



WaterFlying

A SEAPLANE PILOTS ASSOCIATION PUBLICATION • NO. 156 • \$3.95

July/August 2006

RIVER OPS WRAP-UP
ANATOMY OF AN ENGINE FAILURE
READING CURRENTS, TIMING TIDES

**F&WS TURBINE BEAVER:
A BIRD FOR COUNTING BIRDS**

Counting Ducks

By Elizabeth Bluemink

Photo by Karen Bollinger, USFWS.



Juneau-based pilot-biologists Bruce Conant (front row, fourth from left) and Jack Hodges (top row, second from left) fly the unique turbine-powered Beaver on annual waterfowl-counting missions for the U.S. Fish & Wildlife Service. Photo by Todd Harless, USFWS.

Aerial surveys are a vital tool in waterfowl conservation

For a rare few, a day on the job involves flying seaplanes over pristine North American wilderness areas counting “duck...duck...goose...”

The job is challenging and little known, though it has been a critical cog in waterfowl conservation in North America for the past 50 years.

Just 15 pilot-biologists employed by the U.S. Fish and Wildlife Service (USFWS) fly over vast landscapes—including portions of Alaska and Canada—each spring, counting waterfowl and collecting data on the quantity and quality of their wetlands habitat.

That data is the foundation for the entire framework of North American waterfowl hunting regulations, as well as the international treaties created to protect migrating birds.

Conant hand-flies the Beaver while tracking a GPS course, monitoring the aircraft's position on an electronic moving map, and looking out the left side of the airplane for waterfowl to count. Prior to GPS, pilots used paper maps, as demonstrated in the photo.



The job requires special skills and, of course, special seaplanes. Juneau pilot-biologist Bruce Conant operates the flight controls of a unique turbine-powered de Havilland Beaver. Conant and his fellow Juneau pilot-biologist, Jack Hodges, fly the Beaver—registration N754—a scant 150 feet over the ground when on their bird-counting missions.

"After doing it for a number of years, you get comfortable flying at that altitude while counting birds. It's challenging, but it's not unsafe," said Conant, a USFWS pilot based in Juneau since 1978. No fatal accidents have occurred in the 50 years of the North American Waterfowl Population Survey Program, he said.

THE AIRPLANE

Conant's trusty seaplane is one of a kind.

For decades, N754 was the lone turbine-powered aircraft in the USFWS's fleet of seaplanes. The rest of the agency's amphibious fleet is comprised of Cessna 206s, but now two of those airplanes have been converted to turbine power. The USFWS also has announced plans to replace some of its older aircraft with turbine-powered Quest Kodiaks.

The agency's Juneau biologists are fiercely proud of the unusual Beaver, acquired from the U.S. military as surplus in 1964. The airplane's most distinctive feature is its narrow, elongated nacelle, built in the 1970s by Volpar, Inc.—a now defunct company in Van Nuys, California—to house a 715-shp Garrett TPE331-2 turboprop engine. The 43,000 rpm engine speed is geared down to 2000 rpm at the prop.

Other unique cockpit features designed to enhance the safety and utility of waterfowl surveying were added later by Jerry Lawhorn, Chief of Maintenance in the Aircraft Division of USFWS's Alaska Region. Some of those features include an annunciator panel arrayed across the top of the glareshield on the pilot's side so it is within the pilot's view while looking out the cockpit window. Also, trim and flap controls have been moved to the power quadrant.

Switches used to start the engine are

Is your Aircraft . . .

Door Steward™
Equipped?



MODERN GAS SPRING
OPENS AND HOLD DOOR OPEN
PROTECTS AGAINST WIND GUSTS
GREAT FOR LOADING AND UNLOADING



FAA STC-PMA approved on all Cessna 170, 172, 175, 180, 182, 185, 205, 206, 207 and 210 non-pressurized series aircraft.

\$159* EITHER DOOR
OR **\$299*** FOR BOTH

*PLUS S&H

1-800-837-0271
503-981-4550

MTN. VIEW AVIATION PO Box 31 HUBBARD, OR 97032

WWW.MTNVIEWAVIATION.COM

EXAMINER ON STAFF!
WE ALSO OFFER ACCELERATED
AMEL / ATP
AND MUCH MORE.

Sheble's
Riviera Aviation
"Often imitated—never equaled"

**SINGLE ENGINE SEAPLANE RATINGS
ON THE BEAUTIFUL COLORADO RIVER!**

Come to Bullhead City, Arizona and learn all the aspects of river and lake flying in an Alaskan 160 Super Cub. Exciting Laughlin, Nevada is just across the river with hotel / casinos, live entertainment and fine dining.

Also visit our operation in LAS VEGAS!

7100 Flightline Drive • Suite A • Kingman, AZ 800 • 249 • 6482



SATELLITE PHONES

Globalstar Inmarsat Iridium

877-Geo-Call

GPSphones.com

Outfitter Satellite™

Rent a satellite phone for any destination...

all located above the pilot's knees and are activated in sequence, left to right. All circuit breakers are on the right side above the copilot's knees, and all engine instruments are grouped for easy reading.

The fuel system also has been extensively modified. Leading-edge wing tanks were added, each with a capacity of 83.5 gallons. The rear two standard Beaver belly tanks are used as auxiliary tanks when needed, while the front belly tank serves as a header tank. Fuel gravity feeds from the wing tanks into the header tank. Even if the pilot inadvertently runs the wing and aux tanks dry, the header tank has about an hour's worth of fuel. "It's a simple, reliable fuel system," Conant says. Fuel capacity among all the tanks is 262 gallons. The turbine Beaver burns about 40 gallons per hour in cruise.

In 1977, agency pilot-biologist Jim King, now retired in Juneau, was the first to fly the seaplane on the agency's Alaska-Yukon Waterfowl Breeding Population Survey.

Today, N754 operates about a third of the time off water. Typically, the pilots land on lakes, either for a break or to pursue a special project to catch and band birds. "We try to keep it in freshwater," Conant said, explaining that he avoids saltwater landings to stave off corrosion.

The seaplane's operations require special flying techniques because N754 has a max gross weight of 6200 pounds, some 1100 pounds more than a standard Beaver. "We avoid abrupt maneuvers, and carry a bit of extra airspeed due to the higher stall speed," Conant said.

"If we're landing on water, we try to burn some fuel off so the airplane won't be so heavy. With the prop's reverse capability we can stop the airplane on the water, hold it in place, and back onto beaches. It's also nice for directing flight-less geese. When they lose their feathers in July, we can get close to traps and observe them. We also catch swans right off the floats with a dip net,

then use reverse to get the bird in position so we can pick them up and band them."

THE SURVEY

Every year, the Alaska biologists cover about 3,500 miles counting ducks and geese and other water birds on their annual spring survey in Alaska and a portion of the Yukon in Canada. That mileage does not include the long distances the biologists travel to and from the counting areas.

"It's fairly intensive flying," Conant said of the survey. "You are not only flying, you are counting birds."

The Juneau biologists mainly fly N754 in Alaska, the Yukon, and British Columbia, but they also take the seaplane to Mexico and the Canadian Arctic for other federal bird surveys. In the 1990s, Hodges took N754 to Russia for waterfowl surveys.

Lower 48 pilot-biologists—based in Maine, Maryland, Louisiana, North

Dakota, Colorado, California and Oregon—fly to the prairies, parklands, and the bush in central and eastern Canada and the United States to count ducks during the annual North American waterfowl survey.

The Alaskan component of the survey begins in Anchorage and ends near Glenallen. It requires about three to four weeks and 100 hours of flight time.

The Juneau biologists count birds at state and federal game refuges and other waterfowl hot spots at Cordova, the Kenai Peninsula, Fairbanks, Tetlin, Minto Flats, Yukon Flats, Bettles, Galena, McGrath, Bristol Bay, and the Yukon Delta. Then they fly up the western Alaska coast to Nome, Kotzebue, and over to Old Crow Flats in Yukon Territory, Canada.

The flights into Canada are a neighborly gesture. "It's easier for us to go up the Porcupine River than for the Northwest Territories crew to fly over the mountains," Conant explained.

THE BIOLOGISTS

Conant learned how to handle the Beaver in the late 1970s from his predecessor, Jim King. "It's a real apprenticeship program. That's the way they do it down south as well, and it's a big reason why the safety record is so good," Conant said.

