COORDINATION OF GEOGRAPHICAL GRIDS OF THE WORLD.

At the Vth International Hydrographic Conference held at Monaco from 23rd April to 7th May, 1947, the following Resolution was adopted by the Delegates :

> "The Conference recommends that the Directing Committee of the International Hydrographic Bureau get in touch with the International Union of Geodesy and Geophysics, to specify the needs of the Hydrographic Offices, and to offer such cooperation as may be possible in finding the best possible means of making and reducing observations for obtaining the absolute geographic coordinates of points on the globe, with the highest possible standard of accuracy";

the object being to obtain a consistent and standard world-wide network of geodetic coordinates.

In order to comply with this Resolution the Directing Committee sent delegates to the following conferences —

(a) The Photogrammetric Conference held at Florence (October-Nov., 1947), at which the International Hydrographic Bureau was represented by Rear-Admiral C. L. Nichols, Director;

(b) The International Union of Geodesy and Geophysics 8th General Assembly held at Oslo, August, 1948, which Vice-Admiral J.D. Nares, President of the Directing Committee, attended.

At the former, a scientific congress was convened grouping delegates from Italy and other countries to discuss questions affecting geodesy, cartography, photogrammetry and optics, and the questions of the standard adjustment for European geodetic nets and of aerophotogrammetric triangulation systems, figured on the agenda.

At the latter, as its name implies, many subjects relating to Geodesy were discussed.

These two Conferences afforded excellent opportunities for the Directing Committee of the International Hydrographic Bureau to stress the need, from a navigational and hydrographical point of view, owing to the introduction of modern electronic aids such as Loran, Decca, etc., for the coordination of the Geographical Grids of the World. Papers were therefore read by the Delegates of the International Hydrographic Bureau at each of these Conferences, in which it was pointed out :—

(a) That at present, discrepancies occur between the geographical grids of the various nations, the Geodesists having until recently restricted their work to producing a grid of very high relative accuracy within the boundaries of their own country. These discrepancies are further aggravated by the fact that different figures of the Earth may be used in the calculations of these grids ;

(b) That as most countries have their own system of geographical coordinates, any discrepancies between them are only known when common stations have been connected by triangulation. Thus we know the difference between the Danish and the Swedish systems across the Sound, but we have no clear idea of how much this difference amounts to in the Northern part of the Kattegat. We know the difference between British and French values of identical stations in the Channel, and British and United States values of identical stations in the Bahamas.

The following figures obtained from the Danish, British and United States America Hydrographers, will serve to illustrate the extent of these known discrepancies :—

In the Kattegat and the Baltic :

Denmark-Sweden (across the Sound)	Lat.	+ 0",39
	Long.	— 5",525
Denmark-Germany (Land Frontier)	Lat.	— 6",3
	Long.	+ 8",9
Denmark-Norway (across the Skagerak)	Lat.	— 5",5
	Long.	— 1"

Between England and France :

The differences between British and French values for Mont Lambert close Eastward of Boulogne are	Lat.	+ 5",433
	Long.	— 4",029

Between the United States and the Bahamas :

		By U.S. Extension	British Charted position	Difference
(a) Pinder Point Grand Bahama I.	Lat.	26° 30'20"	26° 28'50"	+ 1'30"
	Long.	78° 45'51"	78° 39'53"	+ 5'58"
(b) Walker Cay	Lat.	27° 15'26"	27° 15'30"	— 4"
	Long.	78° 24'17"	78° 23'30"	+ 47"
(c) Gun Cay	Lat.	25° 34'25"	25° 34'37"	— 12"
	Long.	79° 17'49"	79° 18'05"	— 16"

(c) That in the Baltic and the English Channel this has hitherto not created any great difficulties for the marine surveyor or the navigator as the accuracy with which they worked did not result in their being misled by the discrepancies, but with the introduction of electronic aids enabling navigators to fix their position at sea and in the air much more accurately at great distances from the fixed points used, the Marine Surveyor has realised that the Geodetic data on which his survey-work is based, is no longer sufficiently accurate;

(d) That a marine chart often contains coasts of several countries and as most Hydrographic Offices publish charts of foreign waters and frequently use charts of various nations to produce one chart, it is evident that the marine charts as now developed are frequently in error;

(e) That the States Members of the International Hydrographic Bureau believe that the only real way to solve the problem is to establish a common grid of geodetic coordinates for the whole world.

Both papers were well received by the Delegates and long and useful discussions followed. It can therefore be expected that, now the Geodesists have had the needs of Seamen placed before them, progress will be made towards an eventual coordination of the Geographical Grids of the World; and the Directing Committee of the International Hydrographic Bureau, on behalf of its Member Nations, has offered its full cooperation with a view of attaining this important object.