Handling, Servicing, & Maintenance

Section VIII

Table of contents

Intentionally Left Blank

INTRODUCTION TO SERVICING

This section is designed to help you the owner and pilot of your Lancair to service and maintain it in a safe and efficient manner. The information herein is approved by Lancair International. The intended user of this handbook is the pilot, not the aircraft's mechanic. The information herein is intended as a guide to maintaining the aircraft and assumes any/all work accomplished is of such quality that structural or aerodynamic integrity is not compromised. Inspections, inspection periods and servicing information herein should be used as a guide.

"51% Rule"

Your Lancair is in a growing group of aircraft called amateur built. This group of aircraft is unique in that, under the proper conditions, you the builder can become that aircraft's "Certified Repairman" under the Federal Aviation Agency rule that states that the applicant must have built the majority of the aircraft, thus the so called "51% Rule". This has many far-reaching advantages which allow you the builder to service, alter, and maintain that aircraft throughout its "life". This obviously has many advantages and is probably part of the reason you purchased the aircraft.

"51%" Documentation Requirements

As you build your aircraft we hope that you keep good track of bills showing that 1)-You bought the parts and they were shipped to you. 2)-Pictures of you in the process of building the machine are considered mandatory by some agency personnel, and the more the better. Be sure to date each picture, adding some ID as to which part of the builder's manual being worked. Finally 3)-A notebook (preferably bound) log of your building process is recommended. This log should contain your hand written day-by-day description of work performed. References to the builder's manual section should be included and the pictures posted in this log is ideal. Each day's entry should be initialed or signed just as a pilot's log book is endorsed by the pilot.

Given this documentation you should have no problem obtaining your "Repairman" certificate. With this certificate you then are in effect the A&P and the AI for your aircraft (plus engine and propeller) and can perform any and all maintenance it may require, modify, add or remove equipment, etc. with the resulting savings in both time and dollars.

WARNING

It remains your responsibility as pilot to insure that the machine remains airworthy. For example your altimeter and static system must be checked each 24 months by a certified repair station before the plane can be flown in the IFR system. The transponder and encoder must be certified every 24 months for VFR or IFR flight.

All limits, procedures, safety practices, servicing instructions and requirements contained in this handbook are considered by Lancair to be mandatory. It is strongly recommended that you secure the services of an FBO familiar with Lancairs or at least this type of amateur built aircraft for support. This will benefit both you as the owner and the FBO by becoming your second pair of eyes on an as required basis. Your local EAA chapter can supply you with helpful information in this regard.

Non-owner Built Aircraft

If you purchased your Lancair from the builder, it then falls under the rules of all other aircraft and owner/pilot maintenance is significantly restricted. It is then treated just as a commercially built aircraft except that an AI is not required for annuals, and A&P can perform annuals on an "amateur built" aircraft. (The original builder still may perform any and all work on your aircraft, the one he built, however.)

For aircraft registered in the United States, FAR Part 43 defines the types of servicing and maintenance that a certified pilot who owns or operates the aircraft may perform. For other countries the registry of that country should be consulted to define the work that may be performed by the pilot. All other maintenance required must be performed by appropriately licensed personnel.

In this case it is again recommended that you secure the services of an FBO for your maintenance so that it can become familiar with the aircraft. Such personnel will undoubtedly want to familiarize themselves with the aircraft and will need access to the builder's manuals, blueprints, etc. in order to best serve your needs.

AIRPLANE INSPECTION PERIODS

FAA Required Inspection Periods

An annual inspection is required on all aircraft. This inspection must include an inspection of the landing gear, all structure for cracks, evidence of delaminations, corrosion of parts, security of fittings and fasteners, a compression test of the engine's cylinders, and an inspection of the propeller. This "Annual Inspection" must be signed off in the aircraft log book by the inspector as well as any repairs necessary due to items found during the inspection.

