Notice of Change to Controlled Documents #27 – 43, 02 May 2011

Changes to Safety Management Manual

Notice #	Chapter and Section	Summary of Change ** click on the notice # for a hyperlink to that section
27	**Ch 5**	Section 3.0 was modified to include SOPEP or NTVRP
28	**Ch 6**	Sec 4.2 Change "trained vessel officer" to "qualified/ documented VSO" Duties for Wiper and Assistant engineer added to Oiler duties. Sec 4.3-4.4- state Chief Mate and 2nd Mate can serve as SSO under ISPS - "if qualified/ documented". Section 8.1 – Specific procedure for each crane/ winch and deployed equip combination—and standardized info program in SOP-GEN-006E—NO LONGER EXISTS. Delete this section and section 8.1.1 specifying training. Sec 8.2- SOP reference corrected. Sec 8.2- Fire drill not required 24 hrs after departure. Paragraph edited.
29	**Ch 7**	Sec. 6.- STCW Work hours-Electronic acceptable but records of worked hours should be maintained. Sec 7 Instead of deck supervisor report to chief mate, should be "Officer of the Watch". Deleted reference SOP-GEN-006D. Sec 8 – Should state all engine room crew (not deck officers) must read, understand and acknowledge chief eng's standing orders. Corrected. Sec 14- Hot work permits to be filed on bridge- not with engineer. Only engineer or port engineer can authorize hot work.
30	**Ch 10**	Sec 7.2.1 In restricted maneuvering situations, 2 generators should be online.
31	**SOP-GEN-007A**	**Bridge Procedures**—3 Masters chose to review this SOP. Sec 7.3—Security/ stowaway sweep of vessel moved from "Prior to Cast Off" section to the "Pre-departure checklist". Sec 7.7 Mention of mandatory fire drill within 24 hrs removed and paragraph edited to clarify.
32	**SOP-GEN-007D**	**Chief Engineer's Standing Orders**- Engineer's standing orders should be posted in the engine room and signed by current engine room crew signifying their understanding.
33	**SOP-GEN-007G & H**	**Confined Space entry issues – see ch 7**
34	**SOP-GEN-007J**	**Hot work permits must be approved and signed by engineer or port engineer.**
35	**SOP-GEN-008A**	**Fire/ Explosion Procedures**

		Sec 6.0- Fire fighting priorities separated from procedures to avoid confusion.
36	**SOP-GEN-008B**	**MEDEVAC/ Emergency Contacts** SOP References corrected.
37	**SOP-GEN-008C**	SOP References corrected.
38	**SOP-GEN-008F**	Sample Loss of Steering drill added to the SOP
39	**SOP-GYR-007Q**	**Equipment Reset after Power Outage** Sec 3.0- Restart of the Radars and Sperry gyro system changed from engineer's responsibility to bridge crew responsibility.
40	**SOP-BMC-007P**	**Loss of Steering- Sec 3.0 Procedures** Reference to a ship's wheel on the BMC removed.
41	**SOP-GEN-010A**	**Crane, Winch and A-Frame Maintenance** SOP Reference corrected.
42	**NEW SOP-GEN-011A**	**Port Captain proposed gas tester procedures to follow on those vessels that carry one.**
43	**Ch 8 Sec's 2.0, 6.0**	**Last sentence of Sec 6 deleted. (states FRB can only be launched in port??? And Sec 2.0 – reference to mandatory fire drill 24 hrs after departure deleted**

… ellipses indicate unchanged material has been skipped for the sake of brevity.

NOC #27
Chapter 5: Master's Responsibility and Authority
Section 3

Summary of Change: NTVRP added. Previous version only mentioned SOPEP plan, which is only good for domestic. NTVRP plan is for international.

All Chapters	All Topics
New Changes: Revision #	***3.0 Additional Duties of the Master*** The master must be conversant in and able to implement and enforce the following policies and procedures. • SMS as defined in the SMM; • Shipboard Oil Pollution Emergency Plans - (SOPEP or NTVRP);

NOC #28
Chapter 6 Resources and Personnel
Sections 4,5,8 and 9

Summary of Change: Previous version did not mention that VSOs may only be American citizens (qualification) or describe duties of assistant engineers and wipers. Section 8 reference to obsolete SOP and winch operator training components deleted/ corrected. Section 9 Survival at sea requirements and abandon ship drill references removed.

