

Payload and Long Range

How Refuelling in the Air Can Help: Technical Problems Solved: Full Details of Sir Alan Cobham's Latest Developments: Method now completely Safe and Reliable.

By THE EDITOR

ALTHOUGH it is now twelve years since the first actual experiments with transferring fuel from one aircraft to another in flight were made in this country, relatively few know—or remember—the early experiments, still fewer realise the advanced stage of development which has now been reached. The origin was little more than a "circus stunt," but the modern application may be capable of doubling the pay load on routes where long non-stop stages must be flown for geographical reasons (the North Atlantic, for example) or where other considerations make long stages desirable.

The cessation of hostilities will see an immediate increase in all commercial flying, and among the routes on which there will, within the next few months, be feverish activity in an endeavour to be among the first to become established is that spanning the North Atlantic between Europe and the North American continent.

That these routes can be operated with normal aircraft carrying relatively small payloads has been amply demonstrated during the war, but to carry fare-paying passengers at reasonable fares is quite another matter. The two routes—the southern via the Azores and Bermuda and the northern via Newfoundland—are practicable, but direct flights between England and New York, for instance, would save a great deal of time. Moreover, it is generally true to say that the greatest risk of flying occurs during take-off and landing, and thus by reducing the number of these the safety of the whole flight should be increased. This statement needs the qualification that it presupposes that for the long non-stop flight the initial take-off and the final landing are made in circumstances which have not increased the risk as compared with the two or three take-offs and landings made when the route is divided into stages. From



recent study of Sir Alan Cobham's up-to-date refuelling tests it would certainly appear that such can now be said to be the case.

Inspiration from a "Stunt."

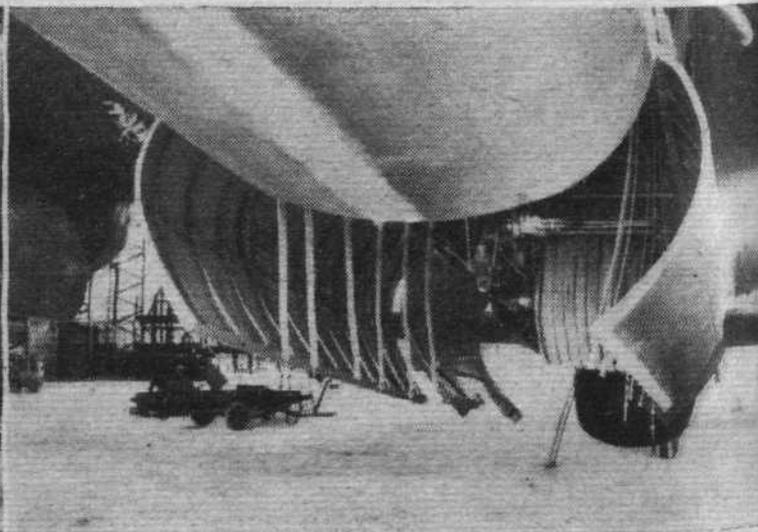
Before describing Sir Alan Cobham's modern method of refuelling in flight, it may be well to establish the background against which it should be seen by giving a brief historic survey of how the system has developed. The idea came to Sir Alan from the crude American experiments in which light planes were made to establish phenomenal endurance records by "feeding" them with fuel for engine and crew from other aircraft at certain intervals. That, as we have said, was little more than a "stunt," but in it Sir Alan saw possibilities for serious application. He first began to ponder the idea in 1931; by 1932 ordered planning was begun, and in 1933 the first actual experiments were made. The next year the Air Ministry became interested and Sir Alan Cobham and Sqd. Ldr. Helmore started on a non-stop flight to India, the idea being that the R.A.F. should refuel him at Alexandria, Basra and Karachi. The little Airspeed Courier was successfully refuelled over Malta, but shortly afterwards the throttle lever broke, the engine petered out and a forced landing on Malta brought the experiment to an end.

Up till this time Sir Alan had visualised that the "tanker" should fly steadily on a straight course while the machine to be refuelled should do the "forming."



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