BCU Open Water Navigation and Tidal Planning
Trainers Notes

Course Philosophy

This course is designed for those paddlers carrying out open water journeys including islands over 2 nautical miles offshore in areas of strong tidal movement of 3+ knots and/or including winds of up to force 5 and is suitable for those seeking their 5 star award sea.
The course is designed to complement the areas covered in the 5 star leader training.

Course Aims

The aim of this course is to give the student the tools to enable them to plan and navigate effectively on open water journeys in advanced sea conditions. It should increase the knowledge and awareness of the paddler and therefore improve their seamanship. This will include the following aspects:

- To interpret sources of relevant information including maps, charts, coastal pilots, tide tables and tidal stream atlases.
- To apply the above relevant information in calculating vectors and negotiating open crossings and/or coastlines with no landing zones and/or tide races and overfalls.
- To develop the necessary knowledge to navigate on the water using advanced pilotage techniques in poor visibility or hours of darkness.
- By the end of the course each student should have planned at least 2 open crossings that they can take home as references for further trip planning.
- Students should also be aware of the range of resources they require to plan trips in any sea area.

Pre-requisites

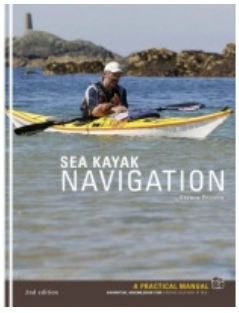
Have completed BCU Coastal Navigation Training day or equivalent

Equipment required for course by students (pre-course letter info)

- Silva type 4 or similar compass
- 2B pencils & rubber
- Notebook

Recommended Reading

Sea Kayak Navigation, 2nd Edition
By Franco Ferrero
ISBN 978-1-906095-03-1



Equipment provided by tutor and required for effective open water planning

- Breton plotter
- Parallel rules
- Dividers
- 2B Pencils
- Pilots / Sailing Directions / tidal stream atlases /sea kayak guides
- Computation of rates tables
- Charts with complex tidal streams and open crossing possibilities e.g. North Channel, English Channel, Pentland Firth, Channel Islands
- Maps
- Tide tables (Local relevant to pilot and charts)
- Resources must include all relevant information for more than one sea area

Venue & Duration

- This is a theory-based course and will take place in a suitable indoor teaching venue with worktables / chairs
- Access to presentation resources for PowerPoint or OHP will be required
- The course is of 8 hrs duration (1 day or several modules)

Administration

- A **Course Authorisation** number is required - obtained from Home Nation Association
- At the end of the course the course director should sign the students logbook if requested
- A **Course Schedule** must be returned to the Home Nation Coaching Officer, within 7 days of the course, with the relevant certification fees. A course schedule is provided by the Home Nation Coaching Office, at the time of notification of the Course Authorisation Number. As a result candidates will receive a Certificate as evidence of training completed
- The **Certification Fees** are £5 for BCU Members, £10 for non-members

Trainer

Ratio 1:8 Registered BCU Open Water Navigation and Tidal Planning Tutor
Ratio 1:12 As above plus BCU Level 3 Sea Kayak Coach with 5 Star Sea

Training Notes

Whilst this is a theory-based course the intention is that it is highly practical and not a lectured syllabus. The students should participate in a variety of practical planning exercises using the variety of resources provided. This must constitute a minimum of 60% of the course time.

Course content

1. Environmental considerations

Weather

Additional knowledge to the Coastal Navigation Course would include:

- How to interpret a synoptic chart and the ability to predict weather conditions at sea from the chart, this should include;
  - Estimating wind direction and strength from isobars
  - Estimating swell development from isobars and systems and relating this to the relevant sea area
  - Estimating changes in wind direction and strength from isobars and weather systems
- How to recognise effects of change through weather observations;
  - Understanding and application of Buys Ballots law
  - Understanding of changes in weather associated with changing cloud conditions
  - Awareness of barometric pressure especially speed of change
  - Recognition of cloud types and associated weather
  - Images of 10 main cloud types to be shown, it is important that students know the meaning of these clouds As Apposed to having to know the names of the cloud formations

Tides

Additional knowledge to the Coastal Navigation Course would include;

- Cause and effect of meteorological conditions on tidal range;
  - Effect of strong winds funnelling or withholding tidal movement
  - Cause and effect of changes in air pressure on tidal range
- Combination of effects to create extreme and unpredictable tidal ranges (known as proxigean tides)

2. Tidal Planning

Additional knowledge to the Coastal Navigation Course would include;

- The various factors to take into account when planning a trip in advanced sea conditions including calculation of timings, group skill level, logistics and environmental factors
- How to calculate Estimated Time of Departure (ETD) and Estimated Time of Arrival (ETA) from looking at Crux points in the open water environment
- The importance of estimating speed over the water especially in open water crossings
- The importance of planning escape routes / options within the plan
- The importance of making all planning as accurate as possible prior to departure due to the risk of compounding errors in practical open water navigation

- The understanding and application of information contained in a tidal stream atlas and tidal diamonds
- How to use a computation of rates table to gain accurate tidal current strengths
- An understanding of the limitations of the speed of a kayak regarding making crossings in areas of strong tides
- The variety of methods used to plan an open crossing with an emphasis on the accuracy of using hourly tidal vector plots

3. The application of navigation theory

Additional knowledge to the Coastal Navigation Course would include;

- How to calculate bearings on the deck for crossings of strongly tidal waters
- How to estimate position in open water using map and compass to;
  - Create a running fix
  - Create a resection
  - Create a dead reckoning position