Virginia Aviation History Project

An Airplane for the Antarctic

by Linda Burdette

*T*his story is about Admiral Richard Byrd's airplane - and not just one of the many airplanes he owned throughout his life, but about NC8006 which is currently housed in the Virginia Aviation Museum. Like many of the airplanes in museums now, the history of NC8006 varies between highs and lows and lends itself to a bit of controversy.

Born in Winchester, Virginia and a descendant of John Rolfe and his wife, Pocahontas, Richard Evelyn Byrd was a naval officer, a pioneering American aviator, and a polar explorer.

The history of NC8006 actually begins in 1922 when Sherman Fairchild designed the Fairchild K-3B, an aircraft so modified for aerial survey and photography that it could be called an aerial camera. When the K-3B became standard equipment for the U.S. Army, Fairchild built on that success by establishing the Fairchild Aviation Corporation in 1924 to support civilian aerial pursuits. Prior to this time, camera aircraft had open cockpits and were quite underpowered, so Fairchild designed and built the Fairchild Cabin Monoplane, FC-1. The FC-1 was luxurious by the standards of the day. It featured an enclosed cockpit and a cabin area with room for five passengers or a smaller number of photographers and cameras, depending on the equipment. As one would expect from a camera airplane, visibility was outstanding, with windows in the front, sides, and even the floor of the aircraft. The FC-1 also sported a feature that was to become a hallmark of the Fairchild aircraft, semi-cantilever wings which folded back along the fuselage to facilitate movement and storage of the aircraft on the ground and allowing easier ground transportation on railway cars. The FC-1 was a prototype which never went into production, but the FC-1A was quite successful and was followed by the FC-2 which sported a 4-longeron design for the fuselage. But the precursor to NC8006, and the airplane which most likely first caught Byrd's attention, was the FC-2W developed with bush pilots in mind. This model not only sported six additional feet of wingspan, but a Pratt & Whitney Wasp 400 hp radial engine for increased speed, range, and

payload. It was a bush pilot's dream.

But not resting on his laurels, Fairchild then produced the FC-2W2 which had a longer fuselage and larger ailerons. This gave it excellent short field and climb characteristics and it became a popular work horse in some of the most rugged terrain in the world. Still sporting the Pratt & Whitney Wasp radial engine, the fabric-covered aircraft included a fuselage and tail assembly of welded steel tubing and a horizontal stabilizer which was adjustable in flight. The wings were made of spruce spars, and spruce and plywood ribs covered by fabric. It seemed ideal for the type of rugged work that Byrd would need during the expedition, but first it was pulled off the production line for extensive modifications to adapt it for work in the harsh Antarctic environment. Among these modifications were changes to the cabin to allow space for a pilot, navigator, radio operator, writing desk, cameras, a drift meter, and survival gear. No other passengers were accommodated. Other significant modifications were an extra 40-gallon gas tank in each wing and a 72-gallon tank in the cabin. It was adapted for a ski undercarriage which required a 10-foot landing gear spread. Named the Stars and Stripes, the purchase was actually funded by George Hann, a Pittsburgh businessman, as a contribution to Byrd's expedition.

Shown here during the Antarctic expedition, the Stars and Stripes was fitted with special skis and extremely strong landing gear. It quickly became a real workhorse for the expedition, known for its mapping, reconnaissance, aerial photography and rescue work, including the rescue of the crew of a downed Fokker in March 1929.

NX8006 was delivered on August 9, 1928 and flown to the Naval Air Station at Hampton Roads, Virginia, where it was disassembled crated, and loaded on a Norwegian whaling ship for the trip to Antarctica. The Stars and Stripes was certainly not alone on that trip. Byrd had the largest and best-equipped team that had ever traveled to Antarctica. Departing in October 1928, the four ships carried three airplanes, 95 dogs, 650 tons of supplies, and 42 men, and took two months to reach the destination. In addition to the Stars and Stripes, the airplanes included a Ford Trimotor called the Floyd Bennett and a Fokker Universal monoplane called the Virginia.

