

THE FLYING PIONEERS

CHARLES F. WILLARD
Early Curtiss Aviator — Engineer — Manufacturer

By HAROLD E. MOREHOUSE



Pioneer aviator Charles F. Willard was undoubtedly one of the most noteworthy early aviators in the United States. Self-taught on the first aeroplane ever sold commercially, he originated the early exhibition business to demonstrate man's ability to fly to people everywhere. He flew with, and was one of, the greatest early "Birdmen" in all the first famed air meets where immense crowds gathered to see the amazing spectacle of the flying machine. He entered the flying game with seasoned mechanical judgment and a good knowledge of engines, and became a methodical, conservative aviator who had few accidents even though he flew the very first planes.

Willard was born at Melrose, Massachusetts October 13, 1883, attended grade school at Hull, Massachusetts, High School in New York, and went on to Harvard University. Mechanically inclined, he loved automobiles and soon became an expert on motors, operating a shop in New York from 1904 to 1907, specializing in the care and maintenance of foreign cars. In 1907 he went to Europe to investigate serious difficulties with the French Rocket-Schneider cars at their factory and during this period became acquainted with Stanley Y. Beach who was Auto-

EDITOR'S NOTE: Dominguez field, located south of Los Angeles on the way to Long Beach, California, was the site of one of the most successful air meets in the world, from January 10th to 20th, 1910. Headlines were made daily as the pioneer flyers set record after record for altitude, speed and distance. Aviation's most famous personalities were there to compete, including Charles F. Willard, who lives today in Southern California.

Dominguez Field is being covered by the construction of new buildings for California State College of Dominguez Hills. Construction is due to start the day after the holding of ceremonies commemorating the Air Meet, on May 9-11. It seems appropriate at this time to publish Mr. Morehouse's biography of Charles F. Willard. Charles K. Hamilton, also a pioneer aviator who flew at the Dominguez Meet and who died at age 29 in 1914, will be featured in the Fall Journal.

motive Editor of Scientific American Magazine. Beach was also a member of the early Aeronautic Society and through him Willard became interested in aviation.

The Aeronautic Society was a group of aviation enthusiasts formed to discuss and encourage work on aeroplanes and related problems, provide workshop facilities, flying grounds for flight attempts and had engines available for the use of members. The sheds and grounds of the famous Morris Park Race Track on Long Island had been leased for their activities. Many ideas and opinions were prevalent, various types of machines were under construction, and during the winter months of 1908 - 1909 Willard assisted Beach in building a monoplane patterned somewhat after the French Antoinette monoplane.

Nothing came from this project, since the Society decided to purchase an aeroplane to promote flying. In January, 1909 they entered into a contract with Curtiss, who was to build and deliver an airplane and instruct two members to fly it. This was the first commercial airplane built by Glenn Curtiss, and he delivered it to the Society on the 16th of June. Named the GOLDEN FLYER by the group, it was quite an improvement over earlier Curtiss planes, but still retained the front elevator and was equipped with a 4-cylinder 25 H.P. water-cooled engine.

The Society promptly held a local air meet on the 26th which brought out many of the planes built by members, and Curtiss made a few short straightaway hops. Morris Park was quite unsuited for actual flying so the airplane was taken to a large open tract of land near Mineola. Curtiss started to practice here for his attempt to win the Scientific American Trophy, which he accomplished on July 17th, flying nineteen times around a circular course, a total distance of 24.7 miles.

Society members Willard and Alexander Williams had been selected as the students to be taught by Curtiss.

Willard took his first lesson the day after the Scientific American event to become Curtiss' first student. It proved to be the only one he was to receive for Williams immediately smashed up on his first lesson after which the plane was out of use for over two weeks until repairs could be made. During this interval Curtiss left, with another airplane, for France to compete in the Gordon Bennett Cup Race. This left Willard to rebuild the GOLDEN FLYER, which he did, and taught himself to fly. Determined, but careful, he soon mastered the feel of the air and it was not long before he was flying cross-country over the Long Island meadows. His twentieth flight, on August 13th, was noteworthy when he flew over Hempstead, Mineola, Garden City, Westbury and Hicksville, but ended with a forced landing due to a broken camshaft.

Willard then determined to make flying exhibitions around the country to show people that an aeroplane could really fly. The renowned balloonist, Capt. Thomas Baldwin, had assured him that he would undoubtedly receive favorable public reception. The Society was interested and an exhibition corporation was formed to lease the GOLDEN FLYER to Willard for this purpose, with the hopes of raising funds for experimental work and to build additional sheds and workshops. Accordingly, Willard left for his first exhibition date at Athens, Pennsylvania, to become the first barnstorming pilot in the United States. From there he went to Richmond, Va., Philadelphia, and to Toronto to fly at the Canadian National Exposition in late August, 1909.

He shipped to Cincinnati, Ohio, where he flew for the Aero Club of Cincinnati on November 12th to 14th at the Latonia, Kentucky Race Track across the Ohio River from the city. There he was joined by Glenn Curtiss, Roy Knabenshue, Lincoln Beachey and Dixon also performed, flying dirigibles.

