



SAVVY OWNER

BY MIKE BUSCH

PREBUY

If you're looking to buy a previously owned aircraft, a good prebuy examination is essential. Here's how to do it.

With the economy in the tank, my maintenance management firm has been experiencing a surprising upsurge in prebuys. Airplane prices have dropped to bargain-basement levels. Manufacturers and dealers are stuck with excess inventory and have been making remarkable deals to unload them. Owners discovered that they can no longer afford their airplanes, and are dumping them at desperation prices. Repossessed aircraft are being sold by banks on the cheap. It's definitely a buyer's market.

Who & where

A buyer's first challenge at prebuy is to choose a shop or mechanic to examine the aircraft. The prebuy examination should be done by a shop or a mechanic with extensive expertise with the specific aircraft make and model.

Since the mechanic has a limited amount of time to examine the aircraft, it's essential that he know exactly where to look for problems—i.e. the model's most common and serious failure points. So if we're doing a prebuy on a Bonanza, we want to use the most experienced Bonanza mechanic we can find.

The selected shop or mechanic must have no prior history with either the aircraft or the seller. The prebuy mechanic must approach the aircraft with an attitude of absolute skepticism. A mechanic who has been maintaining the aircraft is going to be predisposed to assume that the aircraft is in airworthy condition (particularly if he signed off the last annual). One who has a relationship with the seller is bound to be reluctant to do anything that might "queer the deal" for his customer or friend.

The shop or mechanic also needs to be within a reasonable distance. Few sellers will be agreeable to having their aircraft flown halfway across the country for a prebuy. A good rule-of-thumb is that the location should be no more than an hour's flying time from the aircraft's home base, preferably half of that.

ED. NOTE: See the Shops and Mechanics section of the ABS website Members Only page for member reviews of facilities that might do your prebuy inspection.

Purpose & objectives

The buyer's next challenge is to provide specific guidance to the inspecting mechanic about the scope and detail of the desired prebuy examination—how much time and effort the mechanic should spend examining the aircraft, and on what specific areas and items the examination should focus.

FARs and maintenance manuals offer no guidance about what a prebuy examination should cover; each buyer has to

decide how deep it should go and how much it should cost. Some buyers are content with a quick look-see that takes only a few hours; others want a full-blown annual inspection.

One frequently hears it said that the best prebuy is an annual inspection, but I think this advice is completely wrong-headed. A prebuy has objectives that are different from an annual and should be conducted quite differently.

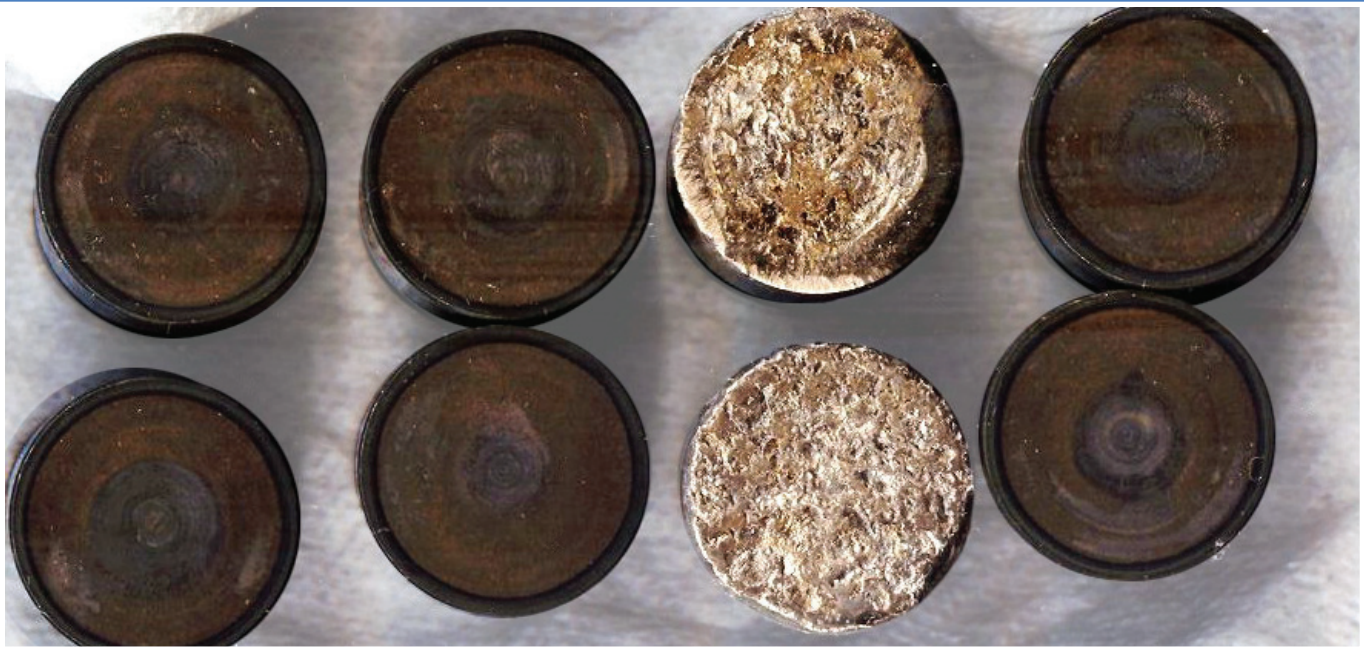
The purpose of an annual is to identify *all* airworthiness discrepancies, whether minor ones that cost \$50 to fix or major catastrophes that cost \$50,000. Once started, an annual almost always goes to completion, and results in one or more maintenance logbook entries.

