

Standard Operating Procedure



SOP #	OPS-VesselOps- Man Overboard
Revision #	Initial
Implementation Date	
SOP Owner	Safety Manager
Approved By	
Diagram or Manual Reference	

Purpose

Man Overboard (MOB) is an extremely serious and potentially fatal event that response crews could experience during exercises, drills, and spill responses. A well-trained Captain and crew have a far greater chance of succeeding at recovering the person alive. It is vital that drills are conducted frequently with regular crew members, involving response volunteers as often as possible. It is a legal requirement for the Captain or designated crew member to brief any new crew or passengers on the procedure, and as with other emergency procedures to record training drills in the vessel log/SSM manual.

Scope

This SOP is applicable to;

- All vessel employees who are assigned to work or travel on SEAPRO's on water oil response vessels and platforms.

Prerequisites

Personnel should be current with all training related to;

- Vessel operation
- On water safety

Responsibilities

Program development and maintenance – SEAPRO Safety Officer (safety@seapro.org)

Program training – SEAPRO Preparedness Manager (prepare@seapro.org)

Program execution – SEAPRO Operations Manager (ops@seapro.org)

Tools

- Standard vessel operations personal protective equipment (PPE).
- Water Rescue training manikin.
- Vessel standard rescue aide equipment. (Life sling, life ring, 'lighted floating datum device', 'Jacobs Ladder')

Step-by-Step Procedure

Primary Actions

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The immediate response taken by the crew member witnessing a MOB or realizing a crew member is missing;

- Shout.
- Throw.
- Point.

Shout

Shout “Man overboard”. This will alert all crew to the emergency.

Captain announces same over the haler.

Throw

Deploy a life ring, or similar device and lighted floating marker to provide a visible reference. It does not matter if the person is visible currently or not. The person in the water may see the flotation device/marker and be able to get to it, if not it serves as a reference point for maneuvering the boat back to the MOB.

Crew must wear PFD (personal floatation device/life jacket) at all times while on deck if underway or performing deck work, so the primary function of any equipment thrown in a MOB situation is not necessarily additional flotation, but as a reference day or night.

Equipment thrown should be;

- Highly visible (brightly colored/reflective tape/flag attached)
- Have a light/strobe attached.
- Strategically located for fast deployment.
- Be affected as little as possible by the wind.

Point

The crewmember who shouted the alert now points continuously with outstretched arm at the MOB (if still visible) or marker, ensuring that continuous visual contact is maintained. This will also indicate the MOB’s location to the vessel operator. It is imperative this crew member does this and nothing else until relieved from this duty by the Captain.

Secondary Actions

The vessel operator will;

- Initiate turn.
- Press MOB button on GPS.
- Transmit distress call by VHF (if necessary – see notes on Distress Call).
- Assess, approach, and brief & delegate crew on appropriate actions for recovery.

Initiate Turn

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For the OSRV a common practice is for the initial turn to be made towards the side which the MOB fell from, to reduce the chances of the vessel's propellers striking the MOB. Given a reaction time of 3 seconds from the person falling overboard to the vessel being put over initiating an immediate turn to avoid 'propeller strike' is not only irrelevant for travel at cruise it is a potential hazard - risking injury to another crew or even a second MOB. As soon as the Man Overboard shout is relayed to the captain, he/she should throttle down the engines immediately. SEAPRO will employ three methods to turn back towards the MOB. Regardless of which method is employed one thing that the crew member on the wheel must be able to establish is the reciprocal course.

The reciprocal of any course is found by adding or subtracting 180°.

- For courses less than 180° add 180°.
- For courses more than 180° subtract 180°.

For example;

- Course 050° reciprocal is $050^{\circ} + 180^{\circ} = 230^{\circ}$.
- Course 315° reciprocal is $315^{\circ} - 180^{\circ} = 135^{\circ}$.

The design of SEAPRO's marine compasses allows the vessel operator to see the course the vessel is on, and the reciprocal at the same time. A reciprocal table is displayed by the helm position for quick reference.

