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Bob Moffatt

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Syllabus references

The table over shows how the book matches each of these syllabi. Addresses are as follows:-

Classroom objectives - Senior Secondary School Studies Syllabus, copies of which may be obtained from PO Box 1379, Spring Hill, 4000.

National Powerboat Training Scheme Topics - Australian Yachting Federation, Locked Mail Bag 806, Milsons Point, Sydney, 2000.

Commonwealth Department of Transport and Communications Handbook for Radiotelephone Ship Station Operators (Restricted certificate standard) copies of which can be obtained from State Offices.

NAUI National Association of Underwater Instructors syllabus on skindiving. Copies of which can be obtained from NAUI Australia 145 Old Cleveland Rd. Capalaba 4157.

GREEN - Global Rivers Environmental Education Network- water quality monitoring syllabus of Stapp and Mitchell available from 2050 Delaware Ave, Ann Arbor, Michigan, USA 48103 which is now widely used in Australian States.

Queensland University of Technology Kelvin Grove Campus Marine Education Materials Locked Mail Bag No 2 Red Hill 4059

Standards and chapter design

This book is designed for a two year course of study by students aged over 15 years, who have approximately 240 hours of programmed class time. Each chapter has a set of **classroom objectives,** centred around a set of **topics** that have been derived from either:-

- Community standards e.g. The national restricted radio operators certificate of proficiency
- University undergraduate courses in Marine Zoology and Botany
- Overseas Marine and Estuarine Courses e.g. The Global Rivers Project or University of Hawaii Curriculum Research and Development Group
- Government Department publications e.g. Green Paper on Coastal Environmental Protection

The *classroom objectives* are derived from the Queensland Board of Senior Secondary School Studies Marine Studies Syllabus, which based many of its ideas on National Curriculum Standards in Marine Education.

The terms content means - knowledge and its application, process means - analysing information, writing reports, data processing and reasoning. Skills refer to physical hands on skills such as "row a boat, collect a sample of plankton using a plankton net" and attitudes are self explanatory. The illustration below, shows how these are arranged four components have been arranged in the book.

