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Call It THE BATHTUB

One has to deal with certain things about the Aeronca C-3 up front: it is astonishingly ugly, it is slow, few know its real names, by current standards it doesn't handle all that well; yet, you owe it quite a bit. ● So, look past the ugly because Aeronca gave us our first affordable airplanes. When Amelia Earhart learned to fly in the 1920s, the experience cost \$1 per minute. Consider that in today's dollars. Those Swallows, Eaglerocks, and Wacos took a lot of money to operate. In the Great-Depression few people had much; yet, the intense desire to fly still burned. In garages and cellars people were striving to build good, inexpensive airplanes and, in general, failing dismally. ● One of the dreamers was Jean Roche, a brilliant engineer employed by the Army at McCook Field near

*Aeronca's quirky C-3
was the first affordable
GA airplane*

BY RICK DURDEN

PHOTOGRAPHY BY MIKE FIZER





In 1931, Aeronca's C-3 design debuted as the Collegian, but everybody

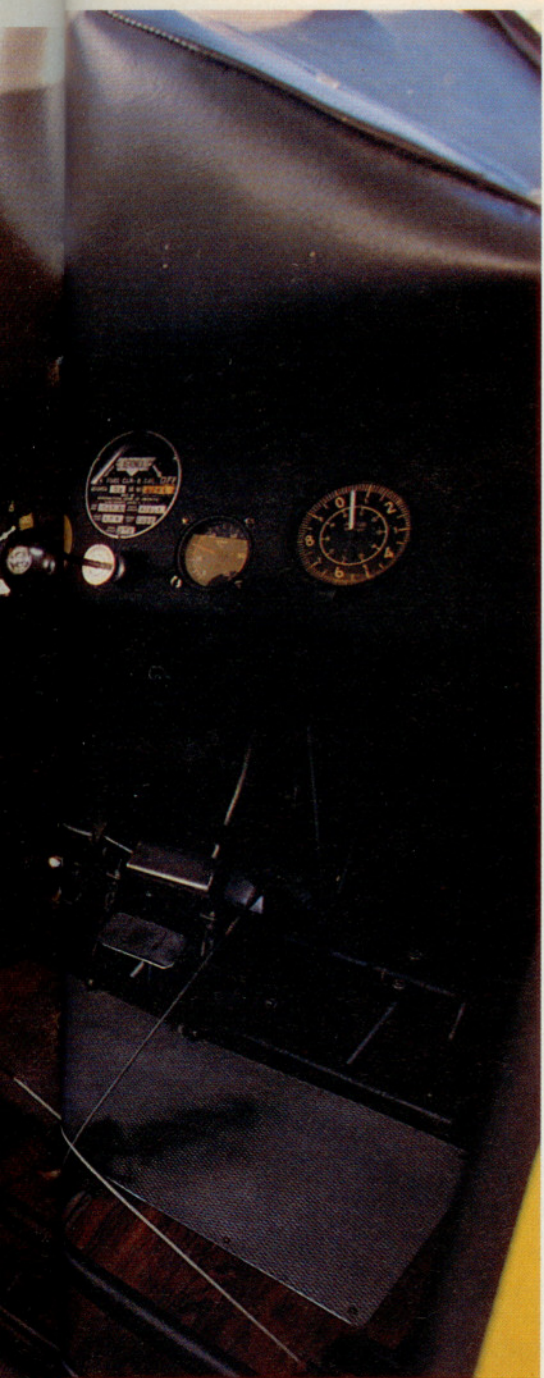
downtown Dayton, Ohio. McCook was the hotbed of aviation research in the '20s. In the middle of it was Roche, who mixed a passion to create an affordable, single-place airplane with the ability to do so. Like the Wrights of his hometown, he started off with gliders. He discovered a co-employee who had designed a two-cylinder, air-cooled engine. It was mated with the glider in what, for us in general aviation, was the immaculate reception. The offspring, a horrible-looking flivver, had decent performance and, by all accounts, stunning maneuverability.



Fate was kind, for Roche had no capital; yet, down the road in Cincinnati, a company called Aeronca had been formed by competent, moneyed businessmen with no airplane to sell. Fortunately for all of us, Mr. Roche and the Aeronca folks got together. The result was the Aeronca C-2, a single-place airplane quite similar to Roche's original design.

