MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

ANNUAL OR 100 HOUR INSPECTION PROCEDURE GUIDELINE

FAR 43.15 (C) (1) states; "Each person performing an annual or 100 hour inspection shall use a check list while performing the inspection. The check list may be of the person's own design, one provided by the manufacturer of the equipment being inspected, or one obtained from another source. This check list must include the scope and detail of the items contained in appendix D to this part and paragraph (b) of this section." The following pages contain a comprehensive annual or 100 hour inspection procedure check list. This check list has been prepared to assist a mechanic in performing a detailed inspection of such scope and detail that when the inspection is completed, the mechanic is absolutely sure that he has not overlooked any areas, even though he may not have previous experience on this particular model aircraft. Once a mechanic becomes familiar with this aircraft, he may wish to prepare his own check list, which must be within the scope of appendix D of FAR part 43.

OWNER'S NAME		STREET ADDRESS	
	CITY	STATE	ZIP CODE
IDENTIFICATION NUMBER	SERIAL NUMBER	HOURS	DATE INSPECTION COMPLETED
SERVICING AGENCY	CITY	STATE	

Check for conformity with FAA Specifications, Airworthiness Directives and Grumman American Aviation Corporation and Supplier's Service Bulletins and Letters.

N O T E

It is recommended that reference be made to the applicable maintenance handbook, service bulletins, letters, installation instructions, and vendor specifications for torque values, clearances, settings, tolerances and other specification data.

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

PRE-INSPECTION ENGINE RUN UP Prior to beginning the annual or 100 hour inspection, an engine run-up is to be made to facilitate oil drainage and to observe the following, noting any discrepancies:	MECH.	INSP.
1. Fuel Pressure (0.5 to 8 PSI) Electric Pump only prior to engine start up _____ Engine Pump only after engine start up _____ Both _____		
2. Oil Pressure (60 to 90 PSI) (Approx. 25 PSI idling) Actual _____ Actual _____		
3. Magneto RPM Drop (175 RPM maximum drop on either magneto no more than 50 RPM difference between magnetos). Actual Drop Left _____ Right _____		
4. Static RPM: Cruise Prop (71-57) - 2150-2300 Actual _____ Climb Prop (71-53) or (71-54) - 2250-2400 Actual _____		
5. Idling Speed (600 to 650 RPM) Actual _____		
6. Ammeter (Shows alt. output on AA-1 & AA-1A; Battery net on AA-1B)		
7. Suction Gauge (4.6 to 5.4 In. Hg.)		
8. Fuel Selector (check operation in all positions)		
9. Carburetor Heat Control		
10. Engine Response to change in power		
11. Idle cut-off.		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

A. PROPELLER GROUP	MECH.	INSP.
1. Remove spinner and check for cracks		
2. Inspect blades for erosion, scratches, nicks and cracks. Dress out nicks as required		
3. Inspect spinner back plate for cracks and secure mounting		
4. Check front crankshaft seal for oil leaks		
5. Check propeller mounting bolt torque to 280 to 320 in. lbs. and resafety		
6. Reinstall spinner. Check spinner run out		
B. ENGINE GROUP	**MECH.**	**INSP.**
1. Remove engine cowl. Clean and check for cracks, wear, distortion, loose or missing fasteners and landing light attachment		
2. Drain oil sump. Remove oil screens, clean and inspect for metal particles. Reinstall and resafety		
3. Check oil temperature sending unit, oil lines and fittings for leaks, chafing, and secure mounting		
4. Fill engine with oil per lubrication chart		
5. Clean engine		
6. Check engine cylinder compression #1.____ #2.____ #3.____ #4.____		
7. Clean and regap or replace spark plugs as required (See latest revision of Lycoming Service Instructions No. 1042).		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