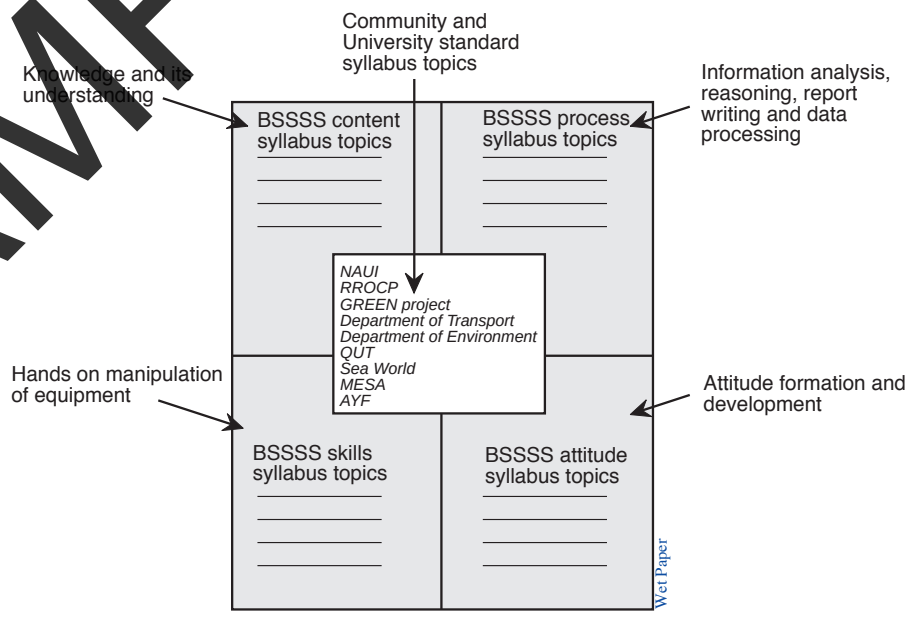


Fig 1: Textbook design

Syllabus matches

Wet Paper

		BSSSS - Board of Senior Secondary School Studies Syllabus	RROCP - Commonwealth Department of Telecommunications Radio Certificate	NAUI - Snorkelling certificate	AUF - Snorkelling certificate	TAFE - Inshore navigation course	AYF - Training level 3 powerboat handling certificate
Chapter 1	Boats and equipment	★					★
Chapter 2	Outboard engines	★					★
Chapter 3	Small craft safety	★	★				★
Chapter 4	Navigation	★				★	★
Chapter 5	Small craft handling	★					★
Chapter 6	Chartwork	★				★	★
Chapter 7	Tides and weather	★				★	★
Chapter 8	Marine communications	★	★				★
Chapter 9	Skindiving	★		★	★		
Chapter 10	Managing marine accidents	★		★	★		★
Chapter 11	Oceans	★					★
Chapter 12	Coastlines	★					
Chapter 13	Sea water quality and pollution	★					
Chapter 14	Plankton	★		★	★		
Chapter 15	Nekton	★		★	★		
Chapter 16	Benthos	★		★	★		
Chapter 17	Marine ecosystems	★					
Chapter 18	Aquaculture	★					
Chapter 19	Principles of conservation and management	★					
Chapter 20	Research projects and case studies	★					

In addition Chapters 19 and 20 address the issues raised by the green papers on coastal management and conservation.

Content

- Design and construction of boats.
- Shapes, differences, advantages and disadvantages of planing, semi displacement, displacement hulls and multihulls.
- Shapes of different sailing craft rigs.
- Terminology applicable to most boat types including hull, bow, stern, gunwale, chine, transom, deck, cleat, bollard, propeller, tiller, rudder, keel, oars, rowlocks, stoppers, port, starboard, bilge and navigation lights.
- The boating safety rules as outlined by government regulations.
- Marine craft commonly used in Australian waters.
- Some marine terminology.

Process

- Apply the uses and applications of a clove hitch, round turn and two half hitches, bowline, figure of eight and sheetbend to new situations.
- Discuss trailer use, maintenance and construction.
- Discuss the responsibilities of boat ownership e.g. third party insurance, registration and licensing.

National Powerboat Training Scheme Topics

Boat design and construction
Buying a Boat
Boat Trailers
Maintenance Equipment
Rope and Knots

Skills

- Select appropriate marine equipment for operating a boat in designated waters.
- Discuss the limitations of operating a boat in designated waters and prevailing weather conditions.
- Tie a clove hitch, round turn and two half hitches, bowline, figure of eight, sheetbend, reef knot.
- Demonstrate how rope is coiled, stowed and heaved.
- Tie basic bends and hitches associated with operating a boat safely.

Attitudes

- Demonstrate safe working practices.

Boats have been built for many different purposes and come in a wide range of shapes. Different equipment is needed for different types of boats, and so an understanding of the design and construction methods is a good place to commence this course. The coricle was one of the first recorded boats.

Heyer (1990) reports that, "The coracle was a light dinghy or skiff, with a light wooded or wicker frame covered with hides and waterproofed with tar. It was typical of boats made in Wales or Ireland."

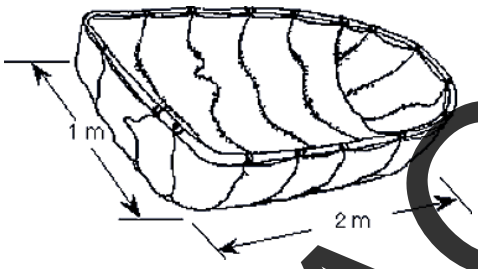


Fig 1 The coricle an early type of hull (After Heyer 1990)
Wet Paper

Power boats

These can be sub-divided into two general categories:

Launches or Runabouts are open vessels fitted with either outboard or inboard engines. Some of these are of the speedboat variety.

Motor cruisers, ranging from 7m to 18m or more in length and designed for cruising, living and sleeping on board in comfort. These may be powered by either petrol or diesel inboard engines.

Bob Moffatt

Fig 2 Sail and power - these boats are designed for living on.

Some boating terms

In any new course there are new terms. An experienced mariner has an extensive vocabulary of special words that apply to the sea. Instead of introducing you to all the words at once, it is the intent of this book to introduce a few at a time so that with practice you will gradually learn them.

Let's start with a diagram of a small dinghy. The left hand side is called **port** and the right side, **starboard**. The front is called the **bow** and the rear the **stern**.

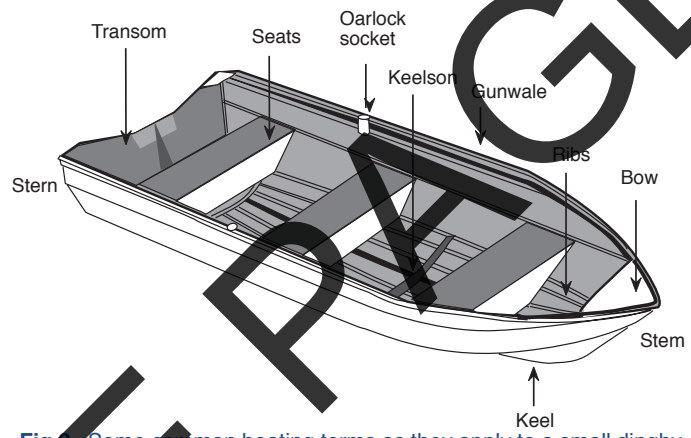


Fig 3 Some common boating terms as they apply to a small dinghy
Wet Paper

Some boating terms

The bow has a port side and a starboard side, hence the terms **port bow** and **starboard bow**.