Upon arrival, the team immediately set up their base camp called Little America on the Ross Ice Shelf and began their explorations by dog sled, snowshoe, snowmobile, and of course, airplane. On January 15, 1929, the Stars and Strips made its first flight over the Antarctic continent.

Another major first occurred on January 25, 1928, and is of interest to aviators, especially considering the importance of radio communications and navigation. The New York Times had obtained exclusive publicity rights to the endeavor and on that day, expedition personnel established a live two-way Morse Code communication link between the Antarctic and New York City, a distance record of 10,000 miles.

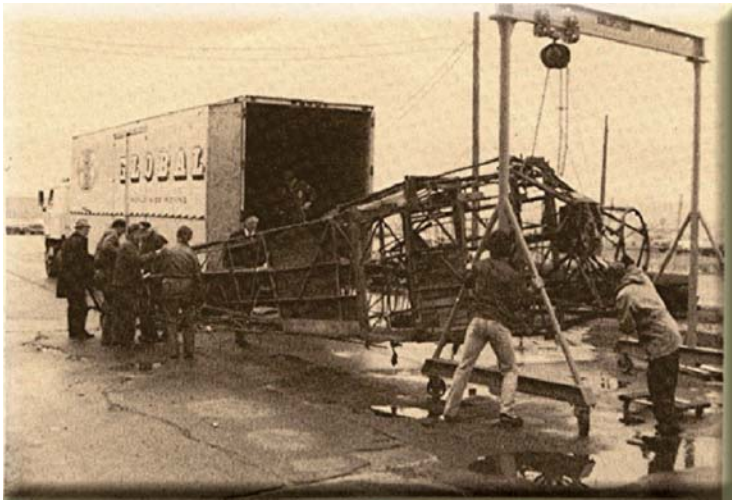
On November 29, 1929, Byrd was finally able to fly the Ford Tri-Motor, Floyd Bennett, over the South Pole and back in 18 hours, 41 minutes. He was accompanied by pilot Bernt Balchen, radioman Harold June, and photographer Ashley McKinley. But while the Floyd Bennett garnered the attention and publicity as the first flight over the South Pole, the Stars and Stripes became the workhorse of the fleet

Harold Jane (pictured) was one of the pilots for NC8006 during the Antarctic expedition. Here he is holding an antenna wire which leads to a drag wire under the wing. It's easy to see from the clothing and surroundings that this picture was not taken in the Antarctic. Photo courtesy of Long Island Early Flyers Club, www.longislandearlyflyers.org.

all through 1929 and 1930, safely completing mapping and reconnaissance flights, providing a stable foundation for thousands of aerial photographs of previously unexplored land, and conducting several rescue missions, including the rescue of the crew of the downed Fokker in March 1929.

Byrd and his crew left the Antarctic in January 1930 and one of their last tasks was an incredible gamble. They prepared the Stars and Stripes for storage, folded the wings, and buried it in a hangar made of ice and snow. There it sat for almost four years until they returned in December 1933. The odds of even finding the snow hangar after so long were astronomical, but not only did they locate it, they removed the Stars and Stripes, returned it to flying condition, and conducted reconnaissance flights with it until the expedition returned to the United States in early 1935. Unfortunately the return trip to the United States was much less favorable for the Stars and Stripes than four years in an ice hangar. After successfully flying 187 hours in the Antarctic, the airplane's fuselage was severely damaged when it was loaded aboard ship.

