

Revision of the

National Powerboat Scheme  
2004

Guidance Notes for:

Powerboat Instructors  
Powerboat Trainers &  
Centre Principals



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# National Powerboat Scheme Guidance Notes 2004

## Forward

“Too much to teach in too little time” is one of the most common worries levelled at the old Powerboat Scheme by instructors teaching the courses. However, despite this, more Powerboat certificates are issued each year than in any other discipline taught by the RYA. The National Powerboat Level 2 course has become one of the most successful courses delivered by the RYA. The powerboat scheme had originally been developed, predominantly, for training Sailing Club boat operators in preparation for Safety Boat duties. Today, with the increase in Powerboating as a family leisure activity, the Powerboat scheme has been updated to reflect the current demands of both amateurs and professional users alike. 1997 saw the introduction of the Advanced Powerboat course. Some of the changes to the syllabus have been to enhance the skills of the commercial operator, others to further the enjoyment, knowledge and safety of the leisure helmsman. The Advanced Certificate has become the required standard for skippers of many commercially coded boats, truly a testimony to the commitment of the RYA and its instructor’s to quality training.

## Introduction

These guidance notes are for new and existing Powerboat Instructors, Principals, Trainers and Regional / Area coaches. They explain the revisions, additions and change of emphasis to the delivery of the Powerboat Scheme.

- These guidance notes should be read in conjunction with the new Powerboat Logbook G20/04.
- The new syllabus was released in January 2004 and comes into effect from Easter 2004.
- It is essential to the credibility of the scheme that the courses are delivered to a constant national standard by competent instructors.

The new structure of the Powerboat Scheme is as follows

Level 1	Introduction to Powerboating
Level 2	National Powerboat Course
Intermediate	Powerboat Day Cruising Course
Advanced	Powerboat Day and Night Course
Safety Boat	Safety Boat Course

## Teaching Emphasis

“Too much to teach in too little time” is one of the most common criticisms made by instructors of the existing Powerboat syllabus. How can we teach all of these subjects within the allocated time?

To address this all subjects taught have been assigned to three different levels of teaching.

These three levels are:

1. The student has **A KNOWLEDGE OF** the subject.  
The subject will be briefly explained, understood at the time and the student knows where to find out further information at a later date.

*An example taken from Level 2 would be Hull Types. Explain the characteristics of the hull of the vessel that is being used for the course and then point the student in the direction of page 4 of the current Practical Course Notes for further reference.*

2. The student **UNDERSTANDS** the subject.  
The subject has been covered in greater depth and the student has demonstrated a basic understanding and will be able to go away from the course and further develop his own skill in this area. Confirmation of the students understanding of the subject could be achieved in a number of ways, maybe a short quiz near the end of the course.

*An example taken from Level 2 would be Distress Signals and the Mayday Call. This session would include an explanation of the use of flares and go through the correct Mayday procedure. The student attending a VHF SRC course at a later date would achieve further learning on this subject.*

3. The student **CAN** demonstrate a level of proficiency in the subject.  
The subject has been covered in great depth, including background theory, practical demonstrations by the instructor and practice by the student until he can demonstrate good skills in this subject.

*An example taken from Level 2 would be IRPCS. At the end of the course the student could explain and demonstrate the correct action to be taken to avoid collisions with other craft, principally rules 5,7,8,9,12-19.  
Another example from Level 2 would be mooring alongside. At the end of the course the student could demonstrate mooring alongside a pontoon or moored craft, taking into account both wind and, where applicable, tide.*

The new Powerboat Logbook G20/04 clearly shows which subjects have been assigned each level of competency.

By applying this new teaching emphasis more time will be spent afloat covering most theory subjects on board the boat. Obviously when the weather is against you a return to the classroom may be required.

Here follows some teaching points that must be considered when creating your new syllabus delivery. It should not be considered as the **only** way to deliver the subjects. However, whenever the logbook entry says CAN you must ensure that at the end of the course you students can demonstrate a level of proficiency in the subject.

## LEVEL 1

## INTRODUCTION TO POWERBOATING

Course duration: One Day  
Taught at: All Recognised Powerboat Training Centres  
Taught by: Level 2 Powerboat Instructors & above.  
Eligibility: Minimum age 8 years.

There are no changes to the Level 1 course content. However the minimum age has been revised to 8 years old. This is in line with the minimum age for Powerboat Racing, RYA / Volvo RIB Challenge and the growing "K" Class developed for youngsters.

