CHAPTER NINE

OPERATIONS

INTRODUCTION

9.01 When manoeuvring the boat, whether in open water, to a specific point or within the confines of a narrow channel, the following factors must be remembered:

a. the boats ability to stop;

b. the boats steerage characteristics,

c the influence of wind and water.

d. the boat's load; and

e. the boat's trim.

STOPPING

9.02 Outboard motors have the advantage that the normal boat rudder is replaced by a propeller, and steerage even at slow speeds, is generally positive and effective; but once the propeller stops, the boat looses steerage In addition, unlike a car, the boat has no braking system. FRB operators must keep this in mind and travel at speed appropriate to conditions avoiding the need for emergency stops. When operating in current the coxswain should assess the situation and select an appropriate method to slow down or stop. Some methods are:

a. throttle back and stem the current;

b. turn into the current and then stem it;

c. manoeuvre safely to slower-flowing water;

d. drop anchor; or

e. use the oars.

For an emergency stop, reverse the thrust of the propeller by throttling back to shift speed and engaging reverse gear. However, this will not completely stop the forward motion of the boat, as water is a fluid and there is little or no resistance on the boat. Once reverse is selected, the boat will slow down, and once the reverse thrust is great enough, it will pull the boat backwards through the water.

STEERING CHARACTERISTICS

9.03 A boat is generally driven and steered by the thrust of the propeller. A boat is steered by the stern. This occurs because a rotating propeller bites into the water, converting a lot of its power into thrust. Power not used in forward momentum is dissipated sideways, giving a sideways thrust. Although this effect is relatively small, it will make itself felt, particularly at slow speeds, and will create problems when manoeuvring in tight corners.

9.04 As the stern is pushed out, the bow is pushed in the required direction. The pivot point of the boat is approximately one third the length of the boat from the bow. The centred motor should drive the boat straight ahead, except for a slight adjustment to the tiller to compensate for the sideways thrust.

9.05 Unless forward controls are fitted, the tiller must be moved in the opposite direction to which you wish to travel for forward movement. When reversing, the motor pulls the boat stern first, and the tiller is moved in the opposite direction to which you wish to go.

WIND AND WATER

9.06 As the water exerts little or no resistance on the boat, strong winds, currents and wash will impede the manoeuvring of the boat. By studying these elements and the boats characteristics in normal conditions, a good coxswain should be able to use the stronger factors to advantage when manoeuvring.

LOAD AND TRIM

9.07 A consideration in loading a boat is the trim, a properly loaded boat will ride level in still water. If the load is placed too far to one side, the boat will heel to that side. If a load is placed too far forward, the boat will ride bow down; while a load too far aft will cause the stern to squat.

9.08 Any boat with a pronounced heel is in danger of capsize, particularly while manoeuvring. Fast waters or winds striking a heeling boat can cause an upset or may cause cargo to move, increasing list.

9.09 A boat riding bow down will be slow to rise to waves, difficult to steer and may drive itself under if too much power is applied. In this situation, fuel consumption will be increased.

9.10 A squatting boat will have difficulty planing and therefore will have poor performance. Forward vision will be restricted and fuel consumption will be high. In extreme circumstances the boat may flip over backwards.

BASIC MANOEUVRES

9.11 The essential manoeuvres are related to undocking, (moving away from a jetty or wharf) docking (returning back to such a position) and manoeuvring in confined spaces. It is preferable that the following manoeuvres are made into the wind and/or current.

9.12 LEAVING A FIXED STRUCTURE

In many instances, it is possible to get away from a jetty or pier in an outboard powered boat by merely pushing off, and once sufficient space has opened up between craft and jetty, go ahead slowly with a gentle outward turn. A short turn may mean that the stern of the vessel will hit the jetty with some force. This must be avoided. If the craft is being pinned to the jetty or wharf by wind or current, it is best to reverse out i e., the outboard motor propeller is turned away from the jetty and power, in reverse, is applied slowly and the propeller draws the boat smoothly and safely away. Some Coxswains always

use this method in any circumstances, and it is often taken as a sign of a prudent operator. Take care that you have reversed far enough out from the wharf, so that when forward thrust is applied, the boat does not come right back to the wharf and strike it It is better to back out further than necessary, rather than back out too little and have to repeat the whole manoeuvre When reversing, watch for waves that may come over the transom into the boat.

9.13 COMING ALONGSIDE A FIXED STRUCTURE

This manoeuvre will be affected by propeller torque, wind and current. However, it is essential to maintain momentum to remain under control. To achieve good docking, (in this instance, with your port side along side the wharf) approach the wharf with motor slow ahead at about 15 to 20 degrees angle towards the wharf with the bow almost alongside in the berthing position, reverse the motor and pull the stern into the structure and tie off.

9.14 COMING IN BOW ON

Approach the landing bow on, watching for wind, current, and torque effect. Put the motor into reverse to lessen approach speed. The boat should come to the stop position almost touching the landing Before the reverse thrust has time to move the boat astern, select forward gear and open the throttle slowly to allow the boat to rest on the landing. By use of the propeller as forward thrust, and compensating for wind and drift, the boat should be able to remain in that position until the task is completed. When the task is completed, reverse clear of the landing.

9.15 TURNING A BOAT AROUND

A common manoeuvre in boat handling is to turn a boat around in confined spaces To achieve this effectively, practice is required in open spaces. To achieve a successful turn and, because steering control using propeller steering, is much more positive when the propeller is rotating, use short bursts of power directly from ahead to astern, rather than allowing the boat to coast in neutral with no steering. To complete a turn:

a. put tiller hard to starboard, slow ahead;

b. put tiller hard to port, slow astern; and

c. repeat until the boat is turned around.

