Aircraft
Annual Inspection Checklist

Beechcraft Model 1947-1948 35 1949 A35 1950 B35 1951-1952 C35 1953 D35 1954 E35 1955 F35 1956 G35 1957 H35 or later Bonanza

Inspection Date: _____

Inspector: _____

Aircraft Make: _____

Aircraft Model: _____

Aircraft Year: _____

Registration Number: _____

Aircraft Serial. No: _____

	Airframe	Engine	Engine (overhaul)
Ti me in logs	_____	_____	_____
+ Tach Time	+ _____	+ _____	+ _____
= Total Time	= _____	= _____	= _____
	TTAF	TTE	SMOH
	Total Time/Airframe	Total Time/Engine	Since Main Overhaul

Revision Date: 2001.11.29

Ron Davis, Newport Beach, Calif.

Directions for the inspection

[____] Perform the Inspection

[____] Perform other regulatory inspections (i.e. Pitot/Static check, Transponder/Altimeter check, etc.)

[____] Perform periodic service (oil, filters, 50-hr, 100-hr, etc.)

[____] Automatically repair / replace equipment which is in an "unairworthy" condition.

[____] Advise owner of equipment in "unairworthy" condition first before doing any work.

[____] Automatically repair / replace equipment which is in a "poor but airworthy" condition.

[____] Advise owner of equipment in "poor but airworthy" condition first before doing any work.

[____] Automatically perform all uncomplied Airworthiness Directives.

[____] Advise owner of uncomplied Airworthiness Directives before doing any work.

[____] Automatically perform all uncomplied Service Bulletins.

[____] Advise owner of uncomplied Service Bulletins before doing any work.

This is really meant to be just an inspection (and maybe a periodic service), not a carte-blanche repair order.

Once the inspection is complete, you can review this with the owner, showing him what "must" be repaired, and also the optional items that you think "should" be repaired. The owner will make the decisions from there.

Other Instructions:

Introduction

Credits

This Annual Inspection guide was made by Ron Davis to assist in inspecting his 1954 E35 Bonanza (N3218C) equipped with the following features:

- E225-8 engine, with the Bendix PS-5C pressure carburetor and fuel primer,
- Electric prop w/ Airborne Electronics electronic prop governor,
- Sunrise spin-on oil filter adapter,
- Beryl D'Shannon air/oil separator,
- various radios and gadgets in the dashboard.

While this checklist is specifically tailored for a specific Bonanza, the document contains additional information regarding other models and options, so it should be useable for others with a minimum of plagiarism and modification. Others are free to use this form, but be forewarned that it may not be complete for other engines, fuel injection, hydraulic props, placards, radios, autopilots, and other features on other models.

The information in this booklet was collated from many different sources, such as Beech's Shop Manual, Beech's original "Model 35 Maintenance Manual", Norm Colvin's "Colvin's Clinic" book, American Bonanza Society magazine issues, Lawson Barber's Annual Inspection checklist, and probably other sources now forgotten. Wherever there was a conflict, I tried to use the most recent (most correct?) or "most logical" information.

This document has been created using Adobe FrameMaker v6.0. There is an option of "conditional text" in use for showing / hiding features and options used / not used in N3218C.

This document will be updated as additional information becomes available.

Replacement Parts Needed

The following replacement parts will probably be needed to do the annual inspection:

Various expendables:

Qty	Mfr	Part Number	Description	Price	...as of
		SAE 20	Lube oil		
		LPS-3	Spray lubricant		
		AN-G-15	grease		
		AN-VV-0-366	Brake Fluid		
			stainless steel safety wire		
			various nuts, screws, washers, cotter pins, etc.		
1/2 pint	Mobil	636	landing gear gearbox oil	7.00	2000.12.00

Induction Air Filter:

Beech mesh / fiber element air filter					
1	Beech	35-921210	ass'y, filter, wire mesh / fiber element		
-or-					
1	Beech	35-1377	filter		
-or-					
1	Beech	13917	assy		
-or-					
1	Beech	R814	filter Note: This is a reusable part		
Beech mesh / fiber element air filter					
1	Beech	35-380035-5	filter, paper element (non-reusable)		
Brackett foam air filter					
1	Brackett	BA-7112	air filter, foam	15.00	1996.06.01

Oil change:

10 qts	Shell	Aeroshell W100	motor oil	31.50/case	1996.06.00
-or-					
10 qts	Shell	Aeroshell 15W-50	motor oil		

2	Beech	AN900-10	drain plug copper crush gasket		
1	Champion	CH48109	oil filter	10.75	1996.06.01
1	AOA		oil analysis sampling kit	11.95	1996.06.01

Tires & Brakes:

Firestone brakes					
	Firestone	BFA236	lining		
Note: The Firestone brakes should be overhauled if they do not meet minimums					
-or-					
Goodyear brakes					
2	Goodyear	9510714-2	anvil lining	88.50	1998.03.00
2	Goodyear	9510713-1	piston lining	129.00	1998.03.00
2	Goodyear	9523937	disc clip	17.25	1998.03.00
-or-					
Cleveland brakes - kit 199-49 (6.00 x 6 and 7.00 x 6 wheels)					
8	Cleveland	66-105	lining	7.50	1998.03.00
16	Cleveland		brake rivets	0.15	1998.03.00
-or-					
8	Rapco	RA66-105	lining	6.00	1998.03.00
16	Rapco		brake rivets	0.15	1998.03.00
Cleveland brakes - kit 199-50 (6.50 x 8 and 7.00 x 8 wheels)					
8	Cleveland	66-044	lining	7.50	1998.03.00
16	Cleveland		brake rivets	0.15	1998.03.00
-or-					
8	Rapco	RA66-44	lining	6.00	1998.03.00
16	Rapco		brake rivets	0.15	1998.03.00

Spark Plugs:

Massive electrode plugs					
12	Champion	REM40E	spark plug, massive electrode	16.50 ea.	1996.06.00
-or-					
12	Auburn	SR-88	spark plug, massive electrode	13.95 ea.	1998.07.00
-or-					

12	MIL-SPEC (?)	2925-986-7082 F41608-67-D;6870	spark plug, massive electrode		2002.03.29
Fine-wire plugs					
12	Chapmion	REM38P	spark plug, fine-wire platinum	39.65 ea.	1998.07.00
-or-					
12	Chapmion	REM38S	spark plug, fine-wire iridium	39.65 ea.	1998.07.00
-or-					
12	Auburn	SR-83P	spark plug, fine-wire iridium	38.50 ea.	1998.07.00
-or-					
12	Auburn	SR-93	spark plug, fine-wire iridium	38.50 ea.	1998.07.00

12	Champion	M-674	spark plug gasket, 18 mm	0.20 ea.	1998.07.00
1	Champion	4 oz. bottle	spark plug anti-seize compound	4.75	1998.07.00

Instrument vacuum filter:

1		D9-18	Instrument filter, pleated paper type		
-or-					
1			Instrument vacuum filter foam garter type		

Engine compartment:

Bendix PS-5C Carburetor					
1	Beech or Bendix	365533	Bendix carburetor fuel screen gasket		
Auxiliary fuel boost pump					
1			Aux fuel boost pump o-ring		
Thompson TF-1900 fuel pump:					
1	TRW	TF-1991	fuel pump drive pin (or cut the shank off a #60 drill bit)		
2	TRW	352065	fuel pump gasket		
	-or-				
2		AN4045-1	fuel pump gasket (not sure which is the right part #)		
1	TRW	TF-1160	Mounting flange gasket		
1	TRW	TF-1195	Mounting gasket		

1	TRW	TF-1143	Relief valve diaphram		
1	TRW	TF-1194-1	O-ring gasket		
-or-					
1	Consumer Aviation	1991	Thompson fuel pump rebuild kit	57.00	1997.10.00
-or-					
1	Aero Accessories		Thompson fuel pump rebuild kit	310.00	2000.04.00
-or-					
1	Beech	216835	Beech "Drive pin inspection kit" (as per Beech Executive Airplane Service Communique No. 55, March 13, 1981)		
Miscellaneous:					
2	Beech	31-408	Propeller pitch motor brushes	34.00 ea.	2000.01.00
2	Beech	535324	Bendix magneto mounting gasket		
1	Beech	530341 (3/8")	Eclipse starter motor mounting gasket		
4	Beech	839317	Eclipse starter motor brushes		
2	Beech	352066 (1/2")	Delco-Remy generator mounting gasket		
2	Beech	1866148	Delco-Remy generator brushes		
2	Beech	35107-A	"Lamb" or "Aero Electric" landing gear motor brushes		
2	Beech	R-457-0627-475	"Lamb" or "Aero Electric" flaps motor brushes		

Miscellaneous cabin items:

ELT Battery
GPS data card updates
Batteries for various accessories

... Plus whatever other parts you find that needs replacing during the inspection.

General Information

This inspection booklet is to perform several duties:

- Allow A&P mechanics to more easily inspect the aircraft's subsystems and components for airworthiness,
- Provide a handy 100 hour maintenance lubrication checklist as you go, and
- Provide a spot to check the aircraft's paperwork, mainly
  - On-board paperwork,
  - Airworthiness directive compliance, and
  - Service Bulletin compliance (optional)

This booklet is designed to be an easy-to-use checklist. Merely go down through the list of things to check, or items to perform, and check off the appropriate space(s) on the right.

Comments in the space should classify the inspected assembly as:

"G"ood, or Satisfactory	√
"F"air, but could stand some work.	F
"P"oor - needs repairs (but it is still "airworthy).	P
"U"nairworthy - grounded until repaired.	U
(Does not apply).	. . .

Other indented lined area are provided for writing in information such as:

Date / tach of last service _____

Current pressure setting or wear length: _____

Component serial number _____

Component Serial Numbers

Component serial numbers will be requested during the inspection to ensure that they have not been mysteriously replaced without a log entry since the last inspection. They need not be checked against the records right now, but if a question arises later, this record will attest to the fact that a particular component was installed at the date of the inspection.

Logbook Entries

Several Service / overhaul decisions are made depending on the time-in-service, so to make things easier, go through the logbooks (or the last owner-assisted form) now and find the Date / tach time for the most recent service or overhaul of the following components:

NOTE: Most 100-hr. service items are automatically assumed to be performed during this inspection, and are not listed below.

Service Description	***Last Serviced***	***Service Every:***	***Next Service Due:***
Beech 215-series propeller:			
Propeller service		250 hrs	
Propeller overhaul		1,000 hrs	
Propeller pitch motor brushes		200 hrs	
Induction air filter		100 hrs	
Major engine overhaul		1,500 hrs	
Engine oil change		screen: 25 hrs filter: 50 hrs	
Spark plug inspection		25 hrs	
Thompson TF-1900 fuel pump drive pin		250 hrs	
Fuel selector sump screen		100 hrs	
Fuel lines replaced		5 yrs or at overhaul	
Oil lines replaced		5 yrs or at overhaul	
Starter motor brushes		200 hrs	
Generator brushes		200 hrs	
Air / oil separator service		400 hrs	
Instrument vacuum filter replaced		250 hrs	
Altimeter check		24 mos	
Transponder check		24 mos	
Pitot / static air line check		24 mos	
Landing gear motor brushes		200 hrs	
ELT battery		24 mos	

NOTE: Components are listed in order of nose-to-tail, more or less

Propeller

Note: Do not wash the plane before inspection.
The dirt and oil patterns may make it easier to discern hidden problems.

1 Spinner
Check spinner for dents, cracks and security.

Remove spinner
Note: The mounting screws should be replaced "periodically" (say, 5 years), as they tend to become difficult to remove with age.

2 Spinner bulkhead
Check for cracks and security

3 Propeller hub
Look for grease leakage at the blade hub juncture caused by overgreasing.
Also check for cracks, security and cleanliness.

4 Blades

Beech R200-series (wood):
Model 35 - A35:
a (unknown)

Beech B200-series (wood):
Model B35:
a (unknown)

Beech 215-series (aluminum):
Model C35 - F35:
a Check blades for damage, especially on the leading edge and on the back face. Look closely at any previous repair of rock damage, especially if file marks appear. Remove *any* nicks or file marks that are found. They should be polished out with crocus cloth. Even a file mark will cause a stress concentration that can start a crack.
b Look for cracks across the face of the blade.
Such cracks indicate blade stress and imminent failure.
c Blades should have a small amount of movement (about 1/8" - 1/4"), fore and aft, at the tip. This play is necessary to ensure free movement and to avoid overloading of the blade bearings.
d Check the play or looseness of the pitch control mechanism.
e Lube propeller blade bearings
f Date / tach of last service
g Hand pack grease every 250 hrs.

Hartzell HC12X20 prop:
a (unknown)

Hartzell HC-A3VF-4 ("heavy blade") 3-blade prop:
a (unknown)

5 Propeller attach bolts
Look for loose prop attach bolts, or signs of oil coming from the prop hub that would indicate a crack.

6 Check exposed area of crankshaft between prop and engine for signs of oil leaks that result from a crack in the crankcase.

7 Crankshaft seals
Check front crankshaft seals for signs of leakage.

Fuselage - Left Side

Forward of wing - Left

Nose

1 Nose cowling (nose bug)

Check around the spinner cutout in the nose bowl for cracks.
Stop-drill those of minor nature. More severe cracks should be repaired by patching or welding.

2 Air induction grill
Remove air induction grill

3 Air induction filter
a Date / tach of last service
b Condition
Look at the air induction filter. It will tell you if the plane was flown out of dirt strips or not.
If it was, then pay particular condition to the propeller blade (rock nicks) and landing gear (proper strut extension and mud in the wheel wells).

Beech wire mesh / fiber element filter:
c If you can see through the filter, or most of the fuzz-like coating is gone, replace the filter. (part# 56-1377, -or- R814 {not sure which})
d Remove and clean the air filter with cleaning solvent.
Air-dry and spray with a fine coat of light oil.
e While replacing the filter, check for dirt in the induction system by reaching into the induction ductwork and wiping your hand across the interior surface. Is it gritty? If it is, then dirt is getting past the filter, or is coming in through the open aux. air door. Suggest to owner that the filter be replaced more often, and advise him that oil analysis will show up with more silicon (sand) in the reports.

Beech paper element filter (part# 35-380035-5):
f Replace the filter every 100 hrs.
g While replacing the filter, check for dirt in the induction system by reaching into the induction ductwork and wiping your hand across the interior surface. Is it gritty? If it is, then dirt is getting past the filter, or is coming in through the open aux. air door. Suggest to owner that the filter be replaced more often, and advise him that oil analysis will show up with more silicon (sand) in the reports.

Brackett foam filter (Brackett part# BA-7112):

h Replace the filter every 100 hrs.

Forward of Wing

1 Exterior skin

This should include a thorough inspection of the exterior skins from the firewall forward, less the cowling and cowl flaps.

Inspect for damage, cracks, and worn rivets. The most prevalent spot for worn rivets is in the nacelle skin tie to the firewall just above the cowl flap areas on both sides. In early stages, they show up as black stains around the affected rivets. They should be replaced when stains or looseness are found.

2 Oil filler door

a Condition

b Placard check

OIL
USE SAE 50 ABOVE 40º F
USE SAE 30 BELOW 40º F

c Placard check

OIL CAPACITY
MAX: 10 U.S. QTS
MIN: 8 U.S. QTS

3 Cowling door (left):

a Exterior condition

b Proper operation

c Interior condition

d Fasteners

The top and side cowls should be checked for fit and wear, and fasteners for condition. Worn fasteners should be replaced.

A thin coat of silicone sealer can be applied to the nacelle surfaces that the cowls ride on. This will eliminate the metal-to-metal contact and do away with black streaks (of oxidized aluminum).

4 Engine cheek cowl panel (left):

a Exterior condition

Side cowls worn to the point where Airloc studs will not stay in the cowl panel should be replaced.

b Proper operation

c Interior condition

5 Nosewheel strut hinge bolt cover (left)

6 Cowl flap (left)

(See Engine Compartment section)

7 Phono jack under window - placard check

GROUND HERE

8 Pilot's storm window
a Condition

9 Front-seat window (left):
a Condition

10 Rear-seat window (left):
a Condition

Wing - Left

Leading Edge

1 Cabin air vent intake screen

2 Wing root - leading edge - placard check

NO STEP

3 Fuel filler door
a General condition
b Placard check

FUEL
20 US GAL
(17 USABLE)

c Placard check

USE GRADE 80
AVIATION FUEL ONLY

d Placard check

CAUTION
DO NOT INSERT FUEL NOZZLE
MORE THAN 3" INTO TANK

e **Auto gas STC:** Placard check

UNLEADED AUTOMOTIVE GASOLINE, 87 MINIMUM ANTIKNOCK INDEX AND/OR LEADED AUTOMOTIVE GASOLINE, 88 MINIMUM ANTIKNOCK INDEX, (RON+MON)/2 PER ASTM D-439 IS APPROVED.
INTERMIXING WITH AVIATION GASOLINE ALSO APPROVED.
DO NOT USE FUEL THAT CONTAINS ALCOHOL.
USE ONLY PETROLEUM BASED GASOLINE.

4 Fuel cap
a Check for proper sealing.
b Check for signs of leaks

5 Fuel cell
- a Look inside the cell to see if the cell has wrinkled or collapsed.
- b Fuel cell manufacturer check:
  Goodyear BTC-39 fuel cell:
  "Bad" - Fuel filler ring has one cast aluminum nutplate ring bonded on inside surface of cell.
  b1 Check for AD 78-05-06 compliance.
  UniRoyal fuel cell:
  "Good" - Fuel filler ring has two machined steel rings with the wall secured between them.
  b1 (No action necessary).

6 Landing light lens condition

7 Stall warning detector
Model 35 - B35: "Fluttering vane" stall detector on traiing edge of wing
Model C35 & later:"Lift style" stall detector on leading edge of wing
(Test will be done later)

Wingtip

1 Wingtip assembly

2 Navigation light (red)

3 Navigation light indicator lens

Trailing Edge

1 Aileron (left):
- a General condition
- b Attachment (hinges)
- c Alignment
  Check the gap between the aileron and the trailing edge.
  The gap should be the same. If the gap is wider at either end, chances are it was installed wrong, and one of the aileron hinges is not in its bolt mounting hole.
- d Freedom of movement
- e Full travel
  Deflect the aileron against its down-travel stop.

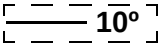
Settings:	Up:	Down:
	$20^o \pm 2^o$	$20^o \pm 2^o$

  It should hit the stop in the wing before it hits the stop in the control column.
- f Counterweights
  With the aileron against its stop,
  Strike the trailing edge with your fist, and listen for any rattling noise that would indicate loose counterweights.
- g Trim tab
- h Push up and down on the aileron.
  Listen for a thumping noise in the nose gear well.
  If you do, it is probably caused by a worn nose steering idler arm.

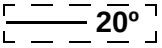
Check for frayed aileron cables at the pulleys below the floorboards and just aft of the firewall.
I would suspect the chain tension inside the control arm is the most likely spot.

2 Flaps - placard check

a Placard check - flap leading edge – flaps extended 10°



b Placard check - flap leading edge – flaps extended 20°



c Placard check - Trailing Edge of Flap

d Model 35 - B35:
Placard check - next to stall warning vane

3 Flap (left):

a Inspect flap skins for condition.
Especially so where the flap actuator attaches to the flap - any deformation indicates a broken bulkhead inside the flap.

b Attachment

c Bearings

d Actuators

e Alignment with other flap
Check for flap looseness at the trailing edge.
If there is movement, go to the right-hand flap.
If there is no free movement on the right flap, squawk the flap adjustment.
The right flap is a slave to the left flap; you don't want the right flap to stop (up or down) before the left.

f Limit switches - check for alignment and accuracy.

