ANNEX XVI

SCOR WORKING GROUP 48
OCEAN CLIMATE PANEL
Current Activities and Objectives by R. R. Dickson

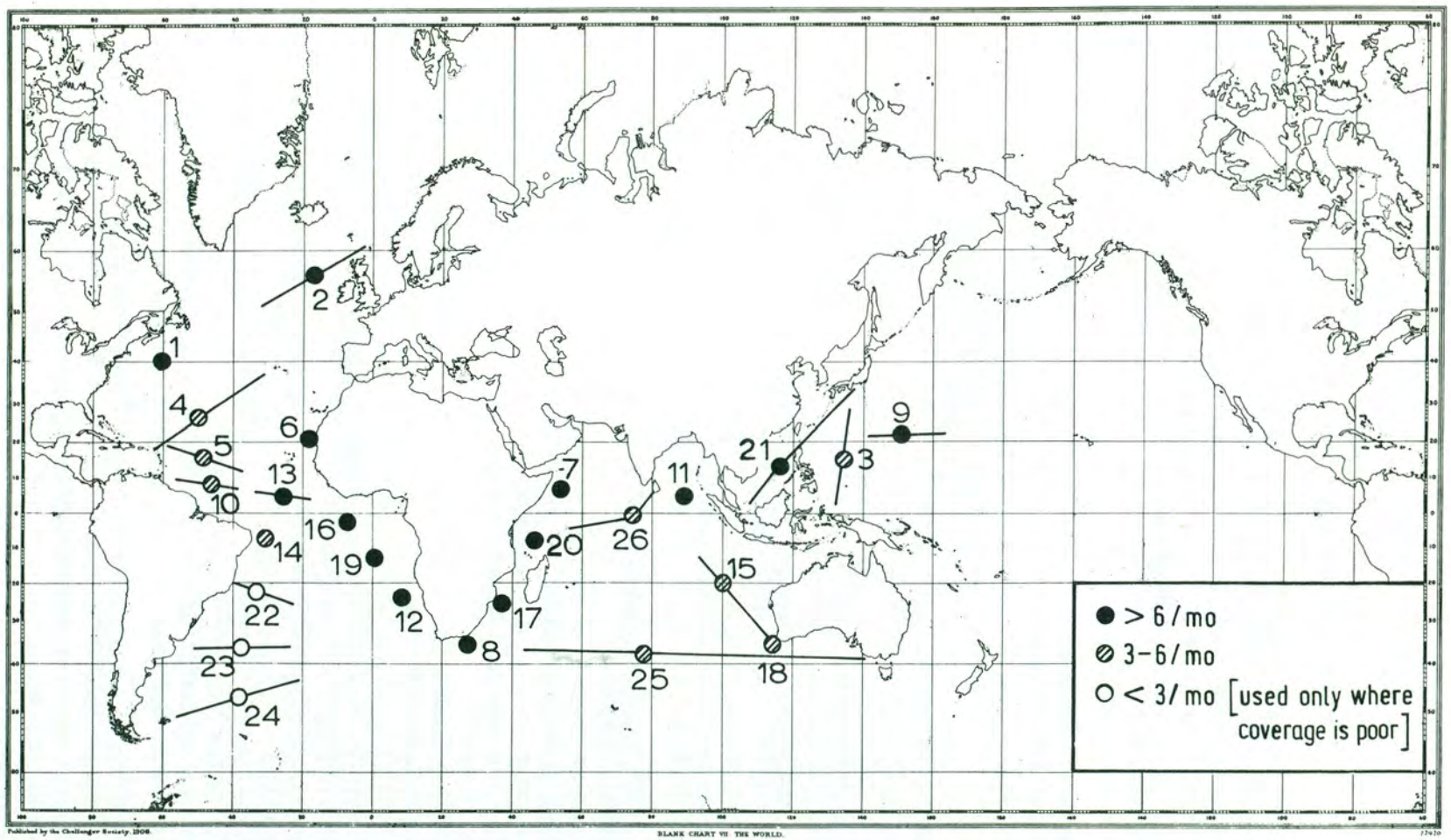
In the past year the Panel has continued to study the oceanographic basis for ocean monitoring and prediction systems for the future and specifically to explore the feasibility of monitoring large-scale, long-period variations in ocean climate. As described in the Panel's first report (January 1974), the Panel has concentrated on the possibility of using certain categories of commercial vessels as 'Phantom Weatherships' in order to provide time-series of essential hydrographic and meteorological parameters from a globally distributed grid of fixed stations.

