

**AA-5 SERIES  
MAINTENANCE MANUAL**

MODELS AA-5, AA-5A & AA-5B  
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 checklist 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 Gulfstream American 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.

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MODELS AA-5, AA-5A & AA-5B ANNUAL OR 100 - HOUR INSPECTION PROCEDURE				
<b>PRE-INSPECTION ENGINE RUN UP</b>  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:	AA-5 & AA-5A (2250-2375) Actual _____	AA-5B (2150-2275) Actual _____	
5.	Idling Speed:	AA-5 & AA-5A (600 to 650 RPM) Actual _____	AA-5B (500 to 650 RPM) Actual _____	
6.	Ammeter (no steady discharge in normal operating range)			
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			

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A. PROPELLER GROUP	MECH.	INSP.
1. Remove spinner and check for cracks, scratches, scoring, dents, nicks and distortions. . . . .		
2. Inspect blades for erosion, scratches, nicks and cracks. Dress out nicks as required . . . . .		
3. Inspect spinner back plate, bulkheads and doubler for cracks and secure mounting.		
4. Check front crankshaft seal for oil leaks. . . . .		
*5. Check propeller mounting bolt torque: _____ Foot pounds or _____ inch pounds. Resafety propeller, mounting bolts. . . . .		
*6. Reinstall spinner. Check spinner run out _____ inch maximum.		
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. Replace oil filter (If installed). Cut apart and inspect old filter for metal particles. . . . .		
3. Check oil temperature sending unit, oil lines, cooler, and fittings for leaks, chafing, dents, cracks, 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 Instruction No. 1042)		

\*Refer to Maintenance Manual Chapter 61 and insert required values here applicable to your aircraft for quick reference during inspection.

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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 and service air filter (see Chapter 73 for details). 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. Pressurize 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 . . . . .		
17. Remove exhaust shroud and check muffler tailpipe, risers, clamps, gaskets and exhaust system for cracks, leaks and secure mounting. Reinstall shroud . . . . .		

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<b>MODELS AA-5, AA-5A &amp; AA-5B ANNUAL OR 100 - HOUR INSPECTION PROCEDURE</b>		
<b>B. ENGINE GROUP (Continued)</b>	<b>MECH.</b>	<b>INSP.</b>
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. Inspect engine mount for cracks, secure mounting and proper safety wiring. Check rubber vibration dampeners for signs of deterioration. Replace as required . . . . .		
21. Check all baffles for cracks, loose or missing screws and deteriorated seal material . . . . .		
22. 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 in. deflection at the center of the belt when applying a pressure equivalent to 14 pounds for new belts and 10 pounds for used belts . . . . .		
23. 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 . .		
24. 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 inter-connecting lines and fittings for leaks, deterioration and damage. Replace as required . . . . .		
25. Check ground straps for condition and secure attachment . . . .		
26. Check electrical wiring for condition and secure connections including shielded cable ground connections . . . . .		

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MODELS AA-5, AA-5A & AA-5B ANNUAL OR 100 - HOUR INSPECTION PROCEDURE		
<b>B. ENGINE GROUP (Continued)</b>	<b>MECH.</b>	<b>INSP.</b>
27. Check voltage regulator, starter relay and master switch relay for secure mounting and proper operation . . . . .		
28. Install cowl, checking for proper engagement of air intake duct and cowl latches . . . . .		
<b>C. CABIN GROUP</b>	<b>MECH.</b>	<b>INSP.</b>
1. Remove front seats, fold rear seat forward, remove cover from rear seat support and remove console side panels . . . . .		
2. Check windshield, windows and canopy for cracks and secure mounting. Clean and lubricate canopy rails. Check canopy operation and locking devices . . . . .		
3. Check seat belts and shoulder harnesses for condition and secure mounting . . . . .		
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 chains, cables, pulleys, turnbuckles and cable ends for condition, secure attachment and safeties. Specifically check cables at pulleys for fraying while actuating controls through full travel. (Max. of four broken wires acceptable) . . . . .		
8. Check cable tension at the average temperature for aircraft operation . . . . .		
9. Check all controls for clearance and proper operation . . . . .		

