

TRANSPORT COMPARISONS—II

Some Further Comments on the Economics of Airline Operation

THE article by Mr. R. A. E. Luard in last week's issue raised a number of interesting points for the potential purchaser of commercial aeroplanes. One reader, who is intimately connected with air transport operation, suggests that the table does one aeroplane, at least, some injustice, and says that the inclusion of the D.H. 86A with Gipsy VI Series II motors and C.P. airscrews, is hardly fair in so far as no example of this type has ever gone into commercial service. He has drawn up a table to show the figures for the D.H. 89A, Lockheed 12A, D.H. 86A (with Series I motors) and the Lockheed Electra 10A.

that it was possible to have one's pay-load in the form of all passengers, all freight, or an arrangement to suit the requirements of the route to be operated. With increasing speeds, this is changing. Through the inability of engines of reasonable horsepower to force an object looking like a block of flats through the air at high speed, fuselages of more limited dimensions are becoming fashionable, while pay-loads are rising. This point is well illustrated by the Lockheed 14H, a new type which is rapidly proving its worth on routes in the United States. Its figures by the Luard method follow: Line 1, disposable load 7,520 lb.; line 2, 44.2 per cent.; line 3, 69 per cent.; line 4, 222 m.p.h.; line 5, 7.1; line 6, 0.094 gal. [ton] mile; line 7, 11 seats; and lines 8 and 9, £6 12s. and £21 13s. respectively.

Machines (in order of size)	D.H. 89A Rapide Gipsy VI Ser. I.	Lockheed 12A. P. & W. Wasp Jnr. S.B.	D.H. 86A Express. Gipsy VI Ser. I.	Lockheed 10A. P. & W. Wasp Jnr. S.B.
Engines	(2)	(2)	(4)	(2)
Disposable load in lbs. ...	2270	2805	4220	4320
Disposable load as per cent of all-up weight ...	41	33.4	41	43
Cruising h.p. as per cent. of max. H.P. ...	65	75	65	75
Cruising speed in m.p.h.	132	213	140	192
Disposable load in lbs./ cruising h.p. ...	8.7	4.6	8.1	7.5
Fuel consumption in gal./ ton/mile/load134	.161	.136	.117
No. of seats ...	6	6	10	10
Cap. cost pass. seat/m.p.h.	£5 10s.	£7 17s.	£6 8s.	£6 4s.
Cap. cost ton/mile load per hr. ...	£39 10s.	£36 8s.	£34 0s.	£32 4s.

"A machine of this type, fully equipped with radio, etc., a crew of three and a full complement of passengers, with fuel for the trip London-Berlin against a 20 m.p.h. head wind and with 45 min. extra petrol, would have a balance of pay-load of over one ton available for freight. Further, there is a reasonable chance of stowing this quantity away, with freight space at the rate of 15 lb. per cubic foot.

"This large increase in freight capacity will probably be a feature of most future high-speed types of commercial aircraft, and is liable to prove a nightmare to operators who have not a substantial airmail or freight contract. To those who have one it will come as a blessing, for medium-sized transport operators, at present, appear to experience difficulty in keeping the mail from overflowing into what could be profitable passenger accommodation.

"Which is a sorry picture for Mr. British Aircraft Constructor, without any sign, not even in the dim distance, of a British type to compare with the Lockheed 14H. What about it?"

"It will be noticed" he writes, "that the figures for the Electra differ considerably from those given last week, which were apparently taken for a machine fitted with radio and de-icing equipment, while fuel consumption figures appear to have been taken in U.S. gallons. To further the comparison the last two lines in the table have been completed for the American types, the prices used being "fly-away factory" at £1=\$5. It is realised that, from the point of view of the purchaser in the United Kingdom, these figures are valueless except to show him what he is missing, there being no manufacturer in this country with the gumption to build a modern commercial machine. But it does give a guide to the overseas buyer, and goes no little way in explaining the apparent preference of operators in the Dominions for the American product.

"Actually, the figures given for the Lockheed Electra are not the normal operating ones, as 75 per cent. power is the maximum continuous cruising figure. Working the column on a basis of 65 per cent. power (line 3) the cruising speed drops to 183 m.p.h., the next line becomes 8.3, the fuel consumption drops to 0.099, while the last two lines increase to £6 11s. and £34 respectively.

"A comparison of these figures with those of the D.H. 86A brings to light the fact that metal construction costs no more than wood and wire, and it would also appear that it pays to go fast—until it is realised that leaded fuel is required in the Lockheed, which restored the balance from the point of view of operating cost, but not from the point of view of pay-load available.

"An interesting fact, which will provide yet another problem for the commercial operator, is that of the ratio of passenger to freight-capacity. In the past, fuselage shape was such

Inverness—Glasgow

THE long-expected service between Inverness and Glasgow will be started early in May by Highland Airways, following the installation of D/F at Inverness aerodrome. The service will be run via Perth, to connect with Stirling and Edinburgh. Incidentally, Highland Airways are also contemplating a service between Inverness and Lewis.

More Transport Training

THE Danish Transport Company has now started a blind-flying course for their new pilots. The course is designed primarily for blind-approach work on the ZZ system, though it includes besides training in "economical" flying.

The school is directed by one of the D.D.L.'s most experienced pilots, Air-Capt. E. Damm, and a specially laid-out Fokker F12 is used.

On the Way Home

ON January 10 the Short *Centaurus* left Wellington, N.Z., for Sydney on the first leg of her return flight. She reached Sydney after a ten-hour crossing of the Tasman Sea, carrying Col. White, the Australian Minister of Customs, as a passenger.

While in New Zealand *Centaurus*, which is in charge of Capt. Burgess, visited Auckland, Wellington, Lyttelton and Dunedin.

CANADIAN TERMINUS: Sea Island Airport, Vancouver, B.C., where the trans-Canada service has its western terminus. The administration building is on the right and the new radio station is on the left. In the foreground is Canadian Airways' first Lockheed Electra used on the Vancouver-Seattle service.

