

Standard Issue

Take Your



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Dan Wood and his Takes-a-Lickin'-and-Keeps-on-Tickin' C-170

BY BUDD DAVISSON

Dan Wood has an unusual perspective on airplanes and why some of them last as long as they do.

"The best thing to happen to my airplane," he says, "was the tornado that totaled it in '85. It was apparently pushed into a hangar and the usual stuff was crumpled. I couldn't track it all down, but I knew for sure it crunched the fin, a wing,

and a strut, but there had to be lots of stuff I didn't know about."

Even the most casual listener would have to question this being a good thing.

"If the airplane hadn't been so severely damaged, it wouldn't have been totaled and sold by the insurance company. The current owner would have simply repaired it and kept it. It also wouldn't have been completely rebuilt, which took it

out of circulation for a time. If it hadn't been completely rebuilt, it would have been just another rag-wing 170, and there was a time back then that straight 170s weren't worth much. Many wound up sinking into the ground on the back tie-down line. By the time this airplane re-emerged, that time was past. I think the tornado saved this airplane."

In a twisted sort of way, there's

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some logic to his argument. The original 1948 170 was so quickly and completely eclipsed by the all-metal 170A and its handsome tapered wings that the old 170 immediately began to look a little dowdy. Not to mention, from a distance, it looked for all the world like a 140. Today, a good percentage of those in sport aviation don't even know that the ancestor of the now-famous C-172 had rag wings. However, you don't have to look far past Dan's airplane to know it's one of the best of a relatively rare breed.

Dan came by aviation naturally: his first ride was in a Brantly he-

licopter by the Brantly test pilot, his uncle Elton Barnum. Plus, his father had flown Taylorcrafts during World War II, doing his part for liberty while flying CAP patrols. Wood-the-elder saw the spark of interest in his son, and even though he'd been out of aviation for years, the two of them decided it would be a good thing for them to do together (Dan's father, W. Robert Wood, passed away August 21, 2005).

"Dad always wanted me to get my A&P, and I did after getting my BS in aircraft engineering from Western Michigan University. I worked in the aerospace industry

for a while and am now a supplier quality team leader at General Motors in Spring Hill, Tennessee.

"We decided that rather than renting for me to learn to fly," Dan says, "we'd buy a 150. He got current while I was working on my license. We were having such a good time that shortly after I got my ticket, my wife [Debbie] decided she wanted to fly with us, so we bought a 172. Even though she was pregnant, she decided she wanted to learn to fly and started taking lessons. When someone is pregnant, however, there comes a time when, for increasingly obvious reasons, you can't land an airplane.



MIKE STEINEKE



PHIL HIGH

Intended to be the four-place airplane any Cessna 120/140 pilot could handle, from a distance the first version of the Cessna 170 could easily be mistaken for its smaller brethren.

Dan Wood (above) did all of the metalwork with his son, Nick.

As is always the case with aviation, the birds of a feather thing kicks in, and you begin making friends you would never have found if it hadn't been for airplanes. In so doing, you often find yourself discovering new facets of aviation.

"I hung out with some friends that were into vintage airplanes. Nothing really exotic. Just the usual taildragger stuff, and that's what got me hooked on older airplanes. They just feel right. The 172 was a great airplane, but I seemed to like the older airplanes better. So, my wife and I bought a 7AC Champ.

"I started going to dawn patrols in Michigan with my dad in the early '70s. We must have gone at least 10 times every summer, and that helped fuel my interest in vintage airplanes, too. It became pretty obvious that many of the older air-

planes could be just as reliable and provide exactly the same utility as newer ones, and I found that really attractive."

The 172 had set the standard for the Wood family in terms of utility, so it

was a foregone conclusion that the Champ wouldn't last long. "It was fun, but the Champ was just too small and too slow. My son, Nick, and I started flying and camping earlier in the 172, and after one camping trip in the Champ, it was obvious that more room and speed was needed.

"We began looking for a four-place, all-aluminum airplane, and when you're looking at older airplanes, there are really just a couple choices that fit that description, the 170 and 180 being the first two. One-eighties were out of our budget, but we thought by doing some creative searching we could find a 170 of some kind. At the time, I wasn't looking for a straight 170, but was looking at 170s in general.

