

SKI BOAT DRIVER LEVEL 1

STUDENT EDITION WORKBOOK 2022 V1



Version 1.
2022 Including
wakesurf
recommendations

The SBD1 certificate guarantees no rights to an ICC for coastal or inland waters. The SBD1 is only valid for coastal waters if used in conjunction with a coastal ICC.

This driving course will be adapted to the water and the boat used by the SBD Centre.

The SBD1 is the BWSW benchmark ski boat driving qualification for inland waters in the UK

- Lakes and Rivers
- Shaft drive or Tournament boats will generally be used on lakes and inland waters.
- Sports boats and RIBS are often used by recreational skiers/riders on inland waters.
- Driving skills will be similar, wherever the centre is located.

By the end of this course, you should understand;

- The Propeller.
- What equipment should be on board.
- The kill switch
- Essential equipment
- Safety
- How to manoeuvre a boat safely
- How to drive for a water skier and wakeboarder.
- How to use tow lines and shorten a wakeboard line.
- How to drive for inflatables.

Types of Boat



Flat Water Boat



Recreational Boat

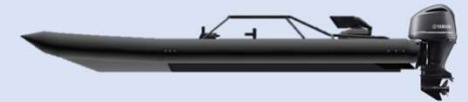


Rigid Inflatable Boat (RIB)

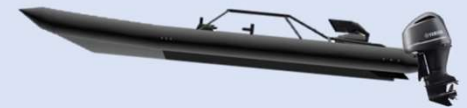
Discuss the characteristics of the these boats

Outboard Engines and Power Trims

TRIM LEVEL
=
EVEN KEEL



TRIM OUT or UP
=
BOW UP



TRIM IN or DOWN
=
BOW DOWN

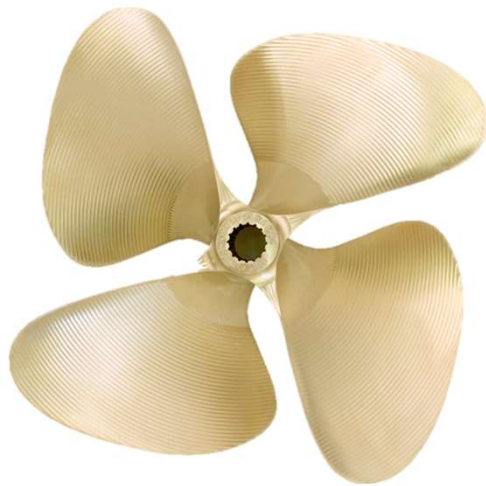


1) Why would you change the trim? 2) Which is ideal for towing a skier/rider?

Propeller Selection

Stainless Steel

Aluminum alloy



Bronze alloy – shaft drive



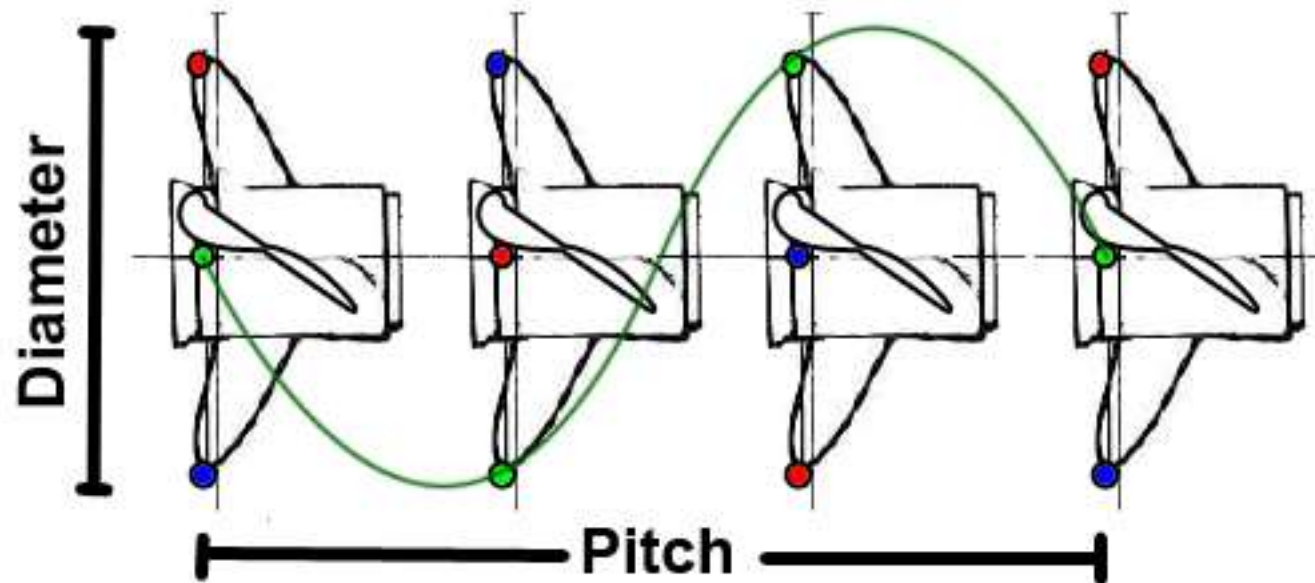
Outboard and stern drive



Outboard and stern drive

Discuss these propellers – what are advantages of a stainless steel propeller on an outboard engine? why could it be necessary to change the type or size of propeller?

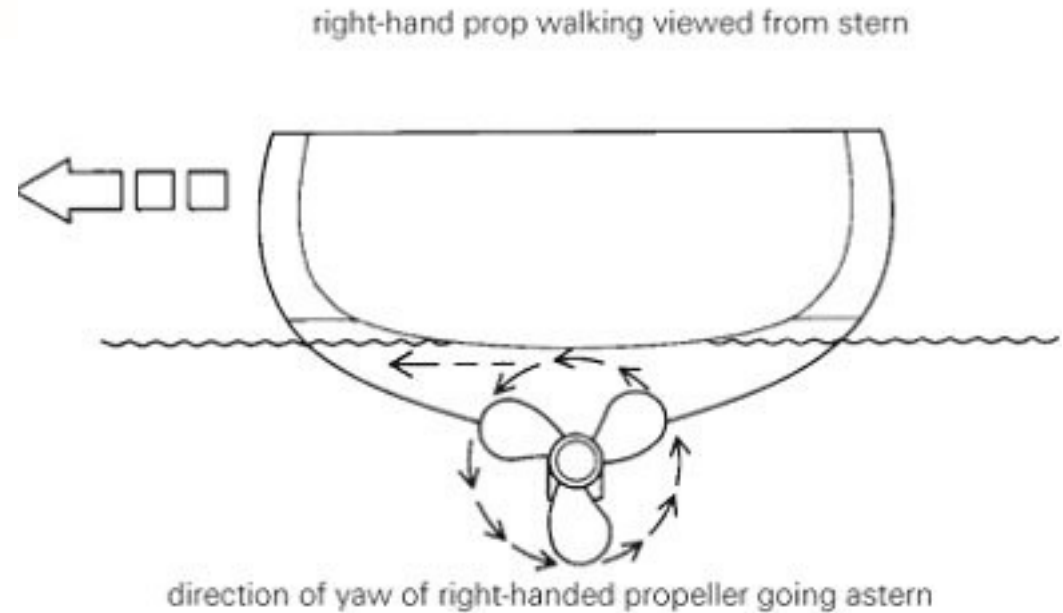
Propeller Pitch



What is Pitch?

