Fairchild 45

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Although not built in significant numbers, the Fairchild 45 of 1935-39 is still a notable milestone airplane. The economic depression that had started with the stock market crash of 1929 wiped out the market for big luxury airplanes and made the small two-seat monoplane virtually the industry standard for a few years. As the financial picture began to improve around 1934, a market for other than light training planes opened up, and the industry moved to supply it. Fairchild Aircraft Corp. of Hagerstown, Md., was among the leaders with a nine-place Model 91 amphibian, which was actually a small airliner, and its smaller five-place Model 45, which was still a "big" airplane by prevailing general aviation standards.

The Fairchild model designation system was unique to that firm and quite confusing to the public, since the numbers had nothing to do with actual model sequence. For example, the Model 71 had appeared in 1929 when the system was adopted, the 34 series preceded the 22's and 24's, and the 91 immediately preceded the 45. The first digit in this numerical system identified the seating capacity—seven in the case of the 71. The second digit showed that this was Fairchild's first seven-seater. Similarly, the 22 was the second two-seater. While the 24 is well remembered as a four-seater, it had started as a two and was briefly a three before settling down as a four, all under the same designation. If the system was being strictly followed, it would indicate that the 45 had started as a four-seater, with the additional passenger seat being added after the design was well along and its model number firmly established.

The new Fairchild models were not simply 1929 classics updated and put back into production as were some other products. Although they were relatively traditional in construction, they incorporated many state-of-the-art improvements that had been used mainly by the military and the airlines during the depression years.

The five-place Fairchild was entirely new to the experience of the Hagerstown firm in being a low-wing cantilever monoplane with retractable landing gear. The original 45, which flew on May 31, 1935, was powered

The single Fairchild Model 45 of 1935 on a test flight. Absence of letters ahead of the registration number meant that the plane was not licensed at the time, even experimentally. It was only registered.

PHOTOGRAPHY FROM THE COLLECTION OF THE AUTHOR

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with a 220-hp Jacobs L-4 radial engine, which was low power for a five-seater even by 1929 standards. Pilot and copilot sat at dual controls and shared a single throw-over wheel, while the passengers set three abreast on a single bench-like seat at the rear of the cabin. This cut down on the elbow room but simplified the weight-and-balance problem by decreasing the longitudinal distribution of the variable personnel load. Entry was through a large door on the right side of the cabin.

The structure was an interesting mixture. The fuselage was welded steel tubing faired to a rounded exterior with wooden formers and stringers with fabric covering. The flat center section of the wing, which also housed the two 30-gallon fuel tanks and the main landing gear, was an aluminum frame covered with sheet aluminum. The outer wing panels, which were sharply swept back at the leading edge and straight at the trailing edge, used wooden box spars and built-up wooden ribs. The ailerons and split trailing edge flaps were aluminum frame with fabric cover, as were the tail surfaces.

The retractable landing gear was unique among single-engine retractables of the time in that the whole assembly simply rotated aft 90 degrees, leaving half of the wheels exposed in the manner of the Boeing 247 and Curtiss Condor II transports instead of folding inward and flush as on the older Lockheed Orion and the new Spartan Executive and the Vultee V-1A transport.

At 160-mph top speed, the 45 was fast for a five-seater of its day, but was somewhat handicapped by the fixed-pitch wooden propeller and the half-exposed wheels. It was docile and easy to handle, due in part to the thick wing with NACA 2218 airfoil at the root tapering to an NACA 2209 at the tip, the flaps and Frieze ailerons. It was a thoroughly good airplane, but somehow not quite good enough. The 45 received Approved Type Certificate A-588 on Dec. 3, 1935, but only one example was built and subsequently sold.

The easiest way to get more performance was to add power. This was done on the Model 45A, which stretched the fuselage a couple of feet, improved the streamlining at the front of the cabin, and replaced the 220-hp Jacobs with a 320-hp (350 for takeoff) Wright J-6-7 (R-760E2). Except for a change to a ground-adjustable metal propeller and a fuel increase to 90 gallons (with an option for 150), everything else remained essentially the same. The 45A received ATC A-603 on April 29, 1936, and a total of 16 was built, with the last delivery in March 1939.

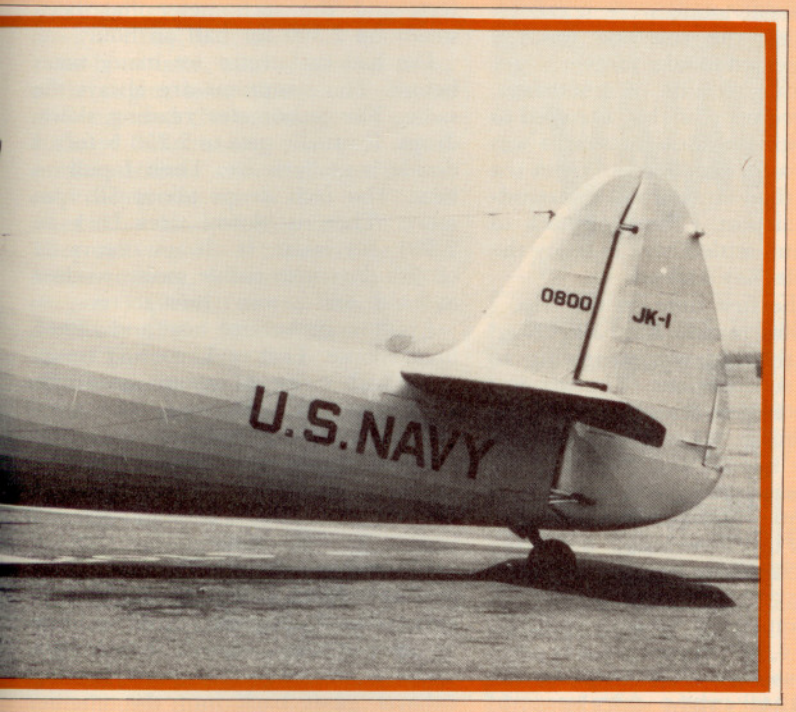
While a jump of nearly 50% in power could be expected to work wonders in the performance department, it didn't work out that way. There were many factors that reduced the gain. For one thing, the new engine was heavier than the old and had an automatic requirement for increased tankage. Altogether, the empty weight increased by 235 pounds while the useful load gained only 155. The top speed increased only 10 mph and the cruise 3. The rate of climb increased dramatically, a decided plus, but the landing speed also increased by 6 mph, a notable setback.

