New Zealand Schools Waterwise Incorporated

WATERWISE INSTRUCTOR MANUAL

MODULE 1 GENERAL OPERATIONS

Module 1 - General Operations (Compulsory)
Module 2 - Sailing
Module 3 – Kayak

Contents

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1. INTRODUCTION

A warm welcome to Waterwise. Your time and effort will be much appreciated and your reward will be the enjoyment of working with an excellent organised team of teachers and parents.

This manual is the official New Zealand Schools Waterwise Instructor Training Manual that you should keep with you whilst you are learning and teaching at Waterwise. **To become a Waterwise Instructor you are required to be at least 18 years of age** and to have an enthusiasm for teaching children in water activities. You will need to be able to talk to children - showing something is one thing but being able to describe it as you are showing it demonstrates good instructor qualities. You should be able to work as a team helping to run the Waterwise session. Self-help is one thing but helping others displays good communication skills.

In 1982 the Pupuke Schools Waterwise project commenced operation. The official opening of the facility was performed by Lady Diana. Although the initial momentum was in the Auckland region with the establishment of eight Waterwise centres, there are now many more established centres throughout New Zealand, including country areas.

New centres are being formed on a regular basis as the momentum spreads throughout the country.

Since its inception there have been over 2500 persons qualified as Waterwise Instructors. To ensure that individual Instructors are not imposed on unduly we need as many qualified Instructors as possible.

Please ensure that you read the manuals that pertain to you qualification as a Waterwise Instructor prior to attending your qualification course. This will allow course tutors and examiners the ability to reduce the time spent indoors on theory work and so have more time for on the water practical work.

From the modules you will see that land-based teaching ability and power craft handling are very important parts of the course and your qualification. The aim of the course is to train teachers, parents, caregivers, and other helpers to become proficient and qualified Waterwise Instructors within the Waterwise programme.

Whilst we hope that course members will sit the instructor's test, we recognise that not all trainees will want to or feel that they are ready to do so. Tutors will make assessments during your course and may suggest that further experience be gained, and the test taken at a later date.

Qualified or not, those who have attended an instructor's course have knowledge and skills which are always valuable when they attend as helpers during any Waterwise schools session.

When attending a course, or a Waterwise session you will need to bring, in addition to your day clothes:

- Footwear suitable for the beach you are attending
- A raincoat
- Clothing which will dry quickly or stay warm when wet e.g. board shorts, polyprop vest
- A towel and bag for wet clothes
- Sunhat and sunscreen
- Some energy snack food and a drink
- Writing equipment (pen, pencil, paper) in a re-sealable plastic bag

Your Tutor may ask you to bring extra items to those listed above.

If you require any further information or assistance please contact your Waterwise Centre training officer, your tutor, your examiner, the Central Registry Office, or one of the National Association's officers.

The Syllabus Modules are available by email from your instructor. If your hard-copy manual, or any pages within it, becomes damaged or illegible or lost, just print off more from that document.

Good luck with the course, your sailing, and remember to have fun!

2. WATERWISE INSTRUCTOR SYLLABUS

The Waterwise Syllabus is currently divided into three modules.

The first is the Common Module which is mandatory for all Waterwise Instructors to pass. It includes content that is important to all Waterwise Instructors prior, during and after instruction.

Waterwise Instructors need to demonstrate proficiency in the "General Operations Module" and at least one other Waterwise discipline to be fully qualified as a Waterwise Instructor in the specific discipline. E.g. Common Module and Sailing Module – now qualified to instruct Waterwise Sailing.

3. GENERAL OPERATIONS SYLLABUS

To be assessed as proficient in this Waterwise Module, candidates will need to have knowledge and practical abilities to meet and carry out the minimum requirements for a Waterwise session in:

Safety

Weather

Basic Knots

Rescue Boats

Rescues

Navigational Safety for Power Driven Vessels

General
All candidates will be expected to have read, and be familiar with, the "Yachting New Zealand – Club Safety and Responsibilities Guide". This document can be borrowed from your tutor, your yacht club, or by looking on the Yachting New Zealand website: www.yachtingnz.org.nz.

4. SAFETY

The Waterwise Instructor will be expected to know what safety procedures need to be followed before Instruction Afloat and during Instruction.

Ratios

Rescue Boat – on the water warmed up	
Each Rescue Boat must have onboard	**One current Water Wise Instructor plus either a Second Instructor or other Crew member – 15 years or older**
One Rescue Boat	**Max 4 Students on the water**
Each additional Rescue Boat	**4 Additional Students on the water**
Two Instructors in a Rescue Boat	**6 Students on the water sailing 2 up in an Opti**

Before Instruction Afloat

Because of the "high risk" nature of on the water activities, the safety aspect is heavily emphasised.

- The skipper of the rescue craft is responsible for safety and must comply with all Maritime Rules, By-laws, etc
- The skipper of the rescue craft must be familiar with the Collision Prevention Rules and Navigation Safety Rules (Summary attached to this Manual) and must know the contents of “Safe Boating – An Essential Guide”.

The following safety requirements are mandatory requirements of the New Zealand Schools Waterwise Association.

1. The instructor in charge will discuss with the teacher in charge that the conditions are suitable and safe for the on- water session to proceed.
2. At the beginning of any session the Instructor in charge (Session Leader) shall brief all personnel (including students) as to the object of the lesson and how this is to be achieved.
3. Correctly fitted and approved buoyancy aids are to be worn at all times by everybody on and in the water.
4. There must be a teacher present, who shall be responsible for children, at all times when schools are using the Waterwise complex. (Parents are not able to be in "loco parentis").
5. Only qualified Waterwise Instructors may instruct children on the water.
6. Pupil Rule - Strict adherence to the minimum Waterwise Instructor / Pupil ratio must be maintained at all times (See Ratios above and Module 2 and Module 3).
7. The Session Leader and Waterwise Instructors shall carry out the Pre-checks before any instruction afloat.
8. Rescue craft outboard to be tested and "warmed up" on the water before other craft are put on the water.
9. At least four children are to be used to carry an Optimist and at least six children must be used to carry a rescue craft.
10. Removable outboard motors and petrol tanks are to be carried by adults only.
11. Appropriate medical assistance shall be obtained in the event of an accident or emergency.
12. All accidents must be detailed in the Waterwise log.
13. All buoyancy aids are to be tested annually.
14. Any damage must be reported as soon as possible and written in the Waterwise log.
15. Waterwise log to be filled out by the Session Leader after each session.
16. **The patrol craft shall be crewed by a qualified Waterwise Instructor and another person 15 or more years of age approved by the Training Officer.**

Pre-Checks for Instruction Afloat

1. A weather forecast shall be obtained prior to any on the water activities and weather conditions are to be monitored during session (refer to the section "Weather Forecasts").
   Wind speed over **15 knots** (whitecaps start forming at about 12 knots) is deemed unsafe for instruction afloat.

   Remember - ***"if in doubt - don't go out"***.
2. Participants should wear clothing appropriate for the conditions.
3. Ensure that rescue craft are first on the water, crewed and **operational** before the other craft are launched.
4. Check that all going afloat are wearing correctly fitted buoyancy aids.
5. Ensure Ratios - 1:4 (One rescue craft to every 4 Student craft & One Waterwise Instructor to 4 Students on the water)
6. Ensure everyone involved in the session has been given clear instructions on the object of the lesson and how it will be achieved.
7. Ensure craft and equipment are in a safe, operational condition.

   If not, such equipment shall be identified and recorded in the Waterwise log.

