BROADCAST SEEDING FROM HELICOPTERS IN ONTARIO

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Since 1962 the Ontario Department of Lands and Forests has been conducting broadcast tree-seeding trials using helicopters. (1) An effective device, the Brohm aerial seeder, was developed by Department researchers for quick and easy mounting on Bell 47 series models (fig. 1) ; it is also adaptable to many other types of helicopters.

This seeder can evenly dispense specified quantities

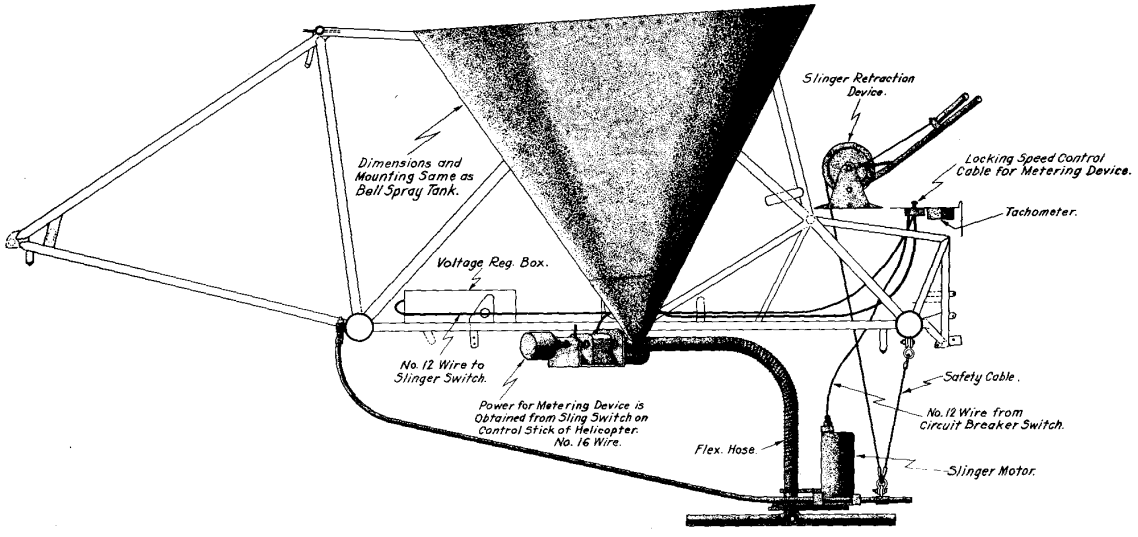

Figure 1.—Brohm aerial seeder installed on Bell 47 series helicopter.

of seed per acre of commercially important Ontario coniferous tree species, such as black and white spruce, d white, red, and jack pine. Since 1962 the design d materials for the seeder have been improved many times. A model is now being developed for light, fixed-wing aircraft; it will be used where landing strips are available.

The helicopter seeder, which weighs 62 pounds, has four main parts: A hopper for the seed, a metering device to control seed flow, a slinger to spread the seed, and a mechanism to lower and retract the slinger unit.

The seed hopper is the same size as the Bell tank used for spraying. The metering device is fitted to the bottom of the hopper, and the unit is mounted on the right-hand side (to counterbalance the pilot on the left). A flexible tube connects the metering unit to the slinger.

A control panel is mounted in the position normally occupied by the cover on the seat of the helicopter. This panel has a tachometer and speed control for the metering device and a switch for the slinger. All instruments and controls are located so they can be seen and operated by the pilot. All electrical equipment is of aircraft quality, and is protected by circuit breakers.1

A drum-and-cable retraction device enables the pilot to lower the slinger below all obstructions on the air craft when seeding (to protect the seed) and to retract it when landing.

The amount and distribution of seed depends on the flying speed and altitude of the aircraft and the metered rate of seed dispersal. In the Department's trials with this seeder, a speed of 60 m.p.h. and an altitude of 150 feet were found preferable. Under these conditions, 20,000 viable jack pine seeds per acre are evenly distributed in a 90-foot swath, and 40,000 black spruce seeds per acre are evenly distributed in an 80foot swath. Adjustments easily can be made to meet other requirements .[2]

Literature Cited

(1) Scott, J. D.
1964. Helicopter Seeding Trials. Ontario Dept. of Lands and Forests, Downsview, Ontario, Canada.

1 Mimeographed detailed instructions for the construction and installation of the helicopter seeder are available from the Department of Lands and Forests, Maple, Ontario, Canada.

2 Detailed instructions for the construction and installation of the helicopter seeder are available in mimeographed form from the Research Branch, Ontario Department of Lands and Forests, Maple, Ontario, Canada.