All Chapters	All Topics
New Changes: Revision # 9	4.2 Master Details of the master's duties are outlined in Chapter 5 and include the following. • Maintain authority over all persons in matters of ship operation and safety; • Implement and review SMM under ISM Code; • Implement and review security under ISPS; • Ensure a qualified, certified vessel security officer is on board; … • **Ensure that all meetings, accidents, incidents and special work permits are entered in the NS5 system.** • **Ensure that all maintenance is recorded and work orders closed in a timely manner in the NS5 system.** 4.3 Chief Mate Details of the chief mate's duties include the following: • Serve as second-in-command within vessel compliment; • Provide daily maintenance, security, and care of the vessel under the captain's direction; • May serve as the vessel security officer under ISPS if qualified;

…

- Responsible for vessel and crewmembers while standing watch.
- **Assist the captain in ensuring that all maintenance, work permits and HSE information is entered in the NS5 system and completed in a timely manner**

4.4 Second Mate

Details of the second mate's duties include the following:

- Assist the mate with daily maintenance and housekeeping activities of the vessel;
- Maintain all navigation supplies;
- Assist the first mate and captain with HSE reporting activities;
- Stand regular deck watch;
- May serve as the vessel security officer under ISPS if qualified;

…

4.6 Assistant Engineer, Oiler, Wiper

Details of the assistant engineer, oiler or wiper's duties include the following:

- Assist the chief engineer with his duties as assigned;
- Stand watch as part of engineering staff;

…

4.5 Chief Engineer

Details of the chief engineer's duties include the following:

…

- **Ensure that all scheduled and unplanned maintenance is entered into the NS5 system and linked to the affected equipment.**
- **Ensure that standard jobs are turned into work orders and work orders completed in a timely**

manner or documented as to why it was not.

5.0 General Training Requirements

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Crewmembers and technical/ science personnel must have all the required licensing, certification and training required for their respective positions. If the required training is not known, the Vessel Manager can supply this information to the Master or Party Chief from the Crewing Module and ~~relay that information to the Master or Party Chief from the Crewing Module and~~ relay that information to the joining crew member.

…

8.0 Specific Training for Selected Crewmembers

8.1 Crane/Winch Operators

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It is recommended that crane and winch operators attend a crane and rigging training course or alternately receive training from a winch operator who has completed a crane and rigging course. ~~TDI-Brooks has developed specific procedures for each crane/winch and deployed equipment combination (**SOP GEN-006D and other documentation**). No such SOP. These procedures are used to provide a standardized information program for all winch/crane operators~~. It is the DPA's responsibility to ensure that crewmembers operating the winch/crane have received the appropriate training and are qualified to operate this equipment.

~~*8.1.1 Training Components*~~

~~The following topics are included in the TDI-Brooks' crane/winch training program:~~

- ~~Authority/responsibility structure;~~
- ~~Daily pre-operations checks;~~
- ~~Operational guidelines;~~
- ~~Qualification requirements;~~
- ~~Record keeping;~~
- ~~Maintenance requirements.~~
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8.2 Small Boat Operations

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	It is the master's responsibility to ensure that crewmembers operating small boats have received the appropriate training and are qualified to operate the boats (~~**SOP GEN-006E**~~ **SOP-GEN-007Y**). The master may delegate this responsibility to another qualified member of the crew under his direction. ***9.0 Non-Crew Orientation*** Each person joining a TDI-Brooks vessel needs to have an understanding of basic boating safety. ~~Consequently TDI-Brooks requires all persons sailing to have completed an approved survival-at-sea course. Additionally~~ TDI-Brooks has developed a *Safety at Sea* training session that covers basic shipboard safety such as procedures in the event of fire, abandon ship, and MOB events. ***…*** Within 24 hours of sailing, ~~the master will conduct an abandon ship drill. All persons will meet at their assigned muster stations. The master or mate will give additional instructions on procedures to be followed during an abandon ship operation, what to bring and how to properly put on life jackets, survival suits, and enter a life raft. Also within 24 hours of sailing~~ a general safety meeting will be held by the master, party chief and, if present, client representative to discuss project specifics, safety requirements and goals, work schedules, and personnel protective equipment required for deck operations and responsible individuals.