   Contact the person responsible for maintenance.
8. **W - weather**
   A - appropriate clothing
   R - rescue boat
   B - buoyancy aids
   R - ratios
   I - instruction
   E - equipment

Failure to comply with the safety requirements will lead to withdrawal of the Waterwise Instructors qualification.

Dressing for Instruction Afloat

1. **Buoyancy Aid** - All persons taking part in on the water activities must wear a buoyancy aid or life jacket adequately fitted to provide reliable flotation assistance when in the water.
2. **Appropriate Clothing** - suitable for the conditions prevailing on the day. This means warm clothing that will provide insulation from the wind and cold in cooler weather, or loose cool clothing to provide protection from the sun in hot sunny weather. Note. That although cotton fabrics are cool when dry they will become cold when wet, wool or polypropylene is recommended. Hats and sunscreen are also considered to be included in the context of suitable clothing.
3. **Footwear** - must be worn, where appropriate, to protect the feet from sharp objects on the shore and under the water.
4. If a child shows evidence of being cold e.g. Shivering or pale or blue skin colour, they should be returned to the shore as quickly as possible.

5. WEATHER & TIDES

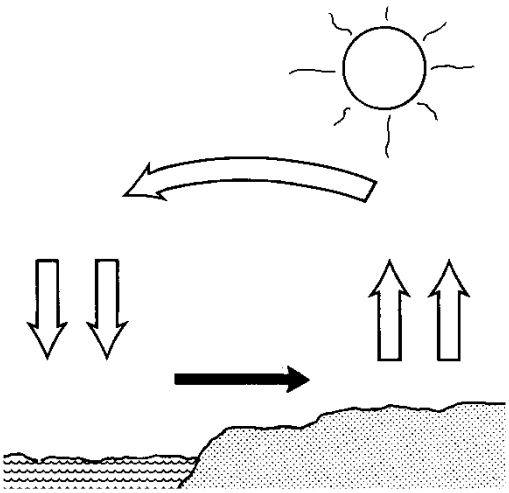
General Assessment

1. Weather conditions can change rapidly. A constant watch is especially necessary in marginal conditions.
2. Weather forecasts are not always accurate and wind speeds may vary.
3. Maximum wind speed for operating with children at Waterwise is **15 knots**. Note: Whitecaps start forming at about 12 knots.
4. Visual observations from the shore area are most important.
5. The sun's rays in New Zealand have a high ultraviolet component and suitable protection is necessary.
6. When people are cold and wet they may be less likely to learn and possibly make irrational decisions.
7. A general weather forecast is available. Telephone the 0900 999 (+ your area std code) number (99 cents a minute) but remember to keep the weather eye open. The weather can change before the forecasters realise they have got it wrong!
8. The overriding rule is: **IF IN DOUBT - DON'T GO OUT!**

Local Weather Effects

Land and Sea Breezes

Sea breezes occur in summer in settled weather as a result of the land heating up faster than the sea in the morning. As the land heats up, the air above it rises and the cooler air from the sea flows in to replace it. Sea breezes set in at about 11 a.m. - 1 p.m. and fade away at about 5 p.m.
Sea breezes can sometimes reach speeds of 15 -18 knots.



Funnelling Effect

Winds can present problems at Waterwise with the variance in direction and intensity as they flow across the grounds, around buildings and through trees, etc.

Observation of Local Effects

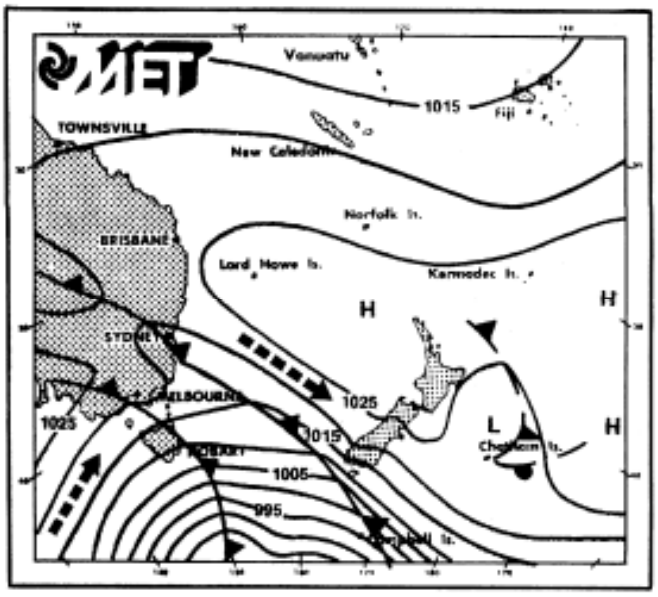
Observations from the shore of local weather conditions will include –
a. Cloud movement and texture – e.g.
- Fluffy white clouds could mean stable weather and light winds;
- Heavy black clouds could mean changeable weather, rain and possibly strong winds;
- The direction and speed of movement of low clouds will indicate wind strength and direction.

b. Movement and direction of flags, wind anemometers and smoke will indicate wind speed and direction.
c. Movement of trees and bushes will give an indication of wind gusts.
d. Movement and behaviour of boats on the water will give indication as to wind direction, speed, and gusts.
e. Dark or reflective patches on the water will give an indication of wind speed and gusts.
f. Whitecaps on the water will indicate wind speed and direction.

Weather Forecasts

Forecasts of the weather expected to prevail in the next one or two days may be obtained from the:

- Newspaper
- Radio
- Television
- Telephone
- Internet
- VHF forecasts available some areas eg AKL Channel 21



Spoken or written forecasts are descriptions of what is shown on the maps available in the newspaper or from the internet.

These maps provide a summary of recorded data and show high and low pressure systems, isobars, fronts and directions of movement of the weather systems. These maps can be used to assist in the interpretation of locally observed weather effects to assess possible weather changes during your Waterwise session.

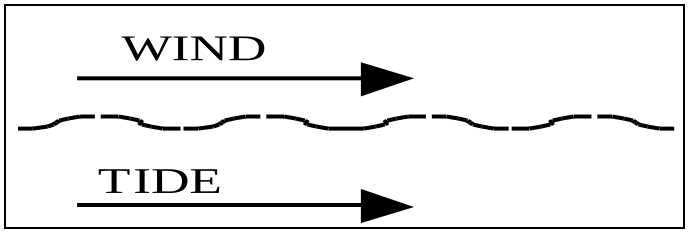
Make a point of checking the weather before the start of a Waterwise session, and keep a watchful eye on weather changes during the session.

Tidal Conditions

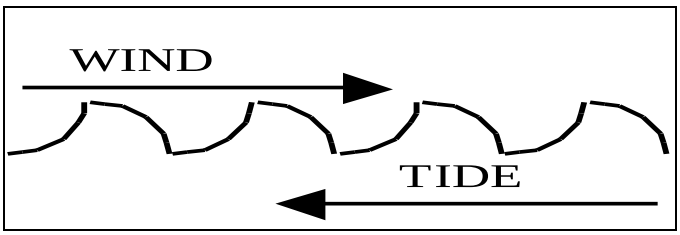
It is important that all instructors are aware of the times of high tide and low tide and understand the effect that tidal flows can have on the on-water conditions and the height of the tide can make a considerable difference in the physical aspect of the area that your are operating in eg rocks become a hazard, beach becomes shallow and hard to launch and retrieve, wave break changes etc.
Note: Tidal flow increases to its maximum during the third and fourth hour after high or low tide.