SECURING FRBs

9.16 Consideration must be given to the methods of securing the FRB for loading, unloading or securing. Two methods are shown below.

9.17 To secure alongside one rope from the bow and one from the stern are tied to an anchor point with regard to the prevailing wind and current. (see Fig 9:1)

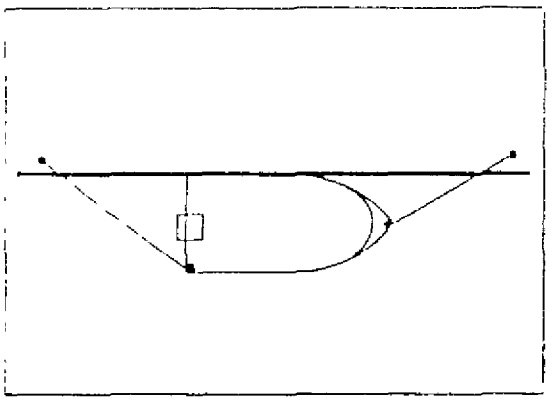

Figure 9 1

9.18 On occasions it may be necessary to hold the boat bow on. In that case tie quarter lines from the boat, to the shore. To do this, the bow should be driven against the landing and a line run from each quarter and attached to an anchor point. (see Fig 9:2)

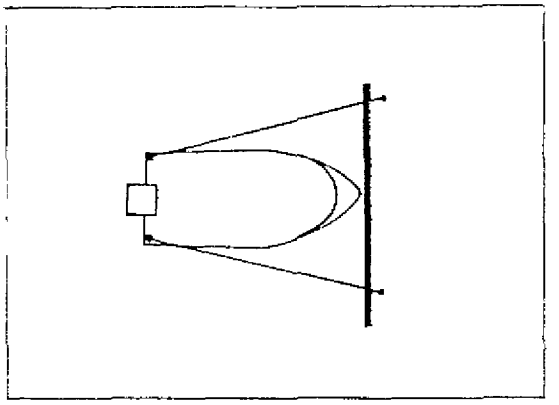

Figure 9 2

9.19 All lines should be long enough to allow for variations in tide, wind and flood heights. In some circumstances lines should be long enough so that they can be taken around an anchor point and brought back into the boat and secured so that the crew can release the lines from inside the boat

BEACHES AND BANKS

9.20 For detail on leaving a beach or bank refer to paragraph 8.14 'Start Up'.

9.21 In flood operations it will be necessary to land on beaches or river banks. This is more likely to be the case than landing at jetties or on structures. The points to note for beaching are:

a. **Selection** - Select a landing point that can be approached safely and with a minimum of effort (avoid landings in muddy areas or areas which require crew to wade long distances through shallows)

b. **Current** - When approaching the landing point, allow for the effect of any current or strong winds.

c. **Slow Down** - On the approach, slow down to idle speed while clear of shallows.

d. **Stop** - When in shallow water, place the motor in neutral and then stop the motor. Raise it to the tilt position and allow the boat to run in under its own momentum.

e **Strong Current** - If the current is too strong, drive in at low speed until grounding. When the boat has grounded, the crewman can step over the bow on the upstream side and hold the boat. A line may then be run to shore or an anchor used.

f. **Waves** - Where it is necessary to land with large waves astern a kedge anchor should be used. Refer to paragraph 5.18 Kedging.

TOWING

9.22 It may be necessary to tow a boat which has broken down or a log or tree which causes obstruction.

9.23 APPROACH

Approach the object (boat) from downwind or down current, whichever is stronger. Allow sufficient room to manoeuvre, especially in waters which could endanger you, the crew, or the boat. Always treat with caution.

9.24 TOWLINE

If using a tow line, the line should be belayed around the forward cleat/bollard or rail from the towed boat; or in case of an object, around the fore part. The towline should be secured to the towing boat by means of the towing bridle. It is the duty of one of the crew to watch the towline to ensure their is no danger of the towline snagging, fouling the propeller, nor the towed object striking into the towing boat. In strong currents it is safer to tow upstream where possible, to prevent the load being washed or drifting into the tow boat or allowing slack in the towline which could foul the propellor.

9.25 TOWING BRIDLE

Each FRB should have a towing bridle. The bridle consists of a rope, normally 12mm-16mm diameter, a pulley block and 2 spring snap hooks tied at either end of the rope. The towing bridle should be shackled to the ring bolts, located at each side of the transom (see Fig 9:3).

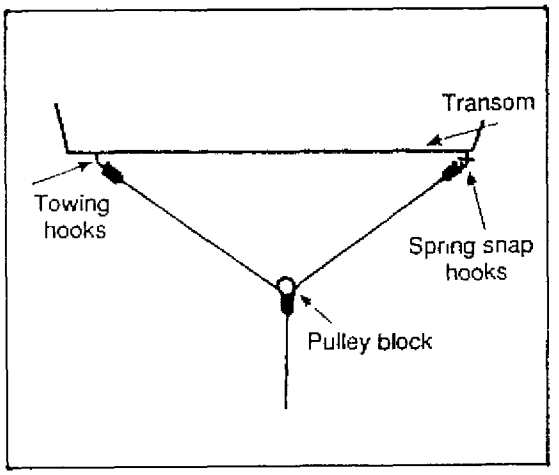

Figure 9:3

The towline should then be secured to the eye of the pulley block on the bridle by means of a slip Bowline. (see paragraph 5 9) it is very important that when the towline is attached to the pulley block, the block can move freely along the bridle. If it does not, difficulty will be experienced in turning the towing boat. When debris or some other object interferes with, or causes tension on the towing line and it becomes necessary to release the line, the quickest method is to cut the rope with a knife. The slip bowline used on the towing line is not meant for quick release but to prevent the knot from jamming. A sharp knife should be kept handy

9.26 TAKING UP THE STRAIN

A gradual taking up of the strain permits the towed object to gather way gently and prevents damage to the transom of the tow boat. It also protects the rope and reduces the possibility of it snapping. This movement will also allow the towed boat to align itself with the towing boat.

