



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular

AC 43-209
DATE: 10/16/03



L-39 ALBATROSS MILITARY JET RECOMMENDED INSPECTION PROGRAM

Initiated by: AFS-305



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1. PURPOSE. This Advisory Circular (AC) provides a recommended inspection program for existing and new owners of L-39 Albatross aircraft operating under an Experimental Exhibition Special Airworthiness Certificate. While this AC provides one way of addressing the inspection and overhaul provisions found on the aircraft's operating limitations, it may not be the only way of addressing the requirements for continued airworthiness of L-39 aircraft. This AC is not meant to supersede existing L-39 inspection programs.

2. BACKGROUND. As of September 2003, there are approximately 220 L-39 aircraft registered in the United States. Because of the large number of L-39 aircraft operating in U.S. airspace, the owners of these aircraft requested the Federal Aviation Administration (FAA) standardize the scope and detail of the inspection and overhaul times of engines and other components of these aircraft.

3. DESCRIPTION. This AC consists of an overview and three appendices: a recommended inspection program, an ejection seat/canopy inspection program, and a hard landing/off runway/overstress inspection. The overview describes the aircraft, recommends using engine maintenance records to establish engine overhaul times for the AI-25TL engine, and provides other useful information. The inspection program contains airworthiness limitations (overhaul times for components other than the engine), maintenance preflight, engine run-up and systems checks, and 50, 100, and 400-hour inspections. The ejection seat/canopy inspection program contains safety precautions and procedures. The recommended inspection program should be used with the aircraft maintenance manual and other manufacturer's manuals when performing maintenance on the aircraft.

4. OVERVIEW.

a. General. The L-39 Albatross is an all-metal, single-turbine engine, two place tandem seat, subsonic military trainer aircraft. Aero Vodochody, located in the Czech Republic, manufactured the aircraft. The most popular model is the L-39C; approximately 3,000 of this model were manufactured. The L-39C model makes up the majority of the jet trainers imported into the United States and issued an Experimental Exhibition Special Airworthiness Certificate.

b. L-39C Specifications (Abbreviated).

Max speed at 16,400 ft.....	407 knots (469 mph)
Max speed at sea level	378 knots (435 mph)
Length	39 ft., 8 inches
Wing span	31 ft.
Height.....	15 ft., 6 inches
Wing area	202 sq. ft.
Flaps.....	Double-slotted, Fowler-type
Flaps takeoff.....	25 degrees
Flaps landing	44 degrees
Empty weight.....	7,625 lbs.
Max. takeoff weight	10,362 lbs.
Max. landing weight	10,141 lbs.
Normal takeoff weight	9,976 lbs.
Empty aircraft weight C/G range.....	27.7 +/- .5% MAC (27.2 – 28.2% MAC)
C/G range	20.7 to 28% MAC
Takeoff run.....	1,575 ft.
Landing distance	1,968 ft.
Initial rate of climb	4,330 ft./min.
V _{mo} knots.....	491 knots
Max load factor	+8g, – 4g
M _{mo} knots	0.80 clean
Range at 16,400 ft	540 nautical miles
Engine	3,792 lbs., Ukrainian Progress, Ivchenko AI-25TL.
	Twin shaft bypass turbofan engine.
	Bypass ratio 1.983.

5. ENGINE OVERHAUL TIMES.

a. Determining Engine Overhaul Times. The AI-25TL engine has been in production for approximately 30 years. During the production run, the engine underwent many changes and modifications. These modifications increased the engine's reliability and lengthened the time between overhauls. Since the majority of L-39 aircraft are older models imported into the United States from countries with different maintenance/inspection programs and recordkeeping requirements, it is difficult for the FAA to determine with a high degree of accuracy each individual engine's overhaul time. Therefore, for the purpose of issuing an Experimental Exhibition Special Airworthiness Certificate, the initial overhaul times for the AI-25TL engine will be based on the engine logbook and/or the engine manufacturer (Motor Sich) overhaul and life limits. While the factory recommended engine overhaul times for different engine serial numbers varies from 300 hours to 1000 hours, the engine overhaul life limit for all engine serial numbers is 4000 hours total time in service.

NOTE: If an engine time cannot be documented (no logbook), or the engine has exceeded its overhaul limit or life limit, the aircraft in which the engine is installed will not be issued an experimental certificate.

b. Engine Storage Life. Engines which have exceeded storage life limits are susceptible to internal corrosion, deterioration of seals and coatings, and breakdown of engine preservation lubricants. If an engine has exceeded its recommended storage life limits, that engine's fan, compressor, and turbine sections will be visually inspected for any sign of corrosion or other problems associated with long-term storage. If the engine is found to be airworthy it may be re-preserved in accordance with the manufacturer's instructions and placed back in storage for the length of time specified in Table 1. This inspection and re-preservation must be documented in accordance with Title 14 of the Code of Federal Regulations (14 CFR) § 43.11 and signed off by a mechanic with at least a powerplant rating or an appropriately rated part 145 repair station.

(1) At the end of the storage period, the engine must be reinspected. The engine, upon passing the inspection, can be re-preserved for an additional period of storage. The engine can be re-preserved a total of two times using this method. After the end of the second re-preservation inspection and storage, the engine must be either placed in service or overhauled.

(2) If corrosion or other problems are found, they must be documented in the engine maintenance log. After the repairs are completed, the engine may be preserved in accordance with the manufacturer's instructions and placed back in storage.

Table 1. Storage Life Limits for Properly Preserved Engines

	Moderate Climate Conditions	Tropical Climate Conditions
Engines in sheltered storage areas	6 years	3 years
Engines in unsheltered storage areas	3 years	1 year

NOTE: A sheltered storage area is an area that is protected from external environmental conditions (for example, a metal container or a room in which the temperature and humidity is controlled).

c. Engine Overhaul Time Extension. The FAA understands that the original engine overhaul and time limits were set by the manufacturer to ensure safe engine operation under harsh military conditions. Presently, the FAA has no data to justify extension of the overhaul times on the AI-25TL engines.

d. Information Warranting an Increase in Overhaul Times. If an owner seeks an increase in overhaul times, the FAA will consider any owner-supplied data/records/logbooks or other information from the engine manufacturer that documents specific modifications or service bulletins that were performed on the engine. The local FAA Flight Standards District Office (FSDO)

Airworthiness aviation safety inspector (ASI) will determine if an increase in overhaul time is justified based on the above documents and revise the operating limitations for the aircraft.

e. Privately-Owned L-39 Aircraft that Have Operated Under This Recommended Inspection Program for at Least Two Years. For these aircraft, the FAA will consider granting fleet-wide engine overhaul time extensions in increments of 50 hours each, not to exceed a total of 150 hours. Each of the three engine time increases will be based on the results of engine and accessories tear-down inspections and reports performed by an appropriately rated part 145 FAA Repair Station or by the engine manufacturer on five AI-25TL engines with identical overhaul times. If an increase in overhaul times for a particular series of engines is warranted, the FAA will revise appropriate portions of this AC to reflect the change in overhaul time. Once the revision to the AC is published, the owner can request that the local FSDO revise the aircraft's engine life limits.

6. OWNER INVOLVEMENT. The FAA's desire is to work closely with L-39 owners to ensure safe operation of these high-performance aircraft. With a large number of L-39 aircraft, it would be impossible for the FAA to work with each owner on an individual basis. Therefore, the FAA is seeking to initially establish two L-39 safety working groups: a maintenance safety group and an operations safety group. Each FAA-recognized L-39 safety working group's mission will be to promote safety within its area of expertise and to serve as an interface between the FAA and L-39 owners. Interested persons, please contact the Aircraft Maintenance Division, AFS-305 (telephone: (202) 267-3796).

7. REVISIONS. The FAA ASI at the local FSDO may make minor changes to this inspection program based on installed equipment, environmental conditions, and operating conditions. Extensive revisions to this inspection program should be coordinated with AFS-305.

8. COMMENTS INVITED. The FAA encourages public participation in updating this document. Please send comments, suggestions, or information about this AC to the following address: Aircraft Maintenance Division, AFS-305, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591, or by FAX to (202) 267-5115.

/s/ John M. Allen for
James J. Ballough
Director, Flight Standards Service

APPENDIX 1. L-39 ALBATROSS RECOMMENDED INSPECTION PROGRAM

L-39 ALBATROSS

MANUFACTURED BY: AERO VODOCHODY, CZECH REPUBLIC

SERIAL NUMBER: _____

REGISTRATION NUMBER: _____

REGISTERED OWNER: _____

ADDRESS: _____

FAA SIGNATURE: _____

FSDO ADDRESS: _____

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APPENDIX 1. L-39 ALBATROSS RECOMMENDED INSPECTION PROGRAM**INTRODUCTION:
L-39 INSPECTION PROGRAM RESPONSIBILITY**

The owner of N_____ Serial # _____ is responsible for scheduling and supervising the inspections required by this program while the aircraft is based at _____ airport, city/county of _____, state of _____.

If and when the aircraft is moved to another location, the owner will notify the local Federal Aviation Administration (FAA) Flight Standards District Office (FSDO) having jurisdiction over the area in which the aircraft is based, furnish it with a copy of the approved aircraft inspection program, and identify the person responsible for scheduling and performing the required inspections.

The owner is responsible for having the inspection(s) performed as prescribed in the inspection program identified in the aircraft's operating limitations and for keeping the records as required under Title 14 of the Code of Federal Regulations (14 CFR) § 91.417.

**INTRODUCTION:
L-39 INSPECTION PROGRAM RESPONSIBILITY (Continued)**

The owner shall ensure that all inspections are performed in accordance with the applicable L-39 and other manufacturers' maintenance manuals. In addition, the owner should ensure that all maintenance record entries are made in accordance with 14 CFR §§ 43.9 and 43.11 and retained in accordance with § 91.417.

