



Construction

DH Shows Profit

A net profit of \$65,114, has been reported by The de Havilland Aircraft of Canada for the year ending September 30, 1949. This was equal to \$2.04 per share, as compared with a net of \$3,215, or ten cents a share for the previous year. Working capital increased to \$1,272,733 from \$1,202,939.

P. C. Garratt, vice-president and general manager reports that the general position of the company improved during the year and the gross sales were the best for any year since the end of the war. Outlook for the current year was said to be good.

CF-100

The first flight of Avro Canada's CF-100 jet fighter was another high point during a period which has been

some speculation as to why the undercarriage was made so high, but according to Dowty Equipment, because of the extreme length of the aircraft (52 ft. 6 in.) the undercarriage had to be made high so that the tail would not strike the ground on landings or take-offs, when the angle of attack necessary would make this a distinct possibility if the airplane had been built as close to the ground as many jets.

Placing the main undercarriage farther back was also impractical in that it would have been too far behind the centre of gravity, with the result that it would have been difficult to lift the nosewheel off the ground at comparatively low speeds. The main undercarriage, incidentally, also has a fairly narrow track.

Though generally clean in line, the

and air tests that he has so far carried out, and the fact that he took it aloft just a few short weeks after he had first seen it would certainly indicate strongly that he was confident of the machine's capabilities.

C-102 At SBAC

Avro Canada is planning to take a Jetliner to England in time for the 1950 SBAC Show, at Farnborough according to the SBAC. The same report says that the aircraft may then be flown to Australia for demonstration. The Australians have already expressed considerable interest in the Jetliner.

Piper Prices

Canadian prices for aircraft in the Piper 1950 lines, which are scheduled to appear in Canada at the end of February, have been announced by the Trans Aircraft Company of Hamilton, Ontario, Canadian distributors. The PA-18 "95" Super Cub is listed at \$3,570; the PA-18 "105" Super Cub, \$3,820. The latter is also available in an agricultural version (for dusting or spraying) at \$4,563. These prices are for the standard models, such items as radio, electrical system (starter, battery, generator) are extra.

The PA-20 "115" Pacer (formerly Clipper) lists at \$4,195; the "125" Pacer, \$4,825; the "135" Pacer, \$5,410. The latter model has controllable pitch prop, manifold pressure gauge, fairing kit, and outside air temperature as standard equipment. Radio and other extras are additional on all models.

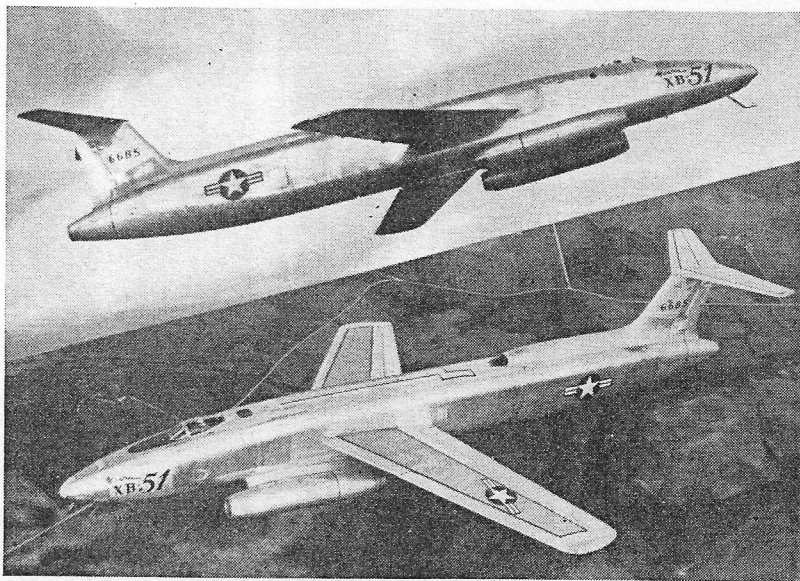
Wolf Tools

Wolf Electric Tools Ltd. has opened its first overseas branch in Toronto with H. Arthur Brittain as district manager. Wolf Electric Tools are well known to Canadian industry. Made by the the largest manufacturer of portable electric tools in Great Britain, the line includes bench and portable electric drills, sanders, grinders, hammers, valve tools, nutsetters, screwdrivers, blowers, and other electric tools necessary to the aircraft trade.

This marks the first entry into Canada of an assembly and centralized factory service and parts distribution for Wolf Electric Tools.

New Bellanca

The new Bellanca Cruisemaster made its first appearance in Canada during February when Carl Millard



UP AND DOWN: Two first flight photos of the USAF's unorthodox Martin XB-51 show off some of its features. Designed as a ground support attack aircraft, the XB-51 carries a crew of two and is powered by three GE J-47 turbo jets generating 5,200 pounds of static thrust each. One engine is mounted in the tail. Span is approximately 55 feet and the wings have a sweepback of 35°. Tail formation is unusual.

just one high point after another as far as Canada is concerned. The CF-100 is certainly an interesting machine, for reasons other than the fact that it is a Canadian project.

It is, first of all, big. This bigness is further exaggerated by the height of the undercarriage. There has been

appearance of the airplane suffers somewhat from the extreme size of the nacelles, which of course were necessitated by the size of the engines.

Little tangible has yet been released about the CF-100. Test Pilot Bill Waterton has publicly expressed satisfaction with the results of both ground

of Millard Auto-Aero-Marine Ltd. brought the first model bearing Canadian registration into Toronto's Malton Airport. The Cruisemaster, which is basically much the same as the earlier Cruisair, is a much more powerful and faster machine than its predecessor.