Wind and Tidal Influence on the Water Conditions

When the wind and the tide are running in the same direction, the water conditions will be smoother than you would expect for the given wind strength.



When the wind and the tide oppose each other, the water conditions get rougher and choppy.



Water conditions often dictate whether it is safe to sail or not.

6. KNOTS AND LINES

The Properties of a good knot are:

1. Holds for the purpose intended
2. Retains the overall strength of the line
3. Is easy to undo when desired.

Ropes are rarely called ropes when used in conjunction with boating. They are usually called "lines" or have a special name like halyard, sheet, painter, etc.

Terminology

STANDING PART: ..... The part of the line which is fixed.

RUNNING PART:..... The moving part of a line which is loose and is used to hoist or lower.

BIGHT:..... The looped or loose part of a line between two ends.

RUNNING END:..... The free end of a line.

KNOTS:..... Usually involve only one length of line and are tied in the end of it, or are used to join the two ends around something, e.g. Figure of 8 or Stopper Knot.

BENDS:..... Join two different or similar sized lines. e.g. Sheet Bend.

HITCHES:..... Attach lines to an object by passing the line around the object and crossing one part over the other.

The Reef Knot

Used for tying the two ends of a line around something eg attaching sail to mast or boom. It needs to be tied kept under tension at all times.

Take one end in each hand. Holding the right end firmly, place the left hand end over the right, then around and under it and change hands. Turn the loose end on the now right hand side back on itself and place over the left hand end, and then under it. Change hands again and pull tight.

The result is the Reef Knot in which the bight and tail of each end of the line come out together.

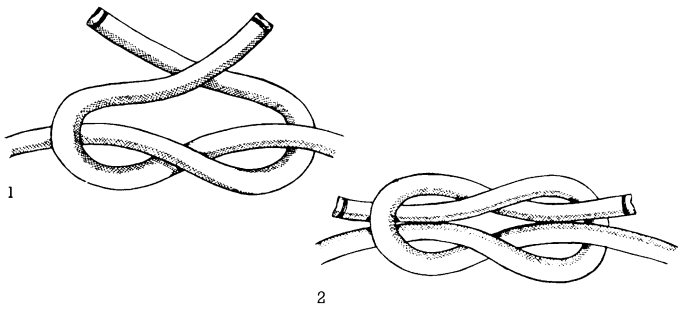
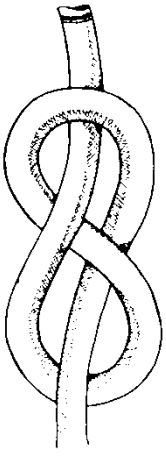


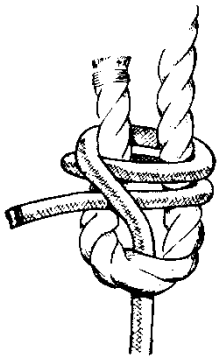
Figure of 8



Used as a stopper knot to prevent the end of a line from passing through a block.

Figure 8 knot - Take the bight of the line in the left hand with the running end towards the body. With the right hand take the running end back over the bight crossing from right to left. Pass the running end around behind the bight back over itself and through the loop. This knot is easy to undo.

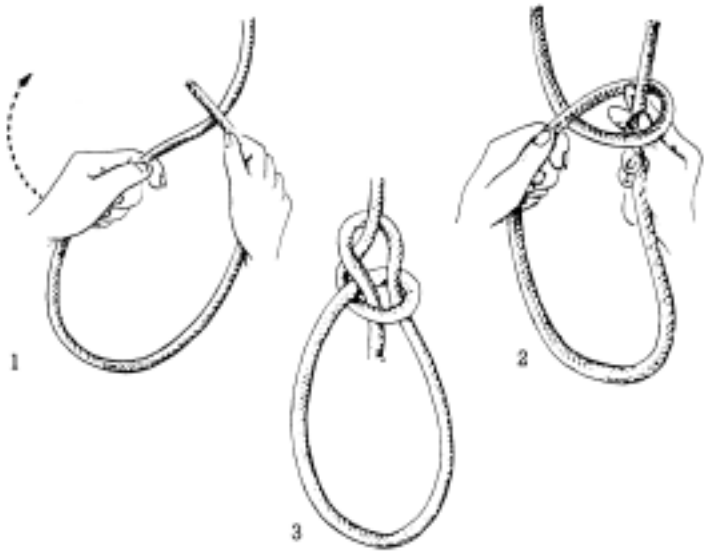
Double Sheet Bend



Used to join lines of similar or different size, and of similar or different material or construction.

If one line is very much thicker than the other, the Double Sheet bend should always be used.

Form a bight in the thicker line and pass the end of the thinner line through the loop thus formed. Then pass the running end of the thinner line around behind the bight and underneath the part that comes up out of the loop. This is a single Sheet bend. To form a Double Sheet Bend, take the thinner line again around behind the bight and again under the part which comes up through the loop.



The Bowline

Used for whenever a fixed loop is needed that will no close around a waist, leg or foot.

There are several ways of tying it
but this twisting method is the simplest.

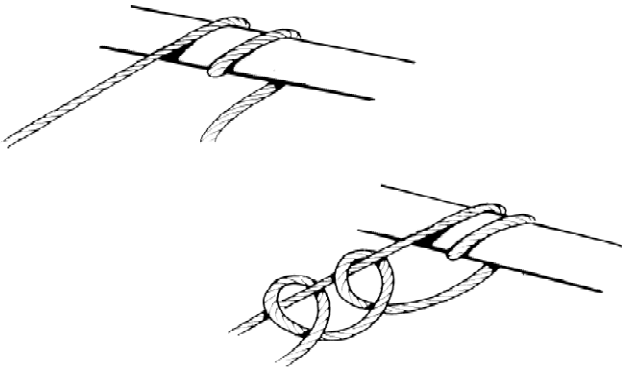
The running end should finish on the inside of the loop.

The Round Turn and Two Half Hitches

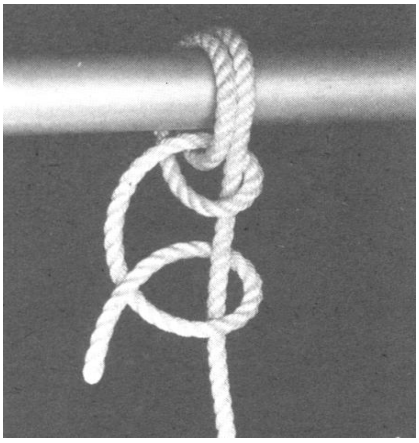
Used to attach a line to a spar or some fixed object.

It is the only good knot able to be undone under tension.

Pass the running end around the object and then around it again. Take the running end across the standing part and pass the end through the loop. Repeat this operation for the second half hitch.



Fishermans Hitch/Anchor Hitch



Used to attach the mainsheet to the boom or a fixed line to a ring or or anchor. It does not loosen under moderate motion. If used to attach an anchor it is good practice to seize the running end of the line

Similar to and more secure than the "Round Turn & 2 Half Hitches" but less likely to undo once pulled tight.

