

## **Cessna 172/182 & 170/180 series Prebuy Examination—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 Phase 1, we may need to terminate the prebuy examination early.

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

- 8-10 hours for normally aspirated airplanes.

### **PHASE 1**

#### **1.1 Operational and Functional Check**

- 1.1.1 \_\_\_ Perform “Airplane Operational and Functional Check” of all systems in accordance with Cessna Airplane Maintenance Manual/Aircraft preflight checklist.

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

- 1.2.1 \_\_\_ Check cylinder compressions hot. Report compression readings, master orifice reading, and location of audible air leakage (rings, exhaust valve).
- 1.2.2 \_\_\_ Check cylinder heads for cracks.
- 1.2.3 \_\_\_ Check pushrod housing seals, cylinder bases, and rocker covers for oil leaks.

- 1.2.4 \_\_\_ Borescope examination of all cylinders. For each cylinder, report appearance of exhaust valve (particularly asymmetric appearance indicating hot spots), appearance of barrel (loss of crosshatch, vertical scoring, aluminum smearing at 3 or 9 o'clock position suggesting piston pin plug scuffing, excessive oil in combustion chamber).
- 1.2.5 \_\_\_ Spark plug examination. Report any abnormal color or appearance, particularly top spark plugs. What brand and type of plugs installed?
- 1.2.6 \_\_\_ 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.
- 1.2.7 \_\_\_ Check crankcase for cracks and oil leaks. Check front crankshaft seal for oil leaks. If any cracks or leaks are found, please provide high- resolution photographs.
- 1.2.8 \_\_\_ Check all fuel and oil lines, wire bundles and ignition harness leads for chafing and security. Check engine transducers (CHT, EGT, etc.) for lead chafing at strain-relief springs.
- 1.2.9 \_\_\_ Check carburetor and carburetor heat for security, box for damage, and proper travel of heat door. Evidence of fuel leaks. Engine control mounting and security.
- 1.2.10 \_\_\_ Check cowl flap attachment and operation.
- 1.2.11 \_\_\_ Check engine baffles for cracks. Check inter-cylinder baffles for proper position. Check flexible baffle seals for condition and proper orientation.
- 1.2.12 \_\_\_ Check engine mount for corrosion, heat signatures, and damage to powder coating/paint.

- 1.2.13 \_\_\_ Check firewall for signs of hard landing at engine mount and if applicable, nose gear attach points. Damage to firewall including corrosion, holes, and missing hardware at pass-thru areas. Battery box for corrosion.
- 1.2.14 \_\_\_ Exhaust system examination for exhaust leaks, cracks, bulges. For normally aspirated engines, check mufflers (particularly flame cones if applicable) and heat exchanger and shroud. (pressure test of exhaust is requested)
- 1.2.15 \_\_\_ 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/unapproved repairs. If prop heat installed, check security of boots, leads/wires and operation.
- 1.2.16 \_\_\_ Check cowling for damage and repairs, with concentration on exhaust-induced heat damage (inside or outside). Chaffing of baffle/seals/ engine components.

### **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 \_\_\_ Provide SB compliance list. Report any applicable SBs for which compliance is not well-documented, and identify whether mandatory, recommended or optional.
- 1.3.4 \_\_\_ Check for compliance with all Airworthiness Limitations in Section 4 of AMM. If applicable, check for compliance with Airworthiness Limitations on any installed STC's or major alterations. Report any Airworthiness Limitations for which compliance is not well-documented.

- 1.3.5 \_\_\_ Check for compliance with overhaul/replacement schedule in Section 5 of AMM, report any items for which compliance with recommended overhaul/replacement times is not well-documented. (Mags, alts, vac pumps, etc) Special attention to Magneto 500.
- 1.3.6 \_\_\_ Verify date of most recent 91.411/91.413 biennial certifications (static system, altimeter/encoder, and transponder).
- 1.3.7 \_\_\_ Confirm that aircraft is equipped as shown in equipment list.

