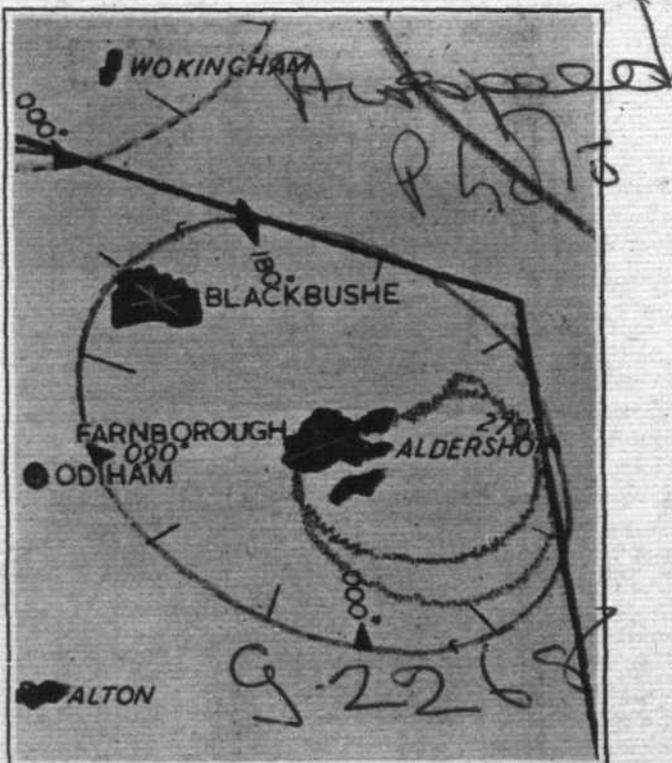
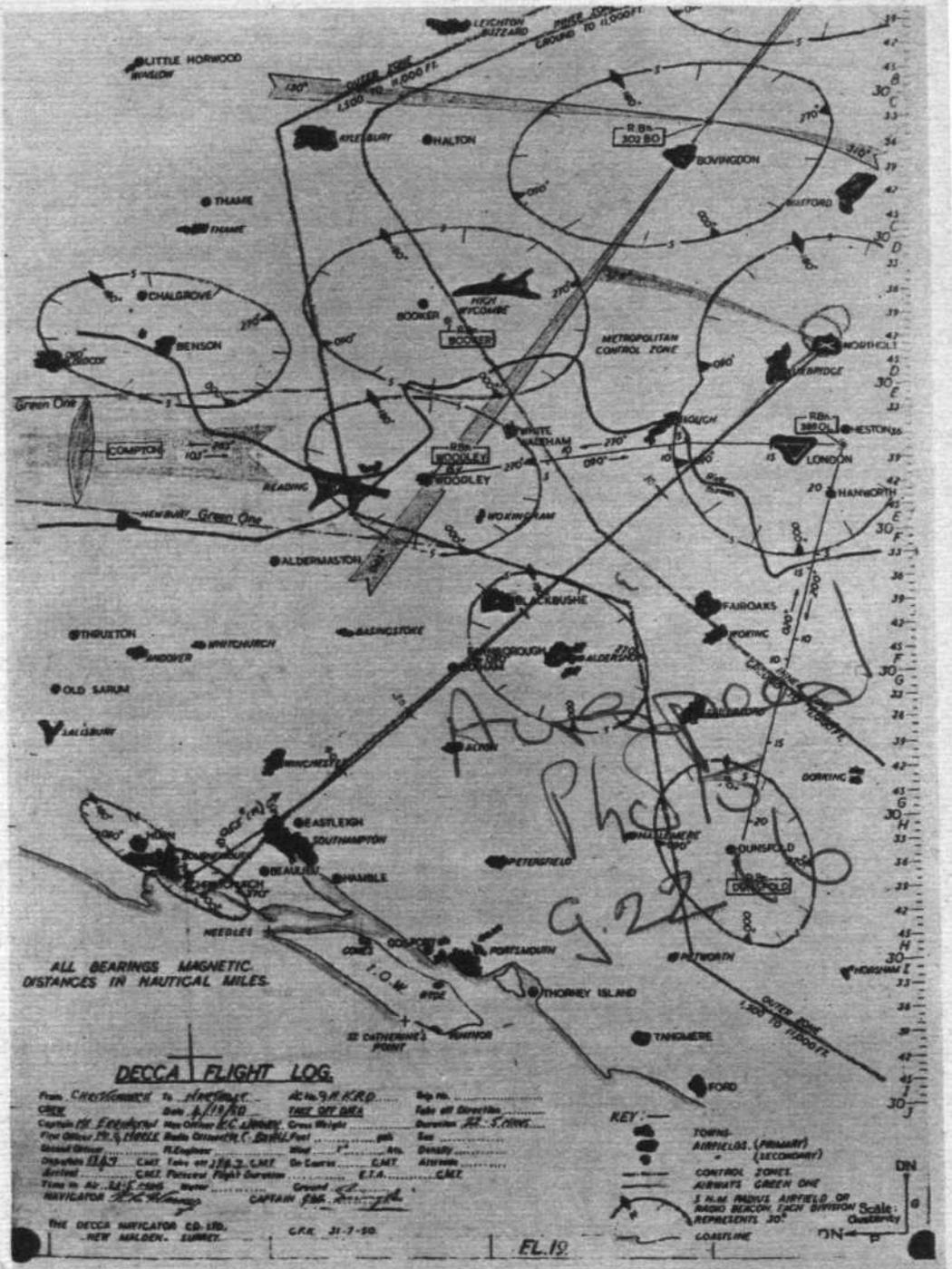