In contrast, the purpose of a prebuy is to provide the prospective buyer the information he needs to decide whether to purchase the aircraft or walk away, and whether the aircraft has any problems that would be so expensive to correct that the selling price needs to be renegotiated. Therefore, the prebuy should focus on identifying any big "show-stopper" discrepancies, and time should not be wasted looking for minor discrepancies that won't influence the buyer's purchase decision or trigger a price renegotiation.

Unlike an annual, the prebuy will not necessarily go to completion. If some big-ticket show-stopper is discovered during the exam, a time-out should be called while the buyer considers the implications, discusses it with the seller, and decides

ANNUAL VS. PREBUY

ANNUAL INSPECTION	PREBUY EXAMINATION
Aircraft owner selects shop or mechanic, manages & pays for annual inspection.	Prospective buyer selects shop or mechanic, manages & pays for prebuy examination.
Scope & detail defined by regulation (usually Part 43 Appendix D) or manufacturer's maintenance manual.	Scope & detail not defined by regulation or manufacturer & solely at the discretion of the buyer.
By regulation, must attempt to discover all airworthiness items & other discrepancies, both major & minor.	Focuses strictly on discovering any major "show-stopper" discrepancies that would be costly to repair.
Once begun, almost always continues to completion.	May terminate prematurely if prebuy discovers a show stopper that persuades buyer to walk away from the deal.
Always culminates in a maintenance record (logbook) entry per FAR §43.11, either approving or disapproving the aircraft for return to service.	Never documented in the aircraft maintenance records (unless buyer purchases aircraft & opts to convert the prebuy exam into an annual inspection).



If the aircraft has been inactive for months preceding the prebuy exam, it may be prudent to pull some lifters to inspect them and the cam lobes for pitting or spalling.

whether to walk away from the deal. Unless and until the issue is resolved, there's no point in spending any additional money.

Another difference is that the exam should *never* result in any maintenance-record entries. The prebuy is performed at the buyer's expense, by a mechanic selected by him or her, and its findings should be communicated solely to the buyer to guide the purchase decision and price negotiations. There should be no direct communications between the prebuy mechanic and the seller, and the findings should never be recorded in the aircraft logbooks.

ED. NOTE: The ABS Prepurchase Inspection Checklist helps you and your inspector evaluate candidate airplanes. Download it from the Members Only page of www.bonanza.org or call 316-945-1700 for a copy.

Scope & detail

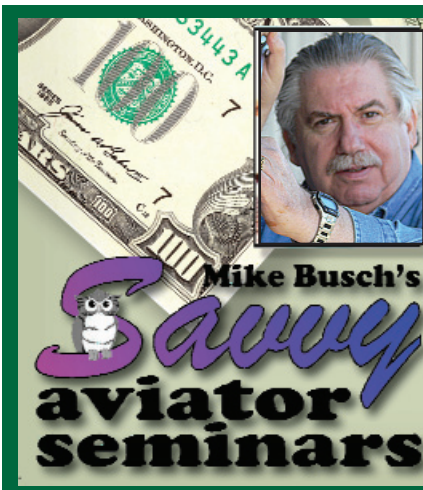
The scope and detail of a prebuy examination should also differ from an annual inspection. In most areas, the prebuy

need not go nearly as deep as an annual inspection, but in certain areas it may need to go deeper.