**IMPORTANT: Please report your Phase 1 findings to Savvy and obtain authorization to proceed with Phase 2.**

## **PHASE 2**

### **2.1 Landing Gear, Wheels, Brakes**

- 2.1.1 \_\_\_ Check landing gear for cracks, buckling, and signs of hard landing.  
Wear at pivot points, steering and shimmy dampener mounts.
- 2.1.2 \_\_\_ If tail wheel equipped, visually inspect tail wheel assembly for damage or excessive wear.
- 2.1.3 \_\_\_ Check wheels for heavy pitting corrosion on exterior.
- 2.1.4 \_\_\_ Check MLG and NLG fairings for cracks, security, and overall condition.
- 2.1.5 \_\_\_ Check tires for condition.
- 2.1.6 \_\_\_ Check brake calipers for leaks, brake disc/pads for obvious excessive wear.
- 2.1.7 \_\_\_ Check brake hoses for chafing, condition, date codes.

### **2.2 Cabin**

- 2.2.1 \_\_\_ General condition of seats, seat belts, and interior panels.

- 2.2.2 \_\_\_ Seat tracks for obvious wear/cracks that may not pass A/D.
- 2.2.3 \_\_\_ Check brake master cylinders for leaks. Hoses for age and condition.
- 2.2.4 \_\_\_ Check windows for security and clarity and free of cracks.
- 2.2.5 \_\_\_ Check wing spar-carry thru for corrosion.
- 2.2.6 \_\_\_ Legacy Cessna's, prior to 1994, have lead panels bonded to interior skin in cabin areas. Moisture/corrosion will de-bond panels and pitting of skin is likely. Check these panels just forward of the door post as this is a common area of this.
- 2.2.7 \_\_\_ Check bottom of the rear window track for corrosion as well as rear bulkhead. (caused by water leaks)
- 2.2.8 \_\_\_ Check engine controls for smooth operation and adequate cushion.
- 2.2.9 \_\_\_ Check all interior lights (including instrument lighting) for proper operation.
- 2.2.10 \_\_\_ If installed, oxygen bottle for life limit and hydrostatic date.
- 2.2.11 \_\_\_ Check fuel quantity indicators for proper operation. (Functional checks only; please do not defuel the aircraft for this check.)
- 2.2.12 \_\_\_ Check headliner for evidence of leaks at door or rear window.
- 2.2.13 \_\_\_ ELT, remove batteries, look for leaks and corrosion. Perform functional check.
- 2.2.14 \_\_\_ Fire extinguishers, check for proper weight.
- 2.2.15 \_\_\_ Verify that aircraft cabin contains airworthiness certificate, registration certificate, POH, current W&B, applicable avionics operating manuals, and hand microphone.

## 2.3 Airframe

- 2.3.1 \_\_\_ Check entire exterior of airframe for significant cosmetic flaws (e.g. cracks, missing or discolored paint), corrosion in exhaust trail area, antenna base cracks.
- 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, with concentration at fuel quantity senders, access panels, and drains.
- 2.3.4 \_\_\_ Check inside wing for corrosion. Any significant corrosion, please note and provide pictures. (Legacy Cessna's, pre 1994, are prone to corrosion) Evidence of any treatments? (Corrosion X or ACF 50)
- 2.3.5 \_\_\_ Check pitot heat for proper operation.
- 2.3.6 \_\_\_ Check wing flaps for excessive chafing. Flap tracks/rollers for excessive wear. Flap skins for cracks. (note if stiffener is installed on trailing edge)
- 2.3.7 \_\_\_ Check flight controls for freedom of movement including trim systems.
- 2.3.8 \_\_\_ Check for required placards
- 2.3.9 \_\_\_ Check vertical and horizontal attach points for damage. Adjustable Stabilator free play.
- 2.3.10 \_\_\_ Report any obvious modifications or repairs to the airframe. If so, are there corresponding 337's.
- 2.3.11 \_\_\_ If G1000 equipped, is software current?
- 2.3.12 \_\_\_ Check areas of any major repairs noted in logs for quality of work and correctly repaired.

2.3.13 \_\_\_If equipped with engine data monitor, download data from unit and send data to Savvy.

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