Topside

1 Wing: general condition
Check for a bump in the area above the landing gear, indicating that the gear is/ was improperly rigged, and is striking the top of the wheel bay from below.

2 Wing bolt: forward bathtub drain
If wing has been re-attached, wing bolt must be re-torqued (once) after 100 hrs.

3 Wing bolt: rear bathtub drain
If wing has been re-attached, wing bolt must be re-torqued (once) after 100 hrs.

Underside

1 Wing: general condition

2 Jack attach point - placard check

3 Fuel sump
- a Check for leaks or stains
- b Placard check

FUEL CELL SUMP
DRAIN DAILY

4 Fuel cell forward vent (overfill vent)

5 Possible fuel cell leakage
- a Look for fuel stains at the lower fuel cell area (trailing edge)
- b Look for fuel stains along the bottom front spar, around the front lower spar bathtub drain.
- c Look for fuel stains along the bottom wing root fairing.

Fuel cell leaking?
Check the gaskets & connections first. Also check to see if it has jillions of pinhole leaks.

6 Anti-siphon valves for operation

7 Fuel cell rear vent
- a Note the position of the fuel vent.
  It should stick out 1-3/4 inch, angle forward 10°, and chamfered forward about 45°.
- b Look for fuel stains around the vent.
  If present, check the siphon break vent hole in the bottom wing just outboard of the fuel tank end.
  Talk to the owner about fuel siphoning through the vents.

8 Pitot tube

9 Tiedown ring

Remove inspection cover 1 (rectangular cover by landing light)

10 Inspection cover 1 interior
- a Check fuel lines for security.

Remove inspection cover 2 (circular inspection cover near outboard landing gear door)

11 Inspection cover 2 interior
- a Check aileron cables and fairleads for security.

Remove inspection cover 3 (oval inspection cover near aileron)

12 Inspection cover 3 interior
- a Check aileron cables and fairleads for security.
- b Check aileron transfer mechanism for corrosion and security.

Aft of Wing

1 Auxiliary baggage fuel tank:

a Filler door

b Placard check

c Placard check

FUEL **10 US GAL**

d Placard check

USE GRADE 80 **AVIATION FUEL ONLY**

e **Auto gas STC:** Placard check

UNLEADED AUTOMOTIVE GASOLINE, 87 MINIMUM ANTIKNOCK INDEX AND/OR LEADED AUTOMOTIVE GASOLINE, 88 MINIMUM ANTIKNOCK INDEX, (RON+MON)/2 PER ASTM D-439 IS APPROVED. **INTERMIXING WITH AVIATION GASOLINE ALSO APPROVED.** **DO NOT USE FUEL THAT CONTAINS ALCOHOL.** **USE ONLY PETROLEUM BASED GASOLINE.**

f Fuel cap
Check for proper sealing.
Also check for signs of leaks.

g Rubber collar

h Fuel vent

i Fuel drain (belly)

2 Auxiliary baggage fuel tank grounding phono jack

a Condition

b Placard check

GROUND **HERE**

3 Fuselage behind cabin windows

Model 35 - B35:

a Condition

Model C35 -and later:

a Condition

b Placard check (1)

L P **E O** **V I** **E N** **L T**

c Placard check (2)

4 Static air vent (left)
a Condition
b Placard check

Fuselage - Tail

Remove tail fuselage side access door
Remove tailcone - be careful of the tail light wiring.

1 Fuselage skins - Check skins in the stabilizer area and the ruddervator skins for condition and distortion.
a Left side:
b Right side:
c Note left ruddervator stabilizer serial number at tip
d Note right ruddervator stabilizer serial number at tip

2 Ruddervator fuselage side access door
a Tailcone bulkhead
This is the vantage point to view the tailcone bulkhead. Examine it closely!
This is the stabilizer attach bulkhead which will show buckling or warping if there has been any overstress on the tail (the infamous v-tail problem).
Take special pains to look for cracks, too.
b Lubricate ruddervator differential control every 100 hrs.

3 Check the rudder spar and bell crank welds for cracks and rust.

4 Check control cables for condition and correct routing.
Standard check procedures calls for inspection of control cables both visually for condition and by slipping a cloth along the cable which will detect broken cable strands that eventually could lead to further deterioration.

5 Elevator cable tension

Settings (lbs.):	min	max:
@ 70º:	22	32

a Cable tension is:

6 Elevator trim tab cable tension
Settings (lbs.): min max:

@ 70º:	17	22	

a Cable tension is: _____

7 Elevator push-pull rods

a Rotate the push-pull rods.
They should have "some" rotation. _____

b Check elevator push-pull rods for service bulletin / AD compliance.
Beech Service Bulletin Number 989 or 2188 or AD 97-06-11 _____

8 Ruddervator (left):

a Condition
Inspect the v-tail stabilizers for skin distortion at both spar root ends. _____

b Lower stabilizer spar bolt _____

c Check the actuator arms on the ruddervator root end for security of attachment and for cracks. _____

d Check actuator castings for security to the control surface. _____

e Check the ruddervator skin around the castings for cracks.
There must not be *any*. If there are, then ground the plane. _____

f Check the inboard ruddervator hinge bearing for wear and end play. _____
Wear / play limits are ± 0.000" (?)

g Check the outboard hinge bearing for wear, and visually check the counterweight for security. _____

h Note the condition of paint on the elevator skins.
If paint is thick and heavy, question the owner about elevator balance.
Ruddervators are very difficult to balance, and the weight of a heavy coat of paint may make it impossible to balance properly. _____

i Full travel _____

Settings - elevator travel:	Up:	Down:
Model 35 - F35:	20° ± 1°	20° ± 1°
Settings - rudder travel:	Up:	Down:
Model 35 - F35:	21° ± 1°	21° ± 1°
Settings - maximum travel:	Up:	Down:
Model 35 - B35:	35° ± 2°	35° ± 2°
Model C35 and later:	35° ± 2°	30° +2° –0°

Remove the ruddervator inspection cover

j Check trim tab cables and pulley . _____

9 Ruddervator trim tab (left)

a Note the condition of the trim tab. _____

b Check the trim tab hinge for security and proper hinge rig. _____

c Check trim tab airfoil _____
Model 35 - B35: The trim tab airfoil is flat on both sides.
Model C35 - G35: The trim tab airfoil should appear as "upside down".

d Check the trim tab actuator linkage for accumulated wear. _____

e Check for proper hinge installation and clevis bolt tension at the trim tab horn, paying particular attention to the exposed tab cable for rust.
The bolt should be snug, but not so tight as to bind the cable clevis. _____

f Check for frayed or damaged trim tab cable _____

g Check for proper travel

Settings:	Up:	Down:
Model 35 - A35:	10° ± 2°	30° ± 2°
Model B35 and later:	10° ± 2°	31° +2° –0°

10 Left ruddervator tip - placard check

NO HANDLE

11 Navigation light (white)

12 Tail tiedown ring

13 Ruddervator (right):

a Condition
Inspect the v-tail stabilizers for skin distortion at both spar root ends.

b Lower stabilizer spar bolt

c Check the actuator arms on the ruddervator root end for security of attachment and for cracks.

d Check actuator castings for security to the control surface.

e Check the ruddervator skin around the castings for cracks.
There must not be *any*. If there are, then ground the plane.

f Check the inboard ruddervator hinge bearing for wear and end play.
Wear / play limits are ± 0.000" (?)

g Check the outboard hinge bearing for wear, and visually check the counterweight for security.

h Note the condition of paint on the elevator skins.
If paint is thick and heavy, question the owner about elevator balance.
Ruddervators are very difficult to balance, and the weight of a heavy coat of paint may make it impossible to balance properly.

i Full travel

Settings - elevator travel:	Up:	Down:
35 - F35:	20° ± 1°	20° ± 1°
Settings - rudder travel:	Up:	Down:
35 - F35:	21° ± 1°	21° ± 1°
Settings - maximum travel:	Up:	Down:
Model 35 - B35:	35° ± 2°	35° ± 2°
Model C35 and later:	35° ± 2°	30° +2° –0°

Remove the ruddervator inspection cover

j Check trim tab cables and pulley .

14 Ruddervator trim tab (right)

a Note the condition of the trim tab.

b Check the trim tab hinge for security and proper hinge rig.

c Check trim tab airfoil
Model 35 - B35: The trim tab airfoil is flat on both sides.
Model C35 - G35: The trim tab airfoil should appear as "upside down".

d Check the trim tab actuator linkage for accumulated wear.

e Check for proper hinge installation and clevis bolt tension at the trim tab horn, paying particular

attention to the exposed tab cable for rust.
The bolt should be snug, but not so tight as to bind the cable clevis.

f Check for frayed or damaged trim tab cable

g Check for proper travel

Settings:	Up:	Down:
Model 35 - A35:	10° ± 2°	30° ± 2°
Model B35 and later:	10° ± 2°	31° +2° –0°

Leave tail fuselage side access door removed until service has been done
Leave ruddervator belly access panel removed until service has been done
Leave tail cone removed until service has been done

Fuselage Belly

1 Fuel selector sump

a Access door: condition

Examine the fuel selector sump access door.
If this does not have a wing nut on the door, then suggest that one be added to simplify preflights. The necessary parts are:
WL 98293-1-060 Wing Nut Dzus Fastener
99785-2 Pin (TRW Electric Components)

b Placard check

FUEL STRAINER DRAIN DAILY

c Placard check

**WARNING
FUEL STRAINER MUST BE INSTALLED FIRST WITH FLANGED END UP TOWARD SELECTOR VALVE, FOLLOWED BY SPRING**

d Fuel selector sump screen

Access to the fuel selector sump screen, which is located in the bottom of the fuel selector pump unit, is through the access door in the fuselage beneath the fuel unit.
Service the sump screen every 100 hrs.
(Make sure the fuel selector is in the "off" position...)
Check for corrosion and unusual amounts of collected sediment, dirt, lint, etc.

2 Jack attach point - placard check

JACK ATTACH POINT

3 Auxiliary baggage fuel sump drain - placard check

FUEL CELL SUMP DRAIN DAILY

4 Belly antennas:
- a Transponder ("blade" antenna)
- b DME ("blade" antenna - no longer used: Jun 1997)
- c Localizer ("sled" antenna)
- d VOR ("Vee" antenna)

5 Cabin air exhaust belly vent

Model 35 - B35:
- a Does not apply

Model C35 -and later:
- a Condition

6 Strobe light

7 Identification placard
- a Placard check

MANUFACTURED BY
BEECH AIRCRAFT
CORPORATION
WICHITA KANSAS

SERIAL ***D-1*** **MODEL** ***35***
DATE MFD ***10-1947***
ENGINE ***E165-4***

LICENSED UNDER U.S. AIRPLANE
PATENTS OF ALL MEMBERS
MANUFACTURERS AIRCRAFT ASSOCIATION

MAA PLATE NO 220640

Model 35: This placard is on the fuel selector in the cabin.
Model A35: This placard is on the fuel selector in the cabin.
Model B35: This placard is on the fuel selector in the cabin.

Remove access door 1 (below landing gear actuator)

8 Access door 1 interior
- a Access door condition

Model 35:
- b Landing gear limit switches
- c Landing gear actuator mechanism, lower seal - check for leaks

Model B35 and later:
- d Landing gear actuator mechanism, lower seal - check for leaks

Remove access door 2 (below rear seat)

9 Access door 2 interior

Model 35 - B35:
- a Does not apply

Model C35 - V35:
- a Access door condition

b Check cables and fairleads

Remove access door 3 (at tailcone near the identification plate)

10 Access door 3 interior
- a Access door condition
- b Check cables and turnbuckles

Fuselage - Right Side

Aft of Wing

1 Static air vent (right)
- a Condition
- b Placard check

STATIC AIR
KEEP CLEAN

2 Baggage door:
- a Condition
- b Seals and fit
- c Lock

3 Entry assist step: condition

Fuselage Top

1 Windshield: condition

2 Antennas:
- a ADF Sense ("ice detector" AM/FM radio) antenna
- b Forward dorsal (com-1 ?) antenna
- c GPS ("square pad") antenna
- d ELT ("whip") antenna
- e Rear dorsal ("dog-leg") antenna

3 Cabin air exhaust vent

4 Air conditioner intake scoop:
- a Condition
- b Proper operation
- c Rotating beacon

Wing - Right

Leading Edge

1 Cabin air vent intake screen _____

2 Wing root - leading edge - placard check _____

NO STEP

3 Fuel filler door _____

a General condition _____

b Placard check _____

FUEL
20 US GAL
(17 USABLE)

c Placard check _____

USE GRADE 80
AVIATION FUEL ONLY

d Placard check _____

CAUTION
DO NOT INSERT FUEL NOZZLE
MORE THAN 3" INTO TANK

e **Auto gas STC:** Placard check _____

UNLEADED AUTOMOTIVE GASOLINE, 87 MINIMUM ANTIKNOCK INDEX AND/OR LEADED AUTOMOTIVE GASOLINE, 88 MINIMUM ANTIKNOCK INDEX, (RON+MON)/2 PER ASTM D-439 IS APPROVED.
INTERMIXING WITH AVIATION GASOLINE ALSO APPROVED.
DO NOT USE FUEL THAT CONTAINS ALCOHOL.
USE ONLY PETROLEUM BASED GASOLINE.

4 Fuel cap _____

a Check for proper sealing. _____

b Check for signs of leaks _____

5 Fuel cell

a Look inside the cell to see if the cell has wrinkled or collapsed. _____

b Fuel cell manufacturer check: _____

Goodyear BTC-39 fuel cell:
"Bad" - Fuel filler ring has one cast aluminum nutplate ring bonded on inside surface of cell.

b1 Check for AD 78-05-06 compliance. _____

UniRoyal fuel cell:
"Good" - Fuel filler ring has two machined steel rings with the wall secured between them.

6 Landing light lens condition _____

Wingtip

1 Wingtip assembly

2 Navigation light (green)

3 Navigation light indicator lens

Trailing Edge

1 Aileron (right):

a General condition

b Attachment (hinges)

c Alignment
Check the gap between the aileron and the trailing edge.
The gap should be the same. If the gap is wider at either end, chances are it was installed wrong, and one of the aileron hinges is not in its bolt mounting hole.

d Freedom of movement

e Full travel
Deflect the aileron against its down-travel stop.

Settings:	Up:	Down:
	20º ± 2º	20º ± 2º

It should hit the stop in the wing before it hits the stop in the control column.

f Counterweights
With the aileron against its stop,
Strike the trailing edge with your fist, and listen for any rattling noise that would indicate loose counterweights.

g Trim tab

h Push up and down on the aileron.
Listen for a thumping noise in the nose gear well.
If you do, it is probably caused by a worn nose steering idler arm.
Check for frayed aileron cables at the pulleys below the floorboards and just aft of the firewall.
I would suspect the chain tension inside the control arm is the most likely spot.

2 Flap (right):

a Inspect flap skins for condition.
Especially so where the flap actuator attaches to the flap - any deformation indicates a broken bulkhead inside the flap.

b Attachment

c Bearings

d Actuators

e Alignment with other flap
Check for flap looseness at the trailing edge.
There should be "some" at the right-hand flap.
The right flap is a slave to the left flap; you don't want the right flap to stop (up or down) before the left.

f Trailing edge - outboard of wing walk surface - placard check

NO STEP

Topside

1 Wing: general condition
Check for a bump in the area above the landing gear, indicating that the gear is/ was improperly rigged, and is striking the top of the wheel bay from below.

2 Wing bolt: forward bathtub drain
If wing has been re-attached, wing bolt must be re-torqued (once) after 100 hrs.

3 Wing bolt: rear bathtub drain
If wing has been re-attached, wing bolt must be re-torqued (once) after 100 hrs.

4 Wing walk

Underside

1 Wing: general condition

2 Jack attach point - placard check

JACK ATTACH POINT

3 Fuel sump
- a Check for leaks or stains
- b Placard check

FUEL CELL SUMP DRAIN DAILY

4 Fuel cell forward vent (overfill vent)

5 Possible fuel cell leakage
- a Look for fuel stains at the lower fuel cell area (trailing edge)
- b Look for fuel stains along the bottom front spar, around the front lower spar bathtub drain.
- c Look for fuel stains along the bottom wing root fairing.

Fuel cell leaking?
Check the gaskets & connections first. Also check to see if it has jillions of pinhole leaks.

6 Anti-siphon valves for operation

7 Fuel cell rear vent
- a Note the position of the fuel vent.
  It should stick out 1-3/4 inch, angle forward 10°, and chamfered forward about 45°.
- b Look for fuel stains around the vent.
  If present, check the siphon break vent hole in the bottom wing just outboard of the fuel tank end.
  Talk to the owner about fuel siphoning through the vents.

8 Tiedown ring

Remove inspection cover 1 (rectangular cover by landing light)

9 Inspection cover 1 interior
a Check fuel lines for security.

Remove inspection cover 2 (circular inspection cover near outboard landing gear door)

10 Inspection cover 2 interior
a Check aileron cables and fairleads for security.

Remove inspection cover 3 (oval inspection cover near aileron)

11 Inspection cover 3 interior
a Check aileron cables and fairleads for security.
b Check aileron transfer mechanism for corrosion and security.

Forward of wing

1 Exterior skin
This should include a thorough inspection of the exterior skins from the firewall forward, less the cowling and cowl flaps.
Inspect for damage, cracks, and worn rivets. The most prevalent spot for worn rivets is in the nacelle skin tie to the firewall just above the cowl flap areas on both sides. In early stages, they show up as black stains around the affected rivets. They should be replaced when stains or looseness are found.

2 Phono jack under window - placard check

GROUND HERE

3 Cowling door (left):
a Exterior condition
b Proper operation
c Interior condition
d Fasteners
The top and side cowls should be checked for fit and wear, and fasteners for condition. Worn fasteners should be replaced.
A thin coat of silicone sealer can be applied to the nacelle surfaces that the cowls ride on. This will eliminate the metal-to-metal contact and do away with black streaks (of oxidized aluminum).

4 Engine cheek cowl panel (right):
a Exterior condition
Side cowls worn to the point where Airloc studs will not stay in the cowl panel should be replaced.
b Proper operation
c Interior condition

5 Nosewheel strut hinge bolt cover (left)

6 Cowl flap (right)
(See Engine Compartment section)

7 Cabin door:
- a Condition
- b Seals and fit (closed)
- c Door handle / lock:
  - c1 Condition
  - c2 Lubricate door handle / lock every 100 hrs.
- d Door latching mechanism (upper):
  - d1 Condition
  - d2 Lubricate upper door latching mechanism every 100 hrs.
- e Door latching mechanism (lower):
  - e1 Condition
  - e2 Lubricate lower door latching mechanism every 100 hrs
- f Door hinges:
  - f1 Condition
    To check the door for looseness or poor fit, open the door up to its full open position and lift up on the door to see if there is any play.
  - f2 Lubricate door hinges every 100 hrs.
    The shop manual lubrication chart fails to show these hinges as a lubrication point. The hinge pins are located behind the recessed rubber plugs. The plugs can be easily removed exposing the hinge pins for annual or periodic inspection. A little bit of oil will go a long ways towards minimizing pin wear, thus a sagging door.
- g Door hold-open arm

8 Close and latch the cabin door.
Check pressure to actuate the inside door handle, as the top latch breaks over the cam lock.