The following manuals should be readily available for referencing procedures and service instructions:

1. L-39 Airframe and Engine Installation Manual.
2. Engine Manual AI-25TL—Instructions for Operation.
3. Engine Manual AI-25TL—Technical Description and Instructions for Operation.
4. Electrical Equipment and Instruments—Technical Description and Instructions for Operation.
5. Facilities for Work (systems manual(s))—Operations on the Aircraft Airframe, Including its Individual Systems.
6. Armament and Rescue System—Ejection Seats.

This inspection program includes the following items to be complied with at the specified intervals:

1. Maintenance preflight: first flight of the day.
2. Engine run-up and systems check: as required.
3. Periodic inspection at 50 flight hours/6 months.
4. Specified inspections at 100 flight hours/12 months.
5. Specified inspections at 400 flight hours/48 months.
6. Post inspection run-up and systems check: as required.
7. Airworthiness limitations: as indicated.

NOTE: The pressure gauges in the L-39C are calibrated in kg/cm². To find out the pressure in PSI, multiply the gauge reading by 14.2. For example, if the gauge reads 150 kg/cm², multiply 150 x 14.2 = 2130 PSI.

METHOD OF REVISION

Submit revisions of this manual to the local FSDO office for approval.

Once approved by the FSDO, insert the revision into the approved aircraft inspection program.

Enter revisions in the revision log, which lists the revision number, date, page, subject, and initials of person making the insertion.

Logbook Entries

Enter the following statement in the appropriate aircraft and/or engine logbook after each inspection:

“I certify that this aircraft has been inspected on [insert date] in accordance with the scope and detail of the FAA-approved L-39 inspection program dated _____ for serial number _____, and found to be in a condition for safe operation.”

Aircraft Total Time: _____ Inspection Type: _____

Signature and A&P Certificate #: _____ Date: _____

Enter the following statement in the appropriate aircraft and/or engine logbook if the aircraft was inspected and found not safe for flight:

“I certify that this aircraft has been inspected on [insert date] in accordance with the scope and detail of the FAA-approved L-39 inspection program dated _____ for serial number _____, and found **NOT in a condition for safe operation**; a list of unsafe items has been provided to the owner on this date_____.”

Aircraft Total Time: _____ Inspection Type: _____

Signature and A&P Certificate #: _____ Date: _____

24 Calendar-Month Items

Conduct a pitot/static system and transponder check in accordance with part 43, appendices E and F, every 24 calendar-months, or after system maintenance if the aircraft is operated under instrument flight rules.

[illegible]

SAFETY CONSIDERATIONS

READ BEFORE STARTING ANY INSPECTION

1. Engine Run-Up and Systems Checks. These checks will be performed before the inspection. All run-up sheets will be attached to the inspection checklist and become part of the aircraft's maintenance records.

2. Ground the Aircraft. Static electricity could cause a fire or explosion, set off pyrocartridges, or result in any combination of the above.

CAUTION: Ground the aircraft, ensure all electrical tools are grounded, and use industry-approved explosion-proof flashlights or other lighting sources.

3. Ejection Seats (if Installed). Confirm the status of the ejection seats and canopy in both the front and aft cockpit as soon as the engine is shut down. Install all safety pins in the firing mechanisms of pyrocartridges. After the pilot has exited the aircraft, close and lock the canopies. Confirm warning placards are legible and in good condition. Do not attempt to remove cartridges from firing chambers or remove either seat from the aircraft without first consulting a technician trained and experienced in removing those seats. Consult the armament and rescue system manual. (Instructions for seat inspection are in Appendix 2, L-39 Ejection Seat/Canopy Inspection Program.)

4. Radioactive Components.

a. The transmitter of the ice accretion system on the left underside of the nose must have its special cover installed when the aircraft is on the ground. It can be removed by the pilot when entering the cockpit.

b. The engine ignition system (high voltage energy source) contains built-in radioisotopes.

c. Do not dismantle either of the above systems. If any part of the transmitter of the ice accretion system or the high voltage energy source is damaged, it must be specially wrapped and disposed of following Environmental Protection Agency (EPA) guidelines.

5. Fire Risk. Do not allow oil, fuel, kerosene, or any cleaning fluid to come in contact with the oxygen installation. This could cause an explosion or fire.

6. Gear Positions. Before moving or working on the aircraft, confirm the front cockpit landing gear control is in the "down" position and the landing gear control in the aft cockpit is in the "neutral" position.

SAFETY CONSIDERATIONS (Continued)

7. Ensure Access. Position controls for access during inspections:

- Landing gear doors open
- Flaps extended
- Ram air turbine extended
- Parking brakes applied and wear indicators checked

8. Hydraulic Pressure. Reduce hydraulic pressure to 0 (zero) before working in or near the gear wells or dive brakes, or before working on any hydraulic components.

AIRWORTHINESS LIMITATIONS

This inspection program specifies that the following components be replaced or overhauled in accordance with the manufacturer's data at the specified intervals:

ENGINE (S/N_____)	4000 HOURS—REPLACE
(MODEL_____)	
ENGINE (TOTAL TIME_____)	XXX HOURS—OVERHAUL (to be determined by engine S/N and logbook documentation)
FUEL REGULATOR	ENGINE OVERHAUL
FUEL PUMP	ENGINE OVERHAUL
OIL TANK	ENGINE OVERHAUL
OIL UNIT	ENGINE OVERHAUL
AIR SEPARATOR	ENGINE OVERHAUL
FUEL OIL UNIT	ENGINE OVERHAUL
START-IN TURBINE	ENGINE OVERHAUL
IGNITION	ENGINE OVERHAUL
SPARK PLUGS	ENGINE OVERHAUL
ELECTRO MECHANISM	ENGINE OVERHAUL
STARTER	ENGINE OVERHAUL
SAPPHIRE GAS GENERATOR	3000 STARTS—OVERHAUL
FUEL TANKS	10 YEARS—REPLACE
LANDING GEAR (NOSE)	3000 LANDINGS/12 YEARS—OVERHAUL
LANDING GEAR (MAIN)	3000 LANDINGS/12 YEARS—OVERHAUL
BRAKES (LEFT/RIGHT)	ON CONDITION—REPLACE

AIRWORTHINESS LIMITATIONS (Continued)

ROCKET ENGINE	8 YEARS—REPLACE
PARACHUTE	5 YEARS—REPLACE
PARACHUTE STABILIZATION SYSTEM	5 YEARS—REPLACE
CARTRIDGES (2 EACH)	PER MANUFACTURER'S INSTRUCTIONS
BATTERY	ON CONDITION
TURBO-COOLER	1000 HOURS—OVERHAUL 3000 HOURS—REPLACE
FRONT WINDSHIELD SEALING HOSES	IF HANGARED FULL-TIME, ON CONDITION IF NOT, 8 YEARS—REPLACE
FRONT CANOPY SEALING HOSES	IF HANGARED FULL-TIME, ON CONDITION IF NOT, 8 YEARS—REPLACE
REAR CANOPY SEALING HOSES	IF HANGARED FULL-TIME, ON CONDITION IF NOT, 8 YEARS—REPLACE
HYDRAULIC PUMP	1200 HOURS—OVERHAUL
HYDRAULIC ACCUMULATOR	1500 HOURS/8 YEARS—OVERHAUL
NITROGEN BOTTLE	PER MANUFACTURER'S INSTRUCTIONS
OXYGEN BOTTLE	PER MANUFACTURER'S INSTRUCTIONS
FIRE BOTTLES	PER MANUFACTURER'S INSTRUCTIONS
TEMPERATURE REGULATOR RT-9-2 SERIES	6000 HOURS—OVERHAUL 8000 HOURS—REPLACE

NOTE: Replacement of pressure bottles will be accomplished in accordance with the manufacturer's recommendations and applicable federal regulations.

ACCEPTABLE OILS, GREASES, AND LUBRICANTS

FUEL.....JET A
TURBOJET ENGINE OILROYCO 481 MIL SPEC L6081C
SAPPHIRE ENGINE OILROYCO 481 MIL SPEC L6081C
TURBO-COOLER.....MOBIL JET OIL II—SYNTHETIC OIL
AIR STARTER.....MOBIL JET OIL II—SYNTHETIC OIL

GREASE:

WHEEL BEARINGS.....AEROSHELL #22
FLAP TRACKSLUBRIPLATE 630
AEROSHELL #5

GENERAL APPLICATIONSLUBRIPLATE 630
AEROSHELL #22
AEROSHELL #17

HYDRAULIC FLUIDMIL 5606

NOTE: Control hinges, control rod end bearings, and bellcranks are packed with grease (Lubriplate 630, Aeroshell #22, or similar grease) at assembly. During inspections it is generally not necessary to disassemble each control rod end to grease. Use of LPS-2 will displace moisture and maintain a film of lubrication.