For example what does a 21 inch pitch mean?

How a shaft drive boat manoeuvres

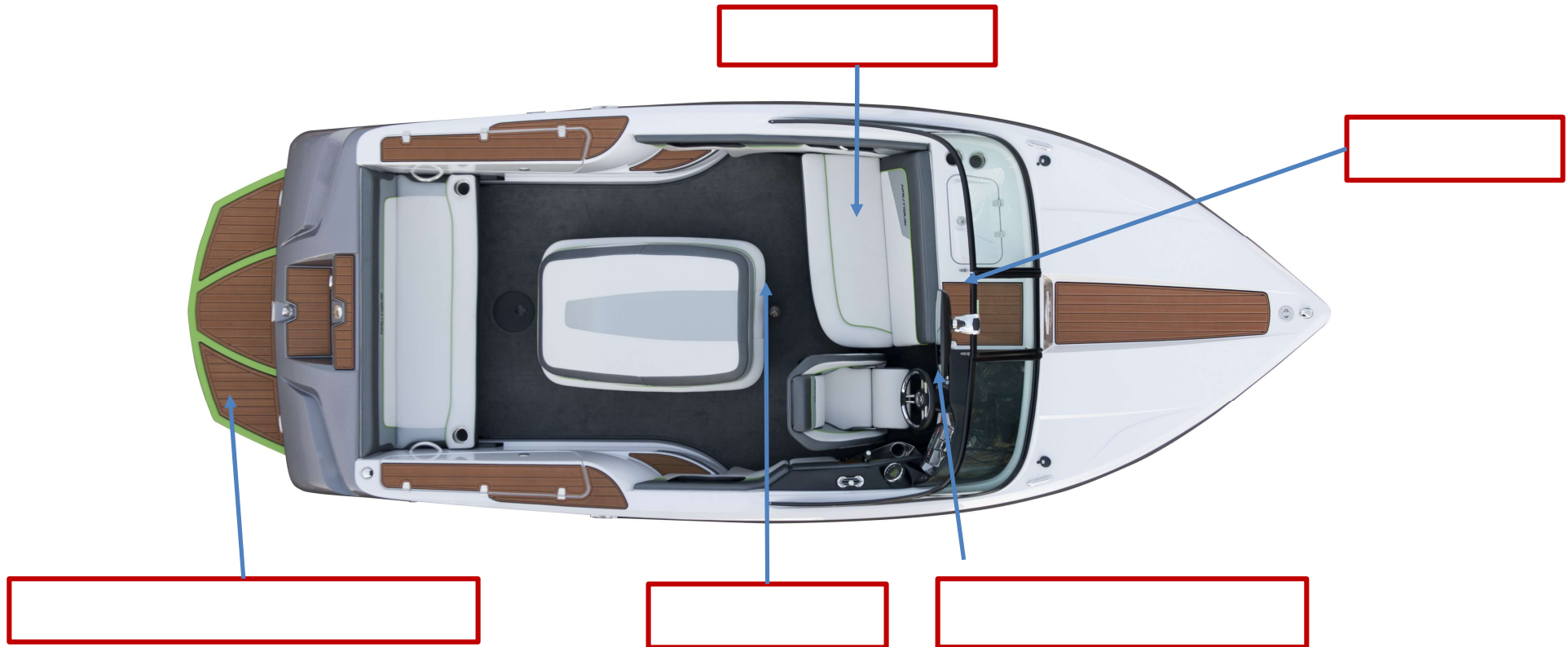


Discuss..... what is 'Prop Walk or Paddle Wheel Effect'?

Equipping a Ski Boat

What Equipment would you expect to be fitted to a Ski Boat?

The illustration below, shows features common to a tournament boat.
A sports boat may not have these features



**Discuss what equipment you would TAKE WITH YOU
in the boat for various waters**

Small club waters

Very large public lakes

Rivers

Tidal rivers

Kill Switch

- Key Points?

Other Inhibitors

- What are they (on the gear/throttle lever)?

The Blower

- What is it?



Fire Extinguishers



- Discuss requirements and where you would expect the fire extinguisher to be fitted, mounted or stored

Buoyancy Aid OR Life Jacket

NOTE: Buoyancy aids and life jackets must fit correctly

Buoyancy Aid



Impact Vest



Life Jacket



Discuss the benefits, why and when the equipment above is appropriate

Discuss communication equipment

Discuss the advantages and disadvantages of a mobile phone



Mobile Phone

Discuss the advantages and disadvantages of VHF marine Band radio



Marine Band Radio

Trailers

Tournament Boat Trailer

- Specifically for a tournament boat
- Trailer and boat are very heavy
- Consider the legal weight and width a car can tow



Sports Boat Trailer

- Typical for small sports boats and RIB's
- Has rollers so the boat can easily be rolled on and off
- Boat needs to be secure when towing and on the slipway



- NOTE that all water is corrosive, salt water is VERY corrosive. Trailer brakes corrode, making them very unreliable
- WHEEL BEARINGS are a consumable component, they need to be checked and replaced regularly.
- The towing vehicle should not be driven into water, especially salt water. It is bad practice to drive the vehicle's braking system into salt water or sand

