

# AERONCA

## the Hard Way

**Bill Pancake's 7AC**

**BUDD DAVISSON**

**PHOTOS BY LEEANN ABRAMS**



One of the most under-appreciated airplanes at EAA AirVenture Oshkosh 2003 had to be Bill Pancake's little 7AC Champ. Even if someone had grabbed you by the nose and dragged you over to it, you would have thought it was nothing more than an extremely well done little Air-knocker with a Chief nosebow and spinner. You could have examined it until you were blue in the face, but without knowing the background of both the airplane and its unusual owner, you would have missed "... the rest of the story," as Paul Harvey puts it.

So here's the rest of the story.

Bill Pancake is a rare individual for a lot of reasons, not the least of which is he still lives in Keyser, West Virginia, where he was born and raised. From day one, however, it was pretty obvious that this was a kid who had already picked out which direction he was going to go in life.

"I started working around the local airport when I was 10 years old," he says. "By the time I was 14, two of the local mechanics, Stan Dantzig and Junior Thrush, had taught me how to do fabric work, and I was doing a lot of the dope and tape work by myself.

"One day I was having problems with dope blushing, so I moved the wing outside and had it on sawhorses working on it when two CAA inspectors walked up. Apparently they wanted to know what a 14-year-old kid was doing working on airplane parts with no one supervising him. Dantzig was off running errands or something, but usually he was around.

"The inspectors asked me how much of the work I was doing and how I was being supervised, and being young and simple, I told them I was doing it all and didn't need supervision. At least that's how I saw myself.

"A couple of weeks later Dantzig got a two-page letter from the CAA explaining in no uncertain terms why he couldn't be using unsupervised kids to do his work for him," Pancake laughs at the memory, but apparently Stan Dantzig wasn't laughing at the time.

"A few years later one of the same inspectors gave me my private pilot written test, and I got 50 out of 50 right. He told me that when they talked to me about working on the wing, they both laughed about it but didn't know exactly what to do. So they

sent Stan a letter."

The airplane Bill was working on was an Aeronca Champ, N1397E, which was the start of an unbelievably long and intense love affair with the type.

"As a kid I was absolutely fascinated by many different things from electric motors to mechanics and meteorology, which is still one of my hobbies. Aviation has it all, however. Mechanics, paint, fabric, welding, you name it; it has all of the stuff I really like. I guess I just selected the right genes and found a place to use them.

"If I had any problem growing up it was that school interfered with being out at the airport doing what I really wanted to be doing."

Out of school Bill found his way into the job market as an electronic instrument technician for a big paper company.

"I was there for forty-two and a half years. It let me make a good living and gave me insurance, all of which freed me up to really get into airplanes. I set my schedule up so my day job didn't get in the way of my 'real' job, rebuilding airplanes."

Even someone as dedicated as Bill Pancake needs a life-partner and he met his 46 years ago at Burlington Airport in West Virginia.

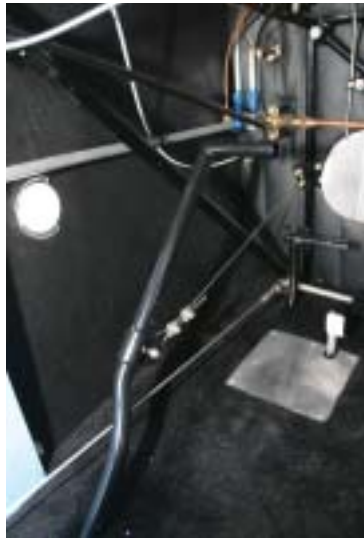
"Saundra and I met at the airport, and a friend told me, 'She's not after your airplane, Bill, she's after you' and thank goodness he was right. We've been a perfect match for each other in so many ways. For instance, on the longer hauls, like to Oshkosh, she drives and brings all the clothes and support stuff."

By the time Bill was into his late 20s, the I.A. who had been signing off his work retired, forcing him to get A & P and I.A. tickets.

"It was no big deal. I just studied the books then took the practical and I was done. This made me into my own show and made it easier to do my work."

"I'm not certain why Champs became such a large part of my life. It may have been that, as a kid, a friend had one and let me fly the heck out of it. I had the same deal with a Mooney Mite and other airplanes, but it was the Champ that really fired me up. If I wasn't working on them, I was flying them, and my grandson, Michael Boggs, looks as if he's going the same route. He has gone to a number of fly-ins with me, and most of the times he's at the controls.

