SURF LIFE SAVING®

Rescue Water Craft

Training Manual


V.3 2017

SLSNZ gratefully acknowledges the contribution of SLSNR and the RNLI for their content and images within this manual.
SLSNZ would also like to acknowledge and thank all those involved in the updating and creation of this manual.

SURF LIFE SAVING

START

A Rescue Water Craft (RWC) commonly known as a Personal Water Craft (PWC) or Jet Ski is specially outfitted for surf interaction and operated by at least one qualified Surf Lifeguard.

The main use of the RWC is for Support Services, this is defined as the provision of SLS services over and above the club patrolling system. Support Services major thrust is to provide services at remote/inaccessible locations and to supplement Club patrols as applicable.

As the operator of a Rescue Water Craft you are responsible for the safety of your crew, the public and yourself. It is important that you understand the inherent risks in operating this type of craft in the surf environment, and the requirement for you to identify hazards and assess the associated risks, then apply necessary controls to manage these. You need to refer to the SLSNZ Health and Safety Manual (October 2017 – V1) to fully understand your Health and Safety responsibilities and obligations.

You need to be mindful that the speed, noise and general presence of the powered craft and vehicles can create issues in a beach environment so always be respectful of right of the public to enjoy their time at the beach and their expectations that the vehicles or craft will be operated safely and reasonably.

Remember, that as Lifeguards we should promote safety at every opportunity and we have a duty to our colleagues, the public and the SLSNZ to act in a responsible way.

OPERATIONAL USE

Uses of the RWC

RWCs are used by SLSNZ lifeguards in their day-to- day duties. They can improve lifeguard response and capabilities during an emergency.

The RWC is used in a number of ways including:

- Rapid response to isolated areas and/or in support of a patrol incident.
- Effective and safe use in large surf.
- Effective around rocks and in tight operating spaces.
- Patrolling and shepherding
- Rescue

Advantages of the RWC

- Speed.
- Manoeuvrability around rocks and jetties.
- Effectiveness in large surf
- Can be operated by one Surf Lifeguard
- Can be righted and restarted after capsize.
- Can be operated in the shallow water of harbours, estuaries and inlets.

Limitations of the RWC

- Its weight makes it difficult to launch and retrieve.
- Its speed and weight pose a risk to other water users.
- Significant training, supervision and adherence to the rules are required.
- Two-Four patient capability at most (depending on craft and sled).

Recognised types of RWC

The design and construction of the RWC must be approved by SLSNZ.

SLSNZ Policy for use of a RWC

- The use of RWC for all Surf Life Saving activity must be approved by Surf Life Saving New Zealand (SLSNZ).
- It is a requirement that all RWC are owned, operated and administered under the auspices of SLSNZ. A Regional Board of Directors and/or a Professional Regional Employee.
- SLSNZ will only consider requests of approval from a Region.
- RWC may not be owned, operated or administered by Surf Life Saving Clubs for any Surf Life Saving activity in New Zealand.
- The use of RWC for all Surf Life Saving activity is limited to support services.

Public Image

Powered rescue craft are ‘high profile’ and are bigger and quicker than most craft in the water. A near miss for a board rider, bodysurfer or anyone in the water by a powered rescue craft can be a traumatic experience. The RWC should not be used for reasons other than its intended uses, or in a way that may be regarded as inappropriate.

RWCs must never be operated aggressively or with excessive speed. The speed, noise, power and smell of the RWC can be annoying and frightening. Keep the RWC speed to the minimum needed to complete the task. Generally, there should be no need to travel faster than 5 knots while patrolling.

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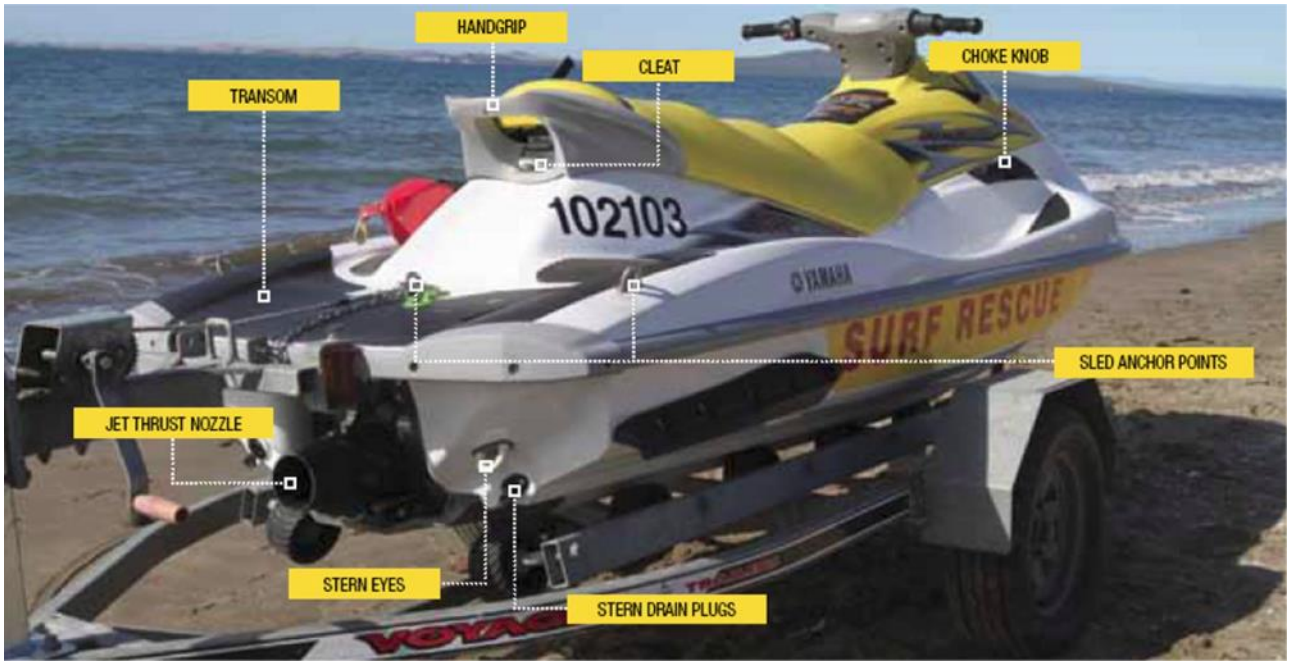
A - Equipment

Design and Features of the RWC



Design and Features of the Rescue Sled

The rescue sled must be checked regularly to ensure that towropes are not damaged or fraying and that there are no sharp areas. The transom (sled fixing) clips should be gate locking, stainless steel carbineer and free from rust. The sled base should be inspected for cracks and tears before each use.

The sled should be securely attached to the RWC by three points of contact

The middle clip attaches to the midline tow point on the RWC – behind the seat. Two side connections should be under tension but not weight bearing – they are solely intended to provide stability of the sled in turns.

Once attached the sled should then be resting on the transom of the RWC – not hard up against the rear of the seat.

Personal Protective Equipment (PPE)

PPE must be worn correctly while preparing to launch and throughout operations.

Essential PPE

Essential PPE is to be worn at all times whilst afloat.

