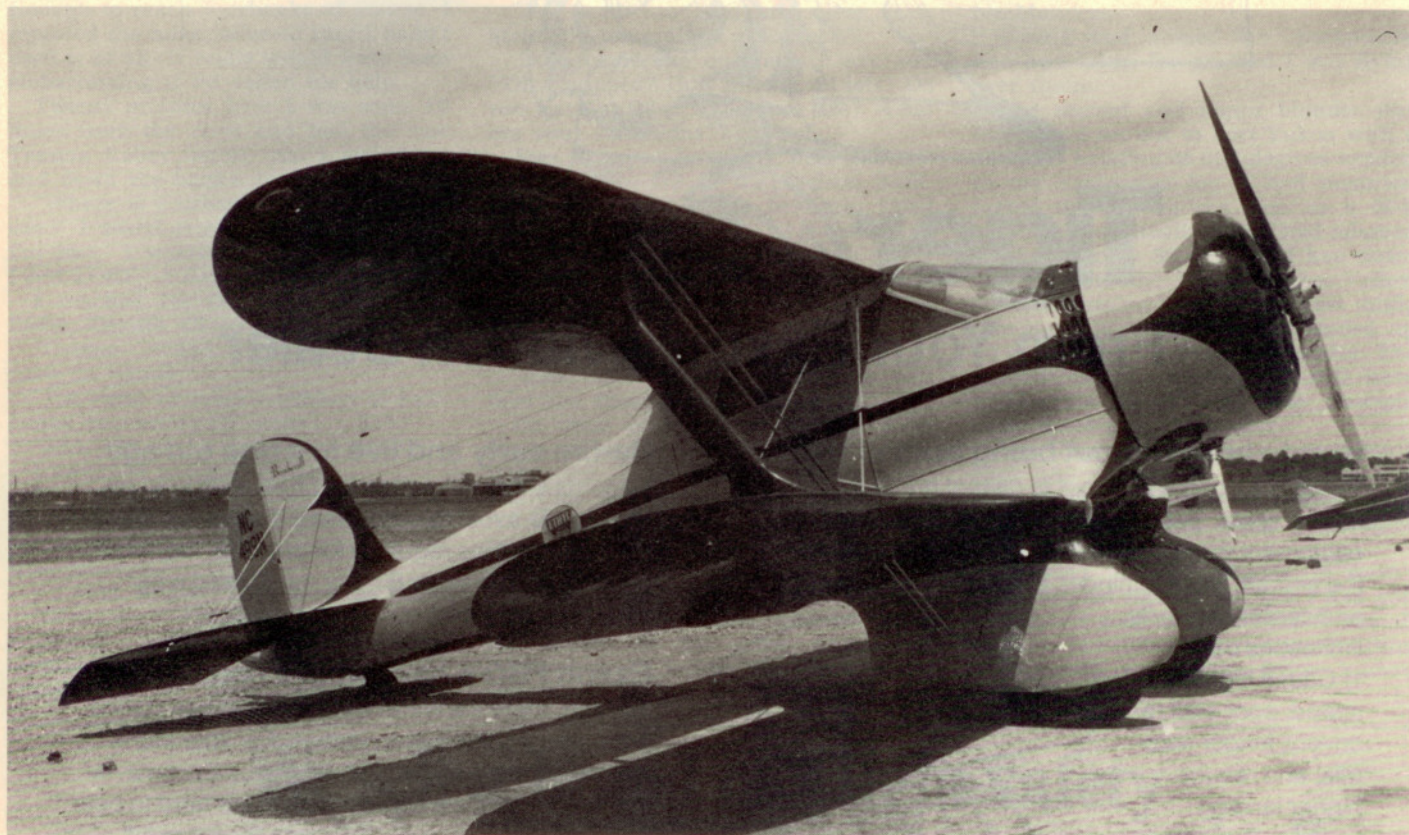


**YESTERDAY'S  
WINGS**

# The Beech Staggerwing



*This is the first Beech Model 17 Staggerwing built in 1932 but not sold until 1934. Note that the flying wires pass right through the lower wing and anchor to rigid landing gear structure behind the spatted wheel. Another of four fixed-gear models built had a 690-hp engine, flew 250 mph.*

**Born in the 30s,  
unorthodox and  
speedy biplane  
still flies in  
significant numbers**

by PETER M. BOWERS / AOPA 54408

■ ■ If anyone were ever to compile a list of the great general aviation airplanes, the Beech Model 17, or "Staggerwing," would have to be at or very near the top.

