

EDITOR'S NOTE: This is the second, and last, article by Peter Bowers on the famous "Cub" airplanes. Last month's article traced the beginning of the "Cub" and was entitled "Mr. Taylor's Cubs."

■ ■ As detailed in last month's PILOT, the famous E-2 and J-2 Taylor *Cub* lightplanes were built by the Taylor Aircraft Company of Bradford, Pa. Co-founder C. Gilbert Taylor was bought out by his partner William T. Piper in 1935 and left to form a new company. After the Bradford factory burned down in 1937, Piper reorganized the firm as Piper Aircraft Company and set up a new shop in an old silk mill in Lock Haven, Pa.

Manufacture of the same J-2 *Cub* continued while Chief Engineer Walter Jamouneau developed a new *Cub* model, the J-3. This was essentially a refinement of the J-2 with enough detail difference to justify a new Approved Type Certificate, ATC-660. Perhaps the most significant change was the adoption of S.A.E. X-4130 steel for the fuselage structure. This permitted a powerplant growth that was impossible in the old J-2.

The original engine was the same 37 hp Continental A-40 used in the J-2 except that revised regulations now required the engine to have dual ignition if it were to be used in a new production airplane. With several new flat-four engines now on the market, powerplant options were offered since the bare J-3 with a tailskid and no brakes was about all that the old A-40 could handle. The J-3F (ATC-692) used the new 50 hp Franklin, the J-3P (ATC-695) used the 50 hp version of the old Aeromarine AR-3-40 radial engine that had been used in the F-2 *Cub* and was now called the Lenape *Papoose*, and the J-3L (ATC-698) used the new 50 hp Lycoming O-145.

This use of letters to indicate the powerplant extended to the original J-3, which became J-3C with enough refinements to justify a new ATC, No. 691. This single ATC covered J-3s with the A-40, A-50, and A-65 Continental engines. The various powers were reflected in the airplane model designation as J-3C-40, J-3C-50, and J-3C-65. Seaplane versions carried the letter S, as J-3C-65S. The same horsepower and seaplane identifications were used on the J-3s with other powerplants.

All of these engines but the Lenape advanced in power and reached 65 hp by 1940. Production of J-3C, F, and L was about equal until Pearl Harbor. A J-3 version with the 50 hp flat-four Menasco was offered in 1937, but this one died because that engine was single ignition and the manufacturer discontinued it soon afterward.

J-3 production was a mere 25 in 1937, but increased to 647 in 1938 and boomed to 1,347 in 1939. Some people maintain that the 1937 J-3s were built as Taylors, but this seems to be a case of the thrifty Mr. Piper using up the existing stock of Taylor nameplates be-

## YESTERDAY'S WINGS

*Piper took over where Taylor Brothers left off. Figures show that 14,125 J-3s had been built when production of this model ceased in 1947. About 10,000 J-3s and succeeding models reportedly still in existence*

# Mr. Piper's Cubs

by PETER M. BOWERS / AOPA 54408

fore ordering new ones.

Piper didn't stake his entire business on a single model. He brought out two related models using many parts in common with the J-3—the side-by-side J-4 *Cub Coupe* in 1938 and the three-place J-5 *Cub Cruiser* in 1940. These will not be detailed here.

The preparations for World War II were a boon to Piper and the J-3. Flying schools in the Civil Pilot Training Program (CPTP) used "Cubs" in greater numbers than any other airplane, and sales climbed to 1,977 in 1940 and 1,855 in 1941. Some unexpected military business developed for the docile and unwarlike "*Cub*" when Piper, along with Taylorcraft and Aeronca, was invited to lend stock lightplanes to the Army for use as unarmed observation and liaison planes in the 1941 war games. This use of lightplanes in close cooperation with the troops impressed the military, who decided to investigate them more thoroughly. Consequently, the three manufacturers were given orders for four stock 65 hp models apiece. Piper's J-3C-65 *Cub* received the service test designation of YO-59. The designation and the Army coloring and insignia were about its only military

features.

The YO-59s were followed by another order for 20 O-59s for later war-games work and then by still another for 120. These O-59s were later redesignated L-4 in the new Army L-for-liaison class in 1942. The Navy also bought 120 stock J-3C-65s for primary training under the Naval designation of NE-1.

Since visibility from the rear seat wasn't too good, especially to the rear, the Army requested that the three manufacturers (it had also bought in quantity from Aeronca and Taylorcraft) add a transparent section to the fuselage aft of the wing and install a reversible rear seat. Piper's improved military version (which was still flown solo from the rear seat) was designated O-59A (later L-4A), and 649 were delivered in 1942. An additional 297 were built as L-4A and the Navy ordered 20 similar models as NE-2.

