



Only a civil registration in the current style proves that this Boeing-Stearman PT-17A is a restoration and not an original warming up at an Army desert training field in 1941.
Photos by Peter M. Bowers

modification. Armed export models with 330-450 h.p. engines were built as Model 76.

In 1939, before major production of the 75 got under way in the war boom, Stearman became the Wichita Division of Boeing and its products officially became Boeings. While a corporate name change had gone smoothly and was taken in stride by the public in the renaming of Taylor *Cubs* as Piper *Cubs* in 1937, the Stearman-Boeing switch didn't take at all in the case of the *Kaydet*. Even though the nameplates and paper work clearly proclaimed them to be Boeings, practically everyone associated with them—factory personnel, military pilots and ground crews, and postwar civil owners—continued to call them Stearmans.

The name *Kaydet* was applied early in World War II when the government encouraged the use of popular names for the various military aircraft models as a security screen to conceal the ac-

■ ■ The Boeing Model 75, better known as the "Stearman" or the *Kaydet*, is one of the outstanding aeronautical anachronisms of all time. Not only is it an antique airplane by today's standards, it was practically an antique when it was built.

Even the name is an anomaly. The Stearman Model 75 was introduced in 1935, a year after the Stearman Aircraft Company of Wichita, Kan., became a subsidiary of the Boeing Airplane Company of Seattle, Wash. Both had been part of United Aircraft and Transport Corporation and joined forces on their own when that combine was broken up in 1934. The Stearman line had started in 1927. The Model 70 of 1933, prototype of the 75, resulted from the evolution of the original Stearman C-series and included features of the Boeing Model 203 trainer of 1929, a design that Boeing had sold to Stearman. Production Models 73 and 76 were minor variants and virtually indistinguishable from the renowned Model 75.

A handsome biplane in the style of the late 1920's, it was produced in greater quantities than any other biplane in the world at a time long after the biplane had lost its numerical and operational superiority in commercial and first-line military operations. If it hadn't been for World War II, there would have been only a few hundred *Kaydets* instead of the 10,346 (8,584 actual airplanes and equivalent spare parts) that were built through August 1945. Although certificated as a commercial airplane in 1939, the military provided the Model 75 with the first of its three separate careers, using it as the principal primary trainer of both the Army and the Navy. With an extremely rugged welded-steel tube fuselage and wood frame wings, the Model 75 was well-suited to the rigors of military training. The frame was so strong that higher-powered engines, and even guns, could be installed without structural

Yesterday's Wings:

The *KAYDET*

With many designations, and varied engines, the Boeing Model 75 biplane is still around in quantity and very popular among vintage-plane buffs

by PETER M. BOWERS / AOPA 54408

This former Army PT-17 has been fitted with a 450 h.p. Wasp Jr. engine and dressed up for air show work. Sunburst paint job for upper surfaces is almost a mandatory uniform for exhibition ships.



tual development stage of an airplane, as B-17F or G. This worked fairly well in public relations work, but not with the actual users of the aircraft, to whom the detail differences were important. In the case of the military Model 75, there were eight different factory model numbers and nine basic military designations for what was essentially the same airplane as shown in the accompanying table. There were also minor differences in the Army designations resulting from special installations, as an electrical system added to a PT-13A making it a PT-13B, etc.

Even though the Army and Navy switched *Kaydet* orders back and forth to meet their varying needs, there were just enough differences involved because of differing service specifications to result in changes in the manufacturer's designation. The first airplane ever to achieve complete standardization between an Army and a Navy version was the Boeing E75, which was given the dual designation of PT-13D/N2S-5. After reaching this milestone, the Navy promptly put winter canopies on some and made them different again.

The majority of the *Kaydets* survived the war and turned up on the military surplus market. This made them civilian airplanes, and the factory model numbers, rather than the military designations, appeared on the FAA paper work. However, the new owners not only kept on calling them Stearmans, but they preferred to use the original military designations. From here on, accurate identification became difficult.

In the military, the power plant originally installed was the major determinant of the designation. If a PT-13, for example, which used the 220 h.p. Lycoming R-680, needed an engine change, another Lycoming was installed. A postwar owner needing another engine might find it easier to obtain the Continental R-670 from a PT-17, so he'd use it to replace the Lycoming in his PT-13 with no noticeable effect on the performance and with minimum problems with FAA engineering. However, the paper work showed his plane to still be a PT-13 while to all appearances it was now a PT-17. Similarly, when a PT-13 and a PT-17 both had their original 220 h.p. engines removed and were converted to absolutely identical dusters with 450 h.p. Pratt &

Boeing Model	ARMY	NAVY	ENGINE
75	PT-13	—	220 h.p. Lyc.*
A75	PT-13A, B, C	—	220 h.p. Lyc.
B75	—	N2S-2	220 h.p. Lyc.
E75	PT-13D	N2S-5	220 h.p. Lyc.
A75J1	PT-18	—	225 h.p. Jacobs
A75N1	PT-17, 17A	N2S-1, -4	220 h.p. Cont.*
B75N1	—	N2S-3	220 h.p. Cont.
D75N1	PT-27	—	220 h.p. Cont.

