FO20 WALLIS LAKE LOP

DOCUMENT CONTROL

Category	Operations
Version	3.0
Effective Date	October 2023
Authorised By	Unit Commander
Review Date	November 2023

Purpose:

This LOP has been developed and written only for the rescue vessel Wallis Lake and to be read in conjunction with the appropriate MRNSW SOP's.

This LOP is subject to review or update as required because of changed local conditions, or a review of MRNSW SOP's. All updates will be recorded in the update table below.

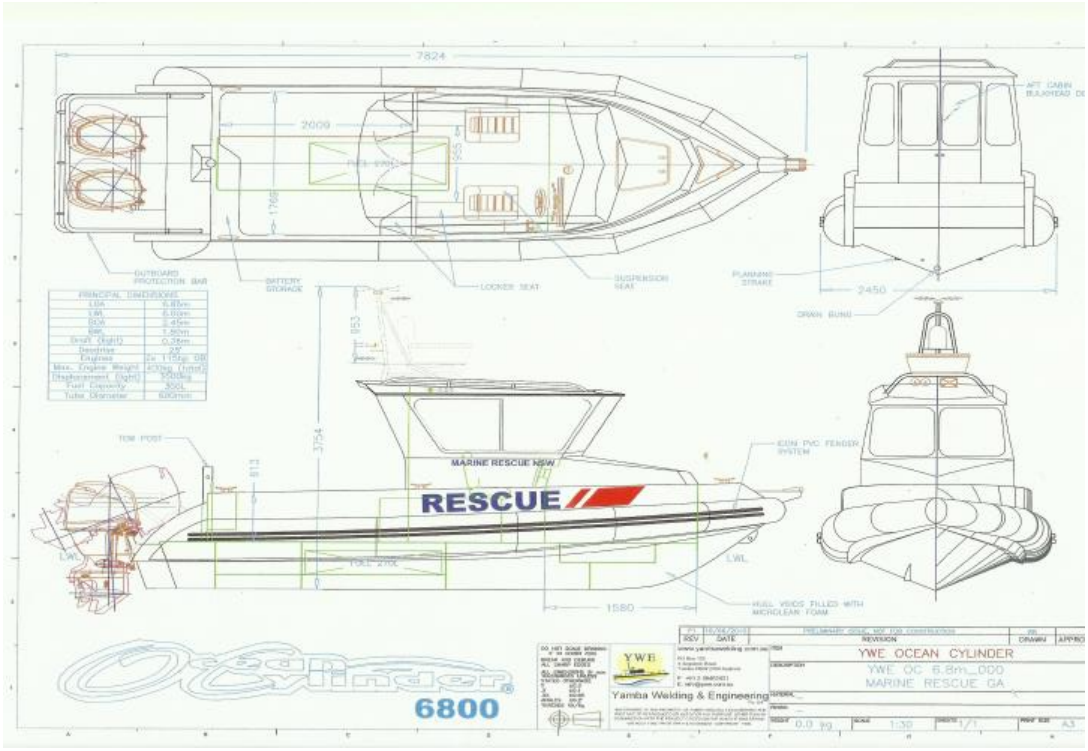
If crew hold copies of this document, they are responsible for keeping them up to date.

Updates

LOP updated	Inserted Pages	Updated By
Oct 2018	All Reviewed	Ray Mazurek
March 2021	All Reviewed	Ray Mazurek
November 2023	All Reviewed	Bryce Nicholls

INDEX

1.0	DIMENSIONS



Length Overall (LOA):	6.8 meters	Rear work deck length:	2.00 meters
Beam (B):	2.5 meters	Cabin Storage area:	1200mm x 1000mm
Beam Internal:	1.7 meters	Rear Deck work area:	2.00 x 1.7 meters
Gunnel Height:	600mm	Dead rise:	25deg
Gunnel Door:	1	Hull weight:	670kg
Draft (Heavy):	540 mm		
Displacement (loaded):	3.5 tonnes		

2.0	ENGINEERING

Outboards:	115 Hp x 2
Total engine weight:	400kgs
Main engine – Voltage:	12V D.C.
Outboard draft (min):	540mm
Max speed:	30knots
Counter rotating props:	Yes
POB:	max 6
Lockable cabin:	Yes
Rear deck partial roof:	Yes
Crew seating:	2
Fuel tank capacity:	300 litres. 1 x 100ltr 1 x 200ltr

3.0	SUGGESTED CREWING REQUIREMENTS

For Daylight Operations: Leading Crew and min of a MRC (or higher rating)
For Night Operations: Leading Crew and min of 2 MCR (or higher rating)

3.1 Codes for personnel involved in this LOP:

TITLE	ROLES	MINIMUM RATING REQUIRED
Skipper	Master of vessel, Helm in critical and Emergency situations	Leading Crew
Crew	Deck hand, Radio Operator	MRC

3.2 Codes for personnel involved in this LOP:

Marine Rescue Crewman	MRC
Master of the vessel	Skipper
Radio Operator	R/O
Helmsman	Helm
Tow Master	TM
Fireman	FM
Bow Hand	BH
Aft Deck Hand	ADH
Trainee (person being trained on a specific aspect of operations)	Trainee

3.3 Plying Limits:

- Max plying limit from shore with MR Coxswain is 7Nm from shore.
- Refer to MRNSW SOP OP 26 Vessel Off Shore Limits for more information.

4.0	SKIPPER'S RESPONSIBILITY

The Master of the Wallis Lake is responsible for:

- Holding a valid General Boat Licence, MR Leading Crew certificate or a higher qualification.
- Ensuring that they are competent to perform the required tasks and that they are not under the influence of any alcohol or drugs, including medications that may impair their ability to operate the vessel.
- Assigning roles to crew.
- Being familiar with the LOP's, SMS, MRNSW SOP's and associated documents.
- Ensuring that vessel operations have been approved by the appropriate authority prior to putting to sea including a risk assessment prior to departure.
- The decision to commence vessel operations based on the weather, the condition of the vessel, the abilities of those on board and the tasks to be performed.
- The decision to cease vessel operations if conditions become unsafe or are likely to become unsafe.
- Considering the views of those on board when assessing the safety of operations including the decision to cease or cancel operations.
- Ensuring that all appropriate safety equipment is on board and operational before setting off.
- The safety of themselves and the others on board the vessel.
- Performing a pre-trip briefing for all personnel on board.
- Issuing clear and concise instructions to those on board when necessary.
- Allocating tasks to those on board and ensuring that they have sufficient instruction or experience to perform those tasks.
- Monitor navigation by maintain adequate situational awareness, by reference to ships head, charts, visual observation all around vessel and her environment, the chart plotter and radar which has been ranged to provide an adequate view of the area around the vessel.