MAINTENANCE PREFLIGHT INSPECTION

1. Front Fuselage:

- a. Skin for damage. _____
- b. Nitrogen pressure per manual requirements. _____
- c. Both nose side doors opened, inspected, closed, and secure. _____
- d. Protective cover on ice indicator pickup positioned correctly. _____

2. Nose Undercarriage:

- a. Tire:
 - Condition _____
 - Inflation (70 PSI) _____
- b. Strut extension. _____
- c. Shimmy damper for security and leaks. _____

3. Right Intake:

- Check for general condition:
- Inside _____
 - Outside _____

4. Right Undercarriage:

- a. Tire:
 - Condition _____
 - Inflation (85 PSI) _____
- b. Strut extension. _____
- c. Brakes—check wear indicator when brakes are applied. _____
- d. Check for fuel or hydraulic fluid in landing gear area. _____
- e. Check wheel-well area for security of hydraulic and fuel lines. _____
- f. Take fuel sample from No. 5 fuel tank and check for contamination. _____
- g. Check landing gear up-locks for condition. _____
- h. Check door up-locks for condition. _____
- i. Inner gear door:
 - General condition _____
 - Hinges _____

MAINTENANCE PREFLIGHT INSPECTION (Continued)**5. Right Wing:****a.** Wing fairings for condition. _____**b.** Flaps: _____

Condition _____

Guide rails for cleanliness _____

c. Aileron: _____

Condition _____

Hinges _____

Security _____

Trim tab _____

d. Wing-tip tank: _____

Condition _____

Cap secure _____

Drain fuel specimen _____

e. Check for fuel or hydraulic fluid leaks. _____**f.** All inspection doors closed. _____**g.** Skin condition: _____

Top _____

Bottom _____

6. Right Fuselage:**a.** Open inspection door to engine compartment: _____

Check for fuel or hydraulic fluid leaks _____

Check for security of engine controls _____

Check oil quantity _____

CAUTION: If oil quantity is exceptionally low, oil may have bypassed into the lower accessory case. In this case, the engine should be cold-run. Re-check the oil and add if necessary. Should this condition repeat itself when the aircraft is inactive for a period of time, it will be necessary to clean the check valve at the oil pump, as referenced in the AI-25TL Engine Manual, chapter 6.2, step 11.

b. Skin: _____

Condition _____

Inspection doors secure _____

MAINTENANCE PREFLIGHT INSPECTION (Continued)

7. Tail Section:

a. Skin:

Condition _____
5 assembly covers (tail cone to fuselage) secure _____

b. Elevator:

General condition _____
Hinges _____
Trim tabs _____

c. Rudder:

General condition _____
Hinges _____
Trim tab _____

d. Tail fairings:

Condition _____
Security _____

8. Exhaust Pipe (use an industry-approved explosion-proof flashlight):

- a.** General condition. _____
- b.** Security. _____
- c.** Turbine blade condition for turbine staves, and mixing chamber cone for cracks in welding seam. Check for fuel and oil residue, which indicates worn-out bearings, and metal spray on exhaust pipe walls, which indicates melted high-pressure turbine parts. _____

9. Left Fuselage (open engine inspection door to engine compartment):

- a.** Check for fuel or hydraulic fluid leaks. _____
- b.** Check oil level in the Sapphire tank.
(MAX = 20 mm below MAX line) _____
- c.** Check compressor blades of Sapphire. _____
- d.** Check for any loose objects in engine compartment. _____
- e.** Rotate main engine using special wrench. _____
- f.** Close inspection door and secure. _____
- g.** Check level of hydraulic fluid and replenish if necessary. _____
- h.** Inspect oil chip magnetic plug. _____

MAINTENANCE PREFLIGHT INSPECTION (Continued)

CAUTION: Before opening the hydraulic system, check pressure in main and emergency hydraulic system before bleeding head pressure from hydraulic tank. Be sure to close hydraulic valve (HV-5) after bleeding air. If you do not close the valve, you will lose your canopy sealing system in flight and have low hydraulic pressure in the main system.

10. Left Wing:

a. Wing fairings for condition. _____

b. Flaps: _____

Condition _____

Guide rails for cleanliness _____

c. Aileron: _____

Condition _____

Hinges _____

Security _____

Trim tab _____

d. Wing-tip tank: _____

Condition _____

Cap secure _____

Drain fuel specimen _____

e. Check for fuel or hydraulic fluid leaks. _____

f. All inspection doors closed. _____

g. Skin condition: _____

Top _____

Bottom _____

11. Left Undercarriage:

a. Tire: _____

Condition _____

Inflation (85 PSI) _____

b. Strut extension. _____

c. Brakes—check wear indicator when brakes are applied. _____

d. Check for fuel or hydraulic fluid in landing gear area. _____

e. Check wheel-well area for security of hydraulic and fuel lines. _____

MAINTENANCE PREFLIGHT INSPECTION (Continued)

f. Check landing gear up-locks for condition. _____

g. Check door up-locks for condition. _____

h. Inner gear door: _____

General condition _____

Hinges _____

12. Fuselage Bottom Section:

a. General condition. _____

b. Check for oil, fuel, or hydraulic leaks. _____

13. Left Intake:

Check for general condition:

Inside _____

Outside _____

14. Upper Fuselage:

a. Skin condition. _____

b. Inspection covers closed and secured. _____

c. Check fuel quantity visually and record amount indicated
on the gauges. Compare these figures with the fuel tank readings
during run-up/taxi. _____

15. Cockpits:

a. Rear:

Plexiglass _____

Hinges aligned properly _____

Hinged retainer operates properly to hold canopy open _____

Hinged retainer releases normally to close canopy _____

b. If ejection seat is armed:

Check all pins in place _____

Check 4 cartridges' safety pins in place _____

Check canopy emergency handle safetied _____

Check for any loose articles in the cockpit _____

MAINTENANCE PREFLIGHT INSPECTION (Continued)**c. Front:**

Plexiglass	_____
Hinges aligned properly	_____
Hinged retainer operates properly to hold canopy open	_____
Hinged retainer releases normally to close canopy	_____

d. If ejection seat is armed:

Check all pins in place	_____
Check 4 cartridges' safety pins in place	_____
Check canopy emergency handle safetied	_____
Check for any loose articles in the cockpit	_____

ENGINE RUN-UP AND SYSTEMS CHECK

NOTE: Engine run-up must be performed in accordance with chapter 5 of the AI-25TL maintenance manual.

AFTER STARTING ENGINE:

1. Sapphire start normal (min. running time: 30 seconds before engine start). _____
2. Engine start normal. _____
3. Maximum temp. during start was _____ °C. _____
4. Engine idle—remain at idle for 1-minute warm-up.
 - a. N_1 : 54.5 – 57.5%. _____
 - b. Oil pressure: 2 – 4.5 kg/cm². _____
 - c. Exhaust Gas Temperature (EGT)
(max. 600° C) actual _____ °C. _____
 - d. Hydraulic pressure: 150 + 10/-15 kg/cm². _____
 - e. Check emergency hydraulic pressure is equal to main hydraulic pressure. If not, move hydraulic system lever from forward position to interconnection position until pressure equalizes. _____
 - f. Brake pressure: 33 +3/-3 kg/cm². _____

CAUTION: Do not press brake lever if there is less than 50 kg/cm² pressure in the system—damage to the brake system may result.

- g. Brake pressure emergency: 32 +8/-3 kg/cm². _____
- h. Generator voltage: 27 – 29 V (checked at N_1 70%). _____
- i. Ammeter shows charge (main and emergency generators). _____
- j. Check brake pressure. _____
- k. Close canopy and lock. “Canopy Unlocked” light will go off. _____
- l. Move air condition-pressurize lever forward to stop-dog. “Air Condition Off ” light will go out. _____
- m. Check pressurization by reduction in cockpit noise level. Pressurization will read 0.021 kg/cm². _____
- n. Check flight controls for freedom of movement and full travel. _____
- o. Set elevator trim. _____

NOTE: Trim indicator follows trim setting.

ENGINE RUN-UP AND SYSTEMS CHECK (Continued)

5. Check operation of air bypass valve (stage III). Advance throttles slowly and monitor RPM. N_2 RPM needle will jump to an increase of 3 – 4% when N_1 is between 74 – 78% as the air bypass valve closes. _____
6. Advance throttle to N_1 85% and warm up for 1 min. minimum. Check flap system:
- a. Extend to takeoff position. _____
 - b. Extend to landing position. _____
 - c. Retract to takeoff position. _____
 - d. Retract to “up” position. _____
 - e. Indicator lights operational. _____
 - f. Time of extension and retraction:
 - Flight—takeoff 1 – 3 sec. _____
 - Flight—landing 4 – 7 sec. _____
7. Check operation of air bypass valve (stage V). Advance throttles slowly and monitor RPM. N_2 RPM needle will jump 1 – 2% when N_1 is between 86 – 90% as the air bypass valve closes. _____
8. Check engine oil temperature: 5° C minimum. If not, increase the throttle to N_1 93% and continue warm-up until 5° C is attained. _____
9. Advance throttle to N_1 85%.
- a. EGT max. 590° C. _____
 - b. Increase N_1 to 99.6% +/- 1% according to standard atmosphere. _____
 - c. Engine vibration meter should be between the yellow lines. _____
 - d. Check fuel pump operation. _____
 - Turn boost pump off _____

NOTE: “Don’t Start” light comes on and engine parameters remain the same.

Turn fuel boost pump on _____

CAUTION: If the Lund 1374-8 thermocouple is installed instead of the T-99 (connected with the change of the RT-12-9 regulator’s setting), the maximum EGT is 610° C.

ENGINE RUN-UP AND SYSTEMS CHECK (Continued)

10. Advance throttle to nominal.

- a. EGT max.: 605° C. _____
- b. N₁: 103.2 +/- 1%. _____
- c. Engine vibration meter should be between the yellow lines. _____
- d. Generator voltage: 27 – 29 volts. _____
- e. Check auto mode of cockpit temperature controller. _____
- f. Check auto mode of air shower temperature controller. _____

11. Advance throttle to forward stop:

- a. MAX throttle should not reach forward stop. Throttle is limited by MAX stop on FCU-4000. _____
- b. Engine vibration meter should be between the yellow lines. _____
- c. N₁ : 106.8 +/- 1% according to standard atmosphere. _____
- d. EGT max: 660° C. _____
- e. Oil pressure: 3 – 4.5 kg/cm². _____
- f. Oil temperature: +5 to +90° C. _____
- g. Max. fuel pressure: 65 kg/cm². _____

NOTE: Fuel pressure at this reading will be used for the acceleration check.

