

Making an Old Friend



New

JIM KOEPNICK

Envy of the airport—he flies an Aeronca

BY SPARKY BARNES SARGENT



Again

Frank Jacob and his Aeronca Champ have been buddies for a long time—and he just invested three and a half years restoring it to make sure they’ll continue their friendship for several more decades. Frank, a soft-spoken gentleman with an amiable smile, flew his newly restored Champ from Lafayette, Louisiana, to Sun ‘n Fun, International Fly-In & Expo at Lakeland, Florida, in the spring of 2010. His Champ and two others composed a friendly flight of three, and they enjoyed fine weather all the way to Lakeland.

He knows N84856 from the inside out, having owned it for 34 years. “It has gone through a lot in its lifetime,” he says with a smile. “I found all the old records of what all the previous owners did to it when I got the file from the FAA in Oklahoma City.” Frank has also gone through quite a bit in his own lifetime, making aviation his profession in one way or another. “I flew various airlines that went bankrupt, went out of business, and all that sort of thing,” he ex-

“The money isn’t really the reason for any of this. It’s fun!”
—Frank Jacob



floating to earth. With its 35-foot wingspan, and 21-foot 5-inch length, the Champ had excellent handling characteristics from taxi through landing. It offered a respectable performance among its contemporaries—its Continental A-65 powered a top speed of 100 mph and a 90 mph cruise while sipping from a 13-gallon fuel tank for a range of 270 miles.

N84856

Unlike many Champs of the day that were used as trainers, N84856 went into service as an agricultural sprayer for Vandalia Flying Service Inc. in Vandalia, Illinois. It installed an Aero Spray King Model A2 unit and converted the plane from a model 7AC to a 7BCM by removing the Continental A-65-8 and wood propeller and installing a C-85-12F with a Hartzell ground-adjustable propeller.

The Champ changed hands several times, and its Grade A cotton fabric was replaced in 1951. Five years later, while it was in Oklahoma, the Champ was converted back to a 7AC model. By 1958, it needed new fabric again, and this time, its fuselage was covered in cotton, and the wings and tail were covered with Irish linen.

N84856 continued flying from owner to owner through the years, experiencing a few mishaps (such as ground loops) along the way. Then in 1975, Frank Jacob became its new caretaker, and N84856 has remained in his capable hands ever since. An A&P and CFI, Frank explains with a chuckle that he learned to fly “in west Texas where the wind blows pretty hard, and they say instead of a windsock, they use a logging chain. If the logging chain is standing straight out, then it gets to be fun.”

He had a bit of work to do on the Champ when he first purchased it—but after all, the airplane only cost him only \$3,000. “The gear had been wiped out from the fuse-

plains. “I did maintenance work for Ozark for a year in St. Louis and put in four years of maintenance work in the Air Force. I got my A&P at Spartan in Tulsa, and I was going to go through the flight engineer course, but the airline on the West Coast that Spartan had contracted to give us the flight training went out of business, so I got my multiengine instrument instead.”

Frank first became enamored with Aeronca Champion airplanes in 1951. “That’s what I did my first flying in, and that’s what I soloed,” he recalls, with a twinkle in his eye, “and I *like* the airplane!”

Champion History

“So safe—so simple—now anybody can fly” boasted Aeronca’s advertising of the era, along with the declaration that the Champ was “America’s No. 1 Low-Cost Plane,” and its pilot was the “envy of the airport.” The tandem Aeronca Champion trainer was designed by Raymond F. Hermes and manufactured by the Aeronca Aircraft Corporation in Middletown, Ohio.

More than 8,000 were built, and just like its predecessors all the way back through the 1930 Aeronca C-2, it incorporated aeronautical engineer Jean Roché’s unique triangular fuselage structure.

In February 1946, as production was about to begin, the Champ was advertised as “the easiest plane you’ve ever flown...with far greater maneuverability and greatly broadened range of visibility. ...Just wait till you see Aeronca’s luxuriously finished interior...the extra room and comfort...the wide safety-swing door! Improved brake system and tie-down rings that are built in.”

Features also included 300-degree visibility from the cockpit, a 38 mph landing speed, and standard oleo landing gear. So it was easy for a pilot to let his gaze roam over a pastoral landscape and the open sky, thanks to the Champ’s low-profile nose, a one-piece Plexiglas windshield, and rather large side and rear windows. And with its slow landing speed and shock-absorbing gear, the Champ could alight as softly as a flower petal



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Frank says his Champ is probably about 90 percent original.

lage one time, and the doorway was cut down to just a hole. I thought I was going to put the hinge pins in place and put the door back on, but instead I wound up having to take fabric off around the bottom to weld a new door frame,” Frank recalls, then adds with a smile, “An FAA man came up behind me while I was welding on the airframe, and he thought he’d caught somebody! He said, ‘Let me see your A&P license,’ and I pulled it out to show him—then he just walked off.”

