

EAA Sport Aviation

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PLT 23
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A WORK in PROGRESS

Dan Wood of Newnan, Georgia, is proud of his nearly original 1948 Cessna 170, and with good reason. He has poured much of his own time, energy, and talents into its restoration. He acquired many of the mechanical skills he needed early on, through a combination of osmosis and hands-on experiences. His father was a pilot, so he grew up around aviation and also worked on cars as a teenager. He later earned his degree in aircraft engineering and obtained his airframe and powerplant (A&P) certificate—both of which are handy to have when flying and maintaining a “neo-classic” airplane.

Dan, EAA 307871, and his wife, Deborah, bought N4252V in Woodstock, Georgia, in 1993. It was a flyable airplane, though not in pristine condition. “It was pretty rough and lacking maintenance,” recalls Dan. It hadn’t been polished in a few years. The tail wheel wasn’t rigged right, and one of the doors wouldn’t open because the latch was broken. Dan got it flying again and says his son, Nick, “kind of grew up in it.”

RESTORATION REQUIRED

Sometimes we just don’t know when an airplane’s flight may be its last one for a while. In Dan’s case, that happened in 1997, when a friend of his was flying N4252V. The fuel had water in it, and his friend brought it down near the end of the runway. “Part of the problem was that when they put the 140 tanks in these, they didn’t have any fuel drains in the outboard tanks, so you couldn’t check for water,” Dan explains. “Originally, the 170 had three 12-gallon fuel tanks (one in the left wing and two in the right). My 170 has been modified to have four tanks,

so it has 48 gallons of fuel. When we tore it down, we put fuel drains in the outboard tanks, and also Monarch caps on the top to keep the water out.”

There was considerable damage to the airplane, and Dan asked his inspection-authorized A&P mechanic friend, Jay Cavender of Michigan, to work on the wings. The skin was wrinkled, the rivets were torn, the landing gear and prop were bent, the crankshaft flange was cracked, and the whole front of the cowl was flattened. Dan, who lived in Michigan prior to moving to Tennessee and later, Georgia, traveled north on several occasions to help with the wings and also with the engine repairs. The remainder of the time he spent at home in Tennessee, working on the fuselage.



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If you stop and try to do it all at once, then the airplane is never flying, and I want to fly it.”

—Dan Wood



Michael Steinske



Phil High



Phil High

ABOVE: N4252V sports an original green trim paint scheme.

LOWER LEFT: Note the powder-coated yokes and handsomely-detailed interior.

LOWER RIGHT: Wood made the engine baffling for the 145 hp Continental.

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Dan says the secret to metal working is knowing that you're not necessarily going to get a part right the first time. "I usually do it about three times and learn as I go along. Try not to rush it; aluminum isn't cheap. I spend a lot of time thinking about things before I do them, so that helps."

With the airplane down, it was a good time to make other improvements as well. "I went in and had all the instruments rebuilt, put a new top fuselage skin under the windshield, installed new seat tracks and put in shoulder harnesses, installed new windows, painted the interior, installed a speaker, insulation, and made all new aluminum floorboards for it," says Dan. "Joy Warren with the Cessna 140 group actually made a new switch panel for me, and so I put that in, too. Plus, I replaced the lower fuselage skin and slapped the wheelpants back into shape and painted them with the original paint scheme."

WORK IN PROGRESS

All in all, it took four years to bring the 170 back to flying status, but Dan's restoration work didn't halt completely. Instead, it simply transitioned from an intense focus to a slow evolution. "Trying to bring it back to original is kind of a work in progress. If you stop and try to do it all at once, then the airplane is never flying, and I want to fly it," says Dan. "I didn't want it to be a hangar queen. Now, as I can find parts, I try to clean them up and install them. I found a pair of original wheelpants that were in poor shape and had to work out the dents. Then I painted them with a scheme that follows the lines on the fuselage, so I could cover a repair in the wheelpant."



PHIL HIGH

Nuvite is Wood's top choice of polishing systems.



