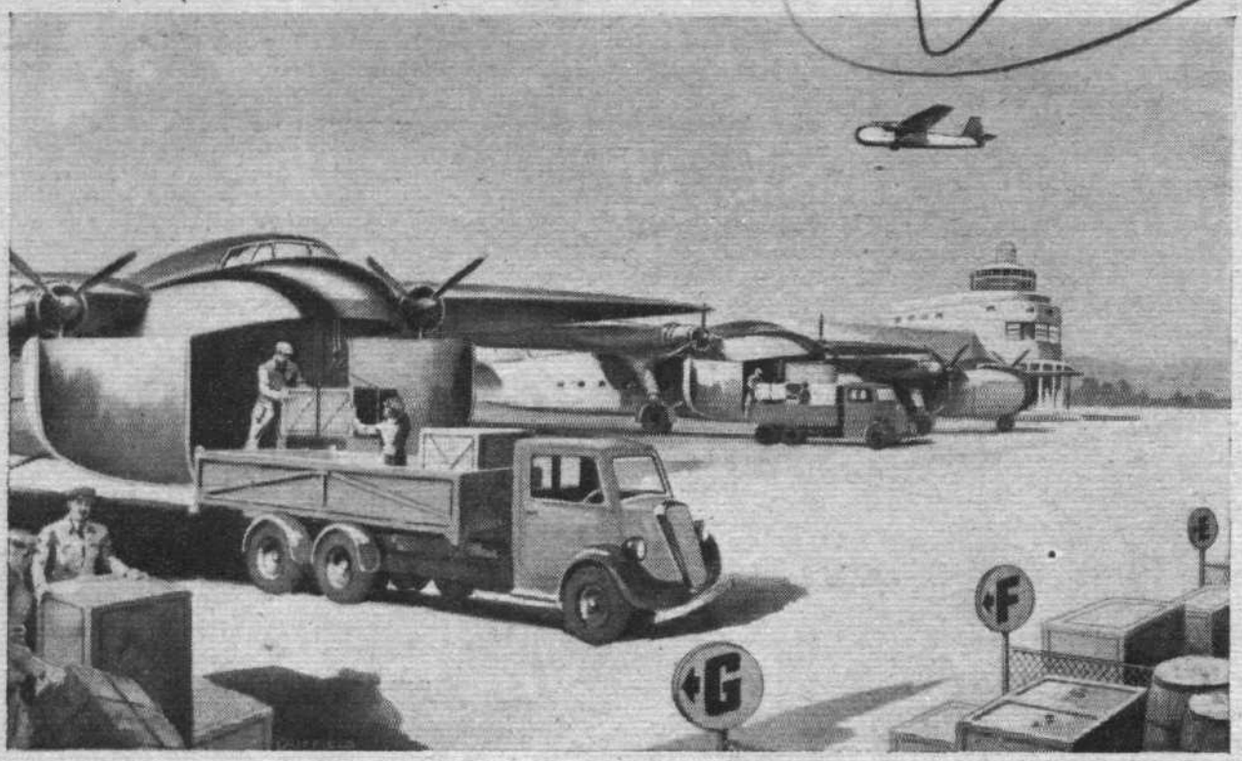
Cargo Aircraft

By W. S. SHACKLETON



Part II. Dealing with Some New Facts and Figures of the Bristol Freighter

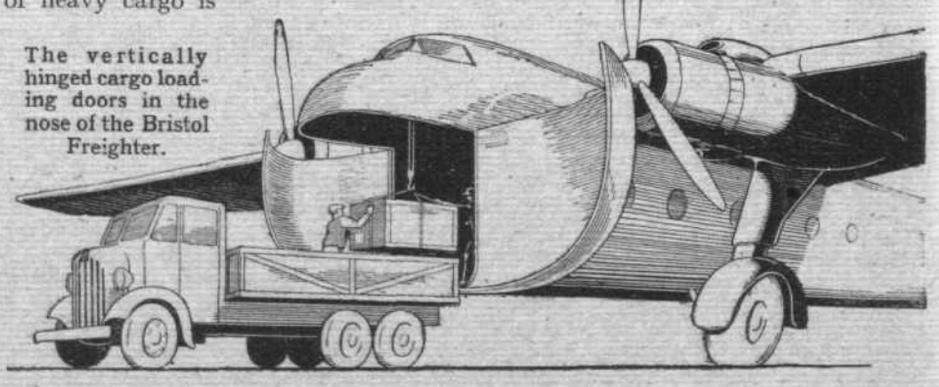
A TWIN-ENGINED high-wing monoplane of all-metal construction—a cargo hold of really generous dimensions, and a fixed (i.e., non-retracting) undercarriage. That is the Bristol Type 170. The engines are Bristol New Perseus nine-cylinder sleeve-valve radials rated at 1,175 b.h.p. for take-off. Any alternative engine in the 1,200 h.p. class can also be fitted.

This aircraft has been designed for the special job of carrying cargo in the most economical manner. We have seen the detail drawings and design data. The construction throughout is very simple, straightforward and robust. There are no power electrics or hydraulics unless one counts the airscrew mechanism. The aircraft is intended for operation from small landing grounds. Its optimum payload is nearly 5 tons. The freight cabin is so big that a standard 3-ton lorry can be driven up a ramp into it. The lorry could even be flown to its destination already loaded with goods. Rapid loading and unloading of heavy cargo is assured by the provision of wide doors, a built-in overhead crane, and an unobstructed hold.

The wing is built in three main sections with the transport joints just outboard of the engine nacelles. As on the Blenheim, Beaufort and Beaufighter, two-spar construction with a stressed-skin covering is used. It is claimed that this method is fundamentally more robust than true monocoque, and is easier to repair. Two fuel tanks of 300 gallons capacity each are slung between the spars inboard of the engines. Although the tanks are high enough to give gravity feed to the carburettors, electric fuel pumps are provided to avoid any possibility of vapour locks developing in hot weather. The system is designed for pressure refuelling. Split flaps are employed, hydraulically operated by hand pump from the pilot's cabin.

Earlier Perseus engines, as fitted in the D.H. Flamingo and some Short flying boats, developed much less power. The increase has been obtained by increasing the capacity of the engine, running on 100 octane fuel and incorporating a number of detail refinements developed during the war. Each power-egg assembly can be removed complete with oil tank and cooler, cowl and accessories, by withdrawing four pins from the attachments to the nacelle.

The oil cooler is placed at the top of the assembly, with the tank lower down, so that the cooler drains into the tank when the engine is



The vertically hinged cargo loading doors in the nose of the Bristol Freighter.