9 Front-seat window (right):
- a Condition

10 Rear-seat window (right):
- a Condition

Landing Gear

Additional inspection of the landing gear occurs at “Gear Retraction Test” on page 71.

Nose Gear

1 General attachment

2 Wheel bay:
- a Condition

b Oil sump drain plug

c Fuel overflow drain tube
This tube should have a loop in it at the top of the bay to prevent fuel siphoning.

3 Left nosewheel gear door:
a Condition
b Weatherstripping
c Linkage and attachment
d Lubricate nosewheel gear door hinges every 100 hrs.
e Lubricate nosewheel gear door hinge points every 100 hrs.

4 Right nosewheel gear door
a Condition
Check for nicks or scrapes 3/4 of the way down the door, indicating possible interference with the nosewheel scraper attach bolt.
b Weatherstripping
c Linkage and attachment
d Lubricate nosewheel gear door hinges every 100 hrs.
e Lubricate nosewheel gear door hinge points every 100 hrs.

5 Door closing mechanism
a Linkage and attachment
b Lubricate nosewheel gear door closing mechanism every 100 hrs.

6 Gear retract mechanism
a Condition
b Linkage and attachment
c Lubricate nosewheel gear retract mechanism every 100 hrs.

7 Nosewheel gear retract rod
a Condition
In most cases, the rod end bearing will stretch before it breaks, causing a nosewheel folding accident. The rod end is covered by a canvas boot, and is often ignored.
b Linkage and attachment
c **G35:** - Placard check

USE 45-824104 SHEAR PIN ONLY
WITH 12 INCHES LONG PLUNGER ASSY

d Placard check (2 placards)

HEAT TREATED ASSEMBLY

HEAT TREATED ASSEMBLY

8 Nosewheel steering mechanism:
Model 35:
(No nosewheel steering mechanism)
Model A35 and later:
a Linkage and attachment

b Canvas boot

c Lubricate steering mechanism every 100 hrs.

d Lubricate steering mechanism linkage every 100 hrs.

9 Nosewheel gear assist step retract cable

Model 35 - M35: retracting assist step

a Cable condition
Look at the cable in the nosewheel well for broken strands. The cable tends to fray and break at the small pulley just behind the nose gear attach point.

b Fittings & rubber hose / shield

c Check for the presence of the aluminum shear link on the fitting (should the assist step jam, the shear link is supposed to break so the landing gear may retract)

d Cable down-tension

Tension settings:	min:	max:
Tension:	45 lbs	65 lbs

Cable tension is:

e Check the clearance between the assist step cable housing and the fuel pressure indicator line inside the nosewheel well. There should be at least 1" of clearance between the two to keep the cable from chafing the fuel line.

f Lubricate the assist step pulley wheel

Model N35 and later: fixed assist step

10 Nosewheel strut:

Model 35 - G35: open-casting strut:

a Condition
Check strut for corrosion in the lower area.

b Check for waterproof patches over the lightening holes.
The patches will keep water from soaking the oiled felt pad at the bottom of the strut and corroding the magnesium strut.

Install waterproof patches if there aren't any.
Some will go so far as to have an aluminum plate fabricated to cover the holes - an excellent idea.

c Check for leakage

d Proper extension

Settings:	Min	Max
Model 35:	2-1/2"	? "
Model A35 and later:	3-3/16"	? "
s/n D-6562 and later:	3-1/2"	? "

Strut extension length is:

Nosewheel strut going flat? Check for a bad schrader valve core.
If the strut is low, you can pump it up with a special high-pressure pump, or wait until the plane is up on jacks and do it with an ordinary pump.

e Placard check

Beechcraft **OIL AIR STRUT** **Beech Aircraft Corporation** **Wichita, Kansas USA**
INSTRUCTIONS **To check fluid and fill** **Remove valve cap. Depress valve core and allow strut to fully compress. Then raise and block strut 1/4 inch from compressed position. Remove valve body assembly and fill with hydraulic oil conforming to instruction manual specifications. Slowly extend strut from blocked position and replace valve body assembly. Depres valve core and completely compress strut to release excess air and oil.** **With airplane empty except for full fuel and oil keep strut inflated to 3-1/2 inches of piston showing** **WARNING** **Release air in strut before disassembling**
Built under one or more of the following Beech patents **patents pending**

11 Nosewheel strut - service

a Strut felt pads

There is a felt pad at the bottom of the strut.
They keep water out of the (open-casting version) strut.
Lubricate the felt pads with oil every 100 hrs.

If it doesn't get done often enough, the bronze bearing will get dry and seize. Make sure it is well soaked, so water will not sit there and begin corrosion.

b Zerk fittings

Grease all zerk fittings every 100 hrs. (16 fittings)

12 Shimmy dampener:

a Condition

b Reservoir

Check the fluid reservoir
Insert a wire in the aft end of the piston (you might have to spread the cotter key to do this).

Settings:	Full	Empty
	2-3/16"	3-3/16"

Reservoir level is:

13 Nosewheel Scraper

a Scraper - condition

b Attachment

If the nosewheel was recently serviced, and the nosewheel scraper removed and reinstalled, then the right side attach bolt for the nosewheel may have been replaced with one that is too long, and the difference made up by adding a few washers. This extra-long bolt can now catch on the nosewheel door during retraction, causing complete nose gear failure.
Make sure the bolts are the proper size. The Beech manual calls out:

Left side:	pg 2-86, item 50-41:	part# AN4-21A {?}
Left side:	pg. 2-84, item 49-7:	part# AN4-4A {?}
Right side:	pg. 2-84, item 49-12:	part# AN74-3

c Ground wire - condition

The ground wire need not drag along the ground. It is to discharge static electricity on touchdown. With the wheels and struts properly inflated, the ground wire should be between 1/4" and 1/2" from the ground.

14 Nosewheel taxi light
- a Housing - condition
- b Wiring - condition

15 Wheel
- a Condition

16 Tire
- a Tire - condition
- b **Model 35 - s/n D-5986 + :**
  Inner tube - condition
- c Proper inflation

  Model 35: 5.00 x 5: 28 lbs
  Model A35 and later: 5.00 x 5: 30 lbs
  Inflation is:

Main Gear - Left

1 General attachment

2 Outer door:
- a Condition
- b Weatherstripping
- c Hinges
- d Linkage and attachment
  Check the bolts that attach the gear doors to the gear attach rods are both facing aft as they are supposed to. Otherwise there will be interference at the main strut, leaving a paint chip on the strut.
- e Lubricate outboard door hinges every 100 hrs.

3 Inner door:
(Will be checked during Gear Retraction Test)

4 Inner Door closing mechanism
(Will be checked during Gear Retraction Test)

5 Wheel bay:
- a Condition
- b Canvas boot over flap mechanism
- c Retract rod linkage condition
  Look behind the canvas boot to see it

6 Gear retract mechanism:
- a Retract rod play (twist 1/8 turn)
- b Lubricate retract rod every 100 hrs.

7 Main Gear Uplock System

The uplock bracket and block are located at the top inboard position of each main gear. Unsnap and peel back the canvas cover and inspect the uplock bracket for the following:

a Check for cracks

b Check that the uplock bracket is not bent where the uplock cable attaches to it.

c Make sure that the bolt that attaches the uplock cable to the uplock bracket points *forward* (screw head aft). The bolt position is covered in Beech Service Instruction 0680-211.

d Make sure that the uplock spring (part # 35-815115, or part # 100942C0020-31) located between the uplock bracket and the outer wing rib of the wheel compartment is in good condition. *Absolutely no corrosion*. The uplock spring is *VERY IMPORTANT*.
This spring is the sole means of pulling the uplock bracket and uplock block clear of the uplock roller, thus allowing main gear extension. If there is any question as to the uplock spring condition, replace it.
Also, check for elongation of the hole where the uplock spring attaches to the wing rib.

e Closely inspect the uplock cable for broken strands and corrosion where it is swaged into the outboard terminal. This is usually where the uplock cable breaks.

f Check cable tension

Settings:	min:	std:	max:
	- 0	52-1/2 lbs	+ 10

Cable tension is: _____

g A short piece of rubber hose should be attached to the outboard end of the uplock cable outer housing. This hose prevents interference of the uplock roller lubrication fitting with the uplock cable. This subject is covered in Beech Service Instruction 0448-211.

h **Models 1964 and newer:**
Beech Service Instruction, 0736-211, applies to the uplock brackets.
This modification requires removal of material on the uplock bracket which reduces the bending of the uplock cable during landing gear operation.

i Inspect that the uplock roller turns freely.
The roller bearing should roll with a twist of the fingers.

Clearance settings:	min:	max:
	.010 in.	.020 in.

Bearing-to-block clearance is about 0.010" - 0.020" (about 1/64", or the thickness of a razor blade) If not, check the vee brace to the wing skin first - it should be 1/16".
Get this right first, then adjust the uplock spacing.

j Lubricate the uplock roller every 100 hours.
This complies with AD 72-22-01.

k Check the uplock block for signs of contact with the roller.
The uplock roller and uplock block should not ever touch.
The owner can check this by smearing grease on the outside of the roller, and retract the gear a couple of times. You can tell after a few retractions if the two are contacting.

l Check the uplock block hinge bolt and holes for wear.

m Check the canvas boot over uplock block mechanism for holes
It is important to keep the canvas covers (Left hand: # 35-815156-4, Right hand:# 35-815156-5) in good condition because they prevent the uplock cables from fouling with the top wing skin ribs.
If the canvas cover or uplock springs need to be replaced, the easiest way to install them is to remove the uplock bracket from the gear. When replacing an uplock spring, do not pry open the ends of the spring. It is a tough fit, but install the spring as it is supplied from Beech.

8 Strut

a Condition

Look for paint chipping on the lower saddle piece surrounding the main strut (the saddle piece is part of the "outrigger" struts).

If there is chipped paint, then check to see if the bolt attaching the outboard door to the link rod is installed backwards.

This bolt should point *rearward* (screw head forward).

b Check for leakage

c Proper extension

Settings:	min:	max:
Model 35:	2-5/8”	
Model A35:	3-9/32”	
Model B35:	3-9/32”	
Model C35 and later:	3"	

Strut extension length is:

If the strut is low, you can pump it up with a special high-pressure pump, or wait until the plane is up on jacks and do it with an ordinary pump.

d Proper operation

Put your back under the wing spar near the tip, and using yourself as a human jack, lift the wingtip up and down several times, and observe the operation of the landing gear strut.

If the strut sticks or extends jerkily or groans while extending and compressing, then the strut may be low on fluid.

e Placard check

Beechcraft
OIL AIR STRUT
Beech Aircraft Corporation
Wichita, Kansas USA

INSTRUCTIONS
To check fluid and fill
Remove valve cap. Depress valve core and allow strut to fully compress. Then raise and block strut 1/4 inch from compressed position. Remove valve body assembly and fill with hydraulic oil conforming to instruction manual specifications. Slowly extend strut from blocked position and replace valve body assembly. Depres valve core and completely compress strut to release excess air and oil. With airplane empty except for full fuel and oil keep strut inflated to 3-1/2 inches of piston showing

WARNING
Release air in strut before disassembling

Built under one or more of the following Beech patents
patents pending

9 Strut: service

a Lubricate main gear hinge points every 100 hrs.

b Lubricate main gear torque knee every 100 hrs.

c Lubricate main gear retract links every 100 hrs.

d Zerk fittings - inspect

e Grease all zerk fittings every 100 hrs. (12 fittings)

10 Strut brace
- a Condition
- b Placard check (2 placards)

HEAT TREATED ASSEMBLY

HEAT TREATED ASSEMBLY

11 Wheel
- a Condition

12 Tire
- a Condition
- b **Model 35 - s/n D-5986 + :**
  Inner tube - condition
- c Proper inflation

Model 35:

6.00 x 6,	**7.00 x 6:**	28 lbs
6.50 x 8,	**7.00 x 8:**	28 lbs

Model A35 and later:

6.00 x 6,	**7.00 x 6:**	30 lbs
6.50 x 8,	**7.00 x 8:**	30 lbs

Inflation is: _____

13 Brakes

Firestone brakes:
- a Castings for leaks
- b Brake disk

Settings:	Min:	Max:
	bottom of the grooves	???
	-or-	
	when the rivet heads are scored	

Thickness is: _____
- c Brake pad linings

Settings:	Min:	Max:
	7/16"	???

Thickness is: _____
- d Brake hose condition

Goodyear brakes (D-1 - D-6492) :
- a Castings for leaks
- b Brake disk

Settings:	Min:	Max:
	0.170"	0.250"
	-or-	
	dist. fm key to keyslot 0.040"	

Thickness is: _____
- c Brake pad linings

Settings:	Min:	Max:
	7/16"	???

Thickness is: _____

d Brake hose condition _____

Goodyear brakes (D-6493 - D-7208, D-7213, D-7214) :

a Castings for leaks _____

b Brake disk _____

Settings:	Min:	Max:
	0.225"	0.250"
	-or-	
	dist. fm key to keyslot 0.040"	

Thickness is: _____

c Brake pad linings _____

Settings:	Min:	Max:
	0.250"	???

Thickness is: _____

d Brake hose condition _____

Beech brakes (D-7209 - D-8460) :

a Castings for leaks _____

b Brake disk _____

Settings:	Min:	Max:
	0.432"	???

Thickness is: _____

c Brake pad linings _____

Settings:	Min:	Max:
	1/32"	???

Thickness is: _____

d Brake hose condition _____

Beech brakes (D-7293, D-8461 - D9192) :

a Castings for leaks _____

b Stationary disk _____

Settings:	Min:	Max:
	0.104"	???

c Rotating disk _____

Settings:	Min:	Max:
	0.100"	???

Thickness is: _____

d Pressure plate _____

Settings:	Min:	Max:
	0.150"	???

Thickness is: _____

e Brake hose condition _____

Beech brakes (D-9193 +) :

a Castings for leaks _____

b Brake disk _____

Settings:	Min:	Max:
	0.330	???

Thickness is: _____

c Brake pads

Setings: Min: Max:
3/32 above the rivet ???

Thickness is:

d Brake hose condition

Cleveland brake kit 199-49 (6.00 x 6 and 7.00 x 6 wheels):

a Castings for leaks

b Brake disk

Settings: Min: Max:
0.330 ???

Thickness is:

c Brake pads

Setings: Min: Max:
0.100 ???

Thickness is:

d Brake hose condition

Cleveland brake kit 199-50 (6.50 x 8 and 7.00 x 8 wheels):

a Castings for leaks

b Brake disk

Settings: Min: Max:
0.330 ???

Thickness is:

c Brake pads

Settings: Min: Max:
0.100 ???

Thickness is:

d Brake hose condition

Main Gear - Right

1 General attachment

2 Outer door:

a Condition

b Weatherstripping

c Hinges

d Linkage and attachment
Check the bolts that attach the gear doors to the gear attach rods are both facing aft as they are supposed to. Otherwise there will be interference at the main strut, leaving a paint chip on the strut.

e Lubricate outboard door hinges every 100 hrs.

3 Inner door:
(Will be checked during Gear Retraction Test)

4 Inner Door closing mechanism
(Will be checked during Gear Retraction Test)

5 Wheel bay:
- a Condition
- b Canvas boot over flap mechanism
- c Retract rod linkage condition
  Look behind the canvas boot to see it
- d Squat switch (right side only)
- e Lube the limit switch with a spray lubricant

6 Gear retract mechanism:
- a Retract rod play (twist 1/8 turn)
- b Lubricate retract rod every 100 hrs.

7 Main Gear Uplock System
The uplock bracket and block are located at the top inboard position of each main gear. Unsnap and peel back the canvas cover and inspect the uplock bracket for the following:
- a Check for cracks
- b Check that the uplock bracket is not bent where the uplock cable attaches to it.
- c Make sure that the bolt that attaches the uplock cable to the uplock bracket points *forward* (screw head aft). The bolt position is covered in Beech Service Instruction 0680-211.
- d Make sure that the uplock spring (part # 35-815115, or part # 100942C0020-31) located between the uplock bracket and the outer wing rib of the wheel compartment is in good condition. *Absolutely no corrosion*. The uplock spring is *VERY IMPORTANT*.
  This spring is the sole means of pulling the uplock bracket and uplock block clear of the uplock roller, thus allowing main gear extension. If there is any question as to the uplock spring condition, replace it.
  Also, check for elongation of the hole where the uplock spring attaches to the wing rib.
- e Closely inspect the uplock cable for broken strands and corrosion where it is swaged into the outboard terminal. This is usually where the uplock cable breaks.
- f Check cable tension

Settings:	min:	std:	max:
	- 0	52-1/2 lbs	+ 10

  Cable tension is:
- g A short piece of rubber hose should be attached to the outboard end of the uplock cable outer housing. This hose prevents interference of the uplock roller lubrication fitting with the uplock cable. This subject is covered in Beech Service Instruction 0448-211.
- h **(Models 1964 and newer):**
  Beech Service Instruction, 0736-211, applies to the uplock brackets.
  This modification requires removal of material on the uplock bracket which reduces the bending of the uplock cable during landing gear operation.
- i Inspect that the uplock roller turns freely.
  The roller bearing should roll with a twist of the fingers.

Clearance settings:	min:	max:
	.010 in.	.020 in.

  Bearing-to-block clearance is about 0.010" - 0.020" (about 1/64", or the thickness of a razor blade) If not, check the vee brace to the wing skin first - it should be 1/16".
  Get this right first, then adjust the uplock spacing.
- j Lubricate the uplock roller every 100 hours.

This complies with AD 72-22-01.

k Check the uplock block for signs of contact with the roller.
The uplock roller and uplock block should not ever touch.
The owner can check this by smearing grease on the outside of the roller, and retract the gear a couple of times. You can tell after a few retractions if the two are contacting.

l Check the uplock block hinge bolt and holes for wear.

m Check the canvas boot over uplock block mechanism for holes
It is important to keep the canvas covers (Left hand: # 35-815156-4, Right hand:# 35-815156-5) in good condition because they prevent the uplock cables from fouling with the top wing skin ribs.
If the canvas cover or uplock springs need to be replaced, the easiest way to install them is to remove the uplock bracket from the gear. When replacing an uplock spring, do not pry open the ends of the spring. It is a tough fit, but install the spring as it is supplied from Beech.

8 Strut

a Condition
Look for paint chipping on the lower saddle piece surrounding the main strut (the saddle piece is part of the "outrigger" struts).
If there is chipped paint, then check to see if the bolt attaching the outboard door to the link rod is installed backwards.
This bolt should point *rearward* (screw head forward).

b Check for leakage

c Proper extension

Settings:	min:	max:
Model 35:	2-5/8”	
Model A35:	3-9/32”	
Model B35:	3-9/32”	
Model C35 and later:	3"	

Strut extension length is:
If the strut is low, you can pump it up with a special high-pressure pump, or wait until the plane is up on jacks and do it with an ordinary pump.

d Proper operation
Put your back under the wing spar near the tip, and using yourself as a human jack, lift the wingtip up and down several times, and observe the operation of the landing gear strut.
If the strut sticks or extends jerkily or groans while extending and compressing, then the strut may be low on fluid.

e Placard check

Beechcraft **OIL AIR STRUT** **Beech Aircraft Corporation** **Wichita, Kansas USA**
INSTRUCTIONS **To check fluid and fill** **Remove valve cap. Depress valve core and allow strut to fully compress. Then raise and block strut 1/4 inch from compressed position.** **Remove valve body assembly and fill with hydraulic oil conforming to instruction manual specifications. Slowly extend strut from blocked position and replace valve body assembly. Depres valve core and completely compress strut to release excess air and oil.** **With airplane empty except for full fuel and oil keep strut inflated to 3-1/2 inches of piston showing** **WARNING** **Release air in strut before disassembling**
Built under one or more of the following Beech patents **patents pending**

9 Strut: service
- a Lubricate main gear hinge points every 100 hrs.
- b Lubricate main gear torque knee every 100 hrs.
- c Lubricate main gear retract links every 100 hrs.
- d Zerk fittings - inspect
- e Grease all zerk fittings every 100 hrs. (12 fittings)

10 Strut brace
- a Condition
- b Placard check (2 placards)

HEAT TREATED ASSEMBLY
HEAT TREATED ASSEMBLY

11 Wheel
- a Condition

12 Tire
- a Condition
- b **Model 35 - s/n D-5986 + :**
  Inner tube - condition
- c Proper inflation

Model 35:

6.00 x 6,	**7.00 x 6:**	28 lbs
6.50 x 8,	**7.00 x 8:**	28 lbs

Model A35 and later:

6.00 x 6,	**7.00 x 6:**	30 lbs
6.50 x 8,	**7.00 x 8:**	30 lbs

Inflation is:

13 Brakes

Firestone brakes:

a Castings for leaks _____

b Brake disk _____

Settings: Min: bottom of the grooves -or- when the rivet heads are scored Max: ???

