

SECTION 2

GROUND HANDLING, SERVICING, CLEANING, LUBRICATION AND INSPECTION

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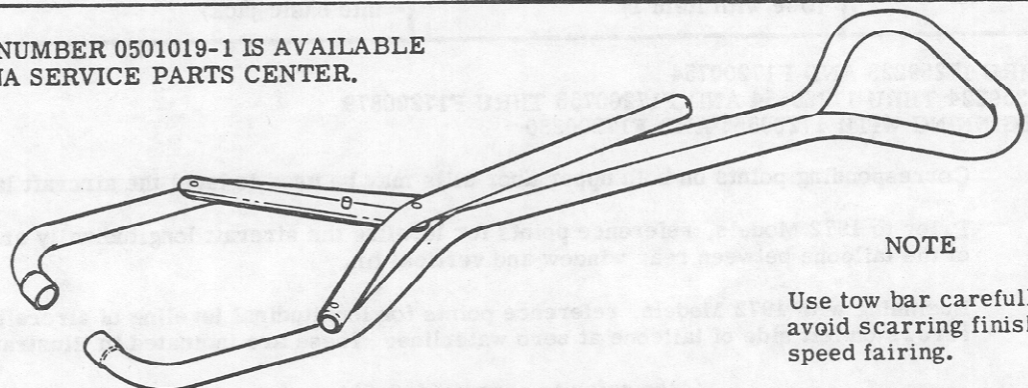
2-1. GROUND HANDLING.

2-2. TOWING. Moving the aircraft by hand is accomplished by using the wing struts and landing gear struts as push points. A tow bar attached to the nose gear should be used for steering and maneuvering the aircraft on the ground. When no tow bar is available, press down at the horizontal stabilizer front spar adjacent to the fuselage to raise the nose wheel off the ground. With the nose wheel clear of the ground, the aircraft can be turned by pivoting it about the main wheels.

CAUTION

When towing the aircraft, never turn the nose wheel more than 30 degrees either side of center or the nose gear will be damaged. Do not push on control surfaces or outboard empennage surfaces. When pushing on the tailcone, always apply pressure at a bulkhead to avoid buckling the skin.

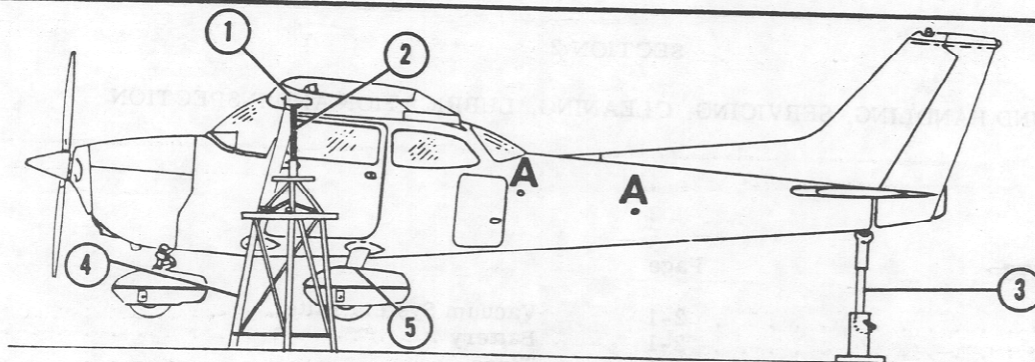
TOW BAR: PART NUMBER 0501019-1 IS AVAILABLE FROM THE CESSNA SERVICE PARTS CENTER.



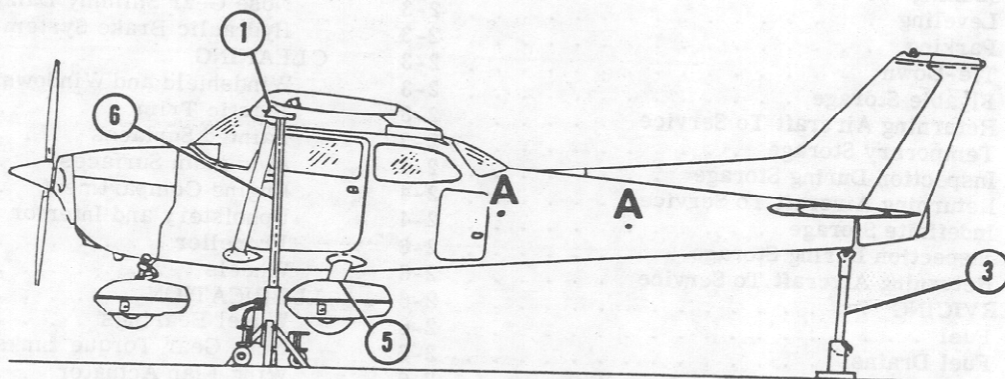
NOTE

Use tow bar carefully to avoid scarring finish on speed fairing.

Figure 2-1. Tow Bar



REFER TO SHEET 2
FOR JACKING
INFORMATION



ITEM NUMBER	TYPE AND NUMBER	REMARKS
①	Block (Jack point not available)	1x4x4 padded with 1/4" rubber
②	Jack	Any short jack of capable capacity
③	Universal tail stand	Any tail stand of capable capacity
④	Cessna #SE-576 (41-1/2" high)	Universal jack stand (FOR USE WITH ITEM 2)
⑤	Cessna #10004-98 Cessna #0541208-1 Built-in jack pad	Jack point * (SEE CAUTION) Jack point # (SEE NOTE 5) Part of step bracket †
⑥	#2-170 Basic jack #2-70 Slide tube (Use with item 1)	Closed height: 69-1/2 inches; extended height: 92" (Insert slide tube extension into basic jack)

* THRU 17259223 AND F17200754

17259224 THRU 17260554 AND F17200755 THRU F17200879

† BEGINNING WITH 17260555 AND F17200880

Corresponding points on both upper door sills may be used to level the aircraft laterally.

Prior to 1972 Models, reference points for leveling the aircraft longitudinally are the top of the tailcone between rear window and vertical fin.

Beginning with 1972 Models, reference points for longitudinal leveling of aircraft are two screws on left side of tailcone at zero waterline. These are indicated in illustration by **A**

(Also refer to paragraph 2-5)

Figure 2-2. Jacking and Leveling (Sheet 1 of 2)

JACKING INFORMATION

1. Wing jacks are placed under front spar of wing just outboard of wing strut, and must extend far enough to raise wheels off ground, and must be of adequate strength.
2. Attach a suitable stand to the tie-down ring. Be sure tail stand weighs enough to keep tail down and under all conditions that it is strong enough to support any weight that might be placed on it (place shot bags or sand bags on tail stand. In addition, the base of adjustable tail stand is to be filled with concrete for additional weight as a safety factor.
3. Operate jacks evenly until desired height is reached.

CAUTION

When using universal jack point (10004-98), flexibility of the gear strut will cause the main wheel to slide inboard as the wheel is raised, tilting the jack. The jack must be lowered for a second operation. Jacking both wheels simultaneously with universal jack points is not recommended. Universal jack point may be used to raise only one main wheel. DO NOT USE brake casting as a jack point.

4. Items (4), (5) and (6) are available from the Cessna Service Parts Center.
5. On tubular gear aircraft, the only fairing requiring removal is the fuselage-to-tube gear fairing. Jack pad is inserted on tube in area between fuselage and upper end of tube fairing, then jack aircraft as required.

SHOP NOTES:

2-3. HOISTING. The aircraft may be lifted with a hoist of two-ton capacity by using hoisting rings, which are optional equipment, or by means of suitable slings. The front sling should be hooked to each upper engine mount at the firewall, and the aft sling should be positioned around the fuselage at the first bulkhead forward of the leading edge of the stabilizer. If the optional hoisting rings are used, a minimum cable length of 60 inches for each cable is required to prevent bending of the eyebolt-type hoisting rings. If desired, a spreader jig may be fabricated to apply vertical force to the eyebolts.

2-4. JACKING. Refer to figure 2-2 for jacking procedures.

2-5. LEVELING. Corresponding points on both upper door sills may be used to level the aircraft laterally. Prior to 1972 models, the reference point for leveling the aircraft longitudinally is the top of the tailcone, between the rear window and vertical fin. Beginning with 1972 models, the reference points for longitudinally leveling the aircraft, are the two screws located on the left side of the tailcone. Refer to figure 2-2 for screw locations.

2-6. PARKING. Parking precautions depend principally on local conditions. As a general precaution, set parking brake or chock the wheels and install the controls lock. In severe weather and high wind conditions, tie down the aircraft as outlined in paragraph 2-7 if a hangar is not available.

2-7. TIE-DOWN. When mooring the aircraft in the open, head into the wind if possible. Secure control surfaces with the internal control lock and set brakes.

CAUTION

Do not set parking brakes during cold weather when accumulated moisture may freeze the brakes or when the brakes are overheated.

After completing the preceding, proceed to moor the aircraft as follows:

- a. Tie ropes, cables, or chains to the wing tie-down fittings located at the upper end of each wing strut. Secure the opposite ends of ropes, cables, or chains to ground anchors.
- b. Secure rope (no chains or cables) to forward mooring ring and secure opposite end to ground anchor.
- c. Secure the middle of a rope to the tail tie-down ring. Pull each end of rope away at a 45 degree angle and secure to ground anchors at each side of tail.
- d. Secure control lock on pilot control column. If control lock is not available, tie pilot control wheel back with front seat belt.
- e. These aircraft are equipped with a spring-loaded steering system which affords protection against normal wind gusts. However, if extremely high wind gusts are anticipated, additional external locks may be installed.