# INTERNATIONAL NAVIGATION-AIDS . . .

construction and installation job comparable in magnitude to that of the system to be jammed. By contrast, V.H.F. can be jammed from aircraft, and it is foreseen that bombers will in future carry jamming sets to interfere with V.H.F. reception in the fighters opposing them. Both V.O.R. and D.M.E. are considerably more susceptible to jamming than is Decca—so much so, that the Americans are already experiencing difficulty with V.O.R. as a result of interference by domestic frequency-modulated broadcast receivers in towns and cities. Decca, certainly, is jammable; but nothing like so easily as any other navaid at present considered internationally for civil use.

Siting is another aspect which is occasionally the subject of criticism. It is sometimes stated that the dual applicability of Decca to aviation and marine use is all right on paper but that, if aircraft are to employ the system, then the siting of the chain must be considered primarily from the viewpoint of providing the requisite accuracy for aircraft. This argument has the appearance of validity, but is worth examining somewhat more closely. The accuracy of Decca is such that a position fix can be obtained to within one mile at a range of 300 miles from the chain during the day. At night, the accuracy is five miles at 300 miles' range, or one mile at 150 miles' range. There is no altitude limitation, neither is there effective terrain limitation. What accuracy does the aircraft require? Obviously, in absolute terms, it is desirable that a pilot should know his exact position at any time, but in everyday reality, he is unconcerned as to his position within, say, five miles, except when flying within control zones, and when executing let-down, approach and climb procedures.

The stations comprising the English Decca chain are sited at East Hoathley, Sussex (green); Stoke Holy Cross, Norfolk (red); Wormleighton, Warwickshire (purple); and Buntingford, Herts (master). From the centre of the chain, i.e., the master station, to London Airport is roughly 40 miles; nevertheless, such is the accuracy of



Flight Log chart of flight from Christchurch to Northolt made by the Airspeed Ambassador. The closeness with which the aircraft followed the pre-drawn track is remarkable, and the orbit and approach circuit made at Northolt is faithfully recorded.

(Left) These tracks were made by the Ambassador during the S.B.A.C. demonstrations, and clearly show the "avoiding action" taken during one circuit.

the system that it is perfectly possible to bring an aircraft in to land at London using Decca as an approach aid. So much has, in fact, been done. Provided an airport is within, say, 50 miles of the chain, Decca could thus well be used (in conjunction with an altitude-control system) as an approach aid; however, the Decca Company makes no such claim—theirs is a navigational system. The matter of chain siting therefore devolves upon the order of accuracy required. For all normal purposes, the central siting of, for example, the English chain, is such that the system serves both aviation and marine users equally well. Such conditions would inherently apply to any other land/water relationship of similar or lesser magnitude and, of course, in these cases, the marine factor can have a material effect upon the financial demand made on the aviation interests. If, however, one group of users wants priority of siting at the expense of other users, then it should be prepared to pay accordingly. Where only one group of users is concerned, no such conflict of requirements exists.