Wartime production of the civil J-3 ended with the 296 delivered to the schools in 1942, but Army deliveries continued. There were 981 L-4Bs with Continentals, and 1,801 L-Hs and 1,680 L-4Js were delivered through 1945. Contemporary Army documents indicate that these were ordered with Lycoming



O-145s, but photographs and examination of surviving examples indicate that these were delivered with Continentals. The L-4C through L-4G designations were assigned to a few J-3s, J-4s, and J-5s acquired by the Army from private owners in 1942. Interesting J-3 variants were the 253 Army TG-8 training gliders, which were J-3s with the engines removed and a seat added to an elongated nose to balance a three-seat glider. Most of these sold as surplus after the war were reconverted to stock J-3s. Counting the gliders and the Navy models, there were 5,945 military J-3s built. Piper also adapted 100 J-5C *Cub Cruisers* to HE-1 ambulance planes for the Navy.

Civil production of the J-3C-65 *Cub* resumed in 1945, with 938 delivered. These were identical to the prewar model, even to the all-yellow paint job with the black lightning streak, except that the wing spars were extruded aluminum instead of solid wood. The only wood left now in the *Cub* was the wingtip bows and the standard propeller. New owners who could afford them quickly adopted the new metal propellers that were then on the market.

In expectation of a private flying boom, J-3 production zoomed to an almost unbelievable 6,320 in 1946. However, the boom did not turn out as expected and the *Cub* also found itself with some formidable competition. Aeronca, Taylorcraft, and Luscombe had also resumed production of what were essentially their 65 hp prewar models, but Cessna and Commonwealth (formerly Rearwin) came out with new and much more comfortable 85 hp models. Bare-minimum types like the *Cub* lost ground to these, and pilots with low budgets who didn't mind flying with the bare minimum were able to buy surplus military liaison or training planes instead of factory-new *Cubs* or T-crafts. By 1947, unsold J-3s were stored in hangars all over the country and the dealers were hollering for the factory to stop the flow. J-3 production ended with the 720 built in 1947 for a total of 14,125 civil J-3s built.

Again, Piper did not have all his eggs in the J-3 basket. He was quite successful with an improved version of the three-seat J-5C known as the PA-12 *Super Cruiser*. This was a 100 hp three-seater. Sales were 1,453 in 1946, 2,158 in 1947, and ended with 146 in 1948. This model was then expanded to a four-seater, the PA-14 *Family Cruiser* of 1948, and a total of 30 was sold through 1949.

The first postwar attempt to modernize the venerable *Cub* and make it competitive was not notably successful. A new PA-11 model named the *Cub Special* used 65 to 90 hp Continental engines, a closed cowling, fuel tank in the wing, and could be soloed from the front seat. A major departure from previous *Cub* practice was a new blue-and-yellow color scheme derived partly from the 1946 *Super Cruiser*. The changes were not enough to justify a new ATC, so the PA-11 was built under the old J-3C-65 certificate. The PA-11



Standard color scheme for the J-3 was "Cub Yellow" with a black lightning stripe on the fuselage. The operator of this one added a circle to distinguish his "Cubs" from those of other schools operating J-3s on Oakland Airport in 1941. Photo by Art Sutter



Army J-3 was originally called O-59 but was redesignated L-4 in 1942. L-4A and subsequent models had transparent section behind the wing. This is rare seaplane version of L-4J. L-18 and L-21 were similar military versions of 90 hp and 125 hp PA-18 "Super Cubs." Photo by Peter M. Bowers

## SPECIFICATIONS AND PERFORMANCE

	J-3C	PA-18
Span	35 ft. 2½ in.	35 ft. 2½ in.
Length	22 ft. 4½ in.	22 ft. 7 in.
Wing area	178.5 sq. ft.	178.5 sq. ft.
Powerplant	Continental A-65 65 hp @ 2,300 rpm	Lycoming O-320 150 hp @ 2,700 rpm
Empty weight	680 lbs.	930 lbs.
Gross weight	1,220 lbs.	1,750 lbs.
High speed	87 mph	130 mph
Cruise speed	75 mph	115 mph
Climb	450 ft./min.	960 ft./min.
Service ceiling	11,500 ft.	19,000 ft.
Range	206 mi. (12 gal.)	460 mi. (36 gal.)
Price	\$1,598	—

sold 614 in 1947, 578 in 1948, and phased out with 233 in 1949 and a final three in 1950.