In mid-November Willard shipped his plane to Los Angeles to prepare for the first scheduled International Air Meet in America, at Dominguez Field January 10th to 20th, 1910. Flying there also were Louis Paulhan, Curtiss and Charles K. Hamilton. Beachey and Knabenshue also flew their dirigibles.¹ Willard flew with the Curtiss team every day and won the spot-landing contest prize of \$250.

After the Los Angeles Meet the Aeronautical Society of New York sold the GOLDEN FLYER to Charles J. Strobel of Toledo, Ohio, and Willard leased another airplane from Curtiss, and with his own manager proceeded to engage independently in exhibition flying. Their first engagement of many during that eventful year was at Fresno, then to Phoenix, and April 5 - 10 Willard, Curtiss and Bud Mars flew at Memphis. There he had a minor smashup but was not injured. April 20 - 25 Willard and Hamilton flew at San Antonio, then May 14th at Alexandria, Louisiana. May 28 - 30 he and Mars were together again at Joplin, Mo. There Willard was shot down by an angry farmer, forcing him to make a landing on a road, with a damaged propeller. June 22 - 26 Willard, Curtiss, Mars and Eugene Ely were at St. Paul, June 29 to July 1st. Willard and Mars flew at Sioux City, Iowa; July 3 - 4 Willard was at Kansas

City and July 9 - 14 Willard, Curtiss and Mars were at Omaha, then July 16 - 17 he flew at Decatur, Illinois.

Willard returned the leased airplane to Curtiss in late July to avoid the possibility of legal trouble with the Wright Brothers. He and his mechanics had been building parts for a new machine, piece-meal, while in transit on the exhibition circuit. It was a Curtiss-type, but larger, using the "Curtiss-Rheims" engine leased from Curtiss. He made his first flight with this new machine at Hempstead, L.I. on August 12th and on the 14th set a new passenger record, carrying three men aloft.

Exhibitions followed in quick succession; August 23rd; at Bradford; August 27 - 29 at Greenfield, Mass. Willard entered the 1910 Boston Meet, staged by the Harvard Aeronautical Society, in company with Glenn Curtiss, Claude Graham-White, A. V. Roe, Walter Brookins and Ralph Johnstone. President Taft was there and Willard made a great showing when he carried as a passenger Lt. J. E. Fickel, an Army sharpshooter, who shot at ground targets from the air. And for press coverage he carried Miss Eleanor Ladd, lady news reporter of Boston.

More exhibitions followed the Boston Meet: St. Johnsbury, Vt. on September 18th; Holyoke, Mass. September 20th; Olean, N.Y. September 22 - 23; Philadelphia September 24 - 25 and on October 1 - 9 Willard flew at the Hawthorne Race Track, Chicago with Curtiss, Ely, J.A.D. McCurdy and Augustus Post. Here Willard made a noteworthy flight over part of the city and Jackson Park, at times reaching an altitude of 4,000 feet.

Willard was at the famed Belmont Park Meet on Long Island October 22 - 30. Twenty-seven aviators were entered in that event, including many of the foremost airmen of Europe. He competed in the altitude and duration events with his larger machine.

He competed at the Baltimore Meet on November 2 - 12 where poor weather and high winds hampered all flying. Willard returned the leased engine to Glenn Curtiss and left for California for the winter. Many thousands of people had seen Charles Willard fly during the 1910 season, many of whom were witnessing an aeroplane in flight for the first time.

In December Willard completed another of his Curtiss-type airplanes, powered by a 7-cylinder, 50 H.P. Gnome rotary engine. Called THE EXPRESS he began flying at once; on the 10th he made a cross-country flight from Los Angeles to Pasadena where he circled the city, flew over Alhambra and other towns, and circled the Express Building in downtown Los Angeles for the newspaper which had promoted his flight. The entire trip of 55 miles was made in one hour, ten minutes.

He flew at Fresno, then prepared to compete in the Los Angeles Meet to be held December 24 to January 3, 1911, again at Dominguez Field, flying there with Curtiss, (again) Phil Ely, Parmelee, Walter Brookins, Arch Hoxsey, Hubert Latham and the newcomer Glenn Martin. At this event Willard made a wonderful showing, entering the majority of the contests, and was second in total earnings. Then on to San Francisco January 7 - 16 with Curtiss, Ely, Parmelee, Brookins, and Latham. During this event he sent

and received wireless messages between his airplane in flight and a special DeForest Station on the field.

Willard was at San Diego, California January 21st and 22nd 1911 to assist Curtiss in the formal opening of his new flying school at North Island. He conducted some special flight tests for Curtiss, immobilizing the vertical rudder to disprove the claims of the Wright Brothers that a rudder was necessary for satisfactory flight.