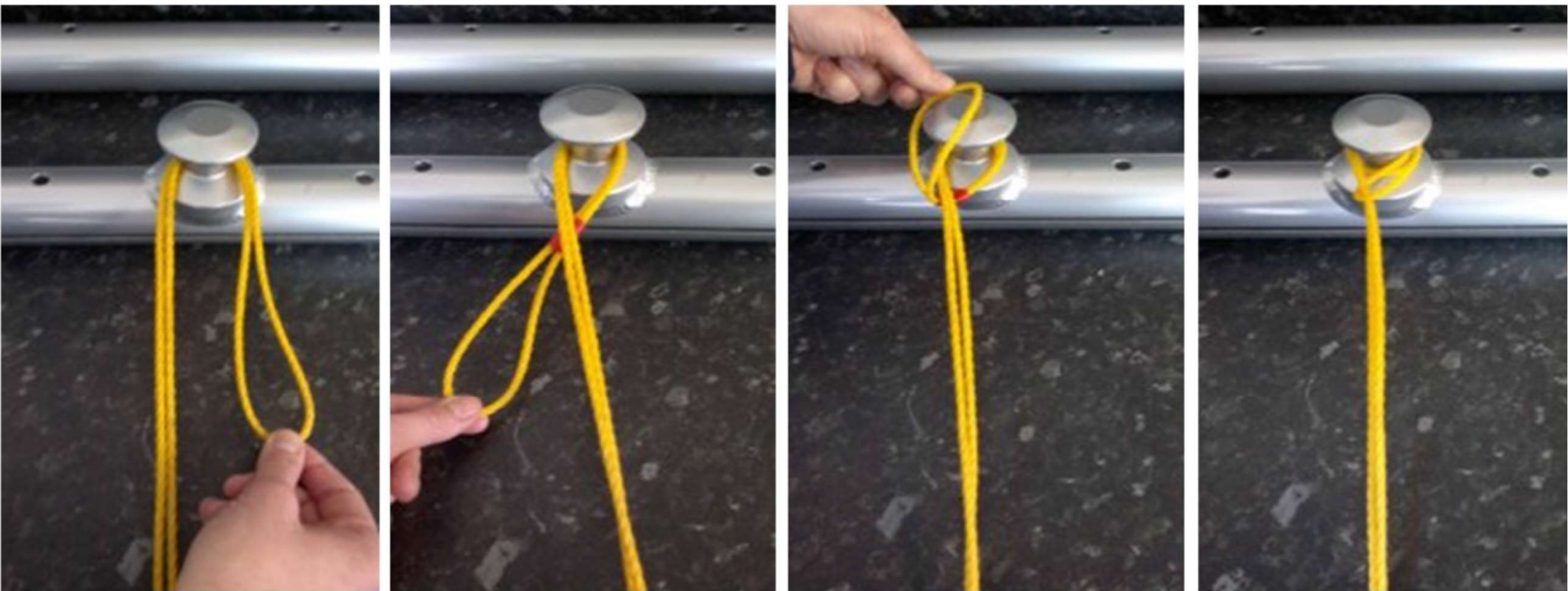
Preparation

Discuss preparation

- what do you need to do to prepare the boat/trailer?
- what are the rules for this site?
- What are the dangers to boat and crew and kier at this site?
- where will is the ski/riding area?
- what can go wrong?
- what will you do if things go wrong?



Knots



The Wakeboarder's knot for shortening a line without loops

Boat Crew



- Your driver should be competent AND FIT TO DRIVE what would make him **unfit**?
- What boat crew do you need and why?
- Do you need an observer/ under what circumstances could you **not** have an observer?
- What makes the observer 'competent'?

BWSW Observer Card

Observer Briefing Card



An observer is expected to;

1. Know the BWSW Safety Hand Signals (see diagram opposite)
2. Watch the skier/rider for dangers and signals
3. Know how to stop the engine with the ignition or the kill cord
4. Be able to use a mobile phone/radio to call for help in an emergency

REMEMBER – the driver looks forwards, the observer watches the skier/rider

SITE INFORMATION – in case of emergency

Club Name:

Postcode:

Contact No.:

In an emergency, call 999 directly

BWSW HAND SIGNALS

www.bwsw.org.uk



FASTER



SLOWER



SAME SPEED



SPEED OK



TURN AROUND



I'M OK



BACK TO DOCK



STOP



Skier Signals



FASTER



SLOWER



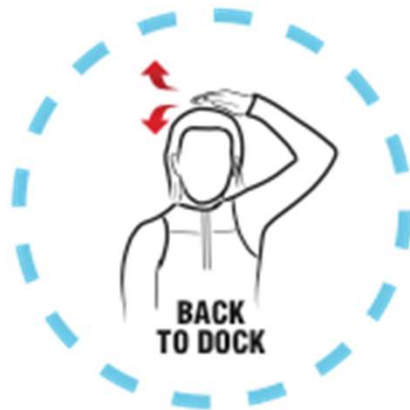
SPEED OK



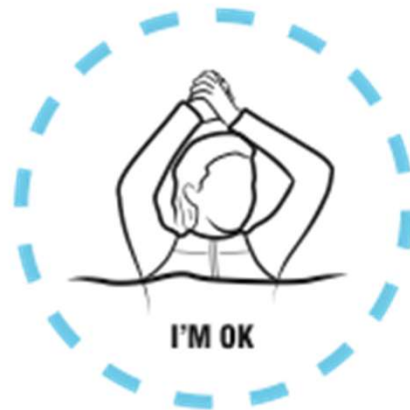
SAME SPEED



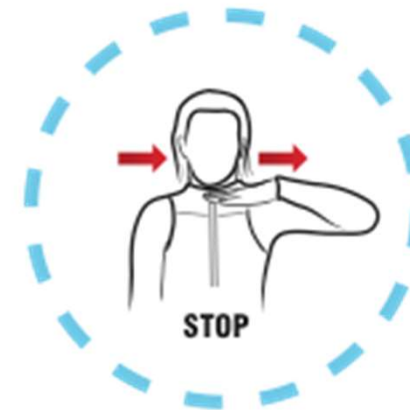
TURN AROUND



**BACK
TO DOCK**



I'M OK



STOP

Risk Assessment

- Risk assessments do not have to be complex – e.g. we carry out a basic risk assessment every time we cross the road

REMEMBER...

- Always appoint a Launch Marshall
- Assess the risks during launch and recovery
 - trailer and towing vehicle brakes
 - limbs or persons becoming trapped
 - danger to the boat during launch
- Assess the risk to the boat and crew on the water
- Assess the risks to the skier
 - ski injury
 - hypothermia
 - taken by the current
 - danger of other craft

Safety Points

- The driver must check the skier by looking over the right shoulder before accelerating
- The driver must be able to see all of the line, the handle and the ski/board tips
- The driver has a responsibility to ensure that the skier is safe before accelerating
- The driver must keep one hand on the throttle at all times when the boat is under way
- All inhibitors must be in good working order
- Always have a competent observer
- The skier/rider must always wear a buoyancy aid
- When returning to a fallen skier/rider, the driver must keep the skier in view over the right hand side of the boat
- The driver must switch off the engine whenever the stern of the boat is close to the skier/rider

Why Accidents Happen

- An accident is an unwanted, unplanned event which can often be prevented
- An accident occurs due to a mechanical breakdown or a breakdown of our “safety systems”
- Driver behavior, procedures, equipment, environment and concentration may be factors

Inflatables

Discuss the safety precautions for
towing inflatables



Discuss what you see in this picture
Do the riders look safe?

