POLAR ROUTE

North-West Passage to make History again: Practical Stages for Commercial Flights

By EINAR PEDERSEN

WHEN Roald Amundsen forced his little ship *Ojoa* through the North-West Passage between 1903 and 1906, he won everlasting fame, but the opening of the passage caused no revolution in shipping routes. Later, in 1926, he flew the airship *Norge* from Spitzbergen to Teller in Alaska across the Polar Sea; this time the feat attracted less attention—but he proved that it was possible to link Europe and North America by a trans-polar air route.

Two years later Sir Hubert Wilkins proved that this route could be flown by aeroplanes; he took a Lockheed Vega some 2,200 miles from Point Barrow *via* Grant Land to Spitzbergen.

In 1937, however, the Russians took the lead in trans-polar flight when Chkalou surprised the world by flying direct from Moscow to the west coast of America *via* the North Pole. In July the same year the Russian Gromow broke the world record in long-range flying by going from Moscow to San Jacinto in California *via* the North Pole, 10,148 km (6,320 miles) in 63 hours. Both Chkalou and Gromow used a single-engined Ant-25 aircraft with a three-man crew.

A third Russian attempt, to fly from Moscow to Fairbanks, ended in disaster. Levanevsky and his crew disappeared with their four-engined aircraft some time after passing the North Pole. A series of search flights were made over the Arctic Ocean, and during the autumn and winter of 1937-38, Sir Hubert Wilkins crossed hitherto unexplored areas of the Polar Sea. These flights did not accomplish their primary object: Levanevsky and his crew were never found; on the other hand, Wilkins did discover that winter was the best time for Arctic flying. The weather is more stable than during the summer, and navigation is easier, because the stars may be used both by day and as well as by night.

Post-war Developments

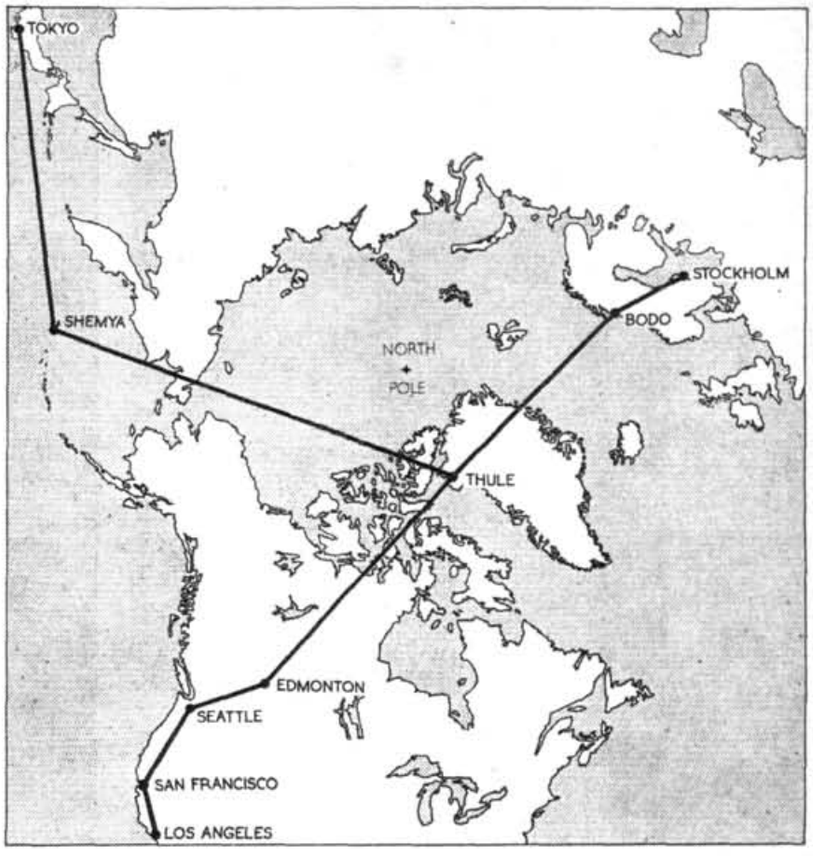
During the last war, when Russia came in on the Allied side, the idea of establishing a polar air-route was revived. But there were no tangible results, and when the war ended the Russians built their iron wall, thus cutting short all plans for friendly commercial flying across the Arctic.

At the end of the war the British became very interested in polar flying. The Arctic flights of the R.A.F. Lancaster *Aries* laid the foundations of modern polar air navigation. About this time the Americans became aware that they were lagging behind: thus they started the "Ptarmigan" flights from Fairbanks to the North Pole and back. After more than 500 meteorological flights to the North Pole, the U.S.A.F. are now the acknowledged leaders in the field of polar aerial navigation.

New instruments have been invented and new techniques developed. The Pfund sky-compass is one of the most important inventions in this field, for it enables the navigator to take course corrections from the sun when it is below the horizon, by means of the polarized light in the sky. The Greenwich Grid system and the gyro compass are, of course, the basis of polar navigation, for the magnetic compass is useless over great areas around the North Magnetic Pole.

Col. Balchen's non-stop flight from Fairbanks to Oslo in 1949 and Captain Blair's subsequent solo flight from Bardufoss in Northern Norway to Fairbanks showed that trans-polar flying now may be considered as incident-free as flying over the North Atlantic.

So far no commercial flying has been done on the trans-polar routes, primarily because the great distances between airfields have prevented existing airliners from carrying a useful payload.



This map shows the directness of the proposed trans-polar commercial routes from Scandinavia to Canada, the East Coast of North America, and the Far East. S.A.S. (Scandinavian Airlines System) have worked out plans for the route and proving flights may begin this year.

Very soon, however, the whole situation will change, when Thule airfield in Northern Greenland and Bodo airfield in Northern Norway will be ready for commercial operation, thus providing two excellent intermediate stops on the North-west passage to the West Coast of America and the Far East.

The Stockholm-Seattle route may now be achieved in practicable stage-lengths. Flight time at a cruising speed of 250 kt at 20,000ft, with a head-wind component of 20 kt, should be around 2 hr from Stockholm to Bodo, 6 hr 30 min from Bodo to Thule, 7 hr 35 min from Thule to Edmonton and 1 hr 55 min from Edmonton to Seattle. The total flight time should be 18 hr, which, compared with the conventional route from Stockholm to Seattle *via* New York, means a saving of 10 hr.

On the route to Tokio *via* the North-West Passage, assuming the same aircraft and wind-speeds, the flight times would be as follows :—

	hr	*min*
Stockholm to Bodo	2	00
Bodo to Thule	6	30
Thule to Anchorage	7	50
Anchorage to Shemya	5	45
Shemya to Tokio	8	10

The total flight time will be 30 hr 15 min. The flight time by the conventional route from Rome and Bangkok is around 40 hr. The 20 kt head-wind is in each case rather pessimistic and an even greater saving in flight time may well result. However, a 10-hr cut means much for both passengers and operators—for the passengers a lower fare, and for the company a higher aircraft-utilization.

It may take some time before scheduled airliners fly these routes; meanwhile, individual aircraft will continue the pioneering work. One day everyone will realize that the ancient navigators were not romancing when they dreamed about a short-cut to the East *via* the North-West.