Canadair's 1000th Sabre

CANADA'S Aircraft Industry has been knocking out production aircraft and engines with such regularity during the past year that it came as no surprise recently when Canadair Limited announced the completion of its 1,000th Sabre. This figure represents a commendable production record, especially when one considers that when the Canadian Government placed the first order in August 1949, only 100 aircraft were involved.

And here are some other factors that should be considered when making note of Canadair's Sabre production record:

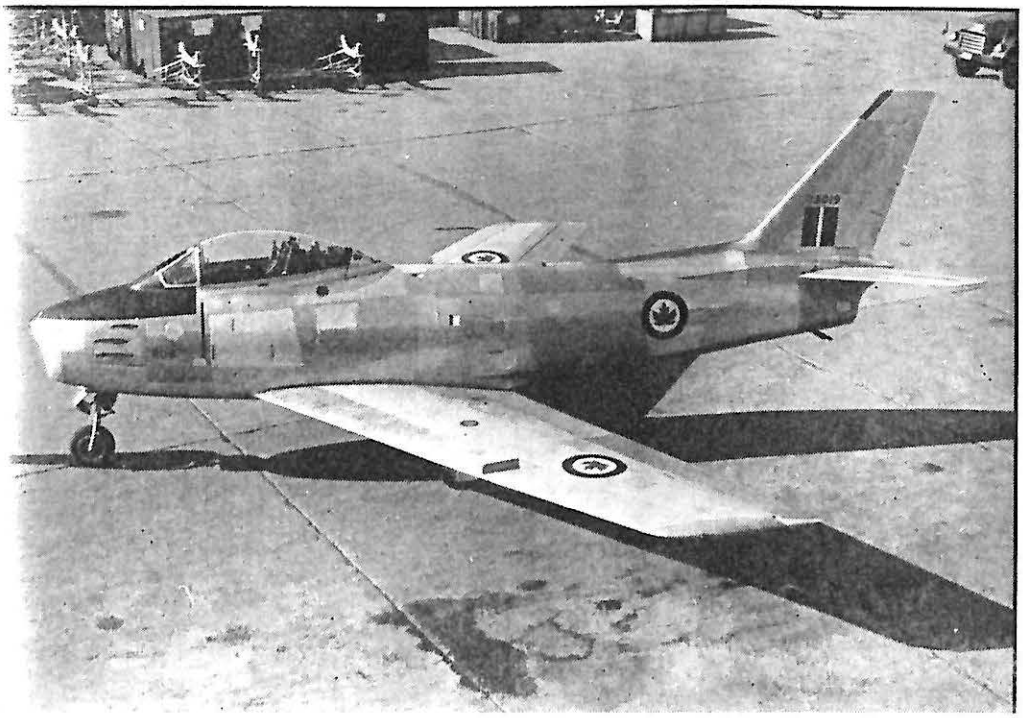
•The first production aircraft made its initial flight on August 9, 1950, just a year after the placing of the original order, and less than four years ago.

•Of the 1,000 Sabres now completed, 500 were constructed in the last twelve months. It was on April 8, 1953, that Canadair President J. G. Notman announced the delivery of the 500th Sabre, and the 1,000th machine was turned over to the RCAF on April 20, 1954.

•During the production run so far, a number of major modifications have been incorporated in the aircraft without noticeably retarding output. This includes the switch-over from the J-47 version to the Orenda-powered model, which took place during the past year.

Appropriate recognition of Canadair's achievement was taken April 20 at a ceremony held at the company's Cartierville plant, and attended by Minister of National Defence Brooke Claxton, Minister of Defence Production C. D. Howe, and Air Marshal C. R. Slemon, Chief of the Air Staff. The 1,000th Sabre was turned over to Defence Minister Claxton by Canadair President & General Manager J. G. Notman. Mr. Claxton then turned the machine over to Air Marshal Slemon, who in turn requested Flight Lieutenant Fred Moore, RCAF acceptance pilot based at Canadair, to take over the aircraft.

In Mr. Notman's comments prior to the presentation of the Sabre to Mr. Claxton, he warned: "It is an established fact that no airplane designed after 1939 saw service in the last war.



Top, L to R are: J. G. Notman, C. D. Howe, Brooke Claxton, A/M C. R. Slemon, F/L Fred Moore, and Canadair's A. J. Lilly. At left is one of first Sabre 5's, model now in production. Below, A/V/M A. L. James signs the 1000th Sabre. With him is Admiral L. B. Richardson, USN (Rtd), Canadair vice-chairman.

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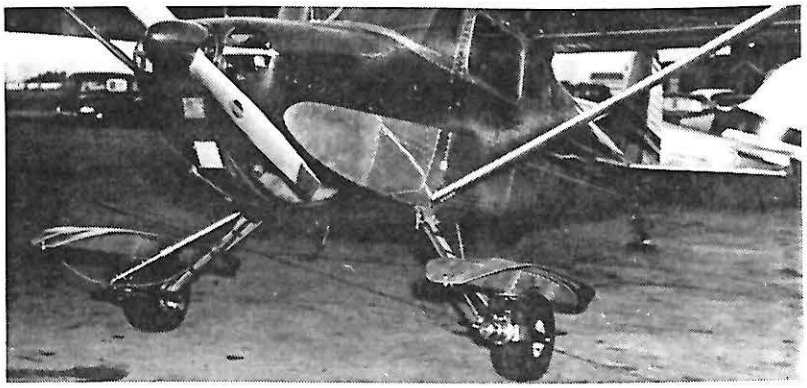


A New Wheel-Ski

A unique wheel-ski combination has been designed and developed by an Edmonton organization, Curtis Hoover Industries Limited, and a prototype model of the device has been constructed and proven successfully in all tests to which it has been subjected.