BWSW have a Code of Practice for the use of towed inflatable equipment – these should be read before driving for inflatables

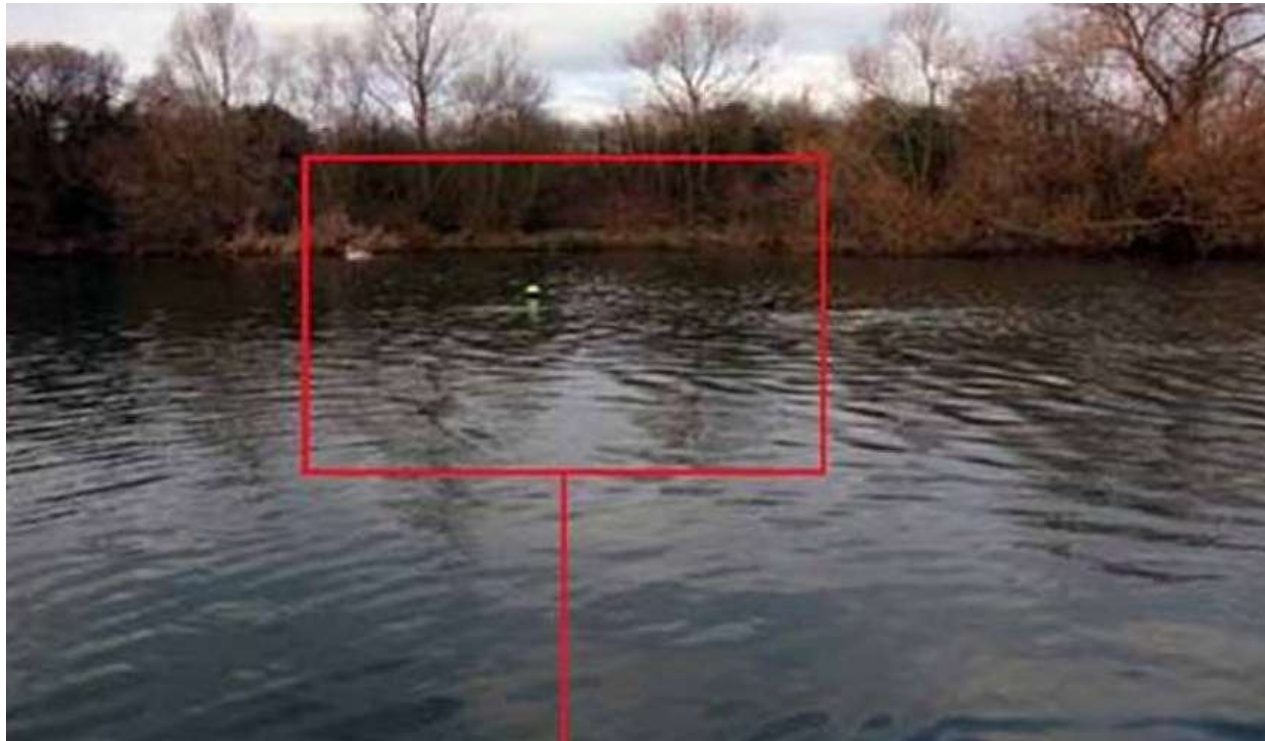
BWSW CODE OF PRACTICE FOR THE USE OF INFLATABLE EQUIPMENT

INFLATABLE RIDERS

- 1 Wear a ski vest or buoyancy aid.
- 2 Wear high-visibility, soft head protection.
- 3 Do not ride an inflatable unless you are confident in the water.
- 4 Know BWSW standard hand and aural signals.
- 5 Do not stand up on the inflatable.
- 6 Do not try to throw other riders overboard.
- 7 Do not attempt to steer an inflatable.
- 8 Do not attempt to abandon an inflatable during a tow.
- 9 Do not hold the towing rope.
- 10 Do not fasten any part of your body to an inflatable.
- 11 Do not shout hit it until the rope is taught and all riders are prepared.
- 12 If a fall takes place, put your hands in the air to indicate 'OK'.

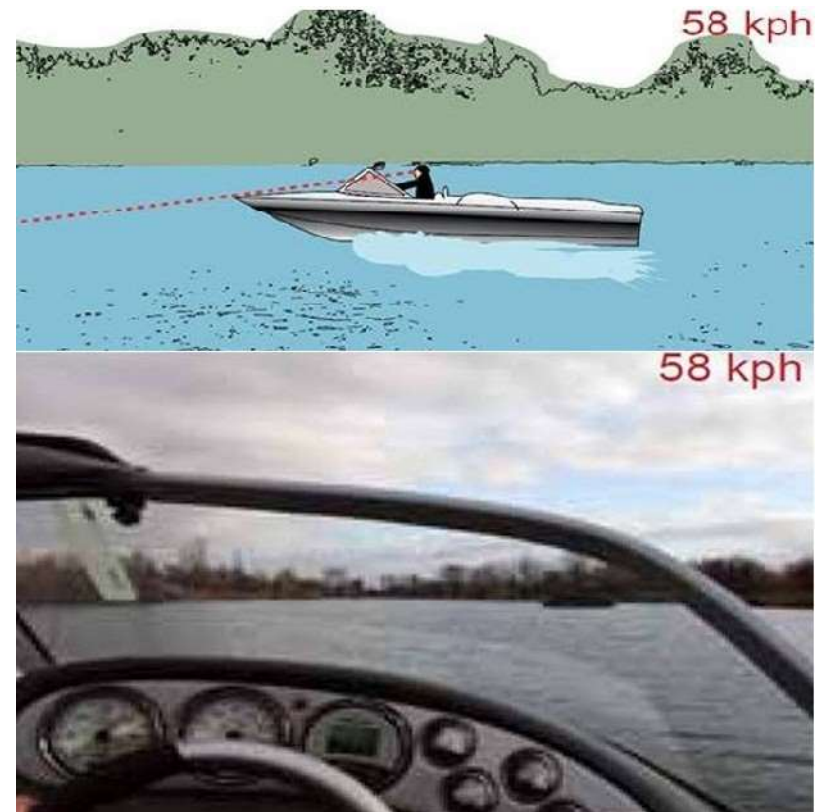
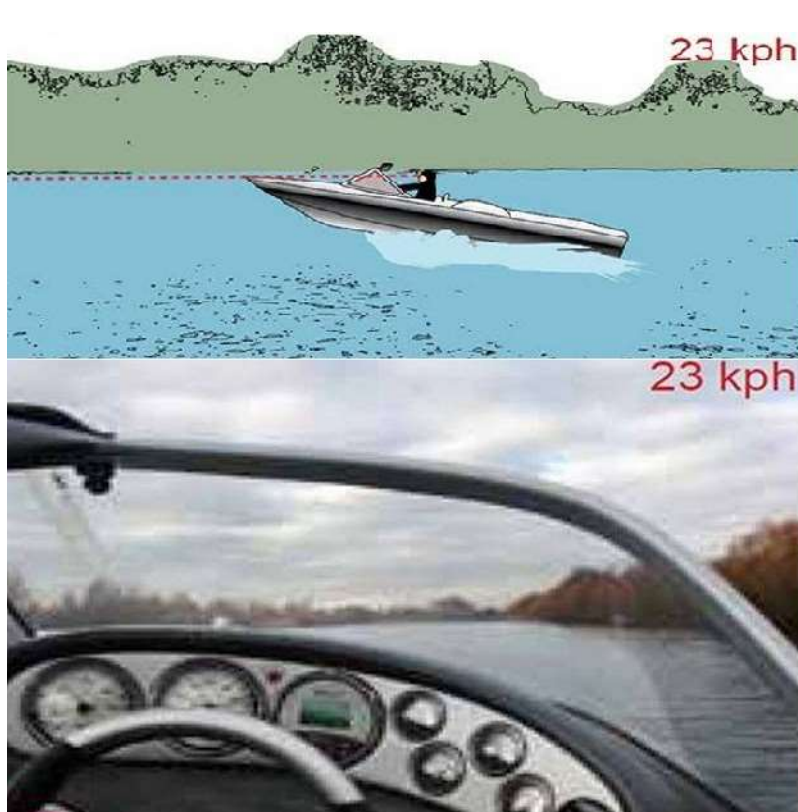
<http://www.bsw.org.uk/resources/inflatable-recommendations/>

