COMET IN AMERICA . . .

it may be presumed their six DC-8s are intended. It would be surprising if National do not, with a strong Electra fleet on order, strongly resist purchase of medium jets. Western will not be affected by Capital competition and possibly not at all by T.W.A. or Delta Golden Arrow services (except perhaps Denver-San Francisco) and they might not appear to be likely purchasers of medium-jets.

Branniff may be operating Electras against Comets from New York and Memphis to Washington and they may be up against Golden Arrows operated by T.W.A. between Chicago and Kansas City. Not one might suppose, sufficient justification for a Branniff switch to medium-jets.

It seems that the airlines most likely to be worried about Comet competition are American and Eastern. Both have banked heavily on the Electra and it might be concluded that, were these two airlines to order medium jets from D.H., Convair or even Douglas, the significant swing on medium-haul routes was taking place. Especially, it might be added, as each has big jets to deploy, if the competitive need arises, on the medium routes.

National, Western and Braniff may, it appears, be less worried by medium-jet competition. It can therefore be argued that it would be even more indicative of a swing towards medium jets were any of these to sign up with Convair, D.H. or Douglas. An order for Comets, evidence Air Rule 3 is called from any of these three Electra airlines might be most significant of all, since it would be placed relatively free of competitive pressures.

Comets are not yet considered as a factor in competition (including T.W.A. Golden Arrows) on such routes as Chicago to Denver and Kansas City and from Kansas City and Denver to Los Angeles. They may consider that such routes may in the near future be handled by a small fleet of DC-8s or DC-9s which have on order, and that the 15-strong fleet of Viscount 810s (which may be soon increased to 20) will satisfactorily take care of the traffic on their routes. They do not appear to be unduly pressed to buy medium jets, and being one of the comparatively small U.S. carriers, they may resist the addition of medium jets to their fleet: on the other hand, Mr. Six's airline is notably progressive, and has plans before the C.A.B. for expansion of its western routes. A Continental order for medium jets might, it seems, be significant, since they would not be forced into so doing by competitive considerations. Yet there may be a Continental order if the high-speed operating procedure (Flight, July 27) but the aircraft can of course be operated like the Comet 4 according to higher altitude long-range techniques. It may be up against the fact of cruising altitude and payload range may be obtained from the following example. Cruising at 30,000 feet instead of at 23,500 gives about 8,500 lb more payload over the same range, or alternatively 400 extra miles getting more passengers per load, while cruising true air speed is only reduced by 17 m.p.h.

Such are the Comet 4A's formidable capabilities. It may be assumed that, if T.W.A. and Eastern are not the fickle pendulum does begin to swing toward the jet for medium stages (in Europe and elsewhere as well as the U.S.), it may well have been these capabilities which helped to send it on its way.

J.M.R.

GRAND PRIX DE FRANCE

The French Aero Club is organizing a light aircraft competition lasting from September 7 to 11 and intended to show up the aircraft with the best qualities of design and performance. Handicap formula take into account loading, passengers, equipment and such factors as visibility from the cockpit. There will be a speed trial over the 234 km from Biarritz to Toulouse/ Blagnac and take-off and landing tests respectively over one metre and three-metre markers. Detailed assessments and regulations have been prepared including, for example, the attachment of accelerometers to the aircraft for the landing trials, so that landing distance can be modified in relation to the abruptness of the touch-down. A figure of over 4g will disqualify the aircraft. Further remarks are necessarily based on supposition, one plain fact can be considered. This is that, notwithstanding the competitive pros and cons of jet or turboprop for medium-haul operations, the three jets just mentioned are the most realistic challenge. The word "realistic" is carefully chosen, after consideration of the facts. These are that, compared with the Golden Arrow and the DC-9, the Comet's delivery date of mid-1959 (or late 1958 if "interim" Comet 4s are ordered) is earlier, and behind the aircraft are experience and factory-capacity that dispel any doubts that D.H. are allowing too little margin for development or production delays. Secondly, the Comet can use the existing Rolls-Royce engines in favour of the aircraft. Further, the terms of any U.S. contract for British equipment, if the Capital orders for Viscounts and Comets, will, in any case, be extremely favourable. And, it might be added, to those the offers of technical service, as might be expected of firms trying to establish themselves in a new and highly competitive market. Finally, as the accompanying tables show, the aircraft makes sound sense on U.S. routes. It fits easily into the networks of the U.S. operators (with the exception of the non-stop coast-to-coast service, for which the aircraft is not intended) and offers a passenger-speed performance which, from the commercial point of view, will win at both ends of the flight. Purchase (see Flight, July 6) compares within a few pounds and a few minutes with the Golden Arrow and DC-9. The operating cost (see Comet 4A) is a cure for the ailing passenger, shows that a break-even load factor is obtainable on stages of about 600 miles (about the average length of the whole U.S. airline network) a figure which—although not as good as may be achieved by the projects turbojet—the jet leaves a big profit margin. Actual direct costs per seat-mile (neglecting freight revenues) for the touristic version work out at 1.95 cents over 500 miles and 1.62 cents over 1000 miles. And the Comet's noise (for tourist) is not so large for medium-stage work that high frequency of service—the cost-reducing factor which generates the traffic to the short- and medium-haul markets—cannot be maintained at high load factors.

The Comet's "airport behaviour," as may be seen from Table 2, enables it to operate into and out of the major U.S. airports as their latest today, and would not appear to fit within the bearing capacity of the major-airport pavements. Climb performance after take-off is such that the 152,500-lb gross weight is only affected in the sense that the required climb rate for this consideration can therefore be dismissed for U.S. domestic operation.

A selection of ten routes is presented in Table 3, varying in length from about 200 miles to 2000 miles, to demonstrate the capabilities of the aircraft in U.S. operation. Other rows (see map), which could not be included for space reasons, are, like those shown in Table 3, also well within the Comet's capabilities.

In one case only (Chicago - San Francisco) if necessary to fly above the maximum-speed height (see Flight, July 27) of 23,500 feet. Table 3 illustrates capabilities of the 70-seat first-class aircraft (the version which Capital will be using), but the 92-seat tourist aircraft is able to operate all the routes with equal facility, with the one possible exception of sectors into Minneapolis, an airport where rather too low a maximum permissible landing weight (105,500 lb) would have to be used.

If American and Eastern—who could be said to be threatened by medium-jet competition. It can therefore be argued that it would be even more indicative of a swing towards medium jets were any of these to sign up with Convair, D.H. or Douglas.

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