

Atlantic's Conquest by Air

By WAYNE THOMIS

THE two giant flying boats reproduced here sectionally to scale and in colors are engaged this summer in shuttling back and forth across the North Atlantic ocean in a series of experimental flights.

Their departures and arrivals to schedule after crossing what has been the most treacherous stretch of salt water ever flown indicate that predictions of regular air services for passengers and mail by 1938 are not unduly optimistic.

At the top of the page and eastbound—if you consider the page like a flying or nautical chart—is the Pan American Clipper III, the Pan American Airways system boat in which all the American flight, radio, meteorological, and navigation problems will be worked out.

Beneath it and westbound is the Caledonia, one of the two British Imperial Airways boats in which crews are being trained by actual flights. The other Imperial

experimental craft is the Cambria, a sister ship.

Their comings and goings, their midocean passings, long since have ceased to be news. There has been little space in daily news columns, however, to tell what the crews discovered in their flights or to relate the various tests which are being conducted while the flights are in progress. These subjects will be covered here.

First of all let it be recalled that the double crossings are

made to date have been completed under the most favorable conditions from the technical standpoint of any Atlantic flights.

The big flying boats have four engines apiece. The crews have been large, with each member a specialist in some one phase of flying, such as navigation, engineering, communications. And certainly the ships have had an ample fuel supply which allows for head winds, errors in navigation, and unfavorable weather conditions at destination.

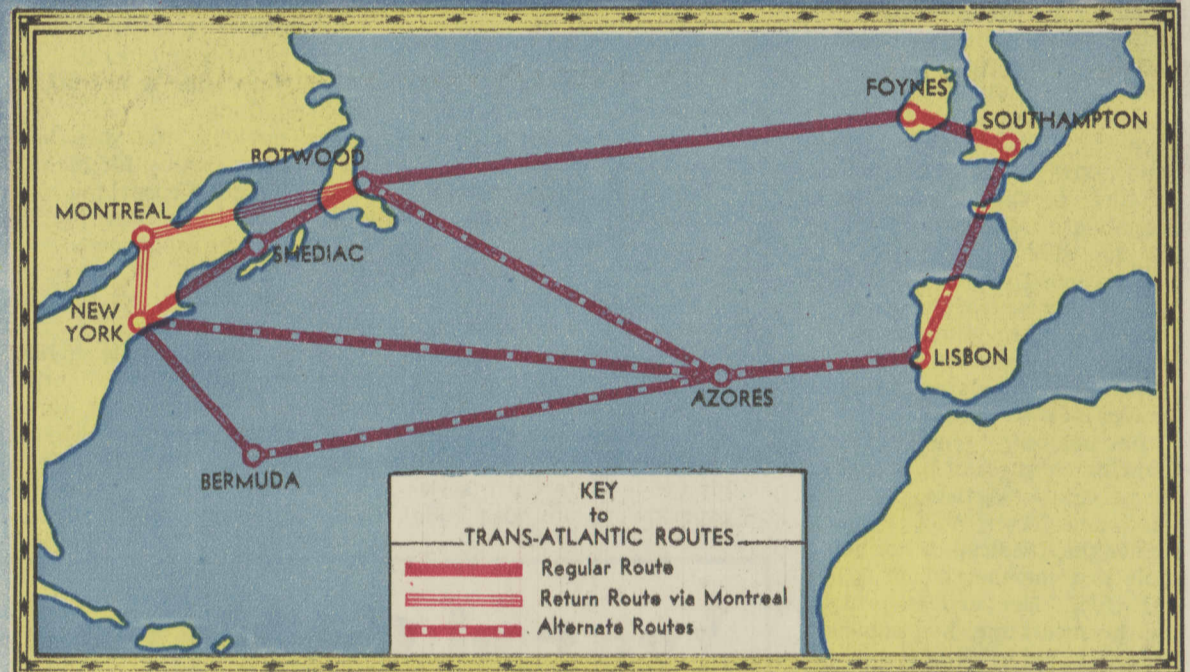
In other words, the ships and men are perfectly equipped for the job. There was no element of chance involved even in the first of the experimental trips.

Now let us consider the flight problem as do the Pan American and Imperial Airways experts.

