



1931 Second-hand Airplane

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So many times, when we talk about a restored antique airplane, we begin by explaining that there were so few original parts remaining that it made more sense to throw the airplane away and restore the basket it came in. Today “data plate airplanes” are so common we don’t even bother to get an incredulous look on our face when we find all that’s left of the original is the clevis pin holding a tail wire.

And then there are antique birds like Jim Hammond’s 1931 C-3 Aeronca. In 72 years of life the wings have been recovered only twice and the fuselage once. And it was never a derelict. In fact, if you ignore the 72 years since its

birth, you could say that condition-wise it has barely drifted down into the “used airplane” category.

Hammond’s airplane is unique not because of the massive effort that went into restoring it but because so little restoration has been done. It is 1931 aviation in its purest form.

The airplane is also unique for a totally different reason, however. Hammond is only the third owner, which is interesting, but what makes his airplane *really* interesting is that the first owner was Jean Roche, the original designer of the C-3 and the recognized father of light aviation. For over 34 years, Hammond’s C-3 was Roche’s personal airplane.

During the 1920s, when big, hulking

biplanes typified civil aviation, Roche and two friends, John Dosche and Harold Morehouse, were busy bucking the trend. They were young and were seriously infected with the aviation bug. But they were also broke. They not only couldn’t afford to buy any of the available airplanes, but even if they managed to acquire one, they couldn’t afford to keep it in gasoline and oil. It was a common dilemma. The world was catching the aviation fever, but the size and costs of the average airplane made flying available only to the rich. The common man was being left on the ground. And Jean Roche, for one, didn’t like that.

Roche and his friends didn’t have



Jim Hammond's Aeronca C-3 was once owned by its original designer, Jean Roche.

builder do when he finds a particular part isn't readily available? He builds it! That's exactly what *they* did. Harold Morehouse designed and built a two-cylinder, horizontally opposed engine that fit perfectly in the pug nose of the airplane Roche had designed.

Let's put the concept of some amateurs building an engine in perspective: the concept of the automobile and its internal combustion engine was barely 25 years old. The



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Jim Hammond

Wright boys had done their thing only two decades earlier, but here were a trio of young men in their twenties with little or no money deciding to build not only an airplane, but the engine too. No one can say the guys lacked confidence.

Amazingly enough, Morehouse hit the right combinations right out of the gate and his homemade 25-hp engine ran beautifully, and the pregnant-looking Roche design flew well too.

It would take an entire book to adequately tell the Roche/Aeronca story, but from 1928 through 1931, through the Aeronautical Corporation of America (Aeronca), Roche was central to introducing his little airplane, dubbed the C-2, to the public. In 1931, the two-place C-3 joined the single-place C-2. Morehouse and his original engine had gone another direction and were never part of the Aeronca product line, partially because a crash badly damaged the original engine. However, even before Aeronca entered the picture, Roche had fellow mechanics/engineers Roy Poole and Robert Galloway take the Morehouse concept and a few salvageable parts and design a new engine. This engine became the Aeronca E-107 (26 horsepower) and later evolved into the famous E-113 (36 horsepower).

It says something about the pas-

sion attached to aviation to think that, as the country was spiraling down into a debilitating depression, here was a fledgling company preparing to launch a product line that could hardly be defined as necessary for an individual's existence. Part of America was selling pencils on street corners while another plotted how they could buy one of Aeronca's little airplanes.

The first two years of production saw 160 C-2's flutter out the door. Although Roche reportedly wasn't crazy about all the changes being made to his super-lightweight (390 pounds) design, he still requested that one of the new C-3's be reserved in his name. So in the spring of 1932, Jean Roche became the proud owner of NC12407, which had actually been built in the fall of 1931. The company had tried to deliver an airplane to him earlier but the sales manager was killed show boating in it for a small crowd. Because of the accident and the pressure of the depression, the company charged Roche \$1,500, nearly retail, for the airplane which he had designed.

The airplane that eventually was going to wend its way into Jim Hammond's hands led an interesting life, partially because Roche had to put it to work to pay for it and partially because he was still a designer at heart and wanted to try new things.

Roche put the airplane in the rental stable of Al Johnson, who was managing the Vandalia, Ohio, airport, for flight training use. The rental fee was \$5 per hour, half of which went to Roche. Eight hundred hours later, after teaching dozens of students to fly, being damaged in a spot landing contest (it snagged a fence and wound up on its back), and becoming an integral part of an airport community, the little airplane was paid off.

Ever in search of more performance with no accompanying cost, Roche designed and tested a single-wheel landing gear for the airplane. The small wheels from a child's tricycle were bolted to the wing tips to act as out-riggers and a single bal-

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A Johnson airspeed indicator is mounted on the brace wires on the right side, a much handier location than on the instrument panel. In flight, the upper half of the panel can be difficult to see.



