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AERO ENGINES . . .

FLIGHT International, 7 January 1971

spring this year, with flight-cleared RB.199s required for the aircraft flight test programme starting in May 1973. Initial deliveries of the aircraft are planned for 1976. Basic rating of the definitive RB.199-34R is 8,5001b, 38.55kN, rising to 14,5001b, 65.77kN, with afterburning.

UNITED STATES

AIRESEARCH

AiResearch Manufacturing Co. Headquartres: Los Angeles, California. Public company owned by Garrett Corporation, subsidiary of Signal Companies Inc, oil, industrial and aero-space group. AiResearch engaged in aircraft, industrial and marine turbine manufacture. Signal 1969 corporate sales up at $1,500 million, £626 million, of which AiResearch products represented in region of 15 to 20 per cent.
AiResearch, having established itself as world-leader in turbine APUs, has expanded during past decade into the general aviation sector of the turbine market with a series of low-power engines. Successful initial entry was made with TPE331/T76 commercial and military turboprop followed by a rapid sequence of five new engines since mid-1968. These comprise the ATF3 4,0001b, 18.14UN, to 9,0001b, 40.82kN, turbo-fan; TFE731 3,4001b, 15.42kN, to 4.0001b, 18.14kN, turbofan; TSE331 840 s.h.p., 626kW. turboshaft (derived from the TPE331); TSE231 474 s.h.p., 353kW, turboshaft; and TSE36 240 s.h.p., 179kW, turboshaft.
Subsequently, results have been mixed—the ATF3, which lost a potential application in the Lockheed JetStar 3, experi-enced development problems necessitating a new fan which first ran on the engine in October 1970; the first run of the TFE731 scheduled for August 1970 has yet to be publicised but the engine has been ordered in quantity for PanAm version of Dassault Falcon 10; the TSE331 and TSE36 have both been FAA certificated, and the TSE231 which first ran in September 1970 has already attained its rated power but work on its launching application, the Gates Eearjet Twinjet helicopter, has been slowed.
Overall the greatest problem faced by AiResearch is that, having moved strongly into the general-aviation market, this sector is currently suffering a reversal of its previous growth pattern—added to which Lycoming entered the field in 1970 with two new commercial turbofans boxing-in the ATF3/ TFE731 thrust bracket. Signal Co in its first three-quarters' results for 1970 showed a small decline in sales and a heavy drop in profits which the corporation explains as partly

SIGNALS COMPANIES Inc

| 100 PER CENT

GARRET CORP

t 100 PERCENT

AIRESEARCH MANUFACTURING CO.

ATF3 turbofan
4,OO0lb-9,OO0lb

TFE731 turbofan
3,400 lb-4,000 lb

TPE331/T76
turboprop
600-1,000 c.h.p.

TSE331 turboshaft
840s.h.p.

TSE231 turboshaft
474 s.h.p.

TSE36 turboshaft
240 s.h.p.

resulting from aerospace programme stretchouts. Unlike every other aero engine company with a design and develop-ment capability, AiResearch does not engage in licence or technical collaboration agreements of its propulsion engines. Representative applications; Messerschmitt-Bdlkow-Blohm HFB 330 Hansa Fan Jet, 2XATF3 (4,0501b, 18.40kN). Swear-ingen Model SA 28T, 2XTFE73M (3,5001b, 15.87kN>. Swearingen Merlin IV, 2X TPE331-3U-3039 (904 e.h.p., 674kW). Aviation Specialities S-55T, 1XTSE331-3 (840 s.h.p., 626kW). Gates Learjet Twinjet,.2XTSE231 (474 s.h.p. 353kW). Enstrom F-28, 1 XTSE36-1 (240 s.p.h., 179kW).

GENERAL MOTOR CORP

T 100 PER CENT

DETROIT DIESEL ALLISON DIVISION

ROLLS-ROYCE LTD

MODEL 912/TF41
turbofan

14,250 lb-25,000 lb y* Spey RR168-62&66J

ALLISON

Detroit Diesel Allison Division (previously known as Allison Division), General Motors Corporation. Headquaters: Indianapolis, Indiana. Division of public company engaged in motor-vehicle manufacture. Allison engaged in diesel engine, aircraft turbine, and transmission systems manufacture and general automotive engineering. GM 1969 corporate sales up at $24,295 million, £10,100 million, of which aero-engine sales-represented an extremely small proportion.
The activities of Allison and Detroit Diesel Divisions of GM were consolidated in October 1970 towards the end of a major GM strike during which the Corporation suffered losses well over $80 million, £33 million. Allison has aircraft turbine design and development capability which has engineered only two production series of engines, the Model 501/T56 turboprop and Model 250/T63 turboprop and turboshaft, during the past 15 years. Through long-standing technical and commercial collaboration with Rolls-Royce, the Division has participated in development of two additional engines, the Model 912/TF41 turbofan (based on the Rolls-Royce RB.168 Spey military turbofan I and the XJ99 lift-jet.
Manufacture of the Model 501/T56, Model 250/T65 and Model 912/TF41 (jointly with Rolls-Royce) has been extensive and continues to be so: the XJ99 remains under low priority development, financed by US and UK Governments. Market-ing of the Model 250 outside North America has been let mainly to Rolls-Royce which has also acquired a manufactur-ing licence for the engine.
Representative applications: LTV A-7E, 1 XTF41-A-2 (15,0001b, 68.00kN). Lockheed P-3B Orion, 2XT56-A-14 (4,910 e.h.p. 3,661kW). Hughes OH-6A, 1XT63-A-5A (317 s.h.p., 236kWK SIAI-Marchetti L-1019, lxModel 250 B15G (335 e.h.p., 250kW).

GENERAL ELECTRIC

Aircraft Engine Group, General Electric Company. Head-quarters: West Lynn, Massachusetts. Operating group of