9 27 CREW POSITIONS

At least one crew member must be aft watching the towline. The crew must warn the coxswain of any impending threat, and be prepared if ordered to slip or cut the towline where there is any danger to either boat.

9.28 TOWED BOAT

If there are crew or passengers on a towed boat, they should, except for the member watching the line, be moved aft as far as possible. This makes the towed boat less liable to yaw widely to either side. If the weight is forward the boat is likely to ride bow down.

The best position for towing a disabled boat is to adjust the towline so that the bow of the disabled boat rides on the second wave of the wash produced by the boat towing. The motor of the disabled boat is left in the water to provide steerage should the front boat have to stop suddenly for any reason.

9.29 TURNING

While towing, the towing boat should keep to low speed in order to avoid straining the tow line. When turning, allowance must be made for the tow as it may tend to cut across the arc of the turn and could foul any object around which a turn is being made. (see Fig 9:4).

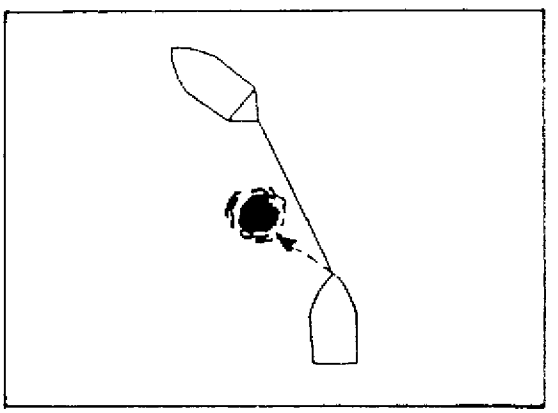

Figure 9:4

9.30 TOWING ALONGSIDE

Where there are numerous obstacles to manoeuvre through it may be necessary to secure the disabled boat alongside the towing boat. This reduces the arc of the turn. It is only suitable for short tows at slow speed and in calm waters. The towed boat should be secured alongside with a headrope, sternrope and a backspring (see Fig 9:5). Fenders will need to be placed between the boats. Lifejackets must not be used as fenders. In an emergency improvised fenders e.g tree branches could be used

Figure 9:5

DOWN DRAUGHT EFFECT OF THE ROTOR

9.54 The down draught from the rotors of a hovering helicopter plays havoc with stationary FRBs. The down draught from the helicopter to the boat is at about 45 degrees and this blast of air pushes the boat along in front of the approaching aircraft. On smaller FRBs it may rotate the boat on the water.

9.55 This results in the relative positions of the helicopter and the FRB remaining constant and hinders a person or cargo being lowered into or retrieved from the FRB (see Fig 9·6)

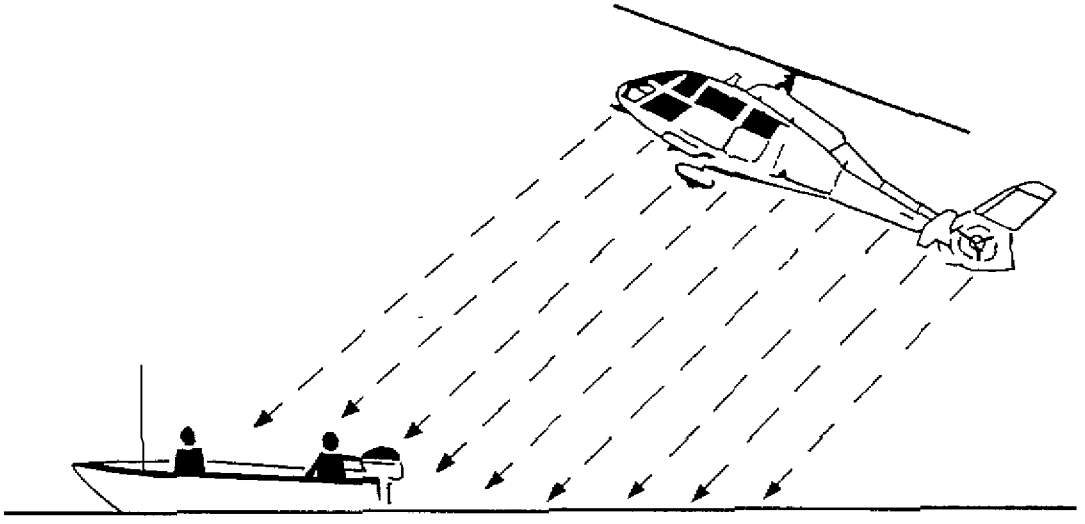

Figure 9.6

9.56 FRBs not underway when approached by hovering helicopters will be pushed ahead and in circles by the down blast making it very difficult for the helicopter to hover directly over the boat. To overcome this effect the boat should be travelling at a speed of about 15 knots. As the helicopter approaches the boat, the Coxswain can hold the boat steady and the helicopter can then hover over the boat, and match its forward speed. However, as the Pilot cannot see the boat because it is directly below him, it is very difficult for him to hold station relative to the boat. The pilot is dependant on directions he receives from the helicopter crewman and the ability of the Coxswain to hold a constant course and speed.

9.57 The winch line may be dropped into the FRB by this method and a person, or stretcher and patient removed. This method requires a high degree of skill and practice in order to be carried out safely and effectively.

9.58 When winching a stretcher from a FRB a guy line needs to be attached to the foot end of the stretcher to prevent it spinning in the rotor wash causing further injury to the casualty, damage to the helicopter or a broken winch cable.