Start by making two round turns around an object from back to Front. Pass the running end behind the standing part, then through the round turns from left to right. Bring the running end behind the standing part the wrap upward one turn feeding the running end behind the working part thus creating a half hitch.
Pull on the standing part and tighten the knot

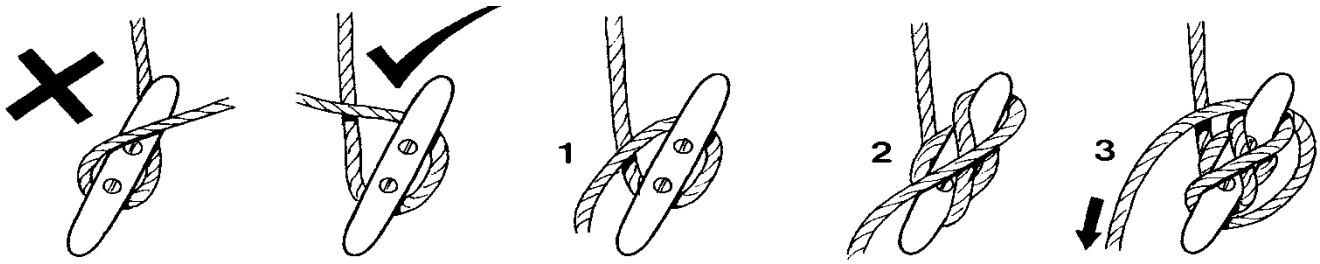
Cleating

Used to secure the end of a line under load to a cleat.

Take the running end one complete turn around the shank of the cleat.

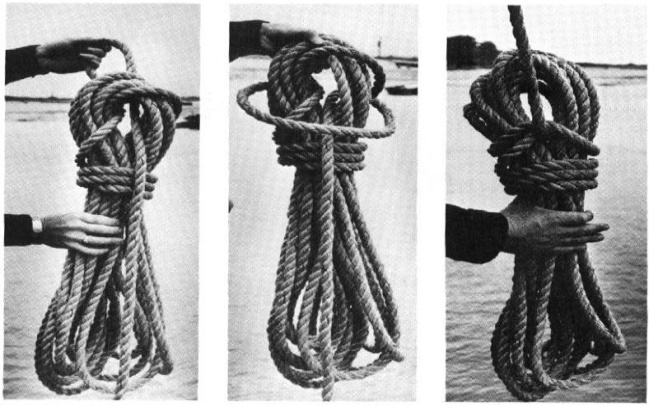
Make two or preferably three figure of 8 turns around the ends of the cleat and then one further complete turn around the shank.

The end of the line may be secured by tucking a bight under the final turn.



Coiling

Laid rope needs to be coiled clockwise and given a right hand twist in each turn. Plaited rope tends to form "figure of eight's". Both can be stored like this.



Take the standing end in your left hand and coil the rope in a clockwise direction with the other.

Make sure that for each coil you give the rope a half turn clockwise with the lay.

Leave about a metre of the running end and wrap it several turns around the coils. Secure the wrap by pushing a bight made up of the running end, through the gap between the wrap and the top of the coil.

Finish by either dropping the bight over the coil or pass the running end through the bight, and pull tight.

7. RESCUE BOAT HANDLING

Safety Standards

Ratios - Strict adherence to the minimum Waterwise Instructor / Pupil Ratio must be maintained at all times.
To maintain safety standards during water based activities, there must be:

- ONE rescue craft with motor fitted and warmed up, crewed by one qualified instructor with one other able person 15 or more years of age approved by the training officer available at all times per ratio of instructors to students as per each Waterwise discipline: Sailing, Kayak.
- Before leaving the shore the Instructor shall fully brief the crew on all aspects of the proposed activities.

The Waterwise Instructor is to be in the rescue craft with one other able person 15 or more years of age approved by the training officer

- **Sailing Ratio –**
    - Where there is one Waterwise Instructor in the rescue craft the Instructor to pupil ratio is ONE Waterwise Instructor for every FOUR children on and in the water (ratio 1:4)
    - Where there are TWO Waterwise Instructors in the rescue craft, then the Waterwise Instructor to pupil ratio may be (ratio 2:6) to allow yachts to sail with "two up". See Module 2
- **Kayaking Ratio –**
    - one instructor must be in a kayak on the water with one other instructor in the Rescue Boat (see Module 3)

Prior to Going Afloat for Instruction

Prior to going onto the water the rescue craft skipper must fully brief the crew member of their duties and the method of operation for the session. Whilst on the water the skipper will explain to the crew member all proposed actions and their expectations of the crew member.

Outboard motors must be fitted correctly and have been started, warmed up and checked (as per the rescue craft check list) before children begin their activities (see Outboard Motor Training Notes). Motors should be used only when clear of any shore weed.

Sit on the starboard side of the rescue craft facing the motor, or sit astride the rear seat so that the tiller/throttle is operated with the left hand. Change the tiller to the right hand when changing gearshift. You should be able to do this without looking away from whatever you are doing. Some people (right handers in particular) may prefer to sit on the port side and operate the throttle with their right hand. Unless you are already competent, use starboard side.
Leave and approach the shore slowly and take care to avoid shallow areas, rocks or weed patches that may foul the propeller. Do not create bow waves that may capsize canoeists or upset novice sailors. There are local speed limits that govern us all so you need to check local rules.

Launching and Landing

When handling boats in shallow water care must be taken to control them at all times to prevent impact on other boats, people in the water, rocks, the wharf or going aground. The boat should be held at the bow and pointed into the wind. To steady the boat it might be necessary to hold it with two hands (or people) in which case the second hand (or person) should hold the boat forward of midships.

For sail boats the centre board should be removed from the centreboard case and laid in the bottom of the boat. The sheets should be loosened and left to run free. Never hold the boom.

For power boats the motor should be turned off and the propeller raised to the maximum height.

Getting into or out of the boat should be done over the landward gunwale or the stern.

8. POWER BOAT RULES

Collision Rules

All boats used by Waterwise in any situation on the water are required to operate under the "International Regulations for Preventing Collisions at Sea". A summary of these regulations may be found in the New Zealand Coastguard Federation publication entitled "The Rule of the Road at Sea".

In particular the rules that are applicable to the operation of Waterwise rescue craft may be summarised as:

1. Every vessel shall keep a proper lookout at all times.
2. Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision.

   In New Zealand vessels within 200 metres of the shore are restricted to speeds of less than 5 knots.
3. In narrow channels any vessel of less than 20 metres in length or a sailing vessel shall not impede the passage of a vessel that can only safely navigate within a narrow channel or fairway.
4. Any action to avoid a collision shall be positive and made in ample time.
5. Power boats give way to sailing boats *and to boats that are paddled or rowed.*
6. When approaching head on both vessels will alter course to starboard to pass port side to port side.
7. When crossing the boat that has the other vessel on the starboard side must give way (right hand rule). Action to avoid a collision by the give way vessel should be taken early and be clearly visible by the stand-on vessel. An alteration of course to port should be considered carefully and should normally be avoided
8. The vessel with right of way should maintain course and speed unless it becomes apparent that collision is likely. In this situation the Right of Way boat must take avoiding action.

Safe Operation

The operator of a boat is responsible for the "safe operation of the ship and the safety of all passengers and crew." To meet this requirement the person in charge of the boat must ensure adequate safety equipment is on board and that the boat is operated safely.

All power boats operated by Waterwise must carry:

a. A buoyancy aid for every person on board

b. An alternative means of propulsion.

c. An anchor with sufficient warp to ensure reliable anchoring in the conditions at the site

d. A painter

e. A bailer

f. A bung

g. A spare line of adequate length to use for towing another vessel

h. A knife or other suitable cutting implement

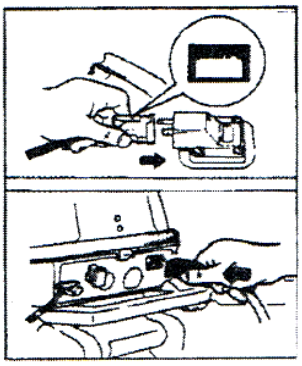
i. At least one other crew member

The operator must be aware of the capacity of the boat and plan to ensure that this limit is not exceeded under conditions that could foreseeable eventuate during the use of the boat.