  DO NOT RELY ON ELECTRONIC DEVICES ALONE
- Controlling and coordinating emergency responses and delegating tasks.
- Complying with all relevant rules and directions in relation to the operation of the vessel, including but not limited to:
  - The International Regulations for Preventing Collisions at Sea (COLREGS)
  - Marine Safety Act 1998
  - Water Traffic Regulations 2000
  - Marine Safety (Commercial Vessels) Regulation 2010
  - State Rescue Board Statutes relevant to MRNSW
  - Marine Rescue NSW SOP
  - MACSAR
  - The directions of a Relevant Officer
  - Local Operating Procedures
- The maintenance of the vessel whilst it is in their use.
- Performing daily maintenance checks prior to departure and reporting any maintenance issues to the Designated Person as soon as practical.
- The correct reporting of any incidents, including to MRNSW, MACSAR, NSW Maritime. Refer to MRNSW SOP 06 and 17.
- Reviewing the operational and emergency procedures of the vessel and reporting any suggested changes to the Boating Operations Officer.

5.0	CREW'S RESPONSIBILITY

- Holding a valid General Boat Licence, MR Crew or a higher qualification.
- With instruction and supervision from the Skipper, become familiar with the handling characteristics of the vessel (manoeuvring, docking, anchoring, etc.).
- Operation of critical systems (electronic navigation aids, steering, towing, safety apparatus, etc.).
- Perform navigational watches while underway and safety/anchor/dock watches at other times.
- Assist the Skipper with the maintenance of required logbooks according to established practice and in established formats.
- Under instruction of the Skipper, direct and supervise all members of the crew, and ensure that each understands and performs his/her assigned duties adequately.
- Assist Skipper with training and orientation of new crew members.
- Coordinate line-handling when coming to port, anchoring, towing, rafting.
- Deck maintenance and safety.
- Participate in the design and execution of emergency drills, generally taking charge of on-scene response actions.
- Help ensure written drill reports are properly logged.
- Maintaining an active visual watch for other vessels and obstructions.
- Line-handling when coming to port, anchoring, towing and rafting.
- Deck maintenance and safety.
- Participate in emergency.
- Preparation of vessel for sea.
- Operation of all electronic and mechanical apparatus within the scope of Leading Crew or MRC responsibility.

6.0	RISK ASSESSMENT

6.1 Areas of Identified Risk:

- Local area operating waters and prevailing conditions.
- Vessel capabilities.
- Crew capabilities.
- Operational tasking.

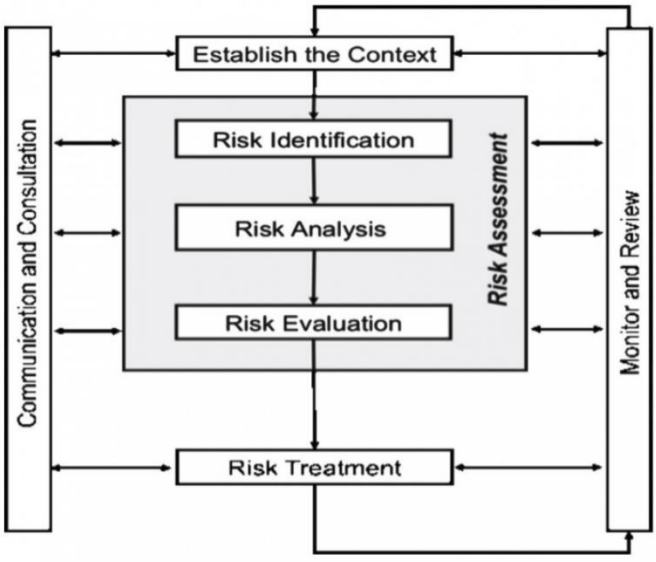
6.2 Risk Management:

- Risk management is an ongoing process and should include formal and informal risk assessment processes. Formal risk assessment must be completed at least annually for an ongoing practice, such as management of the MRNSW asset. This minimum crew assessment does not mitigate the ever changing environment and the operational risk assessment (ORA) which shall be complete prior to on water activities. Informal risk assessment should be a day-to-day process to prevent issues from happening before they occur.
- MRNSW is committed to embedding risk management practices to support the achievement of objectives and fulfil governance obligations by:
    - Achieving a consistent and effective approach to managing risks.
    - Developing a risk aware culture where risk management is integrated into business activities and decision making.
    - Ensuring accountabilities for risk management are defined and understood.
    - Demonstrating effective management of all aspects of risk, consistent with the nature of work and scale of risk.

- Ensuring management systems incorporate risk.
- Following documented process for escalating critical risks.
- Ensuring accurate and timely risk information is reported and shared.
- Capturing lessons learned and promote continuous improvement.
- Meeting corporate governance regulations and obligations in relation to risk management.

6.3 Vessel Operations Process of Risk Assessment:

- The MRNSW risk management policy is to be applied when managing risks. The risk management and assessment process involves the steps as set out in ISO 31000:2018, including:
  - Communication and consultation with members and employees.
  - Establishing the context, a risk management plan needs to be developed to identify the purpose, principles, scope, people involved, their roles and the implementation schedule
  - Identify risks through conducting of a risk management analysis with those people identified in the risk management plan.
  - Assess the risks using the event risk analysis matrix to evaluate likelihood and consequence of the risk.
  - Control the risk identify using the most practical option.
  - Review and evaluate: were the controls effective? Is there any follow up action required?
  - Monitor and document the process – regularly check to guarantee continuous improvement.



6.4 Risk Management Register Tool:

Instructions: Use the Risk Management Register on next page to discuss risks, hazards and mitigation strategies with all participants. Note in action taken / mitigation discussed column what was discussed and any changes to the mitigation strategy.

Hazard / Risk Description	Likelihood	Consequence	Risk Rating	Who	Mitigation Strategies – (Crew requirements to safely operate)				Action taken / mitigation discussed	Residual Rating
					COXSWAIN	LC	CREW	TOTAL		
EXAMPLE: *Survivors in water*	C	4		Public	1	1	1	3	Quick recovery and apply first aid	

6.5 Risk Management Matrix for Vessel Minimum Crewing:

Step 1 - Qualitative measures of **likelihood**

LEVEL	DESCRIPTOR	DETAILED DESCRIPTION
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Might occur at some time
D	Unlikely	Could occur at some time
E	Rare	May occur only in exceptional circumstances

Step 2 - Qualitative measures of **consequence or impact**

LEVEL	DESCRIPTOR	DETAILED DESCRIPTION
1	Insignificant	No injuries or fatalities, little disruption
2	Minor	Small number of injuries / no fatalities, first aid required.
3	Moderate	Hospital treatment required/no fatalities, some inconvenience
4	Major	Extensive injuries, some fatalities, some displacement of the public
5	Catastrophic	Large numbers of fatalities / injuries, extended hospitalisation,

Step 3 Probability Matrix

LIKLIEHOOD	CONSEQUENCES				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
A (Almost certain)	**High**	**High**	Extreme	Extreme	Extreme
B (Likely)	**Moderate**	**High**	**High**	Extreme	Extreme
C (Possible)	**Low**	**High**	**High**	Extreme	Extreme
D (Unlikely)	**Low**	**Moderate**	**Moderate**	**High**	**High**
E (Rare)	**Low**	**Moderate**	**Moderate**	**High**	**High**

Step 4 Risk Ratings – Legend

	Extreme Risk	Crew numbers not adequate
	High Risk	Continual risk assessment managed with qualified operators
	Moderate Risk	Continually risk assess and proceed with caution
	Low Risk	Do Something by Routine Procedures

7.0	PREPARING TO LEAVE AIR BERTH

7.1 Overview:

- Each time the rescue vessel departs the mooring and proceeds to sea it provides an element of interest to other vessel operators and the public at large. Accordingly, the image of Marine Rescue is on display and therefore it is of the highest importance that we are seen to act in a most professional and courteous manner at all times.