A J-3 variant with some PA-11 features was the *Cub Prospector*, assembled in Canada from American-built parts

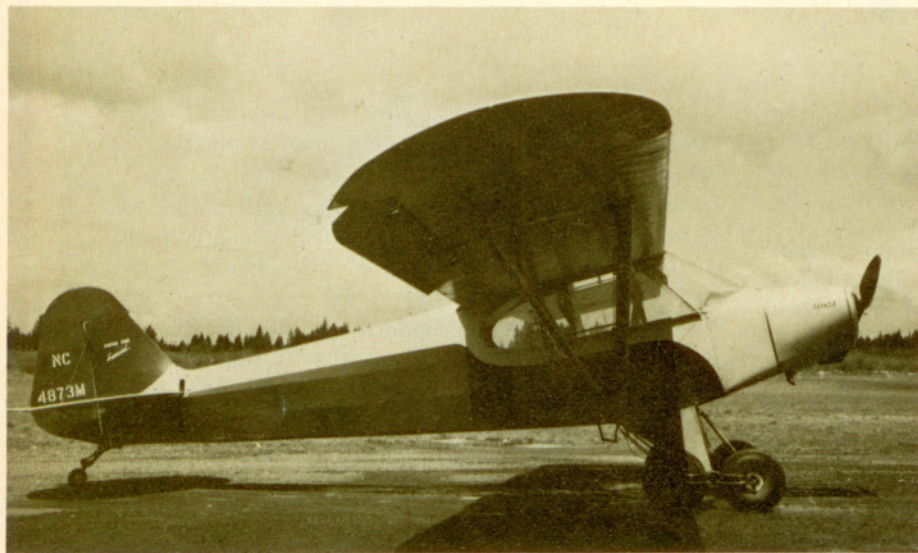
by Cub Aircraft, Ltd. This was a Canadian subsidiary of Piper established in 1937 to assemble "Cubs" for sale in Canada. The *Prospector* featured increased fuel and baggage capacity, but (Continued on page 52)





An odd J-3 variant for the Army was the TG-8. The original nose was cut off and a third seat was added in the new glider nose to maintain the balance. The object was to create a training glider that had the flight characteristics of the boxy cargo gliders that the students would fly later.

USAF Photo



The PA-11 "Cub Special" of 1947–1950 was the first step in modernizing the old J-3. Closed cowling, wing fuel tank, heavier structure, and new paint job were the principal new features. This one has the special Whittaker tandem landing gear developed for rough-field work.

Photo by Peter M. Bowers

The PA-18 "Super Cub" was a higher-powered development of the PA-11. Principal recognition feature from a distance was the more rounded rudder adapted from the three-seat J-5C and PA-12. This PA-18-135 carries salt blocks on wing bomb racks for airdrop to livestock in the western mountains.

Photo by Peter M. Bowers



(Continued from page 49)

otherwise looked like a J-3 with a PA-11-style paint job.

Despite the postwar slump, the "Cub," did not die with the J-3 and PA-11. Piper did abandon the sport-training market for the two-seater, however, and sought to make a workhorse out of the "Cub." The Model PA-18 *Super Cub* was introduced in 1949. This started as a beefed-up PA-11 under ATC 1A-2 but quickly gained extra features, weight, and horsepower. Wing flaps were added, two wing tanks became standard, the span of the horizontal tail was increased, the elevators were aerodynamically balanced, and, of course, the size of the fuselage tubing was increased.

The original powerplant was the 90 hp Continental C-90, and the airplane was designated PA-18-95, or *Super Cub* 95. However, this soon changed to the 108 hp Lycoming O-235 in the *Super Cub* 105, the version that introduced the flaps and balanced elevators. The PA-18-125 and -135 adopted the 125–135 hp Lycoming O-290 engine. The still larger 150 hp Lycoming O-320 produced the *Super Cub* 150, and this model is still in production. Fifty-seven were built in 1970 for a total of 7,138 civil *Super Cubs* through 1970. All of these were built under the same ATC in spite of the engine changes and other variations.

A special *Super Cub* variant, the PA-18A, was notable in being the first agricultural airplane built in quantity at the factory as such instead of being a post-delivery conversion. A new ATC, AR-7, was issued to cover some of the 135 and 150 hp Lycoming versions.

The military also began to buy "Cubs" again, starting in 1950. The *Super Cub* 95 became the L-18, with the old L-4 type rear windows and military features. Nine hundred and seventy-two were ordered by the Army for U.S. forces and for Mutual Aid Pact nations. The *Super Cub* 125 became the similar L-21, with 716 sold. An additional 243 were ordered by the Army but were not true military aircraft. These were designated PA-18T, for M.A.P. nations and Army flying clubs, and the U.S. models carried civil markings.

FAA figures to the end of 1969 (the latest available), show 6,268 J-3s still on hand and 619 PA-11s. The PA-18 *Super Cubs* total 3,518.

An interesting thing about the J-3 is its changing status. It used to be that when anyone had to repaint or re-cover a "Cub," particularly the J-3, he painted it anything but "Cub yellow." Also, referring to a pilot as a "Cub jockey," or "He flies 'Cubs'" was a slur, a derisive remark that indicated he either could not fly anything more complicated or couldn't afford anything better. Now, J-3s are very "in," and are recognized as such classics that the recent restorations are reverting to the original scheme of yellow with the black lightning stripe. Specialty houses do a good business in selling reproductions of the famous old "Cub" decal that Piper applied to the vertical fin in the old days. □