"I didn't want a project, but some part of me was attracted to finding an airplane that I could do a little work on and make it our own.

I found a straight 170 in Georgia that was flying reasonably priced. It was pretty rough and needed lots of TLC. Lots of it.

"I liked the fact that the airplane had never been painted. Plus the skin was good enough to polish, which I also found enticing. The airplane did have some damage history, but it was a little hard to figure out exactly what had happened to it from looking at the logs. I was lying in my tent relaxing at Oshkosh this year when I heard a gentleman getting more excited the closer he got to my airplane. He turned out to be the pilot who had owned the airplane in 1985 when the tornado totaled it. John Startz owned this airplane in Houston, Texas, and he was sure that the insurance company had scrapped it. He was so excited to see her still flying, and we became instant friends.

"It was really fun to watch him walk around and look at the airplane. The last time he'd seen it, it was in a pile against a hangar. He told me the whole story. That's one of the things that makes owning an airplane like this so much fun. Every vintage airplane has had a long string of owners, and you never know when you'll run into one of them."

When a machine has lived for



PHIL HIGH

More outstanding metalwork by Dan and Nick Wood is evident in this shot of their engine compartment.



PHIL HIGH

Russell handed him an envelope. In it was his last rent check all torn up. He said, "It is your hangar for as long as I am alive."

well more than half a century, it is bound to have had its fair share of incidents, but you'd think getting scrambled by a tornado would be enough for an airplane. But fate wasn't finished with the Wood family C-170.

"In 2000 a friend was flying it when the engine quit cold. It turned out there was a slug of water in the fuel. He got it down okay, but it went up on its nose. Thankfully, it didn't hit a hangar, or we would have been right back where this particular airplane started. It did, however, get the cowling, the prop, the landing gear, and a few other items. So, even though I wasn't looking for a project airplane, right at that moment, that's

While not intending to create a perfect stock Cessna 170, the Woods' airplane maintains the feel of the airplane as it was in the late 1940s.



PHIL HIGH



A modern set of radios is installed in the lower left corner of the instrument panel, which otherwise looks stock, complete with a new reproduction of the plastic panel with a “graph paper” style insert in the lower center.

PHIL HIGH



PHIL HIGH

The rounded tail surfaces are another distinctive characteristic of the 170.

exactly what we had.

“One of my aviation buddies that got me interested in vintage taildraggers is Jay Cavender. Jay is an IA and operates Classic Flight Inc. in Brooklyn, Michigan. We took the wings off and got it ready to rebuild it. We decided this would be the obvious time to do some of those things we’d been wanting to do all along.”

