Modern Nautical Tables

from S. M. Burton

H.M.S. *Dryad*'s memorandum (*Journal*, 9, 444) speaks of 'only those tables required'. But what this word 'required' does or should mean could be debated *ad infinitum*. The main division comes as between a set of tables intended to be an instrument of practical navigation and one intended to be an instrument of technical education, and the dividing line between the two would be a very blurred and disputable one indeed. My own set of nautical tables came into existence because I was convinced at the time that a set of tables, 'streamlined' for sea use was urgently needed, and in so far as logarithmic methods may be still used I still consider that my first edition was a better instrument of navigation than any of the four later ones. But whereas I knew that I wanted such a set of tables for my own use, and was of the opinion that everybody else did (or should), I became aware that I was in a comparatively minute minority. In fact it became slowly and painfully borne in upon me that something like 90 per cent of all navigators would use all their sea-going lives the tables they were first taught on. This meant that I had to consult the schools and examining authorities and include all their academic needs, and so my streamlined volume soon began to develop a corporation. I did, of course, try again with my Four-Figure Navigation Tables, but that is another story.

Now, to turn to *Dryad*'s list, I must confess myself a bit puzzled. If it were meant for ordinary sea use several of the suggested tables would almost seem to be just clay pigeons put up to draw fire (as they no doubt will). On the other hand, as an instrument of technical education the list would still seem to be somewhat unbalanced. I am supposing them to be navigational tables not connected with other naval requirements.

While on this subject of the Admiralty's attitude to nautical tables I should like to take the opportunity of raising a matter which has always been a mystery to me: and that is the subject of the ABC tables. Although these tables have been in use in the British Merchant Navy and in practically every foreign navy for the last sixty years, so far as I am aware their very existence has always been ignored in all Admiralty publications. Can anybody explain why? After all, it is some time since we discovered that we live on a globe: a direct consequence of which is that in order to proceed from one place to another by the shortest route it is necessary to ascertain what we sailors call the great-circle course between the places, and to keep on finding it at longer or shorter intervals as we proceed. An adequate and well-arranged set of ABC tables provide, I submit, the quickest and easiest way to find these courses, and are therefore invaluable.

To return to the tables list, for minimum book-bulk for all sea-going navigational purposes I would (not unnaturally) recommend the contents of my 'Four-Figure Navigation Tables'.

For all purposes, both practical and educational, I would recommend my (five-figure) Nautical Tables, but with the omission of certain tables included at the request of the examining authorities. I cannot refrain from mentioning 'Table 26. Maximum (or Minimum) Altitude'. A shocker this. I have never before had an opportunity of apologizing for its inclusion and cannot resist doing so now.

By way of conclusion the following remarks about particular tables are offered.

Amplitudes. A thoroughly dangerous method of checking compasses in high latitudes.

Ex-meridian tables. As long as meridian altitudes are taken there will be a demand for ex-meridian tables.

Dip, refraction, and kindred tables. Although not generally necessary for sea use, they take up so little space that their inclusion or exclusion is, surely, unimportant.

The Region of Collision

from Captain H. J. Sadler

SINCE the advent of radar, the need for correct interpretation has become only too clear from the record of so called radar-assisted collisions. The practical navigator has been shown various methods of noting PPI data and solving the problem of how best to avoid collision. We have the practical system of plotting, either with ship's head or true north upwards. We are now being offered some ingenious graphs and tables by Captain Wylie, Mr. Slater and others (*Journal*, 9, 161, 448). The navigator has an opportunity to study these methods and use them at sea, in clear weather, in conditions where he can assess the advantages of each method and also their accuracy.

When plotting with ship's head or true north upwards we are using all possible data, bearing, distance and time; but with graphs and tables we have only two of the three elements, distance and bearing, time and distance, or bearing and time. We can note the third element with advantage, but we still haven't a clear picture of the situation. It seems evident, therefore, that plotting is by far the best method. Although there are many reasons put forward for using a plot with ship's head upwards, I agree with Captain Wylie that plotting with true north upwards is better, mainly because an alteration of course on own ship does not disturb the plot of other vessels showing on the PPI and therefore shows the true situation at all times. However, as has been said before, the best method is the one with which the navigator is most familiar.

The case suggested by Dr. Sutton has already been noted in this *Journal* (9, 163), where a vessel whose bearing on the bow is increasing ends up in the region of collision. It is clearly seen on graphs and tables that risk of collision is imminent, but by plotting with time, distance, and bearing data much more information is available, and we find the surprising situation of a ship which should pass clear, one mile off, altering course several times after closing within 2½ miles as if it desired a collision.

Although I advocate the use of plotting, I do not suggest that tables and graphs should be ignored. Of these I prefer Mr. Slater's distance-bearing system. I would say that the graph is better than the table because it gives a better picture of the situation, but if you can graph it's better to plot. If the navigator is stationed at the PPI and has no facilities or assistant to plot, a situation by no means unknown in the Merchant Navy, then the distance-bearing table is an