Special considerations for: **8 to 12 year old students.**

- Launch & Recovery is to be observed only.
- TWO KILL CORDS MUST BE PROVIDED. One for the student and one for the instructor.
- A suitable craft for training shall be considered as:  
"Any new or existing craft as long as the visibility and controls are appropriate for the student"
- The certificate issued shall be endorsed as follows:  
***"The holder should only use powered craft under the supervision of a responsible adult on board the craft"***
- Don't forget your Child Protection Policy.

Special considerations for: **12 to 16 year old students.**

- A suitable craft for training shall be considered as  
"Any new or existing craft as long as the visibility and controls are appropriate for the student"
- The certificate issued shall be endorsed as follows:  
***"The holder should only use powered craft under the supervision of a responsible adult."***
- Upon reaching the age of sixteen the holder may exchange the original endorsed certificate for a new one from the school that carried out the student's training.
- Don't forget your Child Protection Policy.

## LEVEL 2

## NATIONAL POWERBOAT CERTIFICATE

Course duration:	Two Days
Taught at:	All Recognised Powerboat Training Centres
Taught by:	Level 2 Powerboat Instructors & above.
Eligibility:	Minimum age 12 years.

- It is recognised that each Training Centre's area of operation is different and therefore the Chief Powerboat Instructor and Principal should formulate operating procedures to include the changes made to this course.
- There have been no major changes to the course content however you should update your course delivery to take into account the competency standards described above and the minor additions and changes of emphasis detailed below.

Reference to the new Powerboat Logbook G20/04 will explain which subjects fall into which category.

- Note revision to SECTION B: *Currently SHOREBASED TEACHING  
Will become THEORY TEACHING*

This change will enable more time afloat teaching some of the theory during natural breaks, for example on passage between two practical sessions.

It is intended that in future the great majority of the Level 2 course will be taught afloat.

- CAN demonstrate the correct use of an appropriate length kill cord at all times. Detailed instructions are to be found within the owner's manual supplied with every outboard engine. However, for those of you who may have mislaid your engine's copy, the purpose of the Kill cord is to prevent the helmsman moving away from the normal operating position of the craft whilst underway, either intentionally or by accident.

Remember that the kill cord is easily forgotten, especially by novice operators, therefore demonstrations of best practice at all times is essential.

- How long?  
*The Lanyard is a cord usually between 4 and 5 feet (1220 and 1524mm) in length when stretched out.*

- Use and limitations of GPS.  
One of the first pieces of equipment that a new boat owner will purchase is probably a GPS. It is important that we educate them in its proper use rather than concentrate on the negative issues. It is important that the positive benefits be explained with guidance in its basic operation and use and, of course, its limitations.

- IRPCS, principally rules 5, 7, 8, 9, 12-19

As an instructor it is essential that you are familiar with the collision regs. Remember you are not only responsible for the safety of your students but also for teaching them correctly so that they leave your course with a sound and correct understanding.

It is strongly recommended that each instructor has a copy of the RYA's version of the International Regulations for Preventing Collisions at Sea. These clearly state each rule, followed by a simple detailed explanation.

In brief the rules to be taught at Level 2 to the competency of CAN are as follows:

Rule 5	Look out.
Rule 7	Risk of Collision
Rule 8	Actions to Avoid Collision
Rule 9	Narrow Channels
Rule 12	Sailing Vessels
Rule 13	Overtaking
Rule 14	Head-on Situation
Rule 15	Crossing Situation
Rule 16	Action by give-way Vessel
Rule 17	Action by Stand-on Vessel
Rule 18	Responsibilities between Vessels
Rule 19	Conduct of Vessels in Restricted Visibility

## INTERMEDIATE

## DAY NAVIGATION IN POWERBOATS

Course duration: Two Days.  
Taught at: Advanced Powerboat Training Centres  
Taught by: Advanced Powerboat Instructors  
Eligibility: Minimum age 16. Students should be able to demonstrate boat-handling skills to the level of the National Powerboat Certificate Level 2 Coastal.  
It is strongly recommended that candidates hold a first aid certificate and VHF operator's certificate.

- This course is only to be taught at Advanced recognised training centres.
- This course is taught by Advanced Instructors. There is not going to be an "Intermediate Instructor" level.
- The vessel used must be equipped to the standards required to operate Advanced courses.
- It is recognised that each training centre's area of operation is different and therefore the Chief Powerboat Instructor and Principal should formulate operating procedures for this new course.
- There is not a commercial endorsement applicable to this course.

The main teaching aim of this course is to equip the student with a sound understanding of daytime passage planning and he will be able to execute a passage plan created by him on the course.

As an Advanced Instructor you will already be teaching most of the subjects covered in this course. You should teach subjects in this course to a similar standard to that on the Advanced course. Your students will probably already have been through the Level 2 course and will be attending this course to further their own knowledge and skills, so rather than repeating Level 2 standard exercises introduce subjects at a higher level. Some guidance is given below.