In addition to being a true classic among flying machines, this unorthodox design has a mystique enhanced by highly implausible beginnings, a Rolls-Royce reputation for both performance and prestige, and a production life exceeding that of any American-built biplane other than the Grumman Ag-Cat duster. While it qualifies by all standards as an antique, the present-day owners don't regard it as such. It is in an ageless class and category all its own. Its widely-used nickname, Staggerwing, based on a distinctive structural feature, has become a noun instead of an adjective. The Staggerwing is one particular manufacturer's airplane model, as is the "Cub."

In 1924, Walter H. Beech left Swallow Aircraft in Wichita, Kan., to establish a new firm, Travel Air, in the same city.

When giant Curtiss-Wright absorbed Travel Air in 1930, Beech became a C-W vice president. Then, when C-W decided to close the Wichita plant and move its operations into another C-W plant in St. Louis, Beech resigned and stayed in Wichita. With some former Travel Air engineers, he formed a new company, the Beech Aircraft Co., and set up shop in a borrowed corner of the Cessna plant (Clyde Cessna had been a partner of Beech in the founding of Travel Air) and hand-built the prototype of the Beechcraft 17. The implausibilities of both the action and the design were many.

First, the four-place airplane was a biplane at a time when big two-wingers were almost entirely out of production and largely displaced in general use by monoplanes. Second, it was a high-powered (320 hp) and expensive machine, obviously intended for the carriage trade at a time when the industry was hurriedly developing simple no-frills models to keep costs down and attract customers. Finally, it was introduced



## BEECH STAGGERWING

	A-17F	B-17L	D-17S
Price	\$24,500 (1934)	\$8,550 (1935)	\$18,870 (1940)
<b>Specifications</b>			
Engine	Wright Cyclone R1820F-11 690 hp @ 1,950 rpm	Jacobs L-4 225 hp @ 2,000 rpm	P&W Wasp Jr. 450 hp @ 2,300 rpm
Wing span	34 ft 6 in	32 ft	32 ft
Length	24 ft 2 in	24 ft 5 in	25 ft 11/16 in
Wing area	356 sq ft	273 sq ft	296 sq ft
Empty weight	3,285 lb	1,600 lb	2,605 lb
Gross weight	5,200 lb	3,165 lb	4,250 lb
<b>Performance</b>			
Rate of climb	2,500 fpm	1,000 fpm	1,500 fpm
Maximum level speed	250 mph	175 mph	212 mph
Cruise speed	212 mph	150 mph	202 mph
Range	780 mi	550 mi	700 mi
Ceiling	25,000 ft	15,000 ft	26,000 ft

in the depths of the same depression that had forced the closure of many old and well-established aircraft firms.

Even the designation was a misnomer. As the first product of Beech Aircraft, it wasn't the logical "Beech Model One." The model designation 17 meant that it was the 17th designated design developed under Beech's direction, starting with the first Travel Air. His last for C-W had been the Model 16, a continuation of the old Travel Air numbers, so his own first model was the 17 and ignored the fact that C-W had meanwhile produced a Model 17 of its own.

Structurally, the Beech 17 was mostly conventional, with welded steel-tube fuselage and tail and fabric covering. The wing, designed for speed, used a U.S. Navy N-9 airfoil and featured welded steel-tube truss spars and wood-truss ribs, again fabric covered. The prototype had no flaps, but the second article had drag flaps mounted ahead of the ailerons, which were on the lower wings only.

The unorthodoxy was external—while most biplanes of the time utilized staggered wings, that is, one ahead of the other, their stagger was "Positive," meaning that the upper wing was forward. Beech reversed this to put the lower wing forward for two major reasons—first, to improve the pilot's visibility and second, to provide a convenient mounting for the fixed or retractable landing gear in the style of the contemporary Northrop "Alpha" and the Lockheed "Sirius/Altair/Orion" series. The original fixed landing gear was covered by big "spats" in the style of the Northrops and made the 17 look like no other biplanes seen before or since. The negative stagger imparted a racy look that was further enhanced by the use of a single I-strut on each side in the style of most biplane racers of the 1920-1930 era.

Since the use of negative stagger was a rarity, the term was used in outsiders' descriptions of the Model 17 to distinguish it from other biplanes; no

one would have thought to identify a Waco, say, by calling it "The Positive Stagger Waco." Somehow, the word "negative" was dropped along the way and Beech Staggerwing became common. Soon the word "Staggerwing" alone was all that was needed to identify that one model without further reference to builder or model.

