AVIATION PIONEER

Picture yourself in Orlando, Florida, in the early 1900s reading the *Orlando Morning Sentinel* when an article catches your eye:

by Patricia Patterson Allen

"A Youthful Machinist"

"In the window of the McElroy Drug Company may be seen an excellent model of a flying machine built by young George Patterson of this city, which shows not only a very retentive memory, he having seen several of the most celebrated machines exhibited in this country, but a remarkable degree of inventive genius. Those who have never seen a flying machine will do well to call by McElroy's and take a look."

The young George Patterson who built the first "flying machine" model seen by the residents of Orlando had moved to Orlando from Brookline, Massachusetts, in 1901 with his parents who had retired there. They had considered Miami Beach first but, finding nothing but miles and miles of sand dunes, chose Orlando, a town of about 2,000 with no paved streets and no national banks but boasting 33 beautiful pristine lakes in the city limits. James Clifford Patterson, George's father, started the first bank in Orlando to have a place to put his money. His mother, Mary Gill Beatty Patterson, became President of the Equal Suffrage League and was the first woman to vote in Orlando in the presidential election of 1920.

Young George grew up with all the advantages that his well-to-do family could provide, including his own rifle and the use of their private hunting preserve. But his sights were set on the sky and, from an early age, he longed to soar like the birds he hunted. He greatly admired the Wright Brothers and kept voluminous scrapbooks of early "flying machines" including hot air balloons, which had successfully flown overseas. His avid interest in flying led him to secure a job as one of the young mechanics of Lincoln Beachey, the famous pioneer aviator who made Orlando's, and Florida's, first recorded flight in 1910 at the local Fairgrounds. It was Orlando's first Fair since the 1895 freeze and was celebrated by an automobile parade down Orange Avenue. The cars, decked with flowers, held the belles of the town riding beside dashing young men sporting colorful blazers. But the main attraction was to be the city's first air show. The management of the Orlando County Fair Association, seeking to attract crowds to its exposition, had decided to feature aviation. They did not contract with just one aviator but shrewdly offered a prize of $1,500 to any flyer who

Captain George Beatty Patterson.
(Photo: Author's Collection)

could stay up in the air five minutes at one time. Three contestants appeared with their airplanes; two crashed, but Lincoln Beachey flew his Curtis bi-plane built by the Wright Brothers for five minutes at one time and collected the prize. This famous pioneer pilot, known as "the man without nerves" not only stayed in the air five minutes, but flew every day of the Fair. Beachey continued his flying exploits and set standards for the rest of the world by flying at night over Tampa in March 1911. Young Patterson was one of a dozen boy "helping assistants" who traveled with Mr. Beachey and helped him in his flights. On the return trip from Tampa, they stopped to give air shows in Ocala and Gainesville. It was at one of these shows that Pilot Beachey used oranges as dummy bombs to show witnesses how easy it would be to blow up ships or armies with dynamite. (Little did young George dream that he, would one day be involved in bombing a battleship with General Billy Mitchell to prove air superiority.) Beachey, the first American

to "loop the loop" in 1912 was later offered $50,000 to cross the Rockies in a plane and make it to California. However, a storm swept him out to sea and he was lost. His widow received the $50,000.

As war clouds loomed, Patterson dreamed of becoming a military pilot. After graduating from Asheville School for Boys in North Carolina, where he introduced his school mates to flying machines by demonstrating his models, and attending the University of Pennsylvania, he volunteered to be a student pilot in the Aviation Section of the Signal Enlisted Reserve Corps. By the end of February 1917, three pilot training schools had been established due to increased appropriations and the likelihood of the nation entering the conflict in Europe. Patterson was assigned to the pilot training school at Chandler Field, Essingten, Pennsylvania, where he learned to fly in a 1913 seaplane. The new pilot described the experience as "flying with the engine on the back of your neck." After flying in N-9 seaplanes through September 1917, he accepted a commission in the Officers Reserve Corps. His first solo in a Curtiss "Jenny" JN4A "land machine" was on October 16, 1917. The "Jenny" was a structure of wood and cloth held together by a maze of wire. Without the wire, it was said the "Jenny" would never have gotten off the ground. It was initially powered by a 90 hp Curtiss engine.