Operator

- Wetsuit (Minimum wetsuit shorts)
- Lifeguard Rash vest or SLSNZ branded wetsuit
- Helmet
- PFD
- VHF Radio
- Fin Belt (With Personal fins)

Crew

- Wetsuit (Minimum short arm/short leg)
- Lifeguard Rash vest or SLSNZ branded wetsuit
- Helmet
- PFD
- Fin Belt (With Personal fins)

Optional PPE

- Spray Jacket
- Full Body Wetsuit

Minimum equipment required for operation

The following items must be used at all times when operating a RWC:

- Rescue sled
- Rescue tube (secured to the RWC)
- Spare engine shut-off cord (lanyard)
- Fins
- Googles or Dive Mask
- Knife
- First aid personal protection (gloves, face shield)

Recommended

- Flares
- EPIRB (if operating off shore)
- First aid kit (Bag valve mask, gloves, oropharyngeal airway-OPA)

Note: Please refer to regional operation procedure

B - Fuel

Safety around Fuel

Fuelling must be conducted following the procedures outlined below. There may also be additional procedures to be followed in your regional operating procedures. No fuel premixing is necessary, except during the engine break-in period. Simply pour gasoline into the fuel tank and oil into the oil tank.

Fuelling procedures

Fuelling should always take place at the facility where the fuel is stored.

NOTE: Under certain circumstances, re-fuelling will need to take place on the beach. In such cases, where practical, the RWC must be removed from the sand and positioned on either a grass or concrete/tarmac surface.

- Always wear appropriate PPE in order to protect your eyes, face and hands from any fuel spills.
- Always have a dry powder/AFFF fire extinguisher, fuel spill bag to hand during fuelling.
- A minimum of two people is required for each fuelling operation.
- Ensure all cigarettes and naked flames are safely extinguished. Choose a suitable flat site with adequate ventilation. Ensure that passers-by do not come close to the fuelling area.
- Ensure that the RWC is securely on the trailer and is level. Open fuel cap and carefully transfer fuel using an appropriate spout and funnel with filter. Replace cap securely, wipe up any spills and check for leaks.
- If you should swallow, inhale or get petrol in your eyes, seek immediate medical attention.
- If any petrol spills on your skin or clothing, immediately wash the affected area with soap and water and change your clothes.

Fuel Type

Recommended gasoline:
RWC should use petrol – See manufactures guidelines

Filling the oil tank

Refer to manufactures guidelines

WARNING

- Do not add gasoline to the oil tank. Fire or explosion could result.
- Oil in the bilge is a serious fire hazard. Wipe up any spilled oil immediately.

CAUTION

Do not allow the oil tank to become completely empty. If the oil tank becomes empty, the oil pump must be bled to ensure proper oil flow, otherwise engine damage could result. If necessary, have a Yamaha dealer bleed the oil pump.

1. Remove the seat.
2. Remove the oil tank filler cap, and then very slowly add engine oil to the oil tank. Stop filling when the oil level just reaches the top of the oil tank.
3. Install the oil tank filler cap.

C - Communication

Signals

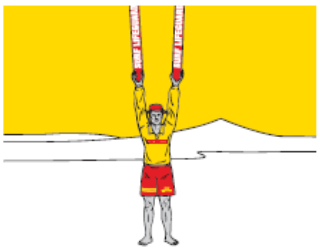
Signals are a common method of communicating between lifeguards and shore. Radio communications are not always available, therefore operator and crew must know and understand these signals.
When signaling to the RWC the following should be taken into account:

A location should be used on the shore which will ensure that the signals can be clearly seen, i.e. patrol tower, higher ground or sand dunes.
Signal communication is not limited to the use of rescue tubes. Alternatives include arms, paddles, flags, or signalling discs. These methods do, however, have their advantages and disadvantages. For example, when a cross wind is blowing, signal flags can be easily seen, but when the wind is blowing onshore, flags are difficult to use

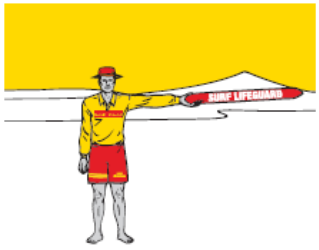
Signalling From Land to Sea

To Attract Attention between Boat and Shore
Two rescue tubes waved to and fro, crossing above the head.

Return to Shore
One rescue tube held above the head.



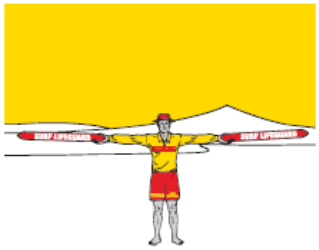
Proceed Further out to Sea
Two rescue tubes held above the head.



Proceed in the direction indicated
One rescue tube held at arm's length parallel to the ground and pointed in the required direction.

Pick up Swimmers.
One rescue tube waved in a circular manner around and above the head and a second held parallel to the water's edge and horizontal to the ground.

Message Understood-Clear.
One rescue tube held stationary above the head and cut away quickly.



Remain stationary
Two rescue tubes held at arms length parallel to the ground.

Ok Signal
Internationally recognised diver's signal. One arm is curled round the top of the head to form an "O".

D - Maritime Regulations

Operator Responsibility

The operator is responsible for the safe operation of the RWC and the safety of the crew and must abide by all Maritime rules and regulations. Inshore coastal waters are used by many recreational and commercial operators, all of whom operate to statutory Maritime regulations. If you have an accident, ignorance of the law is not accepted as an excuse. Heavy fines are possible for breaches of Maritime rules.

The RWC must not enter the patrolled flag area while in use

Code of conduct

Accepting the fact that at times, the RWC has to be driven with assertiveness in the surf zone, the operator must not allow this to replace safety and consideration towards others. Respecting the right of swimmers and the public to enjoy their time on the beach is paramount.

Profile

The RWC is regarded as 'high profile' and will therefore draw attention, the operator and /or crew have a responsibility to the community and Surf Life Saving to act in a considerate and safe manner at all times.

Understand your limitations

Respect and understand the limitations of operator and crewperson in varying conditions and understand your role in assessing risk. The operator has a duty of care to the crewperson, patient/s and RWC. It is an offence to maintain or operate a boat (or any other maritime product) in a way that causes any unnecessary risk to another person or property.

Operational details

Operators must be familiar with the application of the following SLS documents:

- RWC Operation Log – record details of all usage.
- Local Club Patrol Operation Manual (POM) – area maps, schematic plan of beach, specific dangers and hazards, local knowledge.
- Patrol Captains Report Form – weather and surf conditions.
- Incident Report Form
- Patient Report Form

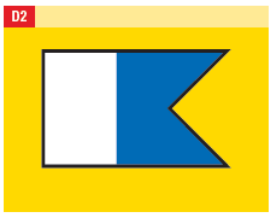
Rules of the road (on the water)

It is compulsory for the Operator and Crewperson to wear a NZ Standards approved (or equivalent) personal flotation device and helmet at all times when the RWC is on the water.

Speed

The maximum speed is 5 knots (9km/h) in these circumstances:

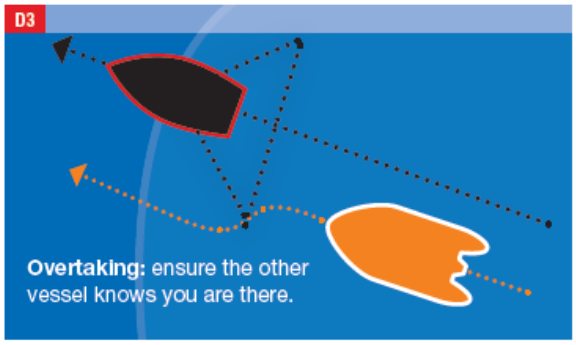
- Within 200m of the shore **D1**
- Within 200m of a boat displaying a divers flag **D2**
- Within 50m of any other boat or person in the water



When two boats meet overtaking

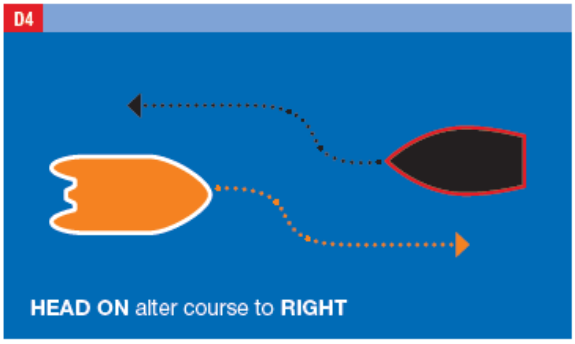
You are overtaking if you are approaching another boat anywhere in a 135 degree sector at its stern.