N	NE				W				SE				S					
000	010	020	030	040	050	060	070	080	090	100	110	120	130	140	150	160	170	180
↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	000
S	SW				W				NW				N					

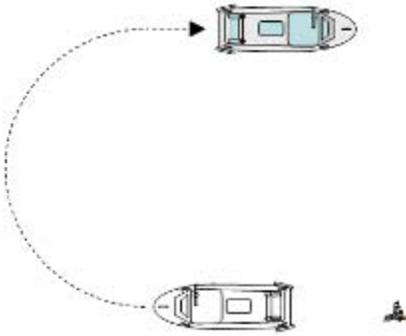
Methods for Turning

Captains should be familiar and practiced in all three methods that can be used to turn a vessel back towards a MOB. Their discretion as to which method is appropriate should be based on comfort in executing and sea conditions that best facilitate a successful recovery.

Williamson Turn

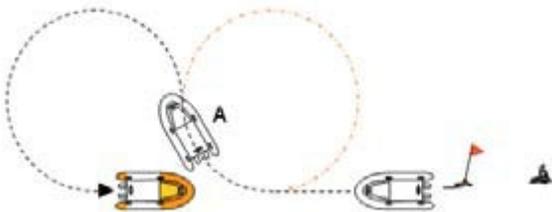
The Williamson Turn was developed primarily for large vessels, whose turning circle is such that the MOB would almost certainly be out of sight by the time the vessel had turned around. Sea state could make this the best option for the OSRV. The size of the turning circle could mean that merely turning 180 might put the vessel on a reciprocal course, but it would be nowhere near its reciprocal water track.

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To execute a Williamson Turn;

- The same speed is maintained throughout the maneuver until the vessel is on its reciprocal course.
- Vessel is first turned until the heading is approximately 60° - 70° from the original course.
- The helm is then reversed with the same amount of helm applied the opposite way as was used in the initial turn, (for example one full turn of the wheel to starboard then back to midships and one full turn of the wheel to port) until the vessel is on the reciprocal of the original course.
- The vessel turns and initially describes ¼ of a circle, when the helm is reversed it then describes ¾ of an identical sized circle.



Simple Turn

To execute the Simple Turn method;

- Maintain or reduce speed.
- Turn the vessel around.
- Use the still visible wake / floating datum to turn onto the reciprocal water track.

This method depends heavily on the wake and/or floating datum being visible. Both may be rapidly lost from sight in bad weather especially at night or in poor visibility.

The size of the turning circle will determine at which point the vessel returns to cross its original water track. With a large turning circle there is a small, but potential risk of running over the floating datum or even MOB if reference to either is lost during the turn.

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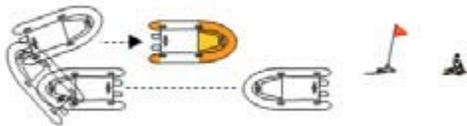
The need to keep a visual reference on the floating datum or wake means that this method needs a relatively small turning circle to be effective.

Stop / Slow and Turn

Unlike the previous two methods the first step is to slow down to a near or full stop, then;

- Turn short around.
- Motor ahead on the reciprocal course.
- The maneuverability of small vessels means they can be turned in little more than a boat length. As the vessel is slowed down without altering course, the wake will be clearly visible off the stern (lining up the center of the residual wake and the floating datum means there is not a need to calculate a reciprocal heading).

Whatever method is used in a MOB situation the vessel operator must alert the other crew members prior to any maneuver.



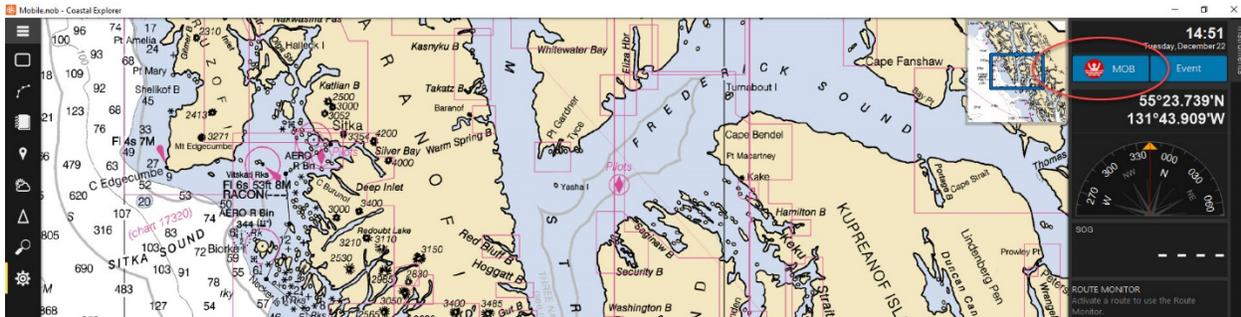
- Any maneuver should be preceded by a loud and clear warning from the vessel operator.