2-8. FLYABLE STORAGE. Flyable storage is defined as a maximum of 30 days non-operational stor-

age and/or the first 25 hours of intermittent engine operation.

NOTE

The aircraft is delivered from Cessna with a Corrosion Preventive Aircraft Engine Oil (MIL-C-6529, Type II, RUST BAN). This engine oil is a blend of aviation grade straight mineral oil and a corrosion preventive compound. This engine oil should be used for the first 50 hours of engine operation. Refer to paragraph 2-21 for oil changes during the first 50 hours of operation.

During the 30 day non-operational storage or the first 25 hours of intermittent engine operation, every seventh day the propeller shall be rotated through five revolutions, without running the engine. If the aircraft is stored outside, tie-down in accordance with paragraph 2-7. In addition, the pitot tube, static air vents, air vents, openings in the engine cowl, and other similar openings shall have protective covers installed to prevent entry of foreign material. After 30 days, aircraft should be flown for 30 minutes or ground run-up until oil has reached operating temperature.

2-9. RETURNING AIRCRAFT TO SERVICE. After flyable storage, returning the aircraft to service is accomplished by performing a thorough pre-flight inspection. At the end of the first 25 hours of engine operation, drain engine oil, clean oil screens and change external oil filter element. Service engine with correct grade and quantity of engine oil. Refer to figure 2-4 and paragraph 2-21 for correct grade of engine oil.

2-10. TEMPORARY STORAGE. Temporary storage is defined as aircraft in a non-operational status for a maximum of 90 days. The aircraft is constructed of corrosion resistant alclad aluminum, which will last indefinitely under normal conditions if kept clean however, these alloys are subject to oxidation. The first indication of corrosion on unpainted surfaces is in the form of white deposits or spots. On painted surfaces, the paint is discolored or blistered. Storage in a dry hangar is essential to good preservation and should be procured if possible. Varying conditions will alter the measures of preservation, but under normal conditions in a dry hangar, and for storage periods not to exceed 90 days, the following methods of treatment are suggested:

- a. Fill fuel tanks with correct grade of gasoline.
- b. Clean and wax aircraft thoroughly.
- c. Clean any oil or grease from tires and coat tires with a tire preservative. Cover tires to protect against grease and oil.
- d. Either block up fuselage to relieve pressure on tires or rotate wheels every 30 days to change supporting points and prevent flat spotting the tires.
- e. Lubricate all airframe items and seal or cover all openings which could allow moisture and/or dust to enter.

NOTE

The aircraft battery serial number is recorded in the aircraft equipment list. To assure accurate warranty records, the battery should be re-installed in the same aircraft from which it was removed. If the battery is returned to service in a different aircraft, appropriate record changes must be made and notification sent to the Cessna Claims Department.

- f. Remove battery and store in a cool dry place; service the battery periodically and charge as required.

NOTE

An engine treated in accordance with the following may be considered protected against normal atmospheric corrosion for a period not to exceed 90 days.

- g. Disconnect spark plug leads and remove upper and lower spark plugs from each cylinder.

NOTE

The preservative oil must be Lubricating Oil-Contact and Volatile, Corrosion Inhibited, MIL-L-46002, Grade 1 or equivalent. The following oils are approved for spraying operations by Teledyne Continental Motors, Nucle Oil 105 - Daubert Chemical Co., 4700 So. Central Ave., Chicago, Illinois, Petractec VA-Pennsylvania Refining Co., Butler, Pennsylvania, Ferro-Gard 1009G - Ranco Laboratories, Inc., 3617 Brownsville Rd., Pittsburg, Pennsylvania. The following oils are approved for spraying operation by Lycoming, Socony Averex 901, or Esso Rust-Ban 626, or equivalent.

- h. Using a portable pressure sprayer, atomize spray preservative oil through the upper spark plug hole of each cylinder with the piston in a down position. Rotate crankshaft as each pair of cylinders is sprayed.
- i. After completing step "h," rotate crankshaft so that no piston is at a top position. If the aircraft is to be stored outside, stop two-bladed propeller so that blades are as near horizontal as possible to provide maximum clearance with passing aircraft.
- j. Again spray each cylinder without moving the crankshaft to thoroughly cover all interior surfaces of the cylinder above the piston.
- k. Install spark plugs and connect spark plug leads.
- l. Apply preservative oil to the engine interior by spraying approximately two ounces of the preservative oil through the oil filler tube.
- m. Seal all engine openings exposed to the atmosphere using suitable plugs or non-hygroscopic tape. Attach a red streamer at each point that a plug or tape is installed.
- n. If the aircraft is to be stored outside, perform the procedures outlined in paragraph 2-7. In addition, the pitot tube, static source vents, air vents, openings in the engine cowling and other similar

openings should have protective covers installed to prevent entry of foreign material.

- o. Attach a warning placard to the propeller to the effect that the propeller shall not be moved while the engine is in storage.

2-11. INSPECTION DURING STORAGE.

- a. Inspect airframe for corrosion at least once a month and remove dust collections as frequently as possible. Clean and wax as required.
- b. Inspect the interior of at least one cylinder through the spark plug hole for corrosion at least once a month.

NOTE

Do not move crankshaft when inspecting interior of cylinder for corrosion.

- c. If at the end of the 90 day period, the aircraft is to be continued in non-operational storage, again perform the procedural steps "g thru o" of paragraph 2-10.

2-12. RETURNING AIRCRAFT TO SERVICE. After temporary storage, use the following procedures to return the aircraft to service.

- a. Remove aircraft from blocks and check tires for proper inflation. Check for proper nose gear strut inflation.
- b. Check battery and install.
- c. Check that oil sump has proper grade and quantity of engine oil.
- d. Service induction air filter and remove warning placard from propeller.
- e. Remove materials used to cover openings.
- f. Remove spark plugs from engine.
- g. While spark plugs are removed, rotate propeller several revolutions to clear excess rust preventive oil from cylinders.
- h. Clean, gap and install spark plugs. Torque plugs to the value specified in Section 11 or 11A; connect spark plug leads.
- i. Check fuel strainer. Remove and clean filter screen if necessary. Check fuel tanks and fuel lines for moisture and sediment, drain enough fuel to eliminate moisture and sediment.
- j. Perform a thorough pre-flight inspection, then start and warm-up engine.

2-13. INDEFINITE STORAGE. Indefinite storage is defined as aircraft in a non-operational status for an indefinite period of time. Engines treated in accordance with the following may be considered protected against normal atmosphere corrosion, provided the procedure outlined in paragraph 2-14 are performed at the intervals specified.

- a. Operate engine until oil temperature reaches normal operating range. Drain engine oil sump and reinstall drain plug.
- b. Fill oil sump to normal operating capacity with corrosion preventive mixture which has been thoroughly mixed and pre-heated to a minimum of 221°F at the time it is added to the engine.

NOTE

Corrosion preventive mixture consists of one part compound MIL-C-6529, type I, mixed with three parts new lubricating oil of the grade recommended for service. Lycoming recommends Esso Rust-Ban 628 or equivalent. Continental Motors Corporation recommends Cosmoline No. 1223, supplied by E. F. Houghton & Co., 305 W. LeHigh Avenue, Philadelphia, Pa. During all spraying operations corrosion mixture is pre-heated to 221° to 250°F.

- c. Immediately after filling the oil sump with corrosion preventative mixture, fly the aircraft for a period of time not to exceed a maximum of 30 minutes.
- d. With engine operating at 1200 to 1500 rpm and induction air filter removed, spray corrosion preventive mixture into induction airbox, at the rate of one-half gallon per minute, until heavy smoke comes from exhaust stack, then increase the spray until the engine is stopped.

CAUTION

Injecting corrosion-preventive mixture too fast can cause a hydrostatic lock.

- e. Do not rotate propeller after completing step "d."
- f. Remove all spark plugs and spray corrosion-preventive mixture, which has been pre-heated to 221° to 250°F, into all spark plug holes to thoroughly cover interior surfaces of cylinders.
- g. Install lower spark plugs or install solid plugs, and install dehydrator plugs in upper spark plug holes. Be sure that dehydrator plugs are blue in color when installed.
- h. Cover spark plug lead terminals with shipping plugs (AN4060-1) or other suitable covers.
- i. With throttle in full open position, place a bag of desiccant in the carburetor intake and seal opening with moisture resistant paper and tape.
- j. Place a bag of desiccant in the exhaust tail-pipe(s) and seal openings with moisture resistant tape.
- k. Seal cold air inlet to the heater muff with moisture resistant tape.