The C-2 hit the market in 1929 and caused a minor sales sensation despite having only one seat; 167 were sold as the Depression deepened.

Aeronca, over Roche's vociferous



dy called it the Bathtub.

protests (he was very much the small airplane purist), widened the C-2 to create a two-place machine. A single-ignition, two-cylinder engine with the stunning sum of 36 horsepower was built by Aeronca; christened the E-113; and hung on what was to become, in 1931, the C-3 Collegian—but everyone called it the Bathtub. The C-3 supposedly could be operated for well under a nickel a mile. Whether or not that claim was exactly true, it was the first good, inexpensive two-place airplane to hit the market. It sold and sold and sold. A racing version

was tried, floats were fitted (on 36 hp—that boggles the imagination), and Aeronca even tried to build the airplanes in England.

Eventually, the C-3 was a victim of its own success. It later begat the Aeronca K, Chief, and Champ; but, at a time of extremely rapid development in affordable airplanes, Aeronca stayed with the C-3 design too long. Thus, it is the Cubs—as the representative of a second generation of light planes, which were roomier and had dual ignition—that pilots more readily recall.

There are a few Aeronca C-3s still

extant. Because of their rarity and history, good ones may command up to \$25,000. One, in excellent condition, is owned by a partnership of Jeff Pearson, an Aeronca and Cessna 195 guru, and Steve Ericson, Lockheed engineer and one of the designers of the “Formula I” racing plane *Nemesis*. Despite their affection for fast airplanes they have a soft spot for their Bathtub and keep it at that nirvana of aviation, Chino, California. Pearson’s and Ericson’s C-3 is a 1936 model, by then titled the Master. While earlier versions were open cockpit, theirs has doors and side windows. It





The C-3 brings to mind an ultralight predating modern materials.

has also been modified with a tailwheel, from the original skid, and now has brakes.

One's initial examination of their superb C-3 and its 1,006 pounds somehow brings to mind an ultralight that didn't have the advantage of modern materials in construction.

Certainly you should not pass up the opportunity to fly a C-3. There is not much to the preflight. Confirm that the engine rocker arms have been greased and the valves oiled within the last 24 hours. Rotate the little tab on top of the crankcase. The oil dipstick floats up. To see how close to full the oil reservoir is, pull on the metal rod and see whether it moves upward. Then push the rod down and close the tab. Next, attach each ignition wire to the one—yes, only one—spark plug on each cylinder. They attach with a miniature universal joint arrangement that does not appear to be able to withstand a good sneeze let alone the furious windblast from 36 hp.

Look over the maze of flying and landing wires and the kingpost on top of



everything. Contemplate the funny little wheels jutting from the fuselage and wonder where one gets 14.50 SC tires before Pearson explains that he uses Curtiss P-40 tailwheel tires, as they are the only ones that fit. Pearson has a company called Preservation Aviation, where you can find historic instruments in their original boxes, so it's no wonder he can find P-40 tailwheel tires.

While the C-3 is fabric, the ailerons are aluminum and crimped at the trailing edge. The elevators and rudder have pins that slide into openings built onto the horizontal and vertical stabilizers. The bellcrank in the center of the assemblage holds everything in position. Once you get beyond the odd appearance, the

innovations of the airplane are striking.

Getting inside a C-3 is neither an elegant nor graceful process. Once inside, you wonder how in the world two people ever fit. There is but a single stick with a spade grip that predated that of the Spitfire. The loop at the top is for the instructor to grab. The C-3 was never equipped with dual controls. The instructor could seize the stick but could do nothing about the rudders, thus making the student a voice-activated autopilot when teaching rudder use. The implications for teaching crosswind landings are staggering. It was widely said that for a person to instruct in the Bathtub, he or she had to desperately want to fly.

There are only a few instruments, notably a nonsensitive altimeter and airspeed indicator with a large crash pad above covering the fuel tank. The concept of crashworthiness and the folly of putting fuel tanks in the fuselage—particularly just behind the engine—wasn't understood in aviation until more than a few pilots had been parboiled.