When overtaking you must keep clear of the vessel you are overtaking. You continue to be the give-way vessel until past and well clear. If overtaken, maintain course and speed. **D3**



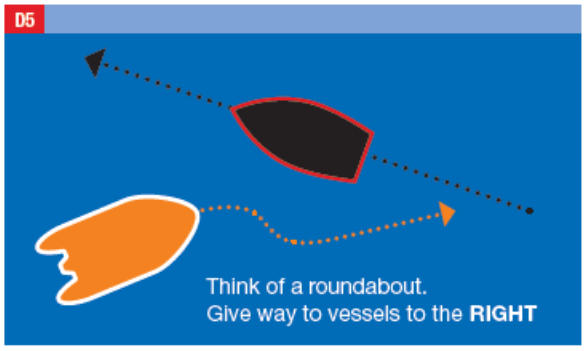
Head on

Power vessels approaching head-on should alter course to starboard, passing down each other's port side. **D4**



Crossing

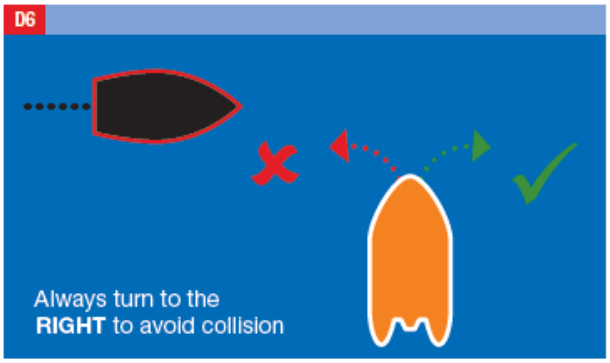
If two power vessels are crossing, the vessel with the other on its starboard side should steer clear. Think of a roundabout. Give way on the right. **D5**



Collision avoidance

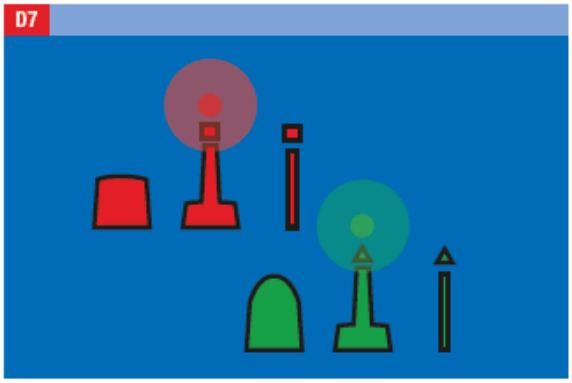
Always turn to the RIGHT to avoid collision. **D6**

When a powered vessel meets a boat being rowed or under sail, the power boat gives way (unless the sail boat is overtaking).



Buoys and beacons in and around harbours

- These are the road signs on the water.
- Channel markers indicate port (left) and starboard (right) sides of the channels:
- Port mark, a red can shape (at night a red flashing light may be shown). **D7**
- Starboard mark, a green conical shape (at night a green flashing light may be shown).

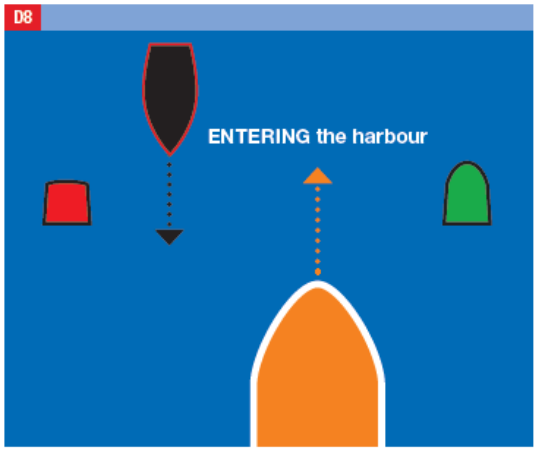


Distress signals

RWC Operators should be able to recognise and respond to common distress signals from vessels on the water such as:

- Orange smoke flare.
- Red flare, hand held or parachute.
- Waving arms to attract attention.
- Continuous sounding of a whistle or similar.
- Radio signal

- "Mayday-Mayday-Mayday" used in a life threatening situation
- "Pan-Pan" used to indicate assistance required.



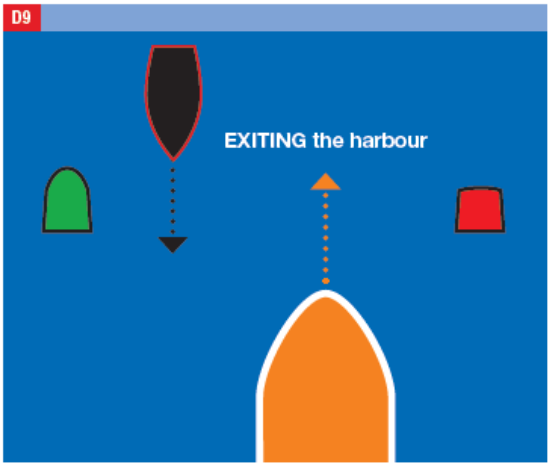
In channels and harbours

All boats must keep to the starboard (right) side of any channel, estuary or river.
Inside a harbour, the RWC must keep out of the way of any ship (large vessel) and should not attempt to pass when the ship is operating in a narrow channel.
You must not create a wake which causes unnecessary danger to other boats or people.

Entering and Exiting Rules

When ENTERING HARBOUR the port (red) lateral mark should be kept on the boat's (left) side. **D8**

When EXITING HARBOUR the port (red) lateral mark should be kept on the boat's (right) side. **D9**



Night time activity

The RWC is limited to operating during daylight hours where visibility is sufficient to see the shoreline and surf zones at all times. The RWC does not comply with regulations concerning lighting and should NOT be utilised for night operations.

E - RWC Setup

Pre-operational checks of the RWC

The following is a guide to preparing the RWC for use. It is important to follow the steps below to ensure longevity of the craft and safety for those operating it. The RWC operator is responsible for all equipment check prior to use. The following pre-operation checklist should be used as a guide to systematically check the RWC.

If any item in the pre-operation check list is not working properly, have it inspected and repaired before operating the RWC, otherwise an accident could occur.