For example; 'Turning starboard!'

- Followed by a pause of 1-2 seconds before initiating the maneuver.

MOB Button

The MOB function on the Coastal Navigator software should be activated at the first opportunity; this will provide a back up to the floating datum, and automatically displays bearing and distance to the MOB waypoint.



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Distress Call

Send a distress to ensure that assistance will be available if it becomes necessary. It can always be cancelled should the situation be resolved. Whether the Distress call is sent immediately or at a later stage is at the discretion of the Captain.

SEAPRO carries a minimum three persons as its normal complement, and in the event of a MOB there will be two crew needed to help in the recovery of the MOB, and one on the helm. While turning around, sighting the MOB, then preparing to approach and recover, sending a Distress Call may be an unwarranted distraction.

In the event of an un-witnessed MOB, or where the search fails to locate the MOB a Distress Call must be made.

If the MOB is lost from sight, a structured search must be initiated. For the search to be successful correct procedures must be followed. (See MOB Search Techniques)

Crew Tasks

Having sighted the MOB and assessed the situation, the vessel operator/Captain or crew in charge (Captains are not immune to falling overboard) will allocate positions to the crew and brief them on appropriate recovery actions. (See Victim Recovery Procedures)

Post Rescue

The following points must be considered after rescuing the MOB:

- Cancel any Distress Call.
- Continue to monitor the patient's condition – ABCs and treat for shock as required. (See Module Victim Recovery)
- Complete the necessary reporting as required for a MOB incident.

Controls

- MOB training for all vessel personnel.
- Life saving equipment onboard available and in proper working order.
- First aid, AED and EMS training for vessel operators.
- Crew and passengers briefed prior to any departure or vessel related work activity.
- Periodic (annual at minimum) procedural review and update.

Field Level Risk Assessment

Man Overboard Risk hierarchy ranking - 1a, the risk of a person falling overboard is slight due to the placement of adequate guard rails around the vessel, minimization of trip hazards and non-skid coatings on deck surfaces. However, due to the cold-water environment of Southeast Alaska, the consequence of this hazard raises its hazard ranking. Likelihood – remote, Impact – high.

Checklist

Summarize the SOP in a checklist format for use in other documentation.

