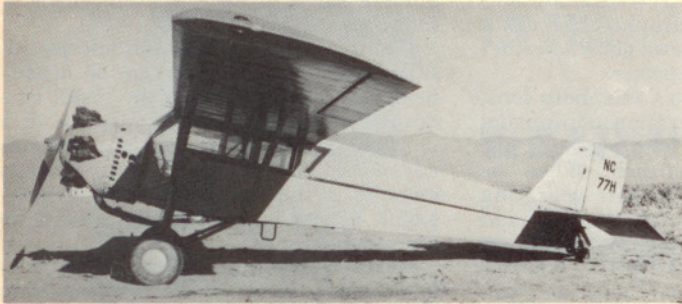


Powered originally with OX-5 engine, the Robin was one of the first efforts to produce low-cost cabin monoplane designed for the private owner. Later models equipped with higher-powered Curtiss Challenger powerplant



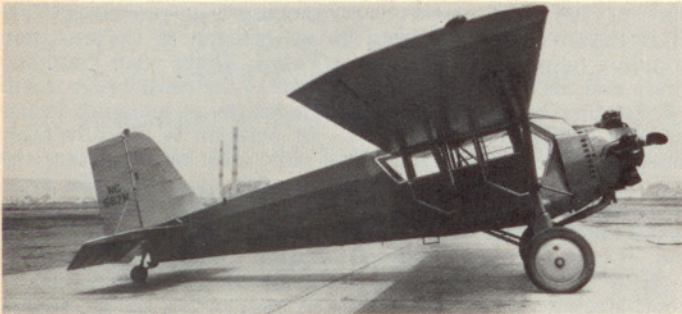
1.



2.



3.



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■ ■ Introduced in the spring of 1928, the three-place Curtiss Robin was a unique airplane for the time. It was representative of two distinct eras of American general aviation and appeared right on the dividing line between them.

This was the first effort by one of the major manufacturers of the country, the Curtiss Aeroplane and Motor Company, to bring out a low-cost modern cabin monoplane for private owners. High-wing, strut-braced monoplanes were clearly the commercial design of the time, and had been so before the start of the Lindbergh boom. However, most of those produced prior to the Robin were essentially light transports and mailplanes with 220 h.p. and up. Most of the private-owner types in production in the Robin's seating-horsepower-price class at the time of its introduction were open-cockpit biplanes that still reflected the design traditions of World War I.

The Robin was Curtiss' first significant private owner design since the Oriole of 1919 [see PILOT, July 1968]. In the years between, Curtiss had been a major supplier of fighters and observation planes to the military and had developed high-powered mailplanes and transports. The main Curtiss plant was at Buffalo, N.Y., with an experimental

factory at Garden City, Long Island.

While the "modern" feature of the Robin was the cabin monoplane design, its old feature was the powerplant. This was the 90 h.p. water-cooled Curtiss OX-5, a prewar design that had been built by the thousands for the wartime trainers. After the war, Curtiss and other suppliers were able to buy several thousand brand-new OX-5s back from the Government at near-scrap prices. Still available for an average price of \$250 for a new engine as late as 1929, the OX-5 was the principal powerplant used in two- and three-place American civil aircraft from 1919 through 1928. A few planes built as late as 1930 still used the OX-5 as original equipment.

It should be pointed out that 90 h.p. in the heyday of the OX-5 was considerably different from 90 h.p. today. The OX-5 displaced 502 cubic inches and turned an eight-foot propeller at a possible 1,400 r.p.m. wide-open. Today's Continental C-90 has 200 cubic inches and spins a six-foot prop at 2,700 r.p.m. While the formula horsepower is the same for each, the delivered thrust and the propeller efficiency of the OX-5 is far greater. Of course, the OX-5's weight is much greater, 390 pounds compared to 188. It took a big plane, such as the Robin and its contemporaries, to fly

1. One of the earliest OX-5-powered Curtiss Robins with the original wide strut fairings and elastic-cord shock absorbers covered by the fairings on the landing gear struts.