12. Reduce throttle slowly.

- a. Check that air bypass valve (stage III) opens at N₁ 89 – 86%. _____
- b. The N₁ needle will indicate a sudden decrease of 1 – 2% as the valve opens. _____
- c. Reduce the throttle further and note the N₂ RPM needle will indicate a sudden decrease from 77% to 74%, signifying that the air bypass valve of stage V has opened. _____

13. Engine acceleration check (note: do not exceed engine operating parameters).

- a. Record the fuel pressure after 30 sec. at idle. _____
- b. Advance the throttle smoothly from idle to full throttle within 1 – 2 sec. Note at what time the fuel pressure reaches MAX pressure minus 10%. This should be 9 – 12 seconds. _____
- c. After 15 sec. at full throttle, record the time and smoothly reduce the throttle to idle within 1 – 2 sec. _____

ENGINE RUN-UP AND SYSTEMS CHECK (Continued)

- d. N_1 at idle should stabilize within 45 sec. after rapid deceleration. Fuel pressure should go down to idle value within 5 seconds. _____

NOTE: If N_1 drops below 54.5% during throttling down, cut the engine off by displacing the throttle handle to the “Stop” position.

14. Check deicing system at N_1 85% NOMINAL for 30 seconds only.
- a. Switch deicing switch to “on” position. Engine temp. will rise 20-30 degrees max. “Deicing On” light will light 30 seconds later. _____
- b. Switch deicing off. Temp. will decrease and deicing light will go off. _____

NOTE: Engine run-ups at temperatures below +5° C require the deicing system to be on after the engine is on idle for the whole period of the run-up.

15. Check engine overheat protective system.
- a. Turn generator off and close cockpit air conditioning. Both generator light and “Air Conditioner Off” light will come on. _____
- b. Set throttle to N_1 70%. _____
- c. Pt-12-9 switch to “Check I” position. “700° C” light will turn on and RPM should start diminishing. As soon as N_1 diminishes and starts dropping by 2 – 3%, switch PT-12-9 to neutral position. “700° C” light should go out and N_1 should return to 70%. _____
- d. Turn generator on. _____
16. Low-speed taxi check.
- a. Brake operation. _____
- b. Differential braking. _____
- c. Emergency braking. _____

17. Emergency fuel system check.
- a. Turn generator, cockpit air conditioning, and deice system off. _____
- b. Test with no load on the hydraulic system. _____
- c. Adjust N_1 to 70%. _____
- d. Emergency fuel switch on. _____
- e. Emergency fuel delivery warning light on. _____

NOTE: High pressure compressor RPM may change when emergency fuel is turned on.

ENGINE RUN-UP AND SYSTEMS CHECK (Continued)

- f. Advance throttle smoothly and note the 3 – 4% jump in N_1 . Check the RPM chart on page 251, figure 41 of the Airframe and Engine Manual. A 2% variation is allowed. The air bypass valves of stage III and stage V operate simultaneously when the emergency fuel system is on. _____

NOTE: Do not allow the RPM to decrease below 56% N_1 when using the emergency fuel system.

CAUTION: Do not switch from emergency fuel system to the main system when the engine is running.

18. Shut the engine down by closing the throttle to the stop position. _____
19. After moving the throttle to the stop position, switch from emergency fuel system to main fuel system. _____
20. Note time of engine run-down (10 seconds minimum). _____

50-HOUR/6-MONTH PERIODIC INSPECTION

NOTE: This preventive maintenance inspection can be performed by a rated pilot who is properly trained to perform these tasks in accordance with the appropriate maintenance manual. The inspection is signed off in accordance with the aircraft's operating limitations.

1. Lubricate landing gear:
 - Left _____
 - Right _____
 - Nose _____
2. Lubricate flaps:
 - Left _____
 - Right _____
3. Lubricate rudder pedals:
 - Front _____
 - Rear _____
4. Lubricate controls and trim tabs:
 - a. Aileron and trim tabs:
 - Left _____
 - Right _____
 - b. Elevators and trim tabs:
 - Left _____
 - Right _____
 - c. Rudder and trim tabs. _____
5. Clean and inspect 3 hydraulic filters per manual. If non-metallic filter elements are installed, replace them. _____
6. Replenish hydraulic fluid in the tank. _____
7. Check and service nitrogen pressure in accumulators:
 - Main _____
 - Emergency _____
8. Replenish the oil in the turbo cooler. _____

50-HOUR/6-MONTH PERIODIC INSPECTION (Continued)

9. Check and clean fuel filter of fuel/oil heat exchanger. (Bleed air out of system prior to run-up.) _____
10. Obtain engine oil sample and send to laboratory for analysis. _____
11. Inspect stator and LPC blades of stage I **visually** through the air intakes for visible damage. _____
12. Inspect stator and HPC blades of stage I with borescope.
(See Engine Manual part 2, § 5.11.) Borescope: Make: _____
For parameters of blade damage allowed, Model: _____
refer to Engine Manual part 2, appendix 2. S/N: _____
- NOTE: For parameters of blade damage allowed, refer to
Engine Manual part 2, appendix 2.**
13. Conduct engine test run and systems and taxi checks as given in Engine Manual part 2, § 5.1. Use an engine run-up check sheet and insert completed run-up sheet in aircraft maintenance records. _____
14. Make entries in the appropriate logbooks. _____

**100-HOUR INSPECTION/CONDITION INSPECTION
(ACCOMPLISHED EVERY 12 CALENDAR-MONTHS)**

This inspection is divided into 8 zones and operational checks with a double sign-off. Ideally, the inspection task is performed by one mechanic and followed by another mechanic inspecting the work performed.

ZONE 1	FUSELAGE — NOSE SECTION
ZONE 2	FUSELAGE — COCKPIT SECTION
ZONE 3	FUSELAGE — FUEL TANK AND ENGINE SECTION
ZONE 4	FUSELAGE — TAIL CONE SECTION
ZONE 5	RIGHT WING AND CENTER SECTION
ZONE 6	LEFT WING AND CENTER SECTION
ZONE 7	WHEELS AND BRAKES
ZONE 8	OPERATIONAL CHECKS

100-HOUR INSPECTION/CONDITION INSPECTION

ZONE 1: FUSELAGE—NOSE SECTION

1. Open and inspect nose cowling doors:
 - a. General condition. _____
 - b. Hinges for security and condition. _____
 - c. Lubricate hinges. _____
 - d. Security of latches. _____
2. Inspect batteries for:
 - a. Security. _____
 - b. Electrolyte level, if applicable. _____
 - c. Batteries charged to 24V. _____
 - d. Vent system condition, if applicable. _____
3. Inspect electric wire bundles and junctions for:
 - a. General condition. _____
 - b. Security. _____
4. Inspect electrical systems and radios for:
 - a. General condition. _____
 - b. Security of attachments. _____
5. Inspect high-pressure bottles for attachment and security of lines:
 - a. Nitrogen. _____
 - b. Oxygen. _____
6. Inspect ice accretion sensor for:
 - a. Security. _____
 - b. Secure fit of cover. _____

WARNING: Cover must be on this sensor when the aircraft is parked. This sensor is radioactive. Refer to Appendix 1, page 7, Safety Considerations.

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 1: FUSELAGE—NOSE SECTION (Continued)**

7. Open nose gear door for inspection:
- a. Nose gear actuator for security and leaks. _____
 - b. Nose gear door actuator for security and leaks. _____
 - c. All hydraulic plumbing for security and leaks. _____
 - d. Nose gear oleo for extension (2 – 3") and for leaks. _____
 - e. Shimmy damper for condition and attachment. _____
 - f. Service shimmy damper. _____
 - g. Scissors for condition and bushing wear. _____
 - h. Trunion for attachment and bushing wear. _____
 - i. Tire for condition and inflation. _____
 - j. Lubricate all grease fittings on scissors and trunion. _____
8. Confirm that all placards are in place for:
- a. Nitrogen service. _____
 - b. Oxygen service. _____
 - c. WARNING—radioactive sensor. _____
9. Inspect skin for condition and loose rivets. _____
10. Close and secure all access doors and ensure radioactive cover is in place. _____

INSPECTOR:**CONFIRM INSPECTION OF ITEMS 1 THROUGH 10.** _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 2: FUSELAGE—COCKPIT SECTION
(Covers area from nose section to leading edge of wings.)

