

SAVVY MAINTENANCE / OPINION



# Tale of two prebuys

## The importance of a truly independent prepurchase examination

BY MIKE BUSCH

**MY COMPANY MANAGES** a lot of prebuys. At any given point in time, we typically have a dozen of them in progress. We've managed thousands of them over the years and seen the good, the bad, and the ugly.

Most of the time, the aircraft turn out to be in decent shape and the outcome is a successful purchase by our client, often after some last-minute price negotiations based on prebuy findings of airworthiness discrepancies that we think the seller should

pay to correct. Once in a while, however, the prebuy uncovers problems serious enough that we advise our client to walk away and find another purchase candidate.

We always try to arrange for the prebuy examination to be performed by a shop or mechanic highly experienced with the make and model involved and who is truly independent. By independent I mean the selected shop or mechanic has no prior exposure to the aircraft being examined

and no prior relationship with the seller or (if applicable) the seller's broker. This is the only way we can have confidence that the prebuy findings will be thorough, honest, and unbiased.

Let me tell you about two of these prebuys. One was truly independent, the other—well—not so much. I've changed some names to protect the guilty, but the rest is exactly what happened.

### Cabin-class twin

Burt was looking to buy a cabin-class pressurized twin. After diligently searching the usual sites—Controller, *Trade-a-Plane*, and Aircraft Shopper Online—he located what looked like a promising purchase candidate. It was a Cessna 340 that was listed by an airplane broker named Brad on behalf of Sam, its owner. Burt made an offer, Brad conveyed it to Sam, and Sam accepted it. Since Burt lived on the West Coast and Sam's airplane was based in the Deep South, Burt asked my company to manage a prebuy for him.

We're always a bit nervous about managing prebuys on airplanes as sophisticated and complex as a Cessna 340 because we've seen so many of them become money pits unless very well-maintained and cared for. There are only a handful of twin Cessna specialty shops in the United States that we'd feel comfortable with evaluating an airplane like this. The closest ones were in Texas, so we recommended Burt have the prebuy examination done at a shop in Dallas.

We'd worked with this shop on several occasions and knew it to be extremely knowledgeable about twin Cessnas and also extremely thorough. Actually, this shop was so picky that we hesitated to use it for annual inspections for fear our clients would have to take out a second mortgage. But a picky shop like this is precisely the kind you want for a prebuy.

We contacted the Dallas shop about doing Burt's prebuy. They said their shop schedule was booked solid and it would be some weeks before they could look

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at Sam's airplane. Sam balked at this. He wasn't happy about flying his airplane as far as Dallas for the prebuy and wasn't willing to wait weeks to have the prebuy done. Brad (Sam's broker) became concerned that the deal was falling apart and suggested that the prebuy be done by an A&P/IA named Ed who was located close by and whom Brad knew to be knowledgeable about twin Cessnas.

We'd never heard of Ed and knew nothing about his qualifications. All we really knew was that Brad recommended him, which set off alarm bells because it would be a clear violation of our "independent prebuy" criteria. If Ed did the prebuy, we could never be sure whether his allegiance was to our client, Burt (who wanted to ensure that the airplane was airworthy and well-maintained), or to the broker, Brad (who recommended Ed and who wanted the deal to close ASAP).

Meantime, Brad was telling Burt that he'd better get this deal done quickly

because he had a couple of other interested buyers for Sam's airplane. (Brokers always say that, and buyers often believe them. Sigh.) So, contrary to our advice and much to our chagrin, Burt agreed to have Ed perform the prebuy examination of Sam's airplane. We reluctantly sent Ed a checklist of specific items we wanted him to look at during the prebuy, and we crossed our fingers. This was not starting out on the right foot.

No sooner had Sam's airplane been delivered to Ed's shop for the prebuy, Brad (Sam's broker) threw us another curveball. Realizing that the Cessna 340's annual inspection was about to expire,



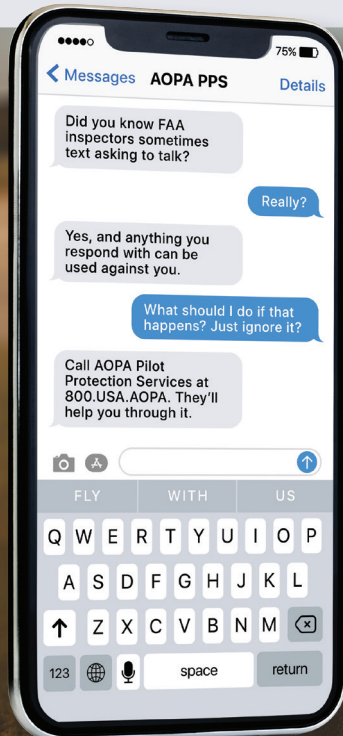
Cessna 340.

Brad proposed to have Ed perform an annual inspection in lieu of the prebuy. Sam agreed to pay for the annual and for repair of any airworthiness discrepancies found during the annual. Burt thought this was a great idea and immediately agreed.

We thought it was a terrible idea. Now Sam would be paying Ed's bill, Ed would be working for Sam, Sam would be calling the shots, and Ed would have no duty of care to Burt whatsoever. From where we sat, this was no longer a prebuy whose purpose was to protect Burt from buying a lemon. Instead, it had morphed into a scheme cooked up by Brad and Sam to get the airplane sold with no questions asked. Sadly, Burt was fully on board with this, and we could not convince him otherwise.

Ed performed the annual inspection, performed a few thousand dollars' worth of repairs, and signed off the airplane as airworthy. Burt bought the airplane, had it flown to the West Coast, and started enjoying his new acquisition.

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### Pencil-whipped?