7.2 Purpose:

- The purpose of this LOP is to provide a standard approach to operations whenever Cape Hawke is leaving the air berth, such that all crew are aware of their respective duties and no conflict in methodology will occur due to the changing of skippers and/or crew from one crew to another.

7.3 Scope:

- This LOP covers that period of time between the crew's arrival at the vessel, through to departure from Cape Hawke Harbour (outside the entrance).

7.4 Safety/Hazards:

- The following standard safety equipment shall be worn by, or be available to all crew members;
  - PFD1
  - Sunscreen
  - Marine Rescue hat or cap
  - Sunglasses
  - Safety harness

7.5 Definitions/Terminology:

- Cape Hawke Harbour: From the bridge to the north eastern extremities of the break wall.
- Forster Boat Harbour: The marina in which the vessel is normally moored.
- Air Berth. The submersible pontoon cradle which lifts "Cape Hawke FO30" clear of the water.
- PULSE POWER. The momentary application of throttles. Placing engines in and out of gear at idle speed in a PULSE action to move the vessel at the slowest possible speed.

7.6 Special Precautions:

- Due to the potential danger of the air berth capsising due to improper use, no person shall operate said air berth without proper MR Forster Tuncurry certification.
- Due to the potentially confused or rough conditions, all crew must maintain a minimum 3 point hold on the vessel.
- The skipper of the vessel must warn crewmembers to hold fast, prior to accelerating/de-accelerating the vessel.
- It is expected that the skipper should take the helm during emergency and critical maneuvering situations.

7.7 Pre Air Berth Lowering Inspection:

- Two crew required – Except in emergency where lives are at risk, then one qualified person.
- Maximum number of 2 personnel allowed on board when vessel is up on air berth.

NO EXCEPTIONS

- Switch off and disconnect shore power lead. Check lead for damage as you coil it up and stow it on the pontoon.
- Inspect mooring lines for wear or deterioration.
- Inspect vessel hull for damage above and below the water line.
- Inspect the propellers for damage or fouling.

- One person to go on board vessel.
- Close all hatches and doors prior to lowering.
- Evacuate vessel.

7.8 Lowering Air Berth:

NO PERSONNEL ALLOWED ONBOARD VESSEL WHILE AIR BERTH IS RISING OR DESCENDING.
Due care and a constant watch must be maintained to ensure a stable descent of the air berth.

- Ensure the water and area in the immediate vicinity of the air berth is clear of all obstructions prior to and during lowering.
- Release the flood tube raising line.
- Release the air berth stern line, and prepare to pay out line to keep stern in control as air berth sinks.
- To lower flood pipes, pull up on both of the lines at the front of the air berth.
- Open both vent valves on the black pedestal at the front of the air berth.
- Lowering should not be stopped accept in an emergency, and only by closing both vent valves simultaneously to cease flooding.
- It takes approximately 6 minutes to flood down.
- Monitor all air berth moor lines so they remain clear and unobstructed, as air berth sinks.
- Once berth submerged and vessel is afloat, tie off pontoon stern line and secure.
- Check that the flood tube raising line is clear of the boat.
- Crew may board vessel once it is afloat.

7.9 Pre-departure Checks:

- Partially release the latches on the forward hatch cover if proceeding to sea.
- Complete the risk assessment on the Ipad or on the phone.
- Brief crew of the purpose of the task (rescue, training etc.).
- Assign individual duties to crew.
- Check vessel log for fuel quantity, defects or items of note etc.
- Turn on battery switches in the stern starboard locker.
- Select appropriate Raymarine MFD mode, for each station from Home screen.
- Confirm all radios and navigation aids are operational.
- Raise appropriate flags: Australian flag and MR flag. No flags flown at night.
- Confirm lifejackets are correctly worn by all crew.
- Confirm all emergency equipment is accessible.
- Lower and start engines and confirm each is running normally.
- Check water flow from both engines.
- Provide radio tower with identification numbers of the crew and create activation log.
- Obtain latest weather and tidal information.
- Obtain relevant position data of target (if relevant).
- Obtain description of target and circumstances at present time.
- Create a waypoint for target on chart plotter (if relevant).

8.0	LEAVING THE AIR BERTH

- Call crew “prepare to leave berth”.
- Skipper checks all clear astern visually and confirmation from rear MRC deck crew.
- Skipper calls “Release stern lines” – stern lines will be released and hung on the posts of the air berth, followed by “Stern lines clear” in a loud and clear voice.

- Ensure lines are outboard of the air berth top rails.
- Check if harbour is clear and advise wheelhouse “Harbour Clear”.
- Advise wheelhouse of any obstructions during all manoeuvers when going astern from berth.
- Skipper to check outboards are centred.
- Skipper to advise crew “Going astern” and give three short blasts of horn.
- Reverse vessel from pontoon slowly using PULSE applications of engines.
- Call “Harbour stations” when clear of berth and moving toward marina entrance.

9.0	WHEN UNDERWAY

- Proceed from mooring at minimum safe operating speed.
- Advise radio tower of departure and estimated time of arrival at the target area.
- Crew to man port/starboard Harbour Stations and advise of activity inside/outside of the harbour.
- Sound appropriate signal(s) on departing the marina.
- Ensure all hatches and windows are closed.
- Limit speed to the minimum practical speed until clear of the break wall if proceeding to sea.
- If proceeding to sea, secure the cabin for sea, with cabin door open. Crew must maintain firm hand holds at all times.
- Check engine oil pressure, engine temperature, and alternator output every 30 minutes.

10.0	RETURNING TO AIR BERTH

10.1 Purpose:

- To provide a standard approach to returning to berth operations, so that all aboard are aware of their respective duties and there is no conflict in methodology through the changing of skippers and/or crew from one crew group to another.

10.2 Scope:

- Covers that period between the vessel entering Cape Hawke Harbour and the crew departing Forster Boat Harbour.

10.3 Safety/Hazards:

- Standard PPE to be worn by all crew members.

10.4 Terminology:

- Cape Hawke Harbour: From the bridge to the north eastern extremities of the break walls.
- Forster Boat Harbour: The boat harbour in which the rescue vessel is normally moored.
- Air Berth: The submersable pontoon cradle which lifts “Wallis Lake FO20” clear of the water.

10.5 Special Cautions:

- Due to the potentially confused or rough conditions at the entrance to Cape Hawke Harbour, all crew must maintain a minimum 3 point hold on the vessel while entering the harbour.
- The skipper of the vessel will warn the crew to hold fast prior to accelerating or decelerating the vessel.
- It is expected that the Skipper should take the helm during emergency and critical manoeuvering situations.

11.0	ENTERING HARBOUR, MARINA AND BERTHING

11.1 On Entering Cape Hawke Harbour:

- Advise the crew of the intention to enter the harbour.
- Stow all deck and cabin gear. Advise crew to maintain a 3 point hold on the vessel.
- Once in the harbour, reduce speed to less than 8 knots, observe 4 knot and no wash zones.
- Assess weather conditions as relates to its effect on berthing.
- Advise crew of any special requirements.

