



Construction

Hughes Owens

The Ontario Hughes Owens Company, with headquarters in Ottawa, has formally completed an agreement with Airborne Accessories Corporation of Hillside, N.J., to act as exclusive Canadian agents.

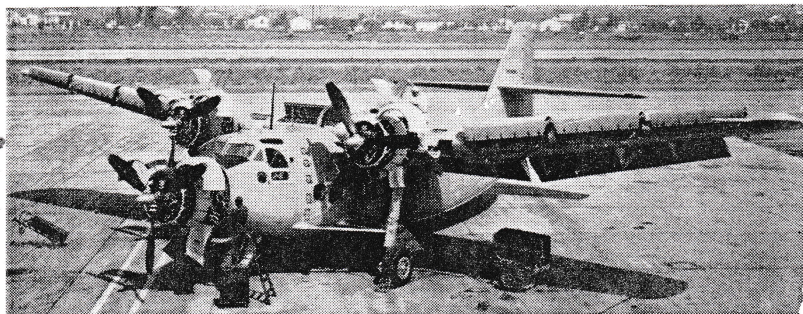
Airborne Accessories specializes in the design and manufacture of actuators for use in aircraft. At present the company has four principal products, "Rotorac", "ANGLgear", "Lineator", and "Trim Trol". A brief general description of each unit follows.

Rotorac is a right angle type electric motorized rotary actuator originally

vice life. They are of low weight.

The Lineator is an electrically powered linear actuator, or motorized screw jack, intended to impart straight line force in either tension or compression. The design is distinguished by the "Tee" construction in which the power unit is perpendicular to the axis of the screw jack. This feature results in the shortest compressed length for a given stroke which is valuable in restricted locations.

Trim Trol is an improved method for electrical operation of control surface trim tabs. A specially designed electrically powered rotary actuator is employed connected to the tab with a



PEELED: The Northrop C-125 Raider has been designed for accessibility as this picture shows. Intended for rough and ready operation, the Raider has a ramp door at the rear through which vehicles with double axle loads of up to 8,000 pounds can be loaded directly. The landing gear is fixed and is extra heavy duty for set-downs on rough ground. In emergency, the wheels can be changed without a jack.

developed for intermittent duty aircraft application. It incorporates in one unit all of the features required for this class of service. Essentially, it is a reversible geared motor, magnetically braked, with a right angle power take-off and provision for controlling the number of shaft revolutions between desired limits. This unit may also be readily adapted to industrial applications.

ANGLgear units are standardized right angle bevel gear drives which are suitable for use in either manual or power operated systems. They are specifically designed for the exacting requirements of the latest military and commercial aircraft but are applicable to many high grade industrial applications. They combine simple construction with high load capacity and ser-

vice life. Selection of a crank arm which requires operation of the actuator through a total angle of from 120 to 160 degrees to achieve full tab motion results in a mechanical advantage increasing proportionally with tab deflection. This minimizes the effort required as load increases and permits handling high operating and static loads with much less power than is normally used.

All Airborne actuators meet radio noise requirements of AN-M-10a through incorporated filtering means within the equipment. Complete engineering details on each unit are available. The Company has units in several American aircraft including the Grumman Panther, the McDonnell Banshee, the Republic Thunderjet, the Martin XB-51, the Chance Vought

XF-7U, and the Republic XF-91.

Super DC-3 in Canada?

Reports from Fort William, Ontario, indicate that Canadian Car and Foundry Company is preparing its aircraft production plant at the Lakehead for re-opening. Some credence is lent to these reports by the fact that Trade & Commerce Minister C. D. Howe, who is the Lakehead member, promised some aircraft work for the area during the recent election campaign.

It is thought that the work will probably be Super DC-3 production. Canadian Car was recently dickered with Douglas for Canadian rights to the Super DC-3. In this case the promised work from Mr. Howe would involve the conversion of the TCA fleet. There is also the distinct possibility that Canadian Car may yet receive a sub-contract in connection with the F-86A Sabre.

Orenda No. 1

It looks as if Avro Canada is going to take top honors with the Orenda engine. The company announced in November that Orenda No. 1 had recently been subjected to an endurance run of unprecedented length. So far, the third build of the engine has run more than 750 hours without a major rebuild or overhaul. This was achieved within 8½ months of the date on which this engine ran for the first time.

According to Avro, the endurance run which has been completed to date has included: the 150 hour Endurance Test Schedule; the 25 hour British Ministry Special Category Test Schedule; the 150 hour RCAF Type Test Schedule; the Canadian 50 hour Preliminary Flight Rating Test Schedule; the 150 hour British Ministry Service Type Test for Turbo-prop and Turbo-jet engines; the U.S. 50 hour Preliminary Flight Rating Test Schedule; plus approximately 175 hours of miscellaneous running, including performance running to simulate engine flight conditions, acceleration trials, and endurance running to measure consumptions.