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MODELS AA-5, AA-5A & AA-5B  
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C. CABIN GROUP (Continued)	MECH.	INSP.
10. Check all interior bond lines for any indications of damage, peeling or cracking . . . . .		
11. Check nose gear torque tubes and mounting brackets and bond joints for cracks and secure mounting. Check torque on mounting bolts - center bearing bracket bolts 185-195 in. lb and end plate bolts 300-350 in. lb . . . . .		
12. Check flap actuator, push rods, limit switches and indicator for proper operation and secure mounting . . . . .		
13. Lubricate per lubrication chart (Chapter 12) . . . . .		
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 . . . . .		
19. Inspect baggage compartment, baggage door and cargo tie-downs.		
20. Inspect all placards in cabin for condition and legibility . . . . .		
21. Reinstall cover over rear seat support, console side panels and front seats . . . . .		
22. Check fresh air vents for proper operation . . . . .		
23. Check and verify correct quantity and rating of spare fuses mounted in right side of glove box . . . . .		
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 . . . . .		

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D. FUSELAGE AND EMPENNAGE GROUP (Continued)	MECH.	INSP.
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 or cracks . . . . .		
5. Check ventral fin (Model AA-5), horizontal and vertical stabilizers for damage and secure mounting. Insure that horizontal stabilizer and elevator drain holes are open . . . . .		
6. Check elevator, elevator bearings and stops, rudder, rudder bearings and stops, tab hinges and bellcranks for damage, travel and proper operation. Maximum allowable torque tube wear limit at bearing supports is 0.030 in. reduction in wall thickness . . . . .		
7. Check elevator trim mechanism for damage, secure mounting and proper operation . . . . .		
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. (Chapter 12) . . . . .		
10. Inspect antenna mountings, wiring and electronic installations . .		
11. Check position and anti-collision light (s) 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 . . . . .		

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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 lights for secure mounting. Insure that all wing drain holes are open . . . .		
2. Visually inspect interior and exterior bond lines for any indication of damage, peeling or cracks . . . . .		
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 0.030 in. reduction in wall thickness. Check that aileron flap and drain holes are open. Check that aileron balance weight tube arm I. D. is open, corrosion free and zinc coated (early aircraft only) . . . . .		
4. Check fuel vents and connecting lines for damage and restrictions .		
5. Check fuel tanks, sump tanks and lines for evidence of leakage. Check sump tanks and lines for secure mounting . . . . .		
6. Check fuel cap gaskets for air tight seal . . . . .		
7. Check wing and outboard wing section attaching bolts. Torque to 60-85 in. lb . . . . .		
8. Inspect fuel tank placards . . . . .		
9. Check pitot heating element for proper operation (if installed) . . .		
10. Check pitot tube opening and lines. Drain accumulated moisture . .		
11. Check for interior corrosion of skin indicated by a white flaking ash . . . . .		

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MODELS AA-5, AA-5A & AA-5B ANNUAL OR 100 - HOUR INSPECTION PROCEDURE		
F. MAIN LANDING GEAR GROUP	MECH.	INSP.
<p>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.</p> <p>For operation in dusty areas or areas of high humidity, repack every 100 hours. Perform a complete wheel inspection when tires are replaced . . . . .</p>		
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 and strut 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 . . . . .		
3. Remove and check nose gear fork for deformation, wear and cracks. Maximum fork to strut bearing clearance is 0.035 in. . . . .		

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MODELS AA-R, AA-5A & AA-5B  
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MODELS AA-R, AA-5A & AA-5B ANNUAL OR 100 - HOUR INSPECTION PROCEDURE		
G. NOSE GEAR GROUP (Continued)	MECH.	INSP.
4. Grease fork and friction dampener, assemble to strut and tighten to 10-22 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. 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 . . . . .		
6. Check oil pressure and temperature . . . . .		
7. Check engine controls for proper operation. Check throttle control for proper cushion . . . . .		

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H. OPERATIONAL INSPECTION (Continued)	MECH.	INSP.
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: 2250-2375, Model AA-5 and AA-5A 2150-2275, Model AA-5B . . . . .		
10. Check carburetor heater for proper operation . . . . .		
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 mixture setting and idle speed: 600-650 RPM, Model AA-5 and AA-5A; 500-650 RPM, Model AA-5B. . . . .		
17. Check idle cut off on carburetor for proper operation . . . . .		
18. Check ailerons for proper operation . . . . .		
19. Check elevators and trim tabs for proper operation . . . . .		
20. Check flaps for proper operation . . . . .		
21. Check fuel quantity gauges for condition and proper operation . .		

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MODELS AA-5, AA-5A & AA-5B ANNUAL OR 100 - HOUR INSPECTION PROCEDURE		
H. OPERATIONAL INSPECTION (Continued)	MECH.	INSP.
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 Owners Manuals or Pilots Operating Hand-book.		
6. Aircraft papers in proper order. Make log book entry . . . . .		

"END OF INSPECTION"

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