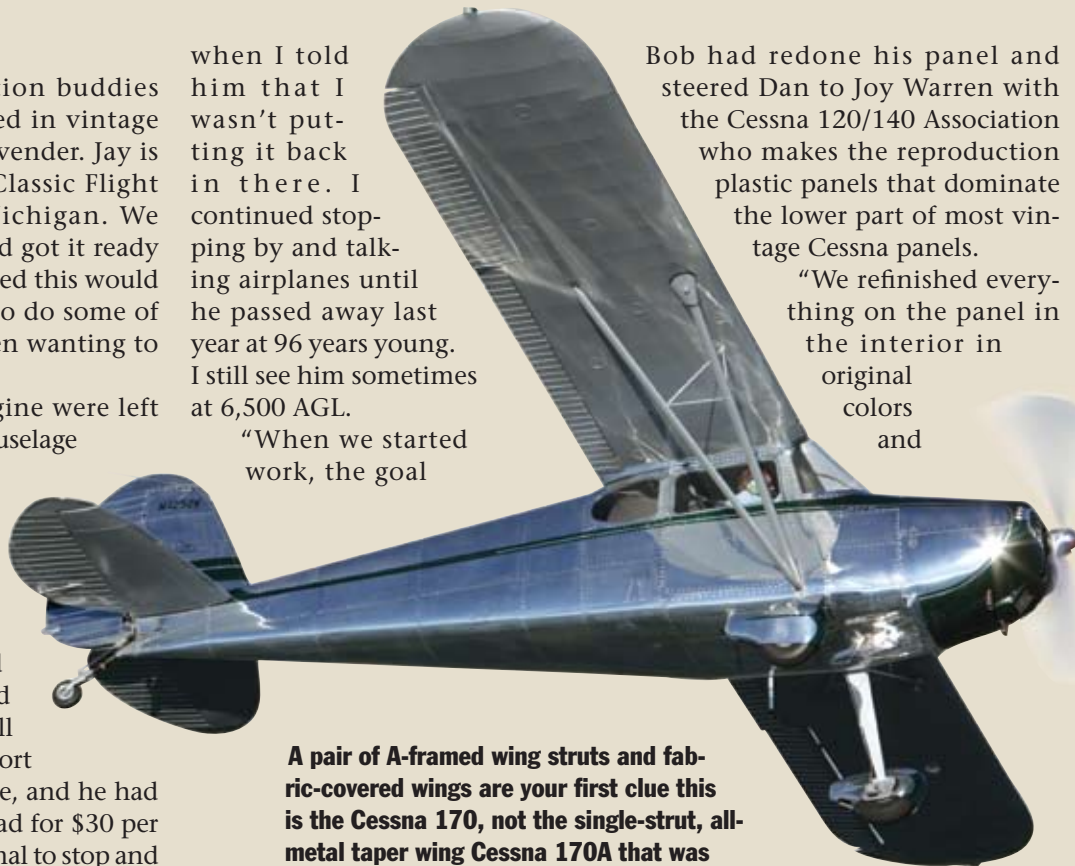
The wings and engine were left in Jay’s care, and the fuselage went home to Tennessee. When the Wood family first moved to Tennessee and started looking for a hangar, they met a person who would become a good friend and inspiration. Russell Puckett owned an airport in Eagleville, Tennessee, and he had a hangar across the road for \$30 per month. It became normal to stop and talk to Russell and his wife, Nora, almost every time Dan went flying.

Russell was a civilian instructor at Pine Bluff, Arkansas, during the war flying PT-19s. After the war, he became a Piper dealer buying new J-3s for \$600 each. At one time he had six new J-3s with the wings off in that hangar. Dan and Russell became lifelong friends, and one time Dan stopped by and Russell handed him an envelope. In it was his last rent check all torn up. He said, “It is your hangar for as long as I am alive.”

“The hangar was getting really bad, and when the airplane was finished, I think it broke his heart

when I told him that I wasn’t putting it back in there. I continued stopping by and talking airplanes until he passed away last year at 96 years young. I still see him sometimes at 6,500 AGL.

“When we started work, the goal



A pair of A-framed wing struts and fabric-covered wings are your first clue this is the Cessna 170, not the single-strut, all-metal taper wing Cessna 170A that was to follow.

wasn’t to have a completely original airplane. At its core, we wanted a completely usable airplane that was as original as we could make it without compromising its utility. For instance, when doing the panel, on the one hand I took the LORAN out of the glove box and kept looking until I found an original door for the box. On the other, I stayed with the Terra avionics stack in the panel.”

Dan met another friend-to-be, Bob Runkle, at a fly-in, where Bob had his beautiful 1948 Cessna 140.

Bob had redone his panel and steered Dan to Joy Warren with the Cessna 120/140 Association who makes the reproduction plastic panels that dominate the lower part of most vintage Cessna panels.

“We refinished everything on the panel in the interior in original colors and

used one of Joy’s reproduction plastic panels to replace the original one that was getting pretty funky looking. Then, I polished the switch keys. Unnecessary, but very cool looking.

“We completely zero timed the engine, including replacing the crank with what was essentially a new one. The original crank cracked when the airplane went up on its nose during the accident.”

When working on the airplane, Dan corrected something that had never made any sense to him, and

since the root cause of the incident was water in the fuel, some corrections had to be made.

"The original rag wing 170s have two 12-gallon, Cessna 140 tanks in the right wing, but only one on the left. This airplane had been modified and had a fourth tank in the left wing. However, only two fuel drains were installed. So, water can get trapped in the outboard tanks, and you have no way of draining it out. We decided to add additional fuel drains to the outboard tanks to get the fuel out. Then we added Monarch fuel caps to keep the water out in the first place. Field approvals were received for both modifications.

