



CUB CRAFTERS



by Thomas Block

**Photos:
CubCrafters**

A few years ago Donald Axinn (a retired real estate developer with homes in Vermont, New York and Florida) decided to trade his 1947 Piper Super Cub in for something different: a brand-new version of basically the same machine. CubCrafters of Yakima, Washington (www.cubcrafters.com) had been doing rebuilds of older Super Cubs for a number of years, and from 1998 through 2004 they manufactured all-new airplanes under the FAA's "Spare and Surplus" rule. (For information on what CubCrafters is up to these days, please see the sidebar)



Piper had ended Super Cub production in the mid-90s, so the CubCrafters version has the CubCrafters name, not Piper's, on the airplane's data plate. CubCrafters would also install whichever of the nearly three dozen STCs they offered to complete the new owner's options list.

The Lycoming O-360 180 HP engine heads the array of improvements that CubCrafters has made to the original Piper design. With it, the airplane will takeoff and land within a couple of hundred feet, and climb at nearly 1500 feet per minute. Fuel consumption at 65% power is listed at 8.5 gph, and that is supposed to yield about 120 mph.

But since forward speed is not the basic reason why Cub buyers clamor for the airplane, the more important number is the airplane's useful load. In Axinn's airplane it comes in at

well over 800 pounds - a number that is helped considerably by the optional STC that takes the maximum gross weight from 1750 pounds to 2000 pounds.

Axinn had his new Cub delivered to him at his Long Island location a few years ago. After putting some flight time on it locally over the next few months, he then took two days and nearly 10 hours of flight time to relocate his new steed to his Florida residence. The total fuel consumed on the southbound trip was 79 gallons, and he said that the flight itself - done entirely at Cub-like ground speeds and altitudes - was just pure fun. He gets to repeat the adventure periodically, since he repositions his airplane whenever he and his wife Joan do their seasonal location changes.

There are lots of neat features on the CubCrafters version that Donald really enjoys - everything from the large access panel on the top of the fuselage to get to the battery, to the optional exterior baggage door on the right fuselage sidewall aft of the rear seat. The old Cub features are still there, too - the big engine cowlings that can be completely opened from either side, and the ability to pivot the engine away from the firewall for ease of maintenance - to name just a few.

When it was time to fly with Donald, I found that my hands went to the optimum spot on the front brace automatically as if it hadn't, in fact, been 40 years since I'd flown a Super Cub (it was the airplane I first soloed, and did most of my Private Pilot flight work in). Unfortunately, my legs didn't twist and bend with the same effortlessness that they did when I was a teenager, so my first few entrances and exits weren't quite as graceful as I had hoped they would be. After awhile, though, my old muscle memory made adjustments for the aging process and I found myself getting in and out without too much trouble (but I never could duplicate that ease of entry/exit of a teenager).

Like the old days, we slid the left side window back and kept the split window/door wide open while he went through the short checklist and got the Lycoming O-360 into action. With the McCauley prop now under power we had a wonderful air conditioning fan at our fingertips and it worked very effectively at keeping us comfortable in spite of the Florida midday heat.

Cockpit accoutrements were comfy but Spartan. The rear seat had measurably less headroom available than the front, and the optional inertial reel shoulder harness for the front seat hung directly in front of the rear occupant. Like the





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original Piper Super Cub, solo flight is front seat only (for weight and balance) so that's the place where the comfort factors would really matter. Everything from switch accessibility to visibility over the nose was greatly improved from that forward crew station where the primary pilot would sit.

We taxied out, with no S turns for visibility needed from the front seat (steering from the back, you'd want to do lots of sashaying around to make certain that all ahead was clear). A quick runup with the tail-wheel pinned down, a control check, and we were ready to aviate.

Throttle forward, at 40 mph we pushed the Cub on its front haunches, then pulled back on the control stick at 55 mph IAS. The airplane simply levitated off the ground in a less of a ground run than it takes to talk about. The documents say that at gross weight this 180 hp Cub can get off the ground in 250 feet.

Both pilots are basically in a glass bubble, and visibility is great in every direction excepting the obvious one: up and to the sides, where the wide, long wings shield your view of what might be above. The sights in other directions - straight down out either side, nearly straight back, and ahead, over the sloping nose - are all worth writing home about.

I did some turns and they quickly reminded me how you don't actu-

ally move the control stick in a Super Cub, you sort of just think left, right, up or down and the airplane magically responds. In medium banked turns and greater, the view out the skylight above the pilot's heads is another helpful and easy way to see where you are going.

The bottom line of the wing was very useful, too - just above the natural horizon, and basically parallel to it at normal airspeeds. The airplane was very stable in all axis, and I steered around using just the rudder pedals for awhile. Several times I changed headings a fair amount without ever touching the stick.