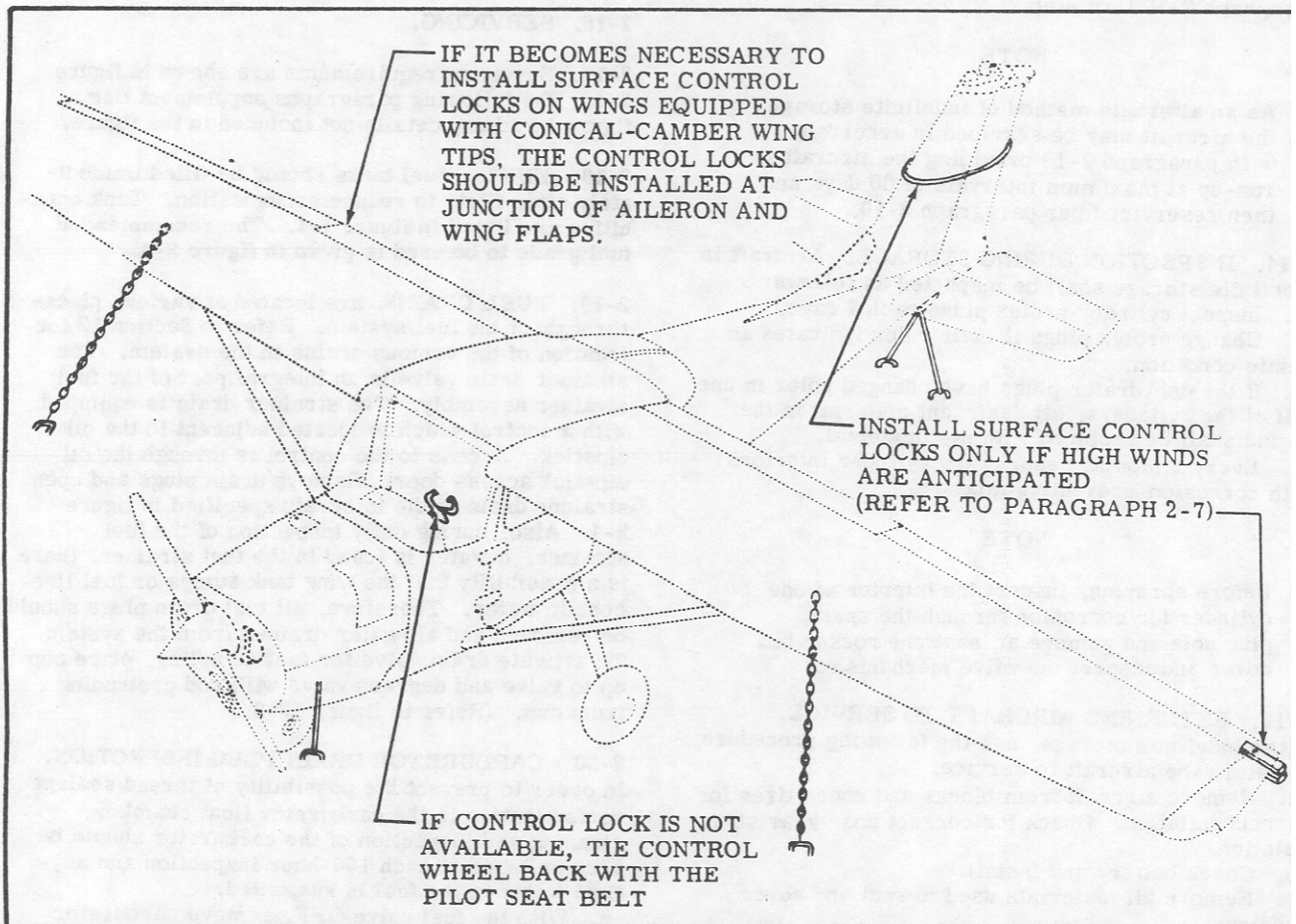


Figure 2-3. Tie-Down Details

1. Seal engine breather by inserting a protex plug in the breather hose and clamping in place.
- m. Seal all other engine openings exposed to atmosphere using suitable plugs or non-hygroscopic tape.

NOTE

Attach a red streamer to each place plugs or tape is installed. Either attach red streamers outside of the sealed area with tape or to the inside of the sealed area with safety wire to prevent wicking of moisture into the sealed area.

- n. Drain corrosion-preventive mixture from engine sump and reinstall drain plug.

NOTE

The corrosion-preventive mixture is harmful to paint and should be wiped from painted surfaces immediately.

- o. Attach a warning placard on the throttle control knob, to the effect that the engine contains no lubricating oil. Placard the propeller to the effect that it should not be moved while the engine is in storage.
- p. Prepare airframe for storage as outlined in paragraph 2-10 thru step "f."

NOTE

As an alternate method of indefinite storage, the aircraft may be serviced in accordance with paragraph 2-10 providing the aircraft is run-up at maximum intervals of 60 days and then reserviced per paragraph 2-10.

2-14. INSPECTION DURING STORAGE. Aircraft in indefinite storage shall be inspected as follows:

- a. Inspect cylinder protex plugs each 7 days.
- b. Change protex plugs if their color indicates an unsafe condition.
- c. If the dehydrator plugs have changed color in one half of the cylinders, all desiccant material in the engine shall be replaced with new material.
- d. Every 6 months respray the cylinder interiors with corrosion-preventive mixture.

NOTE

Before spraying, inspect the interior of one cylinder for corrosion through the spark plug hole and remove at least one rocker box cover and inspect the valve mechanism.

2-15. RETURNING AIRCRAFT TO SERVICE.

After indefinite storage, use the following procedure to return the aircraft to service.

- a. Remove aircraft from blocks and check tires for correct inflation. Check for correct nose gear strut inflation.
- b. Check battery and install.
- c. Remove all materials used to seal and cover openings.
- d. Remove warning placards posted at throttle and propeller.
- e. Remove and clean engine oil screen, then re-

install and safety. On aircraft that are equipped with an external oil filter, install new filter element.

- f. Remove oil sump drain plug and drain sump. Install and safety drain plug.

NOTE

The corrosion-preventive mixture will mix with the engine lubricating oil, so flushing the oil system is not necessary. Draining the oil sump will remove enough of the corrosion-preventive mixture.

- g. Service and install the induction air filter.
- h. Remove dehydrator plugs and spark plugs or plugs installed in spark plug holes and rotate propeller by hand several revolutions to clear corrosion-preventive mixture from cylinders.
- i. Clean, gap, and install spark plugs. Torque plugs to the value listed in Section 11 or 11A.
- j. Check fuel strainer. Remove and clean filter screen. Check fuel tanks and fuel lines for moisture and sediment, and drain enough fuel to eliminate.
- k. Perform a thorough pre-flight inspection, then start and warm-up engine.
- l. Thoroughly clean aircraft and flight test aircraft.

2-16. SERVICING.

2-17. Servicing requirements are shown in figure 2-4. The following paragraphs supplement this figure by adding details not included in the figure.

2-18. FUEL. Fuel tanks should be filled immediately after flight to reduce condensation. Tank capacities are listed in figure 1-1. The recommended fuel grade to be used is given in figure 2-4.

2-19. FUEL DRAINS. are located at various places throughout the fuel system. Refer to Section 12 for location of the various drains in the system. The strainer drain valve is an integral part of the fuel strainer assembly. The strainer drain is equipped with a control which is located adjacent to the oil dipstick. Access to the control is through the oil dipstick access door. Remove drain plugs and open strainer drain at the intervals specified in figure 2-4. Also, during daily inspection of the fuel strainer, if water is found in the fuel strainer, there is a possibility that the wing tank sumps or fuel line contain water. Therefore, all fuel drain plugs should be removed and all water drained from the system. To activate drain valve for fuel sampling, place cup up to valve and depress valve with rod protruding from cup. (Refer to figure 12-3.)

2-20. CARBURETOR DRAIN PLUG INSPECTION. In order to prevent the possibility of thread sealant contamination in the carburetor float chamber, cleaning and inspection of the carburetor should be accomplished at each 100-hour inspection and anytime water in the fuel is suspected.

- a. With the fuel valve OFF, remove carburetor drain plug and clean off any sealant present on the end of the plug or in the threads on the plug.
- b. Inspect drain plug hole in the carburetor and re-

move any sealant remaining in the hole.

c. Turn fuel valve to ON to flush float chamber and drain plug chamber while probing drain plug hole to ascertain that all residue of sealant material is dislodged and washed out of the chamber. Flushing operation should last 15 to 30 seconds.

d. A second flushing should then be accomplished and the drained fuel retained for inspection to insure that no sealant particles are present.

e. Install drain plug as follows:

1. Install drain plug in carburetor 1-1/2 to 2 turns.

2. Apply NS-40 (RAS-4) MIL-T-5544 (Antiseize, Graphite Petrolatum) or equivalent to plug threads.

3. Tighten and safety drain plug.

f. Turn fuel valve ON and inspect for evidence of fuel leakage.

2-21. ENGINE OIL. Check engine lubricating oil with the dipstick five to ten minutes after the engine has been stopped. The aircraft should be in as near a level position as possible when checking the engine oil, so that a true reading is obtained. Engine oil should be drained while the engine is still hot, and the nose of the aircraft should be raised slightly for more positive draining of any sludge which may have collected in the engine oil sump. Engine oil should be changed every six months, even though less than the specified hours have accumulated. Reduce these intervals for prolonged operations in dusty areas, in cold climates where sludging conditions exist, or where short flights and long idle periods are encountered, which cause sludging conditions. Always change oil, clean oil screens, and clean and/or change external filter element whenever oil on the dipstick appears dirty. Aviation grade oil conforming to AVCO Lycoming Specification No. 301 and Service Instruction No. 1014, and to any revisions or supplements thereto, shall be used in the "Blue Streak" (Lycoming) engine. Ashless dispersant oil conforming to Continental Motors Specification MHS-24 and all revisions or supplements thereto and conforming with current Continental Aircraft Engine Service Bulletins shall be used in the Continental engine.

NOTE

New or newly-overhauled engines should be operated on aviation grade straight mineral oil until the first oil change. If an ashless dispersant oil is used in a new or newly-overhauled engine, high oil consumption may be experienced. The anti-friction additives in detergent and dispersant oils will retard "break-in" of the pistons, rings and cylinder walls. This condition can be avoided by the use of straight mineral oil. The aircraft is delivered from Cessna with a Corrosion Preventive Aircraft Engine Oil (MIL-C-6529, Type II, RUST BAN). If oil must be added

during the first 25 hours, use only aviation grade straight mineral oil (non-detergent) conforming to Specification No. MIL-L-6082. After the first 25 hours of operation, drain engine oil sump and clean both the oil suction strainer and oil pressure screen. If an optional oil filter is installed, change filter element at this time. Refill sump with straight mineral oil (non-detergent) and use until a total of 50 hours have accumulated or oil consumption has stabilized, then change to ashless dispersant oil.