"When the gear was bent back, it really did a number on the forward lower fuselage, so we had to do some surgery in that area. My son, Nick, and I did all the metalwork ourselves, with Nick doing the bucking bar duties, something of which he is very proud.

"The rest of the airplane was actually fairly clean inside, considering its age, but naturally some stuff was worn. We installed new seat tracks and did some detail work, like painting the entire interior so it matched the Silver French Gray that was found on the rear ashtrays.

"The cowl was pretty beat up in the accident, but rather than replace it, we rolled most of the wrinkles out. At the same time I removed the antenna, which for some reason they had mounted right in the top, center of the cowl and replaced the sheet metal. Very weird.

"We replaced all of the windows in the airplane and went back to the original two-piece windshield. For whatever rea-

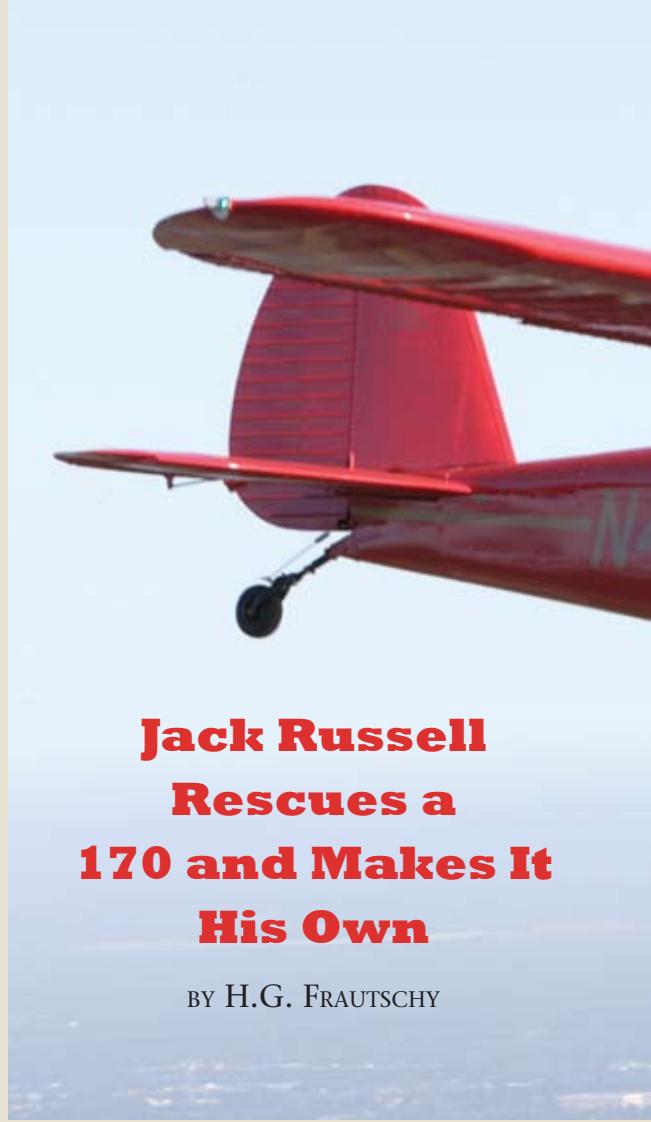
son, I just think it looks better on that airplane."

Regardless of what kind of airplane we're talking about, if it has the original aluminum wheelpants and they are polished, everyone who sees the machine gives it a mental thumbs-up, and that is definitely the case with the Wood 170.

"The wheelpants were bought a couple of years ago, and they were painted. I stripped the paint and removed all the filler and found they didn't seem to be that bad underneath, so I took them to one of the metalworking shops at Oshkosh 2004. There I spent some time with Shawn Miller of Miller Custom Metalcrafting who runs one of the forums, and he showed me how to work the metal with a dolly and slapper. I learned a lot from him in a very short time, and after a couple of weeks working on them in my basement, I had a respectable pair of wheelpants. It was amazing to watch the surfaces start to come back up level. (*Editor's Note: In the VAA Metal Shaping tent located just south of the VAA Red Barn, Shawn Miller will be demonstrating metalwork again during EAA AirVenture Oshkosh 2006.*)

"My great-great-granddad was a blacksmith, so I guess I have it in my blood."