Donald showed me slow flight, courtesy of the vortex generators on the wings and tail. We slowed to 40 mph on the airspeed indicator, and the airplane responded by doing a slight amount of burbling but otherwise it was a totally calm, cool and collected experience. Donald says that he can see and feel a big difference with the VGs installed - without them, there would be more airframe burbling at a higher speed.

Overhead the grass private field we were headed for, Donald pulled the power back, pulled out the manual flaps and dove the Cub around in a tight pattern at 70 mph. Touchdown on the smooth grass was what this airplane had been designed and built to do, and it responded accordingly.

More airfield circuits yielded



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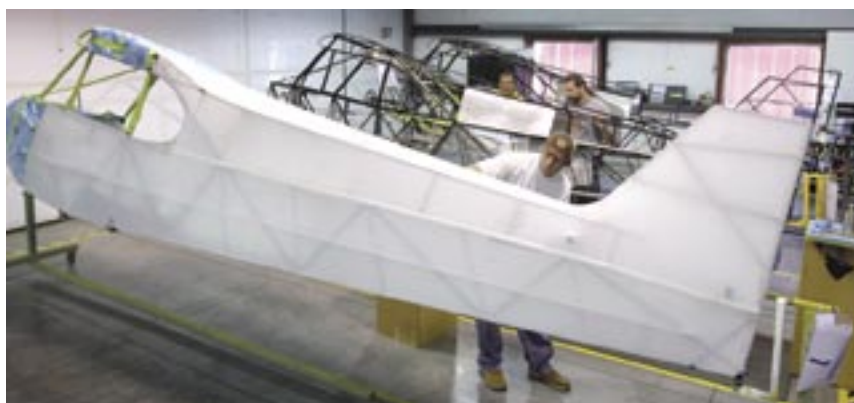
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In 2000 CubCrafters president, Jim Richmond began to worry that a changing climate at the FAA and proposed legislative changes would shut down production of the CubCrafter Super Cub. Not waiting for the other shoe to drop, in 2002 Jim began the arduous process to obtain his own type certificate.

One of the obstacles that Jim and his CubCrafters crew would have to overcome on the way to certification was FAR 23.562- Emergency landing dynamic conditions. This section of the FAR states that seats must withstand a dynamic test of 26 G forward decelerations 19 G downward decelerations and must not allow the pilot's head to hit the instrument panel or cause him to break his back. (give or take 1,000 words)

CubCrafters teamed up with Oregon Aero, a company with a proven track record in seat design for both civilian and military markets, to tackle the seat problem. Working together, they were able to develop a seat and harness system that satisfied FAR 23.562.

With that hurdle out of the way, development of the new airframe continued and on December 16, 2004 CubCrafters received the Top Cub type certificate. The Top Cub boasts 1100 lb. useful load, 205 lb. baggage capacity, complete 4130 reinforced fuselage, 3 inch extended heavy duty landing gear, Cleveland wheels and brakes and a ton more design improvements.

Although the "Spare and Surplus Rule" Super Cubs, like Donald Axinn's are no longer manufactured, CubCrafters continues to develop new and exciting products. Today CubCrafters builds its own certificated, brand new Top Cubs and Sport Cubs (its first entry in the LSA category.) It also continues to rebuild Super Cubs to better-than-new status.

For more information visit www.cubcrafters.com.

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more pleasant Cub memories for me. Side slips to a landing had always been a favorite of mine, and I now remembered why. Wheel landings are also a pleasant experience, and often the arrival of choice on hard surface runways. The airplane's long wheel base makes working off blacktop or concrete far less of a struggle than it might otherwise be - but make no mistake, this is a tailwheel airplane. The pilot needs to fly it each and every moment until the engine is off and the hangar door is locked.

Donald Axinn says that he loved his old Super Cub, but he likes his CubCrafters Super Cub even better. The fit and finish of the mostly fabric (poly-fiber) with a few touches of aluminum airframe is very good, and the improvements in engine power and cockpit instrumentation are big factors in making a pilot feel like this is indeed a modern version of an old and true classic. Matter of fact, that is exactly what CubCrafters had intended to do - to improve an airframe that time had thoroughly tested and voted so positively on. At the very least, the Super Cub is every bit as good as the old one had been. Most pilots would probably say that it's even better.

Editor-at-large Thomas Block has flown nearly 30,000 hours since his first hour of dual in 1959. In addition to his 36-year career as a US Airways pilot, he has been an aviation magazine writer since 1969, a best-selling novelist. He owns an L-19 Birdog, which he contends is a straight cross between a Piper Super Cub and a high-wing Cessna taildragger.

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