

## AIR TRANSPORT...

## MORE ABOUT THE 737

**J**UST as the prototype 707 was used by Boeing to test many new engineering features of the medium-range 727, so the prototype of the tri-jet is now being used to check the design of the forthcoming twin-jet short-range 737.

Vital to the 737's suitability for world-wide short-haul operations are the high-lift devices fitted to the wing. The arrangement is developed from the triple-slotted flap, plus leading-edge slats and flaps, system designed for the 727 but, in this case, with greater emphasis on a higher lift-drag ratio for take-off. On the 737 the triple-slotted flaps cover a greater percentage of the span and extend further before drooping; the effect of this is to confer a greater percentage increase in wing area for take-off. Improvements are also contemplated in the lift-drag ratio of the leading-edge devices. Overall mechanical simplification has also been achieved.

Although the gross weight of the 737 and its planned developments substantially exceed the one-time FAA limit of 80,000lb for two-crew operations, the cockpit of the new aircraft is being designed, like those of its twin-jet rivals, for two pilots only. Some of the features of the revised cockpit are also to be tested on the prototype 727, together with some "simplified" systems components. Justified by the success of the 727 programme, Boeing is confidently scheduling a very tight programme for the 737 by doing much preliminary engineering flight testing in advance. The first 737 will be rolled out in 19 months (in November 1966), and FAA certification is expected less than a year later, in time for first customer deliveries (to Lufthansa) in December 1967.

Boeing is working on four civil variants of the 737 and various military applications. The civil versions are: the basic 737-100 as ordered by Lufthansa with a seating capacity of 100 and a gross weight of 83,900lb; a 737-100C convertible passenger-cargo version; an executive version with extra tankage for a trans-ocean

range; and a 737-200 longer-fuselage, higher-gross-weight development as ordered by United. The -200 will seat up to 113 passengers and have a gross weight of 90,000lb.

As with the 727, the "big airline" requirements of United and Eastern were obviously Boeing's incentive for extracting the last ounce of payload and performance from the power available. Yet, while the net result is an exceptionally promising aircraft, the whole family is a generation bigger than had been envisaged until quite recently. A factor which Boeing, unlike BAC and Douglas, has chosen to ignore is that airline pilots in America are still firmly attached to the 80,000lb maximum gross weight rule for two-crew operations, even though the FAA has stated that it no longer regards weight as an important consideration in this respect. Since initial versions of the One-Eleven and DC-9 are within the two-crew rule, the 737 is likely to become a test case.

Only time will tell how critical to further BAC One-Eleven and DC-9 sales has been the entry of Boeing into this much-vaunted, lucrative market. Eastern's decision to buy the stretched DC-9 must have been a disappointment to Boeing, but the subsequent United order for 40 with an option on 30, together with Lufthansa's order for 21, makes a healthy start even for a Boeing project. Now that the bulk of the world's major carriers are committed to short-haul equipment of one kind or another the basis of future sales conflicts between the four manufacturers involved can perhaps be predicted with more certainty.

With the multitude of smaller carriers yet uncommitted, the all-important factor must be size—hence price—of the aircraft. If BAC, Boeing, Douglas and Fokker maintain the prices of their products in proportion to, say, the seating capacities of their aircraft, it should be a simple matter for airlines to pick the aircraft best suited to their particular traffic. Few manufacturers these days will discuss the price of their aircraft with anyone but a fairly interested potential customer; trade-ins, combined deals, the potential market and so forth combine to confuse the price issue. The net result is that no order can be counted upon with such a multitude of alternatives open to the customer. Nevertheless, each manufacturer must have a basis for price computations and from the best information available it seems that the ex-works basic price situation is roughly as follows: Boeing 737-200 (113 seats) and DC-9B (98 seats), \$3,300,000 (£1,180,000); BAC One-Eleven 300 (84 seats), £950,000; Fokker F-28 Fellowship (65 seats), £800,000. It can be seen that of all the small twin-jets only the developed 737-200 and the DC-9B are truly comparable. This will no doubt be a relief to BAC and Fokker.

*The BS Artouste auxiliary power units fitted to BEA's Trident ICs are being moved from under the fuselage centre section to a position in the base of the fin. The change is expected to lead to quicker turn-rounds, since the efflux had proved uncomfortably hot for ground crews. There is no plan yet to fit a Trident 1E-type 400 Imp gal centre-section tank in the space now available*



## NAJEEB HALABY TO RESIGN?

THERE now seems little doubt that Mr Najeeb Halaby, the Administrator of the Federal Aviation Agency, has handed in his resignation to President Johnson. According to *Aviation Daily* the most likely successor will be Mr David D. Thomas, now FAA associate administrator for programmes, Mr Oscar Bakke, FAA eastern region director, or Mr William Schulte, who was brought in by Mr Halaby to take the new post of assistant administrator for general aviation affairs.

## NEW ATC CENTRE FOR SYDNEY

A NEW air traffic control centre, to look after all international flights to and from Australia, is to be built at Sydney Airport. Positioned near the shore of Botany Bay, and to the west of the new runway extension, the new £A1m block will house control, communications and electronic equipment valued at £A3m and will also control a large area of the domestic network. The control centre is to start operations in 1969. Plans are to be submitted to the Parliamentary Works Committee within a few months.