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# *Dream Aircraft*

The Most Fascinating Airplanes I've Ever Flown

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Barry Schiff

*Dream Aircraft: The most fascinating airplanes I've ever flown*  
by Barry Schiff

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# *Culver Cadet*



*It is little wonder that the Culver Cadet attracted*

so much attention when it was introduced in December, 1939. It had a factory-guaranteed cruise speed of 120 mph while emptying the fuel tank at only 4.2 gph. Specific range was an incredible 28.6 miles per gallon. Other 2-place airplanes of that era struggled to achieve 80 mph using the same 75-hp engine. The petite Cadet rapidly became America's sweetheart, the darling of the sportsman pilot.

The story of the Culver Cadet began in 1938 when Knight Culver, Jr., purchased the design rights to the Monosport aircraft and founded the Dart Aircraft Company, which later became Culver Aircraft. The purchase included retaining a young, self-educated, and accomplished designer who would make an indelible mark in general aviation: Al Mooney. (Al's brother, Art, was retained as factory superintendent.)

One of Mooney's assignments was to design an airplane that would take advantage of the new 75-hp, flat-four, Continental A-75-8 engine that rapidly rendered obsolescent the small radial engines that had been so popular. (The A-75 engine was a faster turning version of the 65-hp, Continental A-65.)

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The result was the Mooney-designed Culver Cadet (also known as Mooney's "wooden wonder"). It was Mooney's twelfth design, which he designated according to his personal list of designs as the M-12. The structure was predominantly wood because metal was in short supply during that post-Depression, pre-war era. From such aircraft eventually came the cliché claiming with tongue in cheek that "wood airplanes stay together only because the termites are holding hands."

The Culver Cadet LCA made its maiden flight on December 3, 1939 and sold for \$2,395. A later version, the Model LFA, had an 80-hp, Franklin 4AC-176-F3 engine, was equipped with an electrical system and starter, and cost \$200 more.

Original Cadets were built in Columbus, Ohio, but the factory was relocated to Wichita, Kansas after being purchased by Walter Beech and attorney Charles Yankey.

A total of 359 Cadets were produced from 1939 through early 1942. Production ended so that the company could concentrate on the war effort and building thousands of drones to serve as targets for anti-aircraft practice. The significant differences between the Cadet and the Culver PQ-8 Drone were that the drones had tricycle landing gear and were coated with aluminum paint to make them better radar targets.

Al and Art Mooney eventually formed their own company, which is when Al developed the single-place M-18 Mooney Mite and the 4-place Mooney M-20, the progenitor of an entire family of popular 4-place airplanes. (The 150-hp Mooney M-20 was the first 4-place, production airplane capable of cruising at more than 1 mph per hp.)

Carl Walston became enamored with the Cadet when he was in grade school but did not begin flying until years later in 1961. This is when he lived in New Canaan, Connecticut, was in the securities business, and wanted to use his own airplane to travel from Wall Street to his other offices in the northeastern U.S. For this he used a Cessna 310, a Piper Apache, and an Aero Commander 500. He accumulated 1,100 hours of flight time including 400 were in sailplanes.

When Walston began planning his retirement in Santa Barbara, California, he decided that he would make a dream come true by spending his carefree hours aloft in a Culver Cadet. Although there were more than 100 on FAA's registry, Walston estimated that only 20 or so were airworthy, and none of these rare machines were for sale. Realizing his dream would require that he become involved in restoring a basket case.

His search for a Cadet eventually led him in 1995 to Wallkill, New York, where he purchased N29398 (serial number 191) from a pilot's widow. The airplane had been originally built from scratch and in its entirety in Wichita during the week between Christmas and New Year's Eve, 1940. It was now a collection of bits and pieces.

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When his wife, Mimi, saw her husband's purchase, she thought he was nuts. It reminded her of an oversized model airplane kit containing uncountable balsawood parts. The airplane had no log books, no airworthiness certificate, and had not flown since 1957.

