



Giving you
options
to save, it's
kind of our
thing

SAVE MORE,
FLY MORE
aopainsurance.org
888.255.2672

P&E | SAVVY MAINTENANCE



Savvy Maintenance coverage
sponsored by **AIRCRAFT SPRUCE**

OPINION |

Just inspect it, please

**Mechanics should never make repairs
without owner approval**

BY MIKE BUSCH



THE CO-OWNER of a Beechcraft Bonanza emailed me that his airplane had been inspected and maintained by a trusted mechanic at his home field in California until the mechanic retired this year. Forced to use another shop for this year's annual inspection, the owner and his airplane partner carefully chose one that his type club recommended as "a center of excellence" for Beech airplanes.

"We were shocked by all the items requiring repair or replacement, and by the cost of doing that work," he said. "We may just have had the benefit of affordable work done all these years, or we may have been overcharged and taken advantage of by this new-to-us shop."

The owner attached the shop's invoice, which contained 24 line items describing

what was done. The invoice total was something north of \$15,000—more than three times what the owners had been accustomed to spending at annual inspection time.

DISSECTING THE INVOICE

The top item on the invoice was \$2,660 for the annual inspection itself. It covered 28 hours of labor at \$95 per hour, a fair and reasonable figure for a flat-rate annual inspection of a Bonanza. About halfway down the invoice was another item for four additional hours of labor (\$380) to cover the airworthiness directive compliance research and summary report. Although AD research is traditionally included in the flat-rate charge for an annual inspection—because it's required by regulation

JOHN SAUER

at every annual—it's not uncommon for a shop to charge extra time for AD research when it's inspecting an aircraft it has never inspected before.

The invoice included a few more hours of labor for routine preventive maintenance items. This included lubricating and adjusting things, replacing the engine's induction air filter, and replacing all 12 spark plugs with new Tempest plugs. At the end, there was a flat-rate \$50 charge for miscellaneous shop supplies, rags, solvent, fasteners, grease, lubricants, and more. All typical stuff.

Had the invoice ended there, the total would have come in well within the \$5,000 figure that the owners had been anticipating. But, it didn't end there.

BIG-TICKET STUFF

Roughly \$7,800 of the invoice involved the Bonanza's gear retraction mechanism. The shop literally tore it apart. The shop devoted one full man-day of labor (\$760) removing and reinstalling the landing gear motor and gearbox in order to send them out for overhaul. The overhaul of the gearbox cost \$4,000, and the overhaul of the motor cost another \$1,000. The shop spent another 6.5 hours (\$618) replacing the rod ends and springs in the landing gear retraction linkage, parts that cost \$840. Then they spent 5.5 hours (\$523) doing a full re-rigging of the landing gear retraction system.

The shop also charged \$1,000 to overhaul both magnetos, \$1,800 to overhaul the engine's starter drive adapter, and \$220 to replace the starter solenoid. That comes to nearly \$11,000 of stuff that the owners didn't expect, and contributes significantly to the \$15,000 invoice total that caused them to go into sticker shock.

What the invoice did not reveal is why any of this big-ticket work was done. For example, why did the shop decide to tear the landing gear retraction system apart and send out the motor and gearbox for overhaul?

Did the owners ask for these overhauls? No, they didn't. Were they experiencing problems with gear retraction or extension? No, they weren't.

Did the annual inspection itself reveal that the gearbox and motor were shot?

I can't imagine it could have. An annual inspection involves only a visual inspection and a functional check (gear swing) of the landing gear retraction system, and neither would likely have indicated that the motor and gearbox were unairworthy.

So why did the shop do it? Probably because their logbook research showed that the two components were "due for overhaul," according to Beech service manual recommendations.

WHAT SHOULD'VE HAPPENED

The aircraft owners—who operate strictly under FAR Part 91—have no regulatory obligation to follow Beech's recommendations. An enlightened Part 91 operator would maintain these components strictly on condition—and overhaul them only when and if they showed signs of becoming unreliable.