Pearson's and Ericson's C-3 has the

most unusual heel brakes you are ever likely to see. They are large pedals that jut aft from the rudder pedals. The operating position is incredibly awkward, requiring you to hold your feet horizontally, with toes pointed at the front of the airplane. Yet those brakes proved extremely effective.

Visibility is, in a word, lousy. Seated, you feel as if you are a small child down inside a bathtub, trying vainly to peer over the sides.

Starting is about as basic as it comes. Turn the ignition on, turn the fuel on, hold the brakes, crack the throttle, and let the Armstrong starter know that you are ready. Pearson's and Ericson's C-3 lit on the first swing of the prop.

Taxiing a C-3 proves to be far easier than you would expect, assuming that it



Starting a C-3 is as simple as it gets. A runup is hardly necessary.



is a model with brakes. It does require S-turns to see what you are about to hit, but control is better than in some newer airplanes.

Once near the runway, about all there is to do is to check control movement and look for traffic. Runup? There is no carburetor heat and only one magneto. Once you open the throttle on takeoff, you discover, to your intense relief, that the rudder is instantly effective. The airplane saunters, it asks repeatedly if you are serious about going flying, and it gives you all sorts of time to make up your mind—time in which you wonder how in the world it ever got off the water with floats.

Somewhere around 40 mph the airplane simply lifts off the ground.

Climb at 50 or so. The ailerons are very heavy. Otherwise, as the elevator and rudders are both equally light, the controls are better harmonized than might be expected. In a time when decent control harmony was extremely rare, the C-3 was a step in the right direction. The light elevator forces and the small operating speed range mitigate the need for much trim.

The Bathtub ascends at around 300 fpm in a sea of unmuffled engine noise. Climb until you are bored. That works



Aeronca's C-3 was far better than aircraft that had come before.

out to about a thousand feet, so level off. It is not worth the effort to go higher. You will rapidly find that you cannot make very much of a power reduction to fly level. The C-3 needs virtually everything that it has to struggle along, which it does at about 65 to 70 mph while burning about 3.5 gph. Even with an eight-gallon fuel tank, the airplane's endurance may well exceed yours. Pilot amenities were not a high priority 60 years ago. Any kind of steep turn means going to full power or sacrificing altitude. As with all older airplanes, if you decide to stall it, do not use the ailerons to pick up a wing at low speed; there may be enough flex in the wing to allow aileron reversal. Early pilots learned the hard way that the rudder is used at low speed and the ailerons are locked in a centered position.

On descent to the airport you notice the oil that the engine has happily thrown onto the windshield. At the end of the downwind, pull the throttle back and set up something on the order of 50 mph indicated. On final, peer under the one cylinder on the left side and work on figuring out what reference you need to



tell when the airplane is pointed straight ahead. According to Pearson and Ericson, it takes about five hours before one gets used to the landing picture. In ground effect the glider heritage shows. It does not want to stop flying.

The C-3 is not an easy airplane to land on hard-surface runways. On grass fields, with the aircraft pointed into the wind, it isn't bad despite the lack of visibility. Full opposite rudder by itself will not correct a crosswind-induced swerve on rollout. Because the brakes are effective (those that have brakes), using them is a major mistake, as they can lock up a wheel and create all sorts of havoc. When the C-3 heads for the bushes, the only solution is full power and full rudder *right now*. Partial power won't do it. Treat the situation

as an aborted landing; straighten the airplane out and plan on taking off. Fortunately, acceleration is so slow that you have time to think and, if you wish, start a slow power reduction to see if you can still keep things going straight. By the time you have closed the throttle, the tail can be lowered and the airplane is rolling slowly enough to use the brakes.

After you have put the C-3 away, you realize that it is the perfect vehicle upon which to reflect on how far we have come in general aviation and how very lucky we are. In reality, despite nostalgia, many of the airplanes that predated the C-3 were at best hard to fly—and at worst, expensive, awful machines that a modern pilot would be hard-pressed to fly. The C-3 brought affordable flight to many of those who so yearned for it. It did so in a form that, by modern standards, isn't always fun nor easy to fly, but which was so much better than what had come before that it was a revelation.

Sitting there beside the C-3 as it cools, you suddenly realize that you want to fly the little beast again. Funny, it doesn't look nearly as ugly as when you first saw it. □