Carl Badgett of Winsted, Connecticut, was enlisted to do the fabric and wood work, and Mark Grusauski of Wingworks in Canaan, Connecticut, to do the metal and mechanical work.

The Cadet was restored as much as possible to its original condition, but Walston made two concessions. One was to replace the original full-swivel tailwheel with a steerable unit, and the other was to strengthen the bulkhead behind the seats to accommodate the installation of shoulder harnesses.

Except for the nose bowl and tail cone, all metal parts (of which there are not too many in a Cadet) had to be made from scratch. These included fairings, doors, panels, cowlings, and so forth.

Although he purchased his project for only \$7,500, Walston estimates that he has more than \$100,000 invested in his dream machine. N29398 finally took to wing on May 16, 2000, its first flight in 43 years.



The fit and finish of N29398, which sports its original colors of Santa Fe red and Diana cream, are impeccable. It is not surprising that the restoration has garnered numerous first-place awards at air shows.

One glance at a Cadet explains why it is so fast and efficient.

The wings and fuselage are exceptionally smooth, reminiscent of something made from composite materials. There are no rivets, fabric stitches, metal joints, or other blemishes to interfere with the airflow. Sheets of mahogany plywood shape the semi-monocoque fuselage, which is then overlaid with fabric to protect the wood.

The cantilever, elliptically shaped wing is similarly constructed from the leading edge to the laminated spruce and mahogany spar. Aft of the spar, the wing is covered with fabric in a conventional manner.

A slot in each wing tip is intended to improve spanwise stall characteristics and low-speed roll qualities. The U.S. Army, however, operated some Cadets with covered slots. These planes reportedly flew better and faster. There is no question that the gap seals used with the ailerons and elevator increase aerodynamic efficiency and performance.

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Culver Cadet • Fairchild 22 • Lockheed U-2  
Ryan NYP *The Spirit of St. Louis*  
Goodyear Blimp • McCulloch J-2 Gyrocopter  
NASA's Space Shuttle Orbiter  
SIAI Marchetti SF.260C • P-51D Mustang  
Transavia PL-12U Airtruk • Antonov AN-2  
Beech T-34 Mentor • DeHavilland Chipmunk  
Douglas DC-3 • Martin 404 • Beriev 103  
Grumman G-44 Widgeon • Sikorsky S-38 Amphibion  
Curtiss Wright Junior • Ryan PT-22 Recruit  
Lockheed 12A Electra Junior . . . and more

*An amazing journey across time and space in some of aviation's most rare and popular aircraft, from the pilot-author whose gift of storytelling has truly universal appeal.*

Barry Schiff's expertise in, and passion for aircraft have made him one of the most sought-after aviation journalists in the world. *Dream Aircraft* documents his lifelong voyage flying aircraft that pilot enthusiasts dream of flying. Some of these aircraft are so rare that most pilots have never even seen one, let alone had the chance to fly them—yet they represent some of the most popular and well-known aircraft in and beyond the aviation community.

Each of 35 chapters is dedicated to a different aircraft as the author describes in detail the unique aspects and performance characteristics: exactly how it feels to be behind the control wheel (or stick, as it may be). From the nostalgia of the *Spirit of St. Louis*, to the popular WWII fighter P-51 Mustang, to the exciting Lockheed U-2, this book is the who's who and how-to on some of the most remarkable aircraft ever developed.

Barry's passion for flying many different types of planes is evident as he spans oceans and continents to bring these first-hand pilot reports to the reader. He has amassed more than 27,000 hours in over 300 types of aircraft and received worldwide recognition for his wide-ranging accomplishments. During his 34-year career with Trans World Airlines (TWA) he flew everything from the Lockheed Constellation to the Boeing 747. He continues to investigate and report to the aviation community various aspects of proficiency and safety, and remains a vigorous and outspoken advocate for general aviation.



Cover photo by Mike Fizer



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