

SHOP TALK



# Staying Sharp

Flying proficiency and building BY BUDD DAVISSON

**THE STORY IS AN OLD AND TOO-FAMILIAR ONE.** A builder, let's call him Bill, spends five years laboring on his [insert name of common homebuilt here]. It is an award winner in every detail. As a builder, he is in the top few percentile in terms of capabilities. As a pilot, he's average/ typical: 225 hours of total time, mostly in Cessnas, spread out over the last 15 years with none during the five years the airplane was being built. He knows his piloting skills are probably rusty, so as soon as he has the airworthiness certificate, he rushes out to the airport and gets a flight review. He spends two hours in a rental 172, shoots 10 landings, and his CFI proclaims him airworthy. In a Cessna. So, he is now legal again, but is he actually prepared to test his own airplane?

airplane to be flown. If it's a Pitts, he's not even in the ballpark. If it's a Pietenpol, he might have a chance, assuming he's tailwheel current. But, his C-172 flight review didn't do that. If it's an RV-6A, the tail wheel is no factor, but the control feel (light and quick) and performance become worries. Bill wouldn't be the first to have a tragic first flight, and he probably won't be the last. All of which is so unnecessary. First, let it be known that personally I am nervous when builders do their own first flights unless they are very current, very proficient pilots who have recent experience in aircraft similar to what they've just built. Unfortunately, that profile doesn't fit many

### THERE IS ALWAYS A FIRST FLIGHT

Common sense says Bill is definitely not prepared to fly his newly completed airplane. However, the degree of the mismatch between his skills/proficiency and the airplane in question depends on the

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ILLUSTRATION BY BRANDON JACOBS

builders. Plus, if a pilot/builder who has five years of his/her life tied up in the project has a problem on the flight, there's the possibility that the pilot will make decisions with the builder part of the brain rather than the pilot part.

On page 68 in this issue, I have an article in which, as an old-school instructor, I make a case for re-inserting the "basics" back into one's flying skill package. However, what we're talking about on this page isn't flying technique so much as it is proficiency. Let's face it, when it's a sunny Saturday and building fever has taken over our brains, we know that, if we go flying, we'll walk back into the shop and nothing about the project will have moved ahead. Visual progress always spurs a project on, so we often find our urge to build overpowering our urge to fly. Then, when we come to the end of the project, a number of months or years will have passed since we've flown. This is where EAA's Flight Advisor program can be brought to bear.

#### FLIGHT ADVISORS CAN BE IMPORTANT

Decades ago, EAA began to address first-flight difficulties by formally recruiting highly experienced homebuilt pilots who know specific airplanes well and are willing to share their expertise. They advise the soon-to-be-homebuilt pilots on the best course of action to be taken to fly their airplane. Where the tech counselors look for glitches in the hardware, the flight advisor checks out the software between the builder's ears and helps him or her make the right decisions concerning the first flight.

## NEW REGULATIONS EASE THE FIRST FLIGHT BURDENS

The last decade has seen some incredibly important changes in the FAA's attitude toward test flying homebuilt aircraft and getting transition training for them. These have been in three phases, each better than the last.

- » Allowing CFIs to charge for training in an experimental amateur-built aircraft. In the past, it was impossible for an instructor to charge for doing anything in a homebuilt aircraft. Then the FAA allowed them to charge when giving training for transition into the exact type of homebuilt being used as a trainer. So, a CFI could charge an RV builder for training given in an RV.
  - Letter of deviation authority (LODA). This expands the program and allows commercial flight training to be given in an airplane that approximates the characteristics of the homebuilt to be flown, for example training for a Thorp in an RV. This makes it easier to get training for aircraft that have no factory support.
  - Additional Pilot Program. This is a really big change in that a new homebuilt pilot can now bring along a pilot who is more

experienced. The "required crew" limitation, which essentially required all test flights to be flown solo, was removed. This is an important change because the newbie pilot can now have someone on board to not only watch over the pilot's flying but also to help in the case of a problem. More than half of firstflight accidents involve pilot error, so this one change has and will drastically lower first-flight accidents.