The greatest width of the boat is called the **beam** so we have "on the starboard beam" and "on the port beam."

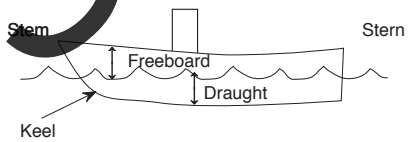
The strengthened section of the stern where the motor goes is called the **transom**.

The body of the boat is called the **hull** and the fore and aft centreline at the bottom is the **keel**.

The rope which ties onto the bow used for making fast and towing the boat is called the **painter**.

The height of the hull above the water is called the **freeboard** and the amount of water displaced by the boat when loaded is called the **displacement**.

Small boats are called dinghies and have seats called **thwarts** and rubbing strips called **gunnels**.



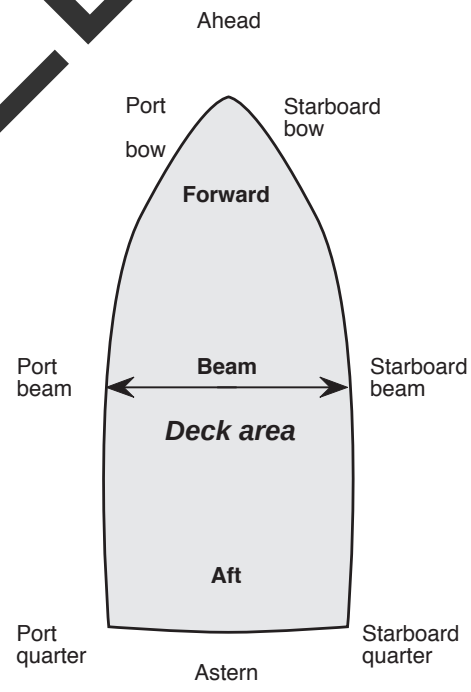
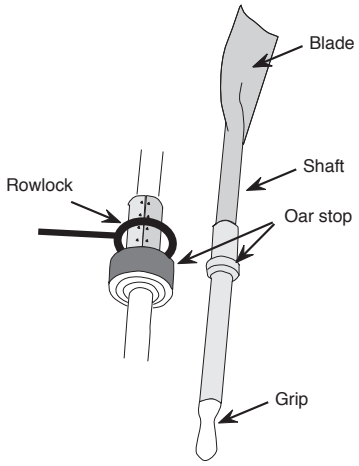


Fig 4 Adapted from Neil and Young 1989
Wet Paper

Start your own glossary of terms. Each day write down the new terms you learn, their meanings and draw any diagrams to help you remember them.

In a small dinghy, the entire area inside the boat is referred to as the **deck** and items are stowed on the deck. The **oars** in a small dinghy are stored on top of the thwarts and in some cases are held by octopus straps so that they do not roll around while the boat is in motion. Oars contain a **rowlock** and a **stopper** which is fitted over the **sleeve** of the oar. The oar with its **grip**, **rubber stopper** and **blade**, is fitted into a **rowlock** , is used to row the boat when the outboard motor is not in operation. A **rowlock** is placed over the oar stop which is inserted into a **rowlock block** in the gunnel prior to rowing. One of the best ways to start a practical course in boating is to do some rowing so that you can familiarize yourself with the terms mentioned.




Bob Moffatt

Fig 5 Parts of an oar and suggested stowage in a small dinghy
Wet Paper

Some types of sailing boat

Generally speaking, modern sailing craft can be identified by the type of sail rig they carry as shown in the Figure 6. Some of these will be motor driven by either petrol or diesel engines.