The power boat must be operated at a safe speed at all times taking into account the operations being carried out, weather conditions and the surrounding environment

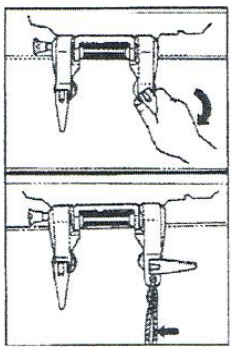
9. OUTBOARD MOTOR USE

Fitting (If necessary)



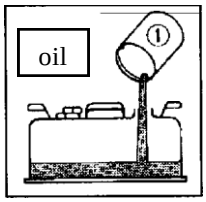
Fit motor to transom of boat as near to centre as possible. Tighten clamp screws securely and fit safety chain. Check the tightness of the clamp screws occasionally during operation. Place fuel tank as far forward as practical of rescue craft and connect fuel line to motor. Ensure that fuel line is fitted so that the arrow on the black primer squeeze bulb is pointing towards the motor.

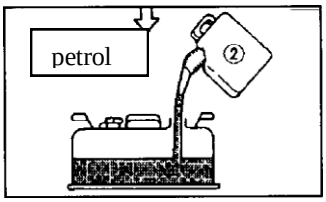
LOOSEN air-vent to allow the release of any pressure build up inside the tank.

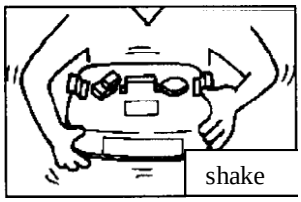


Refueling

No Smoking! Remove tank from boat before refueling, check oil and petrol mixture is correct. Always refuel tanks out of the boat and outside any building. This should be done carefully by a competent adult, as expensive repairs may be incurred if these instructions are not followed.







Lowering the Motor

Reach over the motor cover and grasp the recess in the cover. Pull the motor up and towards you slightly. Release catch to hold engine up. Lower the motor into the water, until it is resting tight against the stern of the boat. Check the engine is fully lowered and engage lock device.

Tilting the Motor

Make sure the motor is turned off and stopped. Release catch to hold engine down, there are many different types. Reach over the engine cover and grasp the recess in the cover. Pull the motor up and towards you until it is nearly horizontal. Engage catch to hold up engine.

When operating in shallow water eg launching and returning from a beach the motor can be operated in the shallow drive mode. Most motors have two shallow drive positions. Shallow drive is engaged by releasing the catch and pulling the motor up until it clicks into the shallow drive position. Reverse gear should be avoided as the motor is not locked down.

Launching and Retrieving the Patrol Boat

Check the tide or lake level, as it may be difficult to get the boats into the water. The trailer, often of larger craft can be heavy. Remember that the ramp can be very slippery if the level is low.

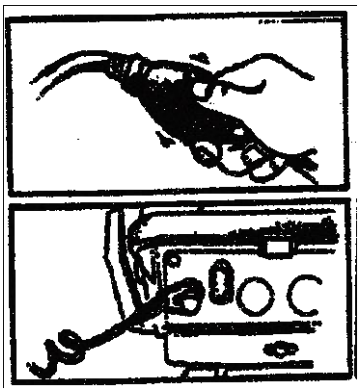
Have sufficient assistance available. Waves can push the boat on to the shore resulting in damage. Always have at least one qualified Waterwise Instructor with the boat while launching. Do not let assistants use it unsupervised.

Get the boat into the water with someone holding the boat. Climb in whilst wearing your buoyancy aid and get ready to lower the motor in sufficiently deep water. Make sure the engine is raised during launching so that the propeller does not touch the bottom.

Lower then start motor and make sure it works properly while the boat is being held from the shore if deep enough. Otherwise row or paddle the boat out in to deep water before lowering and then starting the motor. Idle the motor for a minute to warm it up.

When returning to the shore, the forward person must jump out in time to hold the boat steady and pull it towards the shore before the propeller touches bottom.

Starting the Motor



Starting Cold

a. Ensure that motor is fully lowered into the water.

b. Squeeze the fuel primer bulb until it becomes firm.

c. Ensure that safety cut out switch is fitted correctly and its "tail" is attached to your ankle, arm or other suitable place. Not all outboards have this very important safety feature.

d. Ensure the Gear lever is in the neutral position

e. Pull choke knob fully out.

f. Set throttle control to START position. CAUTION: Do not attempt to advance the throttle past this mark until motor is running and in gear (Cord cannot be pulled if motor is in gear).

g. Check you are not going to "hit" someone when you pull the start cord. Pull starter handle gently until resistance is felt, then continue to pull firmly and steadily to start motor. If you cannot pull the cord, the motor is not in neutral.

h. Return handle slowly to motor cover and if necessary repeat (d) to start engine. DO NOT return cord by letting go of the handle.

i. If motor has not started after three pulls of the starter cord, turn off choke then check fuel supply and then item's (a) and (c). Try again (d) and (e).

j. If motor starts, push choke control in half way. After approximately 20 seconds to one minute's running, push choke control FULLY IN.

k. After starting ensure the cooling system is operating by observing water discharge from under the motor housing. This should also be checked from time to time during use of the motor.

l. Allow motor to warm up at the idle speed for 1-2 minutes after a cold start before leaving the shore.

Starting Hot

a. Set throttle control to START position. Do not use the choke when the motor is hot.

b. Ensure the Gear lever is in the neutral position

c. As before pull starter handle gently until resistance is felt, then continue to pull firmly and steadily to start motor.

d. Return handle slowly to motor cover and if necessary repeat (m) to start engine. **DO NOT** return cord by letting go of the handle.

e. If motor has not started after three pulls of the starter cord, check fuel supply and then items (l) and (m). If the motor has been stopped for some time after running (approx. 1 hour) then the choke may have to be used to start; however it should not be pulled out for more than two pulls of the starter cord.

Remember, the engine should be kept warm and ready to start all times.

f. After starting ensure the cooling system is operating by observing water discharge from under the motor housing. This should also be checked from time to time during use of the motor.

IF THERE IS NO FLOW OF WATER AT ANY TIME THAT THE MOTOR IS RUNNING STOP THE MOTOR IMMEDIATELY

Stopping the Motor

During Normal Use

Ensure gearshift is in neutral. (This is to allow the motor to be started again immediately if required. If left in gear, the starter cord cannot be pulled).

Press stop button hard, and hold until motor has stopped.

Emergency Stopping Only

Pull the safety cut-out switch (if fitted). Replace after motor has stopped.

Changing Gear

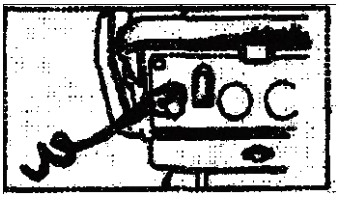
These motors do not have clutches so it is very important that you change gear at idle speed only.

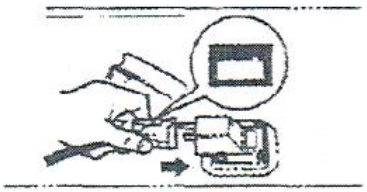
Reverse

Make sure that the motor is at idle speed and the motor is tilted fully down in the locked position. Push the gear lever quickly and firmly away from you. Open throttle carefully when using reverse gear.