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The wing is braced by a set of streamlined brace wires, which attach on the upper end at this A-frame cabane strut. It also makes for a handy location to mount the pitot tube.



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which included a quick release mechanism not unlike a tow hook, but it was aimed down the left wing. The theory was that rather than using a linear runway, they'd use a small circular one and depend upon the cable to tether the airplane into a circular path. Sounds outlandish, except it actually worked. They even found the pilot could control the tension on the cable at will by varying the bank angle. The little C-3 would chug along in a circle, lift off,

The engine instruments and mag switch are mounted on the panel, with the throttle sticking out of the middle.

loon tire was mounted under the centerline of the fuselage. Besides saving something like 40 pounds (a healthy amount for such a little bird), the elimination of the drag generated by big main gear tires and struts upped the top speed from 80 to 90 mph. Anxious to prove the concept, the airplane was entered in a race in Chicago and came in third despite the fact that all of its competition was much higher powered.

While the mono-wheel yielded some benefits, it was judged just a little too weird (something about falling over on landing) and never approached production status.

Another test involved the Frazier propeller. This was a little-known automatic variable-pitch prop that apparently worked on a principle similar to an Aeromatic.

One of the more bizarre tests involved an investigation into ways of getting airplanes off the ground without requiring conventional runways. The test crew anchored a cable securely to a pivot in the middle of Wright Field and devised a method of attaching the cable to Roche's little airplane,



then release itself and go on its merry way. Whether the concept was ever applied to larger aircraft isn't known, but it reportedly worked great with the lightweight C-3.

The airplane provided a lot of relaxing fun for Roche, as he flew it up and down the coast in the Virginia/Maryland area. Occasionally, they'd even land it on the beach and Roche liked a particular beach so much, he eventually built a home in the same location.

Shortly after Pearl Harbor, the edict came down that the C-3, along with most other civilian aircraft, would have to be disassembled and stored for the duration. It seems the government couldn't see the C-3 out over the ocean doing anti-submarine duty or didn't feel the pregnant guppy appearance of the little Aeronca was going to inspire fear in the hearts of our enemies. It has been reported (but unconfirmed) that the actual reason the military wanted all unused civilian aircraft dismantled was so they couldn't be used against us in the event of an invasion. Yeah, right! An Aeronca C-3 used by the enemy to strafe our troops. That's kind of funny, actu-



JIM KOEPNICK

ally. It sat out the war disassembled in Roche's house.

Offering flight to the common man was just one of Jean Roche's dreams. Another was to offer the "sportsman's life" to the same class of people, and he defined a sportsman's life as living close to the shore with both a seaplane and a boat in a style that offered both economy and total recreation.

The first ingredient of that, the seaplane, he had, but not without putting the C-3 on floats. This was no small decision because the airplane didn't have a huge surplus of power so the floats had to be well matched to the airplane. Cost was also a factor, which is why he considered the McKinley pneumatic floats for a while. The McKinleys never received CAA approval so Roche began looking for a set of EDO 1070s. And he looked. Then he looked some more. The search took eight years until he finally cornered a set in 1948.

The little C-3 on floats looked perfect in the "sportsman house" he had designed and built for it. During World War II, he started building the house and saw it as a prototype for

similar houses people of meager means could build out of their salaries without resorting to loans. Essentially, it was a tall seaplane hangar with an apartment on top. The hangar was cinder block and the apartment of frame construction and built in a way that the floor plan could be easily customized to a builder's tastes.

Critical to the "sportsman house" was its location, which in this case was on the shore of the Back River, in Hampton, Virginia, not far from his work at NACA. He had his water front home, his seaplane ramp, and, eventually his seaplane. But the three elements that defined his concept of sportsman living never really came together for him. Traveling and other interests kept the C-3 in the hangar and not once was it trundled out to the water barely fifty feet away. In fact, Roche never flew the airplane after it was reassembled after WWII.

The airplane sat in its specially designed hangar for years before Roche finally sold it to Bill Harwood and Thomas Grogan of Freeport, Long Island, in 1966 ending Roche's 34-year ownership of the airplane.

When Harwood and Grogan got the airplane, it had about 1,200 hours on it. Its cover was getting a little ratty, so they gave it a new suit of clothes, but that's about it. It didn't need anything else.

While Harwood and Grogan were enjoying the airplane, far to the west, in Ohio, young Jim Hammond was feeling the first pangs of the airplane bug. He was still in junior high but airplanes, especially old ones, were already part of his life. He grew up on his grandfather's farm where he now has a 2,100-foot runway and a row of hangars.

