

## **PA28 & PA32 Prebuy Evaluation Checklist – Scope and Detail**

**NOTE:** This is a two-phase checklist. Please perform phase 1 items first and report results before proceeding with phase 2 items. If there are any high-cost issues noted during Phase1, we might need to terminate the prebuy examination early.

**NOTE:** Estimated labor hours to complete both phases of this checklist:

- 10 hours for normally aspirated fixed gear airplanes. Add 2 hours for turbocharged airplanes, and 2 hours for retractable gear airplanes.

### **PHASE 1**

#### **1.1 Operational & Function Check**

- 1.1.1. Perform Airplane Operational and Functional check IAW the applicable aircraft Flight Manual.

#### **1.2 Engine and Propeller**

- 1.2.1. Check cylinder compression hot. Report compression readings. Report location of audible air leakage (rings, exhaust valve).
- 1.2.2. Drain 1-2 quarts of oil, take a Blackstone oil sample and ship overnight for expedited service.
- 1.2.3. Borescope examination of all cylinders in accordance with the Savvy Aviation Borescope Examination Checklist. Upload image set to the ticket.
- 1.2.4. Spark plug examination. Report any abnormal color or appearance, particularly top spark plugs. Report brand and type of spark plugs installed, massive or fine wire.
- 1.2.5. Check all fuel and oil lines, wire bundles and ignition harness leads for chafing and security.
- 1.2.6. Check rocker area drain back tubes for chafe damage.

- 1.2.7. Remove oil filter, cut open and inspect for metal. If significant metal is found, please provide one or more high-resolution photographs of filter media, check with a magnet to determine whether metal is ferrous or non-ferrous, and save filter media in a zip-lock plastic bag in the event we need to send it out to a lab for microscopic examination.
- 1.2.8. Check engine for cracks and oil leaks. Check front crankshaft seal for oil leaks. If any cracks or leaks are found, please provide high-resolution photographs.
- 1.2.9. Check engine baffles for cracks. Check inter-cylinder baffles for proper position. Check flexible baffle seals for condition and proper orientation.
- 1.2.10. Check engine mount for corrosion, heat damage and chafing. Check for sagging engine shock mounts. Sagging engine mounts will cause the exhaust to cut into the engine mount frame on some models.
- 1.2.11. Exhaust system examination for exhaust leaks, cracks, and bulges. Check mufflers (particularly flame cones) for damage. Pressure test the exhaust system if you suspect leakage.
- 1.2.12. Check propeller hub for cracks and leaks. Check prop blades for nicks, corrosion, areas of excessive filing. Check propeller spinner and spinner back plate for cracks.

### **1.3 Maintenance Records**

- 1.3.1. Check for complete airframe, engine and propeller logbooks.
- 1.3.2. Provide AD compliance list. Report any applicable ADs for which compliance is not well documented.
- 1.3.3. Check for last 500-hour inspection or overhaul or replacement of magnetos.
- 1.3.4. Verify date of most recent 91.411 / 91.413 biennial certifications (static system, altimeter/encoder, transponder).
- 1.3.5. Verify oxygen system hydrostatic test due date and cylinder expiration date, if installed.
- 1.3.6. Confirm that aircraft is equipped as shown in equipment list.
- 1.3.7. Check for alterations that have mandatory ICA requirements.
- 1.3.8. Check for any damage history.

**IMPORTANT: Please report your Phase1 findings to Savvy and obtain authorization to proceed with Phase 2.**

## **PHASE 2**

### **2.1 Landing Gear**

- 2.1.1. Check main and nose gear struts for leakage, straightness, and corrosion pitting. Look for evidence of hard landings.
- 2.1.2. Check MLG and NLG fairings for cracks, security, and overall condition.
- 2.1.3. Check tires for condition. Check brake calipers for leaks.
- 2.1.4. Check brake hoses for chafing, condition, and date codes.
- 2.1.5. Check brake linings. If you suspect the discs are below dimension, measure with a micrometer.
- 2.1.6. For retractable aircraft, perform landing gear operational check. Check rigging and alignment of doors and gear. Check retraction time and report if power pack sounds labored.
- 2.1.7. For retractable aircraft, check the forward and aft trunions where the gear mounts to the wing spars for play and loose hardware. Check drag brace, pivot and spherical bearings for play.
- 2.1.8. For retractable aircraft, check hydraulic actuators and hoses for leakage and condition.

### **2.2 Cabin**

- 2.2.1. Check brake master cylinders and parking brake valve for leaks.
- 2.2.2. Check windows for condition. Check cabin door structure for cracks.
- 2.2.3. Check engine controls for smooth operation and adequate cushion.
- 2.2.4. Check operation of flight controls, including rudder, brakes, and flaps. Check for excessive play in the control yoke universal joints.
- 2.2.5. Check all interior lights (including instrument lighting) for proper operation.
- 2.2.6. Check fuel quantity indicators for proper operation (Functional check only; please do not de-fuel the aircraft for this check.)
- 2.2.7. Pull back interior to check forward and aft wing attach fittings for corrosion.

- 2.2.8. Check headliner for evidence of leaks at the door. Check sidewalls and floor for evidence of leaks and water damage.
- 2.2.9. ELT, remove batteries, look for leaks and corrosion. Perform functional check. Report if expiration date is near.

## **2.3 Airframe**

- 2.3.1. Check entire exterior of airframe for significant flaws like skin cracks, missing or discolored paint, surface corrosion, etc.
- 2.3.2. Check tail tie down and aft vertical spar for evidence of tail strike damage.
- 2.3.3. Check underside of wings for evidence of fuel leaks.
- 2.3.4. Check pitot heat, stall horn and all exterior lights for proper operation.
- 2.3.5. Check wing walk areas for condition, especially the stiffener panels under wing skin for cracks.
- 2.3.6. Lower the flaps and check the aft wing attach fittings at the area where they attach to the rear spar for evidence of corrosion (reference Piper SB1244C).
- 2.3.7. Check the flap hinge brackets for corrosion where they go into the flap (reference FAA SAIB CE-11-10).
- 2.3.8. Look down tail cone for evidence of corrosion and general condition, look specifically at the steel stabilator attach brackets.
- 2.3.9. Check battery and battery box condition. What is the age of the battery? Has the battery box been modified to install copper cable instead of the original aluminum?
- 2.3.10. Check the starter cable from battery box to starter solenoid to the starter. Is it the original aluminum or has the copper cable been installed?
- 2.3.11. Remove one or two panels on each wing and inspect for interior corrosion.
- 2.3.12. Report any obvious mods to the aircraft, such as speed mods, 3 blade prop, etc. If installed, are Form 337 records available?
- 2.3.13. Check for required placards inside and out, including compass card.
- 2.3.14. Verify that aircraft cabin contains airworthiness certificate, registration certificate, POH, current W&B, applicable avionics operating manuals, hand microphone.
- 2.3.15. If equipped with engine monitor, download data and send data to Savvy.