B. ENGINE GROUP (Continued)	MECH.	INSP.
8. Check ignition harnesses. Clean and inspect insulators		
9. Check magnetos to engine timing, oil seal leakage, and distributor block for cracks, burned areas and corrosion		
10. Remove, clean, inspect, and oil carburetor air filter. Inspect carburetor heat control valve plate, shaft, valve plate to shaft screws and bearings for signs of wear and security. Replace filter and/or gasket if damaged or defective. Reinstall carburetor air filter		
11. Check induction air intake seals for leaks, deterioration and hardness. Check flex ducts for broken or loose strings, loose or displaced supporting wire and general overall condition for signs of wear or perforation		
12. Drain carburetor bowl. Reinstall drain plug. Remove and clean carburetor fuel inlet screen with acetone. Reinstall screen ..		
13. Remove and clean electric fuel pump filter. Reinstall and resafety		
14. Check fuel pump for proper operation and secure mounting. Pressure fuel system with electric pump and inspect fuel system and lines for leaks. Check fuel primer for operation and line leaks.		
15. Check starter for secure mounting		
16. Check security of throttle arm on carburetor. Check throttle, carburetor heat, and carburetor mixture controls for proper travel, security, operating condition and control cushion. Replace mixture control wire every 500 hours		
17. Remove exhaust shroud and check muffler tailpipe, risers, clamps, gaskets, exhaust system and tailpipe brace (If installed) for cracks, leaks and secure mounting. Reinstall shroud		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

B. ENGINE GROUP (CONTINUED)	MECH.	INSP.
18. Check breather tube for obstructions and secure mounting		
19. Inspect cylinders for evidence of excessive heat indicated by burned paint on the cylinder. Check for cracks, loose bolts, oil leaks and general condition		
20. Check valve rocker clearance - .007" to .009" cold..... (See latest revision of Lycoming Service Instruction No. 1068).		
21. Inspect engine mount for cracks, secure mounting and proper safety wiring. Check rubber vibration dampeners for signs of deterioration. Replace as required		
22. Check all baffles for cracks, loose or missing screws and deteriorated seal material		
23. Check alternator for secure mounting and lugs and brackets for cracks. Check condition and tension of alternator drive belt. Replace if required (Adjust belt tension to yield a 5/16" deflection at the center of the belt when applying a pressure equivalent to 14 pounds for new belts and 10 pounds for used belts)		
24. Check battery electrolyte level and specific gravity. Clean and tighten battery terminals. Check battery box drains and vents for condition and drainage clear of aircraft structure...		
25. Inspect vacuum system components (if installed) for secure mounting. Check vacuum pump drive for evidence of seal leakage. Replace seal and pump if required. Check all interconnecting lines and fittings for leaks, deterioration and damage. Replace as required		
26. Check ground straps for condition and secure attachment		
27. Check electrical wiring for condition and secure connections including shielded cable ground connections		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

B. ENGINE GROUP (Continued)	MECH.	INSP.
28. Check voltage regulator, starter relay and master switch relay for secure mounting and proper operation		
29. Install cowl, checking for proper engagement of air intake duct and cowl latches		
C. CABIN GROUP	**MECH.**	**INSP.**
1. Remove and inspect seats (AA-1 and AA-1A only), roll up baggage floor covering, remove inspection covers and fold up aft section of console (remove console inspection covers on AA-1B). Leave in this position until flap, aileron, rudder and elevator inspection and adjustments are completed		
2. Check windshield, windows and canopy for cracks and secure mounting. Clean and lubricate canopy rails. Clean and lubricate canopy cables and pulleys (AA1B-0551 & On). Check canopy operation and locking devices		
3. Check seat belts and shoulder harnesses for condition, secure mounting and latch operation		
4. Check elevator trim control for condition, secure mounting, proper operation and indication		
5. Check rudder pedal and brake system for proper operation and condition. Check brake fluid level. Replace rudder pedal springs at 1000 hours		
6. Check control "T" for secure mounting and adequate clearance from other equipment		
7. Check cables, pulleys, turn buckles and cable ends for condition, secure attachment and safeties. Check cables at pulleys for fraying while actuating controls through full travel. (Max. of 4 broken wires acceptable).....		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