11.2 Entering the Marina:

- Announce Harbour Stations. Crew to man port/starboard Harbour Stations and advise of activity inside/outside of the harbour.
- Reduce speed to minimum practical operating speed.
- Enter the marina at right angle to the entrance, giving consideration to wind and tide. Sound the appropriate sound signals(s).
- Approaching berth, manoeuver the vessel at slow speed, using PULSE POWER mainly to position the vessel.
- Check mooring area for lines or debris in the water.

11.3 Berthing the vessel:

- Approaching the berth, the skipper will announce “Prepare to berth”.
- Skipper will use forward or reverse PULSE POWER to bring vessel in to berth.
- Rear deck crewmen have boat hooks at the ready to reach stern lines.
- Crew to advise wheelhouse of distance to go in a clear loud voice.
- Once the stern lines have been attached to cleat. Announce port/starboard line “SECURE”.
- Shut down engines.
- Lower flags and stow all gear.
- Check fuel quantity, record in the log and advise skipper.
- Record port/starboard engine hours in the log.
- Notify the Base the vessel is now secured on the mooring and closing down.
- Write up the ships log.
- Hose down upper works, paying particular attention to the search light, FLIR camera, and ADF aerial.
- Ensure FLIR is in home position.
- Raise motors ensuring the skegs are clear of the water.
- Switch off the batteries in the starboard stern locker.
- Close all hatches and doors and evacuate vessel before operating air berth.

12.0	RAISING THE AIR BERTH

TWO PERSON OPERATION
NO PERSONNEL ALLOWED ON BOARD VESSEL
WHEN AIR BERTH IS RISING OR DESCENDING.

- Release air berth stern line, and prepare to take in line to keep stern in control as berth rises.
- Start up blower. It is imperative that both pontoons come up evenly to prevent vessel capsize. Control the rise by using the blower switches as necessary
- Stay vigilant; this process must be supervised at all times.
- Blowing of the pontoon tanks can be halted, by turning off the blower.

- Once the lift has risen fully and bubbles have been flowing from both flood pipes for a minimum of two minutes, pull flood pipe lift line all the way out until both flood pipes are clear of the water. Use free standing pipe to raise starboard flood tube as high as possible.
- Tie off the flood pipe lift line on the port stern bollard.
- Turn off blower.
- Secure pontoon stern line to dock.
- Crew may board vessel once air berth flood pipes are secured clear of the water.

NO MORE THAN TWO PERSONS ABOARD VESSEL
WHEN RAISED ON AIR BERTH

- Connect shore power cable to vessel then plug in ashore and switch on breaker.

13.0	FLUSHING ENGINES AND POWER DOWN

Maximum number of 2 personnel allowed aboard when vessel is up on Air Berth
NO EXCEPTIONS

- Connect fresh water hose to central coupling below the tow post, open valves to both motors and run fresh water at full flow.
- From dock, check water is flowing freely from both motors.
- Leave hose running full flow for 5 minutes.
- Turn off fresh water, close valves, and disconnect fresh water hose.
- Debrief crew.
- Collect all rubbish.
- Carry out a visual scan of the vessel, confirming all is secure.
- Check that power is switched on.
- Lock pontoon gate.

14.0	OPERATING AT SEA

14.1 Purpose:

- To ensure that during periods spent at sea the vessel is operated in a manner that ensures crew safety and comfort, and vessel safety and efficiency. Further, that the crew monitor their work environment to reduce all foreseeable hazards and dangers.

14.2 Scope:

- This LOP covers any period when the vessel is proceeding to sea, at sea, or returning from sea.

14.3 Safety/Hazards:

- Conditions at sea may be dangerous, when underway crew should be seated in the cabin unless engaged in specific and necessary duty on the deck. When crew is engaged in deck work the vessel must be helmed so as to provide them with a stable work platform. Also, crew on deck should maintain 3 points of attachment whenever possible.
- Standard PPE to be worn by all crew members.

14.4 Special Precautions:

- Crew must monitor their work environment to reduce all foreseeable hazards and dangers. Skipper must ensure all safety equipment is utilised by crew. Crew for their part should be vigilant during any passage whether at day or night and assist the Helm and Skipper by mentioning anything which may impact on the vessels progress ***(IF YOU SEE SOMETHING, SAY SOMETHING)***.
- The vessels electronic equipment which includes Radar, Chart plotter, Sonar, AIS, FLIR Camera and radios must be powered up and ready for use whenever the vessel is underway.
- It is expected that the Skipper should take the helm during emergency and critical maneuvering situations.

14.5 Positions and duties:

- The Skipper is responsible for navigation of the vessel including maintaining under keel clearance, plotting of waypoints, setting course and clearing distances.
- Other crew may, if suitably experienced, take direction from the skipper in the performance of any of the above.

14.6 Helm:

- At no time shall the helm be left unattended.
- Helm the vessel primarily by observation, secondarily by reference to Electronic Aids. Take direction from the skipper as to course and speed. Adequately warn the crew of all changes of vessel speed and course.
- Monitor helm instruments to ensure engine temperatures and pressures and batteries charge at acceptable levels.
- Maintain a look out for other vessels in the area of operation.

14.7 Helm and Throttle orders are to take the following form:

- Orders depicted as port or starboard are examples, and can be used in either the port or starboard context.
- Helm orders shall be given in degrees of rudder angle, e.g. “port twenty” = 20 degrees of port rudder.
- Course orders shall be given as a compass course in degrees e.g. “steer two two zero”
- The term “pulse power” refers to a method of throttle use where the throttle levers are engaged into gear for the briefest time possible to turn the propeller before taking the engine out of gear again. This method is used for close quarters maneuvering to restrict the vessels speed through the water to the minimum possible.

Order	Response	Confirmation	Meaning
Port 10	Port 10	10 of Port Wheel on	Turn the helm to indicate 10 degrees of Port rudder
Port 20	Port 20	20 of Port Wheel on	Turn the helm to indicate 20 degrees of Port rudder
Steer 240	Steer 240	Course 240	Alter course to 240 deg
Pulse Power	Pulse Power	NA	Until the skipper cancels this mode, all engine commands are in pulse mode

Ahead port When in pulse power condition	Ahead port	NA	Pulse ahead on the port engine by going into gear at idle then immediately back to neutral
Astern Starboard When in pulse power condition	Astern Starboard	NA	Pulse astern on the starboard engine by going into gear at idle then immediately back to neutral
Slow ahead both	Slow ahead both	Both engines ahead slow	Place both engines in forward gear at idle
Stop Both	Stop Both	Both engines stopped	Put throttles into neutral
Stop Port	Stop Port	Port engine stopped	Put Port throttle into neutral
Slow ahead port	Slow ahead port	Port engine ahead slow	Put the port engine into gear at idle
Revolutions for 20 knots	Revolutions for 20 knots	Speed 20 Knots	Slowly advance throttles to bring the vessels SOG to 20 knots
Emergency stop	Emergency stop	Engines stopped	Pull throttles to neutral as quickly as possible and be prepared to go astern when ordered
Half astern both	Half astern both	Both engines half astern	Bring both engines to 1500 RPM in reverse gear

14.8 Radio:

- Obey all lawful commands made by the Skipper.
- Respond to all radio calls made to the vessel.
- Maintain 30 minute SKED calls to Base if Base has not called
- Monitor chart plotter, radar and sonar to maintain the safe passage of the vessel.
- Monitor radios (VHF, DCN and 27Meg) and, at the direction of the skipper maintain radio communication with the MRB/other vessels.
- Assist the skipper by maintaining a look out for other vessels in the area of operation.