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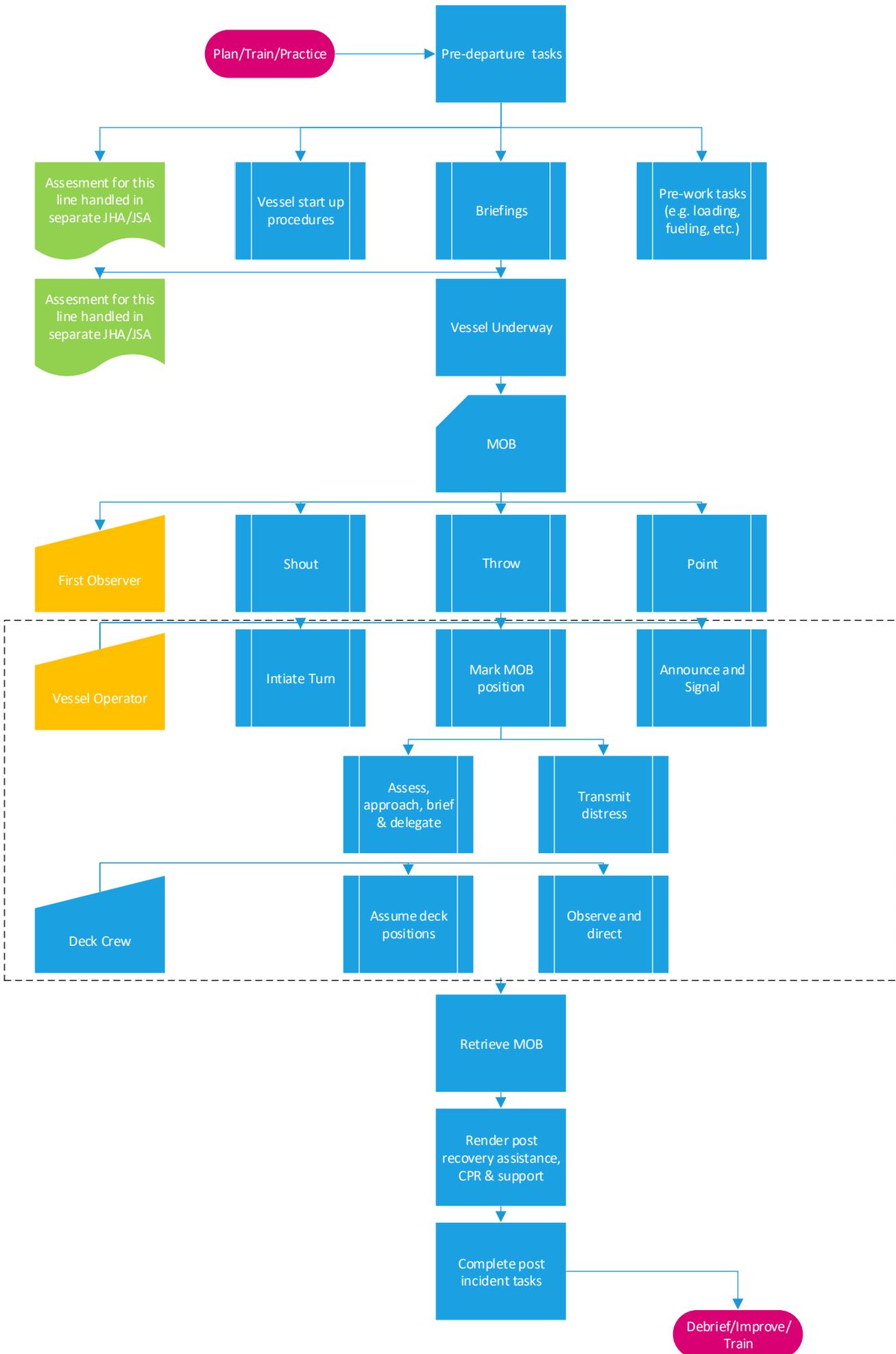


References to JSA Analysis

This is entered by Safety after the SOP is written.

Process Flow Diagram

Include a process flow chart.



Job Hazard/Safety Analysis (JH/SA)

Work Category: Spill Operations

Work Location: Vessel

Task Description: Man Overboard Recovery Procedures

Date: 2020-12-30

JHA No.: 4420242786.1

ID	Sequence of Job Steps	Identified Hazards and Critical Behaviors	Recommended Procedures
Vessel: Pre-departure			
1	Vessel loading/pre-departure tasks/departure (JSA No.:1582213544-1)	See vessel loading and operation SOP(s)	Follow vessel operation and associated standard operating procedures
Vessel: Operations – Departure/transit			
2	Boarding/Cast off/deck secure	<ul style="list-style-type: none"> • Trips/slips - mooring lines, bollards, slippery deck/float • Gaps between vessel and mooring float – immersion, crushing • Trapped fingers, line pinch • Communication, misunderstanding 	Cover communications and procedures during the pre-departure briefing. Briefing is mandatory for both crew and passengers. Follow post departure deck organization procedures.
3	In-transit vessel and systems maintenance. Pre-arrival/pre-deployment equipment setup and readying.	<ul style="list-style-type: none"> • Slippery decks, trip hazards • personnel mobility instability due to speed, maneuvering, weather and 	<ul style="list-style-type: none"> • Proper PPE will be worn at all times while working on deck. Work suits recommended if combined water and air temperatures