Inflatables - Visibility



- Brightly coloured, soft helmets must be worn by the participants
- There are 2 helmets in this photo – one is covered with high visibility material, the other is a standard black helmet

Inflatables - Visibility



- Sports boats are designed to go considerably faster than the recommended speed for an inflatable (around 23-25 KPH)
- But, the optimum visibility for ski boats is around speeds of 48-58 KPH

WHEN DRIVING THE BOAT FOR INFLATABLE EQUIPMENT

BOAT HANDLING

- 1 Tow in a manner suitable for the water conditions and always execute wide turns.
- 2 Do not increase speed on turns.
- 3 If an inflatable goes out on the 'whip', reduce speed.
- 4 Do not tow an inflatable over the wash of other boats.
- 5 Do not tow an inflatable over a jump or through a slalom course.
- 6 Do not use excessive manoeuvres to try to throw the rider out.
- 7 Keep away from other boats and other water users.
- 8 Do not tow an inflatable in shallow water.
- 9 Leave sufficient space to avoid all obstacles, not less than a towropes distance of any solid object.
- 10 Do not continue a tow if a rider(s) falls.
- 11 Always approach a fallen rider at an appropriate controlled speed on the Driver's side.
- 12 Always switch off the engine before boarding riders from the water.

<http://www.bsw.org.uk/resources/inflatable-recommendations/>

Driving for Skiers/Riders

- Signals
- Pulling a skier out the water
- Turning with a skier
- Picking up fallen skiers

Skier Signals

State the eight standard hand signals

Throttle Positions



Neutral



Idle

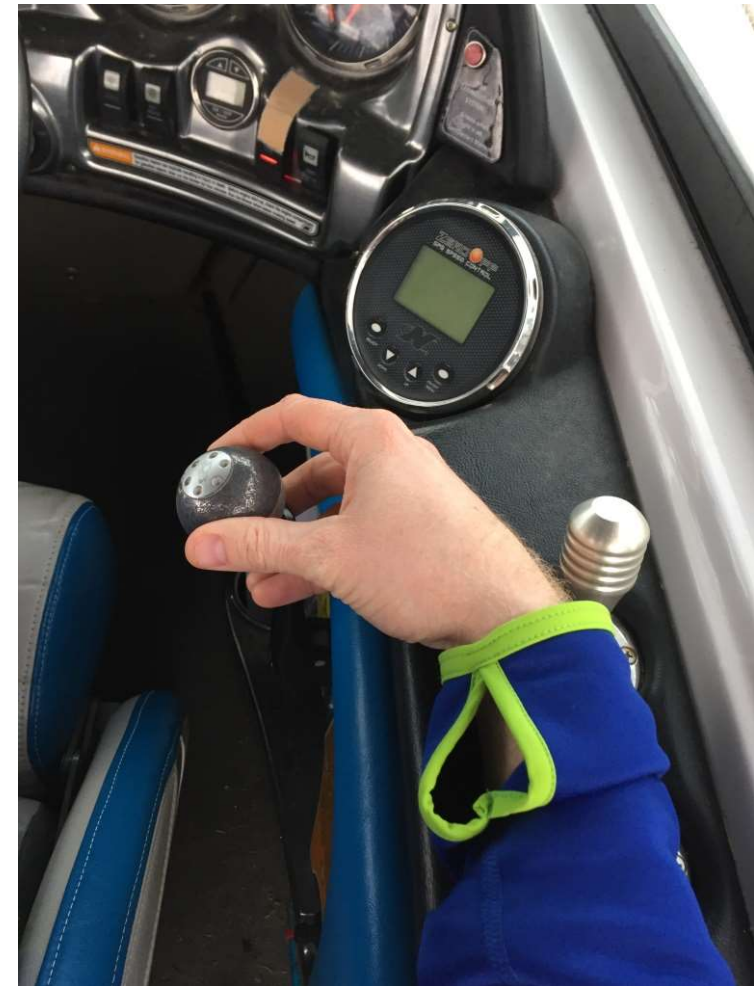


Fast Idle

Holding the Throttle

Thumb and Forefinger for control

Middle finger to lift the collet



Boat Handling

You must demonstrate skill and understanding of the following;

- How a boat manoeuvres
 - Paddle wheel or prop effect
 - Pivot points
 - Momentum
 - Steering
- Slow speed handling
 - Approach a buoy and come along side
 - Three point turn
 - Drive a figure of eight around a boat lane buoy and slalom buoy

or

 - In windy or coastal conditions drive around a single buoy.
- Manoeuvring a shaft drive boat or a sports boat with an outboard or inboard engine

Practical Assessment Manoeuvres

Boat Control & Slow Speed Manoeuvres

One of the most important skills of driving a boat, is the ability to control the boat at slow speed, and be able to position the boat where you want it.

This is done by careful throttle control, and understanding the steering effects without over compensating.

Always be properly seated and have one hand on the gear shift/throttle and one hand on the helm (steering wheel).

For slow speed manoeuvres you will use only the engine idle speed and only engage gear when you need power.

This driving technique is known as “in gear and out of gear” this technique is essential to control the speed and momentum of the boat is important to control the speed and momentum.

You will need to understand where the boats pivot point is and how the rotation of the propeller affects the boat in reverse gear.

The “golden rule” when learning boat control is: “Steer before gear!”