C. CABIN GROUP (Continued)	MECH.	INSP.
8. Check cable tension (at the average temperature for aircraft operation)		
9. Check all controls for clearance and proper operation		
10. Check all interior bond lines for any indications of damage, peeling, corrosion or cracking		
11. Check nose gear torque tubes, mounting brackets and bond joints for cracks and secure mounting. Check torque on mounting bolts - center bearing bracket bolts 185-195 in. lbs. and end plate bolts 300-350 in. lbs.....		
12. Check flap actuator, push rods, limit switches and indicator for proper operation and secure mounting		
13. Lubricate flap actuator per lubrication chart (Figure 2-5) ...		
14. Check all plumbing in cabin for leaks and condition		
15. Disassemble, clean, lubricate and reassemble fuel selector valve every 500 hours. See Fuel System section for details		
16. Check gyro system filters (if installed), replace if necessary.		
17. Check instruments for condition, secure mounting and legible markings		
18. Check electrical wiring, switches, lights and electronic equipment for condition and security		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

C. CABIN GROUP (Continued)	MECH.	INSP.
19. Inspect baggage compartment and cargo tie-downs		
20. Inspect all placards in cabin for condition and legibility ..		
21. Reinstall baggage floor inspection covers, console and seats.		
22. Check fresh air vents for proper operation		
D. FUSELAGE AND EMPENNAGE GROUP	**MECH.**	**INSP.**
1. Remove tailcone and empennage covers		
2. Inspect emergency locator transmitter for security, operation and battery expiration date (See 11-140-01.) (if installed)...		
3. Inspect exterior surfaces for condition and damage. Check all drain holes in the fuselage bottom for obstructions		
4. Inspect bond lines for any indication of damage, peeling, corrosion or cracks		
5. Check horizontal and vertical stabilizers for damage and secure mounting. Insure that horizontal stabilizer and elevator drain holes are open.....		
6. Check elevators, elevator tips, elevator bearings and stops, rudder, rudder tip, rudder bearings and stops, tab hinges and bellcranks for damage, travel and proper operation. Maximum allowable torque tube wear limit at bearing supports is .030" reduction in wall thickness		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

D. FUSELAGE AND EMPENNAGE GROUP (Continued)	MECH.	INSP.
7. Check elevator trim and bungee mechanism for damage, secure mounting and proper operation. Check outside of bungee housing for correct lubrication and wear (max. .016 deep). Check shear link rivets for security. (Replace with soft rivets only (MS20470A3-5)		
8. Check rudder and elevator cables and pulleys for damage, proper operation and safeties. Check bellcrank attaching bolts for wear		
9. Lubricate per lubrication chart. (Figure 2-5)		
10. Inspect antenna mountings, wiring and electronic installations.		
11. Check position and anti-collision lights for secure mounting .		
12. Check static system lines and the alternate air source valve (if so equipped). Drain any accumulated moisture from system drain		
13. Reinstall inspection covers		
E. WING GROUP	MECH.	INSP.
1. Remove wing tips and access panels. Inspect surfaces, skins, ribs and tips for damage. Check position and anti-collision (if equipped) lights for secure mounting		
2. Visually inspect interior and exterior bond lines for any indication of damage, peeling, corrosion or cracks		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

E. WING GROUP (Continued)	MECH.	INSP.
3. Check ailerons, aileron bearings and stops, flaps, and flap bearings for secure mounting, damage, proper travel and wear. Maximum allowable aileron torque tube wear limit at bearing supports is .030" reduction in wall thickness. Check that aileron and flap drain holes are open		
4. Check fuel vents and connecting lines for damage and restrictions		
5. Check fuel tank outboard end plates for leaks and secure mounting		
6. Check fuel cap gaskets for air tight seal		
7. Check wing attaching bolts. See Sec. 3-20-03 for torque values.		
8. Check fuel block lines and spar for evidence of leakage at the wing root opening		
9. Inspect fuel tank placards		
10. Check pitot heating element for proper operation (if installed).		
11. Check pitot tube opening and lines. Drain accumulated moisture.		
12. Check for interior corrosion of skin indicated by a white flaking ash		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