When changing engine oil, remove and clean oil screens, or install a new filter element on aircraft equipped with an external oil filter. An oil quick-drain valve may be installed. This valve provides a quick and cleaner method of draining the engine oil. This valve is installed in the oil drain port of the oil sump, and allows oil to be drained by attaching a hose over the fitting end and pushing up, causing the oil to drain through the hose into a container. To drain the engine oil, proceed as follows:

a. Operate engine until oil temperature is at normal operating temperature.

b. (With Quick-Drain Valve.) Attach a hose to the quick-drain valve in oil sump. Push upon quick-drain valve until it locks open, and allow oil to drain through hose into container.

c. (Without Quick-Drain Valve.) Remove oil drain plug from engine sump and allow oil to drain into a container.

d. After engine oil has drained, close quick-drain valve and remove hose. Install and safety drain plug.

e. Remove and clean oil screen, or change external oil filter element.

f. Service engine with correct quantity and grade of engine oil.

NOTE

Refer to inspection charts for intervals for changing oil and filter elements.

NOTE

Oil capacities for the different models are given in the following chart. To minimize loss of oil through the breather, fill to specified oil level on dipstick for normal operation (flight of less than three hours duration). For extended flight, fill to FULL mark on dipstick. Do not operate with less than MINIMUM-FOR-FLIGHT quantities listed. If an external oil filter is installed, one additional quart of oil is required when filter element is changed.

MODEL	CAPACITY (TOTAL)	CAPACITY (TOTAL WITH FILTER)	NORMAL OPERATION	MINIMUM FOR FLIGHT
172	8	9	7	6

When adding or changing oil, use aviation grade oil in accordance with the following chart.

"BLUE STREAK" (Lycoming) ENGINE			
MODEL	AMBIENT TEMPERATURE RANGE	GRADE	
		STRAIGHT MINERAL OIL*	ASHLESS DISPERSANT OIL*
172 AND F172 (1972 & ON)	ABOVE 60°F 30° TO 90°F 0° TO 70°F BELOW 10°F	SAE 50 SAE 40 SAE 30 SAE 20	SAE 40 OR SAE 50 SAE 40 SAE 30 OR SAE 40 SAE 30
*AVIATION GRADE OILS CONFORMING TO AVCO LYCOMING SPECIFICATION NO. 301 AND SERVICE INSTRUCTION NO. 1014, AND TO ANY REVISIONS OR SUPPLEMENTS THERETO, MUST BE USED.			

CONTINENTAL ENGINE		
MODEL	AMBIENT TEMPERATURE**	GRADE***
F172 (THRU 1971)	ABOVE 40°F BELOW 40°F	SAE 40 SAE 20
** WHEN OPERATING TEMPERATURES OVERLAP INDICATED RANGES, USE THE LIGHTER GRADE OF OIL.		
*** AVIATION GRADE ASHLESS DISPERSANT OILS CONFORMING TO CONTINENTAL MOTORS SPECIFICATION MHS-24 AND ALL REVISIONS AND SUPPLEMENTS THERETO MUST BE USED EXCEPT AS NOTED IN THIS PARAGRAPH. REFER TO CURRENT CONTINENTAL AIRCRAFT ENGINE SERVICE BULLETINS FOR FUTHER RECOMMENDATIONS.		

2-22. ENGINE INDUCTION AIR FILTER. The induction air filter keeps dust and dirt from entering the induction system. The value of maintaining the air filter in a good clean condition can never be overstressed. More engine wear is caused through the use of a dirty or damaged air filter than is generally believed. The frequency with which the filter should be removed, inspected, and cleaned will be determined primarily by aircraft operating conditions. A good general rule however, is to remove, inspect, and clean the filter at least every 50 hours of engine operating time and more frequently if warranted by operating conditions. Some operators prefer to hold spare induction air filters at their home base of operation so that a clean filter is always readily available for use. Under extremely dusty conditions, daily servicing of the filter is recommended. Two types of filters have been used. One is a flock-coated, oiled filter and the other is a dry, paper-media filter.

NOTE

Early Model F172-series was equipped with a flock-coated, oiled filter when it left the factory. However, new filters ordered from the Cessna Service Parts Center will be the dry type with an improved filtering element. The Model 172-series is equipped with the dry type filter.

To service the flock-coated, oiled filter, proceed as follows:

- Remove filter from aircraft.
- Wash filter thoroughly, soiled face down in solvent (Federal Specification P-S-661 or equivalent).
- Drain and dry filter, then dip flock-coated screen filter in the same grade of oil used in the engine and allow excess oil to drain off.

- d. Be sure air box is clean, inspect filter and replace if damaged.

NOTE

A damaged filter may have broken filtering panels or the flock coating may be missing from the filtering panels, which will allow unfiltered air to enter the induction system. Any filter that appears doubtful, shall have a new filter installed in its place.

- e. Install filter at entrance to air box with gasket on aft face of filter frame and with air flow arrow on filter pointed in the correct direction.

To service the dry type filter, proceed as follows:

- a. Remove filter from aircraft.

NOTE

Use care to prevent damage to filter element when cleaning filter with compressed air.

- b. Clean filter by blowing with compressed air (not over 100 psi) from direction opposite of normal air flow. Arrows on filter case indicate direction of normal air flow.

CAUTION

Do not use solvent or cleaning fluids to wash filter. Use only a water and household detergent solution when washing the filter.

- c. After cleaning as outlined in step "b," the filter may be washed, if necessary, in a solution of warm water and a mild household detergent. A cold water solution may be used.

NOTE

The filter assembly may be cleaned with compressed air a maximum of 30 times or it may be washed a maximum of 20 times. A new filter should be installed after using 500 hours of engine operating time or one year, whichever should occur first. However, a new filter should be installed at anytime the existing filter is damaged. A damaged filter may have sharp or broken edges in the filtering panels which would allow unfiltered air to enter the induction system. Any filter that appears doubtful, shall have a new filter installed in its place.

- d. After washing, rinse filter with clear water until rinse water draining from filter is clear. Allow water to drain from filter and dry with compressed air (not over 100 psi).

NOTE

The filtering panels of the filter may become distorted when wet, but they will return to their original shape when dry.

- e. Be sure air box is clean, inspect filter. If filter is damaged, install a new filter.

- f. Install filter at entrance to air box with gasket on aft face of filter frame and with air flow arrows on filter frame pointed in the correct direction.

2-23. VACUUM SYSTEM FILTER. The vacuum system central air filter keeps dirt and dust from entering the vacuum operated instruments. Change central air filter element every 500 hours of operating time and whenever suction gage reading drops below 4.6 inches of mercury. Also, do not operate the vacuum system with the filter removed, or a vacuum line disconnected as particles of dust or other foreign matter may enter the system and damage the gyros.

2-24. BATTERY. Battery servicing involves adding distilled water to maintain the electrolyte even with the horizontal baffle plate at the bottom of the filler holes, checking the battery cable connections, and neutralizing and cleaning off and spilled electrolyte or corrosion. Use bicarbonate of soda (baking soda) and water to neutralize electrolyte or corrosion. Follow with a thorough flushing with water. Brighten cables and terminals with a wire brush, then coat with petroleum jelly before connecting. The battery box also should be checked and cleaned if any corrosion is noted. Distilled water, not acid or "rejuvenators," should be used to maintain electrolyte level. Check the battery every 50 hours (or at least every 30 days) oftener in hot weather. See Section 16 for detailed battery removal, installation and testing.

2-25. TIRES. Maintain tire pressure at the air pressures specified in figure 1-1. When checking tire pressure, examine tires for wear, cuts, bruises, and slippage. Remove oil, grease, and mud from tires with soap and water.

NOTE

Recommended tire pressures should be maintained. Especially in cold weather, remember that any drop in temperature of the air inside a tire causes a corresponding drop in air pressure.

2-26. NOSE GEAR SHOCK STRUT. The nose gear shock strut requires periodic checking to ensure that the strut is filled with hydraulic fluid and is inflated to the correct air pressure. To service the nose gear shock strut, proceed as follows:

- Remove valve cap and release air pressure.
- Remove valve housing.
- Compress nose gear to its shortest length and fill strut with hydraulic fluid to the bottom of the filler hole.
- Raise nose of aircraft, extend and compress strut several times to expel any entrapped air, then lower nose of aircraft and repeat step "c."
- With strut compressed, install valve housing assembly.
- With nose wheel off ground, inflate strut. Shock strut pressure is listed in Section 1.

NOTE

The nose landing gear shock strut will normally require only a minimum amount of service. Maintain the strut extension pressure, as shown in figure 1-1. Lubricate landing gear as shown in figure 2-5. Check the landing gear daily for general cleanliness, security of mounting, and for hydraulic fluid leakage. Keep machined surfaces wiped free of dirt and dust, using a clean lint-free cloth saturated with MIL-H-5606 hydraulic fluid or kerosene. All surfaces should be wiped free of excessive hydraulic fluid.

- 2-27. **NOSE GEAR SHIMMY DAMPENER.** The shimmy dampener should be serviced at least every 50 hours. The shimmy dampener must be filled completely with fluid, free of entrapped air, to serve its purpose. To service the shimmy dampener, proceed as follows:
- Remove shimmy dampener from aircraft.
 - While holding the dampener in a vertical position with fitting end pointed downward, pull fitting end of the dampener shaft to its limit of travel.
 - While holding dampener in this position, fill dampener through open end of cylinder with hydraulic fluid.
 - Push the shaft upward slowly to seal off the filler hole.
 - Clean dampener with solvent. Be sure to keep the shaft protruding through the filler hole until dampener is installed on the aircraft.
 - Install dampener on aircraft.