Thickness is: _____

c Brake pad linings _____

Settings: Min: 7/16" Max: ???

Thickness is: _____

d Brake hose condition _____

Goodyear brakes (D-1 - D-6492) :

a Castings for leaks _____

b Brake disk _____

Settings: Min: 0.170" -or- dist. fm key to keyslot 0.040" Max: 0.250"

Thickness is: _____

c Brake pad linings _____

Settings: Min: 7/16" Max: ???

Thickness is: _____

d Brake hose condition _____

Goodyear brakes (D-6493 - D-7208, D-7213, D-7214) :

a Castings for leaks _____

b Brake disk _____

Settings: Min: 0.225" -or- dist. fm key to keyslot 0.040" Max: 0.250"

Thickness is: _____

c Brake pad linings _____

Settings: Min: 0.250" Max: ???

Thickness is: _____

d Brake hose condition _____

Beech brakes (D-7209 - D-8460) :

a Castings for leaks _____

b Brake disk _____

Settings: Min: 0.432" Max: ???

Thickness is: _____

c Brake pad linings

Settings: Min: Max:
1/32" ???

Thickness is:

d Brake hose condition

Beech brakes (D-7293, D-8461 - D9192) :

a Castings for leaks

b Stationary disk

Settings: Min: Max:
0.104" ???

c Rotating disk

Settings: Min: Max:
0.100" ???

Thickness is:

d Pressure plate

Settings: Min: Max:
0.150" ???

Thickness is:

e Brake hose condition

Beech brakes (D-9193 +) :

a Castings for leaks

b Brake disk

Settings: Min: Max:
0.330 ???

Thickness is:

c Brake pads

Setings: Min: Max:
3/32 above the rivet ???

Thickness is:

d Brake hose condition

Cleveland brake kit 199-49 (6.00 x 6 and 7.00 x 6 wheels):

a Castings for leaks

b Brake disk

Settings: Min: Max:
0.330 ???

Thickness is:

c Brake pads

Setings: Min: Max:
0.100 ???

Thickness is:

d Brake hose condition

Cleveland brake kit 199-50 (6.50 x 8 and 7.00 x 8 wheels):

a Castings for leaks

b Brake disk

Settings: Min: Max:
0.330 ???

Thickness is:

c Brake pads

Settings: Min: 0.100 Max: ???

Thickness is:

d Brake hose condition

Engine Compartment

Left side

1 Engine Data Plate - placard check

a Placard check

Continental Motors Corporation	
Model	***E185-1***
Serial No:	***00001***

2 Nose bug interior

Check the inside of the nose bug for cracks, especially in back of the prop spinner. Suggest stiffening the area with fiberglass if needed.

3 Visually inspect all structure within the engine compartment for cracks, missing or loose fasteners, and distortion. Check for loose or missing rivets attaching the rear engine mounts to the nosewheel well structure. Check structure between front engine mounts for cracks. Check wheel well skin for cracks.

4 Cowl seals (left): condition

5 **Beech 215-series propeller - prop pitch control unit**

a Check for oil leaks around spinner

b Ring gear

b1 Check for broken or missing teeth at the high and low end.

b2 Check for broken or missing spring stops at the high and low end.

c Prop pitch change bearing

c1 Date / tach of last propeller service

c2 Hand pack grease every 250 hrs.

d Limit switches

e Lube the limit switches with a spray lubricant

f Prop pitch motor

f1 Note model & serial number

f2 Condition

f3 Motor brushes

Brush 1 length:

Brush 2 length:

g Wiring

6 Hartzell prop pitch control unit
a (unknown)

7 Air induction ducting
Check the flex duct aft of the filter for condition. Especially check the rubber parts. They should be replaced about every 5 - 7 years. _____

8 Aux air door
a Check hinges.
Check operation - sometimes the hinge or hinge pin will fail, and the door will fall into the duct, choking the carb. _____
b Check spring tension.
The door should open about 3/4" when a 10 oz. weight is placed on it. _____
c Check intake hoses and clamps for condition and security.
Fuel stains at attachment of intake pipes to cylinders can indicate leaking intake pipe seals. _____

9 Carburetor
Bendix (Stromberg) PS-5C:
a Note model & serial number _____
b Check throttle control for full travel _____
c Check mixture control for full travel _____

10 E225-8 engine: fuel primer (option):
a Solenoid - condition _____
b Fuel primer lines - condition _____
c Fuel distribution manifold - condition _____
d Fuel distribution lines to cylinders - condition _____

11 Fuel injection system - Fuel pump:
a Check the vent hole in the manifold valve mounted on top of the engine.
Refer to item 5 on page 26 in the book "Colvin's Clinic" for a diagram of this vent.
If there are fuel stains around this vent hole, the internal rubber diaphragm is ruptured, and the fuel pump needs to be repaired. _____

12 Forward engine mount: condition _____

13 Engine breather pipe _____
a Condition _____
The engine breather tube should be insulated to prevent the oil fumes from congealing in the tube, clogging it – this may happen in extremely cold temperatures.

14 Crankcase through-bolts
Check for oil leaks _____

15 Cylinder #6 (forward)
a Check cylinder barrels for oil leaks that would result from a cracked cylinder wall _____
b Check lower cylinder at juncture of head and barrel for oil or cracks _____
c Check cylinder hold-down lugs for security. _____

d Cylinder base for oil leaks
e Check push rod seals for leaking.
f Fuel injected models: Check fuel injection lines and nozzles for security.
g Upper spark plug
  g1 Check around spark plug base in the cylinder for cracks
  g2 Check spark plug wiring
h Lower spark plug
  h1 Check around spark plug base in the cylinder for cracks
  h2 Check spark plug wiring
i Check CHT sensor (if any)
j Exhaust manifold:
  j1 Check the exhaust gaskets for signs of excessive residue, indicating leaks.
  j2 Check the mounting flange nuts for security.
  j3 Check for cracks, holes or signs of exhaust leakage.
  j4 Check EGT sensor (if any)

16 Cylinder #4 (center)
a Check cylinder barrels for oil leaks that would result from a cracked cylinder wall
b Check lower cylinder at juncture of head and barrel for oil or cracks
c Check cylinder hold-down lugs for security.
d Cylinder base for oil leaks
e Check push rod seals for leaking.
f Fuel injected models: Check fuel injection lines and nozzles for security.
g Upper spark plug
  g1 Check around spark plug base in the cylinder for cracks
  g2 Check spark plug wiring
h Lower spark plug
  h1 Check around spark plug base in the cylinder for cracks
  h2 Check spark plug wiring
i Check CHT sensor (if any)
j Exhaust manifold:
  j1 Check the exhaust gaskets for signs of excessive residue, indicating leaks.
  j2 Check the mounting flange nuts for security.
  j3 Check for cracks, holes or signs of exhaust leakage.
  j4 Check EGT sensor (if any)

17 Cylinder #2 (aft)
a Check cylinder barrels for oil leaks that would result from a cracked cylinder wall
b Check lower cylinder at juncture of head and barrel for oil or cracks
c Check cylinder hold-down lugs for security.
d Cylinder base for oil leaks
e Check push rod seals for leaking.
f Fuel injected models: Check fuel injection lines and nozzles for security.
g Upper spark plug
  g1 Check around spark plug base in the cylinder for cracks

g2 Check spark plug wiring

h Lower spark plug
- h1 Check around spark plug base in the cylinder for cracks
- h2 Check spark plug wiring

i Check CHT sensor (if any)

j Exhaust manifold:
- j1 Check the exhaust gaskets for signs of excessive residue, indicating leaks.
- j2 Check the mounting flange nuts for security.
- j3 Check for cracks, holes or signs of exhaust leakage.
- j4 Check EGT sensor (if any)

Note: Cylinder #2 is usually the hottest one.
If there are indications of excessive heat on an engine, it will probably show up here first.

18 Engine baffles
Check the engine baffles for cracks and especially the brace that attaches to the rear cylinder

19 Exhaust manifold
a Check for cracks, holes or signs of exhaust leakage.
b Check the ball joint for undue stiffness. The spring-loaded bolts may be too tight.

20 Exhaust muffler and cabin heater muff:
a Check muffler shell for signs of excessive exhaust residue, indicating leaks.
If present, suggest that the heater body be checked for cracks.
b Check heater muff and shrouds for corrosion or cracks.
c Check condition of front and rear flex ducts attached to the cabin heater muff.
d Inspect the cabin heat valve externally for condition.
e Check control valve for condition and security

21 Tailpipe
a Physically move tailpipe and check that there is some movement.
b Check for rubber grommets on the tailpipe support bracket.
c Check the tailpipe support bracket for condition and wear.
d Check the support brackets that rivet to the firewall for security.
e Check exhaust tailpipe for clearance with keel.
f Look up the tailpipe and check for condition and for presence of the flame cone.
Owner complaints of low heat output can often be because these flame cones are missing.

Note: Flame cones are recommended, but they are not required (ABS July 1973, p. 347).

Note: If the tailpipe is the "short" version (one which ends flush with the belly), Beech can furnish exhaust pipes which are over 4" longer than the original

(part# 35-950133), and these will cut down on noise and eliminate considerable mess on the belly.

s/n D-3726 + : An improved exhaust support link at the firewall support, for the exhaust heater and muffler, is installed to prevent the possibility of support failure due to engine vibration. The 35-950132 link should be installed in older airplanes as a replacement. The 35-950124 and 35-950125 links under the heater and muffler are not used with the new links.

22 Rear engine mount
- a Condition
- b Be sure ground straps are installed between the rear engine mount legs and mount holes.

23 Aft Keel
Check the keel for condition.
Look for excessive oil on top of the aft keel.
If there is, its coming from somewhere. Probably an engine accessory. Find it.

24 Oil return line

25 Oil pan gasket for oil leaks

26 Look for excess oil on forward keel that would denote an oil leak in the forward lower engine.

Right side

1 Nose bug interior
Check the inside of the nose bug for cracks, especially in back of the prop spinner.
Suggest stiffening the area with fiberglass if needed.

2 Visually inspect all structure within the engine compartment for cracks, missing or loose fasteners, and distortion. Check for loose or missing rivets attaching the rear engine mounts to the nosewheel well structure. Check structure between front engine mounts for cracks. Check wheel well skin for cracks.

3 Cowl seals (left): condition

4 Forward engine mount: condition

5 Cylinder #5 (forward)
- a Check cylinder barrels for oil leaks that would result from a cracked cylinder wall
- b Check lower cylinder at juncture of head and barrel for oil or cracks
- c Check cylinder hold-down lugs for security.
- d Cylinder base for oil leaks
- e Check push rod seals for leaking.
- f Fuel injected models: Check fuel injection lines and nozzles for security.

g Upper spark plug
- g1 Check around spark plug base in the cylinder for cracks
- g2 Check spark plug wiring

h Lower spark plug
- h1 Check around spark plug base in the cylinder for cracks
- h2 Check spark plug wiring

i Check CHT sensor (if any)

j Exhaust manifold:
- j1 Check the exhaust gaskets for signs of excessive residue, indicating leaks.
- j2 Check the mounting flange nuts for security.
- j3 Check for cracks, holes or signs of exhaust leakage.
- j4 Check EGT sensor (if any)

6 Cylinder #3 (center)

a Check cylinder barrels for oil leaks that would result from a cracked cylinder wall

b Check lower cylinder at juncture of head and barrel for oil or cracks

c Check cylinder hold-down lugs for security.

d Cylinder base for oil leaks

e Check push rod seals for leaking.

f Fuel injected models: Check fuel injection lines and nozzles for security.

g Upper spark plug
- g1 Check around spark plug base in the cylinder for cracks
- g2 Check spark plug wiring

h Lower spark plug
- h1 Check around spark plug base in the cylinder for cracks
- h2 Check spark plug wiring

i Check CHT sensor (if any)

j Exhaust manifold:
- j1 Check the exhaust gaskets for signs of excessive residue, indicating leaks.
- j2 Check the mounting flange nuts for security.
- j3 Check for cracks, holes or signs of exhaust leakage.
- j4 Check EGT sensor (if any)

7 Cylinder #1 (aft)

a Check cylinder barrels for oil leaks that would result from a cracked cylinder wall

b Check lower cylinder at juncture of head and barrel for oil or cracks

c Check cylinder hold-down lugs for security.

d Cylinder base for oil leaks

e Check push rod seals for leaking.

f Fuel injected models: Check fuel injection lines and nozzles for security.

g Upper spark plug
- g1 Check around spark plug base in the cylinder for cracks
- g2 Check spark plug wiring

h Lower spark plug
- h1 Check around spark plug base in the cylinder for cracks
- h2 Check spark plug wiring

i Check CHT sensor (if any)

j Exhaust manifold:
- j1 Check the exhaust gaskets for signs of excessive residue, indicating leaks.
- j2 Check the mounting flange nuts for security.
- j3 Check for cracks, holes or signs of exhaust leakage.
- j4 Check EGT sensor (if any)

8 Instrument cluster CHT sensor:

Model 35 - B35: Instrument cluster's CHT sensor "should" be on cylinder #3.
Model C35 and later: Instrument cluster's CHT sensor "should" be on cylinder #4.
Who knows where it is now.

9 Engine baffles
Check the engine baffles for cracks and especially the brace that attaches to the rear cylinder

10 Exhaust manifold
a Check for cracks, holes or signs of exhaust leakage.
b Check the ball joint for undue stiffness. The spring-loaded bolts may be too tight.

11 Exhaust muffler:
a Check muffler shell for signs of excessive exhaust residue.

12 Tailpipe
a Physically move tailpipe and check that there is some movement.
b Check for rubber grommets on the tailpipe support bracket.
c Check the tailpipe support bracket for condition and wear.
d Check the support brackets that rivet to the firewall for security.
e Check exhaust tailpipe for clearance with keel.
f Look up the tailpipe and check for condition and for presence of the flame cone.
Owner complaints of low heat output can often be because these flame cones are missing.

Note: Flame cones are recommended, but they are not required (ABS July 1973, p. 347).

Note: If the tailpipe is the "short" version (one which ends flush with the belly), Beech can furnish exhaust pipes which are over 4" longer than the original (part# 35-950133), and these will cut down on noise and eliminate considerable mess on the belly.

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13 Rear engine mount
- a Condition
- b Be sure ground straps are installed between the rear engine mount legs and mount holes.

14 Aft Keel
Check the keel for condition.
Look for excessive oil on top of the aft keel.
If there is, its coming from somewhere. Probably an engine accessory. Find it.

Accessories

1 Ignition harness
- a Check for security and condition.
  Wires should be routed clear of the exhaust system and not lie on the cylinders.
- b Loosen and retighten all connector nuts on the harness to allow fresh ground connections for shields, especially if ignition noise has been a complaint.

2 Magnetos (both together)
Note the position of both magnetos that might indicate improper internal timing

3 Magneto (left):

Eisemann LA-6:
- a Note model & serial number
- b Condition
  Check mounting bolts for security.
  Make sure it isn't mounted upside down! There are drain vents which should point down, not up.
- c Check for oil leaks
  Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak
- d Cooling tube

Bendix-Scintilla S6LN-21:
- a Note model & serial number
- b Condition
  Check mounting bolts for security.
  Make sure it isn't mounted upside down! There are drain vents which should point down, not up.
- c Check for oil leaks
  Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak
- d Cooling tube

Bendix-Scintilla S6RN-25:
- a Note model & serial number
- b Condition
  Check mounting bolts for security.
  Make sure it isn't mounted upside down! There are drain vents which should point down, not up.
- c Check for oil leaks
  Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak
- d Cooling tube

Bendix-Scintilla S6RN-201 or S6RN-205 (D-6562 - D-7931):
- a Note model & serial number

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up. _____

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak _____

d Cooling tube _____

Bendix-Scintilla S6RN-1201 or S6RN-1205 (D-7932 - D-8621):

a Note model & serial number _____

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up. _____

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak _____

d Cooling tube _____

Slick 662 (D-8622, D-8623, others, D-9000 +):

a Note model & serial number _____

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up. _____

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak _____

d Cooling tube _____

4 Magneto (right): _____

Eisemann LA-6:

a Note model & serial number _____

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up. _____

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak _____

d Cooling tube _____

Bendix-Scintilla S6LN-21:

a Note model & serial number _____

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up. _____

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak _____

d Cooling tube _____

Bendix-Scintilla S6RN-25:

a Note model & serial number _____

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up. _____

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak _____

d Cooling tube

Bendix-Scintilla S6RN-201 or S6RN-205 (D-6562 - D-7931):

a Note model & serial number

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up.

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak

d Cooling tube

Bendix-Scintilla S6RN-1201 or S6RN-1205 (D-7932 - D-8621):

a Note model & serial number

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up.

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak

d Cooling tube

Slick 662 (D-8622, D-8623, others, D-9000 +):

a Note model & serial number

b Condition
Check mounting bolts for security.
Make sure it isn't mounted upside down! There are drain vents which should point down, not up.

c Check for oil leaks
Look for drops of oil on the bottom of the magneto which would indicate a magneto oil seal leak

d Cooling tube

5 Starter

Delco-Remy 1109660:
Eclipse E-80:
Eclipse 36E14 :

a Note model & serial number

b Condition
Physically check the starter security to the crankcase.

c Check for oil leaks.
A drop of oil on the bottom aft end of the case would indicate a starter seal leak.

6 Generator

Delco-Remy 1101879 (25A):
Delco-Remy 1101887 (35A):
Delco-Remy 1101908 (50A):

a Note model & serial number

b Condition

c Check for oil leaks
Check for oil leaks and security. An oil leak may mean a defective or worn seal.
Wipe or wash off any oil seepage at pinion gear shaft in starter adapter.
Should the leather washer ever need replacing on this shaft, replace only with a washer designed for the starter.

d Cooling tube

e Rear bearing
The generator's rear bearing, although prelubricated and sealed, is still vulnerable to water entering the bearing and eventually rust the bearing.
An aluminum cover plate may be fabricated to reduce water invasion.
See ABS Mag. Jan 1992, pg. 2917.
Hey, even some duct or aluminum tape is better than nothing...

7 Tachometer drive adapter
Tighten (or at least check tightness) of the tachometer drive cable.

8 Hartzell HC12X20 prop pitch governor:
a Note model & serial number
b (unknown)

9 Hartzell HC-A3VF-4 prop pitch governor:
a Note model & serial number
b (unknown)

10 Fuel pump
Thompson TF-1900 fuel pump:
a Note model & serial number
b Look for fuel stains (red=80 octane, blue=100LL, green=100 octane) that would reveal a ruptured rubber diaphragm.
A sniff or two will also reveal if there is fuel leaking in the engine compartment.
Lear-Romec RD 7750-1 fuel pump:
a Note model & serial number
b Look for fuel stains (red=80 octane, blue=100LL, green=100 octane) that would reveal a ruptured rubber diaphragm.
A sniff or two will also reveal if there is fuel leaking in the engine compartment.
Lear-Romec RD 7790 fuel pump:
a Note model & serial number
b Look for fuel stains (red=80 octane, blue=100LL, green=100 octane) that would reveal a ruptured rubber diaphragm.
A sniff or two will also reveal if there is fuel leaking in the engine compartment.

11 Electric fuel boost pump (Dukes?):
a Note model & serial number
b O-ring
There is an o-ring at the fuel boost pump quick-drain.
If it goes bad, both the mechanical and boost pump would not be able to supply fuel to the engine.
Replace the $1.00 o-ring every annual. (part# unknown)
c Check for oil leaks
Look for drops of oil on the bottom of the case which would indicate an oil seal leak

12 Instrument air pump
Garwin G450 "wet" instrument pump:
a Note model & serial number
b Condition

Pesco 3P-194F "wet" instrument pump:
a Note model & serial number _____
b Condition _____

Rapco 211CC "Dry" Instrument vacuum pump:
a Note model & serial number _____
b Condition _____

"Dry" Instrument pressure pump:
a Note model & serial number _____
b Condition _____

13 Oil screen / filter
a Condition _____
b Check the adapter base for oil leaks. _____
c Check the oil filter itself for oil leaks. _____

14 Oil filler cap _____

15 Oil cooler tank
a Check condition and cleanliness of tank. _____
b Check for oil leaks. _____
c Check oil tank drain plug. _____

16 Brake fluid reservoir
a Check condition of reservoir. _____
b Placard check _____

BRAKE FLUID
TO REFILL AND BLEED BRAKES
SEE INSTRUCTION MANUAL

17 Cabin air shutoff control _____

18 Flex ducting: carb heat _____

19 Flex ducting: cool air to cabin _____

20 Cabin heat controls _____

21 Flex ducting: warm air to cabin _____

22 Kidney plate _____

23 Starter solenoid
Check for the presence of rubber boots over the connections to prevent arcing and corrosion. Check for water corrosion, too. _____

24 Vacuum pump regulator
Check the screen underneath to make sure it isn't clogged or torn. _____

25 Air / oil separator
- a Condition
- b Oil separator drain hose
- c Examine the drain hose exhaust pipe. The drain tube should end flush with the closed cowl flap, or about 3/4" inside. If it sticks out too far, it can create a suction, pulling the oil out of the separator. The first 45 minutes fills up the air/oil separator, then starts pulling oil out at the rate of about 1 quart per hour.

26 Firewall
Check the firewall for open holes, or holes (improperly) filled with putty.

27 Battery box:
- a Door - condition
- b Interior – condition
  Check for scratches to the bare metal and/or holes in the acid-resistant paint.
  If there are holes, battery acid can drip on the circuit breakers and wiring underneath.
- c Wiring – condition
  Check for signs of arcing near the terminals.
- d Vent lines

28 Battery
- a Condition

29 Fuel lines (general)
- a Condition
  Look at lines for condition and clearance, or signs of chafing.
  Check for abrasion and kinks in small-diameter tubing near the firewall and carburetor in the nosewheel well skin areas.
  "I insist on replacing the 3/8" diameter fuel line between the engine-driven fuel pump and carburetor with a high pressure Aeroquip hose. I have seen several cracked." Harold Clark

30 Oil lines (general)
- a Condition
  Look at lines for condition and clearance, or signs of chafing.
  Check for abrasion and kinks in small-diameter tubing near the firewall and carburetor in the nosewheel well skin areas.

31 Ducting (general)
- a Condition
  Look at lines for condition and clearance, or signs of chafing.

32 Metal lines (general)
- a Condition
  Look at lines for condition and clearance, or signs of chafing.

33 Wiring (general)
- a Condition
  Look at wiring for condition and clearance, or signs of chafing.

34 Hose clamps (general)
- a Condition
  Check all hose clamps for security and tightness.

35 Cowl flaps
- a Check cowl flaps for condition and fit.
- b Check cowl flaps (in closed position) for clearance with exhaust tailpipe
- c Check cowl flap hinges for condition.
  Hinges should be riveted tight to the flap, and hinge bolts should be snug so as to eliminate "working". You may wish to use exhaust manifold bolt springs to reduce wear in the cowl flap hinges. Hinge bolts will wear, and bolt holes may become oversized. If new bolts don't remove play, enlarge bolt holes to 1/4" and install 1/4" aircraft quality bolts.
- d Close the cowl flaps and note cowl flap control linkage rig.
  The rod to the cowl flap should "split" the cross shaft hole with the cowl flaps closed.
- e Check the cowl flap door actuator rods for looseness, wear and security.

Behind kidney plate

Remove kidney plate

1 Wiring (general)
- a Condition
  Look at wiring for condition and clearance, or signs of chafing.
  Especially check the wiring that goes over the control yoke column for chafing or contact with the column.

2 Engine instrument cluster lines
- a Check the oil pressure gauge line for chafing, cracks and leaks
- b Check the oil temperature line for chafing, cracks and leaks
- c Check the fuel pressure line for chafing, cracks and leaks
- d A sniff or two should detect any fuel leaks

Note: If you are installing or removing the instrument cluster, be very careful.
It is *very* easy to damage the instruments or sensor lines.

3 Defroster and heating ducts
Look at ducting for condition and clearance, or signs of chafing.

4 Instrument vacuum hose
Check the hoses for condition and clearance, or signs of chafing

5 Instrument vacuum filter
- a Condition
- b Date / tach of last replacement
- c Replace instrument filter every 250 hrs.
  On models that use a "dry" instrument air pump, note the induction air filter.
  If it is the Styrofoam garter type, suggest it be replaced with the pleated paper type.
  If replaced, write the Tach reading on filter.

6 Radio equipment
- a Check mounting hardware for security and possible chafing of other lines
- b Check wiring harnesses for condition, security and chafing

7 Control yoke
- a Check freedom of movement and rollers
- b Lubricate differential control arms every 100 hrs.
- c Lubricate differential control column every 100 hrs.

Cabin

Dashboard Area

1 Control wheel
- a Move the control in and out.
  Check for free movement and side play.
  If the movement feels "rough" or "gritty", then there probably is grime built up on the control yoke shaft, or on the three sets of nylon idler wheels behind the dash.
  (If so, see "g" below)
- b Turn the control wheel left and right, looking for too-tight a chain inside the control arm.
  If it is, you will feel each chain link as it passes over each sprocket tooth.
- c Turn the yoke again. -- see if they feel "sticky."
  If they do, try spraying brake degreaser onto the aileron hinges and rod ball ends while exercising the control surface to get rid of the old gunk and grit. Clean out the residual grease and dirt dislodged by the degreaser with paper towels. Relubricate the hinges and ball ends with SAE 20 wt oil.
- d Turn the yoke again.-- listen for scraping or sawing sounds.
  If there is, it may indicate fairlead problems.
- e Turn the yoke again.-- check aileron movement.
  Make sure the ailerons are not cross-controlled (you never know).
- f Level the control wheel.
  Note if the aileron inboard trailing edge is aligned with the outboard flap trailing edge.
- g Remove the yoke and the aluminum collar around the yoke shaft to gain access to the yoke column and nylon idler wheels. Clean off the grime using a good cleaner, and relubricate the idler wheels.

  NOTE: Place a dropcloth or some newspaper on the floor to catch any dripping oil or grease.
- h Lubricate the control column linkage every 100 hrs.
- i Lubricate the control column head every 100 hrs.
- j Lubricate the control column aileron link every 100 hrs.
- k Lubricate the aileron control linkage every 100 hrs.

2 Elevator trim
- a Check trim tabs for proper operation and travel

b Ensure trim tabs are neutral when indicator is neutral
c Lubricate trim tab wheel every 100 hrs
d Lubricate trim tab linkage every 100 hrs.

3 Aileron trim
Model 35 - D35:
(No aileron trim)
Model E35 and later:
a Ensure ailerons are neutral when aileron trim knob is neutral.
b Check aileron trim for proper operation and travel.

4 Rudder pedals
a Move the pedals back and forth. -- Listen for scraping or sawing sounds
If there is, it may indicate fairlead problems.
b Move the pedals back and forth -- check ruddervator movement.
Make sure they are not cross-controlled (you never know).
c Move the pedals back and forth --
Check for proper nosewheel steering operation, too.

5 Windshield

6 Windshield defroster vents

7 Dashboard / glare shield

8 Sun visors
a Left visor: condition and proper operation
b Right visor: condition and proper operation

9 Overhead cabin air exhaust vent
a Condition and proper operation
If the vent seems noisy, you can stuff it with some Brackett air filter foam bits to hush it up.

10 Check all instruments for condition and proper marking
a Outside air temperature gauge
b Magnetic compass
b1 Fluid level
b2 Placard check
b3 Placard check - compass correction card

```
For:   0 - 60 - 90 - 120 - 150 - 180 - 210 - 240 - 270 - 300 - 330
Steer: __ - __ - __ - ___ - ___ - ___ - ___ - ___ - ___ - ___ - ___
```

b4 Instrument panel - placard check.
Registration:

```
Bonanza N00000
```

c 3-light marker beacon

d Audio panel switches
- d1 Transmit select
- d2 Radio-1
- d3 Radio-2
- d4 Marker beacon

e Radio-1 VOR indicator

f Airspeed indicator

Settings (Mph):	White arc:	Green arc:	Yellow arc:	Redline:
35:	55-100	64-160	160-202	202
A35:	55-105	66-160	160-202	202
B35:	55-105	66-160	160-202	202
C35:	55-105	66-160	160-202	202
D35:	55-105	66-160	160-202	202
E35:	55-105	60-175	175-202	202
E35: (Kts)	48-91	57-152	152-176	176
F35:	55-105	60-175	175-202	202
G35:	(unknown)			

g Artificial horizon

h Altimeter
- h1 Condition
- h2 Altimeter check -- expiration date is:

i Rate-of-climb

j Manifold pressure

Settings (" Hg):	Min:	Green:	Yellow:	Redline:
35:	15.0	15.0-26.5	26.5-29.6	29.6
A35:	15.0	15.0-26.5	26.5-29.6	29.6
B35:	15.0	15.0-26.5	26.5-29.6	29.6
C35:	15.0	15.0-26.5	26.5-29.6	29.6
D35:	15.0	15.0-26.5	26.5-29.6	29.6
E35:	15.0	15.0-26.5	26.5-29.6	29.6
F35:	15.0	15.0-26.5	26.5-29.6	29.6
G35:	15.0	15.0-26.5	26.5-29.6	29.6

k Tachometer

Settings (rpm):	Min:	Green:	Yellow:	Redline:
Beech R200-series (wood) prop:				
35 (E185-1/E185-8):	1300	1300-2050	2050-2300	2300
A35 (E185-1/E185-8):	1300	1300-2050	2050-2300	2300
Beech B200-series (wood) prop:				
B35 (E185-8):	1300	1300-2050	2050-2450	2450
Beech 215-series (aluminum) prop:				
35 (E185-1/E185-8):	1750	1750-2050	2050-2300	2300
A35 (E185-1/E185-8):	1750	1750-2050	2050-2300	2300
B35 (E185-8):	1750	1750-2050	2050-2450	2450
C35 (E185-11):	1750	1750-2300	2300-2600	2600
D35 (E185-11):	1750	1750-2300	2300-2600	2600
E35 (E185-11):	1750	1750-2300	2300-2600	2600
E35 (E225-8):	1750	1750-2300	2300-2650	2650
F35 (E185-11):	1750	1750-2300	2300-2600	2600
F35 (E225-8):	1750	1750-2300	2300-2650	2650
G35 (E225-8):	1750	1750-2300	2300-2650	2650
Hartzell HC12X20 prop:				
35 (E185-1/E185-8):	1900	1900-2300	2300	2300
A35 (E185-1/E185-8):	1900	1900-2300	2300	2300
B35 (E185-8):	1900	1900-2300	2300-2450	2450
C35 (E185-11):	1900	1900-2300	2300-2600	2600
D35 (E185-11):	1900	1900-2300	2300-2600	2600
E35 (E185-11):	1900	1900-2300	2300-2600	2600
E35 (E225-8):	1900	1900-2300	2300-2600	2600
F35 (E185-11):	1900	1900-2300	2300-2600	2600
F35 (E225-8):	1900	1900-2300	2300-2600	2600
G35 (E225-8):	1900	1900-2300	2300-2600	2600
Hartzell HC-A3VF-4 ("heavy blade") 3-blade prop:				
(unknown)				

l Radio-2 VOR indicator

m Instrument suction gauge

Settings (" Hg):	Min:	Green:	Redline:
35:	3.75	3.75-4.25	4.60
A35:	3.75	3.75-4.25	4.60
B35:	3.75	3.75-4.25	4.60
C35:	3.75	3.75-4.25	4.60
D35:	3.75	3.75-4.25	4.60
E35:	3.75	3.75-4.25	4.60
F35:	3.75	3.75-4.25	4.60
G35:	3.75	3.75-4.25	4.60

n Radio stack
- n1 GPS
- n2 Radio-1
- n3 Radio-2

o Turn and bank

p Gyro compass

q Instrument cluster
- q1 Fuel gauge

Also check for proper markings per AD 72-11-02.

q2 Oil temperature gauge

Settings (deg.):	Yellow:	Green:	Redline:
35:	100	100-225	225
A35:	100	100-225	225
B35:	100	100-225	225
C35:	100	100-225	225
D35:	100	100-225	225
E35:	100	100-225	225
F35:	100	100-225	225
G35:	100	100-225	225

q3 Oil pressure gauge

Settings (psi.):	Min:	Green:	Redline:
35:	30	30-60	80
A35:	30	30-60	80
B35:	30	30-60	80
C35:	30	30-60	80
D35:	30	30-60	80
E35:	30	30-60	80
F35:	30	30-60	80
G35:	30	30-60	80

Note: Minimum idling oil pressure is 8 lbs.

q4 Fuel pressure gauge

Settings (psi.):	Min:	Green:	Redline:
35:	9	11-15	15
A35:	9	11-15	15
B35:	9	11-15	15
C35:	9	11-15	15
D35:	9	11-15	15
E35:	9	11-15	15
F35:	9	11-15	15
G35:	9	11-15	15

q5 Cylinder head temperature gauge

Settings (deg.):	Min:	Green:	Redline:
35:	300	300-525	525
A35:	300	300-525	525
B35:	300	300-525	525
C35:	300	300-525	525
D35:	300	300-525	525
E35:	300	300-525	525
F35:	300	300-525	525
G35:	300	300-525	525

q6 Ammeter

r Engine Analyzer

s 8-day clock

11 Piano key switches

Ensure that the switches are properly labeled

a (blank)

b RADIO (ON / OFF)

c FUEL GAGE (AUX / MAINS) _____
d FUEL GAGE (LEFT / RIGHT) _____
e (blank - lock for flaps switch) _____
f FLAPS (UP / OFF / DOWN) _____
g (blank) _____

- - center console - -

h (blank - lock for landing gear switch) _____
i LANDING GEAR (UP / DOWN) _____
j LEFT LANDING LIGHT (ON / OFF) _____
k RIGHT LANDING LIGHT (ON / OFF) _____
l NAVIGATION LIGHTS (ON / OFF) _____
m ROTATING BEACON (ON / OFF) _____
n (blank) _____

12 Map compartment door (left side)
a Transponder
a1 Condition _____
a2 Transponder check -- expiration date is _____
b Intercom _____
c Strobe light (ON / OFF) _____
d Taxi light (ON / OFF) _____
e (blank – spare switch space) _____
f Radio Master circuit breaker _____

13 Cowl flaps handle
a Inspect cable for condition and security. _____
b Check for freedom of movement and correct travel. _____
c Lubricate the cable every 5 years or so _____

14 Carburetor heat handle
a Inspect cable for condition and security. _____
b Check for freedom of movement and correct travel. _____
c Lubricate the cable every 5 years or so _____

15 Engine starter button _____

16 Mixture control knob
a Inspect cable for condition and security. _____
b Check for freedom of movement and correct travel. _____
c Tighten the Phillips head screw in the knob _____
d Lubricate the cable every 5 years or so _____

17 Center Console
a Flaps indicator lights
Upper = Green
Lower = Red _____

b Beech electric prop:
- b1 Propeller pitch control knob (prop governors only)
- b2 Propeller pitch control switch

c Landing gear indicator lights
Upper = Red
Lower = Green

d Instrument lights dimmer knob

e Throttle
- e1 Inspect cable for condition and security.
- e2 Check for freedom of movement and correct travel.
- e3 Check condition of wires (2) attached to microswitch on throttle cable aft of carburetor (landing gear warning horn circuit).
- e4 Lubricate the cable every 5 years or so.

f Ignition key / magnetos switch

g Fuel primer button

18 Cigar lighter

19 Pitot heat knob

20 Air conditioner handle
- a Inspect cable for condition and security.
- b Check for freedom of movement and correct travel.
- c Lubricate the cable every 5 years or so

21 Cabin heat handle
- a Inspect cable for condition and security.
- b Check for freedom of movement and correct travel.
- c Lubricate the cable every 5 years or so

22 22. Circuit breaker door (right side)
a Placard check :

Push to reset circuit breakers												
BAT	GEN	LDG GEAR	PROP PITCH	TURN BANK	FLAP	INST LAMP	LEFT LDG LIGHT	RIGHT LDG LIGHT	AUTO PROP CTRL	NAV LIGHT	ROT BCN	VENT SHUTOF

23 Circuit breaker vent cutoff knob
- a Inspect cable for condition and security.
- b Check for freedom of movement and correct travel.
- c Placard check

Pull to close in case of smoke or fire

- d Lubricate the cable every 5 years or so

24 Check to ensure all switches are properly labeled

25 Pitot / static system air check
- a Expiration date is: _____
- b Perform pitot / static check as necessary _____

26 Circuit breakers and misc. under the dash

Front Seat Area

1 Storm window
- a Check handle and lock _____
- b Open window to check ease of opening _____
- c Check weatherstripping while window is open _____
- d Placard check _____

> **CAUTION**
> **Do not open above 145 Mph (126 Kts)**

- e Fuselage sidewall under storm window _____
- a Placard check 2 _____

> **UTILITY CATEGORY AIRPLANE**
> **Operate in accordance with FAA approved airplane flight manual**
>
> **INTENTIONAL SPINS PROHIBITED**
> **No acrobatic maneuvers approved execpt those listed**
> **in the airplane flight manual**

- b Placard check _____

> **Turning takeoffs and takeoff immediately following fast taxi turn prohibited.**
> **Avoid prolonged slips (20 seconds or more) with fuel tanks less than half full.**

- c Placard check _____

> **Do not take off if fuel quantity gauges indicate in yellow band**
> **or with less than 13 gallons in each wing tank.**

- d Placard check _____

> **EMERGENCY LANDING GEAR**
> **INSTRUCTIONS TO EXTEND**
>
> **Engage handle in rear of front seat and turn counterclockwise**
> **as far as possible (50 turns)**

2 Cabin ankle vent (left): proper operation _____

3 Aux static air valve _____
- a Proper operation _____
- b Placard check _____

> **Open for Emergency Static Air Port**

4 **s/n D-3185 + :**
Cabin ankle vent (right): proper operation _____

5 Fuel selector / Wobble (auxiliary fuel) pump

a Fuel Selector:

a1 Condition

It should operate smoothly, and each tank position should have a smooth but definite detent.

