25hr and 50hr inspection guide

AA-2550ISP-LS1

Revision	Date	Details
0	4-2009	orignal
1	4-2012	Format change

50 hour Inspection Check List
And
25 hour One time only inspection check List
For
Lightning LS-1

Owner's Name _____

Address _____

City/State/Zip _____

Identification Number _____

Serial Number _____

Hours _____

Date Inspection Completed _____

Servicing Agency _____

Address _____

City/State/Zip _____

Note: The time periods for the inspections noted in this schedule are based on norms: Usage under average environmental conditions. Airplanes operated in humid tropics, or in cold, damp climates, etc., may need more frequent inspections for wear, corrosion, lubrication, and or lack of maintenance. Under these adverse conditions, perform periodic inspections in compliance with this guide at more frequent intervals until the owner or operator can set his own inspection periods based on the contingencies of experience. Airplanes operated commercially less than 100 hours a year must have a 100-Hour Inspection performed no later than 12 months following the date of the preceding 100-Hour Inspection. The 100-Hour interval between performances of the procedures specified herein should NEVER be exceeded by more than 10 hours which can be used only if the additional time is required to reach a place where the inspection can be satisfactorily accomplished. However, any extension of a 100-hour interval must be subtracted from the following 100-hour interval, with no time extension permitted. For example, if an inspection is done at 110 hours, the next inspection is due at 90 hours later with no extension allowed.

Note: Ascertain that all placards are in place and legible whenever the airplane has been repainted or touched up after repairs. Replace any placards that have been inadvertently defaced or removed.

Note: Arion Aircraft, LLCs recommended inspection program in accordance to FAR Parts 43 and 91, consists of, but is not limited to, inspection items listed in this Inspection Guide, any applicable Airworthiness Directives issued against the airframe or any equipment installed therein, conformity to Type Certificate Data Sheet and Maintenance Manual Airworthiness Limitations Chapter as applicable.

The owner or operator is primarily responsible for maintaining the airplane in an airworthy conditions, including compliance with all applicable Airworthiness Directives as specified in Part 39 of the Federal Aviation Regulations. It is further the responsibility of the owner or operator to ensure that the airplane is inspected in conformity wit the requirements of Parts 43 and 91 of the Federal Aviation Regulations. Arion Aircraft, LLC, has prepared this inspection guide to assist the owner or operator in meeting the forgoing responsibilities. This inspection guide is not intended to be all-inclusive, for no such guide can replace the good judgment of a certified airframe and power plant mechanic in the performance of his duties. As the one primarily responsible for the airworthiness of the airplane, the owner or operator should select only qualified personnel to maintain the airplane.

While this guide may be used as an outline, detailed information of the many systems and components in the airplane will be in the various section chapters of its shop maintenance manual and the pertinent vendor publications. It is also recommended that reference be made to the applicable Maintenance Handbooks, previously issued Service Instructions, Jabiru Service Bulletins, applicable FAA regulations and publications, Vendors Bulletins and specifications for torque values, clearances, settings, tolerances, and other requirements. It is the responsibility of the owner of operator to ensure that the airframe and power plant mechanic inspecting the airplane has access to the previously noted documents as well as to this inspection guide.

Arion Aircraft, LLC issues service information for the benefit of owners and operators. It is the responsibility of the owner/operator to review and act upon each service bulletin. It the responsibilities of the owner or operator to ensure that all service bulletins are complied with.

Note: In addition to the inspections prescribed by this schedule, the altimeter instrument and static system and all ATC transponders MUST be tested and inspected at 24-month intervals in compliance with the requirements specified in FAR Part 91.

1. Operational Inspection

1.1. Starter – Check for proper operation, unusual noises and dragging. Check starter energized light (if installed) and/or load meter to ensure starter disengagement when the starter switch is released.

P	F	Comments:

1.2. Fuel Pressure – check for proper fuel pressure limits and fluctuations.

P	F	Comments:

1.3. Cylinder Head Temperature – Check for proper operations, temperature and fluctuations.

P	F	Comments:

1.4. Alternator – check for proper output and unusual noises

P	F	Comments:

1.5. Propeller – Check for smoothness of operation.

P	F	Comments:

1.6. Oil Pressure and Temperature – Check for proper pressure, temperature limits and unusual fluctuations.

P	F	Comments:

1.7. Magnetos – Check the performance of the magneto as outlined under the heading NORMAL PROCEDURES in the appropriate Pilot's Patting Handbook.