14.9 MRC:

- Assist the skipper and navigator as requested.
- Obey all lawful commands made by the Skipper.
- Maintain a look out for other vessels in the area of operation.

14.10 Fuel Consumption:

Fuel Consumption at various speeds:

FO20 FUEL RATE

	RPM	SPEED KTS	FUEL RATE L/Hr		RANGE (In either hours or distance in Nm) ACCORDING TO AVAILABLE FUEL LOAD												
					300 Litres		250 Litres		200 Litres		150 Litres		100 Litres		50 Litres		
			Per Motor	Both Motors	Hours	Distance	Hours	Distance	Hours	Distance	Hours	Distance	Hours	Distance	Hours	Distance	
NON TOWING	Idle		0.95	1.9													
	2000	5	4.5	9	33	167	28	139	22	111	17	83	11	56	6	28	
	2500		7.2	14.4	21		17		14		10		7		4		
	3000	12	10.5	21	14	171	12	143	10	114	7	86	5	57	2	29	
	3500		13.6	27.2	11		9		7		6		4		2		
	4000	13	17.8	35.6	8	110	7	91	6	73	4	55	3	37	1	18	
	4500	20	21.3	42.5	7	141	6	118	5	94	4	71	2	47	1	24	
	5000	25	27.6	55.2	5	136	5	113	4	91	3	68	2	45	1	23	
TOWING	1700	5.1		7.6	39	201	33	168	26	134	20	101	13	67	7	34	Towing large boat
	2700	6.2		15.7	19	118	16	99	13	79	10	59	6	39	3	20	Towing average lake boat
	3000	5.3		22.4	13	71	11	59	9	47	7	35	4	24	2	12	Towing average lake boat against tide

Green cells = real life measurements White cells = Theoretical values

14.11 Operation of radar:

- From the Home screen, select Chart and Radar, or just Radar.
- Touch Radar pane if Chart and Radar selected to highlight Radar pane.
- Select Menu bar
- Select Power to turn the radar on/off, the radar will always power up in standby.
- Select Radar to switch from standby to transmit and advise crew radar is operating.

14.12 Operation of chart plotter:

- From Home screen, select one of the various charts and or combined chart/sonar, chart/radar screens
- Use the – and + signs to zoom in or out
- Touch the screen to set the cursor location. Distance of cursor to vessel is displayed in the top tool bar and cursor coordinates are displayed in bottom left corner of screen.

14.13 Operation of sonar:

- From Home screen, select one of the various sonar and or combined chart/sonar, screens.

14.14 Collision prevention watch keeping using AIS:

- The AIS is set to show any targets in range of the vessel. Don't play with it.

14.15 Operation of FLIR camera:

- From the Home screen select Video.
- Select FLIR.
- Use the pan/tilt module to view the area around the vessel.
- Select scene mode to view objects/people in water.
- The direction the camera is pointing is indicated at the bottom left of the screen.

14.16 Adverse weather or sea conditions:

- Adverse weather can make the task of SAR vessels very difficult.
- It is up to the skipper to obtain the best weather information possible before proceeding to sea.
- In heavy weather it may be prudent to reduce speed to a minimum and apply a zigzag course to minimise the motion over waves. Avoid going straight up or down a wave.
- Avoid getting beam on.

14.17 Critical system failure:

- If the steering fails, it may be necessary to tie off the steering gear using rope.
- This will only be possible in the calmest of seas, due to the serious risk of flooding the compartment.

15.0	NIGHT OPERATIONS

- As previously noted operating the vessel at night is inherently more difficult and dangerous than during the day.
- Vessel speed should be reduced to suit visibility as per COL REGs, and a sharp lookout maintained for hazards and other vessels.
- Vessel speed should be further reduced during whale season, and extra lookouts posted to check for whale signs, and the FLIR camera should be monitored constantly.
- To ensure the safety of the crew and vessel the skipper must travel at a speed which allows forward vision and a safe stopping distance in case of an emergency.
- Cabin to be illuminated only by dimmed MFD and instruments to maximize night vision.
- Night Operations are especially dangerous in that deck and cabin areas of the vessel will be dimly lit to maintain night vision. Extra care must be taken when undertaking any deck duty at night. At all times crew need to be aware of the movements of fellow crew around the vessel and monitor their safety and health. Loss of personnel overboard has the potential to quickly escalate into a major incident especially so at night in poor light, so safety harnesses should be worn on deck.

15.1 Helm:

- Helm the vessel primarily by observation, secondarily by reference to electronic aids. Take direction from the skipper as to course and speed. Adequately warn the crew of all changes of vessel speed and course.
- Monitor chart plotter, radar and sonar.
- Monitor helm instruments to ensure engine temperatures and pressures and batteries charge at acceptable levels.
- Maintain a look out for other vessels in the area of operation.

15.2 Radio:

- Monitor chart plotter, radar, sonar and, if directed by the skipper, operate and monitor the FLIR camera, to maintain the safe passage of the vessel.
- Monitor radios (VHF, DCN and 27Meg) and, at the direction of the skipper, maintain radio communication with the MRB/other vessels.
- Assist the skipper by maintaining a look out for other vessels in the area of operation.

15.3 MRC:

- Assist the skipper and navigator as requested.
- Maintain a look out for other vessels in the area of operation.

16.0	MOB AND BODY RECOVERY

ALSO Refer to MRNSW SOP OP 06 and 27

16.1 Purpose:

- To provide a method by which to ensure the safe and efficient means of recovering a person from the water.

16.2 Scope:

- Covers the time from the sighting of a person in the water through to the landing the person on the rescue vessel, checking of their wellbeing, communicating the situation to the radio base, and landing the recovered person onshore. Also includes the post incident debrief.

16.3 Safety/Hazards:

- Standard PPE to be worn by all crew members.

16.4 Special Precautions:

- Care must be taken to ensure the rescue vessel engines are in neutral when the person is being brought to the rescue gate of the vessel.

16.5 Recovery of a man overboard from the rescue vessel:

- Immediately a man overboard is apparent, call 'Man Overboard' on (port/stbd) side of the vessel.
- Immediately place a waypoint.
- Skipper to decide to execute the appropriate turn.
- Maintain a visual watch on the MOB, indicating position by hand signal.
- Appoint crew to man the rescue door and discuss plan of action.
- Manoeuvre the rescue vessel with bow into the wind, so as to bring the MOB alongside the rescue door and "Heave to" Helm to place engines in neutral.
- Recover the MOB onto the rescue vessel (may require more than two people ie the skipper as well).
- Check the condition of the MOB. If medical assistance is required, conduct DRSABCD and administer the appropriate 1st aid. Call the Radio Base and give details. If medical assistance is required, cease all previous activity and return to harbour.
- If medical assistance is not required, return to previous activity.
- On return to harbour, conduct a full debrief of the incident and prepare an incident report in accordance with LOPs/SOPs. Refer to MRNSW SOP OP 06 and 17.