NOTE

Keep the shimmy dampener, especially the exposed portions of the dampener piston shaft, clean to prevent collection of dust and grit which could cut the seals in the dampener barrel. Keep machined surfaces wiped free of dirt and dust, using a clean lint-free cloth saturated with MIL-H-5606 hydraulic fluid or kerosene. All surfaces should be wiped free of excessive hydraulic fluid.

- 2-28. **HYDRAULIC BRAKE SYSTEMS.** Check brake master cylinders and refill with hydraulic fluid as specified in the inspection charts. Bleed the brake system of entrapped air whenever there is a spongy response to the brake pedals. Refer to Section 5 for filling and bleeding of the brakes.

2-29. CLEANING.

- 2-30. Keeping the aircraft clean is important. Besides maintaining the trim appearance of the aircraft, cleaning lessens the possibility of corrosion and makes inspection and maintenance easier.

- 2-31. **WINDSHIELD AND WINDOWS.** Windshield and windows should be cleaned carefully with plenty of fresh water and a mild detergent, using the palm of the hand to feel and dislodge any caked dirt or mud.

A sponge, soft cloth, or chamois may be used, but only as a means of carrying water to the plastic. Rinse thoroughly, then dry with a clean moist chamois. Do not rub the plastic with a dry cloth as this builds up an electrostatic charge which attracts dust. Oil and grease may be removed by rubbing lightly with a soft cloth moistened with Stoddard solvent.

CAUTION

Do not use gasoline, alcohol, benzene, acetone, carbon tetrachloride, fire extinguisher fluid, de-icer fluid, lacquer thinner, or glass window cleaning spray. These solvents will soften and craze the plastic.

After washing, the plastic windshield and windows should be cleaned with an aircraft windshield cleaner. Apply the cleaner with soft cloths and rub with moderate pressure. Allow the cleaner to dry, then wipe it off with soft flannel cloths. A thin, even coat of wax, polished out by hand with soft flannel cloths, will fill in minor scratches and help prevent further scratching. Do not use a canvas cover on the windshield or windows unless freezing rain or sleet is anticipated since the cover may scratch the plastic surface.

- 2-32. **PLASTIC TRIM.** The instrument panel, plastic trim, and control knobs need only be wiped with a damp cloth. Oil and grease on the control wheel and control knobs can be removed with a cloth moistened with Stoddard solvent. Volatile solvents, such as mentioned in paragraph 2-31, must never be used since they soften and craze the plastic.

2-33. **PAINTED SURFACES.** The painted exterior surfaces of the aircraft, under normal conditions, require a minimum of polishing and buffing. Approximately 15 days are required for acrylic or lacquer paint to cure completely; in most cases, the curing period will have been completed prior to delivery of the aircraft. In the event that polishing or buffing is required within the curing period, it is recommended that the work be done by an experienced painter. Generally, the painted surfaces can be kept bright by washing with water and mild soap, followed by a rinse with water and drying with cloths or chamois. Harsh or abrasive soaps or detergents which could cause corrosion or make scratches should never be used. Remove stubborn oil and grease with a cloth moistened with Stoddard solvent. After the curing period, the aircraft may be waxed with a good automotive wax. A heavier coating of wax on the leading edges of the wing and tail and on the engine nose cap will help reduce the abrasion encountered in these areas.

- 2-34. **ALUMINUM SURFACES.** The aluminum surfaces require a minimum of care, but should never be neglected. The aircraft may be washed with clean water to remove dirt and may be washed with non-alkaline grease solvents to remove oil and/or grease. Household type detergent soap powders are effective cleaners, but should be used cautiously since some of them are strongly alkaline. Many good aluminum cleaners, polishes, and waxes are available from

commercial suppliers of aircraft products.

2-35. ENGINE AND ENGINE COMPARTMENT. The engine should be kept clean since dirty cooling fins and baffle plates can cause overheating of the engine. Also, cleaning is essential to minimize any danger of fire and provide for easier inspection of components. The entire engine cowl may be removed to facilitate engine and interior cowl cleaning. Wash down the engine and components with a suitable solvent, such as Stoddard solvent or equivalent, then dry thoroughly with compressed air.

CAUTION

Particular care should be given to electrical equipment before cleaning. Solvent should not be allowed to enter magnetos, starters, alternators, voltage regulators, and the like. Hence, these components should be protected before saturating the engine with solvent. Any fuel, oil, and air openings should be covered before washing the engine with solvent. Caustic cleaning solutions should not be used. After cleaning engine, re-lubricate all control arms and moving parts.

2-36. UPHOLSTERY AND INTERIOR. Keeping the upholstery and interior trim clean prolongs upholstery fabric and interior trim life. To clean the interior proceed as follows:

- a. Empty all ash trays and refuse containers.
- b. Brush or vacuum clean the upholstery and carpet to remove dust and dirt.
- c. Wipe leather and plastic trim with a damp cloth.
- d. Soiled upholstery fabrics and carpet may be cleaned with a foam-type detergent used according to the manufacturer's instructions.
- e. Oil spots and stains may be cleaned with household spot removers, used sparingly. Before using any solvent, read the instructions on the container and test it on an obscure place in the fabric to be cleaned. Never saturate the fabric with volatile solvent; it may damage the padding and backing material.
- f. Scrape sticky material from fabric with a dull knife, then spot clean the area.

2-37. PROPELLER.

- a. Wash hub and blade with a soft cloth and Stoddard cleaning solvent or equivalent, then dry thoroughly with compressed air. The propeller should be wiped occasionally with an oily cloth, then wiped with a dry cloth. In salt water areas this will assist in corrosion proofing the propeller.

2-38. WHEELS. The wheels should be washed periodically and examined for corrosion, chipped paint, and cracks or dents in the wheel halves or in the flanges or hubs. If defects are found remove and repair in accordance with Section 5. Discard cracked wheel halves, flanges or hubs and install new parts.

2-39. LUBRICATION.

2-40. Lubrication requirements are shown in figure 2-5. Before adding grease to grease fittings, wipe dirt from fitting. Lubricate until grease appears around parts being lubricated, and wipe excess grease from parts. The following paragraphs supplement figure 2-5 by adding details.

2-41. WHEEL BEARINGS. Clean and repack the wheel bearings at first 100-hour inspection and at each 500-hour inspection thereafter. If more than the usual number of take-offs and landings are made, extensive taxiing is required, or the aircraft is operated in dusty areas or under seacoast conditions, cleaning and lubrication of the wheel bearing shall be accomplished at each 100-hour inspection.

2-42. NOSE GEAR TORQUE LINKS. Lubricate nose gear torque links every 50 hours. When operating dusty conditions, more frequent lubrication is required.

2-43. WING FLAP ACTUATOR.

- a. On aircraft prior to Serials 17259905 and F172 00805, not modified by Service Kit SK150-37B and SK150-41, proceed as follows:

1. At each 100 hour inspection, inspect wing flap actuator jack screw and ball retainer assembly for lubrication, and lubricate if required. Also, remove, clean and lubricate jack screw whenever actuator slippage is experienced. If lubrication is required, proceed as follows:

- a. Gain access to actuator by removing appropriate inspection plates on lower surface of wing.
- b. Expose jack screw by operating flaps to full-down position.
- c. Wipe a small amount of lubricant from jack screw with a rag and examine for condition. (Lubricant should not be dirty, sticky, gummy or frothy in appearance.)
- d. Inspect wiped area on jack screw for presence of hard scale deposit. Previous wiping action will have exposed bare metal if no deposit is present.
- e. If any of the above conditions exist, clean and relubricate jack screw as outlined in step "f" thru "r".
- f. Remove actuator from aircraft in accordance with procedures outlined in Section 7.
- g. Remove all existing lubricant from jack screw and torque tube by running the nut assembly to the end of the jack screw away from the gear box and soaking the nut assembly and jack screw in Stoddard solvent.

NOTE

Care must be taken to prevent solvent from entering gear box. The gear box lubricant is not affected and should not be disturbed.

h. After soaking, clean entire length of jack screw with a wire brush, rinse with solvent and dry with compressed air.

NOTE

Do not disassemble nut and ball retainer assembly.

i. Relubricate jack screw with MIL-G-21164 (Molybdenum Disulfide Grease) as outlined in steps "j" thru "m".

j. Rotate nut down screw toward the motor.

k. Coat screw and thread end of nut with grease and run nut to full extension.

l. Repeat the process and pack lubricant in the cavity between the nut and ball retainer at the threaded end of the nut.

m. Repeat the process and work nut back and forth several times.

n. Remove excess grease.

o. Reinstall actuator in aircraft per Section

7.

b. On aircraft prior to Serials 17259905 and F172-00805, which have been modified by Service Kit SK150-37B, proceed as follows:

1. At each 100 hour inspection, expose jack screw by operating flaps to full-down position, and inspect wing flap actuator jack screw for proper lubrication. If lubrication is required, proceed as follows:

a. Clean jack screw with solvent rag, if

necessary, and dry with compressed air.

b. Relubricate jack screw with MIL-G-21164 (Molybdenum Disulfide Grease) as required.

c. On aircraft beginning with Serials 17259905 and F17200805 and aircraft modified by Service Kit SK150-41, clean and lubricate wing flap actuator jack screw each 100 hours as follows:

down position.

2. Clean jack screw threads with solvent rag and dry with compressed air.

NOTE

It is not necessary to remove actuator from aircraft to clean or lubricate threads.