Eventually, the airplane's next annual inspection came due—the first on Burt's watch. He had it performed by an outstanding shop in Northern California, one that we frequently work with and recommend. The inspection findings were catastrophic.

The shop quickly determined that all 12 cylinders on the two Continental TSIO-520-NB engines were illegal. They were all ECi cylinders whose removal from service had been mandated by AD 2016-16-12. The shop removed the cylinders and discovered that both camshafts were unairworthy. Burt was now facing two major unplanned engine overhauls.

The shop also discovered major issues with the landing gear that would be very costly to correct. Our original prebuy checklist had requested that Ed give special attention to the landing gear (a known twin Cessna problem area), but obviously that didn't happen. By the time the dust settled, the shop's estimate to make Burt's



Beechcraft J35 Bonanza.

airplane airworthy came to well more than \$300,000.

There is no doubt in my mind that had the prebuy been performed by the picky Dallas shop we originally recommended, the illegal cylinders and landing gear issues would have been uncovered at prebuy and Burt would never have purchased this airplane. Sadly, Burt decided to follow Brad's advice instead of ours.

### 66-year-old Bonanza

Contrast this to Smitty's experience. He found a 1958 Beech Bonanza J35 in

Arkansas for sale by owner. Smitty and the seller agreed on a price, and we were asked to manage the prebuy.

Once again, we were nervous about this one—not because the airplane was complex but because it was 66 years old. (In our experience, the older the airplane, the greater the likelihood of finding skeletons in the closet at prebuy.)

In most cases, we try to find an appropriately qualified shop or mechanic who can do an independent prebuy within a reasonable distance of where the aircraft is located—generally no more than one hour's flying time away, preferably closer. In this case, however, we engaged Mike Teager A&P/IA (his real name), owner of Mobile Aircraft Maintenance, to come to Arkansas to do the prebuy. Mike operated a shop in Florida for more than 20 years, but these days he mostly travels around the country doing prebuys.

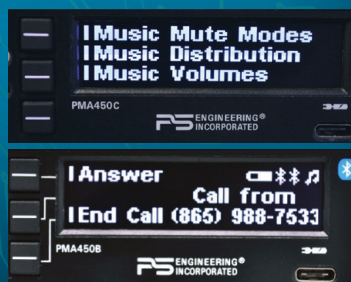
The Bonanza was kept in a T-hangar equipped with a well-stocked toolbox, air

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## RUDDER & WRENCH

compressor, and jacks. Smitty arranged to meet Mike there so he could watch. Mike pulled the top spark plugs, performed a quick compression test (all cylinders 70/80 or better), and started borescoping the Continental IO-470-C engine. All the cylinders, pistons and valves looked good. Mike inserted the ‘scope through the oil filler port and was able to get some great images of several cam lobes and lifters, all of which looked good, too. He captured images of the inside of the wings and empennage, all remarkably corrosion-free. This prebuy seemed to be getting off on the right foot.

### Diving deeper

As he worked his way through the prebuy checklist we’d provided him, however, Mike found things that troubled him. He took copious notes of his findings and tons of high-resolution photos that he placed in a shared Dropbox folder so we could look at them. By the time he was done, he’d assembled a list of 44 airworthiness discrepancies. Here’s a sample:

- Registration is still in previous owners’ names.
- Engine cowling in very poor condition, holes, cracks, improper repairs with less than minimum allowable rivet spacing.
- Ignition leads improperly routed, hard rubbing on fuel injection lines.
- Alternator B+ cable chafed through insulation due to poor routing, fire hazard!
- All three landing gear struts exhibiting excessive hydraulic fluid leakage, need to be disassembled and resealed.
- Left aileron cables rubbing landing gear.
- Nose gear cable assembled incorrectly, rubbing hard on the side of the pulley. Geometry is incorrect. Pulley needs to be removed and inspected. Cotter pins wrong size, appear to be automotive.
- Smoking loose rivets in several locations on wings and fuselage.
- Wiring behind instrument panel is a mess, improperly secured, missing hardware, melted spiral wrap, rubbing in many places.
- Alternate air door not sealing properly, sticks open, improper repairs with pop rivets, safety wired backwards. Needs to be replaced due to illegal repairs.

- Induction balance tube bracket broken, laying in the cowling. Clamp rubbing holes in sheet metal and worn spots in balance tube.
- Exhaust missing hardware, incorrect nuts and bolts installed, corrosion on hardware.
- Crack in tunnel of engine compartment.
- Incorrect routing of mixture cable.
- Vacuum pump has carbon buildup under it and small metal shavings, likely to fail soon.
- Crack in lefthand aileron skin.

### The verdict

Mike summed up his thoughts on this airplane this way: “Aircraft is not airworthy at the time of the inspection. Please review Dropbox folder for current condition photos. The aircraft has been recently poorly maintained, and likely the work was performed by a non-A&P with little to no supervision. I would not feel safe test flying this Bonanza!”

We reviewed Mike’s images and were suitably horrified. “Smitty, I think it goes without saying that we absolutely do not recommend buying this aircraft.”

“This plane is certainly not what the seller represented,” Smitty said. “This Bo was still basically corrosion-free after 66 years. Too bad the maintenance work was so atrocious. With a little love along the way, it could have been a great plane. What a shame. I guess I’ll start looking for another candidate.”

It’s sad when a prebuy ends in a thumbs-down verdict like Smitty’s did. But it’s a lot sadder when the thumbs-down verdict comes at the first annual inspection on a new owner’s watch the way Burt’s did. The difference is that Smitty had a thorough, honest, independent prebuy and Burt didn’t. ■

[mike.busch@savvyaviation.com](mailto:mike.busch@savvyaviation.com)

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