16.6 Recovery of a body from the water:

ALSO Refer to MRNSW SOP OP 27

- On sighting a body in the water, immediately record the position
- Manoeuvre the vessel as close to the body as possible in order to determine there is no sign of life
- Advise the Radio Base that a body has been located in position (Lat Long). Pass this message on either DCN5 or by mobile phone. Avoid the use of 27 MHz or VHF.
- If a member of the NSW police is on the vessel when the body is sighted, discuss the recovery plan
- (Is body bag and latex gloves available?)
- Recover the body and place in the charge of the police
- Return to shore and complete a debrief, attended by the Operations Officer and the police.

16.7 Recovery of a person or persons from another source:

ALSO Refer to MRNSW SOP OP 06 and 27

- Skipper to take the helm and immediately place a waypoint.
- Appoint lookouts to maintain a visual watch on the person/s.
- Notify the Radio Base that a person or persons have been located in the water.
- Await advice from the Radio Base prior to any further action.
- If more than one person in the water, manoeuvre first to the downwind person.
- Appoint crew to man the rescue door and discuss plan of action.
- Manoeuvre the rescue vessel with bow into the wind, so as to bring the MOB alongside the rescue door and "Heave to" Helm to place engines in neutral.
- Recover the person from the water onto the rescue vessel (may require more than two people ie the skipper as well).
- Check the condition of the MOB. If medical assistance is required, conduct DRSABCD and administer the appropriate 1st aid. Call the Radio Base and give details.
- Recover any additional persons from the water in accordance with steps above.
- Immediately return to base with the recovered person(s).
- Present the recovered persons to medical authorities prior to releasing them from the vessel.
- On return to harbour, conduct a full debrief of the incident and prepare an incident report in accordance with LOPs/SOPs.

17.0	REFUELING

17.1 Overview:

- The vessel is fitted with 2 fuel tanks: a forward tank of nominal capacity of 200 litres, and an aft tank of nominal capacity of 100 litres. A minimum level of 75% in each tank should be maintained.
- During any refueling operation there is the potential for fuel spillage which could result in either fire or pollution. Accordingly, every attempt will be made to prevent spillage by closely monitoring fuel tank levels and fuel hose condition. Clean up rags are to be available to wipe up minor spillage.
- Should a fuel spill in excess of one litre escape into the water during the refueling operation, the skipper will immediately report this to the Operations Officer, outlining the amount spilled and the direction of travel (tide running in/out).

17.2 Purpose:

- To provide a standard approach to refueling the vessel in order to ensure safety of the vessel crew and the vessel, and to prevent any fuel spill into the vessel or the environment.

17.3 Scope:

- From the period immediately prior to mooring at the fueling wharf, through to departure from the wharf.

17.4 Safety/Hazards:

- Standard PPE to be worn by all crew members.
- Fire extinguishers to be checked prior to refueling.

17.5 Special precautions:

- Only those crew essential to the refueling operation shall remain on the vessel while fuel is being transferred. Remaining crew are to relocate to the wharf and be available should an unplanned event occur.
- Fire extinguishers shall be made readily accessible on the wharf, and a check made of any firefighting equipment provided on the fueling wharf.

17.6 Securing at Waterline's fuel wharf

- Bring the vessel alongside the fuel wharf, port side to wharf if possible as fuel inlets are portside.
- Secure a bow line to the fuel wharf.
- Secure a stern line to the fuel wharf.
- Snug up all lines.
- Shut down engines.
- Advise tower FO20 will be off the air for refueling and will be back on air after refueling.

17.7 Refueling:

- Shut down all electrics aboard vessel
- Turn off all mobile phones
- Make ready fire extinguishers and mop up rags
- Hoist refueling flag (flag Bravo)
- Remove non-essential crew to the wharf. One person will remain onboard and man the fuel hose
- Remove fuel caps from both fuel tanks.
- Ascertain fuel level in tanks.
- Determine the total amount of fuel to be taken onboard and confirm the amount to be pumped into each tank.
- Pass fuel hose from the wharf to the rear deck.
- Advise the crewman at the bowser of the amount of fuel to be taken in each tank.
- Stand by at the bowser to call fuel quantity delivered.
- Begin to deliver fuel into one of tanks.
- Cease refueling when required amount is delivered (as called by the crewman at the bowser).
- Replace the fuel cap on the open fuel tank.
- Repeat steps for the other fuel tank.

17.8 On completion of refueling:

- Take photo of fuel received.
- Go to Waterline's office, sign for fuel and get receipt.
- Replace fire extinguisher and lower flag 'Bravo'.
- Record fuel levels in logbook.
- Power up electrics.
- Start engines.
- Remove bow and stern lines.
- Depart the fuel wharf.
- Send photo of fuel received to the Treasurer or place receipt in the treasurer's office.

18.0	TOWING

ALSO Refer to MRNSW SOP OP 05

18.1 Overview:

- While the basics of towing a vessel are constant, the size of the vessel being towed, the configuration of that vessel and the prevailing weather and sea conditions will determine the final actions. This is particularly so when bringing a vessel onto the drop off point, be it a mooring, a wharf, or releasing into the vicinity of a boat ramp or safe haven. The key to success in each such case lies in the application of crew resource management where the final action plan is determined prior to commencing the relevant activity.
- Communication with the target vessel will be on 27 MHz channel 94, VHF channel 77 or mobile phone.

18.2 Purpose:

- Towing disabled vessels is an integral part of Marine Rescue. The purpose of this LOP is to provide the rescue crew with a safe and systematic approach to securing the towline to the target vessel and affecting the tow to the designated drop off point.

18.3 Scope:

- The scope of this LOP is from the time the rescue vessel first approaches the target vessel, through to the time the target vessel is delivered to the designated drop off point and the tow line is released.

18.4 Safety/Hazards:

- Standard Personal Protective Equipment (PPE) to be worn.
- Beware of extreme loads on towline.

18.5 Definitions/Terminology:

Pay Out	To let out line to increase the length of the towline
Shorten	To take in or reduce the length of the towline
Make Fast	To secure the towline to the towing post
Let Go	To release the designated line

18.6 Special Precautions:

- During towing operations extreme loads on the towline and towing post are to be expected. Crew must remain forward of the towing post at all times.

18.7 Preparing the tow:

- Radio: maintain calling frequency or mobile phone contact until vessel has been sighted and identified.
- Slow the rescue vessel and approach the target vessel dead slow
- Advise crew to prepare for tow.
- Feed the tow line under the stern safety rail and back onto the deck.
- If required, attach the bitter end of the heaving line to the towline at neck of eye splice using round turn with two half hitches. Then prepare the heaving line ensuring that the line is tangle free.
- Advise the skipper when the tow gear is ready.

