



# The Cara-who?

The Caribou. . .that's who!

BY LAURA KELLY

THE DE HAVILLAND CANADA Caribou is *not* one of your premier, well-known, popular airplanes. As a matter of fact, most people couldn't even begin to describe what one looks like. But this unpopular, strange-looking aircraft did its job and did it well during a time when our country most needed its unique flying capabilities.

An exclusively engineered aircraft—designed and built in Toronto, Canada—the Caribou was used by both the U.S. Army and U.S. Air Force during the Vietnam War. But to begin to understand the importance of what the airplane did, step out of the military mindset for a minute...and step into Alaska!

Imagine the Alaskan bushplanes, with their rugged, anything-goes type of flying. Imagine landing and taking off on the side of a mountain, a rocky river bed, or a cut-out narrow landing strip (about the size of a postage stamp) completely surrounded by tall towering pine trees. When you think of this type of flying and the airplanes used to accomplish these feats, you think of those distinctive, cool-looking bushplanes, such as the de Havilland Otter and Beaver. These Alaskan bushplanes are sturdily built single-engine STOL (short takeoff and landing) aircraft, which were designed after World War II specifically for the rugged and remote ar-

eas of the world.

In the late 1950s, when hostilities in Vietnam were starting to simmer, de Havilland Canada (DHC) responded to a United States Army request for a tactical airlifter. The requirements included the ability to support the remote battlefield locations with troops and supplies...and transport wounded on the return trip. The mountainous, densely forested regions in Vietnam called for a utility aircraft that could handle heavier payloads, accommodate cargo drops, and land on short-field landing strips. It didn't take long for de Havilland's design engineers to develop a multiengine



airplane—with similar short landing and takeoff characteristics as the Otter and Beaver. The first prototype was demonstrated in 1958 and was given the civilian designation DHC-4.

Wanting to continue the practice of using the furry animal naming convention, de Havilland selected the name “Caribou.”

In 1962, the U.S. Army purchased 159 Caribou aircraft, and initially designated them as AC-1 and then later CV-2. They were flown by the Army in Vietnam until January 1967, when they were transferred over to the Air Force—due to a political and strategic realignment of aircraft—and redesignated as C-7.

Regardless of which branch of the military owned the aircraft, the mission remained the same. With the aircraft’s excellent low and slow maneuverability, enabling it to make accurate drops into small places, the Caribou was ideally suited for the tactical transport mission to re-supply Special Forces’ remote outposts with food, ammunition, supplies, and troops. On the return trip back to base, just about anything—and everything—was hauled, from soldiers (both U.S. and South Vietnamese) hopping a ride to the transport of casualties. Occasionally a cow or two would be open-crated and sent as cargo (a favor to the local villagers). Sadly, filled body bags were

carefully transported as part of the load as well.

Sizewise, the Caribou was much smaller than the Lockheed C-130 and slightly smaller than the Fairchild C-123. The gross weight was 28,500 pounds—which kept the ’bou (pronounced “boo”) out of large tactical operations due to the limited payload capacity. The upside, however, was the airplane’s increased maneuverability, which carved a special niche helping deployed elements in small, tightly constricted field sites.

