



**WATERFOWL
POPULATION
SURVEYS**

50 Years & Still Counting

U.S. Fish & Wildlife Service

N-754

A Tested Model for Modern Waterfowl Survey Aircraft

Over the course of more than 10,000 hours of accident-free flight in the demanding business of waterfowl survey work, the deHavilland Beaver N-754 has proven to be a valuable platform with a number of specialized innovations. Many of these have demonstrated their worth time and again, and would benefit any future aircraft acquisition program for the North American Waterfowl Population Survey Program.

History

The U.S. Fish and Wildlife Service obtained N-754, along with eight other Beavers, as surplus from the U.S. military in 1964. It was eventually converted to turbine power, incorporating a Garrett TPE 331-2 engine in a special nacelle manufactured by Volpar, Inc. in Van Nuys, California. Theron Smith and Jerry Lawhorn, both with the U.S. Fish and Wildlife Service's Alaska Region Aircraft Division, redesigned the cockpit and aircraft systems, incorporating modifications specific to the demands of waterfowl survey work. The modified Beaver first flew in April, 1972 in Van Nuys, California, before returning to Alaska

The Service had planned to convert some of the 8 additional surplus Beaver aircraft for waterfowl work elsewhere in North America. However, The U.S. Department of the Interior (DOI) consolidated all aircraft operations under a new Division of the Office of Aircraft Services in 1973, and the new management regime did not look favorably upon this special airplane because of its uncertified status. No effort was made to certify it, and over time all the rest of the Beavers were surplus out of Service ownership. In fact, N-754 has only been allowed to continue to operate with a special waiver.



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N-754 doing what it was meant to do; an extraordinary job in spectacular country

Service pilot/biologist Jim King first used N-754 for waterfowl surveys in Alaska in the mid-1970's, and began using it annually on the Alaska-Yukon Waterfowl Breeding Population Survey (AYWBPS) in 1977. This annual survey has been, and continues to be, one of our region's major contributions to the Continental Waterfowl Survey Program. Basing his action on the Lower 48 style of Service aircraft management, Jim had N-754 permanently assigned to the Juneau Waterfowl Project (JWP) on May 4, 1979, with a total flight time since conversion to turbine power of 1522 hours. It has been under the operational control of the JWP for the past 27 years, during which time it has provided valuable support to international waterfowl management from the Lena Delta in Russia, throughout Alaska and western Canada and down the west coast of Mexico. In the process it

has accumulated an additional 10,000+ hours of accident/incident free flight time. It is the safest, most adaptable and dependable aircraft in the Service's waterfowl survey fleet. It is also the only turbine powered survey aircraft in the fleet. N-754 is generally safer, more reliable, and a more efficient waterfowl observation and capture platform than any other aircraft in the fleet.

The Juneau Waterfowl Project has continued to modify N-754 over the years to enhance its safety, efficiency and usefulness for waterfowl survey work. The Fish and Wildlife Service was able to convince OAS to have the aircraft refurbished in 1998/99. Viking Air, Limited completely disassembled N-754, carefully inspected it for any excessive stress and wear (none was found), and then reassembled it with a number of additional JWP-suggested modifications

to increase its safety and utility for waterfowl-survey flying. It now is in the best shape it has been since its original modification to turbine power. Personal, dedicated attention to this airplane, and its use by only one Service Project, have been significant factors in maintaining its excellent condition and consistent "on line" status over the years.

A Few of the Secrets of its Successes

N-754 is a one-of-a-kind aircraft and is a very specialized tool. It has an excellent safety record and a long and admirable history of enhancing high quality waterfowl management.



Because it has been carefully modified to best perform one specific job, it now being used as a model for the capabilities desired in the new survey aircraft acquisition program.

With few exceptions, only the three waterfowl survey pilots of the Juneau Waterfowl Project have flown this aircraft since 1979. Each of them was carefully instructed in its operation, first by the Fish and Wildlife Service's Alaska Aircraft Division and then internally in the JWP. This training follows the model that has been used so successfully in the continental Flyway Biologist Program for almost 50 years.

This aircraft is flown at weights above its original certificated gross takeoff weight. These operations require special care and attention to flying techniques to ensure its continual safe operation.

To complete wide ranging surveys, waterfowl survey pilots need to be confident of the status

and airworthiness of their airplane, and to be sure that all of the necessary specialized equipment is on board and in good operating condition. Expensive and unique panel mounted computers are key to this airplane's survey work capabilities. These require, and receive, special care to keep them operational.

Aviation accidents have occurred when trying to accomplish low-level surveys with contract pilots; some of these have resulted in fatalities. History shows that the occurrences of such accidents are greatly reduced when surveys are conducted with trained Service pilots in specifically-modified DOI-owned and maintained aircraft

N-754 is exactly that kind of highly specialized tool. It has served the U.S. Fish and Wildlife Service, the American taxpayer, and the international waterfowl resource we collectively manage well. With proper management it can continue to do so into the foreseeable future. When survey aircraft are acquired, the selection of turbine-powered airplanes, incorporating modifications similar to those that have contributed to N-754's long and successful career, would be an invaluable investment in the future of the North American Waterfowl Population Program. And, as such, would enhance our management of the waterfowl populations we share with our international partners and with the American public.



N-754's distinctive nacelle (engine housing) contains a Garrett turbine engine

N-754 Modifications: The Details that Do the Job

- ◆ Time-tested (Beaver) airframe, strengthened for high gross weight operation
- ◆ Direct drive, reversible propeller
- ◆ Custom long-range wing fuel tanks (airframe stress reducing in turbulence)
- ◆ Rugged, amphibious landing gear with good soft field capabilities
- ◆ Superior visibility forward and to the side (no exhaust-fume blurring)
- ◆ Controls located for simple operation with well organized instrumentation
- ◆ Relatively high cruise and low stall speed
- ◆ Light on controls, outboard mounted wing flow energizers; rapid aileron response
- ◆ 5 point shoulder harness restraints at all 4 seat positions
- ◆ Upgraded avionics, including multiple GPS, computers, satellite tracking/phone
- ◆ Independent power supplies for laptops, scanner/receiver and other portable accessories
- ◆ Turbine powered with a Garrett TPE-331-2 engine
- ◆ Easy to maintain in field conditions
- ◆ Camera hatch with internal power supply for large format aerial camera
- ◆ Intercom-equipped at all four seats

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