# EXPERIMENTER

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## NOTHING CAN SUBSTITUTE FOR RECENT PROFICIENCY

While the above changes in the regulations do a lot toward easing first-flight fears, if pilots haven't flown in a long time, the amount of rust that has built up cannot be removed in a short period of time. Removing a lot of rust and getting pilots ready to fly an airplane that may be different than anything they have flown can be a long, sometimes arduous task. So, homebuilders have two choices: One is to make an effort to slow the growth of rust by flying more often while building. That way the transition CFI isn't trying to make a diamond out of a lump of coal. Or, accept the fact that their new beauty will languish for a period of time until they soak up enough training and are absolutely ready to fly it. If they're using the Additional Pilot Program, they don't PUTTING OFF RUST REMOVAL UNTIL THE END

There is something to be said about the continuity required while building an airplane. Interruptions and distractions are to be avoided. So, breaking stride to trundle out to the airport to fly can irritating to some builders but not to others. Some builders put the heads down and mentally become hermits, focusing on the task at hand and surfacing only to eat and commute to work. Others like a break as a way to recharge their batteries. By the way, an extreme case of "taking a break" was a friend who was restoring a Waco cal biplane (an enormous task) and saw building a Bearhawk as a way taking a break! If flying proficiency is sacrificed for building progress, builders have to look at the transition from builder to pilot as they're learning to fly again.

have to be as sharp because they can lean on the pilot who is experienced in the type to do the more serious flying. This, of course, assumes it's a two-place airplane, which many homebuilts are not. If flying a single-place homebuilt, even if it already has the test time flown off by a pro, the newbie E-AB pilot's skills have to be approaching razor sharpness. The two approaches, fly-whileyou-build and fly-after-you-build, require some discussion.

I am nervous when builders do their own first flights unless they are very current, very proficient pilots who have recent experience in aircraft similar to what they've just built. Unfortunately, that profile doesn't fit many builders. Plus, if a pilot/builder who has five years of his/her life tied up in the project has a problem on the flight, there's the possibility that the pilot will make decisions with the builder part of the brain rather than the pilot part.

Flying is one of the most per ishable skills most of us possess and although the rate at which i deteriorates depends on the ind vidual, a hiatus of a few years pu most of us right back to the begi ning. Or close to it. So, when we get back in the cockpit, we need be willing to accept the fact that we may find huge gaps in both o actual skills and our judgement. The CFI charged with knocking the rust off can't make any assumptions about how much or our skill is left. The instructor ha to do more than simply get us to the point where we can get up an down without breaking anything This re-entry into the third dimension should include a little of everything that it took to get our certificate in the first place.

## MAKING FLYING PART OF THE PROJECT When the builder is whittling on a part, the airplane is in the act of improving while the

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builder is, at the same time, in the act of deteriorating as a pilot. So, there are two projects in the room at the same time: The airplane and the pilot. The successful builder develops a level of self-discipline, a "project mindset," viewing each part as if it is the entire project. Build the airplane one part at a time so the completion of a part is a milepost on the road to completion. Flight proficiency can be easily built into that kind of thought pattern, if the builder so desires.

A single flight while building, even if it's just a hamburger run, can be inserted into the building schedule once a month or every six weeks just as if it is a component of the airplane. Builders have to approach these flights as if they are airframe parts where they apply their own definition of craftsmanship. They should be conscious of how well they keep the ball centered, how consistent their airspeed control is, how close they came to landing on their chosen spot on the runway. They should criticize their performance in the air just as they criticize their performance on the bench. In so doing, when it comes to transitioning to the new airplane, their instincts and basic piloting skills will be intact and they'll enjoy the new airplane just that much more. Crosswinds and bad days need to be challenged. Strange runways explored. Emergency procedures practiced. The rudimentary stickand-rudder basics need to be made instinctive again. When all of this has been accomplished in a "normal" airplane, the flight advisor, spo CFI, or qualified additional pilot can take us by the hand and lead us into the new world our homebuilt represents. There are no short cut

## NEVER LOSE SIGHT OF WHAT IS IMPORTANT

We can never forget that aviation is one of the most unforgiving environments in existence. Our ability to survive lies almost entirel in our own hands. Not only in our ability to manipulate the controls but in our mental capacity to perform correctly even in emergency situations. It is important that we recognize that both of those skills come together only when we've made the effort to make ourselves better pilots. Building the perfect airplane is a waste, possibly a dan gerous one, if we don't make the same effort with our skills. **EAA** 

**Budd Davisson** is an aeronautical engineer, has flown more than 300 different types, and h published four books and more than 4,000 articles. He is editor-in-chief of *Flight Journal* maga zine and a flight instructor primarily in Pitts/tailwheel aircraft. Visit him on www.AirBum.com.