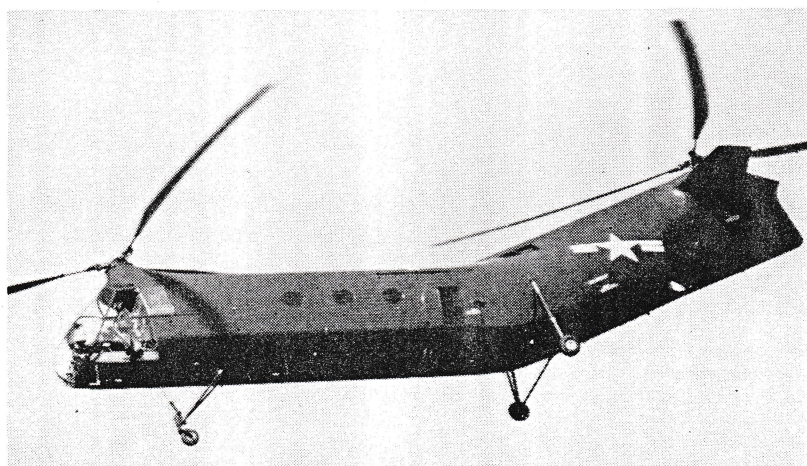
Says Avro: "All of the above tests were carried out at the design rating of this engine, that is, the engine was not derated in any way to achieve this remarkable endurance. Only routine inspection and maintenance was carried

out, and the only replacements of any significance comprised the replacement of the flame tubes at the end of 300 and 600 hours respectively, and the replacement of 6 nozzle guide vanes which had become accidentally damaged.

"These tests were carried out under normal route test and development conditions but were not under official observance." The static thrust rating of the Orenda has yet to be announced.

Aircraft Output

The value of aircraft produced in Canada during 1948 increased slightly over the previous year, though the number of aircraft involved was substantially less. During the past year Canadian aircraft manufacturers made 65 aircraft with a value of \$11,816,000. The comparative figures for 1947 were 199 machines and \$30,305,000.



BROTHER BANANA: The Piasecki HRP-2 tandem rotor helicopter is a metal skinned version of the fabric covered HRP-1, popularly known as the "Flying Banana". It is officially known as the "Rescuer" by the USN; evaluation tests are currently being carried out by the USAF. Length of the HRP-2 is 54 ft.; unobstructed cabin space is 20 ft. by 5 ft. 6 ins., by 5 ft. 6 ins. It carries eight passengers and two pilots.

The addition of the value of parts produced brings the 1948 total to \$45,600,000 as compared with \$44,304,000 in 1947.

Other figures for 1948, with comparable 1947 figures in brackets, are: aircraft imported, 139 (406); value of aircraft imported, \$652,000 (\$2,193,000); number of plants, 11 (12); payroll, \$19,829,987 (\$21,422,060); number of persons employed, 8,049 (9,374).

Faster and Faster

Five hundred miles an hour . . . that's how fast Avro's Jetliner recently

flew. On October 22 the Jetliner was carrying routine tests at 30,000 feet over Malton Airport, near Toronto, when it exceeded a true air speed of 500 mph.

Coincident with the announcement of this achievement, Avro announced that the design cruising speed of the aircraft has been increased from 430 mph to over 450 mph, at 30,000 feet.

On board at the time of attaining the 500 mph. speed were Don Rogers, Avro Canada chief test pilot; Mike Cooper-Slipper, assistant test pilot; Bill Baker, flight engineer; Mario Pesando, test engineer; Frank Spink, flight engineer; Jim Floyd, project designer on the aircraft.

In the week previous Don Rogers carried out engine cut-out tests. Avro claims that he found it was possible to cut an engine at any stage during take-off and still climb without any ten-

dency for the aircraft to swing. On one occasion he brought the Jetliner down at its normal landing weight in less than 1,000 feet of runway from the time the wheels touched until they stopped.

C of A tests should be completed by the middle of 1950 and Avro expects that Jetliners will be flying on commercial routes in 1952.

New Navion

A new 260 hp. "Super" Ryan Navion has been announced by the Ryan Aeronautical Company. The Super

Navion has a claimed cruising speed of 170 mph. and a climb of 1,250 fpm with full load. The new model is powered by the Lycoming GO-435-C2, which is a six cylinder opposed air-cooled, geared engine, with a two minute take-off power rating of 260 hp. at 3,400 rpm. Normal continuous power rating is 240 hp. at 3,000 rpm.

This aircraft does not replace the 205 hp. Continental Navion, which will continue as Ryan's principal model.

Externally the more powerful aircraft differs from the 205 Navion in that it has a three inch longer nose, slightly different cowling lines, and a larger propeller. Normal range on the 260 Navion is 640 miles. It is to sell for under \$14,000 in the U.S.

Outside Interests

All instruments to be installed in Canadair-built F-86A are to be purchased from USAF stores, it was learned by *Aircraft and Airport* recently. It is understood that the purchase is being made by the Canadian Commercial Corporation.

Squirt Story

Jet Propulsion Progress—by Leslie E. Nevill and Nathaniel F. Silsbee. This is a history book. According to the foreword by Jerome C. Hunsaker of the Department of Aeronautical Engineering at M.I.T. *Jet Propulsion Progress* . . . "fills a need, for a book covering international developments in the aircraft gas turbine from an American point of view".

The reader should keep that in mind. Although the book does give quite a complete story, it is from the American point of view. By this it is not meant that the authors at any point tend to underrate the contributions of other nations, but rather that they have simply devoted more space to the American side of things. In fact, half the book is taken up by the American contribution, whereas the British and German contributions together make up the other half.

However, this does not detract from the interest value of the book . . . but it should not be regarded as the complete story written from a neutral point of view. Historically and technically it seems highly accurate.

The portion dealing with German efforts in the jet propulsion field are