There followed many exhibition flights in the West. On February 5th Willard circled the Capitol Building at Sacramento; at Salt Lake City, with Ely and Clarence Walker on February 10 - 16; at San Bernardino with Hugh Robinson on March 26 and on the 29th and 30th was at Pasadena with Ely. April 6 - 10 he returned to Salt Lake City to fly in a small meet with Curtiss, Ely, Parmelee and Brookins; on April 19 - 21 he was at Boise, Idaho with Brookins, then alone at Idaho Falls on April 23rd. Willard and Brookins were at Walla Walla, Washington where on the 29th they flew over the Washington State Penitentiary at the request of the Warden. This allowed the eight hundred convicts in the yards to see the airplanes in the air. May 12th to 14th Willard flew at Kansas City with Ely.

Willard entered into a partnership arrangement with J.A.D. McCurdy in New York, known as the McCurdy-Willard Aeroplane Company, to build and market a new airplane of their design and to fly in exhibitions. Their new machine was a pusher biplane, with a Farman-type landing gear and was powered by a 7-cylinder 50 H.P. Gnome engine. Seven were built by the Queen Aeroplane Company of New York, two for Willard and five for McCurdy. Initial flight tests were made at the Nassau Boulevard Flying Field. Later several recruits were taken on to form an exhibition team, but some of the airplanes were wrecked during instruction, so they began booking exhibition dates under the name of McCurdy-Willard Aviators, and later F.A. "Doc" Wildman, a Curtiss-trained amateur pilot, joined them in the exhibition work, which got under way at mid-year.

On July 23rd Willard flew THE EXPRESS at Summit Park, Utica, N.Y., and at Hamilton, Ontario with McCurdy and James V. Martin. This meet lasted from July 27 to August 1. On the 2nd Willard and McCurdy raced to Toronto where they were scheduled to enter another meet the following week. Willard had a few minutes head start, but McCurdy arrived first. Willard went to Little Falls, N.Y., September 4th, Rome, N.Y. the 6th and 7th; Cincinnati on the 9th; and October 12th and 13th he flew at Sturgis, Michigan.

The McCurdy-Willard venture folded up. Willard went to exhibitions in Mexico at Guadalajara, Tampico and Mexico City, again using THE EXPRESS.

In February, 1912 Willard announced that he planned to give up flying, for a time at least, but still retained his Gnome-powered Curtiss biplane. He opened an engineering office in Los Angeles, where he remained until he became Chief Engineer for Glenn Martin in 1913. In 1915 he left the Martin Company to join Curtiss at Buffalo as an engineer on large flying boats, staying there until he left to

organize the L.W.F. Engineering Company of College Point, Long Island, New York in December 1915.

L.W.F. was incorporated by Charles Willard, Edwin Lowe, Jr. and Robert Fowler.

The outstanding feature of the L.W.F. planes was the molded, laminated plywood fuselage, the first monocoque-type construction used for aircraft in the United States. Willard had designed this body in California earlier and worked out the method of construction in detail while at Buffalo. The first L.W.F. tractor biplane was completed in June 1916, using a 135 H.P. Vee-8 Sturtevant engine. It proved successful from the start. Willard and Fowler withdrew from the L.W.F. Company during mid-summer 1916 but the firm became a major manufacturer during World War I.

Willard joined the Aeromarine Plane and Motor Company at Keyport, New Jersey as Chief Engineer where he remained until into the 1920's. He was responsible for the Aeromarine Vee-8, 190 H.P. engine and many military designs for both land and water planes. He served on the Lockhart Mission of the Bureau of Aircraft Production during the war and was sent to Europe to investigate aircraft construction methods.

In 1926 Willard returned again to California and became Chief Engineer of Rocky Mountain Steel Products, producers of special 4- and 6-speed transmissions used in cars and trucks for mountain driving. While there he designed a 9-cylinder, 225 H.P. radial air-cooled aircraft engine, known as the "Pegasus."

In 1929 Willard became Vice President and Chief Engineer of the California Aviation Company, a finance group to start an air freight package service across the United States. Construction of an all-metal airplane was begun and a 9-cylinder, 400 H.P. diesel engine to power it. Just as this ambitious project was nicely under way the company folded up — the depression of the early 1930's. Willard turned his interest to the metal salvage business and founded a salvage and chemical plant to conduct such an enterprise, which he carried on until World War II.

Charles Willard was a founder member of the Early Birds and has served in various offices in that group. He had become a member of the early Aero Club of America in January, 1916. On October 20, 1956 a plaque was dedicated in the Decatur, Illinois airport administration building to commemorate the first flight ever made there, by Willard in 1910. He was present and the honored guest. On December 10, 1960 Willard again made a flight across Los Angeles, this time as a passenger, commemorating the 50th year of his first crossing of that city in 1910. His F.A.I. pilot license, No. 10, is now the lowest number of any living individual and he also holds California License No. 4. The Early Birds adopted the checkered cap as worn by Willard in 1909 for their emblem. His name rightfully belongs in the Aviation Hall of Fame.

REFERENCES:

1. An excellent though brief account of the Dominguez meet is given in the JOURNAL of the A.A.H.S. See Carter, Dustin W., "First Western Air Meet — Dominguez Field 1910," Volume 7, No. 3 (Fall, 1962) pp. 181-183. A photograph of Willard making a fast takeoff in his Curtiss machine is shown on page 183.