**Bill Pancake and his grandson Michael Boggs cruise in Bill's custom Champ, winner of the Outstanding Aeronca Champ plaque at EAA AirVenture Oshkosh 2003.**



**Straight lines when they should be straight, and curves that follow a sure arc are hallmarks of Bill Pancake's work. The Continental C-90 can be started from the cockpit using the McDowell starter installed in the fairing just behind the spinner. The McDowell was standard equipment on the Chief, and an option on the Champ. Now highly prized by Aeronca aficionados, the hand-actuated starter (see the handle on the left side of the inset photo) is rarely seen on an Aeronca Champ. Bill's custom airplane uses the cowling from an Aeronca Chief, and a new spinner spun by Bob Carr.**

"One time, again while I was young and simple, I got a Champ up to 18,500 feet even though I didn't have oxygen. The engine quit at 13,000 feet and I thermalled up the rest of the way. At one point a glider pulled up along side that was being flown by a guy I knew. We were both

riding the same wave.

"Besides the lack of oxygen, I was seriously cold. I was wearing a jacket, but it was winter and I had to get down fast or freeze, but the airplane didn't want to come down. So, I started spinning it. I did fifty turns to the left, then twenty-five to

the right and another fifty to the left for a total of hundred and twenty-five turns. When I got low enough, the prop would windmill at around a hundred and twenty miles per hour and the engine started again. Like I said, young and simple.

"In the course of rebuilding Champs, I started buying and selling flying Aeroncas. Many of them were never registered in my name, so I don't know for sure how many I had, but it was at least twenty."

As Bill gained a reputation as "The Aeronca Guy," more and more people started bringing airplanes to him for partial or complete restorations. He'd help a lot of others who were rebuilding Champs by doing the major repairs, like longeron replacements, that they felt were outside of their own abilities. In the course of doing that, little by little he found he had set himself up as a mini-factory that specialized in Aeroncas.

"I never splice a piece of tubing. I always remove the entire piece and



**In contrast to the IFR Champ many members have seen Bill Pancake flying over the past couple of decades, this Champ is equipped with the minimum of instruments required for day VFR flight, plus one extra. Can you name the extra instrument? (Answer at the end of the article.)**



**The silhouette is familiar . . . Bill Pancake chose to use the color scheme layout from the Aeronca Champ's brother, the Aeronca Chief.**

replace it from cluster to cluster. To do that right, I'd have to build jigs to hold the fuselage in alignment not only while the tubing was out, but also to help me control the distortion from the welding.

"I did so many rebuilds of aft fuselages that I built a complete rear fuselage jig. Then I had to do a jig for the forward fuselage to replace landing gear and wing fittings that were damaged in accidents. It wasn't long before I had an entire fuselage jig that is now so complete that it has locations for every single tab and standoff.

"Eventually, I made up hard tooling for every part of the airplane including the landing gear, tail, and wings. Back in 1984, I bought a load of aircraft spar material and I still have enough to last me the rest of my life. Even so, I don't waste any of

it. The strips I rip off become stringers and the shavings and saw dust go in the stove to heat the shop.

"I've been giving forums for years on Aeroncas, and I take samples of spar wood with me to show people how to inspect them and spot things like compression fractures."

The list of Oshkosh award-winning aircraft Bill has restored or had a hand in is long and impressive. They include winning Custom Class, Outstanding Aeronca Chief, Grand Champion, Best Champion Aircraft, Outstanding Aeronca as well as a bunch of others. And this doesn't include countless awards at regional fly-ins.

"In rebuilding Aeroncas, I got to the point that every time I had problems finding a part, I'd just use the factory drawings and build tooling to make that part. Take instrument

panels for instance. I got so tired of patching up butchered panels that I made a 140-pound cast iron male die that I pull .070 aluminum down over. The result is a panel that has those nice compound curved edges and you can't tell it from an original.

"Incidentally, FAR 21.303 says that if you have a factory drawing you can make a part to be used on your own airplane as long as you can prove conformity to every aspect of that drawing. Further, you can assist others in the same way when doing repairs.

"Over the years I developed what many refer to as 'the world's greatest hobby shop' in that I have a complete machine shop, including lathes and mills, heat treating oven, Rockwell tester, presses to form aluminum parts, sheet metal breaks, shears, and so forth. I am so well set up to do Aeroncas that, when my current airplane came along, I wound up using just about everything I had to bring it back to life."

The 7AC he had at Oshkosh 2003 started as a hard-luck airplane that, if it had been flown into a mountain at cruise speed, couldn't have been in worse shape.