Radio pre-operation check

1. Turn to correct mode (see radio channels list)
2. Check for breakages, cracks loose fittings)
3. Check lead fitting into the radio is secure
4. Perform radio check with base patrol and/or Beach
5. Fit radio into PFD and radio bag if applicable – check radio is secure

Rescue Water Craft pre-operation checks

1. Complete a Patrol Captains Report Form
2. Check the RWC log to see if there are any equipment problems
3. Inspect condition of Hull - Inspect hull, engine bay, ride plate and water inlet grate for damages or loose items
4. Inspect and Secure Bungs, hatch and seat straps
5. Check Fuel and Oil level - Refill, check oil with dipstick
6. Steering System - Checked operation, Jet nozzle moving simultaneously
7. Engine Start/Stop check (Start engine run for 5 seconds then Stop, repeat twice, test kill cord)
8. Check Lanyard Condition - Check for spare in glove compartment
9. Check all Operational Equipment – Rescue Tube, Helmet's, Fins, Googles, Flares, PFD's

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SLSNZ RWC Operations Log

Previous Operation Log on equipment status checked ☐

SURF LIFE SAVING

Type of Service (Tick Box)		Location of Service:		Signed on completion:
Patrol		Equipment Identification		
Callout		RWC #	Rescue Sled #	Date: / /
Event Guarding		1	1	Day: (Circle one)
Training		2	2	S M T W T F S
Other				

Patrol Members	Operator	Crew	Hours
1			
2			
3			
4			
5			
6			

Pre Operational Checks			Post Operational Checks		
Radio Check (Performed Radio check and secured to PFD)	1	2	Radio Storage (Remove radio from PDF, Place radio on charge)	1	2
Inspect condition of Hull (Inspect hull, ride plate and water inlet grate for damages)	1	2	Inspect and remove Bungs (Remove bungs and tilt trailer for best drainage)	1	2
Inspect and Secure Bungs (Tighten)	1	2	Wash Down (Spray RWC, Rescue Sled and Trailer down with fresh water, lighty spray engine bay)	1	2
Check Fuel and Oil level (Refill, check oil with dipstick)	1	2	Hose out intake and Jet nozzle (Hose out sand and any other debris)	1	2
Steering System (Checked operation, Jet nozzle moving simultaneously)	1	2	Flush Engine (Flush out with fresh water Sequence Engine on, Water on 90 Sec, Water off, 5 sec Engine off)	1	2
Engine Start/Stop check (Start engine run for 5 seconds then Stop, repeat twice, test kill cord)	1	2	Inspect condition of Hull (Inspect hull, ride plate and water inlet grate for damages)	1	2
Check Lanyard Condition (Check for spare in glove compartment)	1	2	Check Fuel level (Refill fuel)	1	2
Check all Operational Equipment (Rescue Tube,Helmet's,Fins,Googles,Flares,PDF's)	1	2	Store RWC and PDF (In Shed with all compartments ventilated)	1	2

Equipment status:	RWC #	Sled ID #	CDO/Region Staff advised of problem(s)
Requires attention			
All OK			Reported to: ☐

Equipment requring attention identified as 'Not for use' YES / NO

F - Basic Skills and Technique

Basic mechanics

Directional control is provided by thrust from the water jet combined with the handle bar position. The jet thrust nozzle at the rear of the RWC is controlled by the handlebars. Water sucked in through the intake grate is pressurized by the impeller in the jet pump. As the pressurized water is expelled from the pump through the jet thrust nozzle, it creates thrust to move and steer the RWC

No throttle, no thrust = no steer

Launching and Recovery

A fully laden RWC can be heavy, and should therefore always be handled using correct technique in conjunction with clear communication. At least two people will be required for this process. The RWC needs to be transferred from the trailer to the water before it may be used. If the launch is conducted correctly, the Crew will sustain little of this weight. When recovering the RWC, the craft often needs to be transferred from the sand to the trailer. This requires potentially strenuous manual handling operations.

Always Remember:

- Agree where you intend to move to, before lifting begins
- The Operator will always be responsible for giving commands
- Bend your knees and maintain a straight whilst crouching
- Always lift by using your legs and maintain a straight back as you carry the object
- Look in the direction you intend to move
- Place your feet shoulder-width apart for improved stability and load bearing
- Maintain the load as close to your body as possible at all times.

Removal of RWC from trailer

To remove the RWC from its trailer when not attached to a vehicle follow the steps below. At least two people are required:

Identify a safe launching area away from swimmers, walkers, children, etc – if near a patrolled area ensure you are at least 100m away.

1. Ensure bungs are in and all road fittings are off (light bar, strops)
2. Attach rescue sled and flip it vertically against the RWC
3. Keep safety (quick release) line secure
4. Take off winch connection
5. Ensure all surf lifeguards assisting with the launch are briefed
6. Disable winch handle
7. Push RWC down to the water's edge
8. When the RWC is in water deep enough to launch, minimum 60cm of water, pull the quick release safety line and lift the trailer

9. One surf lifeguard should move the RWC, the other should move the trailer up the beach
10. Once off the trailer the RWC should be held stationary until boarding. This is best achieved by standing behind and slightly to side of the RWC, holding the rescue sled (Fig 4)
11. A RWC is very heavy; serious injury could occur as a result of standing shore side (directly behind the RWC)

If taking the RWC off the trailer using an ATV or beach vehicle ensure that the proper care is taken to ensure a safe launch.

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Loading the RWC on to trailer

A minimum of two Surf Lifeguards are needed.

1. Brief all surf lifeguards on loading procedure.
2. Position the RWC out of the wave area, with the bow facing the trailer. Flip the rescue sled vertically onto the RWC and secure or remove completely.
3. Reverse the trailer down the beach.
4. Attach the winch cable to the stern hook.
5. Lift trailer and place skids under RWC stern.
6. Winch the RWC onto the trailer and secure the safety chain or quick release mechanism.
7. Disengage the winch handle.
8. If required, secure RWC with tie-downs.

Operating the RWC

Boarding and starting

The operator should never stand between the shore and the RWC.
As soon as the RWC is clear of the trailer, the operator will ensure that the RWC is facing bow into the conditions. The operator will then secure the lanyard, board and start the RWC.
Prior to starting, the operator should rock the RWC from side-to-side in a bid to remove any sand that has settled in the jet unit.

If there is a crew present, the operator will check they are in position before starting and moving off.

1. Observe the surf for the safest moment to board
2. Board the craft from the side (Fig 1)
3. Fit safety lanyard to right wrist (Fig 2)
4. Rock the RWC from side-to-side in a bid to remove any sand that has settled in the jet unit (Fig 3 & 4)
5. Conduct a visual check to the rear/stern of the craft before starting
6. Assume the correct driving position
7. Start the engine
8. If crewperson is present, order the crewperson to board immediately and proceed out to sea once the crewperson gives the okay
9. Never activate the throttle when someone is standing directly behind the RWC as this can cause serious harm.

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Operator position

The RWC operator will stand in order to obtain the best view. The safest position is to stand with a straight back and legs slightly bent in order to absorb the forces generated by moving through the swell and surf.

The operator should use one or two fingers on the throttle lever (whichever they find most comfortable).
In calm non-challenging conditions the operator can remain seated on the RWC.
A standing position provides greater control and increased manoeuvrability of the RWC in addition to better visibility .The operator should use one or two fingers on the throttle lever.

Driving the RWC

The operator will:

- Apply the principles of risk versus benefit throughout operations
- Position their body to reduce the impact on themselves
- Position their body to complement the performance of the RWC.

Poor positioning can compromise safety and affect the handling of the RWC, reducing the RWC's stability and turning capability. The correct positioning and timely movement of the RWC crew will greatly enhance the RWC's capability.

Basic crewing position

The basic position for a crewperson on the sled is to lie face down on the centre of the sled and grasp the handgrips with arms forward of shoulder level. It is important that the body position is not too far back on the sled as this may cause excessive drag on the RWC.
It is the operator's responsibility to ensure the crewperson is fully briefed on the risks of crewing the RWC.

Note: If traveling beyond surf break or in a non-surf zone, crew can position themselves behind operator on the seat. Always when operating in surf crew must be positioned on rescue sled.

Crewing the RWC

Operators shall ensure adequate induction of the crewman takes place prior to entering the water. This shall cover the correct clothing and PPE, crewman positioning, dangers of the craft and emergency procedures.