Recommended Inspections

It is recommended that two additional levels of inspections beyond the preflight inspection found in Section IV of this handbook be made. These are at 25 hour and 100 hour intervals. Your new aircraft will undoubtedly be given several "100 hour" inspections at earlier intervals, a practice which is also recommended. In addition there are continuing care items, items which have a recommended overhaul or replacement schedule, and special inspections required due, such as gear or flap extensions at high speeds.

The 25 hour inspection is intended to cover rather routine items of wear such as tires, oil changes, cable end fittings, brake linings, hose and wire fretting and rubbing areas, etc.

The 100 hour inspection takes a more in-depth look at the aircraft for structural cracks, delaminations, etc. much as an annual inspection. It is recommended that the aircraft be thoroughly washed, the engine cleaned, compression checked and a complete review of the aircraft and engine log book be made to insure all FAA (or appropriate registering agency) requirements for such items as altimeter checks, item TBOs, etc. This inspection must be recorded in the aircraft and engine log books and signed by the inspector. Since your aircraft is registered as an EXPERIMENTAL aircraft it cannot be used for hire, however for aircraft flown regularly, accumulating many hours through the year this is a recommended inspection.

ALTERATIONS OR REPAIRS

If you built your aircraft and have received your "Repairman" certification, you may make any modifications desired however in the interest of safety we strongly recommend that you seek experienced consultation before making any modifications to your Lancair. We take pride in your Lancair as well and have your best interest at heart. If you purchased your aircraft, your local FAA inspector may be interested if you make any alterations. They may contact Lancair or its dealers for advice. In any case, the work must be performed by properly licensed personnel.

NOTE

Only Lancair or its dealers approved parts should be used for any repairs to your Lancair. Salvage parts, or parts whose history cannot be fully traced and their care in storage and handling completely defined and determined acceptable by Lancair or its dealers are not acceptable and are considered unsafe for use.

GROUND HANDLING

The three view drawing shows the dimensions of your Lancair and its hangar requirements.

CAUTION

Proper inflation of the air/oil oleo style nose strut should be maintained to insure adequate propeller clearance and operation. In addition while ground handling your Lancair the propeller should be placed in the horizontal position. Use care when turning the propeller- ASSUME THE MAGNETOS ARE HOT!

Towing

Your Lancair is an exceptionally light aircraft and should present no problems while ground handling. Mechanically attached towing is generally not recommended. If mechanical towing is necessary a tow bar fitting in the nose wheel axle should be used and extreme care taken. Hand towing is recommended as are wing walkers when towing in confined spaces.

CAUTION

Do not exert force on the propeller or control surfaces during towing by hand. If the nose wheel must be raised, apply weight on the fuselage forward of the empennage, not on the horizontal stabilizer. With the nose wheel off the ground, the aircraft can be pivoted around the main gear as required.

Tie-downs

Built in tie-downs should be used to secure your aircraft unless it is hangared. Tie-down ropes should be left with some slack to allow for any rope shrinkage. Manila or hemp ropes should not be used. Chains can be essentially snug. Chocks for the main gear wheels are also recommended.

MAIN WHEEL JACKING

The aircraft can have one wheel raised by jacking. Care must be used to prevent damage to the landing gear doors. A scissors or "bottle" type hydraulic jack is recommended. An allowance must be made for the compression pads to extend the wheel to its limit. At this point the wheel may be removed for servicing of the wheel and/or brake.

CAUTION

Anytime an aircraft is on jacks of any sort personnel should not be allowed in or on the aircraft.

NOSE WHEEL JACKING

The nose wheel may be raised easily by securing some weight about the fuselage forward of the empennage. A 4 inch wide strap is recommended or the use of the tail tie down point. Approximately 150 pounds is required. Again care must be observed and the caution note above applies.

OUT-OF-SERVICE CARE

Should you be required to place your Lancair in storage precautions to protect it from deterioration are recommended. If long term storage is required protection from the elements is the primary concern. With the Lancair it may be easiest to remove the wings and store in your garage where you have (or can provide) some control over temperature and humidity. In any case the most susceptible element of your aircraft is the engine's cylinder walls and bearing surfaces. The engine should be preserved according to the manufacturer's directions.

