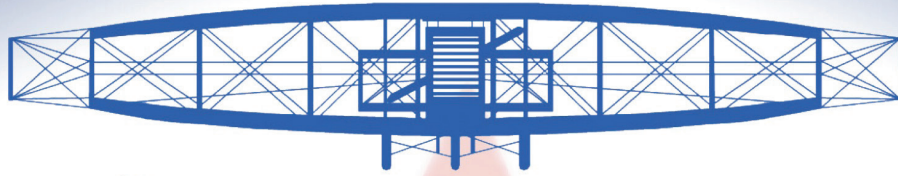


Flypast



Volume 54 | Number 4
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Newsletter of the CAHS Toronto Chapter

A division of the
Canadian Aviation
Historical Society

Remembering Russ Bannock*

Saturday, Feb 1, 2020
at 1:00pm



* RCAF Wing Commander, DSO, DFC+bar; Aviation Hall of Fame; Order of Ontario; French Legion of Honor. (Also BCATP Instructor and "Saviour of London", after showing how to swat Buzz Bombs with Mosquitos!)

above: **Russell Bannock** (1919-2020); background: details from three paintings by **Don Connolly**

The Toronto Chapter of the Canadian Aviation Historical Society
invites you to help salute one of our most high-achieving members
~ in a conversation with author & historian Ted Barris ~

at the Canadian Forces College, 215 Yonge Blvd, Toronto
(free parking; informal reception follows)

December 7, 2019 CAHS Toronto Chapter Meeting

Topic: Robert H. (Bob) Fowler – Forgotten or Famous?

Speaker: Geoff Pyne, Chapter 2nd Vice President & Acting Secretary

Reporter: Gord McNulty

Newcomers and guests were welcomed by Eric Roscoe before Chapter Vice President John Bertram introduced Geoff Pyne, his colleague on the Chapter Executive. Geoff served a five-year engineering apprenticeship with de Havilland Aircraft/Hawker Siddeley Aviation in the United Kingdom. His final assignment as an apprentice, and for several years thereafter, was with the flight development department, as a test engineer. He frequently flew on the HS 121 Trident and HS 125 jet aircraft. Geoff's career reflected the ebb and flow of the aviation industry, as he took other short- and longer-term jobs with corporations such as Aviation Traders, British Aerospace and de Havilland Canada, where he managed the activities and flight plans of the prototype Dash 8 regional airliner. After the Dash 8 Series 300 flew, Geoff left the flight test group and joined project engineering on the Dash 8 and the Bombardier Q400. He was later promoted to Manager, Q400 Test Integration, and then Manager, Ground Test Engineering.



Speaker -Geoff Pyne
Courtesy Gusair.com

Like many others, Geoff was “downsized” in 2001, having survived the DHC/Boeing/Bombardier change of ownership and management style saga. After three less than satisfying years in the automotive industry, Geoff joined Field Aviation as Project and Flight Test Manager, where he was involved in planning and flight testing several Dash 8 major modification programs. Now retired after nearly 50 years in the aircraft industry, Geoff is active in several organizations including the Chapter where he promotes membership, meetings and the Facebook page.

In a well-illustrated presentation that “just scratched the surface” of Robert Howden (Bob) Fowler’s phenomenal career, Geoff described Bob as an aviator who was under-appreciated, though recognized by his peers. Bob Fowler was born in Toronto on September 19, 1922. He was employed at Maclean Hunter Limited and Canadian Fine Chemicals from 1939 to 1942. In 1940, he learned to fly in a J-3 Cub at Barker Field, soloing after only six hours and 40 minutes. He joined the RCAF in July 1942, at age 21, and graduated as a Pilot Officer at Moncton, NB in 1943. He was posted to an OTU at Pennfield Ridge, NB, training on Lockheed Venturas. Bob described an unforgettable flight training episode in his article “Ventura Lost,” in the CAHS Journal, Vol 27-1, Spring 1999. He flew for about 3½ hours and travelled only 10 miles from his takeoff point. He was then posted to Bournemouth, England, where he joined 226 Squadron in the 2nd Tactical Air Force, RAF. He endured an exceptionally rough crossing of the Atlantic but the ship arrived safely. He flew combat 48 missions, day and night, in B-25G Mitchell bombers.