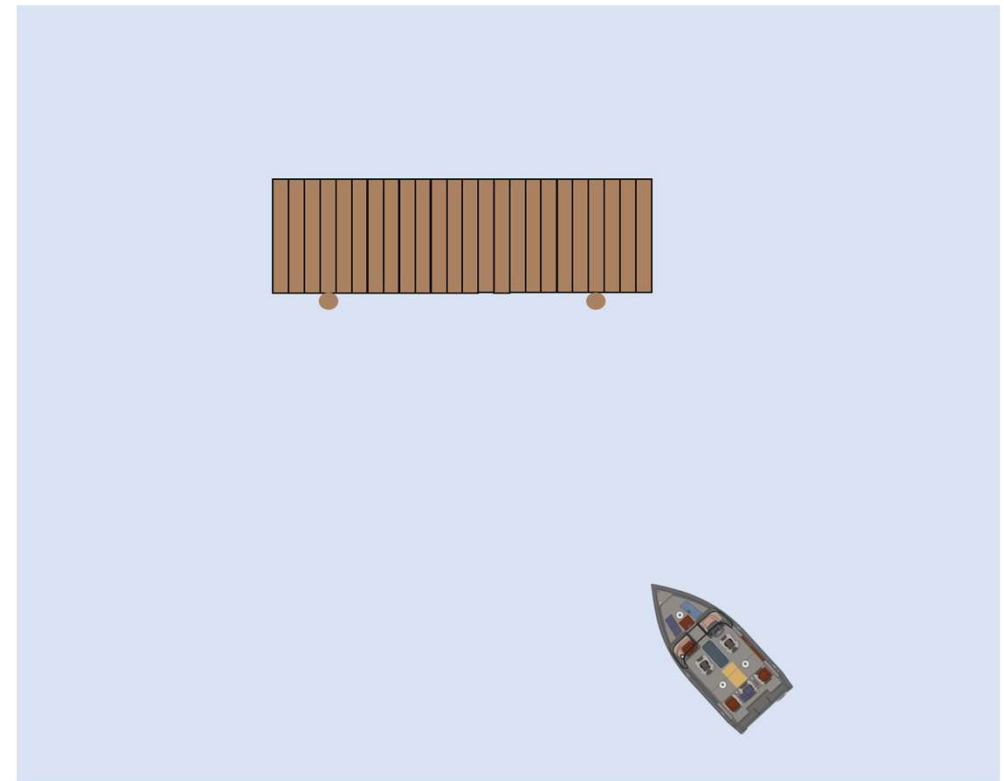
Practical Assessment Manoeuvres

You will need to be able to moor the boat along side the dock.

KEY POINTS;

- Approach the dock very slowly.
- Know the pivot point and the relationship between the bow and stern during the manoeuvre.
- Know how the boat moves in reverse.
- Take account of the wind or current.

Approaching a jetty



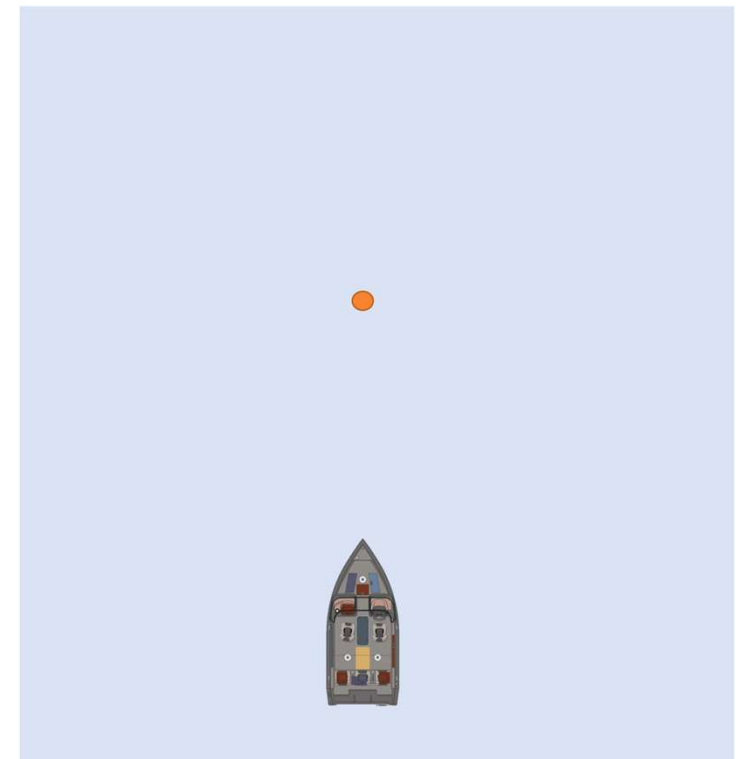
Practical Assessment Manoeuvres

Pick up a buoy

This manoeuvre could be applied to picking up a mooring, a ski or presenting the boat to the person in the water for boarding.

KEY POINTS;

- Approach the buoy very slowly into the wind or current.
- Manoeuvre very slowly.
- Know how the boat moves in reverse.
- Know the pivot point and the relationship between the bow and stern during the manoeuvre.
- Bring the boat to a standstill using minimal reverse gear.



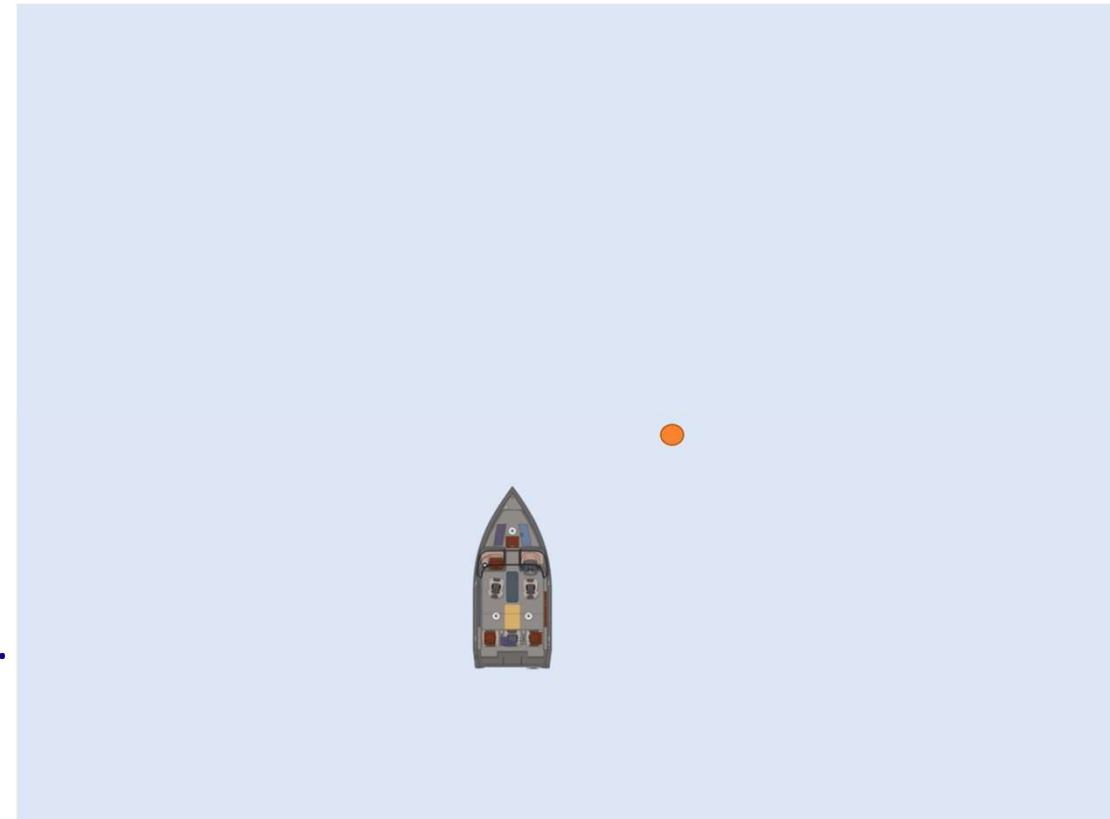
Practical Assessment Manoeuvres

This manoeuvre is used when making a 180° turn on the spot, in a harbour or marina where there is very little space.