(* "Lyc." indicates Lycoming; "Cont." is for Continental)

Whitney engines installed, they were still a PT-13 and a PT-17, albeit modified.

Quite a few *Kaydets* were used by private owners as trainers and sport planes in the early postwar years in their original 220 h.p. dual-control configuration. However, they were uneconomical for such purposes in competition with lower-powered surplus liaison types in the *Cub* class and with the postwar crop of 65 to 85 h.p. commercial trainers. As a result, the stock 220 h.p. *Kaydet*, or "Two-Hole Stearman," virtually vanished from the scene.

Most were eventually fitted with surplus 450 h.p. P&W *Wasp Jr.* engines and converted to dusters and sprayers. A few 450 h.p. conversions were fitted with an extra set of ailerons in the upper wing and a smoke generating system and embarked on air show careers. The Stearman duster dominated the agricultural aviation field for nearly 20 years following the war, giving the *Kaydet* its second full career. Not until the early 1960's did it start to give way to modern designed-for-the purpose "ag" types.

The rugged dusting life took its toll, however. In 1950, FAA figures showed 4,125 Model 75's on the U.S. civil register only six years after the last one was built. This figure dropped to 2,312 in 1964. This figure is almost double the total of all other production biplanes registered in the country.

Now it would seem logical to assume that the end of a rugged 20-year dusting career would provide a fine excuse for scrapping an old war-surplus trainer especially an obsolete biplane with wooden wings. Not so! While the *Kaydet* couldn't compete economically with other private-owner types in the early postwar years, a different situation prevailed in the 1960's: Antique airplanes had become red-hot hobby items on a national scale. So, instead of heading for the junkpile, the faithful old workhorse has now embarked on a third career that is an interesting example of aeronautical evolution in reverse.

The big engines and dust hoppers are pulled out and original model 220 h.p. engines, along with the second cockpit and dual controls, are reinstalled. Some owners go so far in the detailed accuracy of their restorations that they reapply the colorful U.S. Army markings

of the 1935-42 period even though their particular machine might have been built as late as 1945 and for the Navy at that. They rationalize this fine point of aeronautical archaeology by saying that the airplane is representative of the era and therefore qualified to carry the markings despite discrepancies in the calendar or the uniform the original pilot wore.

The work is often done by the owners themselves and can take several years, but there are a number of custom shops that specialize in reconverting Stearman dusters to two-holers. These produce completely remanufactured airplanes under the original prewar approved type certificate at prices from \$8,000 to \$12,000, somewhat above the \$7,713 to \$10,412 that the military paid originally. This may sound high for a two-seater but is not bad at all for 220 horsepower. Besides, who can put a meaningful price tag on the old-time characteristics that have been eliminated from today's crop of winged automobiles—wind in the face, whistling wires, and unrestricted aerobic capability? No discount allowed, either, for restricted visibility, lack of heat, a high two-wheel landing gear, and a cruising speed that you check with a calendar instead of a watch. All of these positive and negative factors add up to a big chunk of nostalgia and a link to the days when flying was a real adventure. No one pretends it's an efficient way to get around. It's like cooking on an outdoor barbecue grill when you have a modern kitchen in the house—it's fun because you don't *have* to do it that way.

There are so many *Kaydet* owners who feel this way today that they have formed a national organization, The Stearman Restorers Association, with headquarters at 123 N. Highland Avenue, Rockford, Ill. 61107, and dues of \$10 a year. They have a real cooperative going, through which they help each other with know-how and spare parts and work up fly-ins and other activities that provide opportunities for taking their beloved biplanes cross-country in numbers. Each member wants the others to enjoy "Stearman flying" as much as he does. Such people will prolong the already phenomenal life of the famous *Kaydet* and assure us the sight of those beautiful biplane wings for many years to come. □

BOEING KAYDET

Specifications And Performance

Span	32 ft. 2 in.
Length	23 ft. 1/2 in.
Wing Area	297.4 sq. ft.
Power Plant	220 h.p. (see table)
Empty Weight	1,936 lbs.
Gross Weight	2,717 lbs.
High Speed	124 m.p.h.
Cruising Speed	106 m.p.h.
Rate of Climb	840 f.p.m.
Service Ceiling	11,200 ft.
Range	505 mi.