3. With oil can, apply light coat of No. 10 weight, non-detergent oil to threads of jack screw.

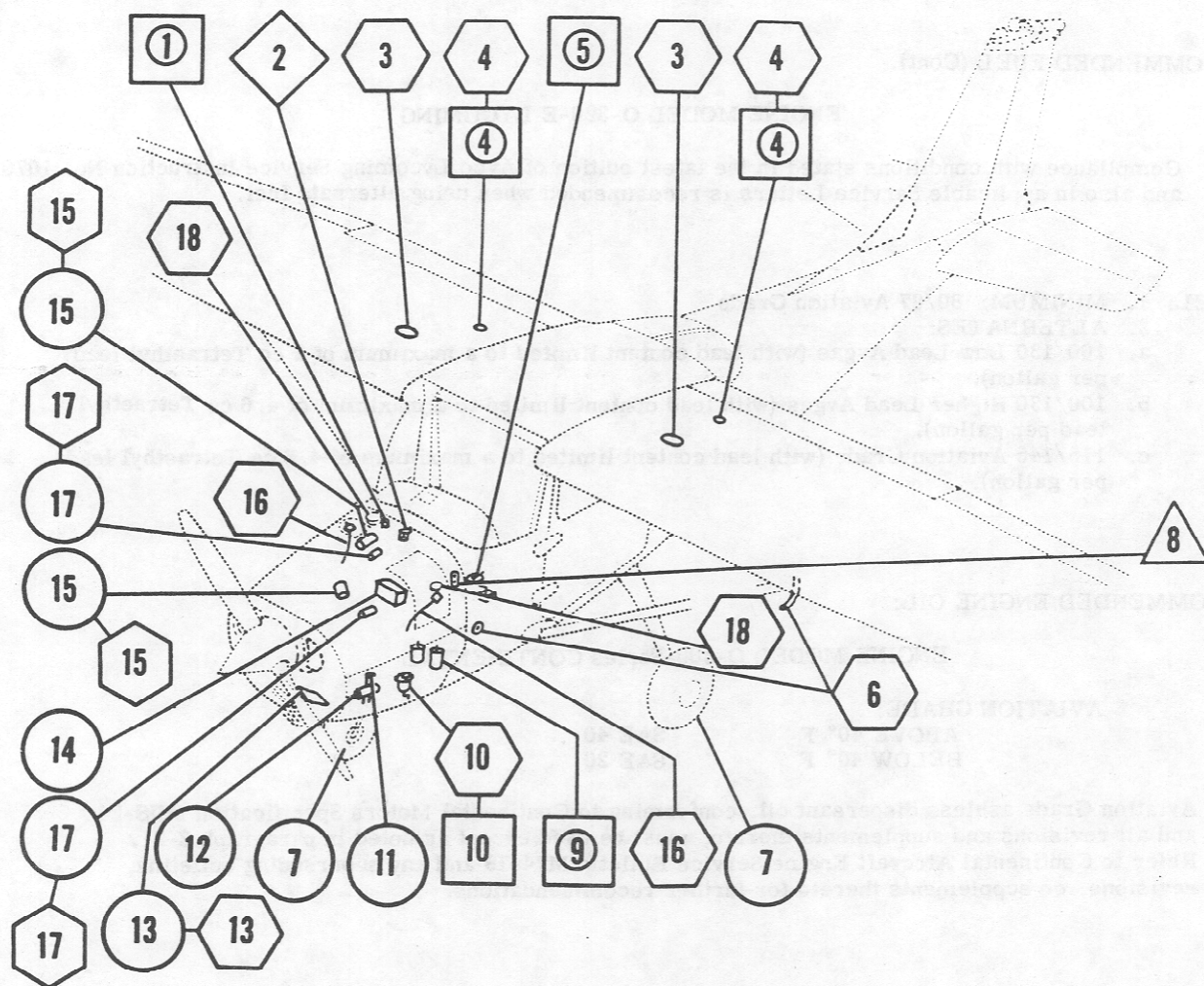
2-44. FUEL SELECTOR VALVE. At each 100 hour inspection, check the fuel selector valve and drive shaft for the following:

a. Valve control detent plate for cleanliness and excessive wear. Dirt accumulation on this plate can cause binding, poor detent feel and rapid wear of the plate.

b. All drive shaft attach points for security, binding, excessive wear and lubrication, if required.

c. Operate valve handle through all positions and check for proper operation, detent feel and freedom of movement.

SHOP NOTES:



HYDRAULIC FLUID:
SPEC. NO. MIL-H-5606

RECOMMENDED FUEL:

ENGINE MODEL O-300-Series CONTINENTAL

Compliance with conditions stated in Continental aircraft engine Service Bulletins M74-6 and M75-2 and supplements or revisions thereto, are recommended when using alternate fuel.

- FUEL: 1. MINIMUM: 80/87 Aviation Grade
2. ALTERNATES:
a. 100/130 Low Lead Avgas (with lead content limited to a maximum of 2 cc Tetraethyl lead per gallon).
b. 100/130 Higher Lead Avgas (with lead content limited to a maximum of 4.6 cc Tetraethyl lead per gallon).

Figure 2-4. Servicing (Sheet 1 of 4)

RECOMMENDED FUEL (Cont).

ENGINE MODEL O-320-E LYCOMING

Compliance with conditions stated in the latest edition of Avco Lycoming Service Instruction No. 1070 and also in applicable Service Letters is recommended when using alternate fuel.

- FUEL: 1. MINIMUM: 80/87 Aviation Grade
2. ALTERNATES:
a. 100/130 Low Lead Avgas (with lead content limited to a maximum of 2 cc Tetraethyl lead per gallon).
b. 100/130 Higher Lead Avgas (with lead content limited to a maximum of 4.6 cc Tetraethyl lead per gallon).
c. 115/145 Aviation Grade (with lead content limited to a maximum of 4.6 cc Tetraethyl lead per gallon).

RECOMMENDED ENGINE OIL:

ENGINE MODEL O-300-Series CONTINENTAL

AVIATION GRADE:

ABOVE 40° F	SAE 40
BELOW 40° F	SAE 20

Aviation Grade ashless dispersant oil, conforming to Continental Motors Specification MHS-24 and all revisions and supplements thereto, must be used except as noted in paragraph 2-21. Refer to Continental Aircraft Engine Service Bulletin M74-19 and any superseding bulletins, revisions, or supplements thereto for further recommendations.

ENGINE MODEL O-320-E LYCOMING

AVIATION GRADE:

ABOVE 60° F	SAE 40 OR SAE 50
30° TO 90° F	SAE 40
0° TO 70° F	SAE 40 OR SAE 30
BELOW 10° F	SAE 30

Aviation Grade ashless dispersant oil, conforming to Lycoming Specification No. 301 and all revisions and supplements thereto must be used except as noted in paragraph 2-21. Refer to Avco Lycoming Service Instruction No. 1014E and any superseding bulletins, revisions or supplements thereto for further recommendations.

SHOP NOTES:



DAILY

3 FUEL TANK FILLER

Service after each flight. Keep full to retard condensation. Refer to paragraph 2-18 for details.

4 FUEL TANK SUMP DRAINS

If quick-drain valves are installed, drain off any water and sediment before first flight of the day.

6 PITOT AND STATIC PORTS

Check for obstructions before first flight of the day.

10 FUEL STRAINER

Drain off any water and sediment before the first flight of the day. Refer to paragraph 2-19 for details.

13 INDUCTION AIR FILTER

Inspect and service under dusty conditions. Refer to paragraph 2-22 for details.

16 OIL DIPSTICK

Check oil on preflight. Add oil as necessary. Refer to paragraph 2-21 for details.

18 OIL FILLER CAP:

Whenever oil is added, check that filler cap is tight and oil filler door is secure.



FIRST 25 HOURS

15, 17 ENGINE OIL SYSTEM

Refill with straight mineral oil, non-detergent, and use until a total of 50 hours has accumulated or oil consumption has stabilized, then change to ashless dispersant oil.



50 HOURS

13 INDUCTION AIR FILTER

Clean filter per paragraph 2-22. Replace as required.

14 BATTERY

Check electrolyte level and clean battery compartment each 50 hours or each 30 days.

15 17 ENGINE OIL SYSTEM

Change oil each 50 hours if engine is NOT equipped with external oil filter; if equipped with external oil filter, change filter element each 50 hours and oil at each 100 hours, or every 6 months.

12 SHIMMY DAMPENER

Check fluid level and refill as required with hydraulic fluid. Refer to paragraph 2-27.

7 TIRES

Maintain correct tire pressure as listed in figure 1-1. Also refer to paragraph 2-25 for details.

11 NOSE GEAR SHOCK STRUT

Keep strut filled and inflate to correct pressure. Refer to paragraph 2-26 for details.



50 HOURS (Cont)



100 HOURS

10 FUEL STRAINER

Disassemble and clean strainer bowl and screen.



200 HOURS

1 VACUUM RELIEF FILTER

Change each 1000 hours, or to coincide with engine overhauls.

4 FUEL TANK SUMP DRAINS

If quick-drain valves are not installed, remove plugs and drain off water or sediment. Reinstall plugs and safety. Also refer to paragraph 2-19.

5 SELECTOR VALVE DRAIN

Remove plug and drain off any water or sediment. Also refer to paragraph 2-19.

9 BRAKE MASTER CYLINDERS

Check fluid level and refill as required with hydraulic fluid. Refer to paragraph 2-28.



500 HOURS

2 VACUUM SYSTEM CENTRAL AIR FILTER

Replace every 500 hours.



AS REQUIRED

8 GROUND SERVICE RECEPTACLE

Connect to 12-volt DC, negative-ground power unit. Refer to paragraph 11-67 for details.