The fuel selector will become hard to turn with age or lack of use.

Hopefully, a few rotations will free it up. Try pulling *up* to loosen the conical valve if necessary.

Do not try to "fix" the fuel selector valve if it is working reasonably easy - it is extremely difficult to service.

a2 Lubricate fuel selector valve every 100 hrs.

b Wobble pump

b1 Condition

Move the selector to a nonempty fuel tank position and pump. Verify that pumping produces a pressure reading.

b2 Check for excessive play and looseness.

b3 Placard check

with no aux. tank:

OFF

L.H. Tank 17.5 Gals **R.H. Tank 17.5 Gals**

(option) 10 gallon aux. tank:

OFF

L.H. Tank 17.5 Gals (Use First) **R.H. Tank 17.5 Gals**

Aux. Tank 10 Gals Level Flight Only

(option) 20 gallon aux. tank:

OFF

L.H. Tank 17.5 Gals (Use First) **R.H. Tank 17.5 Gals**

Aux. Tank 20 Gals Level Flight Only

b4 Placard check 2

EMERGENCY FUEL PUMP

b5 Placard check 3

(no longer required - AD withdrawn)

WARNING
POSITION SELECTOR IN DETENTS ONLY
NO FUEL FLOW TO ENGINE BETWEEN DETENTS

b6 Lubricate wobble pump every 100 hrs.

6 Fire extinguisher

a Condition

b Expiration date is: _____

7 Overhead console
a Condition _____
b Forward cabin light (red lens) _____
c Rear cabin light (white lens) _____

8 Front seat (left):
a Recline adjustment _____
b Seat belt for proper operation _____

9 Front seat (right):
a Recline adjustment _____
b Seat belt for proper operation _____

10 Cabin door
a Placard check _____

Rotate handle to full locked position

b Placard check _____

WARNING
Verify door is latched before takeoff

c Placard check _____

WARNING
Verify door is latched before takeoff

d Placard check _____

Open storm window
to relieve pressure
when closing door

Close and latch
door before leaving
airplane

Do not allow door
to swing in wind

Do not use top of
door as handhold

Floor Area

Remove front seats
Remove front floorboard
1 Rudder bellcrank and linkage _____

2 Rudder pedals (left)
a Check to insure both pedals are in the same adjustment hole _____
b Check the rudder pedal / brake pivot holes for elongation.
The bolt holes in the rudder pedal arms may be worn and/or slotted quite badly on high-time airplanes (> 3,000 hrs).

Determine if the pivot holes are "slotted" by moving the brake pedal by hand and observing looseness.

c Lubricate rudder pedals every 100 hrs.

3 Left side master brake cylinders

a Check condition

b Check for boots over the tops of the brake cylinders.
If there are none, suggest they be installed to keep dirt and dust out.

c Check the top surface for hydraulic fluid leakage.

4 Landing gear position indicator

5 Rudder pedals (right)

a Check to insure both pedals are in the same adjustment hole

b Check the rudder pedal / brake pivot holes for elongation.
The bolt holes in the rudder pedal arms may be worn and/or slotted quite badly on high-time airplanes (> 3,000 hrs).
Determine if the pivot holes are "slotted" by moving the brake pedal by hand and observing looseness.

c Lubricate rudder pedals every 100 hrs.

6 (option) Left side master brake cylinders

a Check condition

b Check for boots over the tops of the brake cylinders.
If there are none, suggest they be installed to keep dirt and dust out.

c Check the top surface for hydraulic fluid leakage.

7 Cables and pulleys

8 Landing gear pushrods
Make sure there are canvas or plastic material covers around the pushrods.

9 Aileron cable tension

Settings:	Min:	Max:
@ 70º	38 lbs	43 lbs

Cable tension is:

10 Flap motor:

a Note model & serial number

b Condition

11 Flap motor gearbox

a Condition

b Lubricate the gearbox every 250 hrs.
As long as the flap motor gearbox doesn't leak grease, leave it alone.

12 Flap motor drive cables

a Left cable - condition

b Right cable - condition

c Lubricate the flex cable every 250 hrs.
This part is often overlooked. Don't take it apart, just add a little lube to the shaft.

13 Landing gear actuator

a Condition
The landing gear actuator gearbox cannot be properly overhauled in the field. If it needs service, it must be sent to Beech.

b Check oil level
The oil should come up to the bottom of the gear teeth.
If it needs oil (which is unlikely), you *must* use Mobil 636.
Any other oil is an expensive mistake!

c Gearbox actuator arms
Lubricate the landing gear actuator every 250 hrs.

d Landing gear retraction motor:
d1 Note model & serial number
d2 Condition

e Landing gear limit switches
Model 35:
(Landing gear limit switches are located in a belly access panel)
Model A35 and later:
e1 Condition
e2 Lube the limit switches with a spray lubricant

Rear Seat Area

1 Emergency gear extension handle

a Check the emergency gear extension handle casting for proper angle of attachment.

b Handle cover - placard check

LANDING GEAR EMERGENCY HAND CRANK

c Look for oil stains on the carpet below the emergency hand crank.
If oil is present, squawk the oil level in the landing gear gearbox - it is too full.

2 Overhead console

a Cabin light (rear light = white)

3 Rear window (left):

a Check handle and lock

b Open window to check ease of opening

c Pull emergency pin and check opening again for proper operation

d Check weatherstripping while window is open

e Placard check

DO NOT OPEN IN FLIGHT

f Placard check

EMERGENCY EXIT
Lift latch - Pull pin - Push window out

4 Rear seat:
a Recline adjustment

5 Rear seat (left):
a Seat belt for proper operation

6 Rear seat (right):
a Seat belt for proper operation

7 Belly exhaust vent shutoff
Model 35 - B35:
a Does not apply
Model C35 -and later:
a Condition
Note: Belly exhaust vent shutoff removed if 10 gal. baggage aux tank installed.

8 Rear window (right):
a Check handle and lock
b Open window to check ease of opening
c Pull emergency pin and check opening again for proper operation
d Check weatherstripping while window is open
e Placard check

DO NOT OPEN IN FLIGHT

f Placard check

EMERGENCY EXIT **Lift latch - Pull pin - Push window out**

Baggage Compartment and Tail Section

1 Air conditioner unit:

If the customer complains of a musty odor in the cabin it is probably due to mold or mildew in the water tank of the air conditioner unit.

a Drain water tank
At least twice a year the air conditioner should be drained to remove dirt and other foreign particles from the water tank (wick box), drain line, and overflow lines. Open the drain valve and allow all water to drain.

b Remove water tank
Disconnect the drain and overflow lines, and unsnap the four fasteners holding the water tank.

c Wick plates

c1 Condition

c2 Remove the baffle from the wick assembly.
Inspect the wicks for the presence of mineral deposits. If tap water has been used in the air conditioner continuously, the drains and wicks may be clogged with salts and mineral deposits.
The wicks should be flushed with, or soaked in distilled water.

c3 Reinstall water tank
Reinstall the wick assembly into the water tank (wick box).

Reconnect the drain and overflow lines and reinstall the water tank.
Close the drain valve.

c4 Refill water tank
Refill the air conditioner (through the top clamshell scoop) with 1 tsp. of chlorine bleach (to kill bacteria) and then 2-3 quarts distilled water (not just bottled water or tap water). Fill slowly. About two quarts must be absorbed by the wicks.

2 Baggage door
There are several placards for the baggage area.
I have no way of knowing which placard is required (if any).

a Placard check

WARNING
This airplane is easily loaded beyond aft CG limits.
Weight and CG must be within limits for each flight.
Refer to pilots operating handbook.

b Placard check

WARNING
DO NOT CARRY CHILDREN IN THE BAGGAGE COMPARTMENT

c Placard check

WARNING
DO NOT CARRY HAZARDOUS MATERIAL

d Placard check

CAUTION
To prevent shifting of baggage or other objects
they should be secured by straps or other suitable means

e Placard check - no aux tank

BAGGAGE COMPARTMENT
Load in accordance with loading chart in airplane flight manual

Maximum capacity - 270 pounds

f Placard check - 10 gal aux tank

BAGGAGE COMPARTMENT
Load in accordance with loading chart in airplane flight manual

Maximum capacity - 258 pounds

g **Placard check** - 20 gal aux tank

BAGGAGE COMPARTMENT
Load in accordance with loading chart in airplane flight manual

Maximum capacity - 250 pounds

3 Static air line

a Access cover

b Static air line condition

c Static line water drain
The drain is located on the left sidewall of the baggage compartment.
Drain this during the annual inspection by first opening the static line at the aux static source (at the pilot's left knee). Then, drain the water from the plastic trap. Otherwise, the sealed air in the line will not let the water drain out.

Remove aft bulkhead panel

Be careful of the air conditioner water drain hoses which are attached to the drain valve

4 Cables and pulleys _____

5 Cleanliness _____

6 Air conditioner water drain hoses
- a Overall condition _____
- b Drain valve - proper operation _____
- c Drain spout on belly - condition _____

7 Passenger assist step retract mechanism
- a Overall condition _____
- b Check cable for frayed ends _____
- c Check bungee cord for looseness, which may mean it is time for replacement. You may wish to consider using door closing springs instead of bungees, as they will not sag with age as badly. _____
- d Put a few drops of oil in the cable's conduit. Do not lube the assist step itself. It will simply get the extension bar (and your clothes) greasy. _____

8 Emergency Locator Transmitter (ELT)
- a Security _____
- b Antenna cable _____
- c ELT battery expiration date is: _____
- d Replace battery if necessary _____
- e ELT test Tests may be done within the first five minutes after the hour (3-4 beeps only). _____

9 Upper anti-collision light housing (rotating beacon) _____

10 Lower anti-collision light housing (strobe light) _____

11 Tailcone - condition _____

Systems Tests

Gear Retraction Test

Additional inspection of the landing gear is done at “Nose Gear” on page 28, “Main Gear - Left” on page 32, and “Main Gear - Right” on page 37.

Pre-retraction Check

Start with the plane on the ground

You may want to connect the battery to supplemental ground power for the test.

Master switch on - check:
Battery switch on - check:
Turn key to "Batt" - check:

1 Floor gear position indicator: "DOWN" _____

2 Center console Gear position indicator light: green _____

3 Gear box for security _____

4 Check that the assist step is properly extended _____

Master switch off - check:
Battery switch off - check:

Put the plane up on jacks (gear is extended)

5 Squat switch check _____
Depress the squat switch.
Attempt to retract the gear – It shouldn't but watch out on this one!

Go to the cockpit, and pull the landing gear circuit breaker.

6 Engage the emergency hand crank, and turn it counter-clockwise. _____
It should turn 1/8 to 1/4 turn before the sector gear inside the landing gear box hits the internal stop.
If there is no travel, squawk that the landing gear motor dynamic brake is not working, or landing gear limits are improperly set.

Retract the landing gear with the emergency hand crank for 20 turns only.
This will open the main gear inner doors, but will not start moving the gear yet or load the system.

DO NOT USE THE EMERGENCY CRANK TO RAISE THE GEAR!
YOU MAY DAMAGE THE GEARBOX TEETH.

Gear Partially Retracted - Nosewheel

1 Nosewheel strut
- a Turn the strut & nosewheel. Note resistance to turn. _____
  If the strut turns hard,
  - a1 Check bolt torque on the shimmy dampener clevis bolt and on the shimmy dampener attach bolt. _____
  - a2 If bolt tension is good, check for a bent shimmy dampener piston shaft.
    To check for a bent shaft, remove the bolt from the clevis end of the shimmy

dampener piston rod and move the piston rod fore and aft. If the rod binds, its bent.

If the strut turns too easy,

a3 The shimmy dampener's piston is probably sheared, allowing it to "float" on the rod. Overhaul the shimmy dampener.

b Turn the strut & nosewheel (again).
You should see no flexing or looseness in the torque knee hinge joints. There must be virtually no play in the center joint where the upper and lower torque knees come together. The center joint is most critical. Even a small amount of looseness here causes considerable looseness in the nose wheel steering, and it rapidly accelerates wear at this joint.

One of the nose gear torque knees is steel, while the other is aluminum. A steel bushing passes through the centerjoint, and a single AN4-12 bolt holds this critical joint together. This design can lead to problems with normal wear. It is imperative that the thru bolt be kept properly torqued. If it is allowed to become loose, the torque knees will wobble. The aluminum knee takes most of the wear. It's machined hole quickly becomes elongated and oversized to the point where play in the joint cannot be eliminated. Another problem is that at the hinge point, the face of the aluminum and steel knees meet; separated by a steel washer. Over time, the face of the aluminum part wears, reducing it's thickness. The wear will reach a point where the stackup of the torque knees and washers is shorter than the steel bushing. When this happens, the bolt will tighten against the bushing, rather than the torque knee stackup. The result is that all play cannot be eliminated. The wear in the hole of the aluminum knee previously described will occur if this condition is not corrected.

c Check the nose gear for strut piston wear by pushing aft on the nose strut.
If the axle will move fore and aft more than 3/8", then squawk for barrel bearing wear.

d Push aft on the partially retracted strut (again).
Watch the strut hinge bolts. If they move or rotate with the strut, they are loose.

e Push aft on the nose strut (again).
Check for wear in the lift leg attach bushing at the strut.

f Push aft on the nose strut (again).
Check for wear in the retract rod hinge bolts in the keel.

g Push aft on the nose strut (again).
Check the right-hand door gear lift hinge bolt.
If the hinge bolt moves up and down, bolt tension is loose or its bushing is worn.

h Push aft on the nose strut (again).
If the main gear jumps, it would indicate wear in the landing gear actuator gearbox's sector teeth or the worm gear drive has excessive end play.

The landing gear actuator gearbox cannot be properly overhauled in the field. It must be sent to Beech.

i Rock the nose gear fore and aft.
Look for excessive play in the retract rod.

2 Nosewheel

a Spin the wheel to see if the tire is out-of-round.
If it is, it can cause nosewheel shimmy problems. You may want to replace the tire.

b Spin the wheel (again) and see how the wheel comes to a stop.
Check for a heavy spot on the tire (out of balance).
If it is out of balance, rebalance the tire.

If the owner complains of taxiing vibration, this is usually the culprit.

c Spin the wheel (again) and listen to the bearings.
If it needs grease or if the bearings are rough, you can hear them.

3 Check rod end bearing at the idler arm location.
If play is noted, investigate further because the rod end may be stretched or broken.

4 Nose gear actuator rods
a Inspect the nose gear actuator rod boot at the firewall for condition.
b Check the nose gear door actuating rods for bends and wear.

5 Nosewheel gear brace joint down-tension
Slightly move the hinge joint of the two pieces of the 45-degree brace.
The applied foce should be:

Settings:	min:	max:
	45 lbs	65 lbs

Brace tension is:

6 Nosewheel actuating rod slip joint down-tension
It should take a perpendicular force directly applied to the knee joint to slightly move the joint. The applied foce should be:

Settings:	min:	max:	
D-1 - D3750:	35 lbs	45 lbs	(up to 3 washers are permitted)
D-3751 and later:	45 lbs	65 lbs	(no washers permitted)

Slip joint tension is:

7 Check the nose gear door hinges for bends and wear.

8 Check the tab on the lift leg that actuates the nose gear doors.
a Check the cross pin for wear.
b Check the tab base for possible cracks.

9 Check the cowl flap door actuator rods for wear and security.
Reach up in the wheel well and actuate the nose gear door actuator that turns on the cowl flap cross shaft in the keel.
This shaft should move freely and its spring should snap the shaft back in a positive manner.
If the nose gear jams up in the nose gear doors during gear retraction, it is the cross shaft just mentioned that is bent or binding, or its spring is broken.

Gear Partially Retracted - Left Main Wheel Well

1 Landing gear wheel well
Look the wheel well area over for:
a Fuel stains
b Chafing fuel lines
c Brake lines
d Electrical wires

2 Main gear outer door
(Checked previously)

3 Main gear inner door
- a Condition
- b Weatherstripping
- c Hinges, linkage and attachment
- d Lubricate inboard door hinges every 100 hrs.
- e Dust cover / patch
  The patches keep dirt and mud out of the inner door lightening holes, which reduces the probability of corrosion.
  If they are not there, use heavy-duty fabric duct tape (not the cheapie plastic) for dust cover patch material.
- f Placard check

  IMPORTANT
  INSTALL DOOR
  LINK ROD BOLT
  WITH HEAD AFT
- g Note wing serial number at wing root

4 Main gear wheel & tire
- a Spin the wheel to see if the tire is out-of-round.
  If it is, consider replacing the tire.
- b Spin the wheel (again) and see how the wheel comes to a stop.
  Check for a heavy spot on the tire (out of balance).
  If it is out of balance, rebalance the tire.
- c Spin the wheel (again) and listen to the bearings.
  If it needs grease or if the bearings are rough, you can hear them.

5 Check brake disc for condition and warpage.

6 Check for condition of brake hose at strut to caliper.
Brake hose should, when extended, have only a slight bend in them.

7 Check for fluid leak at strut piston.

8 Check for lower barrel bushing and torque knee bushing wear.

9 Lift strut and observe main gear strut hinge bolt security.
If the bolt turns with the strut, bolt tension is loose.
If the bolt moves up and down, the bushing is worn.

10 Lift the strut (again) and observe the brake hose at the front strut hinge bolt position.
If the hose flexes at the hose ferrule end, it will cause the hose to fail; suggest the fitting position be changed.

11 Check the main gear door linkage self-align bearings.
The linkage should rotate.

12 Check the main gear door actuator rod.
- a With the landing gear partially retracted, the strut can be lifted in a rocking motion. This action compresses the down tension spring and moves the slip joint inside the rod. The slip joint in the rod should move freely as the landing gear is lifted.
- b If it squeaks, chatters, or binds, it should be lubricated.
- c The same lifting of the strut will reveal loose main gear hinge bolts.
- d Try to rotate the rod. It should have some rotation. If it doesn't, it may mean that washers are missing, the heim bearings may be frozen, or the heim bearings were mis-installed.
- e Lubricate the actuator slip joints every 100 hrs.

Gear Partially Retracted - Right Main Wheel Well

1 Landing gear wheel well
Look the wheel well area over for:
- a Fuel stains
- b Chafing fuel lines
- c Brake lines
- d Electrical wires

2 Main gear outer door
(Checked previously)

3 Main gear inner door
- a Condition
- b Weatherstripping
- c Hinges, linkage and attachment
- d Lubricate inboard door hinges every 100 hrs.
- e Dust cover / patch
  The patches keep dirt and mud out of the inner door lightening holes, which reduces the probability of corrosion.
  If they are not there, use heavy-duty fabric duct tape (not the cheapie plastic) for dust cover patch material.
- f Placard check

  IMPORTANT
  INSTALL DOOR
  LINK ROD BOLT
  WITH HEAD AFT
- g Note wing serial number at wing root

4 Main gear wheel & tire
- a Spin the wheel to see if the tire is out-of-round. If it is, consider replacing the tire.
- b Spin the wheel (again) and see how the wheel comes to a stop. Check for a heavy spot on the tire (out of balance). If it is out of balance, rebalance the tire.
- c Spin the wheel (again) and listen to the bearings. If it needs grease or if the bearings are rough, you can hear them.

5 Check brake disc for condition and warpage.

6 Check for condition of brake hose at strut to caliper.
Brake hose should, when extended, have only a slight bend in them.

7 Check for fluid leak at strut piston.

8 Check for lower barrel bushing and torque knee bushing wear.

9 Lift strut and observe main gear strut hinge bolt security.
If the bolt turns with the strut, bolt tension is loose.
If the bolt moves up and down, the bushing is worn.

10 Lift the strut (again) and observe the brake hose at the front strut hinge bolt position.
If the hose flexes at the hose ferrule end, it will cause the hose to fail; suggest the fitting position be changed.

11 Check the main gear door linkage self-align bearings.
The linkage should rotate.

12 Check the main gear door actuator rod.

a With the landing gear partially retracted, the strut can be lifted in a rocking motion. This action compresses the down tension spring and moves the slip joint inside the rod. The slip joint in the rod should move freely as the landing gear is lifted.

b If it squeaks, chatters, or binds, it should be lubricated.

c The same lifting of the strut will reveal loose main gear hinge bolts.

d Try to rotate the rod. It should have some rotation.
If it doesn't, it may mean that washers are missing, the heim bearings may be frozen, or the heim bearings were mis-installed.

e Lubricate the actuator slip joints every 100 hrs.

13 Check the gear safety switch (squat switch) for proper operation.

Read ahead a bit so you'll know what to look at, and then
Go to the cockpit.

Landing Gear circuit breaker:push in - check:
Stow the emergency hand crank - check:
Master switch, ON - check:
Ignition switch, "Batt" - check
and when the landing gear area is clear
Landing Gear switch, "retract" (up) - check:

DO NOT USE THE EMERGENCY CRANK TO RAISE THE GEAR!
YOU MAY DAMAGE THE GEARBOX TEETH.

Gear Fully Retracted

1 Watch the gear (and the assist step) retract.
Pay particular attention to retract speed and listen for any unusual noises from:

a The landing gear _____

b The landing gear gear-box _____

c The assist step mechanism _____

A change in the pitch of the gear retract motor, as if it were "laboring" to retract the gear, may indicate high resistance to the motor.
Clanking or grinding sounds may indicate poorly lubricated slip joints, or clearance problems on various undercarriage parts.
A clank when the gear stops may indicate a mis-rigged gear system.
Scraping or sawing sounds might indicate assist step retract cable fairlead problems.

2 Gear retraction time
Model 35 - G35 (12v):
09 - 12 seconds (11-1/2 seconds by the book)
Partial retract time should be 08 - 10 seconds _____
Model ?35 - ?35 (28v):
04 - 08 seconds (4-1/2 seconds by the book)
Partial retract time should be 08 - 10 seconds _____
If the retract time is slow, squawk for high resistance in the landing gear motor electrical circuit.

3 Check all doors for proper closing.
If the right-hand inboard door hangs open, squawk the landing gear motor for low power.
Check to make sure that the brake lines to not get pinched in the gear doors. _____

4 Check the assist step.
Check that the step is fully retracted. _____
There is a kit available (35-4003) which installs an additional shock cord to obtain a more positive retraction. Other possible mods replace the bungee cord with an ordinary screen door closing spring.
Note: Increasing spring tension increases the load on the landing gear motor, so don't overdo it.

5 Gear position floor indicator: "UP" _____

6 Gear position indicator light: red _____

7 Check for gear-up warning horn operation _____

8 Nosewheel gear up-tension
Attach a scale to the nose gear axle and move the nose strut from its up-stop. The applied foce should be: _____

Settings:	min:	max:
	18 lbs	25 lbs

Strut tension is: _____

9 Nosewheel gear retract rod

Now, extend the gear electrically.

Read ahead a bit so you'll know what to look at, and then go to the cockpit.

Master switch, ON - check:
Ignition switch, "Batt" - check:
Landing Gear switch, "down" - check:

Gear Fully Extended

1 Floor gear position indicator: "DOWN"

2 Gear position indicator light: green

3 Check landing gear extension time again.
If the extension time is slow, squawk for high resistance in the landing gear motor electrical circuit. (Extension time should be 09 - 12 seconds)

4 Turn key to "Off",
Master switch off,
Battery switch off

End of Gear Retraction Test
Leave the gear on jacks for easier service of the gear.

Landing Gear Service

1 Nosewheel

a Pressurize strut as required.
If strut was low, then you can use an ordinary shop compressor to pump up the extended strut which will translate to a proper extension on the ground.

Settings:	min:	max:
	60 psi	90 psi

b Hand pack grease wheel bearings every 100 hrs.

2 Left Main wheel

a Pressurize strut as required.
If strut was low, then you can use an ordinary shop compressor to pump up the extended strut which will translate to a proper extension on the ground.

Settings:	min:	max:
	180 psi	200 psi

b Hand pack grease wheel bearings every 100 hrs.

c Water will accumulate in the brake lines and sink down to the lowest point, which is the aluminum brake calipers, where it will promote corrosion.
Drain out a small amount of brake fluid from the brake casting at the wheel to remove any water

that may be there to reduce the corrosion problem.

d Replace brake pads as required

3 Right Main wheel

a Pressurize strut as required.

If strut was low, then you can use an ordinary shop compressor to pump up the extended strut which will translate to a proper extension on the ground.

Settings:	min:	max:
	180 psi	200 psi

b Hand pack grease wheel bearings every 100 hrs.

c Water will accumulate in the brake lines and sink down to the lowest point, which is the aluminum brake calipers, where it will promote corrosion.
Drain out a small amount of brake fluid from the brake casting at the wheel to remove any water that may be there to reduce the corrosion problem.

d Replace brake pads as required

Lower plane onto the ground
Remove the jacks

Examination / Service Requiring Disassembly

Aircraft Service - Engine

1 Engine oil service

a Date / tach of last service

b Replace oil every 25 - 50 hrs.
Every 25 hours if engine has an oil screen, every 50 hrs. if engine has a spin-on oil filter.
Be sure to drain the oil cooler tank and the engine sump tank.
Let it drain as you perform the other engine service steps.
Get an oil sample for Oil Analysis.

2 Oil cooler tank

a While the oil is drained, check the oil cooler tank interior for corrosion.

b Interior baffles
Make sure that there are no holes in the interior baffles which would make the oil temperature hotter.

3 Oil screen / oil filter

Oil screen:

a Remove oil screen.

Be careful of the oil temperature sensor!

b Check oil screen for particles / contaminants.
It is common to find "some" carbon particles, but any metal particles should be analyzed to

determine their source, and, by the amount present, if it is normal or excessive wear.
Almost no steel particles, and few others, should be present.

c Clean, reinstall and safety oil screen.

STC'd oil filter adapter:

a Remove oil filter.
Place a rag or a can to catch the pint of oil that will dribble out.

b Install and safety new oil filter.
Champion Filter # CH48109
Torque to 16 - 18 lb.ft.

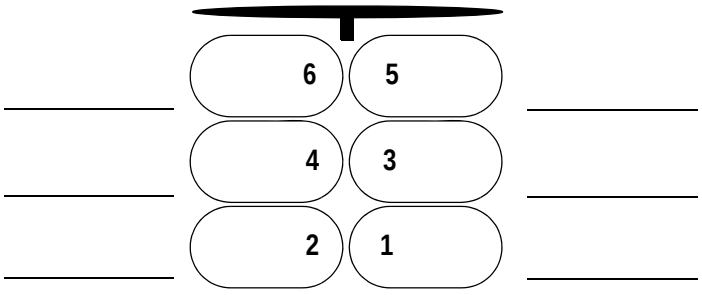
c Scribe tach hours on end of filter.

d Open the old oil filter and examine the pleats for particles / contaminants.
It is common to find "some" carbon particles, but any metal particles should be analyzed to determine their source, and, by the amount present, if it is normal or excessive wear.
Almost no steel particles, and few others, should be present.
(You may do this later on the bench)

4 Compression test

a Remove the upper spark plugs (keep track of which plug came out of which cylinder - you will need to examine them in order later).

b Perform a cylinder compression check on each cylinder.
(Compressions should be nn / 80 psi.)



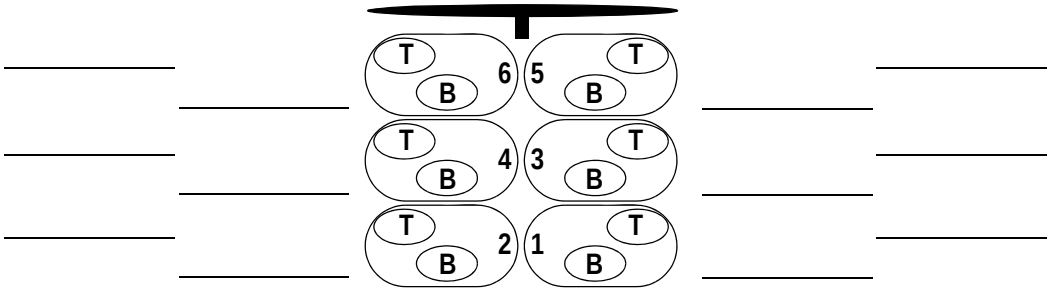
If a cylinder compression test reads poorly, refer to ABS Mag. Jul 1991, pg. 2819 for a description of how to do a second test before declaring the cylinder "bad".
(There is also a correction to the article in ABS Mag. Aug. 1991 pg. 2833).

5 Spark plugs - examination and reinstallation

a Date / tach of last spark plug service

a Remove the remaining lower spark plugs (keep track of which plug came out of which cylinder - you will need to examine them in order).

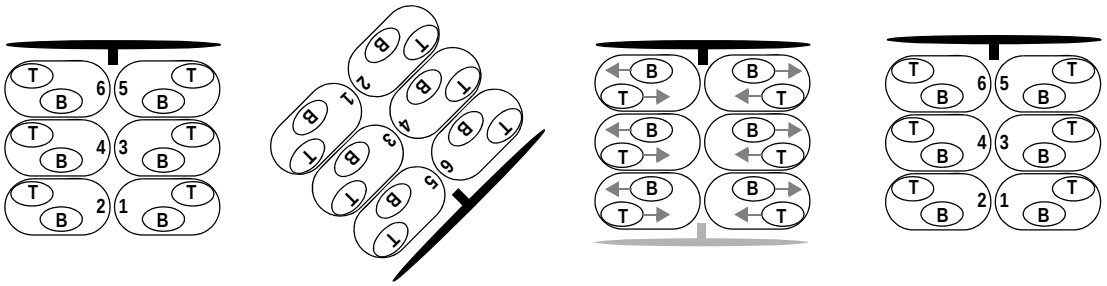
b Check the color and condition of all spark plugs. They give first-hand indication of how each cylinder is performing.



c Clean, gap and test all 12 spark plugs or replace them.
Spark plug gap (massive electrode) is .014 - .018
Torque to 300 - 360 in. lbs. (25 - 30 ft. lbs.)

d To reduce deterioration of the anode / cathode elements, switch and reinstall the plugs as follows:

1 top to 6 bottom,	1 bottom to 6 top,
2 top to 5 bottom,	2 bottom to 5 top,
3 top to 4 bottom,	3 bottom to 4 top,
4 top to 3 bottom,	4 bottom to 3 top,
5 top to 2 bottom,	5 bottom to 2 top,
6 top to 1 bottom,	6 bottom to 1 top.



Note: Many early-model Bonanzas have trouble with carbon or lead "buildup" or missing during or after long, low-power descents. This is normally caused by oil fouling the lower spark plugs. Installation of iridium or platinum spark plugs in the bottom of each cylinder may cure, or at least improve the situation.

6 Carburetor
Bendix PS-5C pressure carburetor:

a Fuel screen
Clean the carburetor fuel screen every 100 hrs.
The carburetor screen is located behind a one-inch diameter hex head brass plug at the right rear corner of the carburetor. It is a small fine screen and should be cleaned. Very little foreign material should be found in this screen (as the debris should be filtered out at the fuel selector screen).
When reinstalling, note that there should be a thin, paper-like gasket (Bendix part# 365533) under the brass plug. It is common to find this missing. Elimination of this gasket can cause fuel leaks and undue stress on the carburetor body. Be sure to safety this plug to the smaller adjacent plug.

b Fuel unit linkage
Lubricate the linkage every 100 hrs.

c Fuel unit shaft
Lubricate the shaft every 100 hrs.

7 Fuel primer system
(optional on E185-11 engines, standard on E225-8 engines):
The fuel primer lines and nozzles may become clogged with fuel solids as the engine heat tends to evaporate the fuel. Lack of use will cause the solids to build up and eventually clog the nozzles and/or the fuel primer lines.

a Remove the primer lines at the cylinders and place a Dixie cup under each of the nozzles.

b Have someone in the cockpit depress the fuel primer button.
Listen to make sure you hear a clicking sound from the solenoid, indicating it isn't sticking.

c Pump the wobble pump and press the primer button for 5 – 10 seconds. _____

d Check the Dixie cups to ensure that there is about the same amount of fuel in each one. Little or no fuel probably means a clogged nozzle. (From Lew Gage 1998.02.19) _____

8 Main fuel screen

a Inspect and clean (?) _____

9 Forward engine mounts

Rotate 1/2 turn to reduce elongation of the rubber Lord mounts _____

10 Rear engine mounts

Rotate 1/2 turn to reduce elongation of the rubber Lord mounts _____

11 Tachometer drive cable

Hand pack grease every 100 hrs. _____

12 Magneto - left:

Eisemann LA-6:

a Remove magneto distributor section (5 screws).
Inspect for the presence of oil, security, and general condition of all parts. _____

b Check point gap.
Remove magneto distributor section (5 screws). Turn the engine crankshaft or magneto drive gear until the cam follower rests on the top of a cam lobe. Check the breaker point gap. _____

Settings:	Min:	Max:
	0.018"	0.022"

Gap is: _____

c Check timing
Timing is 26° before TDC, and within 1/2º of the other magneto. _____

d Reinstall magneto distributor section. _____

Bendix (Scintilla) S6LN-21:

a Remove breaker point cover.
Inspect for the presence of oil, security, and general condition of all parts. _____

b Check point gap.
Points should begin to open when the timing marks line up. _____

c Check timing.
Remove the timing inspection plug from the top of both magnetos. Check to make sure that points are just breaking with timing marks in inspection hole aligned and you are turning the propeller in direction of rotation. _____

If correctly set, time magnetos to engine.
Timing is 26° before TDC, and within 1/2º of the other magneto.

d Reinstall inspection plugs and point covers. _____

e Check for completion of AD 94-01-03R2 _____

Bendix-Scintilla S6RN-25:

a (unknown)

Bendix-Scintilla S6RN-201 or S6RN-205 (D-6562 - D-7931):

a (unknown)

Bendix-Scintilla S6RN-1201 or S6RN-1205 (D-7932 - D-8621):

a (unknown)

Slick 662 (D-8622, D-8623, others, D-9000 +):

a (unknown)

13 Magneto - right

Eisemann LA-6:

a Remove magneto distributor section (5 screws).
Inspect for the presence of oil, security, and general condition of all parts.

b Check point gap.
Remove magneto distributor section (5 screws). Turn the engine crankshaft or magneto drive gear until the cam follower rests on the top of a cam lobe. Check the breaker point gap.

Settings:	Min:	Max:
	0.018"	0.022"

Gap is: _____

c Check timing
Timing is 26° before TDC, and within 1/2º of the other magneto.

d Reinstall magneto distributor section.

Bendix (Scintilla) S6LN-21:

a Remove breaker point cover.
Inspect for the presence of oil, security, and general condition of all parts.

b Check point gap.
Points should begin to open when the timing marks line up.

c Check timing.
Remove the timing inspection plug from the top of both magnetos. Check to make sure that points are just breaking with timing marks in inspection hole aligned and you are turning the propeller in direction of rotation.

If correctly set, time magnetos to engine.
Timing is 26° before TDC, and within 1/2º of the other magneto.

d Reinstall inspection plugs and point covers.

e Check for completion of AD 94-01-03R2

Bendix-Scintilla S6RN-25:

a (unknown)

Bendix-Scintilla S6RN-201 or S6RN-205 (D-6562 - D-7931):

a (unknown)

Bendix-Scintilla S6RN-1201 or S6RN-1205 (D-7932 - D-8621):

a (unknown)

Slick 662 (D-8622, D-8623, others, D-9000 +):

a (unknown)

14 Starter

Delco-Remy 1109660:

a Date / tach of last inspection: _____

b Check starter motor brushes

Settings:	Min:	Max:
	3/8”	???”

Brush 1 length: _____

Brush 2 length: _____

As long as it is running good, leave it alone.

Note: Do not clean with carbon tetrachloride since its use will result in excessive wear of the brushes and corrosion of other parts. Do not apply abrasive of any kind to the commutator under any circumstances.

c Internal lubrication hole
Internally, there is a lubrication hole which may become plugged by carbon deposits.
If it does, it will cause the starter to seize from lack of oil, forcing replacement. _____

Eclipse E-80:

a Date / tach of last inspection: _____

b (unknown)
As long as it is running good, leave it alone.

Eclipse 36E14 -1-C: _____

a Date / tach of last inspection: _____

b (unknown)
As long as it is running good, leave it alone.

15 Generator

Delco-Remy 1101879 (25A):
Delco-Remy 1101887 (35A):
Delco-Remy 1101908 (50A):

a Date / tach of last inspection: _____

b Check brushes and commutator's condition _____

Settings:	Min:	Max:
	1/2"	7/16" (new)

Brush 1 length: _____

Brush 2 length: _____

As long as it is running good, leave it alone.

Note: Do not clean with carbon tetrachloride since its use will result in excessive wear of the brushes and corrosion of other parts. Do not apply abrasive of any kind to the commutator under any circumstances.

16 Fuel pump

Thompson TF-1900 fuel pump:

a Date / tach of last service _____

Service fuel pump every 250 hrs.
See: TRW Service Bulletin "ESD 182D"
Also see: Beechcraft Executive Airplane Service Communique No. 55 _____

Lear-Romec RD 7750-1 fuel pump:

a (unknown)

Lear-Romec RD 7790 fuel pump:

a (unknown)

17 Pressure check fuel system _____

18 Instrument air pump

Garwin G450 "wet" instrument pump:

a Date / tach of last service _____

b Service instrument air pump every 100 hrs. _____
As long as it is working, leave it alone.

Pesco 3P-194F "wet" instrument pump:

a Date / tach of last service _____

b (unknown) _____

Rapco 211CC "Dry" Instrument vacuum pump:

a Date / tach of last service _____

b (unknown) _____

"Dry" Instrument pressure pump:

a Date / tach of last service _____

b (unknown) _____

19 Brake fluid reservoir

a Check brake fluid _____

Settings: Min: Max:
bottom of dipstick ???"

If the reservoir is full, and the parking brake works, then most likely the system is void of leaks.

If the parking brake doesn't work, either:
there is air in the system, or
the master brake cylinders' seals (fwd of the rudder pedals) leak fluid, or
the parking brake valve leaks.

b Check for water in the brake fluid. _____
The old brake fluid reservoir is vented in a way that can promote water ingestion.