Proceeding through surf as a crewperson

It can be dangerous for a crewperson in surf conditions if the correct technique is not used. The following points below should be used as a guide for the crewperson in surf conditions:

- Be prepared to brace against forces from all directions.
- Upon impact with large waves keep your head down as your body may slide forward causing your head to connect with the back of the RWC. (Fig 1)
- When airborne after hitting a wave, tense your abdominals and curl thighs towards your stomach to reduce impact to the groin area.
- The crewman will attempt to anticipate the direction of each turn, and lean into each one.
- The crewman shall always be aware of the dangers of hitting the back of the RWC, and ensure they are positioned so this risk is minimized at all times

1

Basic manoeuvres

Before a trainee operator attempts to drive a RWC out through the surf it is essential that the trainee operator has some experience in still water handling, including launching the RWC, returning to shore and basic manoeuvres such as port (left) and starboard (right) turns, coming alongside an object and picking up an object such as a rescue tube.

Turning/steering

- Large radius turns
- Tight turns
- Figure 0s
- Figure 8s

NOTE: Insufficient throttle can result in slow steering response. No throttle will result in no steering. Excessive throttle during a turn can cause the RWC to spin-out during a turn.

Large radius turns - From the standing operator position, maintain throttle position (power), turn handle bars in the intended direction of turn whilst transferring weight towards the direction of the turn. Large radius turns can be safely done at both low and high speeds (within reason)

Tight turns – When initiating a tight turn, caution must be given to the entry speed. Initiate a tight turn with mid to low speed, maintain power, turn handle bars in the intended direction of turn whilst transferring weight towards the direction of the turn. Once the turn has commenced, apply more power to drive through the turn. A tight turn can be tightened further by applying more power throughout the turn whilst leaning further into it.

Figure 0s and Figure 8's – Weight transfer from one side of the ski to the other, is the key element that must be considered when doing figure O or 8 turns.

Reduce speed prior to turning handle bars, turn handlebars and shift weight towards the direction of the turn, then apply sufficient throttle to complete the turn. Thrust is required to steer the RWC. To turn sharply, apply more thrust.

To stop suddenly a sharp turn can be used by accelerating into the turn and releasing the throttle abruptly. This will cause the RWC to continue to move sideways slowing the craft over a much shorter distance.

Proceeding through surf

Before operating in the surf take time to view the surf conditions from an elevated position on the beach. This will enable you to determine the height and strength of the waves, the intervals between them and the intervals between the sets. Also look for any inshore currents that may exist as this can affect the path the RWC may take; it also may help in determining the most appropriate place to proceed out through the break or possibly a rip, or non-breaking area.

Unbroken waves

When approaching unbroken waves the operator should reduce speed near the bottom of the wave to minimise the likelihood of the RWC becoming airborne as it crests the wave. Injury and damage to the RWC and/or operator and crew can occur if the RWC become excessively airborne.

Broken Waves

When negotiating surf, the operator should consider the crewperson and minimise punching through waves while the crewperson is positioned on the sled.

When approaching a wave, it is important that the RWC carries the correct amount of momentum to overcome the force of the wave. The operator should throttle back just before the RWC reaches the base of the wave so that it rises over the white-water in such a manner that it doesn't become airborne off the top of the wave. Alternatively, the RWC can remain stationary in the surf zone and at the last moment, accelerate towards the approaching wave to generate momentum. A small amount of throttle just prior to connecting with the wave will lift the bow of the RWC resulting in it climbing up and over the wave rather than through it. This can also stabilise the craft throughout the manoeuvre.

In large surf (over 2.5 metres), the Operator should negotiate the wave after it has broken, or position the RWC to go over the wave before it has peaked.

Parallel running – operator

When parallel running it is essential that the correct technique is used. Practice in small surf should be conducted prior to attempting this in large surf. When the RWC is about to come into contact with a parallel wave the operator should:

- Plant feet firmly onto deck
- Adopt a crouch position, still holding steering handle bars.
- Accelerate to ensure just enough speed to pass over the wave.
- Turn into wave on a slight angle.
- Lean body into the wave.
- Be prepared to absorb the shock by landing with legs bent.

Returning to shore

Select a wave to follow and move in behind it. The operator should watch carefully how the wave forms and breaks to judge whether the RWC is capable of holding position behind the wave, particularly with patients aboard.

Once the wave has broken, keep the RWC as close as possible to it, thus giving ample time to beach the RWC before the next wave arrives. Remember to always watch the conditions behind so that, in the event of an abortive attempt, the operator can return the RWC to open sea before committing to another run to shore. The operator should constantly scan the sea to avoid swimmers, surfers, seaweed, fishing lines and other hazards.

Extreme care should be exercised to avoid surfers who may emerge without warning, through the back of a wave.

In certain conditions, it may become necessary to over-run a wave. If this occurs the operator shall:

- Drive the RWC over the wave and down the face, maintaining speed, make sure the bow of the RWC is lifted by transferring your body weight to the rear of the RWC and accelerating. The RWC speed must be more than the wave speed.
- Do not allow the following wave to catch the rear of the RWC as it will result in capsize.

Note: As the RWC approaches the beach, be aware of sand bars.

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Emergency manoeuvres

Collision avoidance

To avoid a collision, the RWC operator will:

- See Hazard
- Throttle off
- Steer
- Throttle on with reserve
- Brace and lean to the inside of the turn.
- Avoid Collision

After avoiding a collision, and when operating with a crew, the operator will immediately check the crew is present and okay.

Punching Manoeuvre

Note: If it is possible to avoid punching a wave then the operator must always attempt to do so.

If the operator does decide to take on a breaking wave the correct technique must be used to minimise injury. When the wave is curling and about to break onto the RWC, the operator should:

- Plant feet firmly onto deck.
- Adopt a crouch position, still holding steering handle bars.
- Keep bodyweight forward.
- The operator should throttle off and accelerate at the last moment into the wave head on with just enough speed to pass through the wave.
- Excessive speed should never be used in this situation, but rather just enough speed to penetrate the wave as it breaks on the RWC.
- Duck head down as the wave passes over.
- At the precise moment the bow of the RWC exits the back of the wave, the operator should immediately release the throttle in order to bring the bow of the RWC down.
- Be prepared to absorb the shock by landing with legs bent
- Before continuing on after such a manoeuvre, the operator should always check to make sure the crew is aboard the rescue sled.

Minimising the body's frontal area by aligning the body shape with the contour of the RWC (see fig, a–b above), as well as bending the legs to form a triangle (x–y), will minimise the effect on the body from surf as it washes over the RWC.

If Crew is present

The operator must give the clear and concise command ‘Punch, punch’ to crew and/or patient.
The crew must remain alert to the possibility that the RWC may fall backwards towards them. If this appears likely, they should abandon the rescue sled immediately.

Beaching the RWC

The RWC operator should never beach the RWC at speeds that pose a risk to crew, beach goers or patient safety. This can cause server wear on the hull and should be avoided where possible.

When beaching the RWC operator will:

- Give consideration to beach gradient, environmental conditions, scenario, and other beach and water users
- Select a part of the beach and water that is free from obstructions (at least 100m from flagged area).
- Apply appropriate throttle to maintain momentum through shallow water and onto the beach
- When beaching, sit down and brace themselves by placing their feet at the front of the foot wells and hold the handlebars firmly; do not lock arms or legs.
- At an appropriate time, depth and speed before the RWC makes contact with the beach the operator will press the STOP button in order to allow enough momentum for the RWC to plane onto the beach.
- Ensure that the RWC is not left unattended with the lanyard attached.

Before beaching the operator must give the clear and concise command ‘Brace, brace’ to crew and/or patient (if present).

When beaching the RWC, always step off on the seaward side, so that a wave will not push or roll the RWC onto you.