P	F	Comments:

1.8. Power Check – Refer to NORMAL PROCEDURES in the appropriate Pilot's Operating Handbook.

P	F	Comments:

1.9. Voltmeter – Check for proper indication and unusual fluctuations.

P	F	Comments:

1.10. Heating and Ventilating System – Check for proper operation, heat and airflow output. Check controls for freedom of operation.

P	F	Comments:

1.11. Firewall Shutoff Valve – Check for proper operation and freedom of movement.

P	F	Comments:

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1.12. Oil Cooler - Check for obstructions, leaks, and security of attachment.

P	F	Comments:

1.13. All Engine Controls – With the engine running, check for proper operational limits, engine response and rigging. Check friction locks for proper operation.

P	F	Comments:

1.14. Fuel Quantity Gages – Check for proper operation and unusual fluctuations.

P	F	Comments:

1.15. Auxiliary Fuel Pump – Check pump for proper operation, unusual noise and fluctuations.

P	F	Comments:

1.16. Fuel Tank Selector Valves – Check for proper operation and feel for positive detent and proper placarding.

P	F	Comments:

1.17. All Lights – Check for condition, attachment, cracked or broken lenses. Check switches, knobs, and circuit breakers for looseness and operation.

P	F	Comments:

1.18. Check electric pitch control system for proper operation. Trim up should move tab down. Trim down should move tab up.

P	F	Comments:

1.19. Radio Operation – Check for proper operations, security of switches and knobs.

P	F	Comments:

1.20. Flaps – check for noisy operation, full travel and proper installation.

P	F	Comments:

1.21. Flight Instruments – Check for condition and proper operation.

P	F	Comments:

1.22. Brakes – Check for condition and wear, ease of operation. Check for unusual brake chatter.

P	F	Comments:

Emergency Locator Transmitter – Check for proper operation and assure that the ELT is armed when the airplane is returned to service.

P	F	Comments:

1.23. Switches, Circuit Breakers – Check for proper operation.

P	F	Comments:

1.24. Flight and Trim Controls – Check freedom of movement and proper operation through full travel with and without flaps extended.

P	F	Comments:

2. Power Plant

2.1. Cowling Skin – check for deformation and obvious damage or cracks. Check for loose or missing rivets.

P	F	Comments:

2.2. Cowling Structure – Check for cracks and deformation. Check for loose or missing rivets and concealed damage.

P	F	Comments:

2.3. Cowling – Check for condition, security and adjustment of latches. Open the upper cowling and clean. Inspect for cracks.

P	F	Comments:

2.4. Battery – Inspect, clean and tighten connections. Check for security and proper attachment. Check for corrosion. Make certain the battery is clean. Water or dirt on battery surfaces can cause the battery to discharge.

P	F	Comments:

2.5. Plumbing – Inspect plumbing and associated accessories for condition (such as cracks) and attachment. Check plumbing clearance and secure against possible chafing.

P	F	Comments:

2.6. Brake Fluid Reservoir – Check reservoir for security, attachment, open vent, proper fluid levels and for leaks.

P	F	Comments:

2.7. Engine Sump – Check for cracks, leaks, proper fluid level, deformation and security.

P	F	Comments:

2.8. Oil Sump Drains and Filter – Remove oil filter. Inspect oil sump drains and install new filter.

P	F	Comments:

2.9. Oil Cooler – Check oil cooler, lines and fittings for condition, security, chafing and leaks. Forward output on engine adapter plate must go to the lower cooler port.

P	F	Comments:

2.10. Propeller and Mounting Bolts – Check for condition and security. Inspect the blades for cracks, dents, nicks, scratches, erosion, corrosion, security and movement in the hub. Check the torque on all bolts, wood props to 17ftlbs, EZ-pitch carbon prop to 15ftlbs.

P	F	Comments:

2.11. Propeller Spinner – Check for deformation, security and cracks.

P	F	Comments:

2.12. Propeller Hub – Check for cracks, excessively leaking seals and condition.

P	F	Comments:

2.13. Alternator – Check for condition and attachment. Check wiring for proper attachment and possible chafing. Check for unusual noise.