- 11.** Inspect skin for:
- a.** General condition. _____
 - b.** Loose rivets. _____
 - c.** Corrosion. _____
- 12.** Remove inspection panels and open all inspection doors to facilitate inspection. Inspect panels and doors for:
- a.** General condition and corrosion. _____
 - b.** Security of hinges and attachments. _____
 - c.** Security of latching mechanisms. _____
 - d.** Lubrication—lubricate as required. _____
- 13.** Inspect control rods in belly for:
- a.** Security and safetying:
 - Rudder _____
 - Aileron _____
 - Elevator _____
 - b.** General condition and check for corrosion:
 - Rudder _____
 - Aileron _____
 - Elevator _____
 - c.** Move controls full travel by control stick and rudder pedals.
 - (1)** Observe control rod and bellcrank movement.
 - (2)** Check for chafing and freedom of movement.
 - (3)** Inspect bellcranks. Lubricate pivot points and control rod bearings:
 - Rudder _____
 - Aileron _____
 - Elevator _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 2: FUSELAGE—COCKPIT SECTION (Continued)

14. Inspect electrical equipment and wiring in the belly for:

- a. General condition. _____
- b. Security of attachment. _____
- c. Cannon plug security and sealant. _____

15. Inspect plumbing in belly for:

- a. General condition. _____
- b. Leaks. _____
- c. Security of attachment. _____

16. Inspect hydraulic accumulators for:

- a. General condition. _____
- b. Security. _____
- c. Service (735 PSI nitrogen +/- 5 PSI). _____

17. Cockpit inspection.

CAUTION: Make sure all safety pins are installed in seats and canopy ejection firing mechanisms. Follow instructions in Appendix 2, page 3, if seats are to be removed.

a. Inspect canopy for general condition:

Front _____

Rear _____

b. Fit in hinges:

Front _____

Rear _____

c. Proper latching:

Front _____

Rear _____

d. “Canopy Unlocked” warning when canopy is open or not fully locked:

Front _____

Rear _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 2: FUSELAGE—COCKPIT SECTION (Continued)

- e. General condition of canopy seal:
- Front _____
- Rear _____
- f. Seal inflation.
- (1) Close canopy and inflate seal.
- (2) Check for proper operation and leaks:
- Front _____
- Rear _____
- g. Condition of canopy plexiglass:
- Front _____
- Rear _____
18. Inspect windshield for:
- a. General condition. _____
- b. Security—latch bolts in place and safety covers installed. _____
- c. Condition of plexiglass windshield. _____
19. Check that cockpit labeling is in English:
- a. Switches (front):
- Left Deck _____
- Panel _____
- Right Deck _____
- b. Switches (rear):
- Left Deck _____
- Panel _____
- Right Deck _____
- c. Handles and controls (front):
- Left Deck _____
- Panel _____
- Right Deck _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 2: FUSELAGE—COCKPIT SECTION (Continued)

d. Handles and controls (rear):

Left Deck

Panel

Right Deck

- 20.** Inspect instruments and gauges for proper labeling and general condition.

NOTE: Operational check is included in pre-inspection and post-inspection run-up and systems check.

- 21.** Check control stick and rudder pedals for proper movement and for freedom of movement. Lubricate pivot points:

Front

Rear

- 22.** Close and secure all access doors.

INSPECTOR:

CONFIRM INSPECTION OF ITEMS 11 THROUGH 22.

100-HOUR INSPECTION/CONDITION INSPECTION

ZONE 3: FUSELAGE—FUEL TANK AND ENGINE SECTION

(From area of wing leading edge back to tail cone attachment bulkhead.)

23. Inspect skin for:

- a.** General condition.
- b.** Loose rivets.
- c.** Corrosion.

24. Remove inspection panels and open all inspection doors to facilitate inspection. Inspect panels and door for:

- a.** General condition.
- b.** Security of hinges and attachments.
- c.** Security of latching mechanisms.
- d.** Lubrication—lubricate where required.

25. Inspect control rods for general condition, security, and safetying:

Rudder
Aileron
Elevator
Throttle
Firewall shutoff (fuel)

26. Check controls for full travel each way. Inspect bellcranks and check for corrosion, general condition, security, and freedom of movement.

Lubricate pivot points and control rod end bearings:

Rudder
Aileron
Elevator
Throttle
Firewall shutoff (breakaway safety wire,
both cockpits)

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 3: FUSELAGE—FUEL TANK AND ENGINE SECTION (Continued)**

27. Inspect fuel tanks where accessible for:
- a. General condition. _____
 - b. Attachment and security. _____
 - c. Leaks. _____
 - d. Fuel line security. _____
 - e. Security and sealing of filler cap (check gasket for condition). _____
 - f. General condition of vent system (confirm vents are clear). _____
 - g. Contamination (take a fuel sample from main tank sump, inverted tank sump, and both tip tanks). _____
28. Inspect belly fuel drains to make sure that they are open. _____
29. Inspect hydraulic reservoir for security. _____
30. Drain hydraulic system fluid and refill reservoir with new MIL 5606 hydraulic fluid. Inspect gasket for condition and close filler cap. Inspect hydraulic pump by disconnecting the drain to the scavenge sump line at the hydraulic pump. If hydraulic fluid drips from the pump fitting, the pump should be rebuilt. _____
31. Inspect nitrogen lines and attachments to hydraulic reservoir. _____
32. Inspect all electrical wire bundles and Cannon plugs for:
- a. General condition. _____
 - b. Security and attachment. _____
 - c. Safetying, where required. _____
33. Extend emergency generator and inspect for:
- a. General condition. _____
 - b. Brush wear and seating. _____
 - c. Commutator condition. _____
 - d. Hydraulic actuator condition and attachment. _____

100-HOUR INSPECTION/CONDITION INSPECTION

ZONE 3: FUSELAGE—FUEL TANK AND ENGINE SECTION (Continued)

- 34.** Remove, clean, inspect, reinstall, and safetie the following filters:
- a.** 3 hydraulic filters. _____
 - b.** Main engine oil filter. _____
 - c.** Sapphire oil filter. _____
 - d.** Fuel filter of fuel oil heat exchanger. _____
 - e.** Fuel pump filter. _____
 - f.** Sapphire return fuel filter and input filter. _____
 - g.** Air filter of air starter. _____
 - h.** Air delivery controller filter for air conditioner. _____
 - i.** 2 filters of anti-G system in cockpit. _____
 - j.** Air filter of air bypass valve. _____
- 35.** Inspect Sapphire D5 starting system:
- a.** General condition. _____
 - b.** For security and attachment. _____
 - c.** Compressor blades for damage. _____
 - d.** Drain oil tank, clean filter, and check magnetic plug for particles.
Refill oil tank with Mobil Turbo 319A-2, Aeroshell Turbo Oil 3SP,
or Ryco 481 turbine oil. _____
 - e.** Check fuel and oil lines for leaks. _____
- 36.** Inspect main engine mounts for security of attachment
and general condition. _____
- 37.** Inspect engine control system:
- a.** Throttle:
 - Freedom of movement _____
 - Full travel: idle through full _____
 - Check stopcock position _____
 - Functional check at engine run _____
 - b.** Fuel shutoff (firewall shutoff):
 - Freedom of movement _____
 - Full travel _____

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 3: FUSELAGE—FUEL TANK AND ENGINE SECTION (Continued)**

- c. Position fuel shutoff lever to the “on” position
and install breakaway safety wire:
- Front cockpit _____
- Rear cockpit _____
- 38.** Check accessory drive section for:
- a.** Accessory attachments. _____
- b.** Oil, fuel, or hydraulic leaks. _____
- 39.** Inspect the bleed air bypass valve (for heating inlet of LPC)
for general condition. _____
- 40.** Change the oil in the S-25 air starter (Mobil Jet Oil II Synthetic). _____
- 41.** Rotate the LPC with a hand crank.
Check for ease of rotation. _____
- 42.** Check igniters for condition (do not clean). Reinstall if in
good condition. If not, replace. _____
- 43.** Functional test igniters. (See part 2, § 5.13 of the Engine Manual.) _____
- 44.** Inspect stator and LPC blades of stage I **visually** through
the air intakes for visible damage. _____
- 45.** Inspect stator and HPC blades of stage I with borescope.
(See Engine Manual part 2, § 5.11.) Borescope: Make: _____
For parameters of blade damage allowed, Model: _____
refer to Engine Manual part 2, appendix 2. S/N: _____
- 46.** Check for easy rotation of the engine.
(See Engine Manual part 2, appendix 3.) _____

100-HOUR INSPECTION/CONDITION INSPECTION

ZONE 3: FUSELAGE—FUEL TANK AND ENGINE SECTION (Continued)

- 47.** Borescope engine and take oil sample. If the color of the engine oil appears dark or reddish in color, the rear seal for the hydraulic pump may be leaking. Run-up engine and check for leaks. _____

- 48.** Close and secure all access doors. _____

INSPECTOR:

CONFIRM INSPECTION OF ITEMS 23 THROUGH 48. _____

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 4: FUSELAGE—TAIL CONE SECTION****(From tail cone attachment bulkhead aft.)**

- 49.** Inspect 5 tail cone attachment bolts. Check torque and fit of safetying covers. _____
- 50.** Inspect skin for general condition, corrosion, and loose rivets:
- a.** Tail cone. _____
 - b.** Horizontal stabilizer. _____
 - c.** Right elevator and trim tabs. _____
 - d.** Left elevator and trim tabs. _____
 - e.** Vertical fin. _____
 - f.** Rudder and trim tab. _____
- 51.** Remove all fairings and inspection covers. Inspect fairings and panels for:
- a.** General condition. _____
 - b.** Security of hinges and attachments. _____
 - c.** Security of latching mechanisms. _____
 - d.** Lubrication—lubricate where required. _____
- 52.** Inspect all control rods and bellcranks for general condition, corrosion, and freedom of movement. Lubricate end bearings and pivot points.
- Rudder _____
 - Rudder trim tab _____
 - Left elevator _____
 - Left elevator trim tab _____
 - Right elevator _____
 - Right elevator trim tab _____
- 53.** Inspect elevator counterweights for attachment, general condition, and security. _____
- 54.** Inspect springs and cam of elevator control assist mechanism:
- a.** Check that springs are in good condition. _____
 - b.** Grease cam. _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 4: FUSELAGE—TAIL CONE SECTION (Continued)

- 55.** Move controls to stops and check angular movement.
(Reference page 219 of Airframe and Engine Installation Manual.)