The airframe will withstand the storage quite well under almost any circumstances since it is of high temperature materials however the upholstery, instruments and avionics will suffer from excessive heat and exposure to the sun so a cover is recommended. Elastomers such as tires also need to be protected from exposure to ultraviolet to limit their deterioration.

Fuel tanks should be filled or drained completely, the control surfaces locked, the aircraft electrically grounded, a pitot cover installed, the static port (or ports if installed on both sides) covered, the engine and cabin cooling air intake (NACA inlets) covered or plugged, and the battery removed.

Flyable Storage

If the aircraft is to be put into flyable storage, the engine would not be preserved nor the dessicated plugs installed. Once a week the engine should be rotated by hand some 4 to 6 revolutions, and left in a different position.

WARNING

Before rotating the propeller make sure the mag switches are OFF, the throttle closed, and the mixture control in the CUT-OFF position. When turning the propeller assume it may start by standing clear.

Each month, the aircraft should be started and run. It is preferable to fly the aircraft for thirty (30) minutes as the Lancair engine compartment is tight and inadequate cooling may result from a ground run.

PREPARATION FOR SERVICE

Following storage, the aircraft preparations for flight should include the following. Remove all taped openings, plugs and control locks. Clean and thoroughly inspect the aircraft checking the gear, tires, controls pitot and static ports. Install a serviced battery. Install spark plugs and check the oil level. The oil used for storage should be removed and proper oil installed. The fuel tanks should be checked for water accumulation and purged as required. Following a short but thorough engine ground check the aircraft should be flown for 30 minutes maximum and given a very thorough post flight inspection.

FUEL SERVICING

The Lancair fuel requirements are dependent on the engine installed. The engine manual should be checked for the recommended grade. In any case, the fuel should be clean and water free. The firewall gascolator drain should be checked on preflight inspections for evidence of water and the filter checked for solid foreign material. It is good practice to leave the tanks full to minimize the amount of combustible fuel/air vapor present in the tanks. This also helps minimize the amount of water vapor in the fuel system.

OIL SYSTEM SERVICING

The oil used should conform to the engine manufacturer's recommendation. Since engine oil consumption is higher during break-in of a new or overhauled engine, very long flights should be avoided until it is certain that the sump quantity is sufficient for the flight duration. The oil level is checked thru the small door on the upper right top side of the engine cowling. A minimum of 6 quarts should be indicated before every flight.

Oil Changes

During the initial break-in the engine should be operated with a straight mineral oil. The break-in is normally 25 to 50 hours during which time the oil consumption should stabilize. Following this break-in period, the oil and filter should be changed and an oil Ashless Dispersant Oil installed. If consumption has not stabilized at the 25 to 50 hour point, continue the use of mineral oil.

The engine oil should be changed at a minimum of each 50 hour of flight time. More often is recommended. The engine oil should be drained while the engine is thoroughly warm and with the aircraft in a level position. The filter should be changed at each oil change and the element examined for its contents. If a "spin-on" filter is installed it should be cut open and the element examined. Sand type material is indicative of inadequate air filtration and may warrant corrective action ranging from more frequent changes to the installation of an

improved filter system. Metallic particles may vary from aluminum to steel to stainless steel. Following the initial break-in period during which some metallic particles are normal almost any amount thereafter becomes cause for concern. If subsequent changes show additional metallic particles, the source should be determined. The type can be somewhat determined by separating by category, i.e. magnetic or not, steel or aluminum, silicon (sand), etc.

Another method of determining the source is the use of spectral analysis of an oil sample. These services are readily available by mail, and can provide you with a running history of the contaminates from each of your oil changes.

BATTERY

The battery should be checked for electrolyte level at each 25 hour inspection and serviced as necessary with distilled water. Do not overfill, nor should the battery be serviced in a low or discharged condition. If the battery is low on charge, service to cover the plates, charge to full, then service to full. Full is generally indicated by a "service ring" within each cell of the battery about an inch from the top.