9.59 A fast and effective method of winching into or out of a FRB is as follows:

9.31 CASTING OFF

The sequence when letting go of a towline will depend on the situation. You must ensure that the tow line does not foul the propeller or become tangled in any obstruction

HANDLING ANIMALS

9.32 ANIMALS ON BOARD

Small animals can be carried in the boat providing this does not jeopardise the safety of the passengers. This decision is at the coxswain's discretion.

9.33 TOWING ANIMALS

Nearly all animals can swim. Halter lines around their necks will assist in guiding them to safety. The halter should be of sufficient length to ensure some freedom, while at the same time keeping the animal clear of the propeller. When towing animals the tow rope should be held in the hand and not attached to the towing bridle, to enable the line to be released quickly if the need arises. If necessary a number of turns may be taken around a cleat but the line must remain hand held. Care should be taken when towing any animal that it does not panic and try to board the boat.

9.34 MOVING CATTLE/HORSES

Moving cattle/horses can be towed on a halter. Another method is for a halter to be placed on the head of the animal and the animal brought alongside the boat, the rope wrapped around the bow cleat and hand held. With fingers placed in the nostrils of the animal, the head is assisted upwards and the nose is kept out of the water. Two beasts at once can be moved in this way. If one animal only, it is best to tow it behind the boat. There are some steering problems with only one animal on one side.

9.35 MOVING SHEEP/GOATS

Large numbers of sheep/goats can be moved quickly and easily.

The following procedures apply:

a. If possible, yard them near reasonably deep water. This will cut down considerably on manhandling.

b. Place them sitting upright as for shearing, in the stern of the boat and across it in a row.

c. The next row is placed between the legs of the first row, also sitting upright, and so on.

d. When the boat is full, the Crewman holds the oar across the last row and the boat gets under way.

e. Rapid progress can be made over long distances.

f Be careful when unloading. There is a tendency for them to jump out the river side of the boat rather than the land side.

REMOVAL OF PERSONS FROM FLOOD-THREATENED AREAS

9.36 Most states have no legal means of compelling persons to leave flood-threatened areas. However, crews, by using tact, can often accomplish an evacuation. The persons concerned are often worried and look to crews for guidance

9.37 When evacuating persons, remember only limited personal possessions should be taken by those evacuated or rescued by boat. Depending upon circumstances, this may range from essential medical requirements, to a small overnight bag

9.38 Never overload the boat. and never leave one person by themselves It would be preferable to undertake two trips than risk on overloaded boat. All necessary details of evacuees must be recorded by the crew.

LOOTING

9.39 In past emergencies, homes and buildings, isolated by flood waters, have been looted by persons using boats. Whenever possible, crews should immediately report any suspicious activities to the relevant authorities.

RECOVERY OF DISABLED VESSELS

9.40 FRB crews will be required to recover various types of craft. Each type should be recovered with minimal risk to life and without causing damage to the FRB or further damage to the vessel being recovered.

9.41 **SAILING VESSELS**

a. On inland and estuarine waters it will be rare to encounter yachts longer than 7m. Most of the larger type of yacht will be of the trailer sailer type. These vessels, should they get into trouble, present problems for the FRB crews. Some of these include:

(1) The physical size of the vessel;

(2) The number of people carried on the vessel;

(3) The amount of debris that can be floating and the ropes and lines encountered, which create hazards for rescue craft;

(4) Possible fuel spillage;

(5) Area in which difficulty has occurred e.g. reef, sandbank etc.

(6) The crew members in cold conditions, at times, may be incapable of helping themselves due to exposure and exertion in trying to right their vessel after a capsize.

b. The following points should be kept in mind by FRB crews

(1) Keep clear of floating lines and hazards.

(2) If a yacht is aground, it is unlikely that you will be able to tow it clear, and if the keel or centreboard is raised it is unlikely that there is enough water for the FRB either.

(3) Should a vessel have capsized and persons are missing, never dive under the hull to see if anyone is trapped. Tap the hull and if persons are alive inside, they may tap back.

(4) Ascertain from survivors the number of persons who were on board and where they were last seen.

(5) Ascertain whether or not they were wearing life jackets. If the yacht has capsized it may be that they have been unable to get out and have drowned.

(6) Once the crew have been accounted for it will be up to the skipper, if he is able, and the FRB crew to decide whether or not to right the craft and try and salvage it.

(7) If left floating the wreck must be secured and marked until further action can be taken.

9.42 **POWER CRAFT**

Most of the points applicable to sailing vessels apply to power craft with the exception that the lines and debris are usually less and there are no sails to worry about. Again, with a capsize of the larger type of power craft it is not good policy to swim under the hull. The most likely sources of trouble with a power boat are mechanical failure or fire

a. **Mechanical Failure** - This usually requires straight forward seamanship from the rescue craft when assisting and then a tow to the nearest port.

b. **Fire** - This usually means that rescue of survivors may have to be effected from a hulk. Fire on petrol driven power boats usually follows an explosion. As LP Gas or fuel for the stove may also be carried, this explosion could be quite powerful. Therefore burns are likely along with shock for the survivors.

COMMONSENSE

9.43 Crews must take time to think and plan even if the operation, at first glance, appears to be a simple one. Take care, plan, act confidently, and use commonsense. These actions, along with theoretical knowledge and experience, will ensure that FRB crew are able to handle any emergency to which they are called.

OPERATIONS IN POOR VISIBILITY

9.44 Reduced visibility may be brought about by fog, heavy rain, smoke, haze, snow, etc. These call for special skills in seamanship, but the general rules and procedures are applicable whatever the situation. Fog is the most common and severe.

9.45 Seamanship in fog is primarily:

a. avoiding collisions with other craft or obstructions of any kind; and/or

b. navigation and position determination.

