantiCare Regional Medical Center 65 w. Jimmie Leeds Road Pomona, NJ 08241	
EMERGENCY ROOM	609-652-1000

STOCKTON UNIVERSITY | MARINE FIELD STATION

Crew Pre-Departure Familiarization Checklist

This checklist shall be reviewed for each vessel contract, project, or class and whenever a crew change occurs. Review of this document is required prior to the vessel leaving the dock. Not all talking points apply to all vessels. The Master is to review the following items with all passengers prior to departure and is to sign the appropriate box on the daily vessel float plan to confirm its completion.

1. Review vessel operational plan including operating area
2. Review scope of work and equipment to be used
3. Review forecasted weather for duration of trip
4. Show where to locate a Life Jacket and how it is properly worn
5. Review the duties of the various positions (Master, mate, party chief, crew)
6. Explain how to operate the portable fire extinguishers
7. Discuss emergency response times at sea and remind passengers to have personal medical needs
8. Discuss locations of handles, safe use of ladders and operation of cabin doors
9. Explain emergency response procedures, referencing the station bill, for the following:
    - Man overboard
    - Loss of buoyancy
    - Engine Loss and Ungrounding
    - Fire Onboard
    - Loss of Propulsion
    - Sea Sickness
    - Adverse weather
    - Abandon Ship

STOCKTON UNIVERSITY | MARINE FIELD STATION

Vessel Pre-Departure Checklist

Review of this document is required prior to the vessel leaving the dock. The Master is to review the following items prior to departure and is to sign the appropriate box on the daily vessel float plan to confirm its completion.

Mechanical (if applicable per the vessel)

1. Fuel System- Fuel levels sufficient
2. Batteries- Switched on, levels sufficient
3. Bilges- Check for excessive water; pumps/alarms operational
4. Navigation Lights- Confirm operation
5. Other 12v systems- Confirm operation
6. Electronics- Confirm operation, including AIS transmission
7. Winch/Davits/A-frame - confirm operation (if needed)
8. Anchor- adequate rode for areas of work
9. Propulsion- check forward/reverse
10. Steering- Check operation, inspect lazarette

Safety

1. VHF Radio- Conduct radio check; check secondary radio
2. Work Vests- Sufficient number on board?
3. Mooring Lines- Check condition; sufficient number onboard?
4. Vessel orientation- conducted for passengers
5. EPIRB- Tested monthly (most recent test is recorded in “safety records”)
6. Life ring- Inspect; secure in proper locations
7. Fire control system- Inspect; secure in proper locations
8. Lighting- Confirm operation of flashlights, searchlights

Seasonal and/or job specific safety items

1. Life raft- When required, check current inspection date (recorded in “safety records”)
2. Immersion suits- when required, sufficient number on board?
3. Hypothermia kit- when required, on board?

STOCKTON UNIVERSITY | MARINE FIELD STATION

Vessel Float Plan, Crew Assignments and Master Certifications

To be completed and communicated to shoreside contact prior to vessel departure.

Date:	**Circle vessel(s):** Petrel Arndt Osprey Skimmer Scoter Zostera * multiple vessels indicate flotilla approach common to academic trips	
Port:	**Master(s):**	**Second in command:** * skip for flotillas
Start time:	**Return time:**	**Engine hours start:** * skip for flotillas
Fuel aboard: *skip for flotillas	**Water aboard:** *skip for flotillas	**Engine hours end:** *skip for flotillas
Weather forecast		
Operating area		
Seasonal concerns		

NAME	POSITION	ORGANIZATION
	Master(s)	
	Mate/Second in command	
	Party Chief	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
	Crew	
TOTAL number passengers aboard:		
Notes		

Master certification to be completed prior to departure

As Master of this vessel and/or flotilla of vessels I certify that the *crew pre-departure familiarization checklist* and the *vessel pre-departure checklist* have been reviewed and that all required safety checks according to those documents have been completed and are current as necessary for the job scope, operating area and seasonal requirements.

Master name:_____

Master signature:_____ V20220823