



The first Cloudboy rolled off the production line in July 1930. Originally designated as Model 6A, the airplane went through several engine changes to become a Model 6D, a 6L and finally a 6H.

Y E S T E R D A Y S • W I N G S

# The Stearman Cloudboy

*Breaking the biplane mold*

BY PETER M. BOWERS

Though the monoplane made significant gains in the civil market in the late 1920s, the bread-and-butter model of most civil aircraft producers in 1929 was still a two- to three-seat open-cockpit biplane with a 100- to 220-hp engine.

The dominant producer at the time was Waco. Travel Air, Alexander Eaglerock and American Eagle were grouped at a second level. Just below these was the Stearman Aircraft Company of Wichita, which had been turning out a variety of 200- to 500-hp general aviation and mail-carrying biplanes since early 1927.

Early in 1930, Stearman started developing a new 165-hp two-seater aimed at the trainer market. A U.S. Army requirement for a new primary trainer of that power level had a strong influence on the design of the Stearman Model 6 and the executive decision to go ahead with it.

The Stearman Model 6, named Cloudboy, was as thoroughly conventional as an airplane could be at the time. There was nothing innovative about it. In fact, the Model 6's rather severe lines looked almost regressive compared with some of its more curvaceous contemporaries. This was deliberate—for structural simplicity and easy maintenance.

*Peter Bowers, AOPA 54408, works for Boeing. But when he flies, he prefers antiques or his homebuilt, winner of the 1962 EAA design contest.*

The fuselage and the empennage were made of welded-steel tubing, and the wings were made of solid wood spars with wood-truss ribs. The airfoil was the U.S. Navy N-22, and four metal-skinned ailerons provided good low-speed control. Fuel was carried in a single gravity-fed tank in the upper-wing center section.

Only 10 Cloudboys were built: six as civil models and four for the Army. There were very minor differences among the various airframes. All the significant variations were forward of the firewall: Seven different engines were used. Because of these, the 10 Model 6 airplanes received 13 different subdesignations. There were seven civil subdesignations: Model 6A, 6C, 6D, 6F, 6H, 6L and 6P, which included five civil Approved Type Certificates (ATCs) and two Memo (2-) Approvals. There were six military subdesignations: YPT-9, -9A, -9B, -9C, YBT-3 and YBT-5.

Before trying to sort these out, it should be mentioned that, after Stearman became part of the United Aircraft and Transport Corporation in 1929, it changed the system of applying aircraft serial numbers to its airplanes. Instead of numbering the airframes as they were constructed, regardless of model, the serials were keyed to the model number. The first Model 6 had serial number 6001, the tenth, 6010. The easiest way to keep track of all the Cloudboy redesigna-

tions is by the unchanging serial number, called c/n—for constructor's number—by aircraft data buffs.

The Cloudboys are listed here in alphabetical order by their suffix letters. However, the letters do not correspond to the order of their appearance on the market.

The first Cloudboy produced was a Model 6A. This used a 165-hp Wright J-6-5 Whirlwind engine and received ATC A-365 on September 16, 1930. Altogether, three airplanes rolled out of the factory as 6As—6001, 6002 and 6004. But all three were converted to other designations: 6001 became a 6D, a 6L and finally a 6H; 6002 remained a 6A for four years before becoming a 6P; and 6004 became a 6L. One additional 6A resulted from putting a J-6-5 engine in the only 6H constructed at the factory, 6009. This too was only temporary. The Model 6A was used as a pilot model for the U.S. Army YPT-9 series.

The initial price was \$8,500. At a time when other manufacturers were slashing prices to unload unsold stock, Stearman raised the price to \$10,500 to meet the real cost of the product.

The Model 6C was the last of the Cloudboy airframes and was sold without an engine in May 1933. The buyer installed a 300-hp Wright J-6-9 Whirlwind on his own, along with many other modifications (including a rear canopy), and obtained

continued

## YESTERDAYS • WINGS

*The single Model 6F was used for a price check—Stearman wanted to test the value of the Continental A.70 over the original Wright engine. The Continental lost, and Model 6F became a 6L with a higher-powered Lycoming.*



*The last Cloudboy built was a Model 6C. Delivered without an engine, it was fitted with a 300-hp Wright J-6-9, a full NACA cowling, wheel pants and a canopy.*

Memo Approval 2-457 on August 18, 1933. The 6C was the only Cloudboy to retain its original model designation.

The Stearman Model 6D was not built as such. Airframe 6001 had that designation temporarily when it was fitted with a 300-hp Pratt & Whitney Wasp Jr. engine. It became the pilot model for the Army YBT-5 model. Because of possible commercial sales, the 6D configuration was maintained long enough for the model to qualify for ATC A-402 on February 12, 1931.

The single Model 6F, airframe 6003, appeared less than two weeks after 6A, 6001, and was used to evaluate an equivalent engine, the 165-hp Continental A.70. The principal advantage of the A.70 was its lower price. The 6F initially cost \$7,945, but that was raised to \$9,460. It received ATC A-371 on September 30, 1930, but became a 6L in less than two years.

One Model 6H, 6009, was built and powered with a 170-hp Kinner C-5 engine. ATC A-458 was awarded on February 12, 1932. This was after a similar engine had been tried in the Army YPT-9C. The civil 6H later became the fourth civil 6A.

None of the Cloudboyes were built as 6Ls—all were converted with the 210- to 220-hp Lycoming nine-cylinder radial engine. ATC A-549 was awarded on February 18, 1932. At least three of the civil models (6001, 6003, 6004 and possibly 6002) and two of the four Army models became 6Ls.