9.46 Of greatest importance in fog or conditions of reduced visibility, is to see and be seen and to hear and be heard. Coxswains must take every possible action to see or otherwise detect other craft or hazards to navigation. Also they must take all steps to ensure that the boat is detected by others

9.47 The key to detection by sight and sound is that it is early enough to allow proper corrective action. Rules of the road require a reduction of speed in poor visibility. Rules require that all vessels go at a safe speed having a careful regard to the existing circumstances and conditions.

9.48 Admiralty Court decisions have established that safe speed is:

'that from which a vessel can come to a complete stop in one half ($\frac{1}{2}$) of the existing range of visibility'.

9 49 The correct situation is to be able to stop in time rather than to have to take violent evasive action. Rules require that a power driven vessel hearing the fog signal of another vessel forward of the beam and not knowing the position of the other vessel, shall insofar as circumstances permit, reduce speed, navigate with caution and stop if necessary until the danger of collision is past.

9.50 It is important that increased lookout activity is taken and the boat should stop if necessary to listen for other craft. When a signal is heard, an effort should be made to identify its source and determine its bearing. Experience in the use of sound signals indicates that they are not reliable. In particular, relative intensity of a sound is not a reliable indication of its distance, or whether the distance is increasing or decreasing. A signal may be totally inaudible in certain areas close to its source. Its apparent direction is not always a correct indication of its actual direction. In poor visibility it may be necessary to stop until the visibility improves. Consideration must be given here to the depth of water, conditions and other traffic.

HELICOPTER OPERATION WITH FLOOD RESCUE BOATS

9.51 Helicopters are now quite common throughout Australia, especially in the vicinity of capital cities. In routine rescue operations the Police or Emergency Service helicopters are the ones most likely to be called to assist in Search and Rescue operations, and these are the ones with which FRB crews will need to be most familiar.

9.52 In disasters/emergencies the aircraft of the Armed Forces may be deployed to support the Civil Community, particularly as a result of floods or cyclones.

9.53 Procedures for the operation of FRBs with helicopters have been developed from operational experience and exercises. These procedures are set out below.

a. Two FRBs proceed in a straight line in line astern formation approximately 3 boat lengths apart at a speed of about 15 knots.

b The helicopter approaches astern the lead boat and positions itself so that the pilot looks straight down at the stern of the front boat at a height of about 10 to 20 metres (see Fig 9:7)

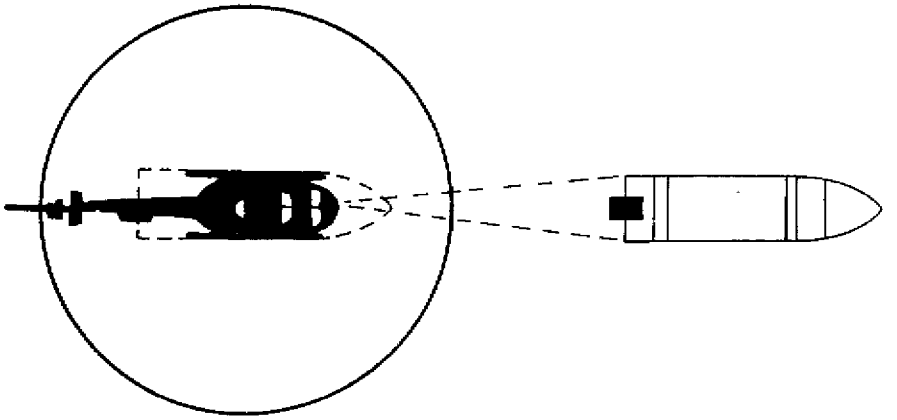

Figure 9.7

c. The helicopter should then be directly above the rear FRB and the crewman can winch directly to or from the rear boat (see Figs 9:8).

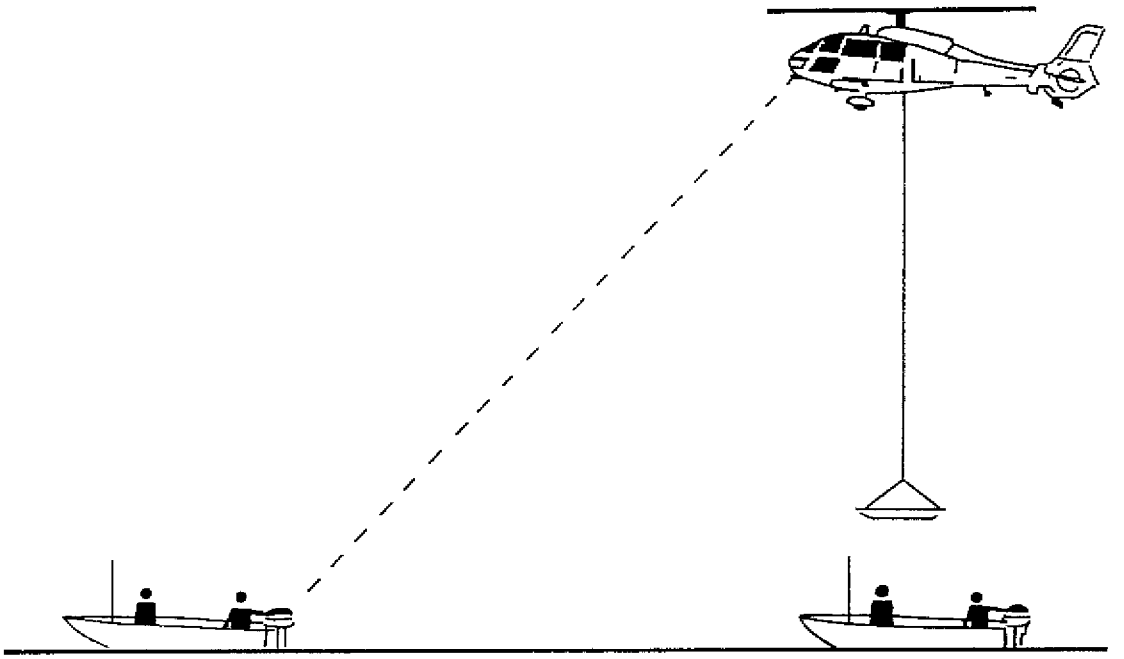

Figure 9:8

9.60 Should a passenger from an FRB need to be winched into a helicopter when only one boat is available, two methods may be used:

a The boat may be secured fore and aft by anchors or some other means.