A '67 graduate of Michigan State University, Conant first learned to fly in the school's flying club, and he then served as a pilot in the U.S. Navy. Thanks to the GI bill, Conant, who already had a degree in wildlife biology, learned to fly seaplanes in Anchorage in the early 1970s.

So far, Conant has logged more than 9,000 hours of total flying time, with more than 7,000 hours in N754, his favorite airplane.

Conant, now nearing his own retirement, gave Hodges similar training. Conant and Hodges take turns flying N754 with Fish & Wildlife biologist Debbie Groves, who counts birds from

Each summer, state wildlife officials gather in meetings to propose hunting regulations based on the findings of the annual waterfowl survey.

"Freedom with Wings"



www.FPNA.com

For **SERIOUS** fun and Safety FPNA is the place to be!



A24 Viking

128 Authority Lane, Sebring, Florida 33870 USA
Tel +1(863) 655-3770 Fax +1(586) 816-0272
Web: www.FPNA.com E-mail: info@fpna.com

STOL CONVERSIONS WITH G.T.O.W. INCREASE FOR CESSNA AIRCRAFT

All models C-180, 182 GTOW 2,950 lbs.
All models C-185's GTOW 3,525 lbs.
All models C-206 approved

"Wing Xtension STOL will increase your flight performance by as much as 30% and your gross takeoff weight by as much as 400 lbs."

AIR RESEARCH TECHNOLOGY INC.

Call 1-888-325-2548 or 514-337-7588 Fax: 3293
www.wingxstol.com or Email: wingex@istar.ca
Discounts available to S.P.A. members
For CESSNA 206 WIP-TIPS Call Lake & Air
651-496-3870 Fax. 4070

STC APPROVED

mt-propeller

Reversible Propeller for Seaplanes with Piston Engines

Unlimited Blade life!
Less Weight!
Improved Performance!



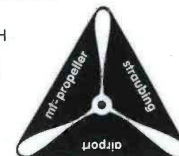
Britten Norman B11-2B

Drastically Reduced Vibration!
Less Crankshaft Stress!
Reduced Noise!

Lake LA-4-200

Headquarters Germany
MT-Propeller Entwicklung GmbH
Phone: 01149-9429-94090
e-mail: sales@mt-propeller.com

U.S. Service Center Florida:
MT-Propeller USA Inc.
Phone: (386) 736-7762
e-mail: mtprop@bellsouth.net



www.mt-propeller.com

Step Up to Baumann Amphib's on Your 172

Equipped with New Baumann BF2550A amphibious floats, your Cessna 172 can be more versatile than you ever thought it could be. Stop letting others have all the fun and call today to turn your 172 into an amphibious, go-anywhere, fun flying machine.

Baumann Floats LLC

10-1 Airport Road • New Richmond, WI 54017
715-246-9352 • 715-246-9379 FAX
e-mail: birkemeyer@baumannfloats.com

the copilot side. Though technology has improved, the annual North American waterfowl survey has remained virtually the same since 1955, when it began.

Conant said he doesn't see the program's strong safety record as any big surprise, even in the sometimes hostile conditions in Alaska. For one thing, the pilots receive expert training and mentoring. Also, the survey never changes.

"We fly on transect lines that we settled on in 1964," Conant said. "In the early days, we used paper maps to navigate and we talked the birds into tape recorders." More recently, the biologists have been using Global Positioning System technology and computers.

The pilots hand-fly the Beaver, tracking a GPS course programmed into a Garmin 250XL while monitoring their position on an electronic moving map. At the same time they look out the left side of the airplane for waterfowl to count. When the pilot or right-seat spotter sees birds, they state the type and the number using their own shorthand—for

example, "pintails a pair" for a male and female grouping of pintail ducks.

The articulating electronic screen that displays the moving map is part of a custom computer installation that includes a CD drive. The computer records the pilot's and observer's voices when they spot birds, and at the same time notes the aircraft's position. Hodges developed the programs used in the Beaver's special computer system as well in other aircraft across the continent.

At the end of the day the pilot and observer each dump their data to a CD for transfer to a laptop, where the spotters' voice notes are converted to text and correlated with the position reports. The data is then emailed for analysis to a Fish and Wildlife Service center in Maryland.