Figure 2-4. Servicing (Sheet 4 of 4)

FREQUENCY (HOURS)

50

100

500

1000

METHOD OF APPLICATION

HAND

GREASE
GUN

OIL
CAN

SYRINGE
(FOR POWDERED
GRAPHITE)

WHERE NO INTERVAL IS SPECIFIED,
LUBRICATE AS REQUIRED AND
WHEN ASSEMBLED OR INSTALLED.

NOTE

The military specifications listed are not mandatory, but are intended as guides in choosing satisfactory materials. Products of most reputable manufacturers meet or exceed these specifications.

LUBRICANTS

PG — SS-G-659	POWDERED GRAPHITE
GR — MIL-G-81322A	GENERAL PURPOSE GREASE
GH — MIL-G-23827A	AIRCRAFT AND INSTRUMENT GREASE
GL — MIL-G-21164C	MOLYBDENUM DISULFIDE GREASE
OG — MIL-L-7870A	GENERAL PURPOSE OIL
PL — VV-P-236	PETROLATUM
GS — MIL-S-8660	DC4 DOW CORNING
GP —	NO. 10-WEIGHT, NON-DETERGENT OIL

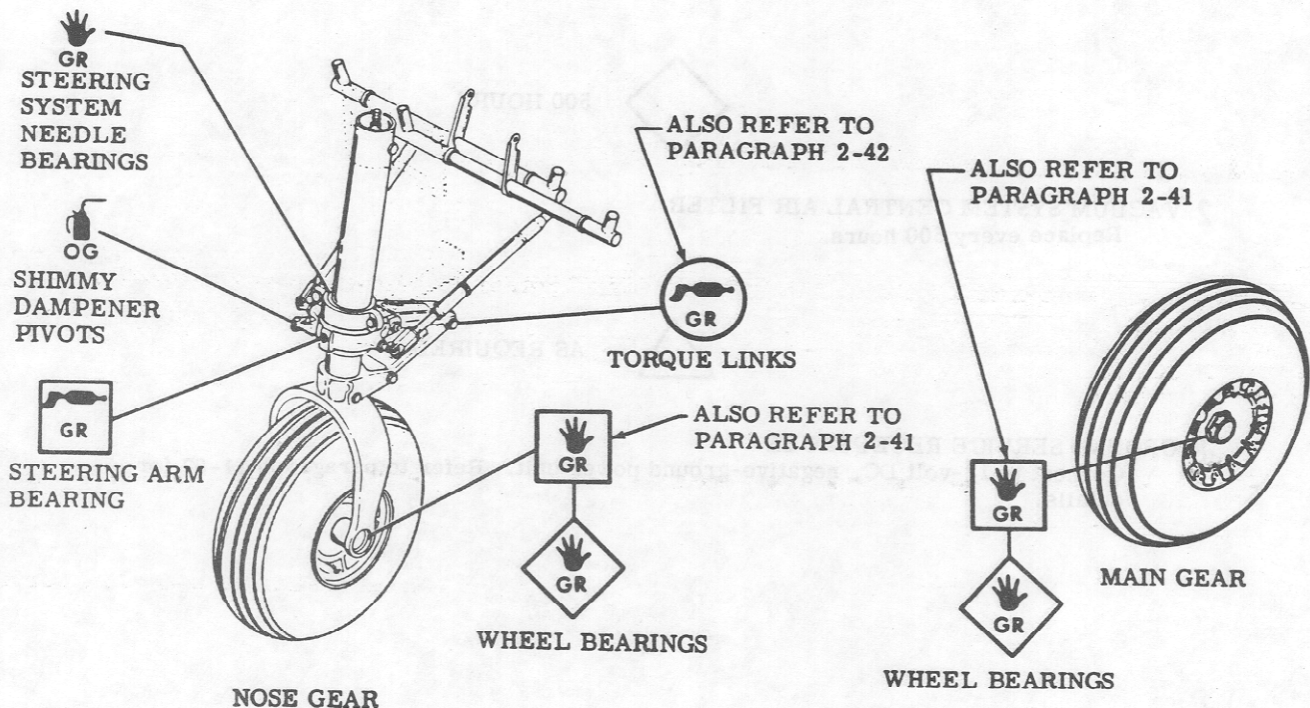


Figure 2-5. Lubrication (Sheet 1 of 3)

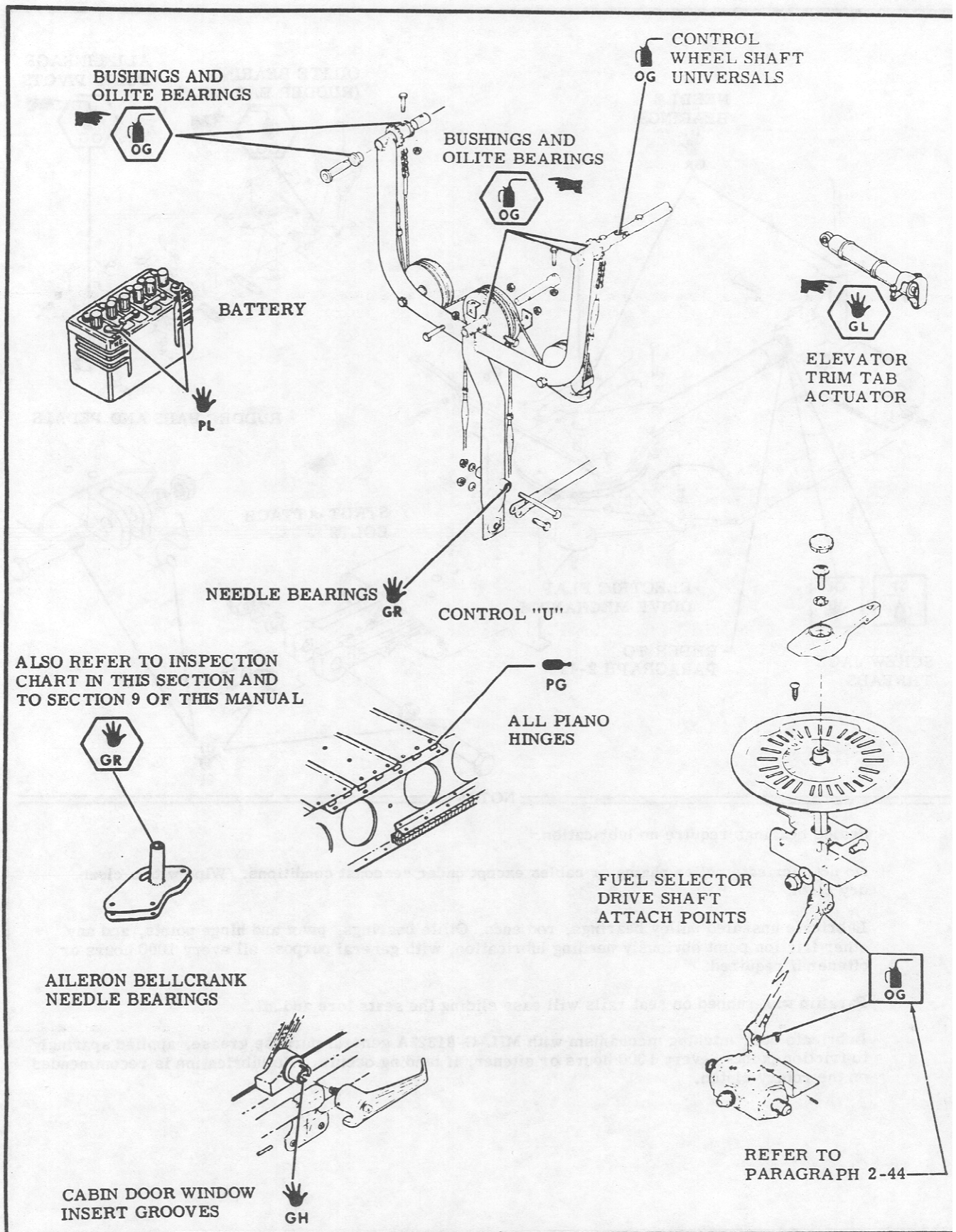


Figure 2-5. Lubrication (Sheet 2 of 3)