Cruising speed of the aircraft is about 180 mph, although the landing speed is claimed to be only 43 mph. It has a rate of climb of 1,400 fpm with a full gross load and 2,000 fpm with pilot only. Power is by a Lycoming 0-435A of 190 hp fitted with a Hartzell propeller. It is interesting to note that much of the extra speed obtained with the Cruisemaster has been attained by cleaning up details

the actual flight of the missile or airplane, were the prototype built. Thus the simulator is able to "flight test" an aircraft in the design stage.

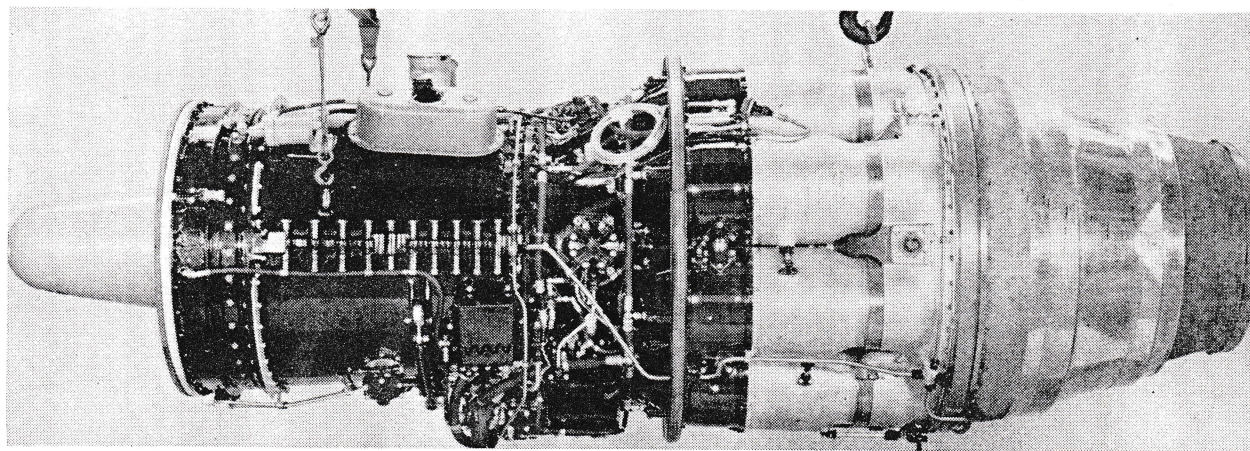
If, for instance, aircraft performance on the flight simulator is not satisfactory, the wing and tail designs of the electrical model may be changed by simple adjustments of the simulator controls until the desired behavior is obtained. Suitable changes can then be incorporated in the plans before the actual aircraft is built.

Because it enables engineers to study some of the flight characteristics of any given design before construction is begun, the simulator can save much of the cost and time of flight testing

60,000 lbs. gross weight, under ICAN conditions at sea level is 3,100 ft. and the landing run under the same conditions is 2,800 ft. Stalling speed at a landing weight of 45,000 lbs. is approximately 82 mph.

At one point Mr. Floyd said: "The Jetliner has been repeatedly taken off and landed at 57,000 lb. T.O. gross weight during tests, in distances of around 1,000 to 1,500 ft., and in one case, landed at an average landing weight, less than 950 ft. from the approach end of the runway . . .

"A comparison was made of one of the newer types of aircraft operating on a block distance of 600 miles at a block speed of 212 mph and a Jetliner



First photograph of the Rolls-Royce Avon R.A. 2 turbo jet engine is shown above. The Avon has an officially released rating of 6,000 pounds thrust at sea level. It has

an axial compressor and eight combustion chambers. Approximate weight is 2,400 pounds. The Avon powers the Avro Canada CF-100 and the English Electric Canberra. It was also

installed in an experimental Gloster Meteor which gave a spectacular display at the last SBAC Show. Early reports said that the Avon developed 7,500 lbs./th.

(such as building aials into the wings).

Exit Engineers

A new machine designed to check flight characteristics and control equipment of an aircraft prior to its construction, has been announced by the Massachusetts Institute of Technology. On this calculator, known as the "flight simulator" MIT engineers will be able to set up an "electrical model" of any aircraft which is in advanced stage of design and then apply an actual autopilot to fly this non-existent, theoretical aircraft.

The autopilot, which may be the muscle of either a guiding mechanism for a guided missile or an automatic pilot for a more conventional airplane, then has exactly the same problem that it would have in

and should help in improving aircraft design. It requires only flight characteristics obtained from working plans and carefully measured data from tunnel tests of a model of the proposed aircraft.

The Jetliner

Further details of the Avro Jetliner were revealed in a recent paper given by J. C. Floyd, Avro Canada Project Designer, to the SAE at its annual convention in Detroit during January.

Mr. Floyd said that the gross weight of the Jetliner is 60,000 lbs. for the short range version and 65,000 lbs. for the medium range version. Maximum landing weight is 52,500 lbs.

The still air range with short range tanks is 1,400 miles while this is increased to 2,000 miles with long range tanks. The four engine take-off at

operating on the same block distance with the same payload at a block speed of 318 mph. The aircraft required in the fleet for the traffic density shown was six of the existing aircraft or four Jetliners to do exactly the same job."

Briefly

- The General Electric Company claims to have now a turbo-jet available for commercial use that is more efficient than the de Havilland Ghost or the Rolls-Royce Derwent. The engine, which is a civilized version of the J-47 and is known as the GE-7 and -9 models, has been certificated by the CAA for commercial use.

- James Howard Kindelberger, chairman of the board and chief executive officer of North American Aviation, was recently elected **president of the Institute of Aeronautical Sciences for 1950.**