5. Arriving off Manukau Bar at 14 h. 00 m., New Zealand mean time, on 16th September, 1929, state the depth of water you would expect to find on the bar if the soundings on the chart showed 3½ fathoms.

6. Chart 695 : Find approximately (without the use of Admiralty or other tide-tables) the time of high water on the afternoon of 14th June, 1929, off Stephens Island, and state also the direction of the tidal stream at 10 h. 00 m. on that day.

SPECIMEN SET OF EXAMINATION-PAPERS FOR MASTER (H.T.).

1. NAVIGATION.

Time allowed : Two hours.

1. On 2nd February, 1929, long. by A/c 176° E., the observed meridian altitude of the sun's lower limb was 72° 18' north of observer ; index error of sextant 1' 10" to substract ; height of eye 22 ft.

    Compute the latitude.

2. In a vessel steering S.E. by compass and steaming 10 knots a light is observed bearing S.S.E. by compass, and after making good the course and speed for 24 minutes the light was observed to bear south by compass.

    Required—The course to be steered to enable the vessel to pass 2 miles off the light.

3. Having taken the following compass bearings of a distant object, find the magnetic bearing and thence the deviation on each of the given courses.

Ship's Head by Standard Compass.	Bearing by Standard Compass.	Deviation required.	Ship's Head by Standard Compass.	Bearing by Standard Compass.	Deviation required.
North ..	N. 69° E.		South ..	S. 86° E.	
N.E. ..	N. 54° E.		S.W. ..	S. 82° E.	
East ..	N. 60° E.		West ..	S. 83° E.	
S.E. ..	N. 78° E.		N.W. ..	East ..	

4. The bearing of two objects when in line with each other was found on the chart to be S. 80° W. mag., but when brought in line on board they bore S. 76° W. by compass.

    Required—The deviation of the compass for the direction of the ship's head at the time.

5. When taking a meridian altitude, how do you know when the sun is on the meridian ; or, in other words, when it is noon ?

6. How does the sun bear (true and magnetic) when on the meridian of an observer in these latitudes (home-trade limits).

7. What do you mean by the " deviation " of the compass, and how is it caused ?

8. Having determined the deviation, how do you know when it is easterly and when westerly ?

9. How could you find the deviation of your compass when in port or when sailing along a coast ?

10. Name some suitable objects by which you could readily obtain the deviation of your compass when sailing along the coasts, or the channels you have been accustomed to use.

11. What means are there for checking the deviation of your compass by night ?

12. Do you expect the deviation to change ? If so, state under what circumstances.

13. What is meant by the " variation " of the compass, and what is the cause of it ?

2. NAVIGATION.

Time allowed : Two hours.

1. 1929, 10th June, p.m., in D.R. long. 173° 30' E., the observed altitude of the sun's lower limb was 12° 4' when a chronometer indicated 05 h. 03 m. 20 s. Eye elevated 30 ft. Sextant error 2'·0 off the arc. The chronometer was 14 m. 10 s. fast of M.T.G. Later, after the ship had made 12 miles on a 130° course, the latitude by meridian altitude of the star Regulus was found to be 40° 18' S.

    Required—The longitude by chronometer at the time when the meridian altitude of Regulus was observed.