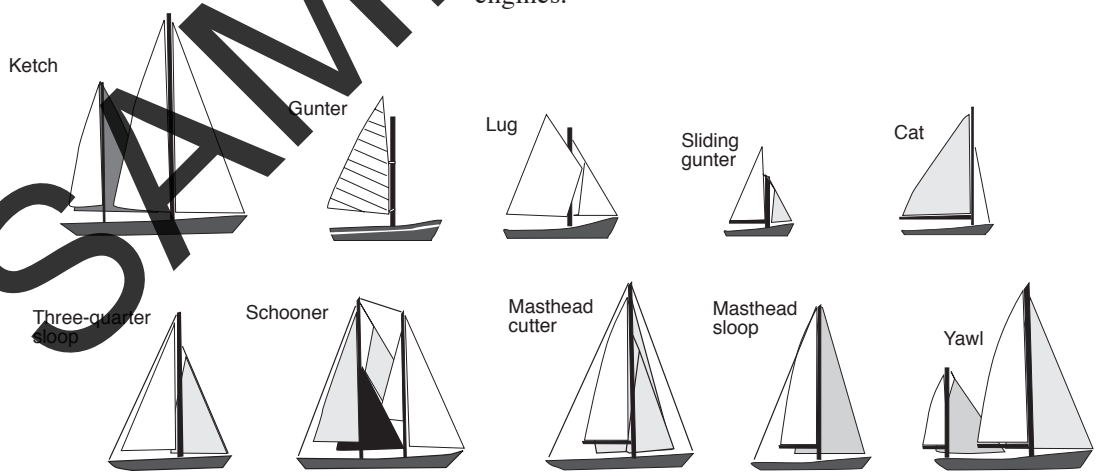


Fig 6 Modern sailing craft can be identified by the type of sailing rig they carry
Wet Paper

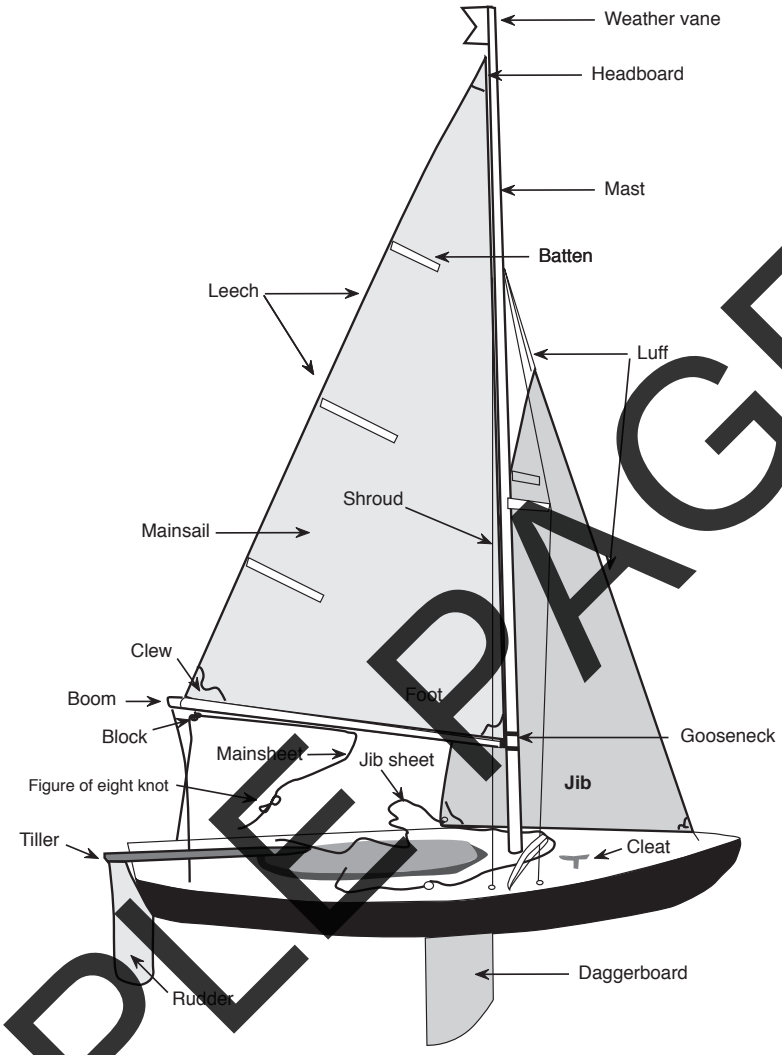


Fig 7 Common parts of a sailing vessel
Wet Paper

This book does not discuss sailing, however, some mention of sailing boat terms is useful. Better and more comprehensive definitions can be found in sailing books.

In a sailing boat each line has a name, e.g. the jib sheet is the rope which controls the jib sail. The main sheet moves the main sail and so on. **The mast** is the long pole of timber, steel or aluminium set upright on a ship's keel to support the sails. The **shrouds** keep the mast in place **Battens** keep the trailing edge of the main sail taut. Above all on a sailing boat you should keep well clear of the boom as it can swing very quickly from side to side when the boat changes direction or course.

National Powerboat handling Training Scheme

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