CAUTION: DO NOT MOVE GEARSHIFT DIRECTLY FROM FORWARD TO REVERSE OR VICE-VERSA. ALWAYS PAUSE IN NEUTRAL BEFORE SHIFTING FURTHER TO AVOID DAMAGE TO GEARS.

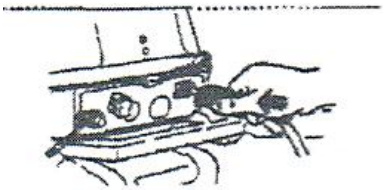
Motor Fails



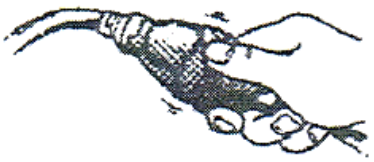


WHAT TO CHECK IF THE MOTOR FAILS?

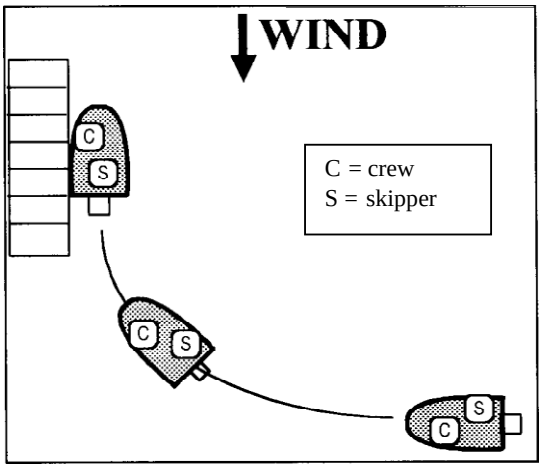
- Emergency cut-off rope and clip is still connected.
- Open air inlet of petrol tank
- Check petrol level in the fuel tank.
- Lift motor to check whether anything is wrapped around propeller.
- Petrol hose still connected correctly to engine and tank
- Petrol hose is connected in right direction (arrow on bulb).
- With choke fully pushed in, start motor while lever is in neutral, if not successful, use choke once.
- If the motor runs, but there is no propulsion, very likely the propeller sheer pin/bush is damaged. This will happen if the propeller hits an object. Seek advice to replace pin/bush.



- If this is all tried but nothing works, use the oars or paddles.
- If other safety boats are on the water call for assistance.
- If necessary when on the water put your anchor down to stop the rescue boat drifting while you check what's wrong or wait for assistance.



10. RESCUE SITUATION



Approaching Shore / Jetty

Always think ahead of the best way to approach. The strength and the direction of any wind and current play a vital role. Normally you approach into the wind and at a small angle to the landing. Initially approach at 30° reducing to 10° prior to arrival. If there is any chance of the motor hitting the bottom, turn the motor off, raise it and row/paddle the boat ashore.

Approaching Yachts / Other Craft

Instruct the sailor to be approached to release the mainsheet and luff up so as to lose steerage way and therefore not be able to change its course at the last moment.

Approach the yacht slowly if possible with the rescue boat's bow pointing into the wind and at a slight angle to the lie of the yacht. This may not be always possible due to the nature of the incident, e.g. a person injured or tangled needing urgent help, or the location of the incident, e.g. yacht hooked on overhanging branches, or stranded on a leeward shore. The method and direction of approach will depend on conditions at the time, but wherever possible the rescue craft should approach from the windward side to avoid the boom, and heading into the wind.

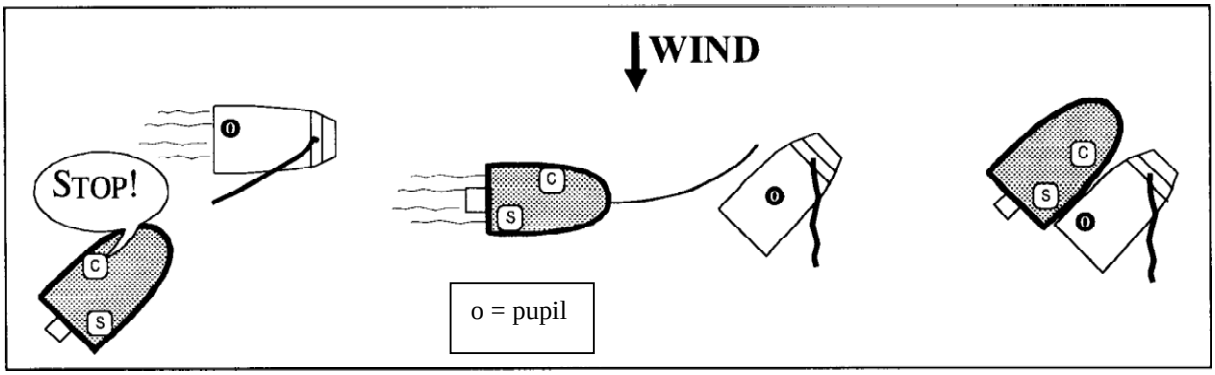
Come alongside the disabled yacht and find out if the sailor can repair the fault with assistance from the rescue craft crew. It is preferable to make the yacht seaworthy again if possible and to allow the child (or adult) to sail the yacht back to shore accompanied by the rescue craft. Instruction on sailing technique, towing the yacht clear of an obstruction or refastening a mainsheet may be all that is required to get the yacht back to normal sailing again.

AVOID standing up in the rescue craft when helping others, as this raises the centre of gravity and makes the craft unstable. Remain seated or crouched in the boat while helping or instructing sailors in other boats alongside.

DO NOT approach a person in the water from upwind as the rescue craft may be blown into them..

The person steering stays at the helm at all times, the crew must do the rescue work.

Watch out for hands/fingers between the boats. It is the responsibility of the rescue boat crew to hold the Yacht alongside.



Approaching Person / Object In The Water

Always plan your approach beforehand. The wind strength and direction play a vital role. When approaching somebody in the water, have the motor in neutral, and keep the motor well away to make sure you do not run over them. Always approach from downwind. Decide the urgency; if speed is not very important, it is far better to do everything in a relaxed manner, thus avoiding mistakes.

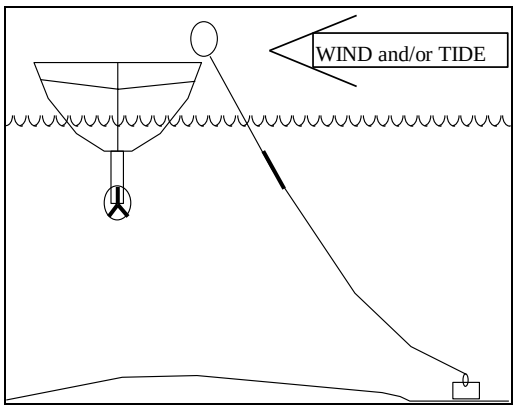
Approach from downwind and point the bow towards the person in the water.

Instruct your crew to direct you where to go; let them show where by having them point with their whole arm. Visual signals are far better than trying to hear commands above the wind and the motor. Before reaching the person, slow the speed of the boat down by reversing the engine if necessary. ***THE MOTOR SHOULD BE STOPPED IF SAFE TO DO SO,*** otherwise it must be in neutral when helping a person aboard the rescue craft from the water. Swimmers may be helped aboard over the side of the rescue craft by using the crew of the boat to counterbalance the tipping effect as the swimmer climbs over the side. Use the recoil effect of the buoyancy aid to bounce the swimmer out of the water.