b. The winch cable and sling can be dropped into the water as near the FRB as possible and the person swim to the sling. For this to occur, the passenger must not be injured, and the crew will need to explain the winching procedure to the passenger. This method is dependant on calm conditions with little or no current.

WIND

9.61 All aircraft are affected by wind. Where possible the FRBs should be moving into wind to allow the helicopter to approach into wind. Excessive cross wind or down wind approaches may result in the pilot aborting the mission.

FAMILIARISATION TRAINING

9.62 All FRB crew that are likely to have to work with helicopters should undergo appropriate familiarisation training.

9.63 For further general detail on working with helicopters refer to the Australian Emergency Manual Land Search.

EMERGENCY DRILLS

FIRE DRILL

1. All FRBs must carry fire extinguishers. The extinguishers must be positioned where they can be easily stowed, seen, and picked up rapidly if necessary. They must never be stowed where stores or other equipment can be placed on them.

2. The extinguisher must be placed away from fire sources e.g. fuel tanks or motors. If these catch fire it may not be possible to reach the extinguisher. Smoking is not permitted in FRBs.

3. In the event of fire, the following procedures must be carried out:

   a. Cut off fuel and isolate tanks, if necessary and possible, throw tanks overboard.

   b. Fight the fire.

   c. If possible steer the boat to keep the fire downwind. This may prevent the flames being fanned or the flames blowing back onto the boat.

   d. If possible clear the area of gear or equipment.

   e. If all else fails, capsize the boat.

ABANDONING SHIP

4. Ensure everyone is wearing a personal floatation device and check that they are being worn correctly:

   a. Send a radio signal if possible. Give call sign, location, nature of problem, number of persons involved and what action you are taking.

   b. Do not jump into the water. You don't know what is below. Ease all persons into the water.

CAPSIZE DRILL

5. If a boat has capsized, survivors should ensure no one is trapped inside the hull and all are accounted for. Recover all floating equipment and take action if possible to reduce equipment loss. The crew and passengers should stay with the boat as the boat will provide extra buoyancy, it is more easily spotted and will provide some protection from obstacles.

6. All persons from a capsized or swamped boat must ensure they are positioned upstream of the hull to provide some protection from debris and to avoid bodies being crushed between the boat and fixed object. eg trees, poles, rocks etc.

7. When a capsize occurs:

   a. Stay with the boat.

b. Use it to aid buoyancy and for protection.

c. If in flood water where there are trees, obstacles and fences, position the boat between you and the obstacle otherwise you may be trapped.

d. Right the boat if possible, and reboard. It will be full of water but will still float and provide some all round protection. Once inside, bail and splash the water out and try to paddle to a calm spot.

e. Remember that the safety of crew and passengers is more important than recovering the boat. If it is unsafe to remain with the boat the coxswain should determine appropriate action.

BOAT RIGHTING

8. It is possible to right the boat by rolling and bailing. To do this:

a each crew member attaches a rope to the upwind or downstream gunwhale, depending on conditions and passes them over to the opposite side of the hull;

b crew members then haul on the ropes as they walk up the hull;

c this will create a rolling motion in the hull causing it to come upright; but

d when the boat rolls care should be taken to avoid injury to the crew.

9. Usually when the boat it upright is will still be swamped with the crew still in the water. The next steps are:

a. one crew member moves to the bow and one to the stern;

b. the bow crewman holds the bow to stabilise the boat;

c. the stern crewman climbs carefully into the boat and bails;

d when the water level is sufficiently low the second crew member may enter the boat; and

e. both crew members continue bailing until the boat is emptied.

10. **MAN OVERBOARD DRILL**

a. Shout 'man overboard' and point to the person, attracting the coxswains attention. Refrain from excessive movement. If possible throw the person a buoyancy aid.

b. The coxswain is to swing the stern away from the person to prevent driving over them. The propeller presents the greatest danger to a person in the water. In brief, if a person falls over the port side, turn the boat to port.

c. The observer is to maintain a watch on the person in the water to direct the coxswain to them. At night a light should be kept on the person

d The coxswain will steer in a circle and approach the person from downstream (against the current).

e. The crew carry out normal recovery drills of the person in the water.

f. The coxswain should not stop the motor in fast running water.

g When close to the person and if safety permits. the motor should be placed in neutral or stopped.

h. If unable to get downstream of the person, an approach may be made from upstream and reverse gear used to match the persons speed through the water while recovery is effected

i. At all times during a recovery great care must be taken to avoid hitting the person and it must be ensured the person is not moved near the rotating propeller.

11. A person who has gone overboard and finds themself caught in a strong current should attempt to float on their back with their feet downstream as this will assist in avoiding injury.

FLOOD RESCUE BOAT EMERGENCY PROCEDURES

12. During FRB operations, at times, emergencies of various kinds will arise; be they motor breakdown, loss of motor overboard, illness or injury to a crew member, or an accident of one kind or another. Experience has shown that set rules and procedures will reduce confusion in these circumstances.