He says, "If I'd ever quit buying airplane projects, I could stop building hangars. Originally, I just tied the airplanes in the corn, but now that I have hangars they are all full."

A mechanical engineer by training, Jim is third generation in the family's desiccant business but airplanes have always been there.

"It's the usual farm kid airplane

story," he says. "Started taking lessons at 14, soloed a J-3 at 17, but didn't get my license until I was in college."

Part of his interest in antique airplanes came from an unusual source.

"We lived not far from Port Clinton where Island Airlines based their Ford Tri-Motors. As a young kid, I found that if you hung around, they



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Balloon wheels are an integral part of the landing gear's shock absorption system.



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Aeronca was one of the few light-plane manufacturers that also manufactured their own engines. The two-cylinder Aeronca engines would be the standard powerplant for the company's product (not including the low wing Aeronca L series) until the four-cylinder Continental, Lycoming, and Franklin engines came out years later.



Jean Roche, original owner of the C-3.



Bill Harwood at Jean Roche's house in 1966. Bill became the next owner of the C-3.

might take you out to the islands if they had an empty seat. But then you had to stay on the island until they had an empty seat going back, which often took a while. Sometimes they'd even let you play copilot.

"I went to Oshkosh for the first time in '82 and my goal was to build a Pietenpol, so I was looking for stuff pertaining to that. But then I saw my first Hatz, and I just had to have one. Originally I was going to cannibalize an old 150 I had bought for parts for the Hatz, but I just couldn't part out a flying airplane. After putting 250 hours on it, I sold it and used the money to buy parts for the Hatz. It took me nearly eight years to finish the Hatz, but I truly love it. During that time, I acquired my A & P rating."

What he doesn't often mention is that he received a bronze Lindbergh award for his workmanship on the Hatz.

The exact trail of airplanes that led to his buying the Roche C-3 is just a little hard to follow.

"I bought a TC Aeronca in Oregon and it took me 32-1/2 hours to make it home. A long but enjoyable ride.

Then in '87 I bought the proverbial airplane-in-a-barn, a PT-19. I was at a wedding and someone told me about an "old airplane" they had seen wasting away and on the way home, I stopped to look at it. It looked like it just needed covering, but when I got it home, I found a lot of the old casein glue had given up holding parts together."

Like many antique airplane types, Jim has a love affair with the concept of starting a new, unusual project.

"I worked on the Fairchild for about five years then got sidetracked by a J-1 Standard project. Somewhere back there I also decided I had to have a four-place family airplane, so I bought a Stinson Junior. I love Juniors. I flew this one for about four years and it was getting pretty ratty. So I sold it and bought another one. Like I said, I like Juniors. Still interested in Pietenpols, I helped restore Alan Rudolf's Model A Ford-powered Air Camper and wound up buying it a few years later.

"I'd always wanted a C-3 project and a friend told me of one in Florida, so I went to look at it. The

same guy had the Standard J-1. He didn't really want to sell the C-3 but said if I took the Standard he'd throw the C-3 in, complete with its 1958 airworthiness certificate.

"I began working on the 220 Hisso-powered Standard so the C-3 had to wait its turn.

"I still had the C-3 bug, however. Last year as I was getting ready to go to Oshkosh, I saw an ad for a flying C-3 and I called the owner. It sounded like it was exactly what I was looking for. On Thursday of Oshkosh I flew home, then drove to Long Island to look at it. Bill Harwood showed me around the airplane and explained the entire Roche connection. You could almost feel the old guy hovering over the airplane. It was incredibly original because all Harwood and Grogan did was cover it. Most of the rest, including the interior, is as it was when Roche had it.

"The airplane is a lot of fun to fly and I feel a little better about this engine than I do other E-113s. For one thing, Roche converted the engine to a 'C' model, which means, among other things, that it received plain rod bearings and a new crankshaft that has a conventional spline, rather than a taper.

"I fly the airplane regularly, but I fly from field to field, always expecting the engine to stop. It's this kind of flying that really keeps you on your toes.

"I'm terribly aware of this airplane's place in history and I work hard at flying it safely and not stretching its limits. I know Roche flew it as if it would never quit, but I can't bring myself to be so blasé about it. Of course, practically all the countryside where I regularly fly is miles and miles of flat fields. So, at the very least, I'm unlikely to damage the airplane."

Jean Roche's little airplane begat a huge number of innovators but they all took the cue from Roche's original concept: keep it small, keep it light, keep it affordable—and the general aviation industry, as we know it, was born. Jean Roche loved aviation and he loved his C-3. It's only fitting that both have survived.