"It was caught in a flood and sat in water for a while. Then, while it was sitting around after the flood, a storm came up and whipped it around pretty well trashing the wings and bending the fuselage. Then, to make matters worse, the water that had gotten into the tubing froze and split some of the tubes. However, I had a data plate, I



**Bill Pancake is known for his beautifully executed workmanship and his attention to details, such as the fit and finish on this wheelpant and the custom wing strut fairings he built.**



**Bill Pancake and his grandson Michael Boggs.**



had the paperwork, and I had my tooling fixtures. So, I figured I could bring this old girl back to life, but there wouldn't be much of the original left."

"I didn't even try to use any of the fuselage. What wasn't bent was rusted and what wasn't rusted was split. I built an entirely new one that matched the drawings exactly. I did the same thing for the wings. I've been hydro-forming ribs for

cut it down to .080 wall. I had a lot of scrap left over."

Bill Pancake is sometimes given to understatement.

"The engine is a C-85 I built up using ECI cylinders and an 0-200 crank. C-85 cranks are hard to find, but there's an STC for using the 0-200 unit instead.

"One of the neat things I installed was a McDowell Air Safety starter," he says. "This was stan-

quite some time, although I'm now replacing my Masonite form blocks with aluminum to give me longer life from the tooling."

In describing his airplane, it's probably easiest just to start at the front and work backward.

"The nosebowl is an original Chief that took a lot of welding and pounding to get straight. The spinner, however, was spun up by Bob Carr in Baltimore. He'd made a few for Chief owners. However, it didn't have a front bulkhead. That's a pretty complex piece to press, so I chucked an eight-pound slab of 6061 T-6 aluminum in the lathe and

standard equipment on the Chiefs but an option on the Champ. Either way, you don't see many of them any more. It's a pull cable, like on a lawnmower, in the cabin that works on a ratchet behind the crank flange.

"I did the baffles to the original drawings, including the leather gap seals and the original style stapling. I found one of the factory staplers that lets me do that pretty easily."

"I'm hard tooled for all of the cowl pieces and the boot cowl so every one I make is identical to the factory parts.

"Because of the way the landing gear shock struts are made, I had to make a boring bar to get the bores just right and the cap is knurled in place just like the originals. Again, the entire assembly is put together in a fixture to guarantee alignment."

Once in a while, Bill says someone asks why he does so many of his airplanes in blue and white rather than factory colors. They also ask why the interior of his current airplane isn't in the original colors.

"I'm color blind," he explains,



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“and I can see blue really well but some other colors don’t work for me. That’s why the inside panels are flocked in blue and the tubing is black, not brown.

“As an aside, my wife wrote a letter to the FAA explaining my whole color blind thing and managed to get the night and color control restrictions lifted from my license.

“And while we’re off on tangents, my AME is a gynecologist and it’s always funny to be sitting in his waiting room with all those women. I’m certain they wonder what I’m doing there.”

Once in a while Bill will farm out items that he doesn’t have the time to do.

“The seats were upholstered by Ralph Smith over a set of original frames. I’m completely tooled to make new frames, but I had these, so I used them.

“The little plate around the trim control in the ceiling is from Hubert Lowenhardt who had someone reproduce them to match the originals exactly.

One of the more interesting features of the airplane when it’s seen at fly-ins is a clear plastic jug that sits on top of each wing with a coil of plastic tubing wrapped around it and fastened to the gas cap vent.

“I didn’t put the nose tank in but have two thirteen-gallon wing tanks which again, are made to match the drawings. The drawback to those tanks is that when they’re

full and the airplane is parked, as the fuel expands, they vent fuel back down the top of the wing and stain it. The jugs are expansion tanks I plug into the vents when I park the airplane. When the fuel expands, it goes into the bottles. Then, as it cools off, it goes back into the tanks.

“It’s really fun to hear what people say about the bottles,” he grins. “I’ve had people ask if they were FAA-approved or they’ll ask me how it flies with the bottles on top of the wing.”

So many new restorations arrive at Oshkosh with the paint still wet. Bill, however, tried to plan ahead so that wouldn’t be the case this year. However, “The best laid plans of . . .” you know the rest.

“We flew the airplane for the first time back in April, but the weather was so bad for so long, we only had seven hours on it when we left for Oshkosh. We had majored the engine so we broke it in on the way to Oshkosh.”

Like so many other airplanes that have been extensively rebuilt there is always the question as to where the line between homebuilt and factory-built lays. In his next project, Bill is going to remove any doubt as to what is what.

“My next airplane, which is underway, will be a 100 percent homebuilt Champ and I’ll register it as homebuilt. I’ve had people ask why I’m homebuilding an airplane that isn’t even remotely rare and the only logical answer I can give is ‘because I can’.”

Makes a certain amount of sense, doesn’t it?

*(Quiz answer: Per FAR 91.205, the slip/skid indicator in the center is not required for VFR flight in the United States.)*