NOC #29

Chapter 7 Shipboard Operations
Sections 5-8, 12 and 14

Summary of Change: Many changes from Masters Reviews.

All Chapters	All Topics
New Changes: Revision # 7	***5.0 Deck Operations***

Deck operations on this vessel involved both scientific/technical and vessel operations. Consequently, the master may expect to interact with the party chief in scientific/technical matters. The immediate responsibility for deck operations lies with the ~~chief mate~~ **Officer of the Watch** who, in turn, reports to the master and keeps the master informed.

…

6.0 STCW Standard Work Hours for Vessel Crew

Assigned vessel positions and STCW standards (Title 46 Code of Federal Regulations 15.1111) dictate the following work hours. Records will be maintained on board the vessel. **Records may be electronic or hard copy, but a record of actual worked hours must be maintained.** Each crewman is responsible for keeping track of their work/rest hours and reporting them to the master or the master's designee. It is the master's responsibility to verify compliance with the standard.

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7.0 Science Deck Operations

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The back deck operations of deploying and retrieving equipment are under the immediate supervision of the winch operator (deck supervisor) who, in turn, reports to the ~~chief mate~~ **Officer of the Watch**. It is the ~~chief mate~~ **Officer of the Watch's** responsibility to keep the master informed. ~~Details of these operations are described in **SOP GEN**- and various other documents specific to each type of operation.~~

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8.0 Chief Engineer's Standing Orders

It is the responsibility of each chief engineer to accept or modify existing standing orders. The chief engineer is responsible for ensuring that all other engineers are aware of and comply with these standing orders. All engineering watch officers must acknowledge the chief engineer's standing orders prior to assuming watch. All ~~deck~~ **engineering** officers must acknowledge that they have read and understand the chief engineer's standing orders prior to standing their first watch by signature in the engine room log.

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12.0 Confined Space Entry

	This vessel has limited confined spaces such as fuel, water and waste tanks. ~~Entry into these tanks will only be made while the vessel is in a shipyard. Only an extreme emergency would a confined space entry be attempted.~~ According to SOP-GEN-007H, "***A confined space entry would only be made on this vessel if she were in a shipyard or in an emergency. The vessel may not carry the equipment necessary to evaluate the atmosphere of a confined space, should one be required outside a shipyard.***" However, confined space entry procedures are in place in the unlikely event that one would be attempted. Details of a confined space entry are in **SOP GEN-007G** and confined space rescue are in **SOP GEN-007H**. ***…*** ***14.0 Hot Work*** Prior to any hot work (welding, grinding, working with the electrical system, or any other potential source of ignition), permission must be obtained from the **Chief Engineer or Port Engineer** and a hot work permit must be obtained. The ~~engineering department maintains the~~ **hot work permits are filed on the bridge**.

NOC #30

Chapter 8 Emergency Preparedness
Sec's 2.0 and 6.0

Summary of Change: Deleting incorrect statements.

All Chapters	All Topics
New Changes: **Revision # 7**	***2.0 Fire/Explosion*** ***…*** The fire and emergency drill is initiated by a continuous ringing of the general alarm bell and the ship's whistle for a period of not less than ten seconds. A fire drill shall be held ~~within 24 hours after sailing and~~ at least once during a 30-day period or more than 25% of the crew changes. ***…***

	6.0 Man Overboard (MOB) ***…*** TDI-Brooks has developed an MOB protocol that involves the use of a fast rescue craft (FRC), training and drills, since speed is essential to saving the life of anyone going overboard. Details of MOB procedures are described in **SOP GEN-008C**. A MOB drill will be conducted monthly. ~~Launching of the FRC can only be done while the vessel is in port or other similarly protected waters.~~

NOC #31

SOP-GEN-008C
Sec. 2.0

Summary of Change: Deleting reference to obsolete SOP. Small Boat Operations is now SOP-GEN-007Y.

All Chapters	All Topics
New Changes: Revision #7	***2.0 Responsibility*** The master has the overall responsibility during any MOB event. The chief mate will coordinate the MOB rescue. The winch operator on watch will operate the crane that moves the MOB boat off the deck to the water. The MOB boat rescue crew will consist of a qualified small boat operator **(see ~~SOP GEO-006E~~ SOP-GEN-007Y)** and an AB that has been previously identified.