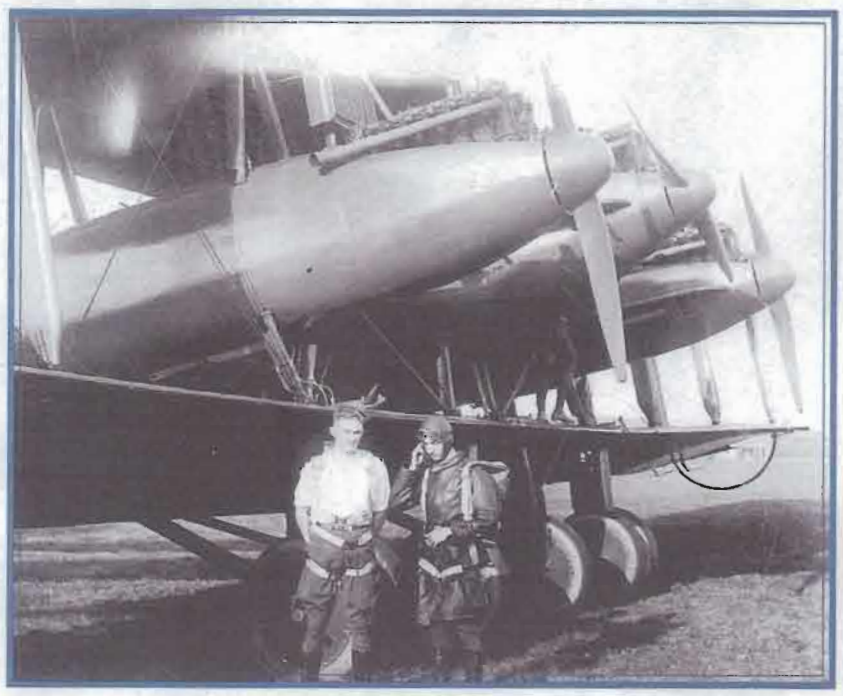
Maj Rudolph "Shorty" Schroeder, February 7, 1920 prior to setting the high altitude record. (Photo: Author's Collection)

After a short stint as a 1st Lieutenant at Selfridge Field, Mt. Clemens, Michigan, he was transferred to Gerstner Field, Lake Charles, Louisiana, where he was rated as a "scout pilot." This meant that he would fly the smallest, fastest and best climbing planes of the single-seat fighting type that were built. After "assembling" the planes, he instructed recruits in cross-country and formation flying. In his next assignment as a 1st Lieutenant at Wilbur Wright Field, Dayton, Ohio, he was head of the Technical Data Section and officer-in-charge of "assembling" and testing the airplanes.

In October 1917, McCook Field was established as an aeronautical experimental station by the Signal Corps. On October 11, 1918, Patterson was promoted to Captain in the Regular Air Service (Aeronautics). He served as Assistant Chief, Flight Test Branch, as well as performance test pilot at McCook Field. During this time, he developed the first scientific methods of measuring flight test performance. His book: "Practical Airplane Performance Test Flight," is on display in the National Air and Space Museum, Smithsonian Institution, Washington, D.C. Displayed on the wall under "Flight Test Manuals" a statement reads:

"From the time of the Wright Brothers, pilots of experimental airplanes recognized that they required a systematic method to govern the testing of new production and research aircraft. Early flight test manuals epitomize the standard practices of the time. All stressed the importance of accurate record keeping by means of a clipboard and pencil. Capt George Patterson's 1919 Manual warns that: "Fountain pens should not be used as the ink will freeze at high altitudes."

Capt Patterson was present to calibrate the instruments and verify the results on February 27, 1920, when Maj Rudolph C. "Shorty" Schroeder set the one-man altitude record of 37,850 feet in a LePere biplane (P-53) with a Liberty engine and a Moss supercharger. The newspaper accounts were so sensational at the time that there were many "non-believers" according to the McCook Field house organ. The plane was loaded with a three hours' supply of fuel and four hours' supply of oxygen. Maj Schroeder looked like an Eskimo in his furlined flying suit, gloves, moccasins and a helmet covering his entire head. His oxygen "snoot" gave him the appearance of a being from another planet. At 25,000 feet, his oxygen supply stopped due to the freezing of the automatic regulating valve. He changed to the emergency tank and was about to cut his engine, preparatory to a spiral descent, when he lost consciousness. The aircraft fell wildly out of control from 38,000 to 2,000 feet, exposing his eyes to the frigid blasts of air. He must have removed his goggles because of the frost obscuring his vision. At 2,000 feet, he was jarred back to partial consciousness due to rapid change of pressure. His eyes were frozen, his lungs poisoned with carbon monoxide gas from the exhaust and his body chilled to the bone. Miraculously, Schroeder was able to shut off his motor and land at McCook Field with limited vision! Within a month, thankfully, Shorty was back to normal. In 1945, he was awarded the Distinguished Flying Cross by the War Department which stated: "From September 1918 to February 1920, as an Army test pilot, Maj Schroeder voluntarily flew a series of high altitude test flights which provided basic high altitude data responsible in a large measure for the success of the United States Army Air Forces in World War II." Patterson pointed out in his notes that there must be corrections applied to the reading of airplane instruments in order to determine the true altitude reached. The reason for the discrepancy in the true altitude reached and the altitude recorded by the instruments was that the instruments used on airplanes for indicating height read correctly for one temperature only. The atmosphere was subject to expansion and contraction with changes in temperature. Patterson wrote that, due to the cold air found at altitudes of 20,000 feet and over, the aneroid barometer nearly always read



