

Northern Hemisphere Exercises

DAY SKIPPER/WATCH LEADER - CHARTWORK ASSESSMENT PAPER

NOT TO BE TAKEN AWAY

TIME ALLOWED 1½ HOURS



Use RYA chart 3

Use variation 6°W.

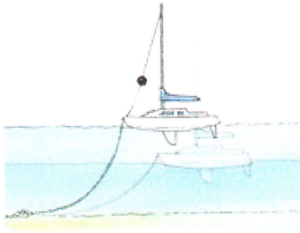
All times are in DST, unless shown otherwise.

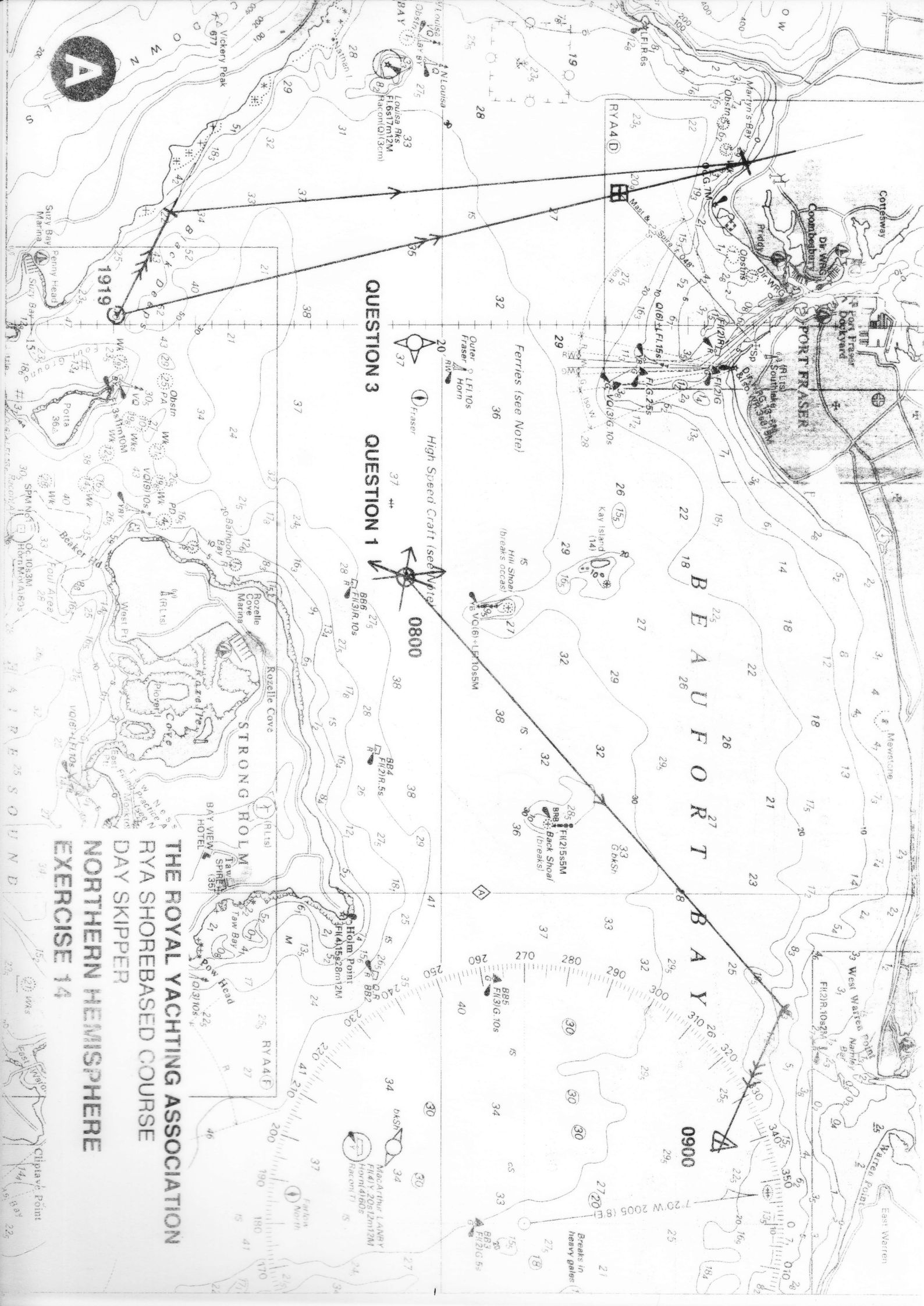
1. At 0800 the following bearing were taken north west of Strong Holm Island:

Hill Shoal South Cardinal beacon	029°(M) =
BB6 port hand lateral mark	178°(M)
BB4 port hand lateral mark	106°(M)

- Plot the fix at 0800.
 - What is the charted depth at this position?
 - What further information is required to calculate the depth of water in this position?
2. From the fix in Question 1 the boat steers 055°(M) towards the Namley Bar beacon at a speed of 7 knots.
- Plot the projected DR position for 0900.
 - The tidal stream is 114°(T) 1.8 knots. Plot the projected EP for 0900.
 - Is 055°(M) a safe heading? Explain your answer.
3. At 1919 on Friday, 6th September the position on the GPS is 46° 16'.05N 006° 00'.20W.
- Plot this fix. What observations would confirm this position?
 - The boat is heading for Port Fraser and places a waypoint at the seaward end of the leading line, in position 46° 22'.20N 006° 02'.25W. Plot this waypoint.
What is the magnetic course to steer from the fix to the waypoint?
Use tidal diamond A. The boat speed is 7 knots.
 - How, other than a GPS position or on the chart plotter, would the navigator know when the boat has reached the waypoint? Do you expect this to take more or less than an hour? *Depth, Bearings*
 - What is the speed over the ground (SOG)? *7.8k*
 - A partially submerged wreck is reported in position 46° 20'.45N 006° 02'.40W by the Coastguard on VHF. How close would you pass this position and would you consider it to be a danger to the boat? Explain your answer.

4. At 1229 UT on Sunday, 3rd November a boat is preparing to anchor in Port Fraser.
- Calculate the height of tide at 1229 UT?
 - How much will the tide fall between 1229 UT and LW?
 - The boat has a draught of 1.5m. What is the minimum depth of water to anchor in at 1229 UT, to give a 1.0m clearance below the keel at LW?





A

QUESTION 3

QUESTION 1



0800

0900

**THE ROYAL YACHTING ASSOCIATION
RYA SHOREBASED COURSE
DAY SKIPPER
NORTHERN HEMISPHERE
EXERCISE 14**

BRITISH SOUVENIR

CHITRAV POINT

ANSWERS

All times are in DST, unless shown otherwise.

1.
 - a) Fix $46^{\circ} 19'.57N$ $005^{\circ} 55'.59W$
 - b) i) exactly 33m
 - c) You would need the height of tide at 0800

2.
 - a) DR $46^{\circ} 24'.16N$ $005^{\circ} 47'.96W$
 - b) EP $46^{\circ} 23'.42N$ $005^{\circ} 45'.58W$
 - c) The heading is not safe as the course over the ground (COG) will take the vessel dangerously close to the Back Shoal rocks which is marked by an Isolated Danger beacon.

3.
 - a) In this position the north end of Potta would be in line with the south edge of Beaker Head Brg $092^{\circ}(T)$. The depth of water should be slightly more than 40m.
 - b) HW Victoria 2249. Springs .

HW – 3 hours	$297^{\circ}(T)$	1.4 knots
Course to steer	$356^{\circ}(T)$	$002^{\circ}(M)$
 - c) The leading line is a transit of a radio mast and church spire on $048^{\circ}(T)$, and at the waypoint the transit should occur and the bearing could be checked.
It will take less than an hour to get to the waypoint, so about 2010.
(Calculated ETA not required at DS).
 - d) SOG 7.8 knots.
 - e) No, the COG should be clear of the hazard by half a mile if the boat is on course. The COG and position should be monitored on GPS or the chart plotter.

4. HW Port Fraser HW 0959 UT 4.1m LW 0.3m Springs
 - a) Height of tide at 1229 UT: 2.3m
 - b) Fall = height of tide – LW = $2.3m - 0.3m = 2.0m$
 - c) Minimum depth to anchor in at 1229 UT:
draught + clearance + fall, $1.5m + 1.0m + 2.0m = 4.5m$