Research and Resources

By 2004, Frank decided, somewhat apprehensively, to start restoring his aging friend. He had helped other folks with their projects, but he hadn’t tackled a full-blown restoration. So the first year, he cautiously decided to fabricate a new cowling. With that accomplished, he says, “I kept doing a little more, a little more, and finally it was time to take the wings off—then I was



BRADY LANE

Frank Jacob

committed! So I got serious about it and put in two and a half years of work.”

Myriad questions sprang to Frank’s mind as he examined the condition of numerous airframe components and contemplated such things as parts replace-

ment, so he sought answers from technical, personal, and cyber resources. “A little bit of research can really do a whole lot for you,” he shares. “There’s a ton of information on the Internet from the various Aeronca flying clubs; Bill Pancake [well-known Aeronca



The Champ at the beginning of the restoration.

COURTESY FRANK JACOB



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The refurbished fuselage, replete with stringers and formers.

PK screws. Another handy one was from Rainbow Flying Service (STC No. SA00860SE), which allowed the installation of that company's fuselage formers. Additionally, Frank also used two more STCs: one for the Champ's fabric installation (Poly-Fiber Aircraft Coatings' STC No. SA1008WE), and one so he could burn autogas in the 65-hp Continental (STC No. SA732GL [airframe] and STC No. SE634GL [engine]).

Snafus and Challenges

Remember that new cowl-ing that was the genesis of the Champ's restoration? Well, as it turned out, Frank had to rework it just a bit. Explaining with a good-natured chuckle, he says, "I made the new cowling first, and later on, I installed new rubber engine mounts, which lifted the engine up about an inch. Then the new cowling didn't fit right! So I had to modify it, because the engine was in the proper position when I finished the airplane."

One of the most challenging situations Frank encountered was installing the leading-edge metal around the wing ribs. "That was because I had to get to the [pre-drilled] holes in the ribs from inside the wing, in order to align them with the placement of holes on the leading edge, and that metal didn't want to bend around the nose ribs. So I had to hold the metal down while reaching inside the wing with a pencil and making a little mark on the metal. Then I took the metal back off and drilled one hole. I did that for each hole, all the way across the wing leading edge. That took a long time," recounts Frank with a wry smile, "and that's the thing—when I first took the airplane apart and looked at it, I thought, 'Boy, this is going to take a whole year to do!'"

Frank endured an odyssey of sorts when he ordered the Sitka spruce to make new wing spars. He says, "My first order was shipped in a cardboard box, and they

"guru"] is super friendly; and John Houser, who worked at the Aeronca factory, has the drawings for the wing spars and fuselage. *[Editor's Note: After decades of faithful service to Aeronca enthusiasts, John no longer provides this help. See the note at the end of this article for information regarding sources of data for the Aeronca.—HGF]* I used the Poly-Fiber fabric-covering process, and I dealt with Dondi and

Jim Miller [of Ohio]. They were super helpful and mixed the original Champ colors for me."

Frank incorporated a few modifications to his Champ, by means of various STCs. Through his research, he discovered one from Cashmere Aviation Inc. (STC No. SA4760NM) that allowed him to use Marson Klik-Fast blind rivets to attach the wing fabric to the ribs, as opposed to using the original

[the wood] rattled on the back of a truck until the cardboard was worn through, exposing the wood. I took the wood to a professional shop, and he ruined the wood,” Frank recalls, adding, “so then, I bought a second batch of wood from the same place, and it came and it was worn terribly, so I sold it back to the trucking company. Then I bought a third batch from a different source (Wicks Aircraft Supply), and they shipped it in a wood box. That spruce was so perfect; it had exactly 90-degree grain instead of 45-degree, and the grain was perfectly straight for 16 feet—I didn’t think a tree could grow that straight! It was the most beautiful wood I’ve ever seen in my life, and we built the spars out of that.”

COURTESY FRANK JACOB



New and old ribs are mounted on the new spruce spars.

When it came time to strip the airframe tubing down to bare metal, he tried using a heavy-duty commercial sandblaster at a boat yard, but its force was strong enough to pepper holes into one elevator, which necessitated welding repair. Since the fuselage was in decent shape, Frank had it Sponge-Jet blasted (an environmentally friendly type of abrasive blasting), and he sandblasted the smaller parts in his hangar. He used two-part epoxy primer to protect and preserve the cleaned metal components.