The LWF "Giant"—designed for US Army Air Service—first official trial flight over Mitchel Field, Long Island. Captain George Patterson is on the right.
(Photo: Author's Collection)

from 3,000 to 4,000 feet too high. Although the indicated altitude was 33,350 feet, the correction for temperature existing between the ground and the highest point reduced the indicated altitude to a true altitude of 31,800 feet above sea level. The instruments were sealed and calibrated and the results of the climb computed by Army officials at McCook Field. The method used in calculating this altitude being the same as that employed by the Bureau of Standards. The instruments were also calibrated by the Bureau of Standards just prior to the flight. Patterson wrote to the Altitude Laboratory, Bureau of Standards, in Washington, D.C. raising several questions regarding the methods of calibrating the barograph used in Maj Schroeder's altitude flight and the methods used in reporting temperature calibrations. His suggestions proved of value in flight test work and increased the accuracy of their results.

In their infancy at old McCook Field were turbo superchargers, controllable pitch propellers, bullet-proof gasoline tanks, camouflage, .50 caliber machine guns and 37 mm cannon, armored plate for pilot and crew, parachutes and pressure cabins. In later years, Patterson said: "Our engineers and test pilots of that day just about anticipated everything we have-except radar. We're flying at high altitudes today just because Schroeder and others risked their necks with primitive oxygen equipment to see how we could withstand flight through the upper air."

In June 1920, Patterson flew the largest airplane built in the United States up to that time in its first official trial. The "Giant," described in the *New York Times* of June 1920 as a "Monster Airplane" was designed and built at the L.W.F. Engineering Company's plant at College Point, Queens, Long Island, New York. It was a bi-plane equipped with three 12-cylinder Liberty motors with a total of 1,200 horsepower. The huge machine measured 106' wide from wingtip to wing tip and had two fuselages, each 50 feet long and a large nacelle in the center capable of accommodating a crew of four. It was built to be used as a bombing plane to replace the dirigible balloons that had been used in the war for such work. It could remain in the air 16 hours at 110 mph and carry a 7,776 pound load. Captain Patterson gave the "Giant" its final test prior to turning it over to the United States government.

By 1921, the Air Corps had freed itself from the Signal Corps and had become a full-fledged arm of the Army. Brigadier General William "Billy" Mitchell, Chief of the new Army Air Service, in testimony earlier before the House Appropriations Committee, had startled members of Congress by saying the airplane had "obsoleted" the battleship. He testified:

"The air will prevail over the water in a very short time. An Army fights on land, a Navy on water, but an Air Force over both. We can tell you definitely now that we can either destroy or sink any ship in existence today. All we want to do is have you gentlemen watch us attack a battleship."

General Mitchell added that he could build a thousand airplanes for the cost of one battleship. In the midst of the resulting media frenzy, a test was authorized and Mitchell selected the Martin bomber bi-plane to prove the point. Martin bombers were rugged and adaptable, serving as the line bomber of the Air Service and, later, the Air Corps, until 1928, with some continuing in use as late as 1931. The targets selected were four German combat ships, including the Ostfriesland battleship, considered unsinkable. Five days were scheduled for the tests—June 12, 13, 18, 20 and 21, 1921. McCook Field officers, including Patterson, flying out of Langley Field, Virginia, had a prominent part in the bombing tests. The Ostfriesland was sunk in 21 minutes. Army and Navy officers and newsmen observing the awesome show of aerial superiority were stunned. Although Patterson was familiar with the Martin bomber and had tested them at McCook Field, he flew a big Navy F-5-L plane during the tests. These ships acted as protecting planes for the Martin bombers that were taking part in the bomb dropping. In case one of the planes was forced down, the F-5-L planes came to the crew's rescue. Fortunately, none of the bombers had to come down on the water, except in one instance where the plane was forced down beside a destroyer which took on the crew. Several of the bombing planes made forced landings, but were able to reach the coast without difficulty.