Upon return to the States, Byrd sold the Stars and Stripes to Alton Walker, who transported it to the Fairchild factory in Hagerstown, MD, for major modifications. Factory records show that the airplane was fitted with new wings, stabilizer struts, landing gear, tail skid, wheels, brakes, tires and tubes, fairings, fuselage, fuselage doors, and windows. Ailerons, wing flaps, and tail surfaces were all repaired in accordance with then-current Fairchild specifications and the entire airplane was recovered and refinished, including all cowlings. A new Pratt and Whitney 9-cylinder 420 Wasp B engine was installed along with a three-bladed propeller, battery, starter, flares and landing lights. The additional gas tank in the cabin was removed and the extra tanks in the wings were disconnected and sealed. Thus the modifications which enabled it to be so successful in the Antarctic were effectively removed and it was approved for a tail number of NC8006 rather than the original NX8006. This



The frame of NC8006 being delivered to the Cradle of Aviation Museum for restoration by volunteers. This picture shows the poor state the airplane was in. The extensive refurbishments undertaken over the years have led to controversy over how much of the current airplane is historically significant, but for the final restoration in the early 1980's the Cradle of Aviation Museum even brought in mechanics who had helped repair the Stars and Stripes after the Antarctic expedition to ensure the accuracy of the restoration. Photo courtesy of Long Island Early Flers Club, www.longislandearlyflyers.org.

complete refurbishment, along with subsequent work done to the airplane, has raised questions

about the historical significance to the airplane, despite the fact that the Smithsonian later returned it to original condition.

Walker kept the airplane for two years during which he conducted a barnstorming tour of sorts. The airplane was fitted to carry six passengers and Walker charged 50 cents a ride per person. He logged 304 hours around the United States and carried thousands of passengers. He eventually offered the airplane to the Smithsonian Museum, which declined the offer. So in June, 1937, Walker sold the aircraft to Fairchild Aerial Surveys, Inc. (FAS), which wanted to return it to original use as a camera and aerial survey plane. FAS reconnected the extra wing fuel tanks and reinstalled the camera gear. Because of the extra weight, it was designated as a three-place aircraft. FAS records are scarce concerning who flew it and what projects it supported. There are indications that in December, 1938, there were plans to fly it from the US to Guatemala and back, and in February 1940, it was scheduled to fly to Ottowa, Canada, to demonstrate solar navigation to the Canadian Institute of Surveyors, but there are no signs that either trip was actually undertaken. It is known that FAS completed 1,534 hours of flight time in NC8006, but in July 1942, it was retired and cannibalized for two other Fairchild aircraft. The treatment of this airplane from 1935 through 1954 illustrates the challenges faced by aviation historians today. So many historically significant aircraft were returned to service and repaired, refurbished, and modified in the interests of continued service, that it is sometimes difficult to actually identify which parts, if any, were actually part of the historical events for which the aircraft is known.

A dearth of records on the airplane continues throughout World War II and afterward. But it resurfaces again on September 9, 1954, when it was sold to Red Jensen in California. In 1957 Fairchild Corporation bought the parts, but after inspection and recognition of the changes that had been made in it over the years, the decision was made not to restore it. Paul Garber of the National Air Museum (later National Air and Space Museum) realized the historical significance of the aircraft even in its condition and offered to take it in 1961. There it remained until 1982, when the National Air and Space Museum requested the Cradle of Aviation Museum, Garden City, Long Island, New York, handle the restoration. Completed in 1989, the restoration was a major effort to restore the airplane to its original configuration under Byrd. The museum even enlisted the help of mechanics who repaired it after shipment back from the Antarctic. Not only was it stripped, recovered, and painted, but one of the volunteers recreated the original skis by hand.

Upon return to the Smithsonian, it was loaned to the Virginia Aviation Museum, a fitting tribute for one of Virginia's favorite sons, Richard E. Byrd.

These two pictures are possibly the only ones showing NC8006 in flight in its earlier configurations. They were taken sometime in the 1930s or early 1940s when the airplane was operated by Fairchild Aerial Surveys and are attributed to Frederick William Binger, a pilot/aerial photographer for Fairchild Aerial Surveys from the mid-1930s to the mid-1950s. Photos courtesy of Steve Binger on behalf of Frederick William Binger and Davis Monthan Aviation Field Register, http://www.dmairfield.com.