Rescued persons may also be helped on board (very carefully even with the motor turned off) over the stern of the rescue boat to avoid a capsize. A loop of rope tied across the stern will act as a step to assist the swimmer to climb aboard. Be careful as the propeller is always sharp and can cause a bad cut even when not turning!

Often when a boat is capsized loose gear will float away. Also loose lines may be floating clear of the yacht. Before attempting to right the boat the sailor should make sure all necessary equipment is reattached. This may avoid the uncontrolled yacht rounding up and capsizing a second time. Also when approaching the upturned yacht with the patrol boat make sure that the rescue craft motor cannot become tangled with the painter or mainsheet.

Laying Marks



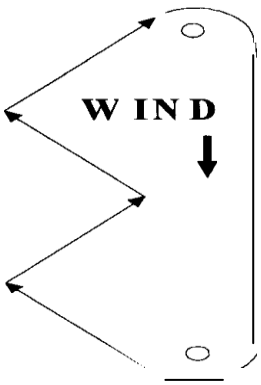
When placing marker buoys, position the boat across the wind (or the tide if stronger) and lower the weight gently towards the bottom. In some conditions you will need to stay head to wind. Make sure you use the windward side of the boat so that when the boat drifts with the wind, the anchor line lies away from the propeller. The motor should be in neutral to avoid ropes wrapping around the propeller anyhow.

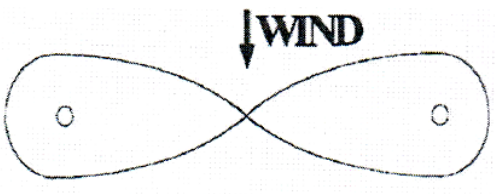
Fix the length of the line so there is little or no excess line floating around.

Hold the buoy and drag it if necessary to the correct point and let go. Pick up the buoys in reverse order.

Course Setting

It is important to lay a "true course" to the wind to make sailing easy for your sailors. Do not be afraid to adjust the course if the wind changes direction. Make sure you have taught the sailing rules beforehand and watch out for collisions.





You should be able to lay a
"Beam Reach"
and a
"Windward Course"

11. TOWING PROCEDURES

Towing A Disabled Yacht

1. If the yacht is capsized, let the child right it first. If the yacht is moving, instruct the child to stop (let go the mainsheet but steer with the tiller or let go the rope and steer across the wind).
2. If towing is necessary, have the sailor:
    a. remove the centerboard from the centerboard case
    b. release the kicker if necessary
    c. release the mainsheet by releasing the sheet clip or un-tie the Round Turn and Two Half Hitches from around the boom or Pull the mainsheet through the blocks to allow the boom to run free. This is done to allow the sail to swing completely around in front of the yacht when towing downwind, otherwise the sail would drive the yacht into or past the stern of the rescue craft.
3. Wrap the painter of the yacht around the mast once to take the load off the often weak fitting at the bow of the boat. Then take a turn around a fitting or cleat near the stern of the rescue craft so that it may be cast off in a hurry.
4. Have the sailor crouch low or lie down to avoid the swinging boom and to steer the yacht to follow the rescue craft. Moving aft in the yacht makes for a better tow and prevents nose-diving.
5. Tow the yacht slowly by its painter (painter should be taught) and ensure the painter is long enough to allow the boom to swing safely between the yacht and rescue craft. Otherwise extend the painter by tying it to the towline stowed in the stern of the rescue craft. This should be a temporary measure - towlines must stay with the rescue boat for quick use in an emergency. Keep the towline taught.
6. Keep the acceleration and speed down. Do not use reverse!
7. When approaching the jetty or shoreline, the rescue craft should pass slowly close and parallel to the shore and cast off the yacht, instructing the sailor to steer it to shore. If approaching into an offshore wind then it is advisable to tow the yacht right into the jetty.
8. While towing, the person operating the motor should be looking forward while the crew controlling the towline should be looking aft at the sailor and the boat.

Rescue craft crew must be prepared to enter the water to help a distressed sailor who may also be situated under an upturned hull. It may be necessary to enter the water to right a capsized craft if the sailor is unable to do so. Choice of suitable clothing and footwear is an important factor when instructors are engaged in rescue craft duties.

Towing Kayaks

Safety Boat Rescues:

Do not attempt to tow a paddler in their kayak with a motor boat ! ! !

If the kayak flips the kayaker will be trapped ! ! !

It is important to remember that a kayak sits very low in the water and a rescue craft looks even bigger to a swimmer in the water. It is preferable for any rescue to be carried out by a kayaker in the first instance however this is not always possible. If a powered rescue boat carries out a rescue, the motor must be turned off prior to approaching the swimmer.

The swimmer is the first concern and although the 'T' type of rescue/recovery may be used, by pulling the kayak over the motorboat, **it is preferable that the swimmer be recovered** and the kayak then emptied or towed ashore for emptying. In extreme circumstances the kayak could be left to drift or attached to any temporary anchor such as a buoy weight.

12. FINISHING UP

Take out and rinse all the buoys and equipment that do not belong in the boat, but leave in the rest of the equipment such as oars, anchor or lifebuoy, etc.

Hose the boats and trailers inside and out after use and make sure that no salt residue, sand or weed is left in or on the boat and motor. Let the water run to one end and drain (remove the bung). When an inflatable does not drain, use a sponge to remove the remaining water and sand.

Flush the motor by running for at least two minutes using water drum or, if suitable, with the "ear muffs" connected to the water hose.

13. NAVIGATION SAFETY RULE (Abridged)

For the full text of this rule and the Advisory Circular that accompanies it, please refer to the MSA web site www.msa.govt.nz.
The Rule is in force from 21 March 2003.

THIS IS A BRIEF SUMMARY OF THE KEY POINTS

Maritime Rule Part 91: Navigation Safety is a Rule made under the Maritime Transport Act 1994. The Act places responsibility on the skipper or person in charge of every vessel for:

- The safety of the vessel
- The safety of all persons on board
- Complying with all maritime rules and other regulations and bylaws.

The Navigation Safety Rule sets out legally binding "code of conduct" for all vessel operators' behaviour. All vessels are also subject to the Collision Prevention Rules which must be read in conjunction with this rule.

Personal Flotation Devices (PFD)

- It is compulsory for PFDs (often called lifejackets) to be carried on all recreational craft. They must be worn when being towed and at all times of heightened risk. This may include, for example: rough seas, non-swimmers, alcohol consumption, emergencies and distress.
- A wide range of PFDs is allowed in the rule to suit all types of boating activity.
- The skipper must ensure that a correctly sized serviceable PFD is available for every person on board.
- In some sports and ceremonial events the PFDs may be carried in another boat which stays in the immediate vicinity.
- PFDs must meet the NZ Standard or another similar national standard acceptable to the MSA. Sports teams from other countries may use their own approved PFDs while in New Zealand

Age for Operating Power Driven Vessels

- The person operating a power vessel capable of more than 10 knots must be at least 15 years of age. If a person aged 15 or over is supervising and remains within reach of the controls, a younger person may operate the vessel.

Speed

Without reasonable excuse, no vessels may exceed 5 knots through the water:

- Within 50 metres of another vessel or person in the water
- Within 200 metres of the shore, any structure, or any vessel displaying a dive flag
- While anyone has any part of their body over the bow or sides of a power boat.

Wake

- Recreational craft must avoid making a wake which can cause unnecessary danger or risk of damage to other vessels, structures or people.