COURTESY FRANK JACOB



The wings, ready for fabric.

Finishing Touches

Frank wanted to make his Champ as original as he could, and overall, he thinks it’s “probably about 90 percent original.” In summary, he used all new hardware and cables, some new ribs and drag wires from Wag-Aero, new aluminum leading edges, and new spars and stringers. He also installed new side windows and simply reused the windshield, since it was still in good shape. Interestingly, the Champ’s original-style hubcaps came from the island of Guam; one of Frank’s friends found them on eBay.

COURTESY FRANK JACOB



The fabric-covered fuselage and wings, coated with Poly-Brush.



BRADY ANE PHOTOS



SPARKY BARNES SARGENT

Note the neat upholstery and “flocking” on the cabin wall.

ors. The brown paint was locally available, and the coordinating brown crackle coating on the instrument panel was available in a handy spray can from Kennedy Manufacturing Company (it makes tool boxes) in Van Wert, Ohio.

Frank purchased the interior flocking kit from DonJer Products Corporation in Winnebago, Illinois. The kit, he says, consists of “one spray gun with glue and another spray gun with powder. You spray the glue on the surface; then you spray the powder and it sticks to it,” explains Frank, adding, “Any excess falls off, and eventually it looks like suede. I had everything ready to spray, but I had the wrong fitting to plug the spray gun into the air hose. So I ran to town and went to all the places I could think of, but nobody had the right fitting. It was late in the day, and I was discouraged, so I just brushed it on the cabin wall. So now, if you get the light just right, you can see little brush marks. Spraying is the way to go!”

Engine and Mags

Back when Frank started the Champ’s restoration, the A-65-8 engine was running so well that he merely took it off the airframe, pickled it somewhat and used dehydrator plugs, and hung it on the wall for three and a half years. At that time, it had a little more than 1,000 hours since major and 200 since top overhaul. With the airframe completed, he reinstalled the engine



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and crossed his fingers. “It started after three flips of the prop,” he says happily, “and has been running good ever since—I’ve flown it about 100 hours since June 2008.”

He spruced up the engine compartment by painting it and powder coated the black rocker box covers. Since the Continental has the old Bendix magnetos, he’s recently decided to buy a magneto with an impulse coupling, to facilitate hand propping the engine.

Flying the Champ

Frank describes flying N84856 by saying, “Generally you want to lift off at 50 mph, climb at 60, and cruise at 80. As for landings, if you have a nice, calm day, it’s going to be all three-point landings, until you get used to the airplane,” he explains, emphasizing, “Basically you want to become part of the airplane—you want to *feel* it. When most people land an airplane that has a nose wheel, as soon as they touch down they sort of relax and the airplane goes straight down the runway. But in this airplane, you

ought to be relaxed *until* you touch down—and then you get serious and have to work at it to keep it straight. I like to wheel land in a strong crosswind, because you have a lot more control.”

As a flight instructor, he feels that simply learning how to correctly taxi the tailwheel Champ is a good step in transitioning from a nosewheel airplane. “If you’re just starting out, mainly you want to get used to the heel brakes, which are unusual for most people. You turn the airplane with full rudder, and if that’s not enough, then add some brake and then some power—you’re just working everything when you’re taxiing. And you should always be conscious of where the wind is when you’re taxiing, because you’re flying it when you’re on the ground. You’ve got to feel the airplane to see what it’s doing.”

An Eye to the Future

Frank is affectionately attached to his Aeronca Champion—and with good reason; his own personal history is inextricably entwined with it. “My daughter, Cathy, first

flew with me when she was 10 years old,” he reminisces, with a twinkle in his eyes, “and she used a cushion so she could reach the rudder pedals. I never thought she would do much with flying...and today she’s flying internationally for Delta. My son, Don, soloed a few days after his 16th birthday but didn’t continue with flying. But the kid across the street, every time I drive in the driveway, he wants to go flying! So you can never tell with kids.”

Father and daughter still occasionally share the joy of flying together in the faithful Champ, and Frank proclaims with a smile, “I plan to give it to her when I finish with it. I hope to wear it out before then! I tell her I’ll restore it in another 40 years.”

So it isn’t surprising that Frank won’t consider selling it. With a gentle laugh, he shares, “I have put \$17,000 of parts in it, and all those hours that I can’t count. If somebody wants to buy it, I say, ‘No way, I don’t care how much!’ The money isn’t really the reason for any of this. *It’s fun!*”