18.8 Approaching and securing the target vessel:

- Brief the target vessel:
  - Ask the vessel's skipper to confirm that they accept responsibility for the tow and any damage incurred to **their** vessel. Also inquire if any injuries and any issues that may impact the tow.
  - We will circle you at minimum safe distance.
  - Have you any lines in the water or debris nearby?
  - We will approach on your port side to pass the heaving line to a person on the bow to retrieve the heaving and tow line, and fasten towline to a strong point closest to the bow.
  - Secure your vessel and determine drop off point for target vessel, don lifejackets, lower and centre motor, and trim the vessel aft.
  - Have anchor available if needed.
- Manoeuvre rescue vessel around the target vessel to check for lines in the water and debris and assess sea conditions.
- Manoeuvre rescue vessel into optimum position to pass heaving line to target vessel, MRC adjacent to target's bow area to pass heaving line to target vessel.
- Advise target vessel to haul in the heaving line with towline attached and secure towline to a strong point closest to the bow.
- Pay out towline.
- Manoeuvre rescue vessel dead slow ahead.
- Advise rescue skipper when towline is secure on target vessel.
- When towline length established order "Make Fast".
- Secure tow line to towing post using tow hitch as low on post as possible, and announce "Made Fast".
- Switch on towing light and red/blue flashing lights (if required).
- Hoist Flag D on halyard, (Keep clear of me, I am maneuvering with difficulty).

18.9 Commencing the tow:

- Initially manoeuvre the rescue vessel off centre at an angle of 30 - 40 degrees ahead of the target vessel to avoid snubbing.
- Once under way maintain sufficient speed to keep a taught tow line.
- The towing line must be kept within 0.5m either side of the transom to prevent heeling of the vessel.
- Advise the base the target vessel is now under tow.
- Note: It may be necessary to periodically adjust the length of the tow line in order to optimise the position of the towed vessel relative to conditions.

18.10 Action in the event of Man Overboard (either vessel) during tow:

ALSO Refer to MRNSW SOP OP 27

- Announce 'Man Overboard' followed by 'where' (eg STB side of relevant vessel).
- Place waypoint.
- Stop the rescue vessel and announce 'drop the tow'.
- Advise target vessel to release the tow line.
- Maintain a visual watch on 'man overboard', indicating direction by pointing with extended arm.
- Recover the tow line on board.
- Proceed to recover the MOB on starboard side of rescue vessel.
- Recover MOB and check and report condition.
- Arrange 1st Aid and further treatment as necessary.
- If tow is to be resumed, approach the target vessel and resume the tow.

18.11 Approaching the harbour entrance (if returning from sea):

- Assess sea conditions at the harbour entrance.
- Determine the need for additional measures to ensure the integrity of the tow, e.g. deploy a drogue from towed vessel.

- Determine the need for berthing assistance (call out crew of FO30).
- Advise towed vessel to deploy additional measures (if deemed necessary)
- Secure the rescue vessel for entering harbour.
- Request radio base to broadcast Securite alert.
- Note: If conditions at the entrance are considered potentially unsafe, the skipper may elect to remain at sea until conditions improve.

18.12 Shortening the tow:

- Advise crew to prepare to shorten the tow.
- Manoeuvre the rescue vessel to provide slack in the tow line.
- Reduce the hold on the towing post to one turn.
- Shorten the tow, maintaining a clear deck.
- Advise to "Make Fast" when tow is reduced to required length.
- Secure tow line on the towing post using 3, 2 & 1 hitch and announce "Made Fast".

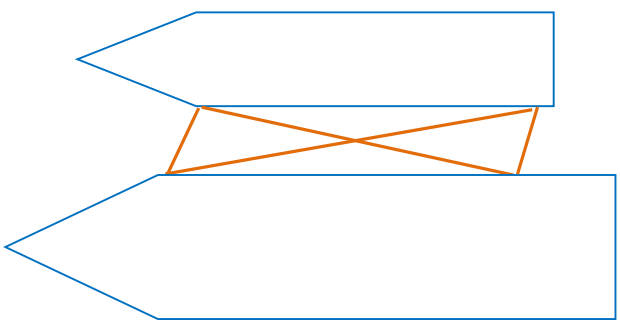
18.13 Releasing the target vessel at the designated drop off point:

- Discuss action plan to drop off the target vessel.
- Manoeuvre the rescue vessel as necessary to bring the target vessel to the designated drop off point.
- Advise target vessel to release the tow line.
- Recover the tow line and the heaving line.
- Obtain details as necessary to complete assist report form.
- Advise the watch room the tow is now complete.
- Note: When approaching the marina entrance or a wharf, skippers should consider transferring the tow line to either the port or starboard side of the boat to maintain the vessel's desired position astern.

18.14 Rafting:

- The following is provided for use in the event a vessel is to be rafted to the rescue vessel. Rafting will only take place inside the harbour.
- Discuss and determine the action plan. Plan may include anchoring the target vessel prior to rafting.
- Communicate action plan and instructions to the target vessel.
- Prepare rafting ropes. Minimum of 2 ropes required (4 ropes if springers are to be used).
- Deploy fenders as necessary.
- Come alongside the pre-determined side of the target vessel.
- Secure target vessel to rescue vessel with a forward line and then a stern line.
- Deploy forward and aft spring lines if required.
- Adjust lines so as to warp the target vessels stern ahead of the rescue vessel stern by approx. 1 meter.
- Adjust all lines so as to parallel each vessel fore and aft.
- Tighten and secure all lines.
- Proceed to designated drop off point.
- If target vessel is to be put alongside a wharf, advise target vessel crew to have lines ready.
- Releasing the target vessel at the designated drop off point will require the removal of the various lines at a time determined by the skipper.
- Ensure crew have sufficient time to remove lines, verify all unrequited lines are clear.

To be read in conjunction with MRNSW SOP OP 05



Prior to rafting a vessel alongside the rescue vessel, the skipper will conduct a crew resource meeting to discuss the size of the vessel to be rafted, the number and position of lines and position of fenders.

19.0	FIRE ON BOARD

19.1 Overview:

- This vessel is equipped with 2 portable fire extinguishers and a fire blanket for conventional firefighting of small containable fires:
    - 2 x ABE Powder type (1 located on the cabin port side, 1 located in stern holder when underway).
    - 1 x fire blanket located behind port seat in the cabin.

19.2 Purpose:

- To provide the crew with an efficient and systematic approach to fighting a fire on board the rescue vessel, using the on board firefighting equipment.

19.3 Scope:

- From the first indication of fire through to the finalisation of the post incident debrief.

19.4 Safety/Hazards:

- Standard PPE to be worn by crew at all times.
- Ingestion of smoke and/or toxic fumes.
- Burns.
- Asphyxiation.

19.5 Fire Fighting Terminology:

- **"Fire, Fire, fire",** followed by location of the fire
  Eg: "Fire, Fire, Fire, fire in the forward berth"

19.6 Special Precautions:

- The use of firefighting agents in confined spaces will displace air and therefore inhibit breathing. If a crew man is required to enter a confined space when there is a fire on board, there must be a backup crewman in support in order to retrieve the first mentioned crew man in case of distress or collapse.