Rudder	_____
Rudder trim tab	_____
Elevator	_____
Left elevator trim tab	_____
Right elevator trim tab	_____

- 56.** Inspect electrical wire bundles and Cannon plugs for:

- | | |
|-----------------------------|-------|
| a. Security. | _____ |
| b. Signs of chafing. | _____ |
| c. Sealing of Cannon plugs. | _____ |

- 57.** Inspect antennae and cables for:

- | | |
|-----------------------------|-------|
| a. General condition. | _____ |
| b. Security and attachment. | _____ |

- 58.** Inspect tailpipe installation for:

- | | |
|-----------------------------|-------|
| a. General condition. | _____ |
| b. Security and attachment. | _____ |

- 59.** Visually inspect turbine blades through tail pipe for:

- | | |
|----------------------------|-------|
| a. General condition. | _____ |
| b. Abnormal discoloration. | _____ |

- | | |
|---------------------------------------|-------|
| b. Close and secure all access doors. | _____ |
|---------------------------------------|-------|

INSPECTOR:

CONFIRM INSPECTION OF ITEMS 49 THROUGH 60. _____

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 5: RIGHT WING AND CENTER SECTION**

- 61.** Inspect 4 fuselage-to-wing attachment fittings and bolts for:
- a. Structural integrity and general condition. _____
 - b. Corrosion. _____
 - c. Any indication of fretting or movement. _____
 - d. Safetying. _____
- 62.** Jack up aircraft and inspect skin for:
- a. General condition. _____
 - b. Security of hinges and attachments. _____
 - c. Loose rivets. _____
- 63.** Remove all fairings and open inspection doors. Inspect for:
- a. General condition. _____
 - b. Security of hinges and attachments. _____
 - c. Lubrication—lubricate where required. _____
- 64.** Inspect gear doors for:
- a. General condition. _____
 - b. Rigging. _____
 - c. Conformity to bottom of wing when in “up” position. _____
 - d. Hinge condition. _____
 - e. Lubrication—lubricate hinges. _____
- 65.** Inspect up-locks (2 gear door and 1 gear) for:
- a. General condition. _____
 - b. Lubrication—lubricate with Lubriplate grease. _____
- 66.** Inspect spring-loaded gear leg entry doors in bottom of wing for:
- a. Condition. _____
 - b. Security. _____
 - c. Hinge condition and lubrication. _____
 - d. Condition of return spring. _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 5: RIGHT WING AND CENTER SECTION (Continued)

- 67.** Inspect tire for general condition, wear, and inflation (85 PSI).
The tire tread may be worn to the first indication of cord.
There should be no cuts in the sidewall. _____
- 68.** Inspect oleo shock absorber for:
- a.** General condition. _____
 - b.** Leaks. _____
 - c.** Extension: (2-1/4" – 2-3/4"). _____
 - d.** Wear in bottom bushing. _____
- 69.** Inspect trunion for:
- a.** General condition. _____
 - b.** Corrosion. _____
 - c.** Security. _____
 - d.** Lubrication—lubricate where required. _____
- 70.** Inspect landing gear actuator for:
- a.** Condition. _____
 - b.** Attachment. _____
 - c.** Leaks. _____
- 71.** Inspect landing gear door actuators for:
- a.** Condition. _____
 - b.** Attachment. _____
 - c.** Leaks. _____
- 72.** Inspect hydraulic, fuel, and pneumatic lines for:
- a.** General condition. _____
 - b.** Security of attachment. _____
 - c.** Corrosion. _____
 - d.** Leaks. _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 5: RIGHT WING AND CENTER SECTION (Continued)

- 73.** Inspect pitot static system:
- a. Check pitot tube for general condition and security. _____
 - b. Check heat element. _____
 - c. Inspect pitot static lines for security and attachment. _____
 - d. Inspect and drain any water from moisture traps in gear wells. _____
 - e. Conduct pitot static check after moisture traps are secured. _____
- 74.** Inspect tip tank for:
- a. General condition. _____
 - b. Attachment to wing. _____
 - c. Quick drain for function and leaks. _____
 - d. Filler gasket condition. _____
 - e. Security of fuel lines. _____
 - f. Fiberglass tail cone condition and attachment. _____
 - g. Leaks. _____
- 75.** Inspect nose section of tip tank:
- a. Wire bundles and Cannon plug condition. _____
 - b. Check that Cannon plugs are sealed. _____
- 76.** Inspect aileron:
- a. Skin for condition, loose rivets, corrosion, and operational check. _____
 - b. Structural integrity. _____
 - c. Hinges. _____
 - d. Control arms. _____
 - e. Trim tab—condition and security. _____
 - f. Trim tab—functional check. _____
- 77.** Flap inspection—remove flap to facilitate inspection:
- a. Flap skin and structure for deformation, corrosion, and loose rivets. _____
 - b. Flap tracks for general condition, wear, signs of binding, cracks, and security. _____
 - c. Flap rollers for freedom of movement and absence of corrosion. _____
 - d. Lubricate roller and flap track with Lubriplate grease. _____
 - e. Control arms. _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 5: RIGHT WING AND CENTER SECTION (Continued)

- 78.** Reinstall flap and safety. _____
- 79.** Inspect all flap and aileron bellcranks and control tubes. Check for:
- a.** Security and attachment. _____
 - b.** Corrosion. _____
 - c.** Free operation of bearings—lubricate. _____
- 80.** Close and secure all access doors. _____
- INSPECTOR:** _____
- CONFIRM INSPECTION OF ITEMS 61 THROUGH 80.** _____

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 6: LEFT WING AND CENTER SECTION**

- 81.** Inspect 4 fuselage-to-wing attachment fittings and bolts for:
- a. Structural integrity and general condition. _____
 - b. Corrosion. _____
 - c. Any indication of fretting or movement. _____
 - d. Safetying. _____
- 82.** Jack aircraft and inspect skin for:
- a. General condition. _____
 - b. Security of hinges and attachments. _____
 - c. Loose rivets. _____
- 83.** Remove all fairings and open inspection doors. Inspect for:
- a. General condition. _____
 - b. Security of hinges and attachments. _____
 - c. Lubrication—lubricate where necessary. _____
- 84.** Inspect gear doors for:
- a. General condition. _____
 - b. Rigging. _____
 - c. Conformity to bottom of wing when in “up” position. _____
 - d. Hinge condition. _____
 - e. Lubrication—lubricate hinges. _____
- 85.** Inspect up-locks (2 gear door and 1 gear) for:
- a. General condition. _____
 - b. Lubrication—lubricate with Lubriplate grease. _____
- 86.** Inspect spring-loaded gear leg entry doors in bottom of wing for:
- a. General condition. _____
 - b. Security. _____
 - c. Hinge condition and lubrication. _____
 - d. Condition of return spring. _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 6: LEFT WING AND CENTER SECTION (Continued)

- 87.** Inspect tire for general condition, wear, and inflation (85 PSI).
The tire tread may be worn to the first indication of cord.
There should be no cuts in the sidewall. _____
- 88.** Inspect oleo shock absorber for:
- a.** General condition. _____
 - b.** Leaks. _____
 - c.** Extension (2-1/4" – 2-3/4"). _____
 - d.** Wear in bottom bushing. _____
- 89.** Inspect trunion for:
- a.** General condition. _____
 - b.** Corrosion. _____
 - c.** Security. _____
 - d.** Lubrication. _____
- 90.** Inspect landing gear actuator for:
- a.** Condition. _____
 - b.** Attachment. _____
 - c.** Leaks. _____
- 91.** Inspect landing gear door actuators for:
- a.** Condition. _____
 - b.** Attachment. _____
 - c.** Leaks. _____
- 92.** Inspect hydraulic, fuel, and pneumatic lines for:
- a.** General condition. _____
 - b.** Security of attachment. _____
 - c.** Corrosion. _____
 - d.** Leaks. _____

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 6: LEFT WING AND CENTER SECTION (Continued)**

- 93.** Inspect pitot static system:
- a. Check pitot tube for general condition and security. _____
 - b. Check heat element. _____
 - c. Inspect pitot static lines for security and attachment. _____
 - d. Inspect and drain any water from moisture traps in gear wells. _____
 - e. Conduct pitot static check after moisture traps are secured. _____
- 94.** Inspect tip tank:
- a. General condition. _____
 - b. Attachment to wing. _____
 - c. Quick drain for function and leaks. _____
 - d. Filler gasket condition. _____
 - e. Security of fuel lines. _____
 - f. Fiberglass tail cone for condition and attachment. _____
 - g. For leaks. _____
- 95.** Inspect nose section of tip tank:
- a. Wire bundles and Cannon plug condition. _____
 - b. Check that Cannon plugs are sealed. _____
- 96.** Inspect aileron:
- a. Skin for condition, loose rivets, corrosion, and operational check. _____
 - b. Structural integrity. _____
 - c. Hinges. _____
 - d. Control arms. _____
 - e. Trim tab—condition and security. _____
 - f. Trim tab—functional check. _____

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 6: LEFT WING AND CENTER SECTION (Continued)

- 97.** Flap inspection—remove flap to facilitate inspection:
- a.** Flap skin and structure condition.
Check for deformation, corrosion, and loose rivets. _____
 - b.** Flap tracks for general condition, wear, signs of binding, cracks, and security. _____
 - c.** Flap rollers for freedom of movement and absence of corrosion. _____
 - d.** Lubricate roller and flap track with Lubriplate grease. _____
 - e.** Control arms. _____
- 98.** Reinstall flap and safety. _____
- 99.** Inspect all flap and aileron bellcranks and control tubes. Check for:
- a.** Security and attachment. _____
 - b.** Corrosion. _____
 - c.** Free operation of bearings—lubricate. _____
- 100.** Close and secure all access doors. _____
- INSPECTOR:**
CONFIRM INSPECTION OF ITEMS 81 THROUGH 100. _____

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 7: WHEELS AND BRAKES**

CAUTION: Aircraft must be placed on jacks for wheel and brake inspection. Do not attempt to raise one wheel at a time. Aircraft must be jacked symmetrically using 3 jacks.

