



Construction

Canadair Turbo-Prop?

The recent appointment of W. S. Haggett as senior Bristol representative in Montreal may be a significant one.

Rumors that Canadair Limited are developing a turbo-prop transport are persistent and quite logical. Mr. Haggett's appointment would tie in nicely with this rumor in that he represents a firm which makes a turbo-prop, the Theseus, ideally suited for installation in a Canadair Four type aircraft.

The Theseus is rated at 2,200 bhp and has already been installed in the Handley Page Hermes V, a civil transport to be used by BOAC.

Light Alloys Loss

A net loss of \$147,951 for 1949 is reported by Light Alloys, Limited. The loss was attributed to Light Alloys' research and development program in the aircraft division. It is expected, however, that the expenses of this program will be largely of a non-recurring nature and the results should materially benefit future operations. During the year Light Alloys became a wholly owned subsidiary of Dominion Magnesium, Limited.

Jet Flying Boat

A new jet flying boat has been designed by Saunders-Roe and is to be known as the Duchess. The aircraft, which has a designed gross weight of 130,000 pounds, will be powered by six de Havilland Ghost turbojets having a static thrust of 6,000 pounds. Installation of the engines will be very similar to that used on the Comet, which also uses Ghosts.

Interior layouts may of course be varied, but a typical one allows for 74 passengers in two compartments connected by a gangway passing the freight hold. The flight crew of four is carried in the nose of the hull which, it is claimed, has been designed to a higher degree of aerodynamic efficiency than most flying boats. Maximum payload for a 1,300 mile stage is 21,000 pounds.

Although the Duchess will be capable of cruising at 500 mph, its most

economical cruising speed will be 468 mph, and its maximum level speed, 500 mph. The unstick run, in a 10 mph wind at sea level, will be 1,200 yards, and the climb to 30,000 feet will be accomplished in 15 minutes. Estimated cost per passenger mile is just over one pence for routes with a stage length of 1,300 to 1,500 miles, and two pence on a stage distance of 2,000 miles.

New Airliner

Consolidated Vultee is planning to build an entirely new airliner specifically designed to take fullest advantage of turbo-prop engines. First American airliner of the turbo-prop variety to reach an advanced planning stage, the new aircraft will be designed for high utilization.

In addition to these plans for a completely new airplane, Consolidated Vultee plans to provide kits for converting Convair-Liners now in service to Turbo-Liners powered by Allison engines.

Uniformity

A uniform method of dimensioning aircraft turbine blading, now being aimed for by the Society of Automotive Engineers, is said to hold promise of significant inspection time and cost savings.

According to the SAE the wide

variety of dimensioning systems now used by aircraft turbine engine makers place a hardship on the blade supplier. He must invest in gauges and tooling for inspecting blades dimensioned by different systems. A turbine blade or bucket has no natural base or reference point for dimensioning because of its shape. Some companies dimension from a developed chord line; several take the leading or trailing edge; still others dimension using co-ordinates. Inspection set-ups differ for each dimensioning system.

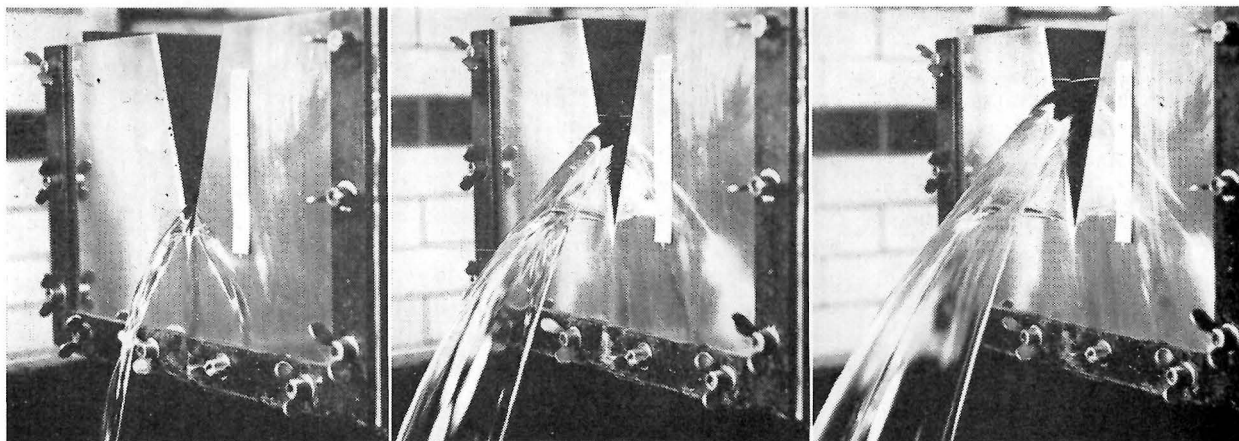
Because of the high cost of installing or adapting inspection tooling for each dimensioning system, the SAE hopes to develop a standard method of dimensioning turbine blades. Preliminary discussions also show this will aid inspection equipment makers by cutting down the diversity of gauges and inspection tooling called for.