KEY POINTS;

- Manoeuvre very slowly.
- Know the pivot point and the relationship between the bow and stern during the manoeuvre.
- Know how the boat moves in reverse.
- Position the boat to make reverse favourable.
- Take account of the wind or current.
- Use the wind or current to your advantage if possible.

3 Point Turn



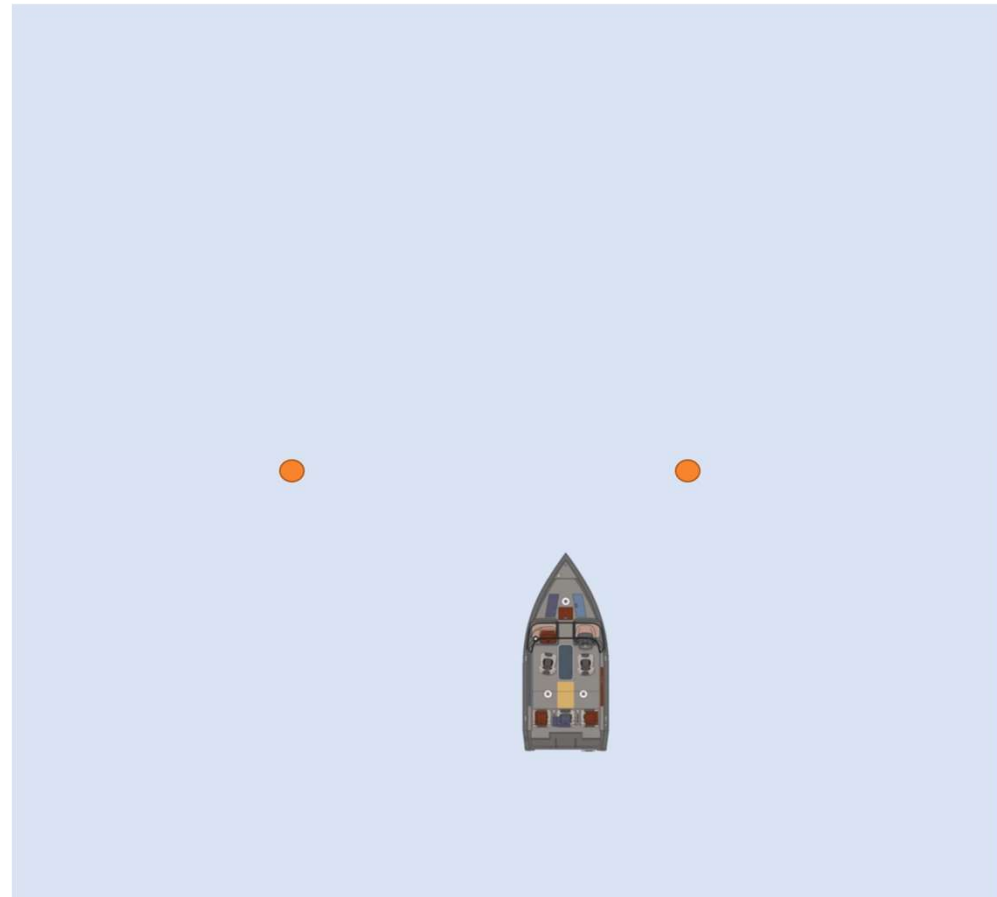
Practical Assessment Manoeuvres

This exercise demonstrates skill reversing off and reproaching the buoy, using reverse and forward gear. It is a requirement to use reverse gear correctly.

KEY POINTS;

- Manoeuvre very slowly.
- Know the pivot point and the relationship between the bow and stern during the manoeuvre.
- Know how the boat moves in reverse.
- Driving a shaft drive boat, reverse gear will be favourable around one of the buoys.
- Take account of the wind or current.

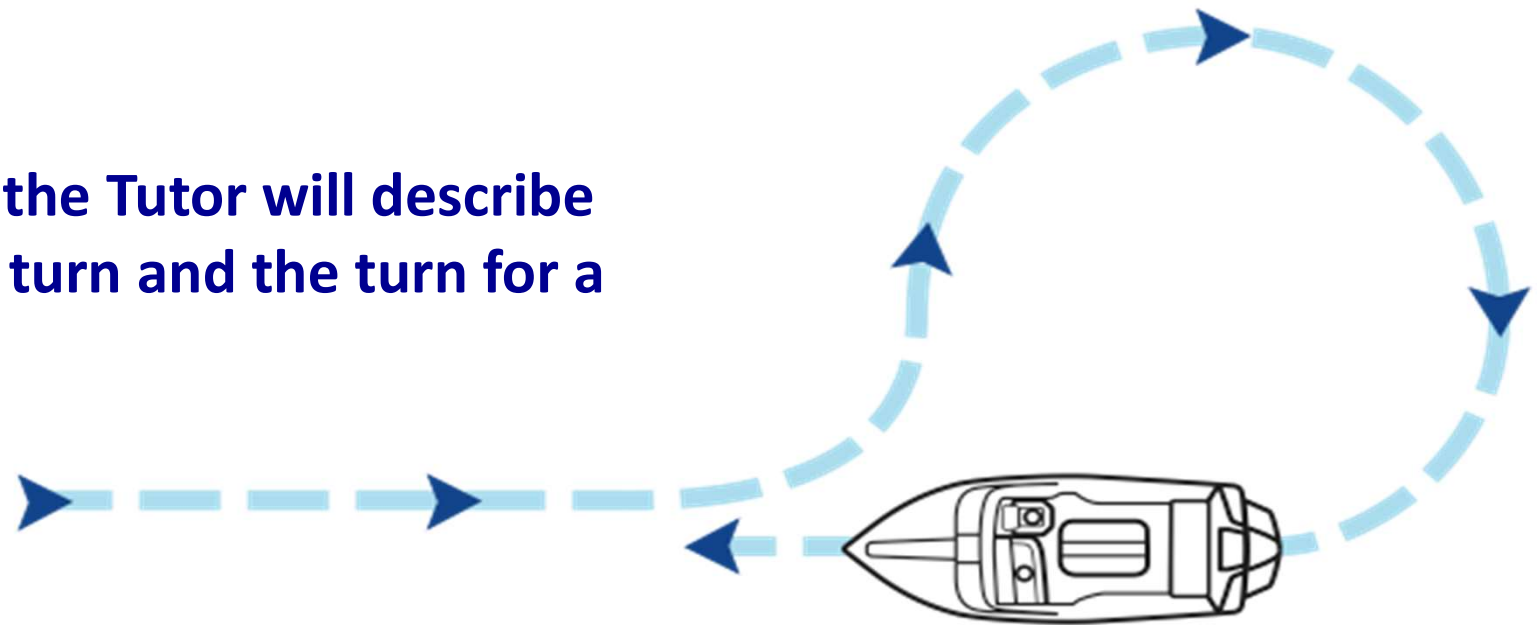
Figure of 8 / Turn round a buoy



Turning with a skier

'P' Turn

Using the flip chart, the Tutor will describe the 'P' turn, circular turn and the turn for a wakeboarder