ACCIDENT/EMERGENCY

13. Should an accident or an emergency occur during operations involving FRBs the following procedures are recommended:

a. The FRB concerned makes an immediate radio call and informs HQ of the following:

(1) The problem (eg an accident).

(2) Seriousness of the problem (ie major or minor).

(3) What the crew are doing about it.

(4) The location of the incident.

(5) Other boats in the vicinity.

RADIO FAILURE

14. Should the FRB in distress lose radio contact as a result of the emergency, or have a radio failure , the nearest FRB to the boat in trouble will contact the HQ. It will then become the communications link with the boat in distress and will stay until its services are no longer required.

EMERGENCY/DISTRESS SIGNALS

1. INTRODUCTION

Any FRB which is likely to operate with aircraft should carry an appropriate radio. When radio facilities are incompatible or otherwise unavailable aircraft should acknowledge an internationally recognised set of visual signals.

2. AIR TO GROUND SIGNAL CODE

Serial	Aircraft Action	Meaning to Ground Party
1	Aircraft orbits ground party at low level changing engine noise.	I require your attention.
2	Aircraft flies over the ground party at low level and sets off in a particular direction.	Follow the aircraft in same direction.
3	Aircraft rocks wings and orbits.	Investigate object position underneath aircraft orbit.
4	Aircraft drops smoke on a particular location.	Investigate object position adjacent t smoke.
5.	Aircraft drops message canister	Retrieve and read instructions contained in canister.

3. AUSTRALIAN AREA DISTRESS SIGNAL

The 'V' Sheet - This is a nationally recognised distress signal and should be treated as such. In the event of a boat being swamped or disabled, the V sheet may be displayed by tying it to the deck in order to be spotted from the air. or tying it vertically between two oars or poles to be spotted from the shore

4. GROUND TO AIR SIGNAL CODE FOR USE DURING EMERGENCY OPERATION

DIRECTIONS FOR USE:

a. Lay out these symbols using pieces of wood, stones. or any other available material.

b. Provide as big a colour contrast as possible between the material used for the symbols and the background against which they are exposed.

c. Symbols should be at least 2.5m (approx, 8")in length or larger if possible. Care should be taken to lay out symbols exactly as depicted to avoid confusion with other symbols.

d. Signals must be obliterated or replaced by Signal ALL WELL after request has been met to avoid waste and duplication of effort.

e. It is of the utmost importance that these symbols be used only during times of actual emergency. As soon as the service requested by the use of these symbols has been fulfilled **the symbol should be removed or obliterated immediately.**

GROUND - AIR VISUAL SIGNAL CODE	
Message	Code Symbol
REQUIRE DOCTOR - SERIOUS INJURIES	I
REQUIRE MEDICAL SUPPLIES	II
REQUIRE EVACUATION	III
UNABLE TO PROCEED	X
REQUIRE FOOD AND WATER	F
REQUIRE MAP AND COMPASS	^
REQUIRE SIGNAL LAMP WITH BATTERY AND RADIO	I
INDICATE DIRECTION TO PROCEED	K
AM PROCEEDING IN THIS DIRECTION	I
PROBABLY SAFE TO LAND HERE	△
REQUIRE FUEL AND OIL	L
ALL WELL	L L
NO	N
YES	Y
NOT UNDERSTOOD	L
IF IN DOUBT USE INTERNATIONAL SYMBOL	SOS

Figure 9B:1

5. USE OF THE PRO-WORDS 'MAYDAY' AND 'PAN'

A 'MAYDAY' situation is one in which you are in grave and imminent danger and you require immediate assistance; eg you are sinking. In other words immediate assistance is required to provide safety of life. A 'PAN' situation is one involving the safety of a boat or person but there is no immediate danger; eg. you require medical advice or assistance but not of a 'life or death' nature, or you have run out of fuel and are drifting, but not in any immediate danger.

CHAPTER TEN

CASUALTY HANDLING AND RECOVERY OPERATIONS

ALL FRB CREW MUST HAVE ACCREDITATION IN FIRST AID

CASUALTY HANDLING IN FLOOD RESCUE BOATS

10.01 When it is necessary for crews to go ashore to conduct rescue and transport of injured, the following points must be observed:

a Secure the boat correctly

b. Once ashore remove life jackets to avoid snagging.

c. First Aid equipment (kits, blankets, stretchers, lashings etc) should be taken from the boat to save time.

d If on call-out, the operation is identified as a casualty evacuation, take an ambulance officer if possible.

e If a HF radio is to be used ashore and the terrain is bushy or rough, turn it off and remove the aerial to prevent damage whilst travelling.

10.02 Crews may encounter various types of casualties. If there are doubts as to the severity of injuries or illnesses, or the treatment required, professional advice should be requested. If practicable, an ambulance officer, doctor or nursing sister should be requested to give instructions.

TRANSPORT OF THE INJURED

10.03 Stretcher cases are to be blanketed and lashed to the stretcher, if necessary, and transported to the FRB. It must be stressed that, before a stretcher is loaded into a FRB, the lashing should be removed from the patient and a life jacket fitted, having regard to injuries.

10.04 Patient's are not to be lashed to the stretcher again until they have been removed from the boat The stretcher is lashed into the boat. A person qualified in First Aid is to attend to patient's and reassure them during the trip.

RECOVERING PERSONS FROM WATER

10.05 The procedure for recovering a person or body from the water will be governed by a number of factors. These include:

a current;

b. weather. in particular, wind;

c. calm or rough water; and

d. whether or not the victim is capable of assisting in the rescue.

10.06 Whatever the situation, it is essential that the Coxswain should carefully plan the operation. A hasty, unsuccessful reaction can cause loss of time, further endangering the life of the victim.