On August 26, 1944, Bob had a harrowing experience. His aircraft was hit by flak over Caen. Eighty holes were later found in the bomber. The left engine was hit and the prop became ungovernable, so he reduced power. Fuel was leaking into the navigator’s compartment. The landing gear was unlocked and drooped down. Bob, losing altitude, offered the crew the option to bail out. They refused. Bob followed two other crippled Mitchells into an airfield on the U.S. side. The first aircraft landed safely, but the second flew past the end of the runway and burst into flames. Bob was landing towards a burning airplane, without flaps and hydraulics. The navigator hand-pumped the gear down, but the left tire was shot out. It was a very rough landing, ending in a ground loop. Luckily, the crew quickly evacuated safely, with fuel still coming out of the wing. Bob wrote in the *Journal* that it was sometimes a relief to not fly in formation, often in high concentration. Crews often flew very close to the ground. After the war, he realized he had flown over numerous hazards that he wasn’t aware of.



Lockheed P-38 Lightning Spartan Air Services Ltd.
Photo Courtesy - www.silverhawkauthor.com

Returning to Canada in 1945, Bob enrolled in law at the University of Toronto, but returned to full-time flying the following year. He received a Commercial Pilot's Certificate in May 1946 and became Chief Pilot for Dominion Gulf Company of Toronto, carrying out magnetic surveys over northern Quebec and Ontario. He flew the Grumman Goose and the Consolidated Canso. Bob married his wife, Margaret, starting a 64-year marriage. In 1949, he joined Spartan Air Services based in Ottawa. He spent three years

in the Arctic and northern Canada on photo survey work. He began with Ansons in relatively low level surveys and then modified P-38 Lightnings, flying at 35,000 feet on 100 per cent oxygen. That required pressure breathing oxygen, which is physically demanding. He would cruise at about 400 miles per hour, with one photograph covering 100 square miles. The flying was extremely delicate and demanding. If the crew overlapped the photos, or not overlap the photos, the mission was compromised. The aircraft had to be maintained at level flight for each photo. Each flight was about two hours and 45 minutes, with about one hour and 40 minutes on station. When pilots returned to refuel, they were still on pressure breathing to maintain normal functions. Geoff noted the job paid pilots 27 cents per mile as a bonus. Bob flew about 115 hours in seven weeks to complete the task, about five hours per day. The weather wasn't always good, so they would often do two and occasionally three flights a day --- pressure breathing, requiring precise heading and altitude, rapid climbing and descending. It was a lonely task for the pilot. Bob felt a need for human contact. In fact, he cut a hole in the bulkhead, so he could see through a space in the instrument panel into the bulkhead to see his colleague, the navigator and photographer, doing his work below. It made Bob's job easier as he knew someone else was there.

A fine illustration of Bob flying the Lightning, by Charles Kadin, made the front cover of the *CAHS Journal*, Vol. 43-3, Fall 2005. Bob had to give up the job, as he was getting the bends from the physical impositions. Fed up with his aches and pains, he joined de Havilland Canada as a production test pilot in 1952. He arrived for his interview in an exotic aircraft, a Spartan-owned de Havilland Sea Hornet, the only civil-registered Sea Hornet in Canada. In his new role, he flew many types of aircraft, everything from Lancasters converted for maritime reconnaissance, overhauled North Stars, de Havilland Vampire fighters, the de Havilland Dove and DHC president Phil Garratt's personal Hornet Moth. Bob was also involved in accident investigations. Geoff showed a fascinating National Film Board video of Bob being interviewed about test flying, circa 1954, by Fred Davis. Margaret was also quoted in this video, easily Googled under "Test Pilot - YouTube." Bob was appointed chief production test pilot in 1958 and chief engineering test pilot in 1959. Responsible for final certification of the Caribou, he solved an initial stability problem flying more than 1,000 stalls to establish the final configuration, which included wing fences, stall bars, drooped leading edges and an innovative stick shaker.