While the prototype and first production models startled the industry with their speed, the 5th and 11th articles were truly sensational. Designated A-17, they were fitted with 690-hp Wright "Cyclone" engines and turned in top speeds of 250 mph. The enormity of this accomplishment can be appreciated by realizing that the Navy's latest biplane fighter, the 650-hp Grumman XF2F-1 with retractable landing gear, topped only 230 mph. The comfortable four-place Beech was a fully-certificated civil model, too, not a special racer.

Major changes came in 1934. The 17 was redesigned for easier production and a broader market. The landing speed was tamed a bit by a change to the docile Clark YH airfoil and the wing spars were changed to solid wood. The engine used in the new B-17L model was the 225-hp Jacobs L-4, but some of the speed lost to the lower power was regained by retracting the landing gear, including the tail wheel. Beech had by this time bought back the old Travel Air plant and was able to go into production.

Sales climbed as the depression began to wane, particularly after a small increase in power allowed an increase of seating to five.

Improvements were constant. The D Model introduced still another airfoil, the NACA 23012, with ailerons now on the upper wing and standard flaps on the lower. These wing details remained constant through all succeeding model changes.

Altogether, eight basic variations of the 17 were type-certificated, starting with the plain 17 and then going from A-17 through G-17. Specific powerplants

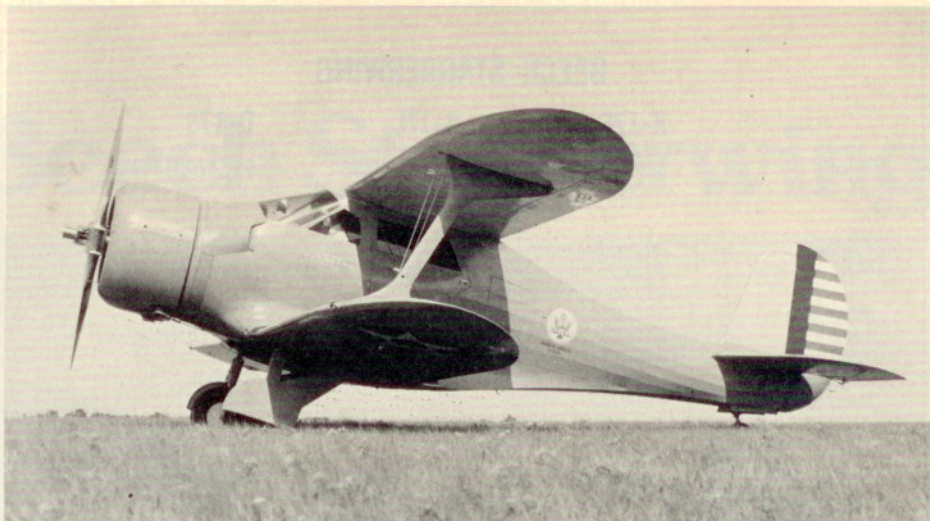


STAGGERWING *continued*

in sub-variants were identified by suffix letters too numerous to list here; the most widely built model was the D-17S with the 450-hp Pratt & Whitney Wasp Jr. The final G model was produced in 1946, still as a custom model for the carriage trade; the last was not assembled and delivered until 1948.

The Staggerwing was never a mass-production article, remaining essentially a custom product until World War II brought a demand for high-performance, light transports. The U.S. Army bought 210 D-17S models as YC-43s and UC-43s, plus drafting 118 various other models from civil owners and assigning designations as high as UC-46K.

The Navy bought a single C-17R as JB-1 in 1937 and 352 D-17S models as GB-1s and -2s starting in 1940. Britain acquired 105 on lend-lease as the Beech "Traveller." Of approximately 924 Staggerwings built, 563 were on military contracts. Of all the variants represented in the approximately 250 Staggerwings still registered, most are former military D-17S models.



*Most widely produced Staggerwing was the D-17S with 450-hp P&W Wasp Jr. This is the Army's first YC-43, assigned to the U.S. Embassy in London in 1939. Final Staggerwing was the C-17S model of 1946-48 with a closed fairing of the cowling into the fuselage.*

As a flying machine, the Staggerwing was a handful, particularly on the ground. In capable hands, however, its biplane characteristics were exploited by wide use in short-field mountain flying and extensive bush-type flying in Canada and Central and South America. Its utility was further enhanced by operation on skis or twin Edo floats, and one even became an amphibian.

A C-17R piloted by Louise Thaden won the 1936 Bendix Transcontinental Trophy Race, after the high-powered racers were all forced down. Other Staggerwings placed third in 1937 and fourth in 1938 and 1939, a remarkable showing from a comfortable and stock five-seat commercial model against a field of bona-fide racers and civil versions of the latest Army pursuits. □