19.7 On the announcement Fire "Fire Fire Fire":

- Radio operator to take a position fix on the GPS, broadcast May Day and notify the base of the vessel position and situation.
- Crew to assemble fire extinguishers and fire blanket away from the fire area.
- Skipper to determine if the engines need to be shut.
- Without propulsion, the vessel will swing to the wind which will tend to clear the smoke from the after deck. If the smoke remains constant or intensifies it must be assumed the fire is still burning.
- Assign a crewman to gather potable water, 1st aid kit, and EPIRB from the rear deck.
- If the fire cannot be controlled, consider immediately ordering ABANDON SHIP.
- Broadcast Mayday and advise the base that the vessel is being abandoned and confirm vessel position.

In the event the fire is controlled and extinguished:

- Advise the base of the situation.
- Assess the damage and determine the seaworthiness of the vessel.
- Determine if the engines can be safely restarted.
- If the vessel can be made operational, return to base.
- If the vessel is not operational, request assistance.

19.8 On return to base:

- After securing the vessel (or being landed by another vessel) a full debrief will be conducted. This will be attended by all crew and the Operations Officer.
- Following the debrief, a full report on the incident will be compiled for submission to the Unit Commander.
- A report of the incident will be submitted to the ZDOM, MAC and AMSA.
- An "After Action Review" (AAR) to be conducted.

20.0	ANCHORING

20.1 Overview:

- The rescue vessel is equipped with 10 meters of chain, plus 50 meters of warp and a 6 kg plough anchor, located in the anchor well in the front berth.
- The anchor is put into operation through the front hatch and veered from the bow position, and can be recovered from this position BUT should be recovered by the bow hand.
- Water depth to anchor rode ratio should not be less than 3:1 when the vessel is anchored for a short period of time and 5:1 if the vessel is to remain at anchor for an extended period.

20.2 Purpose:

- This LOP outlines the action steps necessary to safely and efficiently anchor the rescue vessel, monitor the location of the anchor, and to recover and secure the anchor.

20.3 Scope:

- The scope of this LOP is from the time the skipper of the rescue vessel brings the vessel into the desired position for placing the anchor, through to when the anchor is safely secured and stowed and the vessel is again underway.

20.4 Safety/Hazards

- Standard PPE is to be worn.
- Crew on the bow of the vessel must operate from inside the bow rail.

20.5 Definitions/Terminology/Hand Signals:

Situation secure (OK)	Thumb and forefinger forming a circle
Lower the anchor	Thumb pointing down
Anchor on the bottom	Moving hand horizontally back and forth
Stop Lowering or Raising	Palm open and hand vertical, arm outstretched towards the operator
Raise the anchor	Thumb pointing up
Move ahead	Bending arm at elbow in up and down motion
Direction of anchor	Arm pointing in direction also means continue forward at current speed.

20.6 Special Precautions:

- When the anchor is being lowered the warp must not be allowed to surge and the anchor warp must never be veered to its total length such that the anchoring load is taken on the bitter end of the warp.

20.7 Preparing to anchor:

- Manoeuver the vessel to the required position, bow to the wind/swell/current.
- Ascertain depth of water and amount of warp to be veered.
- Advise crew to take anchor stations.
- Advise Skipper that crew are in position and ready to lower.

20.8 Lowering the anchor:

- Advise the bow hand of the length of warp to be veered.
- Signal the bow hand 'Ready' to begin lowering (thumb down).
- Lower the anchor.
- Signal the bow hand, anchor on bottom (hand horizontal, back and forth).
- Press MOB switch on GPS to record anchor position.
- Allow vessel to ride backwards of the anchor, with wind and tide, and use pulse power if required to prevent chain from stacking on bottom.
- Bow hand to check if anchor is holding.

20.9 While at anchor:

- Maintain contact with the watch room every 30 minutes.
- Check the position of the anchor at 30 minute intervals by referencing current position against the MOB position recorded in the GPS.
- Monitor the wind and sea conditions, giving consideration to the length.

20.10 Weighing the anchor (from the bow position):

- Advise crew to take anchor stations.
- Bow assistant signals all OK.
- Signal weigh anchor (thumb up).
- Bow assistant indicates to skipper direction of the anchor rode.
- Manoeuver the vessel forward in order to minimise the load on the rode and to maintain head into the wind/sea/current.
- Slow the recovery of the anchor when the anchor clears the water.
- Indicate to skipper that anchor is clear of the water.
- Snug the anchor into the fairlead and attach the safety line.
- Place anchor, chain and rode in the anchor well in the front berth, close the front hatch and return to aft deck.
- Clear MOB position from the GPS.

21.0	BILGE PUMPS

21.1 Overview:

- The vessel is fitted with a powered and a manual bilge pump.
- The powered bilge pump is automatically operated by a float switch, and is only operational when the batteries are switched on.
- The manual bilge pump is located on the starboard side of the transom area. This should be operated as part of the Monday change-over procedure to check for any significant ingress of water into the hull.

22.0	EMERGENCY DRILLS

22.1 Overview:

- Drills required to be performed yearly for all crew:
  - Person overboard.
  - Fire on board, in and outside the engine space.
  - Towing.
  - Collision/grounding.
  - Flooding.
  - Emergency steering
  - Persons injured.
  - Fuel spill.
  - Heavy weather management and policies
  - Prepare to abandon ship and abandon ship

22.2 Purpose:

- To ensure that crews are ready for emergencies at sea, these drills should be performed every 12 months and records kept via Otter.

22.3 Scope:

- This LOP covers Monday morning crew change and any time the vessel is proceeding to, or returning from a task, but is not actively carrying out a specific operation.

22.4 Safety/Hazards:

- Standard PPE to be worn by all crew members.

22.5 Terminology:

- Nil

22.6 Special Precautions:

- All crew are to be aware that an emergency could arise at any time; therefore, all must remain alert and be prepared to react appropriately.

23.0	FO20 CORROSION PREVENTION

23.1 Overview:

- After a technical investigation on the evidence of corrosion within the collars on Ocean Cylinder vessels. A conclusion is that a root cause of corrosion is likely the ingestion of salt moisture into the collar from cyclical expansion and contraction of the tube material and/or air pressure differentials over several years creating a salt build-up within the tube, causing corrosion from within.
  To prevent this, the pontoons and other sealed compartments should be flushed every 6 months.

23.2 Flushing of Pontoons:

- Vessel to taken out of water on the trailer.
- Remove the plugs from the rear of both pontoons.
- Salt-Away (or similar) to be injected into one pontoon until it is deemed to be sufficiently full. Let the pontoon to then fully drain. Repeat this process for the other pontoon.
- Once completed and the pontoons drained, refit the plugs using a thread sealant.

23.4 Flushing of other compartments:

- While flushing the pontoons, the fuel tank and bilge compartments are to be flushed.
- Remove the spin out covers from the transom and cockpit decks.
- Salt-Away (or similar) to be injected into both compartments until it is deemed to be sufficiently full.
- Remove the bungs; the small hexagonal plug just off centre towards port, and the large black plastic cap at the bottom of the hull. Let the compartments to fully drain.
- Once completed and the compartments drained, refit the bungs using a thread sealant.