Another conversion, this time of airframe 6002 (the second 6A), created Model 6P. When 6002 was sold in September 1934, the new owner replaced the 165-hp Wright J-6-5 with a 220-hp Wright J-5 Whirlwind, which had been out of production since 1929. The owner obtained Memo Approval

2-520 for the reversion to the older engine on February 12, 1936.

Reverting to an older powerplant was not unusual at the time. Sometimes a buyer already had a suitable engine and bought a used or even a new, engineless airplane and had his own installed (the Model 6C, for instance). Sometimes, a late-model, low-power engine was replaced with an even older, yet higher-power model. This was sometimes government policy, too. In 1934 and 1935, the Navy ordered 61 Stearman NS-1 (Model 73) trainers and had them powered with J-5 engines that had been in Navy warehouses since 1929.

The four military Cloudboyes differed slightly in weight and performance from the civil models because of military equipment and because the Army had different test procedures. For all practical purposes, though, the Army models can be regarded

as identical to the civil models that used corresponding powerplants.

In late 1930, the Army ordered four Model 6As (6005 through 6008) to test as primary trainers under the designation of YPT-9. Two other firms, Consolidated and Verville, also received four-airplane orders for competing 165- to 170-hp trainers, designated YPT-11 and YPT-10, respectively.

The initial low-power engines soon proved inadequate for the mission. This was not the result of the designers underestimating the requirements; the power was dictated by the Army specifications under which the airplanes were built. As an example of how far the Army's specifications were behind the times, the YPT-9s were supposed to use tail skids at a time when the civil models had been fitted with steerable tailwheels. Engine changes quickly were undertaken by all three manufacturers, and none



of the competing trainers kept their original subdesignations.

The fourth YPT-9, 6008, was fitted with a 165-hp Continental A.70 engine, which the Army called YR-545-1, and became the YPT-9A. The Continental engine did not do the job either, so it was replaced by a more powerful Lycoming.

The installation of a 220-hp Lycoming (Army designation R-680-1) in 6005 and 6008 resulted in the YPT-9B and what seemed to be the optimum combination for the airplane and its mission. This change, made in October 1931, quickly was adopted by the civil Model 6L. The other manufacturers also adopted the Lycoming. Consolidated, already the principal supplier of trainers to both the Army and the Navy, received an order for 26 Lycoming-powered PT-11Ds, plus the earlier PT-11s were converted to PT-11Ds.

Airframe 6006 was fitted with a 300-hp Wright J-6-9 (R-975-1) to become the YBT-3. Unsuited as a basic trainer, it was reengineered by the Army with the 170-hp Kinner C-5 engine (Army designation YR-

720), and it became the YPT-9C. The Kinner installation did not last either, and 6006 ended its career as a PT-9B, its fourth military designation.

The second Stearman basic trainer conversion, the YBT-5, was also a YPT-9, airframe 6007. It was fitted with the 300-hp Pratt & Whitney Wasp Jr. (R-985-1), which already had been tried in the civil Model 6D. This was the right engine for the mission, but again Consolidated received the production order, this time for 10 BT-7s.

All but one of the Army's Cloudboys were out of service by early 1936; 6008 survived until September 1942, when it was transferred to the Department of the Interior as a PT-9B.

Stearman struggled through the Depression and made slight changes in its designating system in 1933. The next design, instead of being Model 7, became Model 70 to accommodate variations such as 73, 75 and 76. The Model 75 became the famous Kaydet Army-Navy trainer of World War II. With 8,428 units built, the Model 75 was the biplane with the largest production

volume of all time. After the first Model 70, 70001, appeared, the system was changed to designate a zero serial number for the prototype and higher digits for modifications to the basic design. The Model 73, for instance, started at number 73001.

In 1934, Stearman pulled out of United Aircraft and became a subsidiary of the Boeing Airplane Company. In 1939, it became the Wichita Division of Boeing, and the airplanes officially became Boeing aircraft. However, in a classic example of stubborn name-retention, they still are called Stearmans by almost everyone, in spite of Boeing nameplates and paperwork.

Of the 10 Cloudboys built, only two survive today. Airframe 6003, which ended up as a 6L, was restored in the mid-1960s and painted to resemble a YPT-9B. It was declared Grand Champion Antique at the 1967 Antique Airplane Association convention in Ottumwa, Iowa. Another 6L, 6004, which had been a longtime workhorse at the Boeing School of Aeronautics through 1941, also was painted by its new owner as a YPT-9B in 1970. □

#### STEARMAN MODEL 6 CLOUDBOY

##### MODEL 6A/YPT-9

Wright J-6-5 Whirlwind  
(R-540-1)  
165 hp @ 2,000 rpm  
32 ft  
24 ft 8 in  
272 sq ft  
8.82 lb/sq ft  
14.55 lb/hp  
1,733 lb  
2,400 lb

##### Specifications

Powerplant  
Wingspan  
Length  
Wing area  
Wing loading  
Power loading  
Empty weight  
Gross weight

##### Performance

110 mph  
87 mph  
45 mph  
710 fpm  
12,300 ft  
395 sm  
37 gal

High speed  
Cruising speed  
Landing speed  
Initial climb  
Service ceiling  
Range  
Fuel capacity

##### MODEL 6D/YBT-5

Pratt & Whitney Wasp Jr.  
(R-985-1)  
300 hp @ 2,000 rpm  
32 ft  
23 ft 6 in  
272 sq ft  
10.35 lb/sq ft  
9.38 lb/hp  
1,952 lb  
2,814 lb

137 mph  
113 mph  
55 mph  
1,250 fpm  
18,100 ft  
490 sm  
65 gal



The four military Cloudboys were called YPT-9s. They differed only slightly from the Model 6As in weight and performance. Like the civil models, the military models underwent many engine changes. Before and after—remember the Model 6F from the previous page? Well, here it is again, this time with its new engine and a new paint job. It is one of two Cloudboys still in existence.