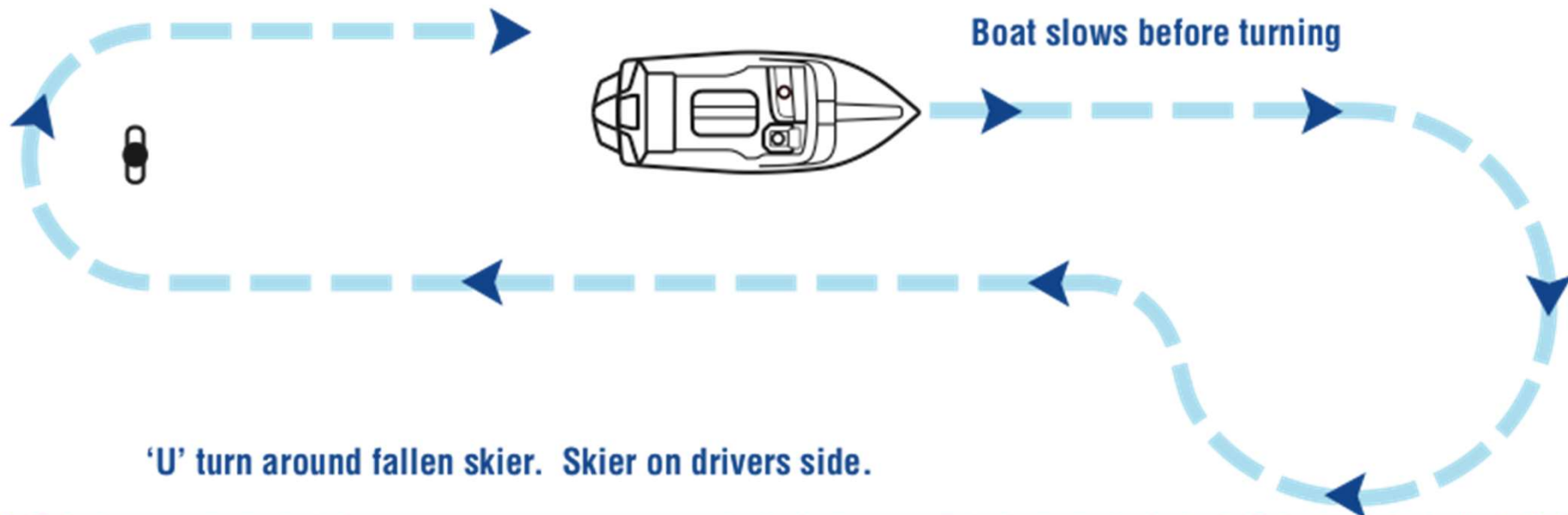


"P TURN" Boat goes back down own wash

Picking up fallen skiers, THE TUTOR WILL EXPLAIN HOW TO SAFELY RECOVER A FALLEN SKIER

- The a main 'turn' that can be used to pick up a fallen skier – the 'U' turn
- It is the driver's responsibility to know how to safely return to a skier/rider in the water

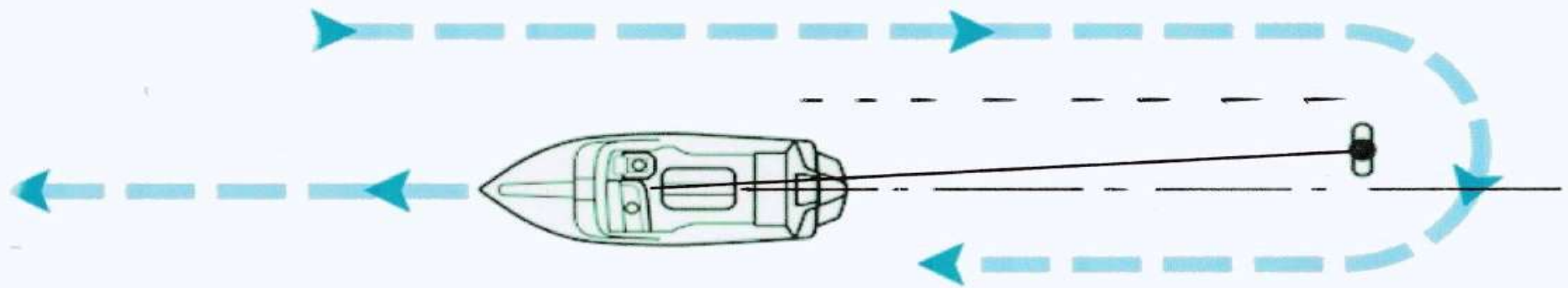
'U' Turn



Pulling a skier out the water

The driver must have the skier in direct line of sight over the right shoulder whilst taking up the slack line

The skier/Rider must be in the centre of the wakes for the pull out
Tolerance is to the RIGHT or centre only



- When driving for a skier the boat must be on course to pick up the original ski run and must take off with the steering straight
- Whilst taking up the slack line, it is ideal to have the skier aligned with the side of the boat
- When the line is taught and the skier is ready to shout 'in gear', the skier must be in line with the center of the boat or slightly to the right of centre
- When the skier is ready to shout 'hit it' the ideal position is for the skier to be aligned with the centre of the boat

Driving for Wakeboarders

Turning for a Wakeboarder

When turning for a novice wakeboarder the driver must consider whether the rider is Regular or Goofy.

Generally, should the turn be clockwise or anti-clockwise for a regular rider?

Advanced riders will expect the driver to turn in the correct direction.

A novice rider is usually more comfortable on WHICH edge?

A beginner will often be outside of the wake when the boat is approaching the turn. Usually the driver will turn CAREFULLY and slowly in which direction?

Under what circumstances would you turn with the rider on the toe side edge?

It is the drivers responsibility to keep the rider safe throughout the turn.

Driving skills for an advanced wakeboarder or skier are not a part of SBD2.

The person towed for the SDB2 test can be a skier or wakeboarder. The turns will be one clockwise and one anticlockwise, irrespective of whether the rider is regular or goofy.

The Driving Exam

If you haven't done so already.....

READ THE DRIVING ASSESSMENT

GUIDANCE NOTES

You should be able to **DEMONSTRATE** your understanding of the following topics;

Discuss what you have learned during this course