Excessive water consumption may be an indication of an improperly set voltage regulator. The fully serviced and charged electrolyte should be checked for specific gravity.

Warning

The battery box is vented overboard to dispose of the hydrogen gas produced during charging. Hydrogen is an explosive gas in widely varying concentrations so it is important to frequently check that the vent line is clear of obstructions.

TIRES

The Lancair tires should be properly inflated at all times. The nose wheel tire should contain 28 to 30 psig and the main gear tires from 40 - 45 psig. Maintaining the proper inflation will minimize tread wear and aid in ground control of the aircraft. When inflating, visually check both sides of the tire for bulges, cracking of the sidewall, cuts. The tread should be >1/16 ".

WARNING

Tire size is important on your Lancair. Use only the specified tire. Other sizes will not fit into the wheel well and may damage the mechanism and the aircraft structure.

LANDING GEAR SHOCK ABSORBERS

Your aircraft is fitted with rubber biscuit type shock absorbers on the main gear. These require no servicing or inflation. As long as they are not physically cut or damaged and remain free of excessive checking due to age they remain serviceable.

Nose wheel struts (320/360 style) contain air (nitrogen) and oil and is a sealed system. It contains a shimmy dampening system which must be checked often. This check is made as follows:

1) Have someone hold the nose wheel off the ground by pressing down on the fuselage just forward of the empennage.
2) Spin the nosewheel. It should not spin over one or two turns at the most. If excessive rotation occurs the axle nut must be retightened and the test conducted again until satisfactory. Verify that the Timken bearings are properly snug, there must be no free play between bearings and race. Check that the side bushings are properly snugging against bearings and that they are not worn.
The shimmy damper system should provide 20 to 50 ft-lbs of drag when the wheel/strut is moved (rotated left and right about the strut axis) at a moderate rate. Fast rotation rates should create higher torques. Verify this condition.

BRAKES

The brakes are independent systems on each of the main gear wheels. The fluid reservoir for each is located behind the rudder pedals on the pilot's side. The toe brakes should depress approximately 1/2 inch before any pressure is generated on the brake when properly serviced. Lines should be checked for leaks and chaffing due to rubbing on the tire or the airframe while the gear is retracted. The brake pucks should be a minimum of 0.150 inches thick. The brake pucks should be replaced when less than this value.

INDUCTION AIR FILTER

Operation of the aircraft in dusty areas requires that a filter be installed and changed periodically to preclude premature engine degradation. Removal of the filter requires removal of the cowling and should be accomplished at least on an annual basis. If operating in dusty areas, more often is desirable. Depending on the type of filter used, it may be cleaned, or may require replacement.

INSTRUMENT VACUUM SYSTEM

The vacuum (or pressure) system for use by the gyro instruments contains very fine particle filters. These require changing on a regular basis. If operating the aircraft in a normal environment the filters should be changed every 500 hours or three years, more often in dusty areas.

PROPELLER

Your propeller should be serviced according to the manufacturer's instructions. It is a highly stressed component and any failure has the potential of being catastrophic. Treat it with care. Nicks and dents (stress risers) in the leading edge due to rocks, hail or whatever need to be "dressed out" until smooth. Care should be used to maintain a similar contour to the blade after dressing and the area should then be polished resulting in a smooth, scratch free surface.

WARNING

Use care when handling the propeller. Insure that the mags are OFF, the throttle CLOSED, and the mixture in the CUT-OFF position. Then remain as clear as possible during the dressing operation. Be prepared for a cylinder to fire when moving the propeller to a new position.

ELECTRICAL POWER

Alternator

The alternator is an alternating current device which is then converted by diodes to direct current for charging the battery. It has no brushes or other rubbing parts and may have the voltage regulator mounted on the unit or integral. The alternator units offered through Neico Aviation use a remotely mounted voltage regulator. Its d.c. voltage output should be the same i.e. 14.2 to 14.8 volts. An alternator should never be operated open circuit, that is without a load.