Photo by Gordon S. Williams

2. Challenger-powered C-1 Robin fitted with air-oil shock absorbers, wheel brakes, and a steerable tailwheel. The Curtiss Challenger engine was a twin-row radial, with three cylinders in each row.

Photo by Peter M. Bowers

3. Challenger Robins could operate as seaplanes. Note the long float struts required by the large-diameter propeller and contemporary propeller/water clearance rules.

Photo by Gordon S. Williams

4. Small-production 4C-1A four-place Robin featured deeper fuselage, larger tail, and revised windshield.

Photo by Gordon S. Williams

5. Most famous of all the Robins—"Corrigan's Crate"—flown from New York to Ireland in 1938 instead of to California as announced. This is a B-1 converted to J-1, fitted with later wheels and brakes but retaining the original steerable tailskid.

Photo courtesy of Bob Esposito.

with the OX-5.

Curtiss had good reasons for using the OX-5 in the Robin. Not only was it suited to the design, it was the only thing available at that horsepower at the time. As a war-surplus engine, its low cost helped to make the Robin's price attractive. Finally, with a good plane in production to use the OX-5, Curtiss

# The Curtiss Robin

by PETER M. BOWERS / AOPA 54408

would soon exhaust its remaining stocks and get out of the surplus business.

While the *Robin* was designed initially for the OX-5, Curtiss knew that the end of the line was in sight for that engine and made provision for the use of other engines of higher power, including the Curtiss Crusader, a 110-125 h.p. air-cooled in-line engine that was expected to be the OX-5 replacement, and the new 165-185 h.p. Curtiss Challenger air-cooled radial engine.

Construction was thoroughly conventional for the period—welded steel-tube fuselage and tail surfaces, with wooden wings, all fabric-covered. Seating was two passengers side-by-side at the rear of the cabin and the pilot sitting at stick controls forward. The pilot and one passenger had separate entry doors on the right side of the fuselage, while the left-hand passenger had a separate door on some models. The designers gave more thought to the pilot's visibility in those days, apparently, for the *Robin* and some of its contemporaries had the pilot's windows extending downward nearly to the cabin floor.

The prototype *Robins* borrowed and amplified upon a trick of the contemporary Bellanca monoplanes. The wing struts were round steel tubing fitted with extremely wide fairings that were expected to function as thin additional wings and provide extra lift. These didn't work as well as expected, and the production models used streamlined steel tubing for the struts.

As originally built, the *Robins* were

not equipped with wheel brakes. A tail skid was standard equipment, and was a big improvement over some contemporary models in that it was steerable. Although the landing gear, with big 30 x 5 wheels and high-pressure tires, was of divided-axle type, shock absorbing was still by rubber cord. This was soon replaced, however, by air-oil shock absorbers. Tail wheels and brakes were added later by most owners.

Instead of building the *Robins* at Garden City, where the prototypes were built, or even in the main plant at Buffalo, Curtiss formed a new company, Curtiss-Robertson Airplane Manufacturing Corporation, with a new factory built at Anglum (St. Louis), Mo. The Robertson part of the new organization was the former Robertson Aircraft Corporation, an airline and flying school that operated the contract airmail route from St. Louis to Chicago.

The new plant was started early in 1928, production was under way by July, and the first St. Louis-built *Robin* flew on August 7. Two slightly different versions of the OX-5 *Robin* were produced under Approved Type Certificates (ATC) 40 and 63, the latter becoming known as the B-1 *Robin* and selling for \$4,000. Two others, with the 165-185 h.p. Curtiss Challenger, were produced under ATCs 63 and 99 and were known as the C-1 and C-2 *Robin*. The Challenger engine improved the performance of the *Robin*, naturally, but also increased the price by \$3,500. The increase in power did not increase the accommodation beyond the original three. Some four-place *Robins* were built—the 4C and the 4C-1A, under ATCs 270 and 309, respectively—but these appeared after the depression was well under way and did not see significant production.