Dan may have the blood of a blacksmith flowing through his veins, but you're going to be hard-pressed to find anyone viewing his gem-like airplane who has "blacksmith" tucked away in the back of the mind as a way of describing the airplane. Actually, the word "jeweler" comes to mind. Or maybe "silversmith." Not bad for an airplane that has been brought back from the dead twice.



Jack Russell Rescues a 170 and Makes It His Own

BY H.G. FRAUTSCHY

When you look through the restoration photo album compiled by Jack Russell, you quickly realize that most amateur-built airplane kits have more components riveted together than his Cessna 170 did when it was disassembled during restoration! There are times in every restorer's life when the project feels more like an exercise in frustration. Most battle through those days, and for Jack and his fiancé, Cindy Johnson, the end result of hanging in there is this agreeably restrained custom Cessna 170.

Many years ago, Jack learned to fly in a Cessna 140. For much of the time since then, he's wanted to own a Cessna 170. Before flying became his life's career, he graduated from East Coast Aero Tech in Boston. His early years were spent working as an airline mechanic, first for American Airlines and later for Eastern. While bending wrenches for Eastern at its Boston base, Jack heard the word that the airline was looking for pilots, so he restored



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an Aeronca Chief to use for his commercial rating. Nice airplane, but he realized he'd have trouble meeting the requirements, since the Chief lacked a radio. On to plan B, in this case a Cessna 140 he bought and flew to obtain his commercial. All of that effort took about eight years, and when Jack applied for one of the pilot slots, he was told he was too old, at the completely washed up age of 28!

Chagrined, Jack returned to Boston and heard that Gillette was looking for a copilot/mechanic for its corporate flight department. Out of 100 applicants, Jack was one of only three who could meet its



Jack Russell and Cindy Johnson



Gene and Bonnie Day

requirements of five years of maintenance experience and 500 hours of multi-engine time. He was pleased to find he'd been chosen out of the three, and went on to fly the Gulfstream G-I and the newly acquired Gulfstream G-II, serial no. 3. After being upgraded to first officer on the G-II, he retired his wrenches. He has spent an aviation lifetime flying Gulfstream business aircraft for 37 years. He worked for Gillette for 12 years, and then found himself working during the next decade for the royal family of the United Arab Emirates, flying a G-III all over the world. He came back to the United States in 1989, doing con-



tract flying for a number of operators, most recently for an Australian businessman and his wife. The couple has homes on multiple continents, and Jack's last type rating before he retired was for a Boeing Business Jet (BBJ), which he also flew all around the globe. He retired in 2004, and spent the first year of his retirement in the home stretch of finishing a project that began in 1999, when he located a Cessna 170 to restore.

He found his 170 on the west coast of Florida, and trailered it home to his place, Tradewinds Aerodrome on the Space Coast of eastern Flor-

“... the interior of these wings was amazing; you could use them as a mirror to shave.”

ida. His grass strip airport is only 12 miles north/northwest of the Shuttle Landing Facility runway at the Kennedy Space Center. You can imagine the view during a rocket launch!

As you would expect with an airplane found in a saltwater coastal environment, as Jack disassembled the airplane he found surface corrosion. Now he had to make a choice; should he scrap the project or dig in and start restoring? He chose the latter, but there were days when he really questioned whether he'd made the right decision.

Not surprisingly, there's one fellow whom Jack credits with making the project possible, his friend Gene Day. While Jack was the cleaning-up and refinishing fellow, Gene did the metalwork, and Jack says he really was the backbone of the operation. If it were not for this 79-year-old spark plug, he doubts the project would have been successfully completed.

Along with Gene, who's been in aviation maintenance all his life, Gene's wife, Bonnie, was also involved in the teardown and repair of the airframe. It was her work that showed the crew just how badly corroded the original wings were. The wings nearly brought the project to a halt. It became clear that unless a new set of serviceable wings could be found, the labor involved in the other wing was just more than they could bear. Jack had to make a decision; should he simply scrap the airframe, tear it apart and start an in-depth restoration, or check on an alternate route?