During a prebuy, there's no reason to remove the wheels to inspect wheel bearings, or to check control-cable tensions and control-surface deflections—all things that would be done at annual—because none of these items would be likely to influence the purchase decision or price negotiations. Any discrepancies in them are inexpensive to correct so not worth worrying about in the context of a prebuy.

On the other hand, the condition of the engine bottom end—particularly the cam and lifters—becomes a major concern, especially if the aircraft has not flown much during the months leading up to the prebuy.

If the aircraft has a low- or mid-time engine, a substantial portion of the purchase price is predicated on the presumption that the engine will provide the buyer years and hundreds of hours of service. A premature engine teardown necessitated by a spalled camshaft or cracked crankcase would be a major



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financial blow, and is exactly the kind of thing the prebuy is intended to prevent.

Prolonged inactivity is something we encounter more often than not in aircraft put up for sale. Recently, we dealt with two airplanes that hadn't flown at all for the preceding eight months, and another that had flown only 10 hours in the past year. Such recent disuse has to be treated as a big yellow flag during a prebuy, especially if the inactivity has occurred in a high-corrosion environment where humidity, salt and/or smog are major issues.

In situations like this, it's essential to go the extra mile during the prebuy to ensure that the engine bottom-end is healthy and is not concealing any nasty, expensive surprises. For engines that use barrel-style lifters—including TCM 470-, 520- and 550-series—I strongly recommend that at least a few lifters be removed for inspection, and that the corresponding cam lobes be inspected through the lifter bosses.

If any of the lifters show signs of pitting, flaking or spalling, I recommend pulling all remaining lifters and inspecting all the cam lobes. Any lifters with visible defects need to be replaced, and any damage to cam lobes is grounds for walking away from the deal or negotiating a major price reduction to cover premature engine replacement.

What's the deal?

Prior to the prebuy exam, the buyer and seller should execute an aircraft purchase/sale agreement defining the selling price, deposit, escrow and delivery arrangements, warranty (if any), and terms and conditions of the prebuy. Normally, it specifies that the prebuy is performed at the buyer's expense by a mechanic chosen by the buyer.

We occasionally see cases where the buyer and seller agree to split the cost of the prebuy, but I think that's a bad idea because that usually means the seller is in a position to influence where and how the exam is done. In my view, the prebuy should be paid for by the buyer, and the buyer should have total control over who performs it and how broad and deep it goes.

The agreement typically defines options of the buyer and seller after the prebuy is complete. Typically it offers the seller two options: (1) to have any prebuy-discovered airworthiness discrepancies corrected at the seller's expense; or (2) to walk away from the deal and return the buyer's deposit.

Some agreements call for the seller to pay for correcting *all* discrepancies (not just airworthiness items). I think that is a bad idea because we really don't want the deal to fall apart over nickel-and-dime stuff. In my view, a buyer who expects a perfect, flawless aircraft has unreasonable expectations and may be shooting himself in the foot by walking away from a good, reasonably priced aircraft.

Convert prebuy to annual?

Once the buyer has decided to purchase the aircraft and consummated the transfer of ownership, there's nothing to pre-

vent him from converting the prebuy into a full annual inspection. In fact, this is often a sensible thing to do. After all, the logbook research has been performed, the aircraft is already open and much of the airframe, engine and propeller inspection has been completed. So finishing up the annual, repairing any remaining discrepancies and completing the logbook entries and other necessary annual inspection paperwork is often the most cost-efficient course of action.

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Mike Busch is an A&P/IA. A pilot for 40+ years with 7,000 hours, Mike has been an aircraft owner and CFI for 35+ years. Hundreds of his aviation-related technical articles have been published. He was cofounder and editor-in-chief of AVweb. Mike's weekend "Savvy Owner Seminars" focus on better aircraft maintenance while spending a lot less. He was named FAA's 2008 AMT of the Year.

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