Water Skiing, Towing and Similar Activities

- Any boat towing a water skier, boat, wake board or similar device at over 5 knots must have a person aged at least 10 to keep a lookout, as well as the skipper. Those being towed must wear a PFD.
- Water skiing and similar activities are not permitted from sunset to sunrise.

Access Lanes and Reserved Areas

- If an area is being used for its designated purpose, then other persons and craft must leave the area.
- If it is not being used for that designated purpose, then all normal navigation rules apply.

Anchoring

- All vessels must anchor well clear of wharves and jetties and their approaches.
- Skippers must ensure they anchor so that they do not cause a hazard by swinging into other anchored craft, or by dragging.

The 500 Ton Rule

- In areas near the approaches to harbours and ports, charts will show where all vessels must keep well clear of ships over 500 tons, even if the ship is overtaking.

Tankers and Defence Premises

- Whenever possible, vessels are required to stay at least 200 metres away from tankers, ships displaying code flag B (dangerous goods) and defence premises.

Diving

- Any vessel where diving activities are taking place must display code flag A so that it can be clearly seen from 200 metres.

Safe Boating Advisers (SBA)

- The MSA may appoint SBAs to promote safety awareness in small craft.

Regional Navigation Safety Bylaws

- Regional Council Bylaws are in place in many places around our coast and also inland. Bylaws must not conflict with this Maritime Rule, so there is one consistent set of Navigation Safety Rules throughout all parts of NZ.
- Where bylaws are in place, the Navigation Safety Rule does not apply.
- Councils may appoint Honorary Enforcement Officers to help police their areas.

14. THE WATERWISE LESSON

Hints for Session Leaders and Teachers

So you're taking your class to Waterwise - Great!

Summer's here, the kids are keen, you have ordered the bus and you're off.

But BEWARE - - - - - **BE PLANNED** because you are, in effect, the manager of an Outdoor Activity that contains hazards and risk that must be managed. The following points are worth considering.

Recommendations (for Teachers-In-Charge)

1. Gain qualification as a Waterwise Instructor yourself so that you have full understanding of what is trying to be achieved.
2. Have a School Policy so that all adults involved with the Waterwise sessions know the objectives and procedures clearly with CONFIDENCE AND WATER SAFETY BEING PARAMOUNT.
3. Have a Programme in place.
4. Try to be free to oversee at your Waterwise session. You need to be in a position to advise, deal with unexpected situations, fill in for instructors, assess, encourage, administer first aid, etc.
5. Have your lessons well planned and your instructors briefed before each session.
6. Have a meeting early in the season with all instructors and parent helpers to outline roles, goals and expectations. Organise a roster for instructors and delegate organisational tasks.
7. Have a Risk Management Plan, i.e. ensure you have strategies in place to prevent any accidents from happening and that you know what to do in an emergency.

WATERWISE

SAILING ACTIVITY SHEET

_____ SCHOOL Teacher _____

Session Leader _____ Class _____ Date _____

ACTIVITY	INSTRUCTOR	PARENT HELP
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		

The Waterwise Session Organisation

1. Develop an arrival procedure, i.e. where to put bags, when to get changed, get gear out, etc.
2. Brief your class as a whole before splitting into activity groups.
3. In Groups - Brief instructors as well as children before each activity commences so everyone is clear on what to do.
4. Debrief your class at the end of each session.

Include praise for achievement, co-operation, etc.

15. WATERWISE SESSION ORGANISATION

WATERWISE LESSON RECORD

Example - Knots

School _____Class _____ Date _____

Instructor _____Helpers _____

NAME	Reef Knot	Figure of Eight	Round Turn & Two Half Hitches	Bowline	Double Sheetbend	Other	***Comments***
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							

Teaching Tips and Techniques for Instructors and Helpers

1. Be pre-planned and visualise your lesson.
2. Don't give open-ended questions in large group situations. Encourage relevant questions and 'hands up'.
3. Focus your pupils in (ears and eyes) and give clear instructions.
4. Give children assigned roles when they're in groups.
5. Be firm and outline your discipline plan clearly to your class.
6. Organise rewards (stickers, certificates) and give praise to reinforce positive behaviour.
7. Revise and repeat skills and activities. Make full use of the simulator to correct faults.
8. Don't embarrass children in front of others. Take aside and correct.
9. When instructing from a safety craft, get as close as possible alongside a child who needs guidance. Give instructions clearly and one at a time.
10. Be positive - encourage children to visualise themselves succeeding.
11. Start simple - step-by-step. Consider skill achievement cards.
12. Use a variety of learning styles, i.e. LOOKING, LISTENING AND DOING and plan activities accordingly, e.g.

    a) Model Boats

    Use markers to lay the course on the ground. Have each child move a model boat around the course changing the sail as necessary and talking through each move.

    b) Walk the Course

    Mark out the course on land just as they see it on the water. Each child walks the course talking through each move.

Note: Both strategies are useful for clarifying course directions and for allowing children whose learning styles are not predominantly visual/audio.

13. Know Your Children

a) Their names. A list is the bare minimum

b) Swimming ability. Children who cannot swim 25 metres unaided should not be allowed to sail without direct 1 to 1 adult supervision.

c) Previous experience in and on water.

d) Language or learning ability, i.e. for children who speak English as a secondary language or slow learners, 'demonstrations' and 'buddies' will be appropriate.

e) If you know your children you can set them tasks that will neither endanger them nor bore them but rather challenge and stimulate them! (This also assists in eliminating any misbehaviour)

14. Remember the **OBJECTIVES OF WATERWISE** - to promote water safety and confidence.

The tasks must be achievable and children must understand their instructions before attempting them. This will help to build **CONFIDENCE**.

WATERWISE ACTIVITY SHEET Name of Activity _____

School _____ Teacher _____

Session Leader _____ Class _____

Date _____

Activity	Instructor	Parent Help

16. WATERWISE INSTRUCTOR LOG RECORD

				VENUE	
DATE	**HOURS AS INST'R**	**HOURS DRIVING RESCUE CRAFT**	**CONTENT OF LESSON**	**WEATHER**	**VERIFYING SIGNATURE**
			Total hours carried forward		

17. WATERWISE EXAMINATION

A Waterwise examiner will be coming to your Waterwise to check that you have learnt the entire syllabus contained in this manual. We will be trying to help you as well as make an overall assessment. Here are some brief points that we will be looking for

Competence

It is important that you can show us you can achieve the desired result. It doesn't necessarily mean that you have to complete a coming along side first time, every time but rather you can make a sensible decision whether or not to continue before you are irretrievably committed**.**

Confidence

The Examiner will be attempting to obtain a complete impression of your Rescue Boat handling ability. Just as you would not approach the driving test in a strange car without having practised reversing into a narrow opening, etc. **You should not attempt the Waterwise Instructor Assessment without practising all the tasks** in the type of boat in which you intend to take the test. You should be able to show that you have done these manoeuvres many times before. Students are going to want to believe you when you show them something**!**

Procedure Following Assessment

If at the end of the Waterwise Instructor assessment, there are still items that are not up to standard, we (your Examiner) will hold your test paper until you have completed all requirements.
Only then will we forward it to the Board and Registry Office for issuing of your formal qualification certificate from New Zealand Schools Waterwise Incorporated.
These requirements may be just a phone conversation about something in the test paper or may be re-sail or rescue boat assessment. These can be done at any of the Waterwise Instructor assessments run in your area
Please do not hesitate to ask questions before, during and after the assessment.
We are here to help!

HAVE FUN! KEEP SAFE*!*

GAIN ***CONFIDENCE*** *and* ***ENJOY*** *our wonderful water environment*