A parts search canvassing the United States uncovered a pair of wings at a Cessna parts dealer in Colorado. They were new old stock, still covered in the original fabric, and had never been installed on an airplane. Sometimes it pays to own one of the airplanes that isn't the leader in production for a particular model! Jack says, "Believe it or not, the interior of these wings was amazing; you could use them



The instrument panel has a solid period feel, with a few custom additions, like the powder-coated piano switches at the center panel, and the custom-engraved bone-colored plastic panel. Detail at right.



Buckskin, saddle, and camel were the colors of the AirTex interior installed in 1959, and it still worked well with the new color scheme, so AirTex was again called upon to update the interior of the 170.



A Grimes retractable landing light is powered by a 60-amp alternator, the only major change to the accessory section of the newly overhauled Continental C-145.



as a mirror to shave. We were reluctant to prime them. They were that good." Primed in the same way as the fuselage, the metal-structure wings were covered in new Dacron polyester, and painted to match the fuselage. All of the paints used were Randolph products, including the Tennessee Red base color with Las Vegas gold trim.

Starting at the tail cone, the fuselage skin rivets were drilled out and the airplane disassembled right up to the baggage compartment. All of the skins except one (which had a surface patch they didn't like) were salvageable, but each had to be stripped of any paint, cleaned with metal brightener, and alodined for corrosion resistance. Then the skins were painted with a zinc-chromate epoxy primer.

The aft fuselage skins were a start; from that point, every component on the airplane was removed, disassembled, and evaluated for airworthiness. Jack was happy to find the vast majority of parts on the Cessna were repairable, and once cleaned up and repainted, they were ready to be installed on the airframe.

The six-cylinder Continental C-145 engine, which had more than 1,700 hours on it with one overhaul done in that time, was also reduced to a box of parts, and they were sent to Engine Components Inc. (ECi) of San Antonio, Texas, for inspection and machine work. That included a complete set of updated new ECi cylinder heads installed by ECi, which

Jack says was done for precautionary reasons. The crankshaft was also replaced, when it was deemed the original crank was marginal when it came to passing inspection. The engine's accessories also passed inspection, but were certainly due for overhaul, and were sent to Kelly Aerospace in Alabama for their work and yellow tags. The original 20-amp generator was replaced with a 60-amp alternator, also from Kelly Aerospace. Finally, at the nose of the airplane, the fixed-pitch prop, which is original to the airplane, was sent to Space Coast Propeller in Cocoa Beach, Florida, where it was checked and recertified.

As the work progressed, all of the flight instruments were checked, and with the exception of the big, heavy old gyros, each was overhauled and kept. All the engine instruments were replaced with UMA instruments, and the panel was restored with correct-looking left and right side panels, which is typically where radios are installed in the older Cessnas. The left side panel now holds a Garmin 250XL GPS receiver and a Garmin transponder; on the right side there is the original glove box.

As you'd also expect of a restoration, the wiring behind the panel needed quite a bit of help, so the cockpit was rewired by Denton Aircraft of Titusville, Florida. Jack built up a wooden mock-up of the panel and the instruments, and sent that along so the harness could be cus-

tom fitted to the installation. The new installation included circuit breakers that replaced the original fuses in their proper locations. There is a separate sub-panel for the avionics, located in the left panel, near the Garmin GPS.

You can't help yourself from being drawn to the center panel of the post-war Cessnas. The plastic panel on Jack's is expertly machined and laid out with neat, tidy markings. Each of the push/pull controls knobs was duplicated from the original plastic. Then they were powder-coated to match the red color of the exterior, as were the "piano switches" at the bottom of the panel.

Buckskin, camel, and saddle were the colors of the new AirTex interior which was installed in 2004, which worked well with the red and gold exterior chosen for the exterior. The interior side panels were sent off to AirTex, where new fabric matching the older interior was installed. Plenty of care went into the installation of the headliner and side panels, where a lapse of workmanship can really show. Not so in the Russell 170—it's first class all the way.

Jack and Cindy plan to use the 170 during the entire year, enjoying the winter in Florida at their home on the Space Coast and their summers in New Hampshire. It's pretty clear that wherever they go, their custom Cessna 170 will be causing people to nudge their neighbor hanging on the airport fence, and perhaps say, "What a nice 170. I always wanted one of those." 