The Lancair uses a negative ground system. Filters in the system reduce noise in the avionics from the alternator (and the magnetos).

Excessively high voltage regulation will cause overcharging of the battery and shorten its life, low settings will result in a low battery and probably poor starting especially in colder weather.

CARE AND CLEANING

Your Lancair requires no special care and cleaning. Prior to washing, cover the wheels, pitot and static ports, and plug cabin air intake ports. Care should be used to avoid removal of grease and oil from lubricated areas.

The windshield should be cleaned with generous amounts of water and a soft cloth. Prepared cleaners should be used with caution unless expressly made for acrylic material. Oil and grease can be removed with small amounts of kerosene if necessary followed by soap and water.

Never use gasoline, benzine, **alcohol,** acetone, carbon tetrachloride, anti-ice fluids, lacquer thinners **or** glass **cleaners.** They will either soften the material or cause it to craze. Rubbing of the surface with a dry cloth should be avoided as it causes static electricity build-up which subsequently attracts dirt and dust particles.

Upholstery materials and carpets can be cleaned in the normal manner. Rubber seals can be lubricated with Oakite 6, Armorall or equivalent materials. A vacuum is the primary means of cleaning the interior of loose dust and dirt. Blot up any liquid spills as soon as possible with cleansing tissues or clean rags. Hold the material securely against the spill for a few seconds allowing it to absorb the liquid. Repeat until all liquid is removed. Scrape off any gum materials. Test a spot remover on a test piece of material or an out of sight location if there is any question as to the compatibility of the cleaner and the upholstery or carpet materials. If acceptable, clean areas of spots as necessary. Detergent foams can be used to clean carpets if used per the manufacturer's instructions.

Interior plastic parts should be cleaned with a water damp cloth. Oil and grease can be removed with cloth dampened slightly with kerosene. Volatile solvents such as those mentioned for the windshield are to be avoided.

Exterior Painted Surfaces

CAUTION

Polyester urethane finishes cure for 30 days or more following application. They should be washed only with a mild non-detergent soap until cured. Use only soft clean cloths and **minimize rubbing** to **avoid** damage to the paint film surface. Rinse thoroughly with clear water. Stubborn **oil or grease deposits** may be removed with automotive tar **removers** if required. (Mild detergents can be **used on** Urethane finishes.)

Wax or polish paint only after it has completely cured. Use power polishers with extreme care as they can build up excessive heat levels locally at the polishing surface and damage the paint surface.

CAUTION

Avoid the use of high pressure cleaning systems and solvents. They can damage parts such as propeller hubs, fill pitot probes and static ports, enter cooling air ports with resultant damage to the interior and avionics, and remove areas of required lubricants. This type of equipment is great for DC-8s, not Lancairs.

ENGINE

Clean the engine with a neutral solvent. While the engine is warm but not hot, spray with the solvent and allow to set a few minutes. Follow with a spray wash and allow to dry. Avoid excessively high pressures which can force entry of water and/or solvents under seals resulting in contamination of the sealed system or entry thru the firewall into the cabin. Use caution and protect any electrical relays or switches you may have installed in the engine compartment as well. Use only solvents which do not attack rubber or plastics.

RECOMMENDED SERVICING

INTERVAL	ITEM
Preflight	Check & Service oil Drain water trap Service fuel tanks
First 25 hrs	Service oil with Ashless Dispersant oil Change oil filter Change fuel filters Check battery fluid Check brake lines Check all gear doors (nose & main gears) Check wing bolt torque Control surface hinges
First 50 Hrs	Change oil and filter Clean or change engine air filter Lube landing gear mechanism Check control surface hinges