P	F	Comments:

2.14. Starter – Check for condition, attachment and chafed or loose wires.

P	F	Comments:

2.15. Magnetos – Check ignition harness for proper connection, security and fraying.

P	F	Comments:

2.16. Cylinders and Baffles – Check cylinders and exhaust manifold for obvious leaks, security and cracks. Check baffles for cracks and security. Check cylinders for broken cooling fins and loose or missing base nuts.

P	F	Comments:

2.17. Exhaust System – check for deformation, security, cracks, leaks, loose or missing nuts and clamps. Check for thin wall condition which may occur due to normal internal erosion on stacks which have long service time.

P	F	Comments:

2.18. Firewall – Check for wrinkles, damage or cracks. Check all electrical and control access holes for proper sealing.

P	F	Comments:

2.19. Hose and Ducts – Check all fuel, oil and air hose or duct for leakage, cracks, deterioration and damage. Check fittings for security.

P	**F**	Comments:

2.20. Engine Accessories – check for condition, security and leaks. Check wiring including; starter solenoid, regulator rectifier, alternator wires, and engine grounding straps, hoses and tubes for chafing, security and leaks.

P	**F**	Comments:

2.21. Engine Mounts – Check for cracks, corrosion and security. Inspect rubber cushions, mount bolts and nuts for condition and security. Torque should be 8ftlbs on ¼" AN4 bolts thru the rubbers.

P	**F**	Comments:

2.22. Cabin Heater System – Check for cracks, distortion, corrosion, leaks and obstructions.

P	**F**	Comments:

2.23. Engine Controls – Check controls and associated equipment for condition, attachment, alignment, and rigging. Check control operation. Throttle control should include a secondary idle stop attached to the wire, this is a ferrule with set screw and should be set against cable adjuster nut when at a warm 850RPM idle.

P	**F**	Comments:

2.24. Ignition Harness – Inspect for fraying and attachment.

P	**F**	Comments:

2.25. Electrical Wiring and Equipment – Inspect electrical wiring and associated equipment and accessories for fraying and attachment.

P	**F**	Comments:

2.26. Induction Air Filter – Check for condition, cleanliness and security.

P	**F**	Comments:

Induction System – Check the hot and cold flexible air ducts for delamination of the inner lining. Check security, cracks, operation, and wear.

P	F	Comments:

2.27. Carburetor Heat System – Check for blockage, security, operation and wear.

P	F	Comments:

2.28. Carburetor – Check for condition. Check for leaks. Float bowl balance tube must be attached and run to the clean side of the air-filter box.

P	F	Comments:

3. Cabin and Baggage Compartment

3.1. Skin – Inspect skins for deformation or cracks. If damage is found, check adjacent structure.

P	F	Comments:

3.2. Structure – Check for cracks and deformation. Check for concealed damage.

P	F	Comments:

3.3. Brake Mater Cylinders and pedals – Check for condition, security and leaks. Check lines for signs of chafing or cracks.

P	F	Comments:

3.4. Rudder Pedals – Check for freedom of movement. Check cables and push/pull rods for proper routing, condition and security. Check rudder pedal fore and aft positions for wear. Check locks and pins to ensure positive lock.

P	F	Comments:

3.5. Control stick; check for cracks at welded joints, chafing of the PTT wiring, and any wear or slop in the pivot points.

P	F	Comments:

3.6. Engine Controls – Check for ease of operation through full travel. Check friction lock for proper operation.

P	F	Comments:

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3.7. Canopy structure and Quarter windows.– Inspect Windows for scratches, crazing and general condition. Inspect Canopy for security of attachment. Check latching mechanism for proper engagement and ease of operation.

P	F	Comments:

3.8. Instruments and Instrument Panel – Inspect instrument panel, sub panels, placards, and instruments for condition and attachment. Check all knobs for security. Inspect shock mounts, ground straps for crack and security.

P	F	Comments:

3.9. Seats, Seat Belts and Shoulder Harnesses – Inspect cabin seats, seat belts, and shoulder harnesses for proper operations, condition, and security of attachment. Inspect floorboards for condition and seat attachment.

P	F	Comments:

3.10. Ventilating System – Check all fresh air and heat outlet vents for proper movement and operation.

P	F	Comments:

3.11. Fuel Selector Valve – Inspect for leakage, security, freedom of movement, proper detent feel and condition. Clean strainers and inspect for condition. Check for proper placarding.

P	F	Comments:

3.12. Microphones, Headsets, and Jacks - Inspect for cleanliness, security, and evidence of damage.

P	F	Comments:

3.13. Static System – Check.

P	F	Comments:

4. Wings and Carry-Through Structure

4.1. Skin – Check for deformation and obvious damage. Check for cracks. If damage is found, check adjacent structure. Check for indications of excessive flight loading.

P	F	Comments:

4.2. Structure – Check for cracks, deformation and concealed damage.

P	F	Comments:

4.3. Spar box Landing gear attach tubes. Check surrounding ½" tubes near base of leg socket for; cracks, deformations, or any other damage.

P	F	Comments:

4.4. Push rods, check end cones for security, jam nut tight, and rod end bearings for freedom of movement. Rod ends must have large area washer to capture the rod end in the event of a bearing failure.

P	F	Comments:

4.5. Ailerons – Check for condition and security. Check for cracks, freedom of movement. Check hinge and brackets for condition, push-pull rods for security and rod ends for corrosion.

P	F	Comments:

4.6. Fuel Tanks, Caps and Vents – Inspect fuel tank, vent lines, and filler caps.

P	F	Comments:

4.7. Electrical Wiring and Equipment – Inspect for chafing, damage, security and attachment.

P	F	Comments:

4.8. Flaps and Actuators – Check for condition and operation. Check flap skin and structure for cracks

P	F	Comments:

4.9. Flap Position sensor – Check for security and operation.

P	F	Comments:

4.10. Pitot/ static Tube – Check for condition and obstructions.

P	F	Comments:

4.11. Drain Ports – Check the drain ports in the wing to assure they are free of obstruction.

P	F	Comments:

5. Nose Gear

5.1. Wheel and Tire – Check wheel for cracks and tire for wear, damage, condition and proper inflation. Check wheel bearings for condition and wear.

P	F	Comments:

5.2. Landing Gear Strut – Inspect aluminum for corrosion and components for cracks and attachment.

P	F	Comments:

5.3. Motor mount – Check for wear at attach points. Check for cracks and security.

P	F	Comments:

5.4. Nose fork assembly – Inspect for tightness, condition and security, freedom of movement of the nose block pivot, check pivot stop bolt for bending or cracking.

P	F	Comments:

6. Nose Gear Operation

6.1. Check for freedom of movement of the nose pivot block, travel is limited to an equal 30 degrees each side of center.

P	F	Comments:

7. Main Gear and Brakes

7.1. Brakes, Lines, Lining and Discs – Check for condition, wear and security. Check lines for chafing and signs of leakage or cracks. Check discs for wear or warping. Check brake discs for cracks.

P	F	Comments:

7.2. Wheels and Tires – Check wheels for cracks and tires for wear, damage, condition and proper inflation. Check wheel bearings.

P	F	Comments:

7.3. Landing Gear Legs – Inspect the aluminum legs and components for cracks, attachment points, and corrosion, or deformation.

P	F	Comments:

8. Rear Fuselage and Empennage

8.1. Skin – Check for deformation, cracks and obvious damage. If damage is found, check adjacent structure.

P	F	Comments:

8.2. Structure – Inspect the two most aft bulkheads for cracks, distortion, or other obvious damage.

P	F	Comments:

8.3. Control Surfaces – Check for deformation, cracks, security, freedom of movement and travel limits. Check for loose or missing rivets in the elevator. Check for security of hinges.

P	F	Comments:

8.4. Trim Tabs and Actuators – Check for security and wear. Check trim tabs for cracks.

P	F	Comments:

8.5. Tail tie down ring. Check for damaged and surrounding structures.

P	F	Comments:

9. General

9.1. Airplane cleaned and serviced.

P	F	Comments:

9.2. Inspect all placards to assure that they are easily readable and securely attached.

P	F	Comments:

9.3. Assure that all Airworthiness Directives, Service Bulletins, and previously issued Service Instructions are reviewed and complied with as required.

P	F	Comments:

9.4. For a complete annual inspection of the airplane, all items on the airplane that are noted in this guide should be inspected.

P	F	Comments:

Additional Comments: