

Beechcraft Bonanza, Debonair, Travel Air, Barron 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:

- 10-15 hours for single engine airplanes.
- 15-20 hours for twin engine airplanes.

PHASE 1

1.1 Operational and Functional Check

- 1.1.1 ___ Perform “Airplane Operational and Functional Check” of all systems in accordance with the 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. Especially around injector nozzles (fuel injected) and spark plug holes.
- 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. Report 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 (non-injected) for security, box for damage, and proper travel of heat door. Evidence of fuel leaks. Engine control mounting and security.
- 1.2.10 ___ Check alt air door operation.
- 1.2.11 ___ Check cowl flap attachment and operation. (electric or manual) Note, Barons and Travel Airc check for rubbing between cowl flap and breather lines.
- 1.2.12 ___ Check engine baffles for cracks. Check inter-cylinder baffles for proper position. Check flexible baffle seals for condition and proper orientation.

- 1.2.13 ___ Check engine mount for corrosion, heat signatures, and damage to powder coating/paint.
- 1.2.14 ___ 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.
- 1.2.15 ___ 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 for leaks requested. Tail pipe hangers for worn or missing rubber grommets.
- 1.2.16 ___ 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 for electrical system or Plumbing, slinger ring, and rubber propeller boots for alcohol system.
- 1.2.17 ___ Check cowling for damage and repairs, with concentration on exhaust-induced heat damage (inside or outside). Chaffing of baffle/seals/ engine components.
- 1.2.18 ___ Turbo charged engines.
 - 1.2.18.1 Check freedom of rotation and check for damage to compressor. Turbo housing for cracks/damage.
 - 1.2.18.2 Check waste gate and actuator for leaks, both exhaust and oil.
 - 1.2.18.3 Check linkage for condition. Hoses for condition.
 - 1.2.18.4 Check inlet and upper deck ducting and connecting rubber tubes for condition and security.

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) Note, Barons certified into known ice must have dry air pumps replaced at 600 hours to retain certification. Report time of last magneto 500 hour.
- 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 NLG gear for leaks, visible corrosion or rust on the gear strut.
Check for looseness in the mounting, piston, or barrel.
- 2.1.2 ___ Check shimmy damper for security and bends or leaks. Tow pin for area for damage.
- 2.1.3 ___ Check NLG retract linkage and steering linkage/boots.
- 2.1.4 ___ Check MLG gear for leaks, visible corrosion or rust on the gear strut.
Check for looseness in the mounting, piston, or barrel.
- 2.1.5 ___ Check MLG retract linkage.
- 2.1.6 ___ Check wheels for heavy pitting corrosion on exterior.
- 2.1.7 ___ Check MLG and NLG fairings for cracks, security, and overall condition.
- 2.1.8 ___ Check tires for condition.
- 2.1.9 ___ Check brake calipers for leaks, brake disc/pads for obvious excessive wear.
- 2.1.10 ___ Check brake hoses for chafing, condition, date codes.
- 2.1.11 ___ Gear doors for damage, loose hardware, cracks, and proper fit.
- 2.1.12 ___ Gear retract test.
 - 2.1.12.1 Conduct full gear retract test.
 - 2.1.12.2 Check gear rigging tolerances, including down tensions, free play in the gearbox, up lock clearances and any sign of bent extension arms.

- 2.1.12.3 Check for looseness in lift leg joints or pivots when gear is at mid travel.
- 2.1.12.4 Gear in transit speed. (14v 11-13 seconds, 28V 4-8 seconds with proper power cart applied)
- 2.1.12.5 Emergency extension system test.

2.2 Cabin

- 2.2.1 ___ General condition of seats, seat belts, and interior panels.
- 2.2.2 ___ Check brake master cylinders for leaks. Hoses for age and condition.
- 2.2.3 ___ Check windows for security and clarity and free of cracks.
- 2.2.4 ___ Check engine controls for smooth operation and adequate cushion.
- 2.2.5 ___ Check all interior lights (including instrument lighting) for proper operation.
- 2.2.6 ___ If installed, oxygen bottle for life limit and hydrostatic date.
- 2.2.7 ___ Check fuel quantity indicators for proper operation. (Functional checks only; please do not defuel the aircraft for this check.) Fuel selector valves move freely.
- 2.2.8 ___ Check headliner for evidence of leaks at doors or windows.
- 2.2.9 ___ Fire extinguishers, check for proper weight if installed.
- 2.2.10 ___ 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 wing tips are correct for model of airplane. If equipped with tip tanks, check for dents, leaks, delimitation of fiberglass, proper fit and condition of fuel caps, proper venting, and opaqueness of visual fuel level indicator windows.
- 2.3.4 ___ Check underside of wings for evidence of fuel leaks, with concentration at fuel quantity senders, access panels, and drains.
- 2.3.5 ___ Check pitot heat for proper operation. Stall vane heat if equipped as well as static port heat if equipped.
- 2.3.6 ___ Check wing flaps for excessive chafing. Flap bearings/hinges for excessive wear. Flap skins for cracks.
- 2.3.7 ___ Check flight controls for freedom of movement including trim systems.
- 2.3.8 ___ Check wing bolt bath tub fittings for corrosion and signs of proper draining.
- 2.3.9 ___ Check for required placards
- 2.3.10 ___ Check vertical and horizontal attach points for damage. Removal of tail cone panels required.
- 2.3.11 ___ V-tails, check ruddervator trim cables for corrosion, proper tension, and installation.

- 2.3.12 ___ Report any obvious modifications or repairs to the airframe. If so, are there corresponding 337's.
- 2.3.13 ___ If G1000 equipped, is software current?
- 2.3.14 ___ Check areas of any major repairs noted in logs for quality of work and correctly repaired.
- 2.3.15 ___ If equipped with engine data monitor, download data from unit and send data to Savvy.

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