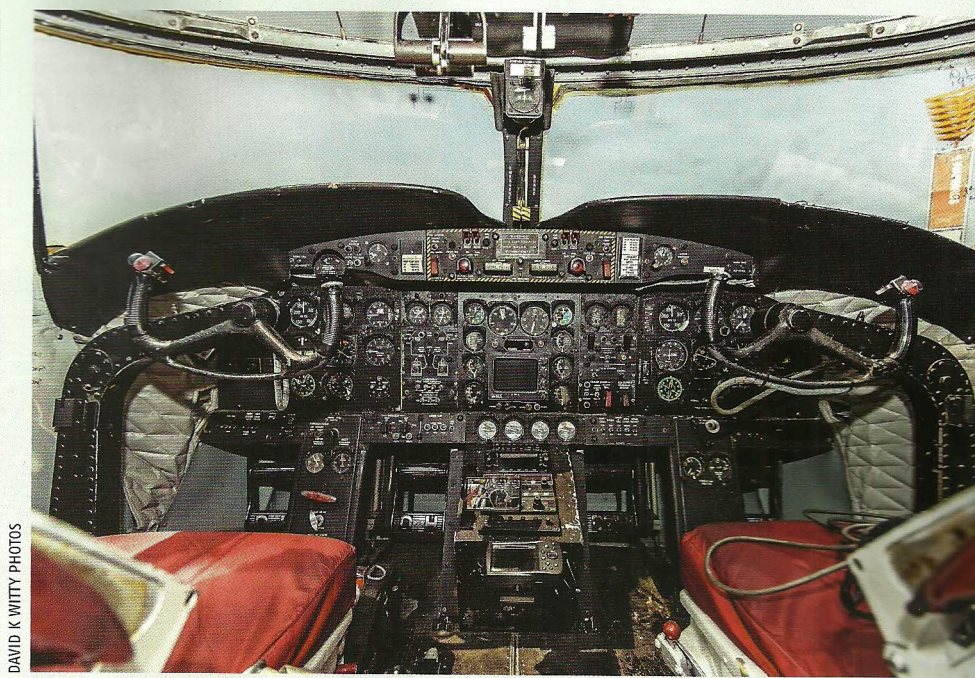
Aerodynamically, the Caribou was designed using the knowledge from the successes of—as well as lessons learned from—de Havilland’s other STOL aircraft. The hori-



zonal stabilizer adds three more degrees to the elevators when flaps are extended to help with slower speeds. The engines are angled 3 degrees down for better lift. A large, outstretched vertical stabilizer—along with a large rudder—provides substantial lateral control surface, and the wide, flat fuselage helps with load balancing and maintaining center of gravity (CG) stability.

But the real marvel of this machine lies with the ingenuity of the flap and aileron system.

The entire trailing edge of the wing was built with full-span double-slotted flaps with the outer flap sections doubling as ailerons. A second set of flaps is stored inside the wing during cruise flight and,



DAVID K WITTY PHOTOS

when activated, extends beyond the normal flaps. At full 40-degree flap detent, the inner flap section closest to the fuselage is almost 90 degrees relative to the wing chord—and looks like the blades of a snowplow hanging down.

In addition to the double-slotted flaps, the *flaperons* also assisted with slowing the aircraft. Flaperons are a mechanism in the wings that are activated by the flap lever and cause the ailerons to droop *along with the flaps*—but at a lesser rate. The advantage with this mechanical alignment is that the whole span of the trailing edge of the wing is flapped, which improves low-speed performance. The disadvantage is the heavy and sluggish roll response while turning (when full flaps are deployed).

The 'bou was powered with two Pratt & Whitney R-2000 engines, each at 1,400 hp. De Havilland later came out with the turboprop version called the Buffalo (with a few still in existence and operational today).

Flying into and landing at isolated camps and field sites (dirt, sand, mud, pot-holed runways, steel-planking, wide areas in roads) necessitated a landing gear designed with sturdy high-absorption struts, cyl-

inders, pistons, tires, and brakes. The 'bou sits high on its haunches, giving a look of an airplane sitting on long pudgy legs. But if you take a look at the open rear clamshell doors, the floor is the perfect height for an Army deuce and a half to back up level with the deck and transfer the load—without having to use the ramp.

Surprisingly, the Caribou had no mounted or attached armament. The pilots had their .38-caliber pistols they carried in their survival vests and the flight engineers had their M-16s, and that was it!

The aircraft's flight requirements mandate two pilots and one flight engineer. The busiest one on board was the flight engineer, who served a number of roles, from being a loadmaster (and pushing the loads off the back deck) to firing at the enemy with his M-16.

### **A True-Blue (Through and Through) Caribou Pilot—or Two**

One of the military pilots who flew the Caribou in Vietnam is EAA Warbirds member Ron Alexander. Ron was a U.S. Air Force first lieutenant at the time of the Vietnam War in 1966—and he was one of the very few pilots who flew the Caribou while it was an Army as-



set and after its transfer to the Air Force. Ron's first time actually laying eyes on a 'bou was in 1964 when assigned to Charleston AFB in South Carolina and flying supply missions into Vietnam.

"When I first saw the Caribou, I was flying C-130s in the Air Force, and we were going into and out of Vietnam on a pretty regular basis. While flying into Cam Ranh Bay Air Base one day, we saw this ugly-looking airplane sitting out on the ramp. I thought, 'What in the world is that?' I had no idea what it was and had never heard of the Caribou.

