

civil form, the selected design (G.A.L. 60, or Universal Transport) is the subject of these preliminary notes.

Though amenable to all manner of internal arrangements, the Universal is by nature a highly specialized aircraft. The purpose underlying its design is the carriage, from relatively small airfields, and in adverse atmospheric conditions, of high-percentage payloads over medium stages (i.e., up to 1,000 miles). In an aircraft of this class, high speed is not a primary consideration; nevertheless, Mr. F. F. Crocombe, Technical Director and Chief Designer to General Aircraft, and his staff, are to be complimented on having designed a machine which promises to cruise at 170 m.p.h. at a low engine output. The commercial potentialities of the Universal can be briefly stated as: 13.4 tons for 500 miles at 9½¢ per ton/mile.

Detailed analytical comparisons have been made by General Aircraft, Ltd., between air transport, as represented by the Universal, and surface transport. It has been found, for instance, that for relatively short distances, i.e., up to 1,000 miles, air freight rates work out at 140 per cent of the surface transport rate, and as an example, the Manchester to Stockholm route (860 miles by air) is quoted. The air transport rate computed for the Universal is 9.1d per pound and the inclusive surface transport rate 6.6d per pound. These figures are, however, illusory unless reference is made to the time factor. A hypothetical cargo of 180 tons is considered. The flying time (block-to-block speed of 154 m.p.h.) is 5.6 hours, but it is necessary to make allowance for delivery at the airport and for loading. A generous figure is considered to be seven hours, with a similar allowance at the destination for unloading and

GENERAL AIRCRAFT UNIVERSAL TRANSPORT

Four Bristol Hercules 761 engines driving Rotol reversible-pitch airscrews

DIMENSIONS

Span	162ft
Length	99ft
Height	31ft
Wing area	2,916 sq ft

WEIGHTS

Weight empty	60,250lb
All-up weight	95,000lb

LOADINGS

Wing loading	32.6lb/sq ft
Power loading	12.2lb/h.p.

PERFORMANCE

Maximum speed	240 m.p.h. at 13,500ft
Cruising speed	170 m.p.h. at 8,000ft
Landing speed (full load)	85 m.p.h.
Still-air range with payload of 12.72 tons	752 miles
" " " " " 11.33 tons	1,072 miles
" " " " " 9.70 tons	1,455 miles
" " " " " 8.15 tons	1,835 miles