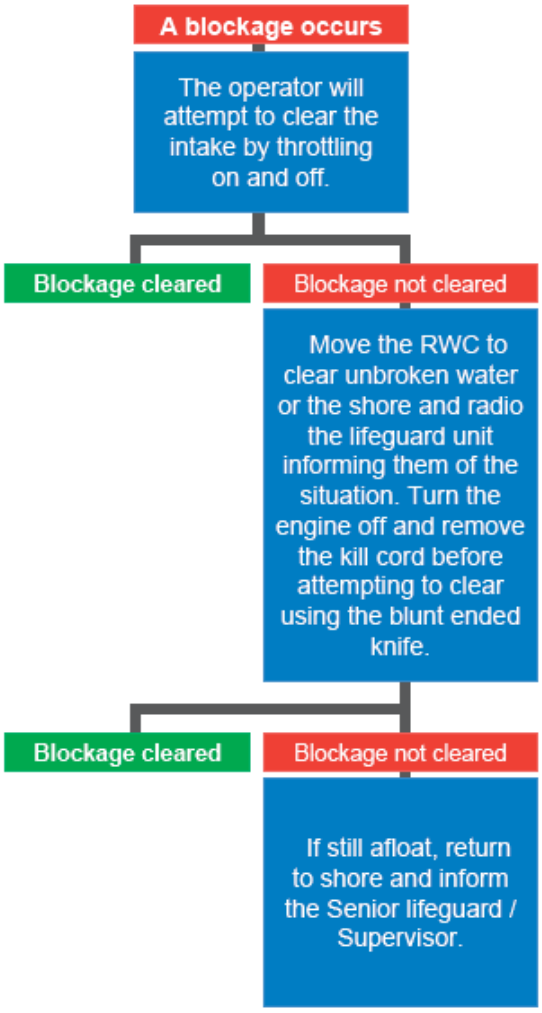
Beaching the RWC can result in small pebbles, sand, seaweed and other debris being taken into the jet intake and can also damage the impeller. Before restarting the motor, rock the RWC from side to side in sufficiently deep water to remove any debris.

Clearing the jet intake or impeller

It is vital that the RWC operator avoids all debris as it is very difficult to clear material from the intake while afloat.

If engine power rapidly reduces, or a change in engine pitch or vibration is heard, then it is likely that some type of debris has affected the intake. Any blockage to the intake will reduce craft performance and can result in engine damage due to overheating.

To clear a blockage, the operator will follow the impeller clearance flow chart:



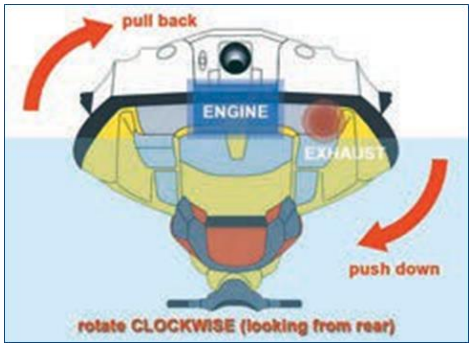
RWC capsize

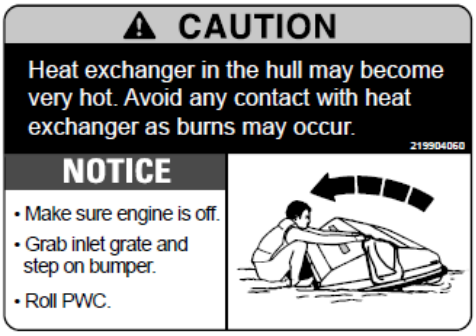
If the RWC capsizes, turn it over immediately. Be sure to carefully follow the procedures below to prevent injury or damage to the RWC.

IMPROPER UPRIGHTING CAN CAUSE INJURY:
Be sure to shut the engine off by pulling on the engine shutoff cord to remove the clip from the engine shut-off switch.

Do not put your hands in the intake grate.

1. Remove the clip from the engine shut-off switch
2. Swim to the rear of the RWC. Pull the RWC over (in manufactures indicated direction looking from rear) with your left hand on the ride plate while pushing down on the gunwale with your right hand or foot
3. Board the RWC
4. Start the engine and operate the RWC to discharge any water remaining in the engine compartment





If the watercraft has been capsized for more than 5 minutes, do not attempt to crank the engine to avoid water ingestion that would damage the engine. See an authorized dealer as soon as possible

It is recommended to ride the RWC for approximately 5 minutes with engine speed lower than 5000 RPM to evacuate any water that might have been accumulated in the bilge. Never exceed 5000 RPM. If not, water could get inside the engine.

1. At no time should the crew place themselves at serious risk in order to recover the RWC.
2. The RWC crew should endeavour to stay with the RWC until it has stopped moving. The operator can maximise the chances of a successful restart by pulling the kill cord out once the RWC is completely inverted.
3. Once surfaced, both the operator and crew should shout one another's names to confirm mutual safety before making their way to the 'surf-side' of the RWC. At this point the operator should check that the RWC kill cord is still attached to their wrist.

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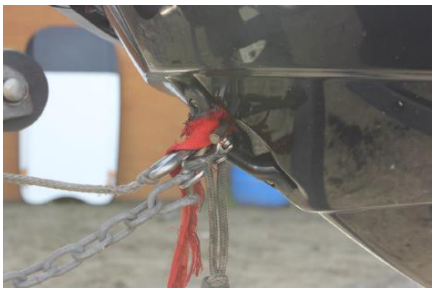
Returning a disabled RWC to shore

Returning a disabled RWC to shore should not be attempted if the risk of staying with the RWC outweighs the benefit. If surf conditions are too large to safely undertake this manoeuvre then the crew will report their position and request assistance using their radio.

Procedure for towing a disabled RWC

- The RWC is not designed or permitted to tow any vessel.
- Where your disabled RWC requires a tow, towing the RWC must be done in accordance with the manufacturer's guidelines.
- The tow rope should be a minimum of three times the length of the RWC.
- Ensure that the water intake shut-off valve is closed
- Attach the tow rope to the bow-eye hitch.
- Towing the RWC should be done slower than 21 km/h to prevent water ingress and damage to the engine.
- The operator should be seated normally and holding onto the handlebars while being towed.



Note: Refer to manufactures guidelines for specifics

H - Rescues Techniques

- Rescue Types
- Equipment Rescues
- Patient Transfers

This section details the knowledge and skill required to respond in rescue situations.

Patient approach

Patients should always be approached from a 7 o'clock angle. This allows the operator an easy option to abort the pick up by straightening their path to face directly out to sea.

Rescuing Patient - Solo techniques

Conscious patient -Solo rescue

Presenting the sled

- When proceeding towards the patient, the operator should steer the safest course through the surf in order to minimize the risk to themselves and the RWC.
- The RWC should come alongside the patient just after a wave has passed. This maximizes the time available to effect the rescue.
- As the RWC closes to within 3 meters of the patient, the operator should point to the location of the rescue sled and give the following instructions:

'Stay calm'
'Climb onto the board'
'Climb onto the board.'

- The operator must then turn the RWC so that the rescue sled is made available to the patient.
- Once the patient has grabbed the rescue sled, the operator will steer the RWC in order to keep the bow facing into oncoming surf or swell.
- Once the patient is aboard the rescue sled, the operator should ask the patient if they were alone or not before providing the lifeguard base/tower with an update of the situation.
- As the RWC returns to shore, the operator should always use the minimum necessary speed and must frequently look back at the patient to ensure they are okay.