NOC #32

Chapter 10 Maintenance of Ship and Equipment
Sec's 7.2 and 8.3

Summary of Change: Deleting incorrect statements and adding equipment details.

All Chapters	All Topics
New Changes: Revision #7	7.2 Ship Service System The system consists of two (2) Caterpillar D379 250 kw diesel generator sets, switchboard and distribution system. Depending upon electrical loads, one diesel generator is capable of carrying the electrical load. 1. Operation procedures a. At least ~~one~~ **two** generator set**s are to be** on-line in restricted maneuvering situations. **…** 8.3 Steering System The steering system consists of ~~BSOM~~ pumps and piping- **need details**

NOC #33

SOP-GEN-007A Bridge Procedures
Sec's 7.3, 7.4, 7.7

Summary of Change: Clarifying first required drill info. Moving security sweep to pre departure checklist.

All Chapters	All Topics
New Changes: Revision #7	7.3 Pre-Sail Checklists Prior to departing for a voyage, the following preparations steps are recommended.

	… • Check that port clearance documents are on board (if applicable), and any other necessary paperwork is on board. • **Do a sweep of the vessel for stowaways or unwanted passengers**. 7.4 Prior To Casting Off • ~~Do a sweep of the vessel for stowaways or unwanted passengers~~. 7.7 At Sea ***…*** • Within the first 24 hours the general alarm should be sounded: **One Long Continuous Ringing of the General Alarm** The first drill will be ~~of a general orientation nature~~ an Abandon Ship drill, covering the Station Bill, ~~Abandon Ship, Man Overboard procedures~~, Life Raft Operation/Launching, Life Jackets (donning), how to respond to the general alarm (basic duties), and how to respond should you encounter a fire.

NOC #34

SOP-GEN-007D Chief Engineer's Standing Orders Sec. 3.0

Summary of Change: Chief Engineer's standing orders to be signed by current engine room crew and posted.

All Chapters	All Topics
New Changes: Revision #7	**3.0 Chief Engineer's Standing Orders** The following components should be included in the chief engineer's standing orders. Standing Orders shall be posted in the engine room and signed by current engine room crew.

NOC #35

SOP-GEN-007J Chief Engineer must authorize and sign hot work permits
Sec. 3.0

Summary of Change: Previous revision stated Master or Mate could authorize hot work.

All Chapters	All Topics
New Changes: Revision #7	***3.0 Procedure*** Prior to the start of any "hot work" ~~the Master or Mate~~ **Chief Engineer** must give permission. Hot work is not permitted in any areas storing combustible materials (i.e., fuels, oils, paints, solvent, and etc.) until they have been cleared. The following guidelines are to be followed in the event of "hot work". • Fill out a "hot work" permit. • Request permission from ~~the Master or Mate~~ **Chief Engineer**. • A "hot work" permit is only valid for the day and job issued. ***…*** ***4.0 Permit*** Before hot work begins, a hot work permit must be filled out by the crewman doing the work and signed by ~~the Master or Mate~~ **Chief Engineer**. The **SMM Forms Only** page on the ship web pages contains the Hot Work Permit. This form can be completed on the computer, printed out and taken to the worksite It is required that a copy of the work permit be posted at the site where the work is being done. Therefore, after ~~the Master or Mate~~ **Chief Engineer** signs the permit, make a copy to post at the work site and the file the original on the bridge. ~~the Master or Mate~~ **Chief Engineer** is responsible for entering the hot work permit into a work order in NS5 and writing the work order number on the signed permit.

NOC #36

SOP-GEN-008A Fire/ Explosion Procedures
Sec. 6.0

Summary of Change: Procedures separated from priorities.

All Chapters	All Topics
New Changes: Revision #7	***6.0 Fire/Explosion Procedures*** **The signal for a fire is one continuous blast of the ship's whistle and general alarm bell for at least 10 seconds.** Dismissal from the drill is indicated by three short blasts of the ship's whistle and general alarm bell. ***…*** ***Upon discovering a fire, procedures are:*** • Immediately sound fire alarm**, notify the bridge** and request help • Notify the bridge and engineering department • If small enough, try to extinguish the fire with the use of hand-held extinguishers, blankets, clothing or similar items

NOC #37

SOP-GEN-008B Medevac/ Emergency Contacts
Sec. 3.3 Injuries/ Illnesses Requiring Emergency Medical Treatment

Summary of Change: References to SOP's corrected.