10.07 The Coxswain must exercise firm control during the operation, especially if there are persons other than crew members in the boat. It is essential that silence be maintained so that ;

a. the Coxswains orders may be heard; and

b. possible noises from a victim may be pinpointed

10.08 Wherever possible, a person should be recovered from the water over the side or stern If the victim must be taken aboard over the side of the boat, special care must be taken to maintain the balance of the boat by counterbalancing as far as possible. When recovery is over the stern, the motor **must** be stopped not merely out of gear.

10.09 **STILL WATER**

The procedure for the recovery of a person from still water is:

a. Attract attention of the Coxswain or crew by shouting 'person in water'.

b. If the person is capable of self-assistance, a buoy or a life jacket (at night a waterproof torch should be attached) should be attached to a line and thrown near them. Do not throw items to the person unless it is certain that they can reach them.

c. The Crewman must keep the person in sight. At night, a light is to be kept on the person

d. The Coxswain must:

(1) Slow down.

(2) Plan the pickup.

(3) Stem the current and/or approach into wind.

(4) Approach as slow as possible.

e. If the pickup is missed, the Coxswain should go around in a large circle, rather that risk failing again with a short cut approach. It must be emphasised that the procedure outlined above is for still water and ideal conditions.

10.10 **FAST FLOWING WATER**

Help the person in the water to hold on to the side of the boat well away from the propeller. The boat should then be turned into the current and the person taken over the side of the boat. Some weight should be placed on the opposite side of the boat for balance to prevent capsize.

10.11 **DANGEROUS CONDITIONS**

A recovery in fast flowing, dangerous flood water requires an approach into the current with the Coxswain stemming the current. Manoeuvre so that the person in the water drifts down the side of the boat. They must be grabbed before they get near the propeller and secured so that they are kept away from it.

10.12 The boat is then steered towards a safer area, at the same time sheltering and protecting the person in the water by keeping the hull between them and any debris floating down.

10.13 Care must be taken not to broach the boat thereby increasing the risk. The Coxswain must head the boat across the current.

10.14 No attempt should be made to take the person over the bow. Not only could they receive injury from floating debris if the boat is stemming the current, but the boat could pass over the top of them if an attempt was made to retrieve them while moving with the current.

RECOVERY OF INJURED PERSONS

10.15 The pick up operation is as previously described, however, if persons in the water are unable to help due to injuries, the crew must recover them having regard to their injuries. Two methods can be safely used to recover people that cannot assist themselves from the water

10.16 **BASKET STRETCHERS**

The procedure is as follows:

a. Position the boat alongside the person.

b. Attach two life jackets to the foot end of the stretcher.

c Position the stretcher underneath the person.

d. Float the foot end of the stretcher until the stretcher is at right angles to the boat and the head end is closest to the boat.

e. Grasp the head end of the stretcher and lift it on to the gunwale.

f Slide the stretcher over the gunwale and into the boat.

10.17 **RECOVERY BOARD**

A device that will assist greatly in the recovery of a person from the water is a recovery board. A recovery board can be made using 20mm marine ply or similar material and consists of:

a. a board 1300mm x 350mm to which is bolted, at about half the length of the board;

b. a pivot made of 50mm water pipe about 400mm long, and

c. rope handles are attached through holes drilled at the head and sides of the board (see Fig 10·1).

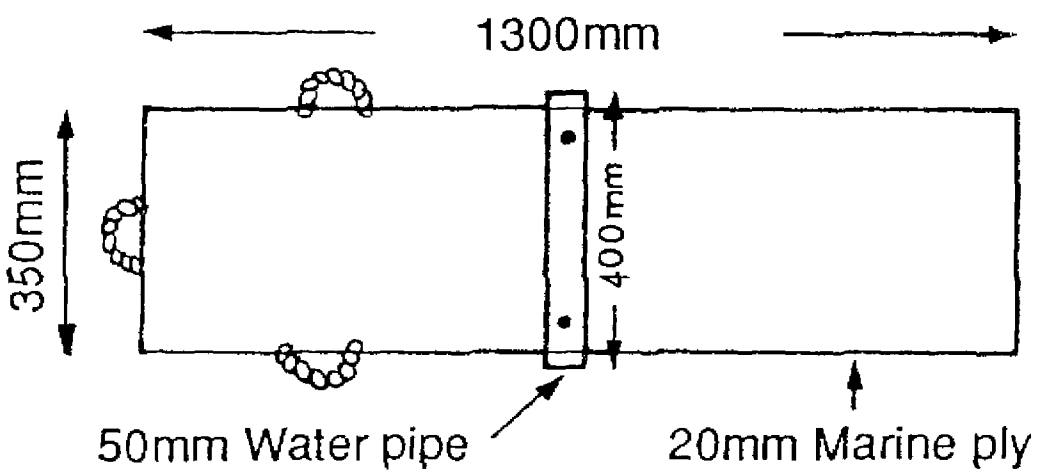

Figure 10.1

10.18 **RECOVERY BOARD USE**

In order to use a recovery board the following actions are taken:

a the board is placed vertically outboard of the gunwale with the pivot resting on the gunwale;

b. the casualty's back is positioned against the board;

c two crew members grasp the victim under the armpits and the victim is bobbed and pulled up the board;

d. simultaneously, the board is pivoted to the horizontal position; and

e. the board, supporting the victim, is then lifted inboard.

If available, additional crew members may assist in supporting the board during recovery

10.19 If suitable equipment is not available it may be necessary, depending on injuries, to tow the person to shore or shallow water to undertake recovery. If this is not possible then casualties must be recovered the best way possible with regard to injuries. In these situations the boat is trimmed so that the gunwale is closer to the water line so as to assist with the recovery of the casualty.

BODY RECOVERY

10.20 Where there is any possibility that a body may have to be recovered then a body bag or other suitable material should be carried. Further detail on body recovery is given in Chapter Eleven.