DUCKY RESULTS

In 1918, the United States and Canada signed the Migratory Bird Treaty Act. Later on Mexico, Japan,

and the former Soviet Union also signed the treaty. The act requires that bird hunting in the nations not harm bird populations.

Each summer, state wildlife officials gather in meetings to propose hunting regulations based on the findings of the annual waterfowl survey. The proposed rules must receive final approval from the Department of Interior.

While hunting has become a tightly regulated affair, there are other problems vexing the ducks. The data provided by the Fish and Wildlife Service's pilot-biologists shows declines in some duck populations over the last 20 years, Conant said.

For example, duck counts were "really up" in the 1950s, but the populations crashed when drought hit the Canadian prairies in 1980s, Conant said. Though the Canadian prairies got wet again in the 1990s, some ducks, notably the prairie-nesting pintail, haven't recovered, he added.

Some have pinpointed a problem. The

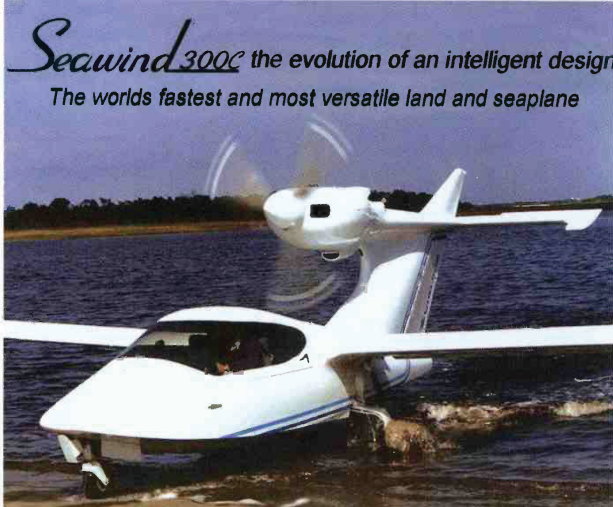
conservation group Ducks Unlimited Canada notes that more than 70 percent of Canada's wetlands have been drained or degraded. Ducks Unlimited has been working with Alberta's agriculture industry to preserve or restore areas for the ducks to breed.

Another group of birds facing serious declines are sea ducks, Conant said. These birds are facing problems ranging from habitat loss in coastal areas to toxic contamination.

And thus, for Fish & Wildlife Service pilot-biologists, counting "duck... duck...goose..." is more than a simple game. ■


Elizabeth Bluemink is a newspaper reporter in Juneau, Alaska, specializing in natural resources. Occasionally, she boards seaplanes for her assignments. These trips have allowed her to observe commercial purse seining for salmon off Admiralty Island, toxic discharges from a Canadian mine, and tracking of Vancouver Canada geese (on N754).

Seawind 3000 the evolution of an intelligent design
The worlds fastest and most versatile land and seaplane



Certified Production 2006 sold out
Positions Available 2007
Visit our Oshkosh Display #230/231

Seawind inc
Phone: 610-917-1120
www.seawind.net




SeaRey

The Ultimate Fun in Sport Planes

- Take off from land or water loaded in 400 ft.
- 550 pounds useful load.
- Dual controls with electric trim
- Fully retractable landing gear
- Two passenger comfort in SeaRey's 44" wide cabin.
- Engine options: Rotax 80, 100, & 115 H.P. Turbo

Progressive Aerodyne, Inc.
520 Clifton St., Orlando, Fl. 32808
Phone: 407-292-3700
Fax: 407-292-5555
E-mail: searey@bellsouth.net



ADVERTISE IN



The best way to reach the world's most active seaplane pilots.

Thousands of pilots want to know your business. So, tell them.



For advertising rates and information, call 707/768-3199 or email spa@seaplanes.org

NEW. CERTIFIED. READY TO FLY.
ON AMPHIBS.



CubCrafters' 2006 TOP CUB AMPHIB.

The ultimate float plane, from the ultimate sport airplane outfitter.

With TOP CUB AMPHIB's 750lb useful load, it's now easy to go where the big fish are.

CUBCRAFTERS

1918 SOUTH 16TH AVENUE | YAKIMA, WASHINGTON 98903 | p 509.248.9491 | f 509.248.1421 | cubcrafters.com