Although it was strictly a civil design, the 45 had an unexpected military career. Two were sold to the Argentine navy. The U.S. Navy bought one in 1936 as a VIP transport, the JK-1, and acquired two others from private owners during World War II. When it was buying useful civil models from private owners in 1941 and 1942, the U.S. Army acquired two 45's and designated them UC-88 in the Utility Transport series.

Of 17 45's built, only two are flying today, and they are hangared side by side at Crest Air Park in Kent, Wash. □

Production Fairchild 45A photographed in 1941. Introduced with fixed-pitch propellers, most 45's were retrofitted with two-position props, when they became available.

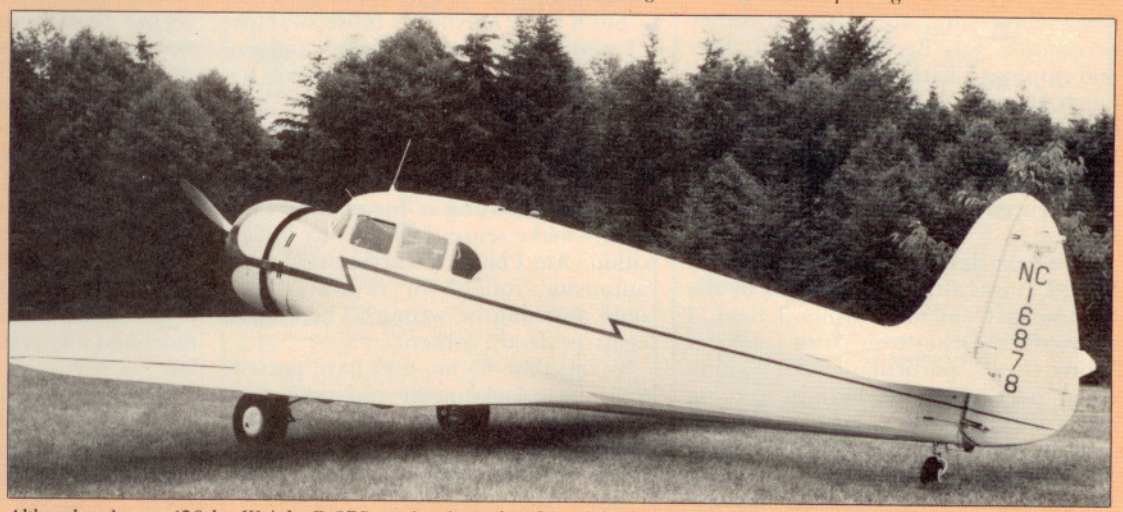
In postwar years, when 45A's were still useful workhorse airplanes and not yet treasured antiques, many individual modifications were made. This one has a metallized fuselage, modified windows, larger engine with constant-speed prop and modern avionics.



FAIRCHILD 45 Specifications

	Model 45	Model 45A
Powerplant	Jacobs L-4 220 hp @ 2,000 rpm	Wright R-760E2 320 hp @ 2,200 rpm (350 T.O. @ 2,400)
Span	39 ft 6 in	39 ft 6 in
Length	28 ft 11 in	30 ft 1 in
Wing area	248 sq ft	248 sq ft
Wing loading	14.9 lb/sq ft	16.1 lb/sq ft
Power loading	16.4 lb/sq ft	12.5 lb/sq ft
Empty weight	2,277 lb	2,512 lb
Gross weight	3,600 lb	4,000 lb
Performance		
High speed	160 mph	170 mph
Cruise speed	147 mph	150 mph
Landing speed (flaps)	48 mph	54 mph
Initial climb	640 fpm	1,000 fpm
Ceiling	16,000 ft	18,700 ft
Range	620 mi (60 gal)	650 mi (90 gal) 1,150 mi (150 gal)
Price	$8,000	$12,000

The U.S. Navy bought one 45A in 1936, acquired two others early in World War II. This prewar example carries the special blue-and-silver color scheme used for VIP carriers. Rectangle on the side holds passenger rank card.



Although a larger 420-hp Wright R-975 engine is under the original-size cowling, only the modern VHF antenna over the cabin and a VOR antenna down by the tailwheel are giveaways that this is a 1979, not a late-1930's picture.