DHC-4 Caribou on test flight - Note wing fences outboard of the port engine. Photo - DHC.

Bob also tested an Otter modified for STOL experiments for the Defense Research Board. It was equipped with a General Electric J-85 engine installed in the rear fuselage, with adjustable forward-facing nozzles to enable the aircraft to perform extremely steep approaches. In further testing, the Otter's Wasp engine was removed and replaced with two Pratt and Whitney Canada PT6 turboprops. This aircraft, an unofficial precursor to the famous Twin Otter, last flew in 1965.

From 1972 to 1974, Bob worked at NASA at the Ames Flight Research Center in California. He worked with DHC's Augmentor Wing Buffalo. It was equipped with Rolls Royce Spey engines in place of GE CT64s. A special modified high wing, high tail and slotted flaps enabled the aircraft to fly at extremely low speeds for short landings and takeoffs. Very steep descents at speeds as low as 55 knots (100 kmh) and up to 18 degrees, that could also be frightening, were possible with this large aircraft. Takeoff distances were as low as 350 feet...really impressive for an aircraft as heavy as the Buffalo. Another version of the Augmentor Buffalo was equipped with four Avco Lycoming engines on the top side of the wing as a Quiet Short Haul Research Aircraft. These projects established new performance criteria for STOL aircraft. Bob was pilot in command of several historic first flights. On May 30, 1961, he flew a Beech Expeditor, RCAF HB109, modified to test fly the first PT6 engine, with John MacNeil from P&WC. On September 22, 1961, Bob flew a Caribou modified with two T64 turboprops with Mick Saunders. On Dec. 31, 1963, Bob made the first flight of the Turbo Beaver, CF-PSM-X, with Jock Aitken. CF-PSM-X is now part of the Canadian Bushplane Heritage Centre collection in Sault Ste. Marie.

On April 9, 1964, Bob took the first Buffalo into the air with Mick Saunders and flight test engineer Bob Dingle. On May 25, 1965, Bob made the first flight of the Twin Otter with Mick Saunders and flight test engineer Barry Hubbard, who attended our meeting. Bob did test flights with the Twin Otter on floats, at Toronto Harbour, and many years later an armed military version of the Twin Otter. On March 27, 1975, Bob made the first flight of the Dash 7 with Mick Saunders and flight engineers Jock Aitken and Bob Dingle. Geoff, after arriving at DHC from the U.K., first worked with Bob on a Dash 7 flight plan.



DHC Otter modified for STOL Research. Photo - DHC.



The NASA- DHC Augmentor Wing Buffalo Photo - DHC.



The RCAF C45 Expeditor - Modified Test Vehicle for the PT6 Engine Photo Courtesy - P&WC.



The Prototype TurboBeaver CF-PSM-X now at The Canadian Bushplane Heritage Centre Photo by Kenneth I. Swartz

Photo No. 1525TB1.



First flight of the prototype Twin Otter on May 25, 1965 with Bob Fowler at the controls. Photo - DHC (2)

In May 1976, they participated in a sales tour, visiting 15 different cities in the U.S. Following the tour, take-off and landing performance measurements were taken at an airfield in Arizona, with a Transport Canada pilot as part of the team. On June 20, 1983, Bob flew the Dash 8 with Mick Saunders. Also on board were flight engineers Don Band and Geoff Pyne. In late 1986, the first Dash 8-100 was set for delivery to Newmans Airways in New Zealand. It arrived in Christchurch, but a problem arose. Newmans had

numerous runways where they needed high crosswind clearance. The maximum demonstrated crosswind on the Dash 8-100 was 22 knots, which the New Zealand authorities interpreted as a "limitation." No one else in the world had such a limitation. Bob was asked to fly the aircraft in crosswinds to satisfy New Zealand authorities, but suitably strong crosswinds were not found. Alas, the New Zealand people insisted the rule had been in place since the DC-3 and they weren't about to change it. A much higher crosswind was demonstrated at Downsview a few months later, which allowed Newmans a full operational capability. Geoff recalled he and Bob were sent off to Queenstown, NZ, on a Dash 7 for a ride on a jetboat. It carried about a dozen people down a causeway on a turbulent, rock-strewn river. "It was the only time that I saw Bob Fowler with white knuckles," Geoff remembered. "When Bob left that boat, he and I were shaking. He was quite upset." On May 15, 1989, Bob was co-pilot on the first flight of the Dash 8-300 with Wally Warner, who was also in attendance, Dave Monteith and Lee Fasken.

