The CFM88 for larger regional jets, will be based on the core oj the Snecma M88

bine, with a high-bypass shrouded fan.
Other variants feature a 1.32m-diameter
shroudless (or clapperless) fan.
Allison has now decided to offer the
advanced version of the two GMA3014
variants which it was considering originally for development of the new regional-jet programmes.
The GMA3014A is derived from the GMA3007, which is being designed to power the Cessna Citation X. The engine is based on the same Allison T406 turboprop core as the 3007, but will have a 30% larger, 1.4m-diameter fan.
Unlike the basic 3014 variant, the ad-vanced version uses a new eight-stage com-pressor derived from Allison's .GMA101 military demonstrator engine. "It'll be a much lighter, altogether better engine," says Al Novick, Allison's director of large commercial engines.
"The engine is still in the preliminary design stages and we are marketing it with several manufacturers. We're doing what's needed to maintain the development sched-ule but nothing's firm because everything in that class [regional jets] is in abeyance," adds Novick. The advanced engine retains the same combustor as that of the 3007, although Novick admits: "It's a new engine, for all intents and purposes." The engine has a two-stage high-pressure turbine and a four-stage low-pressure turbine.
The first GMA3007 is scheduled to fly on
a Cessna Citation III testbed by the end of the second quarter of this year. The proto-type unit is undergoing altitude tests at the US Navy test site at Trenton, New Jersey, and will be shipped back to Alli-
son for strip-down and inspec-
tion before being sent to
Cessna in Wichita.

Textron Lycoming aims
to grow its LF500 family of
commercial turbofans to meet
regional-jet thrust requirements of up to around 62kN. "With the LF507-1H and -IF FAA type certification complete, we have

focused our considerable technical re-sources on defining growth plans for the LF500 turbofan family," says Lycoming director of turbofan-engine programmes, Noel Nightingale. "Ongoing engineering and design studies have identified a rela-tively low-risk path for the development of 9,0001b [40kN], 12,0001b and 14,0001b thrust LF500 growth derivatives of the proven ALF502."

GROWING FAMILY
The US Federal Aviation Administration has certificated the FADEC-equipped LF507-1F for use on the BAe 146. Swiss operator Crossair will receive the first Category III BAe 146-200 powered by the -IF in early 1993. Business Express, US launch cus-tomer for the -lF-powered BAe RJ70 re-gional jet, is scheduled to receive the first of 20 in 1993.
General Electric's CF34 has the distinc-tion of being the turbofan selected to power the Canadair Regional Jet. The engines on three prototype aircraft had amassed 855 flight test hours by the end of April. The

first production aircraft will be delivered to Lufthansa City Lines (formerly DLT) around June, followed by deliveries to Comair in the fourth quarter of 1992. The company is "still very interested" in developing a higher-thrust version of the 40kN CF34-3A1 for larger regional jets. GE admits that the engine will probably be capable of only around 58kN, a maximum thrust improvement of 40%.
For this reason, GE's future stake in the regional-jet market may lie more comforta-bly with the CFM88 programme, under way with Snecma, its partner in CFM Interna-tional. Plans for the engine, derived from the core of the Snecma M88-2 turbofan powering the Rafale fighter, include thrust levels in the 53-88kN range.
The CFM88 maintains the same general core architecture as the M88-2 but adds a seventh high-pressure (HP) compressor stage; the single-stage HP turbine remains unchanged. Details of the low-pressure sys-tem are not yet available.
Two fan diameters are being considered for the common core, according to Snecma chairman and chief executive Louis Gallois. The smaller has a diameter of 1.12m and would provide 53-7 lkN thrust for 60- to 70-seat regional jets, while a 71-89kN engine with a 1.4m diameter fan is aimed at 80- to 120-seat regional jets.
A technical package for the 1.4m-fan variant has already been submitted to Euro-pean aircraft manufacturers for evaluation. Gallois says: "We are maintaining contact with all aircraft manufacturers."
The future regional-jet engine market now seems to be more clearly defined it was a year ago, perhaps reflecting the emerging consortia in the market. The end of 1992 may well see the end of the stalled fight for funding between the engine partnerships
led by BMW and MTU and the clarifying of
the teams to build the regional jets of the
future, making it easier for the engine
makers to plan ahead. E!

1/ BAe launch* I NRA, it would look for a new-generation engine

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