The Curtiss-Wright Sport Trainer

Yesterday's Wings

by PETER M. BOWERS / AOPA 54408

■■ In 1929 the Travel Air Manufacturing Co., of Wichita, Kan., was one of the country's leading producers of three-seat, sport-trainer-utility biplanes in the 90- to 300-hp range. Travel Air also had a successful secondary line of large single-engine cabin monoplanes.

By midyear, however, it was evident that the basic Travel Air three-seater—along with its contemporaries, which had also originated in 1925 or shortly thereafter—was on the way out. The depression then came along and turned what had been merely a declining trend into a rout and eventual extermination.

Walter Beech, president of Travel Air, trimmed the company's personnel and product lines to meet the changing times and assigned designers Herb Rawdon and Ted Wells to the job of developing a new light sport-trainer to replace the heavy old standby.

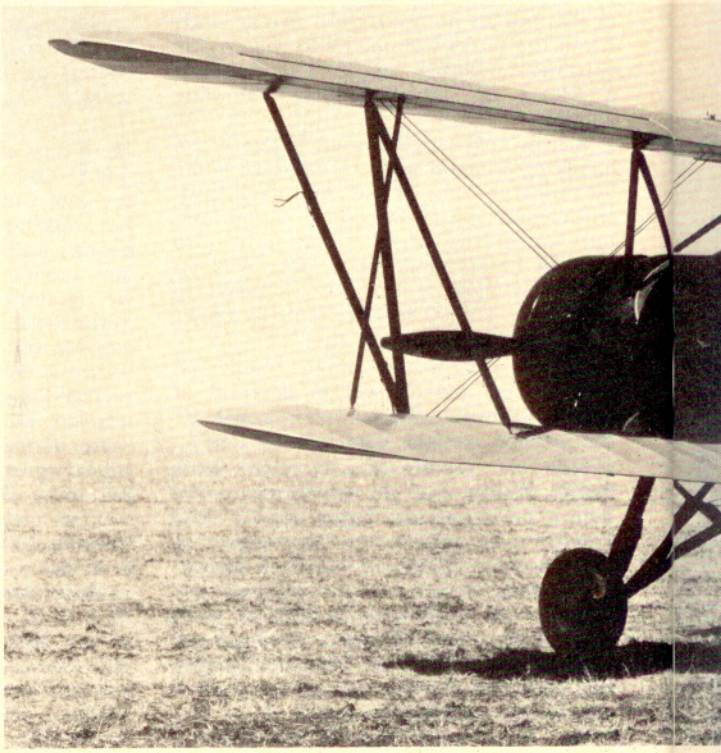
Working with a whole new crop of smaller and lighter air-cooled engines, the team soon came up with a new Model 12. The two-digit numbers were shortened versions of the old Travel Air designations: the old Model 4000 became the Model 4; the 6000 became the 6, etc.

Actually, the new airplane turned out to be six separately certificated subtypes of two basic models—the two-place Model 12 and the three-place Model 16. Except for the powerplants and the front-cockpit dimensions and fittings, the airframes were identical. Fuselages and tails were of welded-steel tubing, fabric covered, and the wings, using the Clark Y airfoil, were wood frame—also fabric covered.

Aerodynamically, the Sport Trainer picked up some of the efficiency that would have been lost because of its smaller size by incorporating an unusually wide gap-chord ratio for the wings. Further efficiency resulted from eliminating the traditional drag-producing and lift-losing cutout in the rear of the upper-wing center section.

Model 12-Q, the baby of the bunch, was powered by a Wright Gypsy engine.

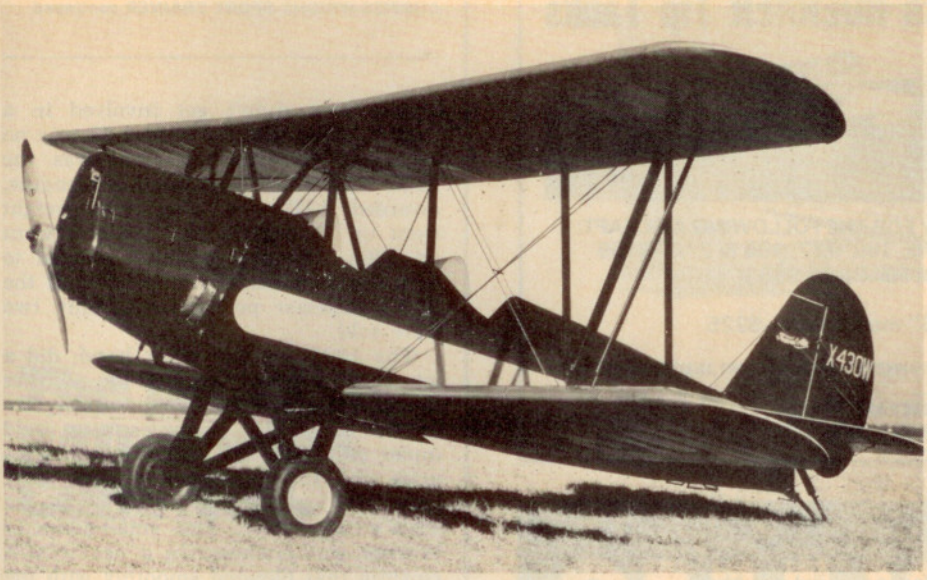
The 12-W, with Warner engine, was identical with the 12-Q except for the powerplant and a few extras such as steerable tailwheel. Note how the NACA cowling around the radial engine blends with the fuselage lines. Manufacturer's photo.