Passage planning on this course should be a combination of traditional navigation including Course to Steer (CTS) and Electronic navigation methods.

### Knowledge of Navigation

The following two subjects could be combined into one.

True and Magnetic Bearings	Explain how to apply both East and West variation. To a bearing read from the chart and to a bearing read from the compass. Get the students to do a few examples using different variation values.
Bearing and Distance	Using the Compass Rose on the chart and measurement of distance using the Latitude on the edge of the chart. Get the student to plot a course over ground from a given point to another given point and calculate

the True bearing, Distance, and estimated time that it would take with a given speed. You may wish to extend this to Magnetic bearing as well.

### Chart Symbols

Get your students to study the chart for your area of operation and identify five or more hazards to navigation. Then get them to identify five good points of interest that would assist them in making a safe passage.

A copy of Chart 5011 is a great aid in this exercise and should be available.

### Tidal Diamonds & Tidal Streams

Give each of your students a Tidal Diamond on your local chart. Set the scenario such as follows; "It is now two hours after High Water you have broken down and are drifting. You know your position to be at Tidal Diamond '#', calculate your position in one hours time. Does this present you in danger?"

### Specific Points to teach

- CAN use a plotting instrument to plot a course to steer (CTS), Breton or Portland style plotters are quite successful on fast planing craft.
- CAN implement IRPCS 5,7,8,9, 12-19, 23  
Additional rule to Level 2 is Rule 23

### Rule 23 Power-driven Vessel underway

**\* Note Typographical error in Logbook G20/04 page 19 IRPCS rules to teach should read as above (12-19 not 13-17)**

- CAN use GPS waypoint navigation and determine
  - XTE – Cross Track Error
  - SOG – Speed Over Ground
  - COG – Course Over Ground
  - BTW – Bearing to Waypoint
  - DTW – Distance to Waypoint

Simple exercises should be created. Ideally, across tide to enhance the live correctional effect of the GPS compared to the traditional course to steer.

A comparative example could be:

1. Plot a Course Over Ground to a clearly identified mark. On this leg do not take into account the tide. Steer the boat on the bearing derived from the chart and observe the sideways movement of the vessel. It is suggested that this exercise is carried out across the tide and at slow speed.
2. Plot traditional Course To Steer (CTS). Starting from the same point of origin repeat the exercise above.

3. Input the lat and long position of the identified mark in exercise 1 as a waypoint in the GPS. Starting from our original position repeat the exercise this time using the GPS data for course correction.
  - Explain how to make a VHF emergency call.  
If you are in any doubt refresh your memory and learn the Mayday procedure off by heart. Remember as the Instructor in charge of the boat you may be called upon to make the call one day.
  - Knowledge of Effects of Waves. Explain how waves form and why they are worse in certain reaches than others. Talk about Head seas and Following seas. Trim down in Head seas, Trim up in following seas.
  - Knowledge of Rougher conditions. Only put to sea in conditions that you know you are capable of teaching in. If you go out in rougher conditions make sure that you can deliver the required information. If it is too rough you will not only be putting you and your crew into unnecessary danger, and you may well put them off boating forever. Do not try to create rough conditions using the wash of another boat. Not only does this provide a false environment it also presents a serious risk of collision. If it is flat calm revert to a well-prepared theory lesson.
  - Mooring Stern-to, between posts and Med style.  
Many of your students will now keep their vessel afloat in marinas in the UK and increasingly abroad.

Most marinas welcome schools to practice mooring situations during quieter times but remember to get permission first.

Med Style mooring is the practice of reversing towards your berth, usually a marina wall or pontoon; on your approach you deploy your anchor allowing the vessel to reach the wall. Attach your stern lines and then tension up your anchor to hold you a short distance away from the wall. Often marinas will have permanent mooring lines in place that you hook up with your boat hook whilst reversing into the berth. This is then attached to the bow instead of dropping the anchor.

- Remember as with all good passage planning, plan for the unexpected return in the dark. On this course you are not going to teach night navigation to the depth of the Advanced Certificate but you should prepare your students with basic light recognition and advice on getting back in the dark.

## ADVANCED

## ADVANCED POWERBOAT DAY AND NIGHT

Course duration:

Two Days including one night passage

Taught at:

Advanced Powerboat Training Centres

Taught by:

Advanced Powerboat Instructors

Eligibility:

Minimum age 17.

- Students should be able to demonstrate boat handling skills to the level of the National Powerboat Certificate Level 2 Coastal with a thorough knowledge of navigation and chartwork to the level of Day Skipper Shorebased certificate.
- Candidates are required to hold a first aid certificate and VHF operator's certificate.