101. Jack aircraft and place stabilizing jacks under the wings.

a. Inspect gear assembly for hydraulic leaks and general condition:

Left main

Right main

Nose

b. Clean the landing gear assemblies and inspect for general condition:

Trunions, actuators, wheels, and plumbing:

Left main

Right main

Nose

c. Remove wheels. Clean and inspect axles using at least 10X magnifying glass:

Left main

Right main

Nose

d. Clean, inspect, and pack wheel bearings with grease:

Left main

Right main

Nose

e. Clean and inspect brake assembly:

(1) General condition:

Left main

Right main

(2) Lining wear:

Left main

Right main

100-HOUR INSPECTION/CONDITION INSPECTION
ZONE 7: WHEELS AND BRAKES (Continued)

- f.** Integrity of anti-skid system: _____
Left main _____
Right main _____
- g.** Reinstall wheels and bearings: _____
Left main _____
Right main _____
Nose _____
- h.** Grease landing gear: _____
Left main _____
Right main _____
Nose _____

102. Close and secure all access doors. _____

INSPECTOR: _____
CONFIRM INSPECTION OF ITEMS 101 THROUGH 102. _____

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 8: OPERATIONAL CHECKS****103. Electrical system operation check:****a. Annunciator panel:**

Front _____

Rear _____

b. Navigation lights—normal and flashing:

Front _____

Rear _____

c. Strobes. _____**d. Landing light/taxi light:**

Left _____

Right _____

e. External gear extension lights:

Left _____

Right _____

Nose _____

f. Cockpit lighting. _____**g. Seat adjustment:**

Front _____

Rear _____

h. Trim tab—functional check. _____**i. Operational check of inverters.** _____**j. Pitot tube heat:**

Left _____

Right _____

100-HOUR INSPECTION/CONDITION INSPECTION

ZONE 8: OPERATIONAL CHECKS (Continued)

104. Hydraulic system operational check:

a. Hook up compatible hydraulic mule: system pressure should be 150 kg/cm².

b. Landing gear retraction **FRONT** cockpit. Smooth action—
normal operation.

- Gear retraction 9 +/- 1/2 seconds

(1) Door sequence:

Left main

Right main

Nose

(2) Up-locks, normal operation:

Left main

Right main

Nose

(3) Gear door up-lock, normal operation:

Left main

Right main

Nose

c. Indicator lights:

3 red-----up

d. Landing gear extension **FRONT** cockpit. Smooth action—
normal operation.

- Gear extension 8 +/- 1/2 seconds

(1) Door sequence:

Left Main

Right Main

Nose

(2) Down-locks, normal operation:

Left Main

Right Main

Nose

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 8: OPERATIONAL CHECKS** (Continued)**e.** Indicator lights:

3 green-----down

f. “Gear Doors Open” light on while gear is in transition.

g. Landing gear retraction **REAR** cockpit. Smooth action—
normal operation.

- Gear retraction 9 +/- 1/2 seconds

(1) Door sequence:

Left main

Right main

Nose

(2) Up-locks, normal operation:

Left main

Right main

Nose

(3) Gear door up-lock, normal operation:

Left main

Right main

Nose

h. Indicator lights:

3 red-----up

i. Gear doors flush with bottom of wing when in the “up” position.

j. Landing gear extension **REAR** cockpit. Smooth action—
normal operation.

- Gear extension 8 +/- 1/2 seconds

(1) Door sequence:

Left Main

Right Main

Nose

(2) Down-locks, normal operation:

Left Main

Right Main

Nose

100-HOUR INSPECTION/CONDITION INSPECTION

ZONE 8: OPERATIONAL CHECKS (Continued)

k. Indicator lights:

3 green-----down

l. “Gear Doors Open” light on while gear is in transition.

m. Gear horn—wheels up and full flaps.

n. Conduct emergency gear extension:

Front cockpit

Rear cockpit

105. Flaps:

a. Extend and retract flaps from both cockpits—operation normal:

Flap extension to takeoff-----3 +/- 2 seconds

Flap takeoff to retraction-----3 +/- 2 seconds

b. Indicator lights “Up”:

Front cockpit

Rear cockpit

c. Indicator lights “Take Off”:

Front cockpit

Rear cockpit

d. Indicator lights “Down”:

Front cockpit

Rear cockpit

106. Dive brakes:

a. Extend and retract from both cockpits:

Operation normal

b. Indicator light:

Front

Rear

Lubricate dive brake hinges

Lubricate dive brake actuator rod ends

100-HOUR INSPECTION/CONDITION INSPECTION**ZONE 8: OPERATIONAL CHECKS (Continued)****107. Emergency generator extension and retraction:**

Operation normal _____

Lubricate hinges _____

Lubricate actuator rod ends _____

108. Final check:**a.** Confirm all inspection doors closed and secure. _____**b.** Confirm all panels and fairings are installed and secured. _____**c.** Registration certificate in the aircraft. _____**d.** Airworthiness certificate in the aircraft. _____**e.** Flight manual with operations limitations and weight and balance in the aircraft. _____**f.** Identification plate on left side of tail cone under horizontal stabilizer. _____**g.** Experimental decals at cockpit entrances. _____**h.** Jet fuel and quantity decals:

Top fuselage _____

Left tip _____

Right tip _____

i. Conduct engine test run and systems and taxi checks as given in Engine Manual part 2, § 5.1. Use an engine run-up check sheet and include it in the maintenance records of the aircraft. _____**j.** Make entries in the appropriate logbooks. _____**109. Close and secure all access doors.** _____**INSPECTOR:****CONFIRM INSPECTION OF ITEMS 103 THROUGH 109.** _____

400-HOUR/48-MONTH INSPECTION

1. Remove the fuel boost pump (LUN 6280.01-8 or LUN 6280-8) and inspect:
 - a. Pump:
 - (1) General condition. _____
 - (2) Condition of bearings. _____
 - (3) Rotor condition. _____
 - b. Pump motor:
 - (1) Commutator for condition. _____
 - (2) Brushes for condition. _____
 - c. Reassemble fuel pump. Install in aircraft and safety. _____
 - d. Fill fuel tanks. Stop fuel operations and check gauges for accuracy. _____
 - e. Pressurize system in accordance with the maintenance manual and leak-check the fuel system. _____
 - f. Check all fuel lines for security and safety. _____
2. Remove Sapphire system from the aircraft and inspect heat components. _____
 - a. Remove, inspect, clean, and reinstall the following:
 - (1) Low-pressure fuel filter. _____
 - (2) Return fuel filter. _____
 - (3) Fuel distributor. _____
 - b. Inspect fuel pump of Sapphire system:
 - (1) Brushes. _____
 - (2) Commutator. _____
 - (3) Bearings. _____
 - (4) General condition. _____
 - c. Reinstall Sapphire system in the aircraft:
 - (1) Attachment bolts secure and safetied. _____
 - (2) Fuel and oil lines secure and safetied. _____
 - (3) Cannon plugs secure and safetied. _____
3. Remove VG-7500 JA main generator from the aircraft and inspect:
 - a. General condition. _____
 - b. Commutator. _____
 - c. Brushes. _____

400-HOUR/48-MONTH INSPECTION (Continued)

4. Pressurize cockpit section and check pressure is holding within limits. _____
5. Conduct engine test run and systems and taxi checks as given in Engine Manual part 2, § 5.1. Use an engine run-up check sheet and include in aircraft maintenance records. _____
6. Make entries in the appropriate logbooks. _____

APPENDIX 2. L-39 EJECTION SEAT/CANOPY INSPECTION PROGRAM

SAFETY PRECAUTIONS WHEN SERVICING EJECTION SEATS

1. The operational use of ejection seat type VSI-BRI/L **requires special knowledge of all the systems**. Therefore, it is the owner's responsibility to ensure that ejection seat inspections are performed only by an **experienced person** who has documentation showing that he or she has been properly trained by the manufacturer's representative and is deemed competent to perform inspections and maintenance of ejection seats installed in L-39 aircraft. It is also the owner's responsibility to ensure that only current manufacturer's data is used when inspecting and servicing the seat. Contact the manufacturer by mail for a list of qualified persons at Aero Vodochody a.s., 250 70 Odolena Voda, Czech Republic, or by their current telephone numbers, which may be found on their Web site at: <http://www.aero.cz>.
2. Follow safety precautions at all times. Ensure that the aircraft is properly grounded. Performance demands, labor shortcomings, and/or other reasons are no excuse for unsafe practices.
3. The following actions are strictly forbidden while servicing the ejection seat, especially during loading and unloading the pyromechanisms or when handling the loaded seat:
 - a. Smoking or using other than industry-approved explosion-proof flashlights.
 - b. Having persons present who are not taking an active part in the inspection or servicing of the seats.
 - c. Using tools other than those specified in the seat maintenance manual.
 - d. Deforming or damaging the seats by forced handling.
 - e. Servicing the armed ejection seats without technical supervision or training.
4. Qualified persons performing service and maintenance of ejection seats should:
 - a. Have the current instructions on storing and handling the pyrotechnical charge.
 - b. Have the current operational procedures for installing, removing, maintaining, loading, and unloading pyromechanisms for the emergency jettison of the canopy (canopy jettisoning gun).
 - c. Load or unload the seat ejection mechanism. Execute Seat Ejection Mechanism (TVM) and the ejection/jettisoning mechanism of the canopy POP only if the seat is installed in the aircraft and if no other servicing operations of other specialties are to be performed. The only exceptions are for the rocket engine URM-1, ejector of stabilizing parachute, Stabilizing Chute Mechanism (VMP), and Shoulder Strap Fastening (PPRP) as these mechanisms are being loaded.
 - d. Always lock the ejection seats and the pyromechanisms, either loaded or unloaded, with "ground locking elements."
 - e. Execute the pyromechanism firing check using only technological pyrocartridges.
 - f. Secure all locks/pins after finishing the work operations and tests of the seats.