Conscious patient - assisted pick-up

Approach

- The operator must decelerate in order to approach the patient slowly while maintaining their line.
- As the RWC closes with the patient, the operator must ensure that the RWC's engine revs are reduced to idle and that the bow of the RWC faces into the oncoming surf or swell.
- At this point, the operator should raise their left arm.
- Patient pick-up

As the RWC closes to within 3m of the patient, the operator should give the following instructions:

'Stay calm'
'Grab my wrist'
'Grab my wrist'

- The operator grasps the patient by the left wrist before guiding them back onto the sled.
- As the RWC moves slowly past the patient, the operator should steer to the right (starboard) in order to manoeuvre the rescue sled towards the patient and keep the RWC bow facing into the oncoming surf or swell
- At the same time, the operator should partially lift and guide the patient onto the sled while instructing them to grasp the rescue sled loops.
- Once the patient is aboard the rescue sled, the operator should ask the patient if they were alone or not before providing the lifeguard base/tower with an update of the situation.
- As the RWC returns to shore, the operator should always use the minimum necessary speed and must frequently look back at the patient to ensure they are okay.

Unconscious patient - solo rescue

Approach

- The operator will maintain a safe distance and attempt to communicate with the patient.
- If the patient does not respond, the operator will decide whether it is best to return to shore and pick up a crew or commence a solo unconscious rescue.
- Prior to taking any action, the operator will contact the lifeguard base advising them of the situation, location and planned course of action.
- The operator will slowly approach the patient and, when they believe they are close enough that their momentum will bring them to the patient, they will press the STOP button and remove the kill cord from their wrist, placing it on the handlebars.

Patient Pick-up

- As the RWC comes alongside the patient, the operator will enter the water to secure the patient and guide them to the rescue sled while remaining in contact with the RWC.
- The operator will position the patient on the rescue sled.
- Once the patient is secure on the rescue sled, the operator will communicate with the lifeguard unit.

Single conscious patient rescue with crewperson

Approach

- The operator must decelerate in order to approach the patient slowly while maintaining their line.
- As the RWC closes with the patient, the operator must ensure that the RWC's engine revs are reduced to idle and that the bow of the RWC faces into the oncoming surf or swell.
- The RWC operator should indicate to the patient to raise their left arm and face the RWC for a pick-up. This should be completed as far away from the patient as possible by the operator using a loud voice and display by raising left hand.
- Once the patient has their left hand in the air the pick-up can be conducted.

Patient Pick-up

- Firmly grip the patient's wrist and at the same time accelerate the RWC slightly forward and slightly to the right (starboard side).
- The patient's legs will rise towards the surface and the patient will float towards the rescue sled.
- The operator acts as a pivot point with arm outstretched and leaning backward to allow the patient to arrive at the sled and not the back of the RWC.
- The crewperson will instruct the patient to board the sled stomach down facing forward and grip the handles tightly. The crewperson will then lie on top of the patient to secure them.
- Once the pick-up is completed the RWC will be facing out to sea, into oncoming waves.

Note: Operator to ensure that RWC is facing into oncoming waves after each rescue is conducted, if not the risk of capsizing the RWC and injury to the patient is increased.

Unconscious patient rescue with a crewperson

Approach

- The operator should drop the crew as close to the patient as possible just after a wave has passed, utilising the maximum window of opportunity to safely effect the rescue.

- The operator should immediately move the RWC to a safe stand-by position where they will radio the Lifeguard Base with an update of the situation.

- The operator will maintain visual contact with the crew at all times and be ready to move in to recover the patient once signalled by the crew.

- Once the crew has signalled, the operator will acknowledge the signal and then slowly move in to make the pick-up just after a wave has passed

Patient Pick-up

- The crew lifts the patient's left arm while maintaining their airway. The RWC approaches at idling speed, maintaining a straight-line approach.
- The operator will reach down with their left hand in order to be ready to grasp the patient's wrist. This manoeuvre must be done as slowly as possible.
- The operator grasps the patient's wrist, guiding the patient to the rescue sled, while turning the RWC's handlebars to the right in order to bring the rescue sled within easy reach of the crew and keep the RWC bow pointing into the surf or swell.
- If at any point oncoming surf jeopardises the RWC, the operator must give the following command: 'Break' 'Break.'
- The crew must release their grip.

- The crew will reach up and grasp the first rescue sled loop available, then reach underneath the patient, placing their forearm in the small of the patient's back, while also grasping a second rescue sled loop. The operator must continue to hold the patient's arm in order for the patient to be rolled onto the rescue sled easily.
- The crew will then pull themselves up while kicking their feet. At the same time, they will roll their right shoulder and forearm forward, rolling the patient and nudging them onto the rescue sled.
- The operator then releases the patient's wrist.
- Once the patient and crew are aboard the rescue sled, the operator will radio the lifeguard Base with an update of the situation.

Note: The crew will secure the patient with one knee between the patient's legs, and hands either side of the patient's body.

- When returning to shore with an unconscious patient the operator should signal ‘assistance required’ to the shore patrol.
- Care should be taken when carrying a crewperson and patient. No attempt should be made to drive down the face of waves on the return to shore unless absolutely necessary
- The operator will beach the RWC after communicating this intention to the crewperson.
- The crewperson will brace himself/herself and the patient during impact with the shore.

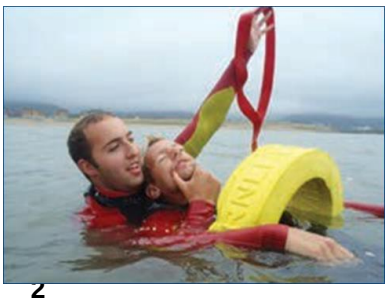
Tube rescue with crewperson

Approach

On approach, the operator will maintain visual of the patient. The crew may remove their buoyancy aid (PFD) if it is safer to do so, for the purpose of securing the patient in the tube.
The operator should drop the crew as close to the casualty as possible.

The operator should immediately move the RWC to a safe stand-by position where they will radio the lifeguard unit with an update of the situation. The stand-by position must allow the operator direct visual contact with the casualty and crew at all times.

Patient Pick-up



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- The crewperson leaves the RWC (wearing fins) and secures the patient with the rescue tube, then moves to a position where they can be easily picked up by the RWC. The crew then signals RWC pick-up.
- The operator acknowledges the signal from the crew by pointing down the ‘line of safe pick-up’.
- Once the crew has reached the line of safe pick-up, they will turn the patient towards the RWC and raise the tube lanyard.
- The RWC approaches at idling speed, maintaining a straight-line approach. The operator will reach down with their left hand and grasp the rescue tube lanyard and put it over their shoulder

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- The crewperson mounts the sled and moves to the very front starboard side.
- The patient by this time will be in the rescue tube at the rear of the RWC. The crewperson shall take hold of the rescue tube clip with one hand and the sled with the other.
- The crewperson will then call 'pull', the operator and crew will pull the patient onto the sled at the same time.

