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Pratt & Whitney Aircraft of Canada exhibits a mock-up of its PT7 turboprop, which has been chosen to power de Havilland's DHC*8 and Embraer's EMB 120 Brasilia. PT7 is a com-pletely new design featuring twin centrifugal compressors, pipe diffusers and an integral gearbox

has a maximum speed of 1,300 r.p.m. De Havilland has ordered the PT7-A2R for its DHC-8, which uses a larger propeller (13ft diameter) and requires more power. PT7-A2R is rated at 1,800 h.p. and max speed is 1,200 r.p.m.
The cores of both versions are essentially the same—the main differ-ence being the reduction gearboxes. Pratt & Whitney claims that PT7 will have a specific fuel consumption (s.f.c.) up to 15 per cent better than current turboprops. The improve-ments are brought about by a higher turbine inlet temperature and a higher overall pressure ratio than the previous generation PT6. Although PT7's first applications are as a turbo-prop, the company hopes to see turbo-shaft use in helicopters as well. Pratt & Whitney sees plenty of room for raising power. At present it is work-ing on a version called PT7-C, which would be in the 2,500 h.p. range.
General Electric changed the name of its General Aviation Engine De-partment to Small Commercial Engine Department a few months ago, re-flecting its greater emphasis on the commuter airline market. The com-pany's main contenders in this field are the CT7-2 turboshaft and CT7-5 turboprop. General Electric's CT7 is derived from its T700 military heli-copter engine.
Two applications of CT7 have been announced since last year. In Novem-ber last year Bell chose the CT7-2 for its 214ST helicopter, while in July this year the CT7-5 was launched with Saab-Fairchild's decision to use it for its 340 commuter. The CT7-2 is rated at 1,600 h.p. and will be certificated in the Bell 214ST next year. Produc-tion deliveries are due to begin in early 1983.
General Electric expects to run its first CT7-5 in the middle of next year and is aiming for certification in early 1983. Engines to support a flight-test programme will be available in mid-1982, but it is not yet clear whether this will precede the 340's first flight in late 1982. Production engine de-liveries are due to begin in mid-1983. Saab-Fairchild is not saying how many CT7-5s have been ordered from General Electric, but as about 65 air-craft have been ordered it seems likely that 100 to 200 engines will have been specified. General Electric claims that PT7 will have 8 to 17 per cent better s.f.c. than current genera-tion engines.
The company is currently studying a development of CT7 which would increase power to more than 2,000 h p.—through the addition of a stage to the low-pressure turbine. A demon-strator has already been run, and if

go-ahead is given next year, the more powerful engine would be avail-able in 1985/86.
General Electric's CF34, chosen powerplant of Canadair's Challenger E, is due to be certificated in 1982. The CF34 is derived from General Electric's TF34 military turbofan, which has just chalked up a million flight hours. A new lower thrust ver-sion of the engine, CF34-55, was announced at the show. The CF34-55 will have a maximum thrust of about 5,5001b, compared to the basic CF34's 8,6501b.
The lower thrust is achieved by slightly reducing fan diameter and eliminating two stages from CF34's four-stage low pressure turbine. General Electric emphasises that the fan is completely new, being based on CF6 technology. The CF34-55 is in-tended for aircraft like the BAe 125 and Falcon 20 and is claimed to offer 5 to 10 per cent better s.f.c. than Garrett's TFE 731.
An increase in time between over-hauls (TBO) from 4,000 to 5,000hr was announced for General Electric's CJ610-8A. The engine powers Gates Learjet series 20 business jets.
Garrett subsidiary AiResearch Aviation will increase its capacity to retro-fit BAe 125s with TFE 731s in January next year, to cope with in-creased demand. The company cur-rently turns round 12 aircraft a year and the new rate will be 18 a year. AiResearch has so far completed 20 of the 48 modifications which have been ordered.
Garrett is currently producing 60 TFE 731s a month and has delivered some 2,300 engines to date. Flight-testing of the latest version of the engine, TFE 731-5, is due in mid-1981. Features of the improved engine in-clude a new fan, low-pressure turbine and modified gearbox. Certification and production deliveries are scheduled for mid-1983.
Garrett's latest versions of its turbo-prop, TPE 331-14 and -15, are now well advanced. The TPE 331-14 is in-tended for executive aircraft and is

rated at 1,250 s.h.p., while the -15 is meant for commuter aircraft and de-velops 1,650 s.h.p. Certification of TPE 331-14 and -15 is scheduled for the third quarter of 1982 and early 1983 respectively.
Certification of Garrett's ATF3 is now expected in November, following unexpected delays in the development programme. Remaining obstacles in-clude a 150hr test and Federal Avia-tion Administration (FAA) acceptance of an exemption proposed by Garrett. The exemption covers ATF3's just failing to comply with the FAA's medium bird-ingestion test. Three Falcon 20s equipped with ATF3s are now flying as part of the aircraft de-velopment and certification pro-gramme.

Rolls-Royce again exhibited a mock-up of its RB.401, emphasising that the project is still open. RB.401 is essentially a Viper replacement and Rolls-Royce naturally wants to main-tain this market slot. Possible applica-tions include the BAe 125, Falcon 20, Westwind 2, Sabreliner and perhaps a new, small military trainer.
Roughly 600-700hr of RB.401 test time has been accumulated with four engines, compared to the 4,000-5,000hr required for certification. Rolls-Royce estimates that it will take 4 to 5 years from RB.401 go-ahead to entry into service.

Rolls-Royce's latest helicopter engine, Gem 60, is due to make its first run in late 1982/early 1983. The engine is committed for use in West-land's WG30 and certification is scheduled for mid-1984.

Dowty Rotol exhibited a new propeller with blades made from composites and featuring the com-pany's latest aerodynamics and hub-mechanism. First application of the propeller is Saab-Fairchild's 340.
Hamilton Standard presented its model 14RF propeller for the first time. The propeller has been chosen by Embraer for its EMB 120 Brasilia and features blades with an aluminium alloy core, covered with a composite shell. •