All Chapters	All Topics
New Changes: Revision #7	3.3 Injuries/Illnesses Requiring Emergency Medical Treatment … The victim will be moved off the vessel by one of the following depending upon the nature of the injury/illness, weather conditions, available facilities, and medical advice. • Transfer from this vessel to supply vessel or other highly mobile vessel via boat to boat transfer (this is dependent upon approval by both masters, weather, sea state and other issues, see boat to boat transfer protocol in ~~**SOP GEO-006E**~~ **SOP-GEN-007Y**). … Should an attempt to be made to move near a fixed facility, such as a drilling rig, then the following steps need to be undertaken to ensure the safety of the vessel and fixed facility crews (also review 500 m entry procedures in ~~**SOP GEO007A**~~ **SOP-GEN-007A.**

NOC #38

SOP-GEN-008F Drills/ Exercises
Sec. 2.0 Drill/ Exercise Topics

Summary of Change: Loss of Steering drill sample form added.

All Chapters	All Topics
New Changes: Revision #7	Loss of Steering drill sample form added.

NOC #39

SOP-GEN-010A Crane, Winch and A-Frame Maintenance
Sec. 4.1 Inspections

Summary of Change: Reference to SOP corrected.

All Chapters	All Topics
New Changes: Revision #6	4.1 Inspections A good maintenance program involves regular Inspections. At a minimum, the lifting equipment needs to be thoroughly inspected prior to the start of a cruise. A daily visual inspection shall be made following the daily inspection check list **(~~SOP-GEO-006D~~ SOP-GEN-007X)**.

NOC #40

SOP-GEN-007Q Equipment to Reset After Power Loss (Gyre)
Sec. 3.0 Procedures

Summary of Change: Bridge crew to restart Radars and Sperry Gyro system.

All Chapters	All Topics
New Changes: Revision # 7	***3.0 Procedures*** Should the vessel lose all power, power will need to be restored to the main 480 V switchboard first. If the vessel suffers a partial power loss, the areas impacted will need to be identified. Once the power has been restored to the main switchboard, the following equipment will need to be re-started and/or checked. Engineers should review start up protocols for all equipment requiring start-up to ensure that equipment is properly brought back on line.

Equipment	Location
Fuel oil purifier	Engine room (if running)
Main A/C Units	02 Level Behind Bridge
Water Maker	Engine room (if running)
Oily Water Separator	Engineer room (if running)

	~~Radar~~	~~Bridge-wheelman station port and starboard~~
	~~Sperry gyro system~~	~~Bridge console~~
	Bow Thruster	BT room forward of galley (if running)

The bridge crew is responsible for bringing the systems on the bridge back online. They include:

Equipment	Location
Radar	**Bridge-wheelman station port and starboard**
Sperry gyro system	**Bridge console**

NOC #41

SOP-BMC-007P BMC Loss of Steering
Sec. 3.0 Procedures

Summary of Change: BMC does not have a wheel as a mode of steering. Removed.

All Chapters	All Topics
New Changes: Revision # 6	***3.0 Procedures*** There are four modes of steering on the Brooks McCall: auto pilot, non-follow up~~, ship wheel,~~ and remote.

NOC #42

SOP-GEN-011A Gas Detecting Devices
New SOP/ Procedure

Summary of Change: This procedure added as guideline for vessels that carry this equipment.

All Chapters	All Topics
New Procedure: Revision # 1	*See SOP on next page.*

SOP GEN-011A
Gas Detecting Devices

Revision/ Review Log

Revision Date	Approved by	Reviewed by	Revision Details/ Proposal Notes
22 April 2011 Revision #1	Dr. Jim Brooks Dr. Bernie Bernard	Capt. Pat Fallwell	New policy regarding the maintenance and use of gas testing devices

1.0 Introduction

The purpose of this policy and procedure is to establish guidelines and procedures through which employees of TDI-Brooks International may safely maintain and use any gas detecting devices (GDDs).