To this end information on commercial bulk carriers was sought from the agencies controlling merchant shipping in eight countries (Japan, USA, UK, Norway, Sweden, Germany, Netherlands and Greece) and 89 such shipping lines were subsequently contacted to obtain detailed information on their shipping routes and traffic frequencies. Two national agencies (USA and Greece) failed to respond to our initial request for information and they will be contacted again; of the shipping lines which were approached, all expressed enthusiastic interest in assisting our study and many gave provisional approval for tne participation of their vessels if such a monitoring scheme came into being. Not all proved suitable for our scheme but a sufficient number of suitable lines were identified for a prototype Phantom Weathership network to be drawn up (see attached figure). The coverage in the Atlantic and Indian Oceans appears adequate; so far as possible the stations are located in climatically sensitive points or in positions which correspond to the current WMO merchant ship sampling programme. The coverage in the Pacific sector is almost nonexistent at present though it is hoped that this situation can be improved if a more thorough response from US and Japanese lines can be achieved.

Based on the prototype network, Panel members are currently examining the following ancillary problems:

1. Can an increased distribution of tide gauges on island stations play a useful role in backing up ship-based data along the Phantom Weathership routes? (Tabata)
2. What programme of observations should be required at each of the Phantom Weathership sites and what will be the cost per ship of the instrumentation involved? (Tabata, Hupfer)
3. Can shipping lines of the 'eastern bloc' be added to our network? (Hupfer)
4. From our knowledge of climatic and hydrographic variability, are we putting any of the stations in stupid locations? (i.e. locations where the local variability is out of tune with the expected ship sampling frequency of 3-6 observations per month) (Namias and Iida/Smed respectively)
5. Can the grid be adjusted to cover more 'climatically critical' areas or to continue historical time series no longer in being? (All)
6. Can we persuade a fuller response from US and Japanese lines to extend our coverage in the Pacific? (Namias, Iida)
7. What are the normal practices of weather- and current-routeing adopted by the shipping lines? (Dickson)

These investigations could not be initiated properly until the prototype station grid was drawn up in November 1974. However, it is hoped that it will be possible to issue a preliminary report covering these points by the summer of 1975. This will provide basic information on the practicability, cost and global coverage of a Phantom Weathership operation, hopefully all the information necessary to find out whether such a scheme will generate enough interest to warrant further investigation.



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PROTOTYPE PHANTOM WEATHERSHIP NETWORK (naming of shipping lines does not necessarily imply their eventual participation)

Station number	Line	Remarks
1	Torvald Klaveness (1)	Climatically sensitive point (Lamb and Ratcliffe)
2	Torvald Klaveness (2)	
3	Torvald Klaveness (3)	
4	Sir Wm Reardon Smith & Sons Ltd	
5	Oivind Lorentzen	Island routed
6	Fernley and Eger A/S (1)	Cap Blanc upwelling (15 miles offshore)
7	Fernley and Eger A/S (2)	Somali upwelling
8	Exxon (1)	
9	Exxon (2)	
10	Exxon (3)	
11	Exxon (4)	
12	Shell (1)	Conforms to WMO program of merchant ship observations
13	Shell (2)	
14	Shell (3)	Climatically sensitive point at nose of Brazil (Brooks 1926, Lamb 1974); land routed
15	Shell (4)	
16	BP (1)	Conforms to WMO program of merchant ship observations
17	BP (2)	
18	BP (3)	
19	Hilmar Reksten A/S (1)	Conforms to WMO program of merchant ship observations
20	Hilmar Reksten A/S (2)	
21	Terukuni Kaiun Kaisha (1)	
22	Terukuni Kaiun Kaisha (2)	
23	Andrew Weir (1)	
24	Andrew Weir (2)	
25	Cunard (1)	
26	Cunard (2)	Undercurrent station, Maldive routed