The gear motor is not a safety-of-flight item. If it were to fail, the pilot could crank the gear down manually. The gearbox has no history of catastrophic failure, its gears just wear slowly. So, these components are both excellent candidates for a run-to-first-indication-of-trouble approach.

Certainly, the owners are entitled to follow the Beechcraft time-based overhaul schedule if they want to. Some owners do. But the shop has no business forcing the owners to do so. It should have told the owners, "The Beech service manual suggests your gear motor and gearbox be overhauled at this point. It'd cost at least \$7,000 to do that. Do you want us to do it?"

Had the owners approved the overhauls, they would have known they'd be getting a big invoice at the end of the annual, and there would have been no sticker shock. Had the owners declined the overhauls (as I would have advised them to), then the invoice would have been not much more than the \$5,000 they were expecting—and again, there would have been no sticker shock.

WHO SAID WHAT?

I wasn't privy to the communications between the shop and the owners when they dropped off their aircraft for its annual inspection. What exactly did the owners authorize the shop to do?

Don't keep
your questions

**BOTTLED
UP**

**PPS CAN
PROVIDE
ANSWERS**

AOPA Pilot Protection Services medical certification staff provide support and guidance for your medications and how they may affect your flying.

LEARN MORE at
aopa.org/pps

CALL
800.872.2672



P&E | SAVVY MAINTENANCE

Did the owners ask for these overhauls? No, they didn't. Were they experiencing problems with gear retraction or extension? No, they weren't.

What the owners should have told the shop—but I suspect they didn't—is that the shop was authorized solely to perform an annual inspection of the Bonanza at the agreed-to flat rate charge of \$2,660, but it was not authorized to perform any repairs or order any parts without first providing the owners a detailed discrepancy list itemizing the findings of the inspection, repair recommendations, and cost estimates for parts and labor. The owners then would have had the opportunity to review this information and decide which repairs to authorize and which to decline.

However, in this case it's apparent that whatever the owners told the shop—or failed to tell the shop—when they dropped off the airplane, the shop thought it had

blanket authorization to perform whatever repairs it felt were appropriate, and that the owners were prepared to pay for those repairs, whatever the cost turned out to be. That's a prescription for sticker shock.

WHOSE FAULT?

It's the owner's responsibility to make it clear precisely what work a shop or mechanic is authorized to do. The owner must make sure the shop understands that any additional work requires explicit (preferably written) authorization from the owner.

The professional shops my company works with automatically seek such authorization from their customers as a matter of good business practice. Unfortunately, this is the exception, not the rule. Many shops and mechanics act as

if they own the aircraft while it's in their maintenance hangar and are entitled to do whatever work they feel should be done. It's up to the aircraft owner to keep such shops on a tight leash—or suffer the consequences at invoice time.

Sticker shock should never happen. When it does, it's usually the owner's fault for failing to communicate properly with—and exercise appropriate control over—the shop or mechanic doing the work. At annual, it's up to the owner to enforce a strict formal protocol: inspect aircraft, document discrepancies, recommend repairs, estimate parts and labor, approve or decline recommended repairs, perform approved work.

Unless you do this, your shop or mechanic may conclude they have carte blanche. That's dangerous—and expensive.

AOPA

MIKE BUSCH is an A&P/IA.

EMAIL mike.busch@savvyaviator.com

▶ www.savvyaviation.com

94 |

HERE'S ONE INVESTMENT IN ADS-B THAT ALSO PAYS DIVIDENDS.



GTX™ 345 ADS-B "OUT" AND "IN" TRANSPONDER FOR HELICOPTERS

REPLACEMENT
TRANSPONDER

ADS-B "IN"
TRAFFIC AND WEATHER

PATENTED TARGETTEND™
INTUITIVE TRAFFIC TECHNOLOGY

DISPLAYS ON COMPATIBLE
AVIONICS AND APPS

To learn more, see your Garmin dealer or visit Garmin.com/ADS-B