2.0 Scope and Applicability

The main use of gas detecting devices is to test the air of enclosed or confined spaces. As stated in SOP-GEN-007H, it is the policy of TDI-Brooks International not to enter any confined space aboard the vessel at any time except in the case of a life-threatening emergency.

On occasion a client may require that gas detecting devices be used in the laboratory to monitor toxic gasses that may potentially be released from a marine sediment sample core. In such cases, any specific requirements of the client will be included in the project specific HSE plan.

3.0 General Responsibilities

The Master, Chief Mate or Chief Engineer shall be trained in the use of any gas detecting units aboard the vessel. The gas detecting unit shall be kept in a secure place in an area not subjected to high temperature or humidity.

A designated officer shall test, calibrate and maintain the GDD and associated testing equipment, recording all results in the Calibration Log supplied with each GDD. Equipment testing is required before each use.

4.0 Training

Personnel responsible for testing, calibrating or using a gas detecting device shall first watch any training video included with the device and read the operator's manual so they may understand the proper procedure, the type of calibration gases and flow regulators to be used. Particular attention should be paid to the manufacturer's instructions for flow through the meter when readings are taken. The GDD need not be adjusted when test readings fall within the limits of the calibration gas or instruction manual.

5.0 Calibration

Equipment calibration is required quarterly at a minimum and after any test in which the results are not within the acceptable range. Calibration is an adjustment to the GDD to match that of a known concentration of a certified test gas and also refers to the measuring accuracy of the equipment.

The GDDs response to the calibration gas serves as a measurement scale or reference point. If the point shifts, the reading will shift accordingly and give an unreliable result. Calibration drift can be caused by the gradual degradation of the sensors, expired calibration gas, exposure to extreme environmental conditions (temperature, humidity or airborne particles), harsh storage or being dropped on a hard surface.

Use only calibration gas designed for the unit being tested or calibrated and make sure it is within the expiry date – The GDD can only be as accurate as the gas used to calibrate it.

Each test gas canister should come with a certificate stating the gas is certified and traceable to the National Institute of Standards Technology (NIST). This certificate is to be kept with the calibration log. It is not required to use the manufacturer's brand of calibration gas, but it must be in the concentrations required by the manufacturer and NIST certified.

Personnel should mark the gas cylinders "FULL", "IN USE" or "EMPTY". Empty cylinders are to be properly disposed of as soon as possible so as not to be confused with other cylinders.

6.0 Testing

The GDD is to be "zeroed" before the test in order to give a more accurate reading. When performing a test, the test gas concentrations should be high/ low enough to trigger the instrument alarms.

Connect the GDD to a known quantity of certified test gas. If the instrument reads within the acceptable range of actual concentration, calibration is verified. If it does not, a calibration must be done. Check the operator's manual for acceptable tolerance ranges.

7.0 Test and Calibration Log

The test and calibration log should contain the following:

- Date and Time
- Calibration gas used, Lot number and Expiration date
- Battery check
- Calibration Gas reading for each sensor element (O2%, LEL%, CO, H2S, etc.)
- Fresh air reading for each sensor element (O2%, LEL%, CO, H2S, etc.)
- Alarm set points (O2%, LEL%, CO, H2S, etc.)
- Name of the person testing or calibrating
- Comments, adjustments or parts replaced

NOC #43

Chapter 8 Emergency Preparedness
Sections 2.0 and 6.0

Summary of Change: reference to mandatory fire drill 24 hrs after departure removed. Last sentence of Ch 6 deleted.

All Chapters	All Topics
New Changes: Revision # 6	***2.0 Fire/Explosion*** … The fire and emergency drill is initiated by a continuous ringing of the general alarm bell and the ship's whistle for a period of not less than ten seconds. A fire drill shall be held ~~within 24 hours after sailing and~~ at least once during a 30-day period or more than 25% of the crew changes. ***6.0 Man Overboard (MOB)*** Due to the nature of work that this vessel undertakes an MOB is a major threat. … Details of MOB procedures are described in **SOP GEN-008C**. A MOB drill will be conducted monthly. ~~Launching of the FRC can only be done while the vessel is in port or other similarly protected waters.~~