"A few months later, while back home at the base in South Carolina, my squadron commander called and said, 'Ron, you are going to be deployed to Vietnam, and you have your choice between flying the Caribou or being a forward air controller.' Not knowing a whole lot about either one, I selected the Caribou since I had a lot of time flying light airplanes."

Ron's opportunity to fly the Caribou came as a result of the transfer from the Army to the Air Force. Since Ron deployed in November 1966, his timing couldn't have been better, giving him the opportunity to train with the Army—and the Army pilots—before the Caribou's official transfer in January 1967. "I was trained at Fort Benning, Georgia, prior to being

deployed to Southeast Asia. When I arrived in Vietnam I was immediately sent to Qui Nhon Air Base and assigned to the Army's 92nd Aviation Company.

"It was quite an experience flying with the Army pilots," said Ron. "They were very cooperative and helped us learn where to go and where *not* to go. They also showed us many of their flying techniques that they had learned through experience on combat missions. During this assignment with the Army, we flew mostly north of Qui Nhon in the I Corps area.

"The airplane could carry about 32 people or 50 armed Montagnards, who are the tribal people from the Central Highlands of Vietnam," explained Ron. "The South Vietnamese military did not care for the Montagnards, but the Montagnards were better soldiers and better fighters than the South Vietnamese. So the U.S. Special Forces would recruit them on a regular basis, and we would transport them from one location to another when they had skirmishes. When they needed a real fast strike force, we would take as many as 50 of these little guys with the big machine guns and hand grenades hanging all over them into these remote areas."

Explaining further about the

mission, Ron said, "When we air-dropped, we would be at 400 feet altitude and 90 knots—you could almost throw a rock and hit us. We had a bunch of pallets that we would need to offload (using a parachute), and if we unloaded it all at the same time, it would change the CG too much. So we would have to make two passes to unload everything. On the first pass, the North Vietnamese would not fire on us because they were sighting us with their guns. They knew we were going to come back around with the same flight path. And that is when they would usually open fire on us. Most of the time it would be small arms fire, like .30 caliber. Occasionally they would use .50 caliber."

Regarding the performance of the Caribou, Ron said, "Cruise speed for the Caribou was 120 knots. . . on a good day. You could slow it down to 60 knots with no issues. It was not designed to go fast; it is designed to get in and out of short fields. We would set it to 30 degrees of flaps and fly at 70 knots. You could slow the aircraft down to 60 knots, and it would fly very comfortably. And you could land this airplane in 400 feet, even with a heavy load. Pretty good for an airplane with this gross weight. It had really good characteristics for a short field. If you see it in landing configuration, everything

on the wing, including ailerons and flaps, were drooping down. It really was quite a machine.”

Another Vietnam pilot who also flew the Caribou into remote Special Forces’ field sites is Michael Loughran. He describes the experience, “like being a bush pilot with the added thrill of ground fire.” Mike is a career B-52 pilot—who sidestepped temporarily out of flying B-52s and volunteered to fly the Caribou in Vietnam. He was stationed in Cam Ranh Bay Air Base from April 1971 to February 1972, and he flew the ’bou right before and during the transfer from the U.S. military to the South Vietnamese air force. This transfer, known as “Vietnamization,” was a policy established in early 1970 to expand, train, and equip South Vietnamese military to completely take over the combat role and subsequently end the U.S. involvement in the war. Mike

had the opportunity to train some of the South Vietnamese air force pilots who took over the Caribou mission—and the aircraft—from the U.S. military. “Actually while I was there, we went from five Caribou squadrons to one. I spent two to three months training a few select South Vietnam air force pilots so that they could upgrade to instructor pilot. Consequently, as the South Vietnamese ramped up their units, we drew ours down,” he said.

Describing aircraft performance, Mike explained, “Most STOL landings were at 30 degrees of flaps because the lateral control was very sloppy with full flaps. This was because you sacrificed aileron effectiveness with full flaps, and in gusty or crosswind conditions, you were almost stop to stop on the lateral controls. As I recall, there was only about a 5- or 6-knot difference in final approach speed, which didn’t justify the decrease in lateral

response. The difference in landing roll was not significant either.

“STOL takeoffs were a bit more problematic. Basically if an engine failed on takeoff, one looked for a soft spot to crash. Essentially you sort of yanked the aircraft into the air, many times at the edge of flying speeds with the stick shakers (stall warning) just tickling your hand. Once the gear came up, it accelerated reasonably quick so you could clean up the flap settings and climb out at speed.

“The landing gear was very rugged, with struts that looked much too large for the size of the aircraft. But that was a design feature since STOL landings were not necessarily known for the smoothness at touchdown—certainly would spill all the martinis!”

### **The Fall of Saigon**

The Caribou mission, for the U.S. military, was officially inactivated in May 1972, with most remaining



**SOFTIE**  
Emergency Parachutes  
from Para-Phernalia, Inc.  
360-435-7220 Fax: 360-435-7272  
softieparachutes.com

aircraft transferred to the South Vietnamese air force.

The South Vietnamese military continued the mission, with decreasing intensity, until the fall of Saigon on April 30, 1975. The invading North Vietnamese troops had no use for the Caribou, nor the desire to maintain the aircraft, so the remaining airplanes were discarded or left to ruin. With the Caribou's services no longer needed, the Vietnam military mission ended.

The few USAF Caribous that made it back to the States were transferred to Air Force Reserve and Air National Guard airlift units—but were replaced by C-130s in the early 1980s. The aircraft was also used briefly by the Army's Golden Knights jump team.

Several additional countries also bought and used the Caribou for military purposes around the same time as the U.S. involvement in Vietnam, such as Australia, Malaysia, Canada, India, and Thailand. Again, very few are in existence today, and most of these are in museums.

In commercial service, the Caribou found a small niche in cargo hauling (for example, Ansett-MAL—operating in the New Guinea highlands—and AMOCO Ecuador). The later turboprop version was produced, which was mostly purchased by a very small, diverse group of civilian business interests.

Fortunately, here in the United States, there is one Caribou still flying and making the rounds. It is beautifully restored and cared for by Cavanaugh Flight Museum out of Addison, TX. The airplane made an appearance at last year's AirVenture, and this 'bou is a *beauty!*

So next time the Caribou flies in near you, check out this unique airplane. And join us in appreciating this special warbird. . .and the people who flew it.

Lead photos from Bob Schrader, Dana Kelly, John Stymerski, Michael Loughran, Ron Alexander, Tom Finkler and the National Museum of the U.S. Air Force.

## Unsung Heroes

Let's give a big "hoorah" for the flight engineers and crew chiefs! Wars couldn't be fought without these guys! They are the engine-maintainers, airplane-cleaners, logbook-keepers, electricians, mechanics, dirt-mud-fuel-oil guys that literally *live* their jobs.

For the Caribou, they are the muscle that loads and unloads the aircraft while ensuring all passengers are safely secured. They are the infantry with their M-16s blazing while balancing precariously on the back deck. They are the mechanics who service the aircraft when it wearily taxis in after a long day—just so it is ready for the next morning's early launch. And they are the ones who are up before dawn's first light, preflighting and getting the aircraft ready for wheels-up early takeoff.

Talk to the pilots who flew with these guys, and they have nothing but praise, admiration, and humble gratitude for what the crew chiefs and flight engineers did for their crews, their units, and the military.

And, remarkably, you can do just that: You can talk to a Vietnam flight engineer himself, that is. Bob Schrader was in Vietnam in 1964, working on what is now Cavanaugh Flight Museum's 62-4149 Caribou. After serving his time in the Army, Bob transferred out of the military. Several years later (around the year 2000), while online browsing the Internet, he discovered that his wartime 'bou was being restored. After getting in contact with the owners, he volunteered to lend a helping hand at the many events and air shows. His mission now, though, is more of helping to heal emotional scars rather than pushing out cargo loads and fending off the enemy.

Bob explained, "Most Vietnam vets won't talk to anybody except another Vietnam vet," he said. "A lot of Vietnam vets had such a bad experience, both during the war and when they came home. We all have stuff we carry in our hearts, and when you have the Vietnam vets coming through every day, you can see the healing process going on, and it is so rewarding being a part of it. This Caribou is a tool that allows the veterans to share their Vietnam stories with their loved ones, while continuing the healing process. I wash the plane, wax the floors, and do a show-and-tell while answering questions for the constant flow of visitors during static displays at air shows. But the most important moments for me are connecting with the Vietnam veterans—and sharing a tear, giving a hug, and being there to listen." 