

The Other Hisso Jenny

Thirty-one years in the making, Frank Schelling's Jenny is a delight

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The next time I get discouraged and think my project is taking too long, I'm going to think about Frank Schelling and his Curtiss Jenny. Entire presidential administrations (some of them two terms, no less!) have gone by multiple times since he acquired his Jenny. The project started before the world became connected to the Internet. Long before. Way before the compact disc came out, replacing our stacks of vinyl. You could buy a brand new Cessna 150 when Frank bought his project. The Apollo Program's earth-orbit Skylab was launched,

and Pete Conrad and crew got to do their own restoration project to make the orbiting lab habitable, after the spacecraft was damaged during the launch. Since he bought the Jenny in 1972, Frank Schelling has kept at it, one strut at a time, one connecting rod after another. Talk about stick-to-itiveness!

Like so many of us, Frank can trace his fascination with airplanes to model airplanes. His mom, in an effort to give him something to do on a rainy day and keep him out of her hair, bought Frank a model airplane kit. He didn't need any further encouragement; he was hooked, and hooked good!

Aviation had Frank Schelling in its grasp, so he earned a degree in aeronautical engineering from Cal Poly, San Luis Obispo. After a four-year stint in the Navy, he actively began to fulfill a dream of having a World War I airplane. He started collecting parts for an SE.5, including a prop and a Hisso engine purchased for \$500, and while busy picking up parts here and there, he noticed an ad in *Trade-A-Plane* for an original Curtiss Jenny that was for sale in the Miami area. After flying from California to Florida to look at the project, he bought it and drove his '67 Chev-elle from California to Miami to pick it up. His buddy Ray Cleone flew out to help Frank drive the new trailer and the car back to the San Francisco Bay area, making the trip an adventure along the way, stopping at Carlsbad Caverns and other fun places.

In 1976, while on a business trip to the Washington, D.C., area, he stopped in to visit fellow Jenny restorer Ken Hyde. Out in the hangar/shop, Frank noticed a Jenny fuselage set up for a Hisso engine installation (the JN-4H model), and with a little cash and some persuasion, he bought the fuselage that would serve as the basis for the airplane he would eventually restore. Since he already had a Hisso engine and didn't really need the parts he'd collected for an OX-5 powered airplane, he sold off the extra parts. The acquisition of the Hisso-configured fuselage seemed to be the actual starting point of the restoration process. It also seemed to be a good time to be starting.

"I got in it just at the right time," said Frank. "There were about four or five people restoring Jennys at the time, and if one person didn't have a part, somebody else did, and we all cooperated."

Restoring a Jenny isn't done often and is usually looked upon as a mammoth project. The Curtiss trainers, like so many of their contemporaries, were built by many, many hands, and their restoration requires the mastering of a number of almost forgotten skills. Almost each part will require some form of handwork, from the cleaning up of a casting for the parts of the Hisso to the rework of a wing interplane strut.

For instance, when first built, each wing interplane strut is cut from a small slab of spruce, shaped

by hand, and then, to prevent splitting, each end is wrapped with copper; the copper is then nailed in place, and each nail is secured with solder. Just in the struts for the wings, 32 strut ends are made in this way!

In the fuselage and tail surfaces, most of the cross members and other structural members are also similarly reinforced. You can quickly see how the man-hours can add up. When there were hundreds of employees at Curtiss building Jennys, that workload was spread across a factory, but when it's your project, it's just you, and perhaps a few buddies, to get it done. It's a challenge for anyone to complete a project like a Cub or a Luscombe, so anyone who has restored an airplane can empathize with a Jenny restorer!

Surprisingly, there are more original pieces in this airplane than one might think. When asked about how much of the airplane was original, Frank responded:

"A lot of it. I'd say about half. The wings are all new, new wood, but all original fittings; struts are all original except for the landing gear; the tail feathers are all original except for the vertical fin—that's new. In the fuselage, the four longerons are new, and there are six uprights where the cabane struts are and one for the engine support that are new. One set of floorboards is new, and the tail post; the rest is all original."