MICHAEL STEINEKE

tried and true

The Cessna 170 has enjoyed popularity since it debuted in 1948, and it's still a favorite among pilots today for its aesthetic lines, ease of handling, and functional economy. An advertisement in the July 1949 issue of *Air Facts* boasted, "Cessna leads" because Cessna offers 'more for the money!' "In 1948, Cessna sold more personal planes than any other company." In a review in that same issue, entitled "The New Cessna 170," Leighton Collins wrote: "There were 833 Cessna 170s sold in their first year of production—more than anything else during that same period, either two or four place. ...The 170's unusual popularity means simply that it is most things to the most people."

The Cessna 170 model evolved through several different versions, as did many aircraft models through the years. The 170 was manufactured under approved type certificate No. 799, and the first version, which came to be known as the "straight" 170, began rolling off the production line in 1948. That was the "ragwing" model, and today they number 417 on the FAA Registry. The straight 170 measures 25 feet long and has a wingspan of 36 feet, an empty weight of 1,185 pounds, a useful load of 1,015 pounds, and a 605-pound payload (with 37.5 gallons of fuel). In 1949, the 170A was produced, featuring all-metal, tapered wings with larger ailerons and flaps, single wing struts, and a dorsal fin. There are 683 170As on the Registry today. In 1952, the 170B arrived on the scene, and its refinements included an even larger high-lift flap and improved Continental O-300 engine. Today, the 170B numbers 1,693 on the Registry.

Overall, the 170 design was basically a larger version of its predecessor, the Cessna 140. The two designs shared numerous exterior and interior parts in common. A pilot report by Don Downie (*Skyways*, July 1948) stated: "So many parts are interchangeable on the '140' and the '170' ... spring-steel landing gear is identical ... wing ribs are the same although the '170' has six more ribs in each wing panel. The rear strut on the '170' is the same as the front strut on the '140.' The complete tail assembly... is pirated from the five-place '195' model. Nose cowlings, control columns, tail wheels and instrument panels are all interchangeable. Even the tires and gas tanks are the same. In all, 40 per cent of the parts in this new model are taken from one of the other line of Cessna aircraft." Improvements for the 170 model included a "yard-wide door" and front seats that easily rolled fore and aft on a track—these features greatly facilitated entry and egress for pilot and passengers.

—Sparky Barnes Sargent

AIRCRAFT DATA

Make & Model: Cessna 170, 1948

Length: 25 feet

Wingspan: 36 feet

Height: 6 feet, 7 inches

Maximum Gross Weight: 2,200 pounds

Empty Weight: 1,200 pounds

Fuel Capacity: 48 gallons

Seats: 4

Powerplant Make & Model: Continental C-145-2

Horsepower: 145 hp

Propeller Make & Type: McCauley DM7651

Cruise Speed/Fuel Consumption: 8.5 gph

Power Loading: 15.5 pounds per hp

Wing Loading: 12.8 pounds per square foot

VNE 160 mph VX 76 mph

VSO 90 mph VY 89 mph

Contact info: Dan Wood fly170@gmail.com



Michael Steineke

Micro Vortex Generator Kits Now Approved for Cessna 170



The FAA has issued an STC approval for the installation of micro vortex generators (VGs) on the wings and horizontal stabilizer of the Cessna 170. While the VGs have no effect on high speed performance, they do significantly enhance slow speed maneuvering. They provide a 10 percent reduction in stall speed, improved aileron response in slow flight, and a reduced takeoff and landing roll. The overall effect is improved flight characteristics in slow flight along with improved crosswind control.

Templates included in the kit provides for the installation of 76 vortex generators just aft and above the leading edge and another 36 vortex generators that get attached to the underside of the horizontal stabilizer. Made of 6063-T6 aluminum, the diminutive VGs measure 1-inch long and 1/4 inch high and are curved to fit the contour of the wing. Each kit comes with complete, illustrated instructions, Loctite Depend for adherence, and all other materials needed to complete the installation, which takes about a day.

For more information, visit www.MicroAero.com or call **800-677-2370**; overseas call **360-293-8082**.