As it now is known, the Atlantic ocean represents a nonstop flight assignment of roughly 2,000 miles. So far as distance is concerned it is substantially the same transport problem as the crossing from San Francisco to Hawaii, except that the Pacific ocean flight is 20 per cent longer.

Strictly speaking, there is no "ocean airway" on either the Atlantic or the Pacific. This means that there is no distinct "route" to be followed on every crossing.

Ocean flying differs from land flying in that airliners



General routes of the crossings to date have followed those shown on the map above. These are great-circle tracks.

over land follow definite airways, along which they receive radio directional signals. But ocean flights are plotted according to weather maps. There is, of course, a great-circle course which is the shortest possible distance

between points. On the Atlantic this is about 2,000 miles, and on the Pacific, between Hawaii and California, it is 2,410 miles.

But the track of the ship is determined by the kind of weather it will encounter.

The crews are willing to travel a course many miles longer than the great-circle course if by so doing they find favoring winds, smooth air, and a speedy voyage.

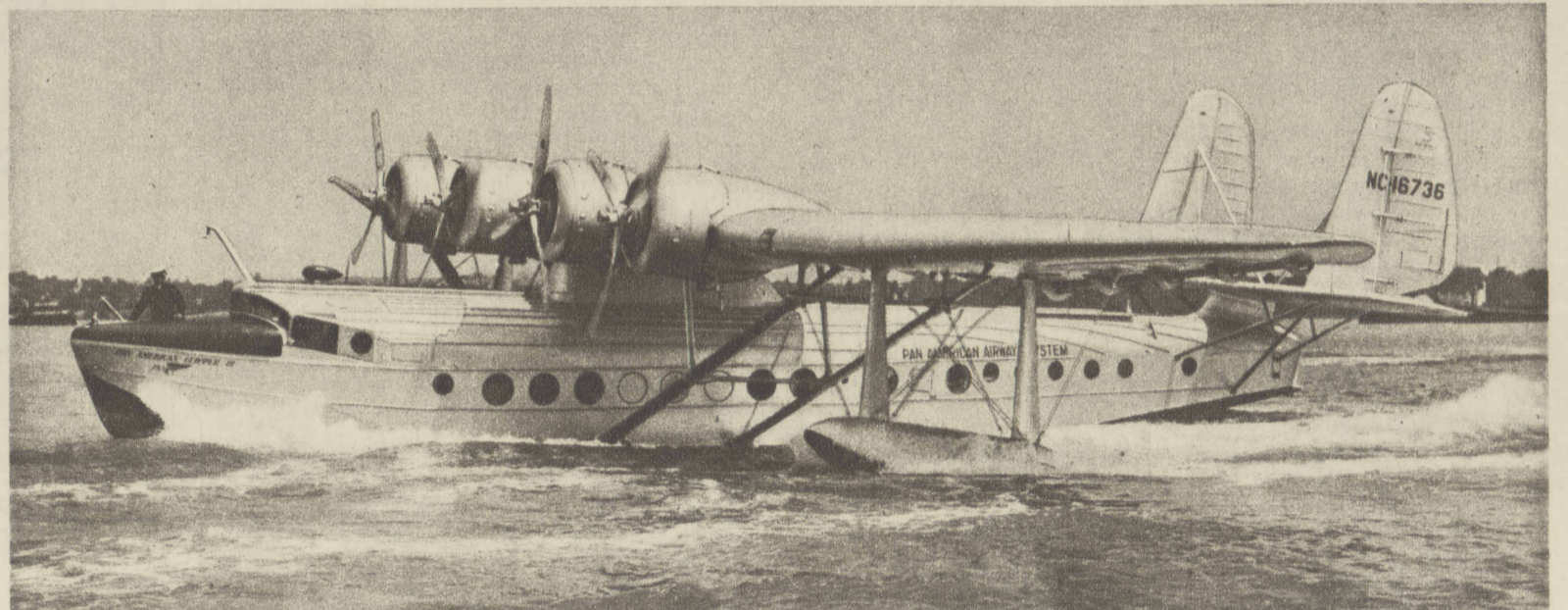
An example of this may

(Continued on page eight.)



(International photo.)

Great Britain's Caledonia over midtown Manhattan in her cruise above New York before landing at Port Washington.



At right: American representative, Pan American Clipper III, casting off at Botwood before one of eastbound crossings.