Bob's many awards included the McKee Trophy in 1974. The citation for Canada's highest award in aviation commended his ability to perceive problems and communicate with engineering associates, making invaluable contributions to the design and development of Canadian aircraft. Bob was made an Officer of the Order of Canada in 1975, a modest man who was acknowledged for his lifetime of achievement and service to Canada and humanity at large. In 1980, Bob was inducted into Canada's Aviation Hall of Fame. Bob was also a Fellow of the Canadian Aeronautics and Space Institute and a member of the Society of Experimental Test Pilots. Bob retired in September, 1987, after 35 years with DHC. He



The Dash 8 at Farnborough 1984 Photo Courtesy - Steve Fitzgerald - Wikipedia

remained busy in “retirement” as an active member of Riverside-Emery United Church in Toronto, delivered Meals on Wheels with Marg until he was 87, and enjoyed our Toronto Chapter meetings as a regular attendee. He received the Queen’s Diamond Jubilee Medal in 2002. His descriptive CAHS *Journal* articles are excellent.

Geoff noted that remarkably enough, for such an expert, Bob was not a trained test pilot. His skills were honed in dangerous wartime and challenging survey flights. Nor was he a trained engineer. He spent considerable time conversing with engineers to understand what aerodynamic and performance testing would prove, as well as understanding engine, propeller and other aircraft system tests. He absorbed technical information until he was absolutely comfortable with it. During a 49-year career as a professional pilot, Bob flew more than 15,000 hours on 60 types of aircraft. Bob died peacefully at home on Aug. 23, 2011 in his 89th year. As Geoff said, “He was quiet, unassuming, self-deprecating and always willing to listen.” He was an inspiration to those who followed him and “truly a Canadian aviation treasure.” Bob’s contributions have been well documented and will never be forgotten. John Bertram thanked Geoff and presented a gift for his comprehensive and much-appreciated presentation.



The Dash-7 Regional Airliner. A type that Chapter 2nd V-P Geoff Pyne spent many hours in as a Flight Test Engineer. Photo - CASM

Folded Wings



The Chapter was extremely saddened to learn of the passing of **Russell (Russ) Bannock (CAHS #2491)** on January 4, 2020 in his 100th year. Russell Bannock DSO, DFC was born in Edmonton, Alberta on November 1, 1919. Russ completed his early education in Edmonton and later studied geology at the University of Alberta night school. Russ had a strong interest in aviation and obtained his Private Pilot’s Licence in 1938 at the Edmonton Flying Club and his Commercial Licence the following year. At the start of World War II, Russ joined the RCAF and was commissioned as a Pilot Officer. Russ completed his advanced training at Camp Borden and was posted to No. 112 Army Co-operation Squadron in Ottawa, then to the Central Flying School at Trenton in 1940 as a Flying Instructor. In September, 1942 he was posted to the No. 3 Flying School at Arnprior as Chief Instructor.

Russ requested an overseas posting and this was granted in 1944. He proceeded to No. 60 OTU in Shropshire, England and then to No. 418 Squadron RCAF in June of 1944. He was soon flying de Havilland Mosquito’s on intruder missions over Europe. Promotions happened rapidly and by October he was given command of the squadron. Within this time period, Russ with his excellent Navigator and friend, F/O Robert Bruce, were also involved in the destruction of Germany’s “Terror Weapon”, the V-1 Flying Bombs that were targeting southern England and London. This team were very successful in downing the V-1’s and for this and the intruder missions, Russ was awarded the Distinguished Flying Cross (DFC) to which was added a Bar as was his navigator. In November of 1944, Russ was posted to 406 Squadron as C/O and was later awarded the Distinguished Service Order (DSO) for his outstanding leadership in that command. By April 1945, Russ had 11 enemy aircraft and 19 V-1’s destroyed to his credit, which gave him standing as Canada’s 2nd highest scoring fighter “Ace” in WWII. He also gained the title as the “Saviour of London”.