20 Battery

Generally, and owner can tell you the condition of his battery. Since he services it regularly and if he doesn't complain about low battery capacity or the need to use external power for starting, it is probably good.

a Service battery every 100 hrs, unless it is a "maintenance-free" battery. _____
It should be checked for water level and specific gravity.

b The battery and box should be thoroughly cleaned, and any bare metal in the battery area should be painted with acid-resistant paint. Household baking soda can be used for cleaning the battery box as it neutralizes the acid. Care should be exercised so as not to allow baking soda to enter the battery cells. _____

21 Engine breather tube

The engine breather tube should be cleaned every 200 - 400 hours. _____

Use a discarded flex cable housing to initially remove sludge/scale from the breather tube I.D. Follow up with a solvent-soaked rag tied to a wire - pull through several times - like cleaning a gun barrel. Air pressure and solvent alone will *not* remove sludge/scale from the breather tube wall.

22 Air/oil separator

The air/oil separator should be cleaned every 200 - 400 hours. _____

Oil separator orifices are known to clog and restrict normal oil return, which causes oil to exit overboard through the breather

23 Cowl flap hinges

Lubricate cowl flap hinges every 100 hrs. _____

24 (Back to the oil change)
Replace and safety oil drain plugs.

25 Refill oil
8 - 10 qts. 40 wt in summer, 30 wt in winter, or
Phillips 20W–50 -or- Aeroshell W100 (50 wt) year round.
If using oil screen, use 9 qts.
If using oil filter, use 10 qts (1 to fill the filter).

Propeller Service

Beech R200-series (wood):

1 (unknown)

Beech B200-series (wood):

1 (unknown)

Beech 215-series propeller:

1 Grease propeller pitch change bolts.
Using the manual switch, tun the pitch to full low.
Add a bit of light grease to the exposed bolts. Now run the pitch back to full fine.

The pitch change bolts eventually spin out the grease and run themselves dry.
Without this grease, the pitch bolts will unnecessarily wear more quickly.

2 Propeller 250-hr service
Assure that the propeller, and in particular, the pitch control bearing, has had a complete lubrication and service every 250 hours. This is sometimes overlooked and can be very expensive.
a Date / tach reading of last service:
b Perform service, if necessary:

3 Propeller pitch motor 500-hr service
a Date / tach reading of last service:
b Perform service, if necessary:
c Check propeller pitch motor brushes for condition.
Settings: Min: Max:
???” ???”
Brush 1 length:
Brush 2 length:
As long as the motor is running good, leave it alone.

4 Propeller 1,000-hr overhaul
a Date / tach reading of last overhaul:
b Perform service, if necessary:

Hartzell HC12X20 propeller:

1 (unknown)

2 Paint tips and face of blades, if necessary.

Other Electrical Motor Service

1 Landing gear retraction motor

a Motor brushes

a1 Date / tach of last service:

a2 Check the landing gear motor brushes.

The landing gear motor works harder than the other parts, so the motor brushes should be looked at every 100 - 250 hrs.
Be careful! The upper brush is easy to inspect, the lower one is more difficult.
Lazy mechanics will skip inspecting the lower brush...

Settings:	min:	max:
	???”	???

Brush 1 length:

Brush 2 length:

As long as the motor is running good, leave it alone.

2 Flap motor

a Motor brushes

Settings:	Min:	Max:
	???”	???”

Brush 1 length:

Brush 2 length:

As long as the motor is running good, leave it alone.

Electrical System Test

1 Overhead cabin light: front seat

2 Overhead cabin light: rear seat

3 Instrument lights & dimmer switch

a Dashboard

b Compass

c Flap position indicator light (checked during flaps test)

d Gear position indicator light (checked during flaps test)

e Trim tab indicator

f Fuel selector / wobble pump

g Floor gear position indicator

4 Stall warning test

s/n D-1 - D-2900: Stall warning lamp only
s/n D-2901 + : Stall warning lamp and Stall warning horn

a Press lamp to test lamp

b Raise stall detector on wing to test detector

5 Landing light - left

14v 250w - GE # 4522:

14v 100w - GE # 4537:
14v 50w - GE # H7635 (Spot) or H7609 (Flood):

Note: If the customer complains of the landing light burning out rapidly, then apply a strip of 5/8" wide 3M Exterior Foam Weatherstrip adhesive-backed tape all the way around the circumference of the bulb before installation. This takes up the looseness of the light in the assembly, reducing the vibration the bulb is subjected to.

Note: This never works. Try a resistor in the circuit to cushion the surge of electricity to the bulb.

6 Landing light - right

14v 250w - GE # 4522:
14v 100w - GE # 4537:
14v 50w - GE # H7635 (Spot) or H7609 (Flood):

Note: If the customer complains of the landing light burning out rapidly, then apply a strip of 5/8" wide 3M Exterior Foam Weatherstrip adhesive-backed tape all the way around the circumference of the bulb before installation. This takes up the looseness of the light in the assembly, reducing the vibration the bulb is subjected to.

Note: This never works. Try a resistor in the circuit to cushion the surge of electricity to the bulb.

7 Navigation lights:

a Left: red _____
b Right: green _____
c Tail: white _____

8 Upper anti-collision light - rotating beacon _____

9 Lower anti-collision light - strobe _____

10 Taxi light _____

14v 100w - GE # 4509 (?):

11 Electrical gyro instruments: check for excessive noise

a Turn and bank _____

12 Radio stack

a 3-light marker beacon _____
b audio panel switches (overhead speaker / headphones) _____
c Radio 1 _____
d Radio 2 _____
e Transponder _____

13 Fuel quantity gauge(s)

a Left _____
b Right _____

c Aux.

14 Fuel primer pump
Watch the fuel pressure gauge to confirm {?}

15 Pitot heat
Watch the ammeter take a nosedive to confirm, and feel the end of the pitot probe.
Note: The pitot head will get hot enough to burn your hand. Be careful.

16 Cigarette lighter

Flaps Test

Start with the flaps up.
You may want to connect the battery to supplemental ground power for the test.

1 Check the flap instrument indicator light: green (up)

2 Extend the flaps halfway.
As the flaps are extended / retracted, listen to the flap drive motor for strange sounds

3 Inspect the left flap.
Lift on the flap trailing edge and at the same time inspect the flap actuator for up-and-down movement that would indicate flap actuator wear.

4 At the same time, look for oil leakage along the actuator piston.
If there is, then that would indicate the need for lubricant.

5 Extend the flaps fully, observing the flap rollers.
The flange on both rollers should be on the inside, like a railroad car wheel.

6 Check the flap instrument indicator light: red (down)

7 With the flaps extended, go to the left side and lubricate the flap limit switches with a spray lubricant

Retract the flaps.

8 Check the flap retraction time.

Flap retraction time	Min:	Max:
Model 35:	10 sec.	13 sec.
Model A35:	10 sec.	13 sec.
Model B35:	10 sec.	13 sec.
Model C35:	10 sec.	13 sec.
Model D35:	10 sec.	13 sec.
Model E35:	10 sec.	13 sec.
Model F35:	10 sec.	13 sec.
Model G35:	10 sec.	13 sec.

Retraction time is: _____

9 Flap up/down limits: _____

Settings:	Up:	Down:
Model 35 - A35:	0° ± 1°	20° +0º -1°
Model B35 and later:	0° ± 1°	30° +0º -1°

Paperwork Check

1 Check for certificates:

a Airworthiness certificate _____

b Registration _____

c Radio Operating License (optional) _____

d Operating Handbook (Owner's Manual) _____

e Weight and Balance figures _____

2 Check for presence of all proper form 337s _____

3 Check for compliance of all AD notices _____

4 Ceck for compliance of all Service Bulletins (optional) _____

General Clean-up

Note: When re-installing bulkheads, inspection covers, etc., coat the screws with a bit of grease to make them easy to remove during the next annual.

1 Re-install spinner _____

2 2.Re-install all plates & inspection covers _____

3 Re-install kidney plate _____

4 Replace floorboards, seats and carpets _____

5 Re-install Emergency gear extension handle cover _____

6 Re-install rear bulkhead _____

7 Leave elevator trim tab at "neutral" _____

8 Leave aileron trim at "neutral" _____

9 Re-install gust lock _____

10 Wash engine
Cover up magnetos, generator and air pumps first

11 Clean the wheel bays

12 Wash and wax the plane

13 Polish the windows
Be careful not to scratch the plexiglass

14 Armor-All the tires

15 Vacuum the interior

Note: Small electric motors, such as the ones in portable vacuum cleaners or drills, may accidentally irreparably magnetize the magnetic compass.
Try to avoid using electric motors in the cockpit (use a long vacuum hose), or else remove the magnetic compass before doing so. (ABS Oct. 96, p.4497)

16 Clean the seats

17 Armor-All –or- leather treat the interior

18 Replace customer's property

Preflight Run-up Test

Preflight Engine Run-up Check

1 Check oil level

2 Check parking brakes for proper operation

3 Engage starter - start engine

Check the starter for normal operation during start-up

Slippage: Most generally caused by engine oil entering the starter (models E-80 and 36E14) and getting into the clutch pack.
Can also be caused by a worn clutch pack.
In either case, it is a shop job to repair or replace the clutch pack and adjust the clutch setting.

Sluggishness: Worn brushes and/or poor wiring connections cause this condition. Worn brushes should be replaced. Starter wiring should be checked for good connections or in the starter relay.
Another not-too-usual cause is a poor connection between the starter ground terminal and structural ground. In some cases the engine ground straps are

broken or missing. It may be necessary to add a large ground wire from the starter ground terminal to a good structural ground.

Unusual noises:Can occur in both the starter and engine and should be examined to determine the exact cause.

Correct if necessary.

4 Fuel pressure
During engine operation, the pressure should be adjusted to give 11 - 14 psi at the carburetor. The adjustment for this is on the engine-driven fuel pump. It is also possible that the gauge may be indicating incorrectly.

5 Oil pressure & temperature
When the engine is started cold, the pressure gauge needle should start moving within about 10 seconds.
If not, shut down *immediately* and determine the reason.
Pre-1956 AC instrument gauges:
It will help normal operations to disconnect the oil pressure gauge line at the engine and instrument. Replace the heavy engine oil in this line with "Three-In-One" oil or light engine oil and reconnect. This will give more direct readings.

6 Oil Temperature gauge:
Prior to start, note that the oil temperature gauge reads about the ambient temperature. It will only be possible to see that the gauge needle moves during the ground run.

7 Cylinder Head Temperature gauge:
It is difficult during a normal ground operation to check accuracy other than to note that the needle on the gauge is somewhere near the normal ground run operation position.
The owner must be the source of an accuracy check unless a flight test is made.

8 All instruments for operation

9 Generator output
The generator will normally cut in between 800 - 1300 rpm to start charging.
Landing lights can be used to check generator capacity.
Each 100w bulb draws 7 amps.
Each 250w bulb draws 18 amps.
The ammeter should also be checked at this time.

10 Mag check:

a First, check the ignition switch at idle to be sure that the engine will stop with the ignition switch turned off.

b At 1800 rpm, make a normal magneto check.
The drop on each magneto should not exceed 75 rpm. It should also be a smooth drop.
If it is rough on either magneto, run on that magneto for about 5 - 10 minutes at 1200 rpm. Shut down the engine and quickly open the cowling. Using caution, check each cylinder with your hand to determine which cylinder (if any) is cold.
If a cold cylinder is found, the problem lies in the spark plug, lead, or distributor cap of the

magneto selected during the run.
If there is no cold cylinder, the problem is most likely within the magneto being checked, or the timing to the engine. Broken impulse springs can sometimes cause this condition.

11 Prop governor check

Beech 215 electric prop:

Manual propeller control check:

a Run the engine at 1800 rpm.

b Switch propeller manual control to Manual Low and hold until engine rpm stabilizes.

c Reset switch to Manual High rpm position and hold until engine stabilizes at 1800 rpm, or a little more in the case of an installation including an Automatic Prop Control.

Beech Automatic Propeller Controller governor check:

a Engage the automatic prop control.

b Turn the prop pitch dial up/down and confirm the prop's rpm goes up/down.

c Return the prop pitch dial to the takeoff position (max).
The propeller rpm should increase to about 1800 rpm.

Hartzell Propeller governor check:

a (unknown)

12 Carburetor Heat check

Apply heat while running the engine at 1800 rpm with a warm engine.
A decrease of about 50 rpm should be noted along with a drop in manifold pressure.

13 Check engine controls for freedom of operation

14 Idle rpm and mixture checks

A warm engine should idle at 550 - 600 rpm.
This can be adjusted on the "E" series engines by removing the left cheek cowl and noting the throttle arm on the side of the carburetor. Above the throttle shaft is a pin with float sides. In the closed throttle position, a screw on the aft side of the throttle arm assembly contacts a flat pin. Screwing the screw clockwise will increase idle rpm, and counter-clockwise to reduce it.
The idle mixture can be checked by idling the engine and pulling out the mixture control at a rate so as to go from Full Rich to idle-Cutoff in 8 - 10 seconds. (This test may not work at altitudes above, say, 5,000 ft.)
Note the rpm. It should rise 10 - 25 rpm prior to dropping off. If it drops with no rise, it is set too lean. If it rises more than 50 rpm, it is set too rich. This can be adjusted by using the slot head screw on the forward side of the throttle shaft assembly (left side). Clockwise will lean and counter-clockwise will richen the mixture. Small adjustments are used, and it must be kept in mind that this adjustment also has an affect at higher power settings. It should be adjusted by a competent A&P mechanic as it may become necessary to reset the enrichment valve after a mixture adjustment.

Note: At idle rpm, the engine's generator will not be spinning fast enough to charge the battery.

15 Check fuel selector in all positions

16 Alternate air

17 Power check _____

18 Heat and ventilation systems _____

19 Check gyros for operation _____

20 Fuel quantity - sufficient for 30-minute test hop
As per AD 72-11-02, you must have at least 10 gallons in each main tank. _____

Electric Prop Control Test

1 Manual Switch: Select Hi rpm
Prop should move to hi rpm _____

2 Manual switch: Select Low rpm
Prop should move to low rpm _____

3 Return prop to Hi rpm _____

Prop return time should be:	Min:	Max:
	00 sec. ?	00 sec. ?

Note: Automatic prop unit must be tested with engine running

Post-Runup Check

Shutdown engine

1 Check engine compartment for fuel or oil leaks _____

2 Check oil level _____

3 Secure cowls _____

Notify inspector ready-to-fly

Flight Test

Remember that at this point, a considerable amount of "tampering" has occurred on every system of the aircraft. The possibility that something was not properly reassembled is, unhappily, rather high.

Pay very close attention to even the "little things" - your life may depend on it.

Cancel or abort the test flight the instant *a problem is found.*
Too many accidents occur when several small problems gang up on the pilot.

1 Stall warning light _____

2 Landing gear warning horn _____

3 Air drafts
Check for cold air drafts
- a Firewall _____
- b Windshield – dashboard vents _____
- c Knee vents _____
- d Storm window _____
- e Overhead air exhaust vent _____
- f Cabin door _____
- g Rear windows _____
- h Cold rear seat _____
- i Overhead air conditioner vent _____

4 First pull knob (CABIN HEAT knob)
Check all systems for operation and ample flow.
- a Windshield – dashboard vents _____
- b Firewall toe vent - left side _____
- c Firewall toe vent - right side _____
- d Rear seat floor vent _____

5 Second pull knob (function varies)
AIR CONDITIONER knob:
- a Check all systems for operation and ample flow.
  - a1 Front seat overhead exhaust _____
  - a2 Overhead air conditioner vent _____

OIL WARMER knob:
(optional on model 35 - A35)
- a Check all systems for operation and ample flow.
  - a1 Pull to close shutter in front of oil cooler tank . Engine oil should get considerably warmer. _____

NOT USED knob:
- a (Knob is not used)

6 Vibrations
Check for unusual vibrations. _____

7 Cabin noisy? _____

Post-Flight Discussion With Owner

Discuss the results of the flight with the owner.

Other things to discuss with the owner:

1 Fire Extinguisher:
Remind owner if the extinguisher's examination is due.

2 On-board battery-powered equipment:
Check for a flashlight, hand held radio, hand-held GPS, and any other battery-operated equipment. Suggest that the batteries be replaced, or that fresh spare batteries are available in the cockpit.

3 GPS Database
If there is a GPS with a Jeppesen datacard, and the database is "expired", remind the owner that it needs to be updated.

4 Survival Equipment:
If there is survival equipment on board, remind the owner to check for goods which may have expired, and replace them.
If there is no survival equipment, then suggest that he carry some.

5 Radio Operator's License:
If there is no Radio Operator's license on board (and it is optional), remind owner that one may be required if he is going to Canada, the Bahamas or Mexico.
If there is one on board, check for its expiration date.

6 Periodic maintenance:
If you noticed during the inspection that periodic maintenance is not being performed, you may wish to suggest that the owner start such a program.

Other Remarks

Conditional Text options

Description	Conditional name	> X <
Model 35	Mod 35	> X <
Model A35	Mod A35	> X <
Model B35	Mod B35	> X <
Model C35	Mod C35	> X <
Model D35	Mod D35	> X <
Model E35	Mod E35	> X <
Model F35	Mod F35	> X <
Model G35	Mod G35	> X <
Newer than Model G35	Mod Z35	> X <
Specific to D-3882	D-3882	> <
Beech R200 propeller	Prop-R200	> X <
Beech B200 propeller	Prop-B200	> X <
Beech 215-series propeller	Prop-215	> X <
Hartzell HC12X20 propeller	Hartz-HC12X20	> X <
Hartzell HC-A3VF4 propeller	Hartz-HC-A3AVF4	> X <
Beech mesh/fiber element air filter	Filter1	> X <
Beech paper element air filter	Filter2	> X <
Brackett foam air filter	Filter3	> X <
Auto Gas STC	Autogas	> X <
Firestone brakes	Brakes-F1	> X <
Goodyear brakes	Brakes-G1	> X <
Cleveland brakes 199-49 (7.00x6)	Brakes-C-49	> X <
Cleveland brakes 199-50 (6.50x8)	Brakes-C-50	> X <
oil screen	Oil screen	> X <
oil filter STC	Oil filter	> X <
No Aux baggage tank	Aux Gas 0	> X <
10 Gal. Aux baggage tank	Aux Gas 10	> X <
20 Gal. Aux baggage tank	Aux Gas 20	> X <
Fuel Injection	Fuel inj	> X <
Eisemann LA-6 magneto	Mag-LA-6	> X <
Bendix-Scintilla S6LN-21 magneto	Mag-S6LN-21	> X <
Bendix-Scintilla S6RN-25 magneto	Mag-S6RN-25	> X <
Bendix-Scintilla S6RN-201/S6RN-205 magneto	Mag-S6RN201	> X <
Bendix-Scintilla S6RN1201/S6RN-1203 magneto	Mag-S6RN1201	> X <
Slick 662 magneto	Mag-Slick 662	> X <
Starter - Delco-Remy 1109660	Starter-1109660	> X <
Starter - Eclipse 36E14-1-C	Starter-36E14	> X <
Starter - Eclipse E-80	Starter-E80	> X <
Thompson TF-1900 fuel pump	Fuel-TF1900	> X <
Romec RD 7750-1 fuel pump	Fuel-RD7750-1	> X <
Romec RD 7790 fuel pump	Fuel-RD7790	> X <
Dukes fuel pump	Fuel-Dukes	> X <
Garwin G450 wet vacuum pump	Vac-G450	> X <
Pesco 3P-194F wet vacuum pump	Vac-3P194F	> X <

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Rapco 211CC dry vacuum pump          Vac-Rapco dry          > X <
Dry pressure pump                    Vac-pressure           > X <

Tactair T-3 autopilot                Tactair                >   <

-- END --
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