The Challenger engine proved to be somewhat less than the ideal powerplant, and the Crusader never got into production, so Curtiss-Robertson sought another engine for the *Robin*. This was found in the 145 h.p. Wright J-6-5 Whirlwind, introduced in 1929 as one of a family of engines using common parts for five-, seven-, and nine-cylinder versions. The Whirlwind *Robins* were built under ATCs 220 and 221 as Models J-1 and J-2. Two W-model *Robins* were built with the 110 h.p.

Warner Scarab radial. One was an experimental light transport for the Army, the XC-10; the other, although granted ATC 268, was not produced. With only 422 cubic inches, the Warner delivered less thrust than the OX-5. The lighter weight, 270 pounds, compared to 390 for the OX-5 without radiator, water, or plumbing, made a very long nose necessary to keep the Warner-powered *Robin* balanced.

Last attempts to use war-surplus engines resulted in a single B-2 *Robin* with the 150 h.p. Wright-Hispano, or "Hisso." An air-cooled version of the OX-5, known as the Milwaukee Tank, and delivering 115 h.p., was tried in a single M-model *Robin*.

Nearly half of the *Robins*, about 325, used the OX-5. Production of all models was at a high rate for the time, 17 per week in the summer of 1929. However, the depression cut this to a trickle and finally stopped it altogether after the B-1 model price dropped to \$2,495.

As a short-range, private-owner type, the *Robin* would not be expected to achieve fame through anything but sheer numbers. Just over 750 were built, far more than any equivalent contemporary model. Fame did come from unexpected directions, however.

In the first year of the endurance flight craze, Dale Jackson and Forrest O'Brien set a refueled endurance record of 420 hours and 17 minutes in a C-1 *Robin* named "St. Louis Robin." This flight, from July 13 to 30, 1929, was fueled from another *Robin*. When a new record of 553 hours 41 minutes was set the following June by the Hunter Brothers of Chicago, Jackson and O'Brien put the "St. Louis Robin" back in the air for 647 hours and 28 minutes, starting July 21, 1930. This record stood for several years, and was topped slightly when another *Robin*, a J-1 flown by Fred and Al Keyes of Meridian, Miss., stayed aloft for 653 hours from June 4 to July 1, 1935.

The most famous, or at least remarkable, flight of a *Robin* was that made by Douglas "Wrong Way" Corrigan in a many-times secondhand J-1 that had been converted from a B-1. On July 17-18, 1938, he took off alone from New York, with the announced goal of California, and landed in Dublin, Ireland.

The *Robins* rapidly gave way to newer designs in the mid-1930s, and only 150 OX-5 and 178 Challenger models were listed as active in 1937. There were only 113 altogether in 1947. Since they couldn't compete with the new postwar commercial designs, and the antique airplane boom hadn't started yet to make them treasures, many of these survivors were fitted with World War II surplus radial engines of 220-300 h.p. and put to work as dusters. FAA records list a total of 46 on hand in 1964, but only a dozen are flying today, mainly relatively pure restorations lovingly maintained by the antiquers. Because of the scarcity and questionable reliability of the original engines, some of these are forced to operate with later engines, mostly Continental R-670 or Lycoming R-680 radials. □

## SPECIFICATIONS AND PERFORMANCE—CURTISS ROBIN

	ROBIN B	ROBIN C-1
Wingspan	41 ft.	41 ft.
Length	25 ft. 10 in.	25 ft. 1 in.
Height	7 ft. 9½ in.	7 ft. 9½ in.
Wing area	224 sq. ft.	224 sq. ft.
Powerplant	Curtiss OX-5 90 h.p. @ 1,400 r.p.m.	Curtiss Challenger 185 h.p. @ 1,800 r.p.m.
Empty weight	1,489 lbs.	1,648 lbs.
Gross weight	2,217 lbs.	2,600 lbs.
High speed	95 m.p.h.	115 m.p.h.
Cruise speed	85 m.p.h.	102 m.p.h.
Landing speed	45 m.p.h.	47 m.p.h.
Rate of climb	400 ft./min.	640 ft./min.
Service ceiling	10,200 ft.	12,700 ft.
Cruising range	600 mi.	300 mi.
Price	\$4,000 (1928)	\$7,500 (1928)