F. MAIN LANDING GEAR GROUP	MECH.	INSP.
1. Remove wheels and check for cracks. Check condition of brake linings, wheel cylinders, torque plates and mounting pins. Pack wheel bearings, reinstall wheels and key axle nuts at first 100 hours and each 500 hours thereafter. Inspect wheel bearing grease for contamination and solidification at each annual or 100 hour inspection. Do not exceed 500 wheel miles between repacking intervals. For operation in dusty areas or areas of high humidity, repack every 100 hours. Perform a complete wheel inspection when tires are replaced		
2. Check tires for approved type, wear and proper inflation		
3. Check brake lines for leaks and secure attachment		
4. Check struts for secure mounting. Inspect for cracks, delamination and nicks		
5. Inspect the upper main mounting brackets and spar attaching supports (center spar to fuselage) for wear, cracks and loose bolts		
6. Inspect wheel fairings for damage and secure mounting (if installed)		
G. NOSE GEAR GROUP	MECH.	INSP.
1. Check nose gear strut for secure mounting, deformation, damage and cracks		
2. Remove nose gear strut from torque yoke and inspect for corrosion of the faying surfaces every 12 calendar months. Remove corrosion, if present, paint surfaces with zinc-chromate and reassemble wet. Seal strut to yoke connection with RTV-102 by DOW-CORNING		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

G. NOSE GEAR GROUP (Continued)	MECH.	INSP.
3. Remove and check nose gear fork for deformation, wear and cracks. Maximum fork to strut bearing clearance is .035"		
4. Grease fork and friction dampener, assemble to strut and tighten to 10-13 lb. drag at axle		
5. Remove nose wheel, check for cracks, clean, inspect and repack bearings, reinstall wheel and safety axle at first 100 hours and each 500 hours thereafter. Inspect wheel bearing grease for contamination and solidification at each annual or 100 hour inspection. Do not exceed 500 wheel miles between repacking intervals. For operation in dusty areas or areas of high humidity, repack every 100 hours. Perform a complete wheel inspection when tire is replaced		
6. Inspect nose wheel for cracks, corrosion and loose or broken bolts		
7. Check tire for approved type, wear and proper inflation		
8. Check wheel fairing for damage and secure mounting (if installed)		
H. OPERATIONAL INSPECTION	**MECH.**	**INSP.**
1. Check brake operation (including parking brake)		
2. Check fuel primer operation and lines for leaks		
3. Check booster pump operation		
4. Check fuel pressure		
5. Check starter for proper operation		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 - HOUR INSPECTION PROCEDURE

H. OPERATIONAL INSPECTION (Continued)	MECH.	INSP.
6. Check oil pressure and temperature		
7. Check engine controls for proper operation. Check throttle and mixture controls for proper cushion		
8. Check magneto operation; both on, left off, both on, right off, both on. (Maximum magneto drop 175 RPM with 50 RPM maximum difference between magnetos). With engine at idle, turn switch to "off" position momentarily to check magneto grounding		
9. Check engine static RPM; cruise prop. (2150-2300), climb prop (2250-2400)		
10. Check carburetor heater for proper operation and cushion		
11. Check alternator output		
12. Check suction gauge and vacuum system output (4.6 to 5.4 in. Hg.)		
13. Check fuel selector valve operation and indexing		
14. Check heating, defrosting and ventilating system for proper operation		
15. Check radio for proper operation		
16. Check engine idle speed (600 to 650 RPM) and mixture setting..		
17. Check idle cut-off on carburetor for proper operation		
18. Check ailerons for proper operation		

MODEL AA-1, AA-1A & AA-1B
ANNUAL OR 100 HOUR INSPECTION PROCEDURE

H. OPERATIONAL INSPECTION (Continued)	MECH.	INSP.
19. Check elevators and trim tab for proper operation		
20. Check flaps for proper operation		
21. Check fuel quantity gauges for condition and proper operation.		
22. Check interior lights for proper operation and adjustment		
23. Check navigation and anti-collision lights for proper operation and landing lights for proper operation and adjustment		
24. Check pitot heat for proper operation		
25. Check stall warning device for operation		
26. Inspect engine after ground run-up. Flight test and inspect for oil leaks and secure mounting of all components		
I. GENERAL	**MECH.**	**INSP.**
1. Aircraft cleaned and serviced		
2. Aircraft conforms to FAA Specifications		
3. All FAA Airworthiness Directives complied with		
4. All manufacturer's Service Letters and Bulletins complied with.		
5. Checked for proper flight manual		
6. Aircraft papers in proper order. Make log book entry		

"END OF INSPECTION