The local Dayton newspaper quoted Patterson:

"The record made by the planes in flying out long distances from the shore, participating in the tests, and then re-

turning to the base was one long to be remembered. Navy men were much surprised and chagrined to see the amount of damage that could be done by the bombers. The tests proved the reliability of aircraft in combating an enemy fleet. It was not believed possible by Navy men that a battleship could be destroyed in 25 minutes. Their belief was that it would take hours before that amount of damage could be done."

The Army had achieved their purpose of portraying the superiority of air power over sea power. The results of the tests clearly demonstrated that the airplane was now the nation's first line of defense. Within a year, a Navy Bureau of Aeronautics was organized to put planes on battleships and start producing aircraft carriers.

Capt Patterson married Eugenie Huffman Ohmer of Dayton whose uncle owned a 100 acre farm along the eastern shore of the Mad River, a tributary of the Miami River, about 8 miles East of Dayton. Torrence Huffman offered the property to the Wright Brothers rent-free provided they keep the farm gates closed to prevent their horses and cattle from wandering away! When the Wright Brothers completed the hangar that housed the Wright Flyer II, they had erected the "first airport in the world."

Gen Mitchell's bombers sink the Ostfriesland.
(Artist: Robert Lavin; Author's Collection)

The newlyweds' first assignment after their wedding was Nichols Field in the Philippines. Maj B. Q. Jones sent a letter to Dayton asking Patterson to bring certain items on the boat with him, including parachutes, machine gun ammunition gauges, and wind vane pumps for the leak-proof tanks of the DH-4s! The De Havilland DH-4, originally a British combat airplane, had been used by the U.S. Air Service in France and had the nickname: "The Flaming Coffin." After Patterson lost close friends in airplane crashes (and encouraged by his bride,) he resigned from the Regular Air Service in 1922 and returned to Orlando. Always interested and active in aviation, Patterson was elected to the City Commission in Orlando in the late 1920s and spearheaded the building of the Orlando Municipal Airport. The airport opened in 1928 at a cost of $24,000. Patterson was the first Florida City Commissioner, if not aviator, to pass the exam for a Transport Pilot's license at the Orlando Airport in 1929. That same year, airmail service was introduced to Orlando; the pilot had to toss his parachute out of the one-seater Pitcairn Aviation Company plane to make room for the mail!

Patterson resigned from the Orlando City Commission in 1930 to join Curtiss-Wright Aircraft and, later, the Technical Aviation Department of Socony Vacuum Oil Company in New York City. He continued to fly Stinsons and other company planes on business until 1934 when he was a passenger in a Bellanca monoplane that crashed in Pennsylvania. His back was severely injured so he flew very little after that. As a result, when he returned to active duty with the Army Air Corps in 1942, he was placed on "limited service." He became a Colonel in the Air Technical Service Command (ATSC), at Wright Field where he and his family lived in the officers' quarters' prior to his retirement to Orlando. He died at home on June 15, 1968 at the age of 73.

George Beatty Patterson became an active member in the Order of Daedalians on September 9, 1938. He not only lived to see the full circle of aviation history from his idols, the Wright Brothers, to the Space Age, but was part of it. He used to say: "The fliers of today aren't doing a thing that we didn't do in 1917 and 1918 ... they just do it faster." There was a sign on the main hangar at old McCook Field that read: "This field is small! Use it all." The field was small, but large enough for the planes of that day. Those early pioneers "flew by the seat of their pants," but tested early devices which are in use today. Peacetime, as well as wartime, aviation has been influenced by these early pioneers. With apologies to Tom Brokaw, this writer is not so sure that these daring aviation pioneers weren't "The Greatest Generation."

About the Author

Patricia Patterson Allen, daughter of the late Colonel Patterson, is a hereditary member of The Order of Daedalians and member of Space Flight 6 at Patrick AF Base, Florida. A former teacher and administrator in the Orlando schools and Florida Department of Education, she lives in Winter Park, Florida, and has one son, Stephen, a location and architectural photographer. Her brother, Brigadier General George K. Patterson, USAF (Ret), lives in Binghamton, New York.

ANOTHER PATTERSON: Patterson Field (now Wright-Patterson) in Dayton was named after Lieutenant Frank Stuart Patterson, a member of a prominent Dayton family. Lieutenant Patterson and his observer, Lieutenant Leroy A. Swan, were killed in a DH-4 crash while conducting a flight test at Wilbur Wright Field on June 19, 1918. His father, Frank Jefferson Patterson, was a co-founder of the National Cash Register Company.