SAFETY PRECAUTIONS WHEN SERVICING EJECTION SEATS (Continued)

5. Remove and test seats using all needed special equipment.
6. Do not remove and/or install the ejection seats when it is raining or snowing, or in severe wind or dusty conditions. Do not service the seat outside the assigned worksite.
7. Do not park the aircraft in the hangar with the seats armed unless they are locked with ground-locking elements.
 - a. Seal the cockpit and provide the following warning:

“ATTENTION: PILOT SEATS ARE ARMED!”
 - b. Remove the onboard battery from the aircraft, but leave the tow equipment connected.
8. Disconnect arming cable from canopy to airframe before removing the cockpit canopy.

SPECIFIED WORK OPERATIONS
(WORK TO BE PERFORMED EACH 100-HOUR/CONDITION INSPECTION)

1. Ejection Seats.

- a. Check the pyrocartridges PK-3-M-I, (PP-POP Alternative) PK-7T, (PP-TVM Alternative) 120-4-2785, and V 9960, and rocket engine URM-1 for life limits. _____

NOTE: If the remaining service-life of the pyrocartridges and the rocket engine is shorter than 6 months, it is recommended they be replaced.

- b. The seat-stabilizing parachutes and the personnel-carrying parachutes must be removed and inspected in accordance with the Armament and Rescue section of the maintenance manual. _____

NOTE: Seat-stabilizing parachute and personnel-carrying parachute maintenance will be signed off on the L-39C parachute/pyro log sheet every 6 months.

- 2. Seat Removal.** Unload the pyromechanism of the telescopic ejection mechanism/TVM, the pyromechanisms of PPRP, and POP. Remove the seat from the aircraft and position it on a special cart. Unload the pyromechanism of the VMP-2. _____

NOTE: When removing the seat it is necessary that all the ground-locking pegs be in the locking openings. Separate the seat-locking elements from the cockpit-locking elements, which are mutually interconnected through the cockpit. As soon as the seat is pulled 80 cm, lock the rocket engine URM-1.

3. Cockpits.

- a. Check that there is no mechanical damage and no silvering of the canopy glass. _____
- b. Inspect the frame of the canopies for damage or deformation. Check the condition of varnish. _____
- c. Check the opening locks of the canopies using both the inner and outer lever. _____
- d. Remove the canopies. Test for leakage of the manifold used for jettisoning canopies. _____

SPECIFIED WORK OPERATIONS (Continued)

4. Specified Work Operations.

- a. Check the clearances of transversal shafts. _____
- b. Check the clearance limits between the finger of the transversal shaft and the end of the piston-rod of the cylinder of the emergency jettisoning system. _____
- c. Clean and lubricate the articulated joints of the canopy locks and piston rod of pyrocylinders. _____
- d. Check the bowden cable of each canopy handle for damage or deformation. _____
- e. Inspect the details of the aircraft emergency rescue system for damage or deformation. _____
- f. Inspect and perform a system check of the emergency jettisoning system. _____

5. Functional Tests of Ejection Seats.

- a. Set the seat mechanism to initial positions. Place the parachute into the seat. _____
- b. Load the pyromechanism VMP-2 with live pyrocartridges and position the shear-off locking element. _____
- c. Install the seat into the aircraft and load the TVM pyromechanisms, telescopic ejection mechanism, PPRP, and POP with technological cartridges. _____
- d. Perform the functional test of the seat ejection mechanisms for ejecting through the canopy. _____
- e. Load the pyromechanisms of TVM, PPRP, and POP with technological cartridges. _____
- f. Perform functional test of the seat mechanisms for a normal ejection. _____
- g. Test the seat blocking and puncture of technological cartridges. _____

SPECIFIED WORK OPERATIONS (Continued)**6. Final Work Operations.**

- a. Set the seat mechanisms to initial positions. Remove the locking elements from the URM-1 rocket engine. _____
- b. Load the pyromechanisms of the TVM, PPRP, and POP with live pyrocartridges and lock them with seat ground-locking elements. _____
- c. Check the locking and seals of the levers and mechanisms of the ejection seat. _____
- d. Inspect the cockpits for foreign objects. _____
- e. Test the opening and closing of canopies. _____

7. Periodic Work Operations During Short-Duration Storing/Standing-by of Aircraft.

- a. If the aircraft is preserved, store it according to operational instructions.
- b. After every 6 months in storage, perform the 100-hour inspection items on the ejection seat systems and make the appropriate logbook entry.

L-39 ALBATROSS PARACHUTE/PYRO LOG SHEET

Registration Number:		
Serial Number:		
Date Armed:		
Technician's Name:		Cert. Type & Number:
Pyrocartridge Checklist:		
1. Seat Ejection Mechanism (TVM)	Mfg. Date:	Due Date:
2. Shoulder Strap Fastening (PPRP)	Mfg. Date:	Due Date:
3. Stabilizing Chute Mechanism (VMP)	Mfg. Date:	Due Date:
4. Accelerating Engine (URM-1)	Mfg. Date:	Due Date:
5. Canopy Eject Cartridge	Mfg. Date:	Due Date:
Parachute Checklist:		
1. Front Seat Parachute PI-701/L	Date Repacked:	By:
2. Rear Seat Parachute PI-701/L	Date Repacked:	By:
3. Front Seat Stabilizing Chute	Date Repacked:	By:
4. Rear Seat Stabilizing Chute	Date Repacked:	By:

NOTE: Inspect personnel-carrying parachute every 120 days.

APPENDIX 3. HARD LANDING/RUNNING OFF RUNWAY/OVERSTRESS INSPECTION PROGRAM

This inspection is used as a guide to detect damage to the airframe, engine, and component parts after the aircraft has experienced a hard landing, run off the runway, or was subject to an overstress condition. A hard landing is when the aircraft is subject to high G forces on landing that may deform the airframe, engine, engine mounts, or landing gear; damage the tires; create fuel or fluid leaks; or injure the pilot or passenger.

1. Main and nose landing gear for:

- a. Visual cracks, signs of nose gear twisting, or impact. _____
- b. Signs of cracked paint that cover hidden cracks. _____
- c. Alignment when viewed from 50 feet away. _____
- d. Damage to trailing arm of landing gear. _____
- e. Main gear parallel to the aircraft centerline.
 - (1) Main wheels center to center—2440 mm (96.063 inches). _____
 - (2) Left/right wheel to center of fuselage—1220 mm (48.031 inches). _____
- f. Evidence of hydraulic shocks bottoming out. _____
- g. Evidence of hydraulic fluid leaking. _____
- h. Condition, alignment, and clearance of down locks and latches. _____
- i. Proper gear extension and retraction operation. _____

2. Main and nose wheel wells:

- a. Landing gear attach points for cracks, deformation, and binding. _____
- b. Landing gear pivot attachment points for cracks. _____
- c. Aircraft structure for cracks and deformation. _____
- d. Landing gear doors for proper fit and alignment. _____
- e. Check for landing gear wear at trunions or actuator end bearings by measuring movement of the axle. _____

Tolerances are:	NEW	MAX ALLOWED
In direction of flight	4 mm	6 mm
Perpendicular to direction of flight	6 mm	8 mm

**APPENDIX 3. HARD LANDING/RUNNING OFF RUNWAY/OVERSTRESS
INSPECTION PROGRAM (Continued)**

3. Aircraft wheels and tires:
 - a. Wheels for cracks, scrapes, or bent or broken flanges. _____
 - b. Wheel-half bolts for cracks. _____
 - c. Tires for cuts, bruises, scrapes, and general condition. _____

4. Top and bottom wings and related structure for:
 - a. Wrinkles, oil canning, or loose or missing rivets or fasteners. _____
 - b. Raised gaps between rivets at butt or lap joint edges. _____
 - c. Fuel leaks. _____

5. Wing interior for:
 - a. Loose or missing rivets, spar, and stringer cracks. _____
 - b. Twists or deformation. _____
 - c. Damage and condition of flight control rods. _____
 - d. Fuel leaks. _____

6. Horizontal flight controls:
 - a. Horizontal stabilizers (top/bottom) for wrinkles, oil canning, loose or missing rivets, damage to spars and stringers, and deformation of the skin around butt and lap joints. _____
 - b. Binding and proper rigging. _____
 - c. Cracked or broken control stops. _____
 - d. Twist when viewed from the tip towards the fuselage. _____

7. Control top and bottom flight control surfaces for:
 - a. General condition, alignment, or loose or missing rivets. _____
 - b. Proper rigging and operation. _____
 - c. Cracks (control stops). _____

**APPENDIX 3. HARD LANDING/RUNNING OFF RUNWAY/OVERSTRESS
INSPECTION PROGRAM (Continued)**

8. Fuselage:

- a.** General condition, alignment, or loose or missing rivets.
- b.** Evidence that the fuselage fairings have moved.
- c.** Fuel leaks.
- d.** Flight control push-pull rods for bends, cracks, or scraping internal structures.
- e.** Raised gaps at butt or lap joints.
- f.** Fit and function.
- g.** Pressurization—pressurize system.

NOTE: Pressures are given in kg/cm². The pressure gauges in the L-39C are calibrated using this scale. To find PSI, multiply by 14.2. For example, if 150 kg/cm² is indicated on the pressure gauge, multiply 150 x 14.2 = 2130 PSI.