CURTISS-WRIGHT SPORT TRAINER

Specifications and Performance

	Model 12-Q	Model 16-E
Wingspan	28 ft 10 in (upper) 26 ft 4 in (lower)	28 ft 10 in (upper) 26 ft 4 in (lower)
Length	21 ft 5 in	20 ft 6 in
Wing area	206.4 sq ft	206.4 sq ft
Powerplant	Wright Gypsy, 90 hp	Wright J-6-5, 165 hp
Empty weight	1,071 lb	1,340 lb
Gross weight	1,725 lb	2,150 lb
High speed	105 mph	135 mph
Cruise speed	88 mph	115 mph
Initial climb	600 fpm	1,000 fpm
Ceiling	12,000 ft	16,500 ft
Range (33 gal)	390 mi	350 mi
Base price	$3,500	$4,600



The prototype of the Curtiss-Wright Sport Trainer line was this first Model 12-Q. Note the use of inverted-V center section struts ahead of the front cockpit, and the single struts behind, to simplify the chronic front-cockpit-entry problems of most small biplanes. Manufacturer's photo.

This was an Americanized version of the well-known British Cirrus upright air-cooled in-line four.

Although rated at 90-hp, the Gypsy was in no way comparable to the 90-hp Curtiss OX-5, which had been the standby of American general aviation since the end of World War I. The OX-5 had a displacement of 504 cubic inches and turned an eight-foot prop at a questionable 1,400 rpm. The little Gypsy displaced only 301 cubic inches and swung a much smaller prop at 1,900 rpm. Even though the formulas said the power outputs were the same, World War I horses and 1930 horses were two entirely different breeds. The latter-day engines of comparable, or even higher, power ratings went into considerably smaller airplanes than did the war-surplus iron.

The 12-Q was awarded Approved Type Certificate (ATC) No. 401 in February 1931, and a total of 27 was produced. Along with its low power, the 12-Q was also a "bare minimum" airplane. Such items as brake pedals in the front cockpit, electric starter, rear cockpit headrest, etc., were options available at extra cost.

It's hard to find any civil airplane in

history that didn't get involved in a "more" cycle, and the Model 12 was no exception. The next variant was the 12-K, with a 125-hp Kinner B-5 engine, awarded ATC 406. The gross weight went up 75 pounds and the cost went up $788. The cost addition seemed to be a major mistake, for, in spite of the 12-K's superior performance, only two were sold.

The 12-W, on the other hand, did a lot better. With the 110-hp Warner Scarab radial engine and the same price as the 12-Q, 12 examples were sold under ATC No. 407. Looks, as well as price and improved performance, may have had something to do with the 12-W's popularity. The small-diameter Warner was enclosed in a neat NACA cowling that blended smoothly with the lines of the fuselage, a feature that could not be applied to the long-stroke Kinner.

The three-seat Model 16s of necessity started out with a bit more power than the 12-Q. The most popular version was the 16-K, with the 125-hp Kinner. While this engine was not popular in the two-seat 12-K, the added utility of the extra seat made it a desirable item in the Model 16. Eleven 16-Ks were built under ATC 411.

The 110-hp Warner did not provide enough power to make a good three-seater of the 16-W, and only one example was ever built. ATC 429 was awarded it in June 1931.

The final Sport Trainer model was the 16-E, with the new 165-hp Wright J-6-5 Whirlwind. Ten were built after ATC 463 was awarded in February 1932, bringing the grand total of Sport Trainers to 63.

The actual identity of these aircraft has been rather confusing right down to the present. In the preliminary design stages, they were bona fide Travel Airs; however, because Curtiss-Wright took over Travel Air before their completion, the planes were delivered as products of the Travel Air Division of Curtiss-Wright and were sometimes referred to as "Curtiss-Wright Travel Airs."

Most subsequent FAA paperwork identifies Sport Trainers as Curtiss-Wright, but they have also been referred to as North American because North American (now Rockwell Standard) acquired the design rights when it purchased the Curtiss-Wright Airplane Division in the late 1940s.

Even the Sport Trainers' place of manufacture is in doubt; the old Travel Air plant closed in June 1931, the division lost its identity, and its production was transferred to the Curtiss-Wright Saint Louis plant. Some of the Sport Trainers, particularly the 1932 16-Es, were built there before that plant, too, closed down.

Thanks to dedicated antiquers, five Curtiss-Wright/Travel Air/North American/Rockwell Standard Sport Trainers survive today—a 12-Q, a 12-W, a 12-K, a 15-K, and a 16-E. □