Postwar in Canada, he joined the de Havilland Aircraft Company of Canada, and was soon taking the famous DHC-2 “Beaver” on it’s first test flight. A series of promotions led to his becoming the company President and CEO by 1975. He left the company in 1978 to return to Bannock Aerospace Ltd., a company that he had established previously. A Memorial Mass was held for Russ, on January 10, 2020 at the Church of the Blessed Sacrament in Toronto. The Chapter wishes to extend its deepest condolences to the Bannock family. Attending the Funeral Mass for Russ Bannock’s were Chapter President, Sheldon Benner, along with Chapter Executives / Members, John Bertram; Gord McNulty; Brian Munro; David Poissant and Bill Tee. *Files from the Chapter / Canada’s Aviation Hall of Fame (CAHF)*

Chapter News & Views February 2020

Mississauga Avro Arrow Replica Update

As reported in a previous issue of “Flypast”, the City of Mississauga decided in 2019 to proceed with its own full-scale replica of the outstanding Avro Arrow interceptor that was being developed for the RCAF. This action was deemed necessary due to the fact that the excellent Arrow replica that was built at Downsview had found a new home at the Edenvale Aerodrome. The City was able to obtain scans of the Arrow nose section at the Canada Aviation and Space Museum at Ottawa as well as information from former Avro employees which has contributed to a very accurate data base. City of Mississauga, Councillor Carolyn Parrish, advises that work contracts are being signed with work to commence shortly. Site preparation started in late Fall 2019 at Paul Coffey Park on Derry Road. A new “Malton” sign has been erected with the “Arrow” to be located directly behind. Source - Bill Tee & Bob Winson, Mississauga Arrow Committee.



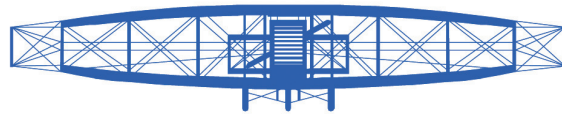
E- Beaver

On the morning of December 10, 2019, a converted electrically-powered deHavilland DHC-2 “Beaver” lifted off from the Fraser River in Vancouver, piloted by Harbour Air CEO, Greg McDougall. The Beaver was equipped with a very powerful MagniX electric motor. The motor was built by the MagniX Company of Redmond, Washington. The motor was called the Magni 500 and rated at 750 Hp (560 Kw), but downrated to an equivalent 450 Hp so as to match the power requirement for the Beaver airframe. The battery pack, located in the belly, in place of the usual fuel tanks, utilized the Lithium Iron technology in place of the more volatile combination.

Aviation critics have complained about the press release that called the flight the “First Electric Commercial Airplane”, instead of an “Experimental or Prototype Flight”. Nevertheless, CEO Greg McDougall stated that Harbour Air was planning to launch passenger-carrying flights by 2022, following further testing and development and certification trials. He felt that zero-emission electric power was ideal for the short haul coastal B.C. operations that are the heart of the company. Regardless of future outcomes, the flight will go down as a “World-First” event in Canada’s aviation history. *Courtesy - Harbour Air Files*



The E-Beaver taking off December 10, 2019 on its first flight piloted by Harbour Air CEO Greg McDougall.
Photo Courtesy - Harbour Air



CAHS Toronto Chapter Executive 2019-2020

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The Chapter is a proud sponsor of the “**Don Rogers Memorial Scholarship**” at Georgian College.

Contacts

President: cahsnatmem67@sympatico.ca
 Tel: (416) 923-3414

Websites: www.cahs.com/cahs-toronto-chapter
www.torontoaviationhistory.com

 Canadian Aviation Historical Society - Toronto Chapter

Mailing Address: Canadian Aviation Historical Society,
 Toronto Chapter
 65 Sussex Avenue
 Toronto, Ontario
 M5S 1J8