Lancair 235/320/360
ANNUAL TYPE CONDITION INSPECTION

Model _____ Serial Number _____ Registration Number _____

Tachometer Time _____ Total Time _____ Date _____

		Mech Initial	Discrepancy
	ENGINE "GROUP A"		
1	Check documentation AD's. SB's. SDR's. ARROW. etc		
2	Fuel Pressure (boost pump) psi		
3	Start-up oil pressure psi		
4	Run engine @ 1200RPM until oil temperature reaches 140°F		
5	Idle oil pressure psi		
6	Magneto check DROP L/H R/H @ 1800 RPM		
7	Cycle prop and check prop governor operation		
8	Suction Inches of Hg (4-6 normal)		
9	Alternator output check for normal		
10	Full power manifold Pressure Hg @ rpm		
11	Check for general running conditions and vibrations		
12	Check idle speed and mixture rise @ RPM		
13	Magneto ground check		
14	Compression check #1 /80. #2 /80. #3 /80. #4 /80		
	ENGINE "GROUP B"		
1	Drain engine oil		
2	Remove oil filter and or screen. and check for contaminates		
3	Drain engine breather can if installed Check whistle or shi for obstructions		
4	Install new oil filter or replace screen gasket Service engine with recommended quantity of oil		
5	Clean and gap spark plugs Rotate plugs top to bottom		
6	Check ignition harness for chaffing and general condition		
7	Check condition of magneto points. set or replace as necessary		
8	Check magneto to engine timing in accordance with engine data plate		
9	Check exhaust system for cracks. security. and condition of gaskets		
10	Check intake pipes for condition and leaks		
11	Check condition of air box. clean or replace air filter element as necessary		
12	Check condition of alternate air system and flapper valves		
13	Check engine baffles and cowling for general condition		
14	Inspect fuel hoses for general condition		
15	Inspect oil cooler and hoses for general condition		
16	Clean injector nozzles		

	Mech Initial	Discrepancy
16 ace or clean fuel filter and screens as necessary		
17 Check engine vibration isolators for poor condition and deterioration		
18 Check engine mount for cracks and security to firewall		
19 Check engine for oil leaks		
20 Check prop gov for leaks and security, and condition of cable end		
21 Check starter for security and condition		
22 Check alternator and mount for security, condition of wiring and belt for condition and tension		
23 Check vacuum pump for security and condition		
24 Check tach cable or wiring for security and condition		
25 Wash engine CAUTION DO NOT CONTAMINATE VACUUM PUMP or INDUCTION SYSTEM WITH FLUID		
26 Lubricate engine controls and check for connections and travel		
PROPELLER "GROUP C"		
1 Inspect propeller for cracks, nicks, binds and oil or grease leaks		
2 Remove minor nicks and dress blades as necessary		
3 Check propeller mounting bolts for torque and safety wiring		
4 Check blades for looseness in hub		
5 pect spinner, screws and bulkhead for cracks and condition		
6 ricate propeller per manufacturer's recommendation		
CABIN "GROUP D"		
1 Check seat belts for general condition and defects		
2 Check battery for electrolyte level and S G and charge		
3 Check battery vent for security and obstructions		
4 Clean battery cable terminals if required and reinstall battery		
5 Check hydraulic power pack and lines for leaks, security, and fluid level		
6 Check elevator idler arm and bob weight for security and lubricate rod ends		
7 Inspect, flap motor compartment, rods and motor for proper operation, running current and lubricate		
8 Check aileron, elevator push tubes and trim systems and lubricate rod ends		
9 Check for loose equipment that might fowl the controls		
10 Inspect rudder cables, and attachments etc		
11 Inspect brake master cylinders and parking brake valve for leakage free and full extension and proper operation Check fluid level at the master cylinders		
12 Check condition of instrument panel wires, hoses, and vacuum filters		
13 Check compass for fluid level and correction card		
14 Check instrument lights		
15 Check instruments for proper markings, general condition and security		
1 ean inside of cabin and insure that drain holes are clear		
17 Inspect fuel lines and tank for security and leaks		
18 Inspect pitot static lines		