The inexpensive antique Hisso Model A engine turned out to be a good find, too. Except for some damage to the oil sump at the bottom, it was remarkably complete, and incredibly, after checking the engine over and doing some dimensional checks of the pistons, cylinder, etc., it became clear that it was a low-time engine. Only one part failed a Magnaflux check—a

The Oshkosh crew consisted of Paul Seibert, Ron Price, Eric Presten (pilot), Jerry Impellezzeri, Jim Wright, and Chris Price (pilot) (not pictured).

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The Jenny's colors are still standard Navy colors today—insignia red, white, and blue, plus aircraft gray.



COURTESY FRANK SCHELLING

The Hisso powered Jenny fuselage before its restoration.

connecting rod—and one camshaft drive was cracked and had to be repaired. A new rod was found, as was the drive part, and new bearings were poured by the Babbitt Bearing Co. of San Jose. It was all part of the rebuilding process to put the engine back to factory tolerances. By the time the Jenny was on the airport in Wisconsin, it had about 30 hours of total running time.

One of the distinctive features on any Jenny is the radiator, and the unit on Frank's airplane is an original, built especially for the Hisso engine. As mentioned before, a few fellows were also restoring Jennys around the country, and Jim Nissen, of Livermore, California, was rebuilding his OX-5 powered Jenny at the same time as Frank's project was being worked on. Oddly enough, Jim's

airplane came with a Hisso radiator, even though it was powered by an OX-5. And, to make it even better, Jim also had the fuel tank for the JN-4H, so they swapped fuel tanks and radiators. Frank said in all the time he's been working on the airplane, he's never seen another spare of either part, and yet they were both there just a few miles away from his home at that time in Alameda, on the east side of San Francisco Bay, and in the hands of a fellow restorer who needed the parts Frank had on hand. Remarkable!

Antique airplane restorers are scroungers and savers of the first magnitude, and Frank's been saving all sorts of bits and pieces as he's come across them. Jenny wheels were high on his list of "save" items, and he picked the best pair he had to use on his JN-4. They are unique in that they are not the usual cross-spoked wheels—they are radial-spoked wheels, which Frank said are a bit stronger and more robust.

In his quest to create a Navy Jenny, Frank has collected a set of antique instruments for the cockpit, right down to a pair of Navy clocks (when

he first restored the Jenny, it had Navy instruments in all the holes except the clocks!). Dave Rogers, of Instrument Pro in the Bay area, does a lot of instrument face work and has worked on a few of the faces of the Jenny's instrument, so he was given the Navy clock reface work.

Also included in his restoration is a full set of instrument panel lights, complete with a pair of Western Electric Blue Bell batteries. The only instrument added to the panel that was not depicted on the blueprint was an inclinometer. After unsuccessfully trying to get an inclinometer back from a former old-instrument restorer in New York state, Frank decided to see if Rieker could still make the older style unit he had sent away. (No, he still hasn't been able to get the original back!) The folks at Rieker, in Folcroft, Pennsylvania, are still in business, and have an active interest in their older units. Frank asked if they would still be able to make an inclinometer shown in an old catalog:

"You're not the first person to call," was the response Frank got, "but we don't have any of the patterns to cast the housing for that stuff; however, I do have an original of one of the housings, and if you want to copy it and send it back, I'll make the glass tubes for them, fill them and seal them, and then send you the pieces, and you assemble them."

"Deal," replied Frank.

Frank's previous experience with pattern-making came in handy, and with the Riker original to work from, he made a pattern and had a foundry cast fourteen pieces, eleven of which were usable. Rieker continued to show great interest in the Jenny project, and when Frank mentioned that most of his castings did not clearly duplicate the markings on the face of the inclinometer, the company offered to lend him the original impression stamps so he could mark the faces properly.



1970s—a tad younger Frank Schelling at the start of his Jenny project.



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A standard Jenny "dashboard". This is the forward cockpit. All the instruments are original to Navy aircraft of the period.



What's a "Hisso?"