- This course is only to be taught at Advanced recognised training centres.
- This course is taught by Advanced Instructors.
- It is recognised that each training centre's area of operation is different and therefore the Chief Powerboat Instructor and Principal should formulate operating procedures to include the changes made to this course.

As an Advanced Instructor you will already be teaching most of the subjects covered in this course. However, your attention is drawn to the following additions and changes:

- **KNOWLEDGE OF the differences for a twin-engine vessel.**  
If you are unfamiliar with twin-engine handling endeavour to broaden your knowledge both in practice and theory. Recommended reading on this subject are the Motor Cruising Practical Course Notes.
- **Responsibility as Skipper**  
A requirement of the SOLAS V regulations is the responsibilities of the skipper for the organisation of the navigation, safety and welfare of the crew during the passage. As soon as a vessel leaves categorised waters SOLAS V requires that the skipper has prepared a passage plan. Although great detail is not required you should include the following;
  - Are the crew fit to make the passage taking into account weather forecast, expected sea conditions and their experience?
  - Do they have suitable clothing?
  - Could the crew get the vessel to a safe haven without you?
  - Do they know where all the safety kit is?
  - Do they know how to use the VHF radio and make a MAY DAY call?
  - Do they have basic first aid skills?
  - Have they been briefed in helicopter evacuation procedures?
  - Is there enough food and water on board?
- **UNDERSTANDS the use of Chart Plotters, Radar, their advantages and limitations.**
  - It is recognised that most schools do not have Radar and it is not proposed that they should, however some students attend the Advanced course to gain their commercial endorsement and many commercial craft will carry Radar. As an Advanced instructor you should endeavour to learn as much as

possible about radar to be able to explain the basics. The RYA shorebased Radar course is a good place to learn.

- Chart Plotters are becoming common place on both commercial and small pleasure craft. They will form part of the Day Skipper shorebased course from Sept 2004. Again learn as much as possible so that you can instruct with confidence. Two common questions asked are:
  - § What is the difference between Vector and Raster Charts?
  - § Can I see other boats on the screen?
  
- CAN use electronic navigation equipment for planning and undertaking a passage.
  - This could include a similar exercise as in the Intermediate course.
  - Plus introduce navigation along contours using the echo sounder. (An echo sounder is a required for the Advanced Course).
  
- KNOWLEDGE OF Terms used in shipping forecasts, including the Beaufort scale, and their significance to small craft.
  - Gain a full understanding yourself.
  - Please teach as: 'CAN' interpret a synoptic chart
  
- UNDERSTANDS Sources of weather information and interpretation of forecasts including synoptic charts.
  - Using the Shipping Forecast or Inshore Waters forecast for the day of the course, interpret the information relevant to your area of operation taking into account wind direction, direction of tide, is it Springs or Neaps?
  - Using the synoptic chart for the day of the course teach your students what all the lines and symbols mean and how to use the synoptic chart to interpret the weather conditions.
  
- CAN apply the International Regulations for Preventing Collisions at Sea
  - By the end of the course you must be satisfied that the student fully understands the Rules of the Road. Continuous testing throughout the course will establish the student's strengths and weaknesses. Concentrate on overcoming their weaknesses as a positive step to successful course completion. Remember that in order to fully assess the student's ability you must possess a complete understanding of the collision regulations.
  
- KNOWLEDGE OF
  - How to change a propeller.
  - Propeller Pitch and Diameter.
    - Explain what Pitch and Diameter mean and how changing either dimension will affect the boat.
  - Propeller ventilation and cavitation
    - Explain the principals, causes and prevention of each.
  
- UNDERSTANDS Use of engines  
Many small craft are now fitted with diesel engines especially those in commercial use.
  - The course now includes the operation of Diesel engines. If you are unfamiliar with diesel engines the RYA Diesel Maintenance Course is a good place to start. The RYA publication on Diesel Engine Maintenance is a valuable resource in this subject.

- UNDERSTANDS Search Patterns.
  - Following consultation with the MCA and RNLI the primary search pattern to be taught is the expanding box method. You may also wish to explain the sector search pattern. However, it is generally accepted that the expanding box method is an easier system to employ in a small fast craft.
  
- In September the RYA will be releasing a Training Chart Plotter for use on Day Skipper Shorebased courses. This will be available to Advanced centres and will be a valuable classroom resource for this course.
  
- Other publications that are recommended to augment your student's knowledge of the subjects covered on this course are The RYA Weather Handbook by Chris Tibbs. The RYA Navigation Handbook by Tim Bartlett and RYA Navigation Exercises by Chris Slade and Sara Hopkinson.