		Mech Initial	Discrepancy
	WING "GROUP H"		
1	Remove inspection covers		
2	Inspect and lubricate all bell cranks, push rods, and end rods		
3	Check all wing attach bolts for security and condition		
4	Check flaps for general condition, and operation		
5	Check flap actuating rods, bell cranks, hinges, and bearings for condition, and lubricate		
6	Check pitot mast and lines for security and obstructions		
7	Check ailerons for condition and hinges for wear, lubricate		
8	Install inspection covers		
	ELECTRICAL "GROUP I"		
1	Check navigation lights		
2	Check landing and taxi lights		
3	Check strobes for proper operation and security		
4	Check cockpit and instrument lights		
5	Check pitot heat		
6	Check ELT for operation and battery due date		
	RADIO "GROUP J"		
1	Check radio and electronic equip. for proper installation and secure mounting		
2	Check wiring and conduits for proper mounting and obvious defects		
3	Check bonding and shielding for improper installation and condition		
4	Check antennas for condition, secure mounting and proper operation		
	GENERAL "GROUP K"		
1	Check all optional equipment for security and proper operation		
2	Check all placards		
3	Check canopy and hardware for general condition, operation and lubricate		
4	Check composites for signs of delaminations, distortion, cracks, damage and lost paint or other evidence of failure		
5	Clean interior and wash exterior		
6	Run up engine and check oil pressure and all gauges for proper operation		
7	Magneto check at 1800 RPM L_____ RPM drop, R_____ RPM drop		
8	Check operation of prop. governor		
9	Check max. M.P. and T.O. RPM		
10	Check idle speed and mixture		
11	All paper work properly signed and AD's and SB's complience checked		
12	Inspect each installed miscellaneous item that is not otherwise covered by this listing for proper operation and installation. See FAR Part 43 Appendix D		
13	Periodically use the dump valve to extend the gear in flight checking for full down and locked condition		

	Mech Initial	Discrepancy
FUEL SYSTEM "GROUP E"		
1 Check fuel transfer pumps for operation		
2 Check fuel tank filters and sump drains for contaminants		
3 Check all fuel vents for security and obstructions		
4 Check fuel lines for security, chaffing, and leakage		
5 Check fuel tanks and caps for leakage, security and placards		
6 Check fuel boost pump for operation, leaks and security		
7 Check fuel shut-off valve for operation and leakage		
LANDING GEAR "GROUP F"		
1 Place aircraft on jacks		
2 Clean excess grease off gear legs, struts, and wheels		
3 Check brake discs and linings for wear or cracks		
4 Check wheels for general condition and cracks		
5 Check tires for wear, condition, and proper inflation		
6 Check wheel bearings for corrosion and wear, re-pack with grease		
7 Check main gear trailing beams and bolts for wear		
8 Check main gear weldment for fore and aft end play		
9 Check compression assemblies and bolts for wear (disassembly required)		
10 Check nose gear drag link at the knee for wear or hole elongation (disassembly required)		
11 Check nose gear gas spring for 100# minimum to compress		
12 Retract the gear checking for wear and freedom of movement of all bearings of gear and drag strut assembly. Lubricate all moving points. Check pressure within limits		
13 Check gear doors for fit and security. Lubricate pivot points and rods		
14 Free fall the gear using the dump valve. Check for freedom of movement and over centering of links. Check gear using power pack and check pressure down within limits		
15 Check nose oleo shimmy damper for proper resistance to movement		
16 Check nose gear oleo for condition and leakage. Inflate nose gear oleo to specified psi unloaded, or strut extension loaded		
17 Check nose gear operation when wheel is at slight turning radius and tire or tang do not hang up when gear is retracted		
18 Check operation of gear position lights and switches		
19 Check all gear actuators and sequence valves for proper operation and leakage		
20 Check gear switch is down and dump valve closed. Remove aircraft from jacks		
EMPENAGE "GROUP G"		
1 Remove exterior inspection covers. Inspect for security and wear and lubricate torque tubes, cables and bell cranks. Reinstall inspection covers		
2 Inspect rudder hinges and rudder attachment pin and safetied		
3 Inspect trim tabs, elevator hinges, and lubricate		

NOTES:

NOTES:

NOTES: