Attacking a Waco

Five-year restoration turns basket case into first-rate aircraft

Dave Leedom, EAA 47799

John "Jack" Schifferer, EAA 93112, is a retired Air Force colonel who flew B-17s in Europe in World War II and F-4s in Vietnam. Now he's also an EAA Flight Advisor, Chapter 286 member, and my friend and neighbor.

In retirement, Jack turned to restoring cars and constructing homebuilts. He built a Breezy and an Osprey, both of which he donated to the EAA AirVenture Museum. He built a Kitfox that he donated to a museum in Santa Barbara, California, and another Breezy that he still owns and flies regularly.

After the last Breezy, Jack decided it was time to restore an antique. He selected a basket of parts at the Corona, California, airport that was represented as a Waco RNF. In February 2000 Jack, Chuck Moon, and I packed the parts into a van and hauled them to Jack's home in Escondido, where he worked on the project in his 12-foot by 20-foot shop and a 20-foot by 32-foot covered shed with plastic sheets for two "walls."

Over the next five years I jumped the fence between our yards as often as I could to check on progress. Jack's good luck was that it could have been worse. The spars were solid, there was little rust damage, some drawings could be had from the Smithsonian and other builders, and his friend Barry Belisle had an RNF he could use as reference where plans were missing. Still, the amount of work and details to be covered were significant.

The bottom wings were gone at the root where the wing-walks were. Jack needed to reconstruct root ribs and walkways. The center section of the top wings had to be remanufactured and tanks fitted. All the wings had rash along the trailing edge, and the rear of several ribs had to be reconstructed—a couple where a previous repair had significantly altered the correct airfoil.

All the wings had at some point been treated with a varnish that reacted with the original varnish, causing a hard, bubbly finish that confounded repairs of the numerous gussets and small braces that needed to be reglued. The wing structures all had to be scraped and resealed with an epoxy varnish. It was amazing to twist the wings as they were at the start of the restoration and then try to twist them again after Jack completed the repairs and resealing. The cumulative strength of all those doublers, braces, epoxy, and sealer is phenomenal.

The fuselage required that all the wood except two stringers be replaced. New metal for the cowlings and instrument panels had to be made from plans. It seemed like it took a month of constant work to restore the Johnson bar brake system that Jack decided to keep. He avoided the full-swivel original tail wheel, though, and replaced it with a Maule.

Jack had the Warner 145 hp restored by Bob Von Willer of the Exotic Aircraft Co. in El Cajon, California. It now has new pistons and rings, bored cylinders with new linings, reground valves, new bearings, refurbished magnetos, and more.

In May 2002, enough of the airframe was completed to assemble it for rigging tests. Once all the adjustments were made, Jack disassembled the components and set to covering.

After covering and painting with the Poly-Fiber process, the parts were moved to Jack's hangar at Ramona Air Park for final assembly.

But the tedious firewall forward work still had to be done. Fittings for the starter and oil lines were tight.

Jack's friend Chuck Moon is a Lancair builder and used his fiberglass expertise to help Jack create a new cowl using S-glass over a foam form built in place behind the engine.

On June 18, 2005, Jack had his friend Alan Purdy inspect the engine and airframe for the last of many times and signed it off. Four days later Dan Johnson of the local FSDO inspected the airplane. On July 1 Jack had his airworthiness certificate. I was pleased to learn that the extensive documentation of every aspect of the restoration in the three volumes of photos I took helped with the certification process.

At the time of this writing the engine has been run for 15 minutes at 600 rpm with everything indicating "green." After a few small oil leaks are fixed and the break-in period run, N11259 will start taxi tests and then flight testing.

Not a bad effort for a guy who made membership in the elite UFO group (United Flying Octogenarians) halfway though the project! Good thing his wife, Barb, was behind him all the way.