- The crewperson then secures the patient with one knee between the patient's legs, and hands placed either side of the patient's body.
- As the RWC returns to shore, the operator should always use the minimum necessary speed and must continually look back at the patient and crew to ensure they are okay

Equipment Rescue

Approach and rescue patients with surf craft

The surf craft referred to here includes:

- Surf boards/body board
- Windsurfers
- Inflatable craft
- Canoes/kayaks
- Kite surfers

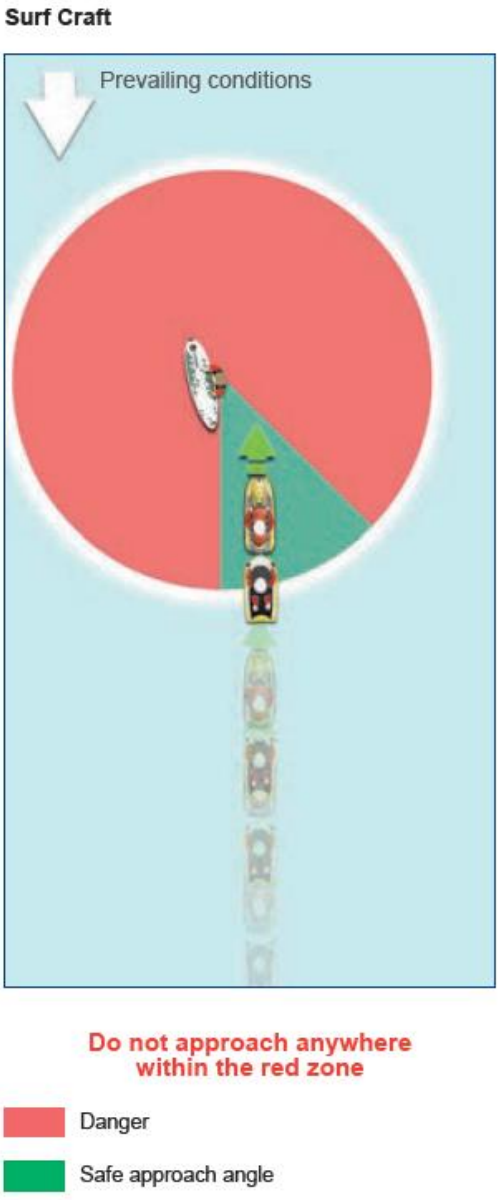
Rescuing patients with surf craft can be hazardous due to lines that may foul the intake grill or entangle the rescuer, as well as kit striking the operator.

The priority is the rescue of the patient. Kit recovery is not a priority and should only be attempted if safe to do so.

When proceeding towards the patient, the operator should steer the safest course through the surf in order to minimise risk to themselves and the craft.

The RWC should come alongside the patient just after a wave has passed. This maximises the time available to effect the rescue.

Approaching a patient with surf craft should be done carefully following the procedures shown.



Kite surfers

The condition of the patient will affect the rescue technique used:

- If they are conscious, ask them if they are able to gather up the kit (if they haven't already done so). This will enable them to be hauled aboard, complete with their equipment.
- If they are too injured or not in control, ask them to jettison the kit.
- If they are unconscious, the crew should enter the water (without a rescue tube). They should then jettison the kit. The patient should then be recovered.

  Under no circumstances attempt to retrieve the kit while it is attached to the patient as serious injuries may result.

Patient Transfers

Transferring patients from the RWC to the beach

Prone patient

1. The operator will safely beach the RWC in accordance with the beaching procedure.
2. Once beached, the operator will dismount from the RWC and immediately walk to the patient's feet where they will await instructions from the crew.
3. The crew will move from their position to the most appropriate side of the sled and straighten the patient's nearest arm.
4. The crew will then place their hand under the patient's nearest armpit and place their own knee against their elbow before rolling the casualty off the sled.
5. The crew will roll the patient by reaching under their furthest armpit and hold the patient's airway open using a pistol grip on the chin as shown.
6. Once the patient has been rolled off the sled, the crew will instruct the operator to take hold of the patient's wrists and support them in a sitting position.
7. While the patient is supported, the crew will get into a position ready to lift, before instructing the operator to pass the patient's arms to them.
8. The operator will then hold the patient's legs above the knees and await the crew's instruction to lift.
9. The operator will then hold the patient's legs above the knees and await the crew's instruction to lift.
10. The crew will give the command:
11. 'READY, BRACE, LIFT'.
12. Before proceeding away from the water, the crew will instruct the operator to inform them of any obstacles or hazards.
13. The crew and operator will carry the patient to a safe position.
14. On reaching a safe position, the crew will instruct the operator to turn the patient so that their pistol grip is pointing towards the sea with the command:
15. 'READY, BRACE, TURN'.

16. The crew will then give the instruction:

17. ‘READY, BRACE, LOWER’

18. Once the patient is seated, the operator will take hold of the patient’s wrists and support them in a sitting position so that the crew can reposition before laying the patient on the ground for further assessment.

Returning patients with injuries to the shore

When rescuing patient’s with injuries, the RWC crew should recover the patient to the RWC and transport them, in the best (and safest) way possible, to the beach where definitive treatment can begin

H - RWC Closedown

- RWC Wash down
- Post Operational Responsibilities

This section describes how to complete a closedown of a RWC once operation is over.

At the end of each day it is the responsibility of the RWC operator to undertake post-operational checks of the RWC. The operator will then inform the appropriate personnel of any defects.

RWC Wash down

Rescue Water Craft post operation checks.

1. Inspect and remove Bungs - Remove bungs and tilt trailer for best drainage
2. Wash Down - Spray RWC, Rescue Sled and Trailer down with fresh water, lightly spray engine bay
3. Hose out intake and Jet nozzle - Hose out sand and any other debris
4. Flush Engine - Flush out with fresh water Sequence Engine on, Water on 90 Sec, Water off, 15 sec Engine off
5. Inspect condition of Hull - Inspect hull, ride plate and water inlet grate for damages
6. Check Fuel and Oil level - Refill, check oil with dipstick
7. Lubricate winch, wheel rims and tie down ratchet
8. Store RWC and PFD - In Shed with all compartments ventilated

Note: It is imperative that the correct sequence of actions be followed to prevent the engine flooding and serious mechanical damage.

The sequence of actions for flushing the RWC engine is:

1. Engine on
2. Water on
3. Water off
4. Engine off

(Flush out with fresh water Sequence Engine on, Water on 90 Sec, Water off, 5 sec Engine off)

Post Operational Responsibilities

Routine maintenance

RWCs should be serviced by a qualified mechanic working for a licensed dealership.
Each RWC should be provided at least two full services per year – one preseason and one post season or as advised by the owner's manual/service mechanic.

I - Operations

- Patrolling
- Towing RWC on public road

How to operate a RWC for patrol and non-patrol activities.

Patrolling

Patrolling and shepherding

When the prevailing conditions and hazards at a beach pose a continuous threat to the public, it is sometimes necessary to maintain a continuous patrolling and shepherding presence afloat. When this situation arises, begin patrolling early and communicate with the shore team at all times.

The rigid hull of an RWC carries a high risk of injury to water users when patrolling and shepherding

It is also intimidating for swimmers when an RWC approaches them, especially if it is at speed. The noise and fumes make for an unpleasant experience for any water user when approached.

When patrolling and shepherding:

- Always leave enough space so other water users are not placed at risk, the craft can be manoeuvred safely but also so you can communicate with them.
- Ensure you wear the appropriate personal protective equipment (PPE) for the conditions as you may be afloat for some time.
- Give clear directions to water users and always take pre-emptive action for those that look tired.
- Always ensure you have an escape route when manoeuvring the RWC close to water users.
- Always have the bow of the RWC facing into the prevailing conditions when shepherding close to water users.

The RWC must not enter the patrolled flag area while in use

Training during patrol hours

Any training undertaken during patrol hours must have the approval of the Patrol Captain. The following precautions must be undertaken:

- Use “Training in Progress”.
- Drive the RWC responsibly at all times.
- Make it clear to the public that you are training.
- Train during a quiet time of the patrol day.
- Train in an area that does not affect normal patrol operations i.e. well outside the patrol flags.
- Ensure you maintain regular contact and stay within signalling distance of the patrol in case the RWC is needed.

Towing the RWC

When transporting the RWC on a trailer, secure the tie downs to the trailer through the bow eye.

The following check must be completed prior to towing the RWC:

- The winch is tight
- All seats and hatches are secure and security straps are on
- Safety chain is secure
- Rear tie down is secure
- Tyres inflated
- Lights tested
- Registration and WOF up to date

When towing obey all road rules and never exceed 90 km/hr