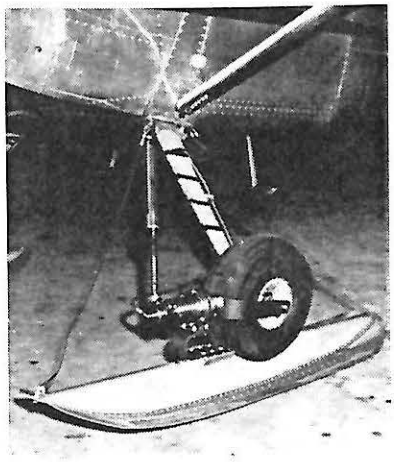
The Hoover wheel-ski combination is one of those inventions of such admirable simplicity that on first sight the question immediately arises: "Why didn't somebody think of it before?"

The heart of this wheel-ski combination is the retracting mechanism, a hydraulically-actuated device which changes linear motion along a fore & aft datum line into a rotary movement around the same datum line. This is achieved by means of a spiral-slotted sleeve. A hydraulic piston driving followers back and forth in the spiral slots, forces the sleeve to rotate through 180°.

A U-shaped piece of spring steel attaches the sleeve to the ski. Thus, when the sleeve rotates, the ski moves from under the wheel (see photos) to on top of the wheel, though its position relative to the line of flight remains more or less parallel. A conventional metal ski is used, the only modification being the removal of the normal pedestal, and the filling in of the resultant gap with a section shaped to conform with the stiffening backbone ridge of the rest of the ski.

From this substitute section has been scooped a shallow segment. When the weight of the airplane is transferred to the landing gear, the wheel simply nestles into this hollow in the ridge. Shock absorption is achieved through the aircraft's regular landing gear, and of course, even when landing on skis, full advantage is still gained from the shock-absorbing qualities of the pneumatic tires.

Forces applied to the extremity of the ski are handled by a double action shock leg extending from the landing leg attachment point to the forward end of the retracting mechanism, the stationary body of which is attached to the main



wheel axle by means of a large U-shaped steel section.

When in flight, the other U-shaped piece of spring steel which attaches the ski to the rotating sleeve, holds the ski at a slightly nose-high angle (when in the down position). In the retracted position, the skis are parallel to the line of flight.

Equipment in the cockpit includes a selector valve and a hand-operated wobble pump. The system will work on pressures as low as 50 psi, though the prototype installation makes use of a hand pump capable of much higher pressures than this.

The complete installation, including skis, weighs 158 pounds. According to Lorne Tompkins, Curtis Hoover Industries' representative and pilot, who has carried out the test flights, the skis have no effect on the flying qualities of the aircraft, regardless of their position.

The wheel-ski was originally developed as a project incidental to Curtis Hoover Industries' regular line of work—machine shop service and custom manufacture of hydraulic equipment for industrial use, specializing in the oil industry. The company is currently investigating the scope of any potential market for its wheel-ski. Further information may be obtained from: Curtis Hoover Industries, P.O. Box 426, Edmonton.

It would therefore seem essential, from a preparedness point of view, that we have in being at all times a production line or lines, producing at some rate the most up-to-date aircraft, capable of expansion in the time of emergency to meet the needs of ourselves and other friendly countries.

"The F-86 is an excellent example of preparedness planning. It started out with an order in late 1949 for 100 airplanes to be produced at the rate of five per month. With the need for a more rapid build-up of our defence forces, the production rate was increased to 40 per month in a relatively short time. In addition to fulfilling the requirements of the RCAF, 60 aircraft were supplied to the USAF for service in Korea and 370 have been delivered to the RAF for the defence of the U.K."

The ceremony was completed with the signing in indelible pencil of the 1,000th Sabre by all those present. Since that time, Canadair employees have added their signatures and the aircraft has been sprayed with a protective coating in order to preserve the names.

Among the versions of the Sabre which have been produced by Canadair have been the Mk. 1, which was an F-86A and the first aircraft to be completed. It is understood that this prototype was the only Mk. 1 unit produced. Bulk of the following production was comprised of the F-86E, Mks. 2 and 4. These two models differ only in detail, one external distinguishing characteristic being the use of the formed aluminum nose intake duct in place of the all-plastic component of the earlier Mk. 2. The Mk. 3 was the prototype Orenda-Sabre, which became known as the Mk. 5 in the production model. The Mk. 5, in addition to having a different powerplant, also features a modified wing which incorporates a "hard" leading edge that has been extended six inches at the root and three inches at the tip, thus effectively increasing leading edge sweep slightly. The leading edge slats have also been removed and small fences have been fitted at the midspan position. The Sabre 5 is superior to earlier versions in take-off and climb performance, as well as performance at altitude. Low speed performance is inferior, however. Approximately 200 Sabre 5's have now been produced.