COMMERCIAL AIRCRAFT OF THE WORLD

The 737-400 is Boeing's short-term response to the A320 and MD-80

1970. Sales of all models now comfortably
exceed those of the civil DC-10 and TriStar
combined.

Programme Status: 747 all models: Orders,
747. Delivered, 635. Production rate all models,
3 per month. Included in the totals are orders for 59 747-400s.

757. The sales fortunes of the 757 took a noticeable upward swing during the year with the valuable order for 20 from United Parcel Service launching the PF (package freighter). Northwest added ten aircraft to its existing firm orders, Republic bought six, Royal Air Maroc two; Royal Nepal two, ILFC one, and LTS one. Boeing expects that growing congestion at major airports will encourage the airlines to re-consider the 757 as a 727 replace-ment, rather than boosting frequencies with smaller 737s or MD-80s. It is considerations such as this which are also encouraging MDC to look at one more stretch of the MD-80.

Boeing is stressing that the 757 has a long life ahead of it and in 1987 will be adding a re-designed passenger cabin with a wider aisle. A windshear protection system, similar to that also being developed for the 737, will also be available. The company is even talking in terms of a fuselage stretch and a modified wing of greater area.

The basic 757 has a maximum take-off weight of 220,0001b (99,700kg) with options at' 230,0001b (104,300kg), and 240,0001b (108,000kg). The UPS 757PFs will have a maximum weight of 250,0001b (113,400kg). There has been fierce competition for every 757 engine order between Rolls-Royce and Pratt & Whitney, with the former offering the RB.211-535C and -535E4 and the latter the PW2037. Of the larger recent orders, North-west fell to Pratt because of its earlier commit-ment to the engine and so did UPS and Royal Air Maroc. Republic (now part of Northwest) decided to choose Rolls, as did LTS.
In May 1985, Royal Brunei signed for three Rolls-Royce-powered 757s. What made this order particularly significant was that the airline specified a number of technical options similar to those used on the 767ER to allow extended range flights between Brunei Daruss-alam and destinations in Europe. Royal Nepal's second 757 will be a Combi, the first of its kind—with the large cargo door of the PF on the left side of the fuselage forward of the wing.
The 757 made its first flight in February 1982 and entered service in December 1982. The 757 carries 178-186 passengers in US mixed class arrangement, but up to 239 in charter configuration.

Flight-testing of the GE36 UDF on a 727-100 has produced encouraging results

Programme Status: 757 Orders, 191. Deliv-ered, 110. Production rate, 2-5 per month.

767. Japan Air Lines took delivery of its first 767-300 at the end of last month, while Delta will receive its first examples shortly. The JAL
- 300s are powered by the P & W JT9D-7R4D rated at 48,0001b, and those of Delta by the GE CF6-80A2 at 50,0001b.
Following its first flight in January, the -300 has been subjected to an extensive, but trouble-free, flight-test programme. Boeing is claiming a fuel burn reduction of about 12 per

cent per seat compared to the -200 and a reduction of 34 per cent compared to the DC-10.

The stretched 767-300 was launched in September 1983 by a JAL order for three. Delta followed with its order for nine, as did All Nippon at the end of last year with an order for 15. Deliveries to ANA will begin in about a year from now.
During the year since the last Survey, 767 orders have been slow to materialise with major customers comprising Varig (six ERs), CAAC (four), and Piedmont (six ERs), This has not stopped Boeing discussing new devel-opments of the 767 including a further stretch. The new model would have about 28 more seats than the -300 requiring fuselage plugs adding about 10ft to the length of the aircraft. Boeing has designated this 4,600 n.m.-5,200 n.m. range aircraft the 767-400.
The -300 uses a 21ft 3in (6-43m) fuselage extension to increase passenger capacity to about 255 seats, about 45 more than the current 767-200. The use of carbon brakes and an aggressive weight reduction programme has helped to cut 4,0001b (1,814kg) from the origi-nally specified empty weight. Boeing has fairly firm plans for a 767-300ER as well as for long range (LR) versions of both the -200 and -300. Boeing has developed a series of modifications for the ER to gain FAA approval for flights over water along tracks which pass up to two hours at single-engine speed from a suitable diversion. The modifications are avail-able for retrofit to those ERs already in service. They comprise a fourth electric gener-ator powered by a hydraulic motor, increased fire suppression for the lower deck holds, and additional equipment-overheat detectors. The first 767-200 flew in September 1981 and entered service in August 1982. Initial models had gross weights of 300,0001b (136,100kg). The -200ER models go to 345,0001b (156,490kg) and this weight will be held on the first 767-300s. Options up to 351,0001b (159,200kg) are available. Using CF6-80C2 or PW4000 engines, however, would allow the proposed 767-200LR and 767-300ER to go to 375,0001b (170,455kg) and eventually the 767-300LR to go to 415,0001b (188,640kg). The -300LR could have a practical 6,000 n.m. (11,120km) range, compared with around 6,400 n.m. (11,840km) for the -200LR, says Boeing.

Programme Status: Orders 207. Delivered,
146. Overall total includes 28 767-300s and 40 ERs. Production rate two and a half per month.

7J7. Preliminary work on the advanced tech-nology 150-seater, dubbed the 7J7, continues against a target in-service date of 1992. The most recent news of the project centres on the successful first flight of a demonstrator 727 with a GE36 unducted fan in its starboard nacelle, and the Farnborough announcement that a 100-120 seat aircraft using the same technology is also being considered .
As far as can be judged, the flight-tests went
well and no noise or vibration problems were
identified. Boeing is entertaining no doubts
that the latest noise rules will prove a problem,
or that it will be diffficult to establish the

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