

ONTARIO'S FOREST AIR WATCH

*Equipment of an Old-established
and Well-proven Service*

THE present Air Service of the Ontario Department of Lands and Forests is the result of some thirty years of careful planning and development. Shortly after aeroplanes were successfully flown, forestry officials recognized their adaptability to forestry work. The first great war gave additional impetus to the idea. Men returning from the Service with flying experience and a better knowledge of its adaptability to forestry work made strong and effective recommendations to the Government.

The spring of 1924 witnessed the start of the present-day Department of Lands and Forests Air Service. The aircraft in use at that time were known as HS2L flying-boats and were powered with a 12-cylinder Liberty engine driving a pusher propeller. From this somewhat humble beginning, subsequent years witnessed many changes in the type of aircraft used—e.g., de Havilland Moths, Stinsons, Norsemen, Fairchilds, Loenings, D.H. 61s [sometimes known as the Giant Moth—Ed.], Wacos, Buhls, Hamiltons, Vickers Vedettes—until the present time when the Department operates 38 D.H. Beavers, three Otters, a Dove and two Bell helicopters.

The first air base was at Sudbury. Other bases were soon established until today the Department operates 28 of them, ranging from Smoke Lake (Algonquin Park) in the east to Kenora and Red Lake in the extreme western boundary of the Province, and from Toronto in the south to Pickle Lake, the farthest north. Eleven of these bases operate the year round and headquarters are maintained at Sault Ste. Marie.

From 1924 onwards many novel uses were found for aircraft in the administration of the Department's work throughout the Province. The 44 aircraft are used principally for forest fire-protection work, but they also serve the requirements of the Divisions of Fish and Wildlife, Timber Management, Lands, Surveys and Engineering, Research and Reforestation. Over and above departmental duties, they are used in many instances for "mercy flights" which stem from injury or sickness in the backwoods.

The primary purpose of the aircraft, however, remains that of forest fire control. The problem of forest protection in Ontario is a big and complex one. The area to be covered is almost 240,000 square miles, and this factor, together with the multitude of causes from which forest fires may start, necessitates a very complicated organization. In the detection field, aircraft are used in conjunction with fire towers with most satisfactory results. They not only assist in finding the fires but supply the ground crew by radio with the essential information necessary for immediate suppressive action. All aircraft used by the Department are equipped to land on water. Thus the thousands of lakes and rivers in Northern Ontario constitute ready-made landing areas and otherwise inaccessible areas can be reached quickly, as the time element is always of vital importance.

All machines, too, are equipped with two-way radio-telephony and during periods of high hazard each one carries an initial fire-fighting crew and the necessary equipment to take the first suppressive action. During daylight hours, aircraft are constantly patrolling the forests to supplement observations taken from the fire towers and cover areas which are not visible from them. When haze, smoke and other atmospheric conditions limit the visibility range of the towers, aircraft patrols are absolutely essential.

When smoke is detected the pilot proceeds to the location of the fire and radios to the nearest headquarters the exact location of the outbreak, its size, the type of terrain, and the amount of men and equipment required. The pilot is then instructed to pick up additional men and equipment from designated points and transport them to the fire. All equipment, including iron rations, is pre-packed in units and can be quickly loaded and transported. These units, with the corresponding number of men, are then flown in to the fire. Aerial cargo-dropping techniques have also been developed by means of which supplies can



This striking photograph, taken recently at White River, Northern Ontario, shows one of the 134 fires that have been raging in the state during past weeks. In the foreground is a D.H.C. Otter by which the Lands and Forests Department has sent in men and equipment.

be parachuted to fire crews to enable them to proceed to the fires "light" rather than encumbered by heavy loads of equipment. This method has greatly simplified the problem of bush transportation.

In the fire-fighting field, aircraft also perform an invaluable service by dropping water bombs, which are used to retard the rate of spread of a forest fire at its incipient stage and beat down the flames until the ground crew can start suppression operations. Water bombs are constructed of two layers of kraft paper with a coating of latex between them, and hold $3\frac{1}{2}$ gallons of water. When filled they are cube shaped and weigh $35\frac{1}{2}$ lb. An aircraft normally carries 24 bombs and releases them in salvos of eight over the target. The bombing runs are carried out at an elevation of 200ft above tree-top level at an indicated air speed of not less than 80 m.p.h.

Another useful instrument is the aerial ground-hailer which has been developed for the oral transmission of messages from aircraft to ground. It has been used effectively to direct fire-fighting crews from the air and to issue fire prevention warnings to the public. In many instances, it has also been responsible for the detection of persons lost in the bush. Helicopters are used in all operations and, in addition, for the laying of fire-fighting hose from the pump over the tree-tops to the fire-line.

Since the inception of the Department of Lands and Forests' Division of Air Service, a yeoman public service has been provided which is too broad in concept to be adequately described in a short article. Throughout the last thirty years, often in conditions of great discomfort, hardship and even danger, Lands and Forests pilots have performed the numerous and varied tasks assigned to them, each contributing to the protection and development of their province.

HANDLING THE TRI-PACER

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Altogether, the Tri-Pacer is an excellent personal transport aircraft, easy to fly and maintain and with a useful performance. Mr. Perrem has found that in Rhodesia, over stage-lengths of some 400 miles with loads of printing equipment and other items, the Tri-Pacer is ideal for his purpose. Pipers have, of course, been building the Pacer and Tri-Pacer for many years, starting with the 125 h.p.-engined version. Now, for 1955, they have produced the latest model with 150 h.p. engine, increased all-up weight and a claimed cruising speed of 132 m.p.h. at 7,000ft.

PIPER PA-22 TRI-PACER 135
(Lycoming O-320 flat-four: 135 h.p. at 2,700 r.p.m.)

Span, 29.3ft; length, 20.6ft; height, 8ft 4in; wing area, 147.5 sq ft; empty weight, 1,100 lb; maximum weight, 2,000 lb; wing loading, 13.5 lb/sq ft; power loading, 13.3 lb/h.p.; fuel capacity, 36 gal (44 gal with extra tank).

Performance: top speed, 139 m.p.h.; cruising speed, S.L., 70 per cent power, 123 m.p.h.; cruising speed, 7,000ft, 70 per cent power, 132 m.p.h.; stalling speed, flaps down, 49 m.p.h.; service ceiling, 15,000ft; consumption at cruising power, 9 gal/hr; range at cruising speed, 492 miles.