565 Miles Per Hour

Following the recent demonstration of the Avro Canada CF-100 to USAF and government officials at Washington, D.C., the aircraft was flown back to Toronto at an average speed of 565 mph. The pilot, S/L W. A. Waterton, reported that he had flown an indirect route of 410 miles for easier navigation. Time for the trip was 43 minutes 40 seconds. He said that no attempt was made to fly the aircraft at its maximum speed. In the navigator's seat of the aircraft was Michael Cooper-Slipper, DFC. Said to be the most interested in the CF-100 at the Washington demonstration were representatives of the USN.



THE WINNER: Cessna Aircraft Company's Model 305 liaison plane was recently named winner of the U.S. Army Field Forces competition to choose an aircraft suitable for observation-reconnaissance. The military designation of the machine will be the L-19. It is powered by a 190 hp Continental engine and has a range of speeds from 43 knots up. Normal cruise is 90 knots. The airplane carries 42 gallons of fuel and has a gross weight of 2,100 lbs.



GREEDY: Comparative fuel consumptions of piston engines and gas turbines is graphically illustrated by these three photographs taken by Rolls-Royce Limited. The strip rule at the side of the V notch is six inches high. The first picture on the left shows the rate of fuel flow for a Rolls-Royce Merlin; the centre picture shows the rate of flow of a Rolls-Royce Nene gas turbine; the picture on the right shows

the rate for a Rolls-Royce Avon. These illustrations make it obvious that aircraft designers are faced with the prospect of doing a clever bit of work in getting enough fuel tankage into a jet to give it a practical duration. Range of course is not such an acute problem because of the comparatively high speed of jet planes. Fuel flow of Avro Canada's Orenda would probably approximate that of the Avon.

Meanwhile, it is understood that Avro has already received an initial production order for ten CF-100s. After completion of Avro's flight testing program the fighter is to be handed over to the RCAF for further testing and for getting service experience in operation of the aircraft. A program for training RCAF personnel in the servicing and operation of the CF-100 has already begun.

Recently Walter N. Deisher, vice-president and general manager of Avro, said that the company was now employing nearly 4,000 people at Malton. He also said: "It is Avro's objective to 'Canadianize' the industry, so that we would be self-sustaining in an emergency. At present, the Orenda engine is about 95 per cent Canadian built, from Canadian materials; the Jetliner about 80 per cent; and the CF-100 about 90 per cent. For the first time in Canada, aircraft engines are being built alongside the aircraft in which they will be used."

Most Powerful

Northrop Aircraft has announced that its new XT-37 Turbodyne engine, which is claimed to be the most powerful turbo-prop in the world, has successfully completed the official 50-hour endurance proving program and is now qualified for flight tests.

The engine was developed for the USAF by a Northrop subsidiary, The Turbodyne Corporation, and has actually developed more than 10,000 hp

in tests. During its endurance proving program it was incorporated in a complete power unit consisting of engine, reduction gears, propeller, and single-lever automatic electronic control system, and is said to have set a record by delivering 7,500 hp continuously over long intervals at a time. During one phase of the test the complete power unit was operated at 8,000 hp output.

Northrop says that the Turbodyne is the only engine of its type that is designed for pusher as well as tractor installation. The six-bladed, constant speed, contra-rotating propellers were developed by the Aeroproducts Division of General Motors.

New Company

The formation of The British General Electric Co. (Canadian) Ltd., has been announced by John S. Langlands, managing director of the new concern. Sales offices have been opened in Toronto and Montreal from which the Canadian company will distribute the great range of electrical goods and equipment made by the parent firm, which is the largest British manufacturer of these products.

The new company will represent all the manufacturing, research and development facilities of the English firm. An existing Canadian company, Fraser & Chalmers Canada Ltd., will continue to distribute certain products manufactured by Fraser & Chalmers Engineering Works Ltd., a wholly owned subsidiary of The General

Electric Co. Ltd. of England.

The Montreal office of the new Canadian firm is located at 1411 Crescent Street. In Toronto the address is 137 Wellington Street West.

New Spark Plug

The BG Corporation is now in production on a new unshielded, ceramic insulated, resistor spark plug, fully approved by the CAA and Continental Motors for Continental A50, A65, A75, C75, and C85 engines. This new plug includes a resistor and is known as the BG Model 706R. The resistor reduces gap erosion and allows the plug to operate for long periods. This model plug is also available without resistor at a slightly lower price. Fully approved for the same engines, the latter plug is known as BG Model 706.

Briefly

- First announced details of the **Luscombe T-8F-L Observer**, which has been designed for United States Army liaison work, shows that it will take off over a 50-foot barrier in 495 feet, and can be landed within 375 feet of a 50-foot barrier. Fully controlled flight can be maintained at speeds under 40 mph.

- The new **Martin 2-0-2 cargo plane** has a maximum payload of 15,106 pounds at full gross weight of 43,000 pounds. At this payload the 2-0-2 has a range of 680 miles.

- Eleven **Short Plymouth flying boats** have been sold to an unnamed Ameri-