For a long time when I first started hanging around old-airplane people, I would occasionally hear the term "Hisso" when they were talking about a particular brand of engine. It took some pestering of a few of my older friends before the full name came out; they were talking about the American-built Hispano-Suiza engines constructed under license by the Wright-Martin Co. in New Brunswick, New Jersey. A quick pawing through the aeronautical encyclopedia *Aerosphere 1939* revealed the whole story. The U.S. military wanted more power for its training airplanes, and the French had just the engine. Manufacturing rights were granted to the Simplex Automobile Co. of America, which was subsequently acquired by the Wright-Martin Co. The term Hisso was a simpler-to-say contraction of Hispano-Suiza, and the name stuck. The Model A was the first effort produced in the States, and it is the type installed on Frank Schelling's JN-4H. Like the Curtiss OX-5, it is a water-cooled, eight-cylinder, 90-degree Vee type engine which produced 150 hp at 1450 rpm, 60 hp more than the Curtiss engine's 90 hp produced at 1200 rpm.

Each of the two cylinder banks of the Hisso were cast in one piece, with four steel cylinder barrels threaded on the outside and screwed into the castings. The Model A has a displacement of 718.88 cubic inches. The later model E, which was also produced in quantity by Wright-Martin, was the same basic engine, and turned faster with a higher compression ratio. The model E was rated at 180 hp, and later it was found it could produce up to 190 hp at 1800 rpm.

Hisso engines on operating aircraft are pretty rare today, but a few are out there, including the Jenny flown at Cole Palen's Old Rhinebeck Aerodrome (making Frank's the only other Hisso-powered Jenny flying today) and on a Travel Air flown by Dennis Trone. I know there are others, but those two come to mind right away. Their distinctive rumble and the one-piece cylinder head covers peeking out of each side of the cowl make them easy to distinguish from the OX-5.



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The Jenny was flown for our cameras by Eric Presten. Our thanks to the Jenny gang (and EAA's photographers and camera ship pilot Bruce Moore) for getting up so early in the morning for our dawn photo shoot at the Brodhead, Wisconsin, airport.

A number of friends helped Frank along the way, including Cleone, Larry Schwafel, Tom Telifson, Newt Craven, Albert Ward, Ken Hyde, and Stanley Hiller.

Speaking of Hiller, the Hiller Aviation Museum was the site of the last big part of the restoration: the assembly and covering of the Jenny. The Hiller Aviation Museum really wanted the Jenny for display, in its unfinished state. Frank cut a deal with them; the museum could have it for display, but it would have to pay for the covering in Irish linen. Because Frank was in the Navy (and the actual history of his JN-4H fuselage was unknown), he knew which color scheme he wanted, and researched it at the National Museum of Naval Aviation in Pensacola, Florida. Before the paint could be applied, the linen had to be attached, and that job fell to a crew headed by Carl Moore. The work was done in Hollister, California, at Bob and Charles Hall's Air-Fab. After all the work that had been put into the Jenny to that point, it's not surprising that Frank was just as particular

about the covering job. Ross Walton of Vintage Aero Fabrics, now located in Kentucky (previously in Vermont), supplied the linen. The correct frayed edge treatment was done, and Frank was pleased with the end result. The final color scheme for a Navy training aircraft was applied, and then the hundreds of little details that need to be attended to were accomplished before its first flight in 86 years.

Frank Schelling's 25 years as a civilian aeronautical engineer gave him plenty of sheet metal experience, but only his innate ability to work well with his hands and mind, and a willingness to learn new processes, gave him the ability to complete the Jenny. "It's not that tough," he said during our interview. "The way I figured it is that if some farmer could do it, I could do it. It just takes persistence...I never looked all the way to the end. Everything I did was a little project in itself. It's like building a brick house; you start with one brick, and you set that one down. Pretty soon you've got a row of bricks; then you start

another row. That's how I did it."

There were plenty of little bricks along the way of the Jenny's restoration. You might be surprised to hear that this airplane is his only restoration project. If that's his first one, I can't wait to see how his next project, a Travel Air 4000, will turn out. Oh, by the way, he doesn't think it will take another 31 years! 

Resources:

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Ross Walton, supplier of vintage covering materials, can be reached at:
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