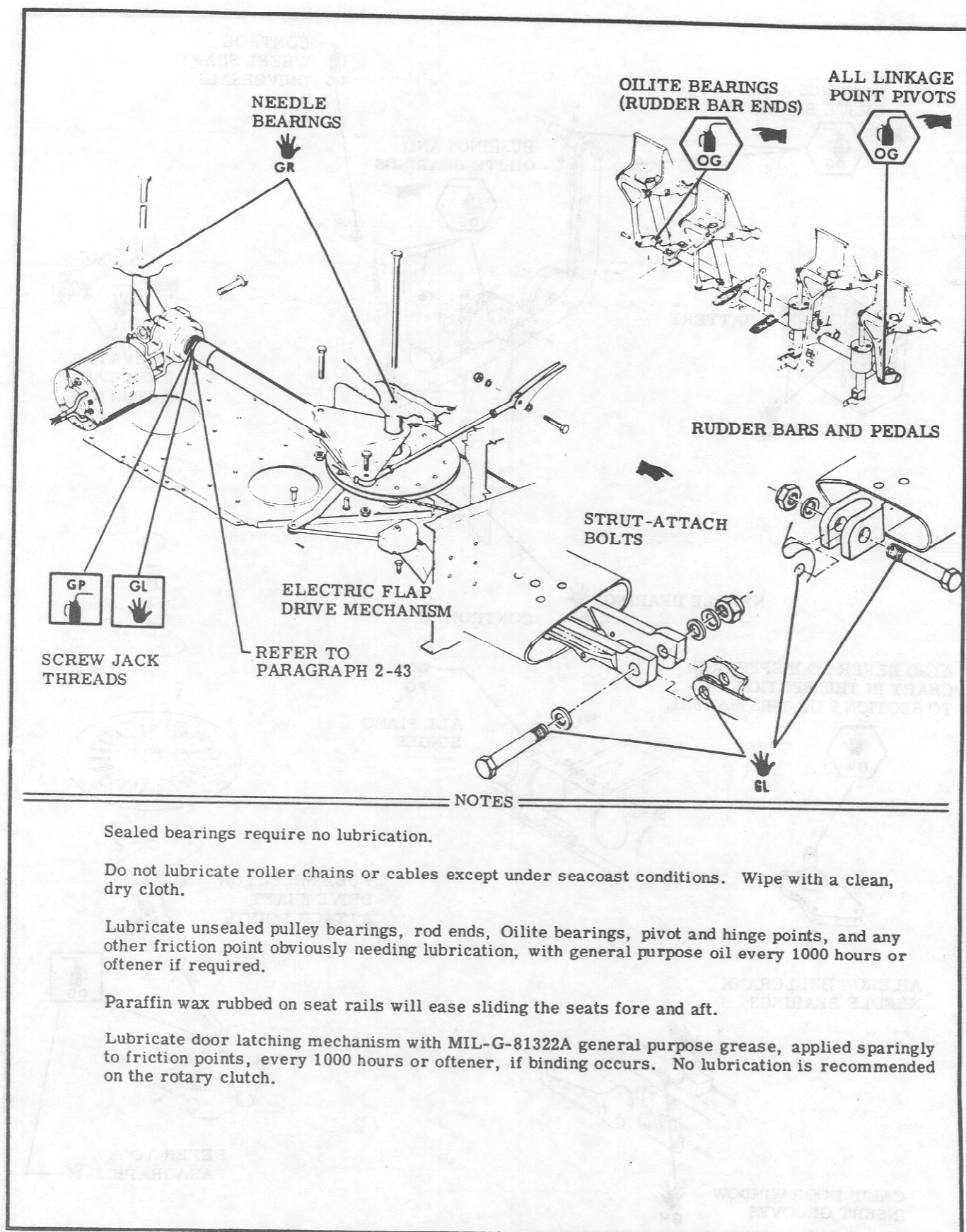


Figure 2-5. Lubrication (Sheet 3 of 3)

I INSPECTION REQUIREMENTS.

As required by Federal Aviation Regulations, all civil aircraft of U.S. registry must undergo a complete inspection (annual) each twelve calendar months. In addition to the required ANNUAL inspection, aircraft operated commercially (for hire) must also have a complete aircraft inspection every 100 hours of operation.

In lieu of the above requirements, an aircraft may be inspected in accordance with a progressive inspection schedule, which allows the work load to be divided into smaller operations that can be accomplished in shorter time periods.

Therefore, the Cessna Aircraft Company recommends PROGRESSIVE CARE for aircraft that are being flown 200 hours or more per year, and the 100 HOUR inspection for all other aircraft.

II INSPECTION CHARTS.

The following charts show the recommended intervals at which items are to be inspected.

As shown in the charts, there are items to be checked each 50 hours, each 100 hours, each 200 hours, and also Special Inspection items which require servicing or inspection at intervals other than 50, 100 or 200 hours.

- a. When conducting an inspection at 50 hours, all items marked under EACH 50 HOURS would be inspected, serviced or otherwise accomplished as necessary to insure continuous airworthiness.
- b. At each 100 hours, the 50 hour items would be accomplished in addition to the items marked under EACH 100 HOURS as necessary to insure continuous airworthiness.
- c. An inspection conducted at 200 hour intervals would likewise include the 50 hour items and 100 hour items in addition to those at EACH 200 HOURS.
- d. The numbers appearing in the SPECIAL INSPECTION ITEMS column refer to data listed at the end of the inspection charts. These items should be checked at each inspection interval to insure that applicable servicing and inspection requirements are accomplished at the specified intervals.
- e. A complete aircraft inspection includes all 50, 100 and 200 hour items plus those Special Inspection Items which are due at the time of the inspection.

III INSPECTION PROGRAM SELECTION.

AS A GUIDE FOR SELECTING THE INSPECTION PROGRAM THAT BEST SUITS THE OPERATION OF THE AIRCRAFT, THE FOLLOWING IS PROVIDED.

1. IF THE AIRCRAFT IS FLOWN LESS THAN 200 HOURS ANNUALLY.

a. IF FLOWN FOR HIRE

An aircraft operating in this category must have a complete aircraft inspection each 100 hours and each 12 calendar months of operation. A complete aircraft inspection consists of all 50, 100, 200 and Special Inspection Items shown in the inspection charts as defined in paragraph II above.

b. IF NOT FLOWN FOR HIRE

An aircraft operating in this category must have a complete aircraft inspection each 12 calendar months (ANNUAL). A complete aircraft inspection consists of all 50, 100, 200 and Special Inspection Items shown in the inspection charts as defined in paragraph II above. In addition, it is recommended that between annual inspections, all items be inspected at the intervals specified in the inspection charts.

2. IF THE AIRCRAFT IS FLOWN MORE THAN 200 HOURS ANNUALLY.

Whether flown for hire or not, it is recommended that aircraft operating in this category be placed on the CESSNA PROGRESSIVE CARE PROGRAM. However, if not placed on Progressive Care, the inspection requirements for aircraft in this category are the same as those defined under paragraph III 1. (a) and (b).

Cessna Progressive Care may be utilized as a total concept program which insures that the inspection intervals in the inspection charts are not exceeded. Manuals and forms which are required for conducting Progressive Care inspections are available from the Cessna Service Parts Center.

IV INSPECTION GUIDE LINES.

- (a) **MOVABLE PARTS** for: lubrication, servicing, security of attachment, binding, excessive wear, safetying, proper operation, proper adjustment, correct travel, cracked fittings, security of hinges, defective bearings, cleanliness, corrosion, deformation, sealing and tension.
- (b) **FLUID LINES AND HOSES** for: leaks, cracks, dents, kinks, chafing, proper radius, security, corrosion, deterioration, obstruction and foreign matter.
- (c) **METAL PARTS** for: security of attachment, cracks, metal distortion, broken spotwelds, corrosion, condition of paint and any other apparent damage.
- (d) **WIRING** for: security, chafing, burning, defective insulation, loose or broken terminals, heat deterioration and corroded terminals.
- (e) **BOLTS IN CRITICAL AREAS** for: correct torque in accordance with torque values given in the chart in Section 1, when installed or when visual inspection indicates the need for a torque check.

NOTE

Torque values listed in Section 1 are derived from oil-free cadmium-plated threads, and are recommended for all installation procedures contained in this book except where other values are stipulated. They are not to be used for checking tightness of installed parts during service.

- (f) **FILTERS, SCREENS & FLUIDS** for: cleanliness, contamination and/or replacement at specified intervals.
- (g) **AIRCRAFT FILE.**

Miscellaneous data, information and licenses are a part of the aircraft file. Check that the following documents are up-to-date and in accordance with current Federal Aviation Regulations. Most of the items listed are required by the United States Federal Aviation Regulations. Since the regulations of other nations may require other documents and data, owners of exported aircraft should check with their own aviation officials to determine their individual requirements.

To be displayed in the aircraft at all times:

- 1. Aircraft Airworthiness Certificate (FAA Form 8100-2).
- 2. Aircraft Registration Certificate (FAA Form 8050-3).
- 3. Aircraft Radio Station License, if transmitter is installed (FCC Form 556).

To be carried in the aircraft at all times:

- 1. Weight and Balance, and associated papers (Latest copy of the Repair and Alteration Form, FAA Form 337, if applicable).
- 2. Aircraft Equipment List.

To be made available upon request:

- 1. Aircraft Log Book and Engine Log Book.

(h) **ENGINE RUN-UP.**

Before beginning the step-by-step inspection, start, run up and shut down the engine in accordance with instructions in the Owner's Manual. During the run-up, observe the following, making note of any discrepancies or abnormalities:

1. Engine temperatures and pressures.
2. Static rpm. (Also refer to Section 11 or 11A of this Manual.)
3. Magneto drop. (Also refer to Section 11 or 11A of this Manual.)
4. Engine response to changes in power.
5. Any unusual engine noises.
6. Fuel selector and/or shut-off valve; operate engine(s) on each tank (or cell) position and OFF position long enough to ensure shut-off and/or selector valve functions properly.
7. Idling speed and mixture; proper idle cut-off.
8. Alternator and ammeter.
9. Suction gage.
10. Fuel flow indicator.

After the inspection has been completed, an engine run-up should again be performed to determine that any discrepancies or abnormalities have been corrected.

SHOP NOTES:

READ ALL INSPECTION REQUIREMENTS PARAGRAPHS PRIOR TO USING THESE CHARTS.

EACH 200 HOURS

EACH 100 HOURS

EACH 50 HOURS

PROPELLER

1. Spinner
2. Spinner bulkhead
3. Blades.
4. Bolts and/or nuts
5. Hub

ENGINE COMPARTMENT

Check for evidence of oil and fuel leaks, then clean entire engine and compartment, if needed, prior to inspection.

1. Engine oil, screen, filler cap, dipstick, drain plug and external filter element
2. Oil cooler
3. Induction air filter
4. Induction airbox, air valves, doors and controls
5. Cold and hot air hoses.
6. Engine baffles
7. Cylinders, rocker box covers and push rod housing
8. Crankcase, oil sump, accessory section and front crankshaft seal
9. Hoses, metal lines and fittings
10. Intake and exhaust systems
11. Ignition harness
12. Spark plugs
13. Compression check
14. Crankcase and vacuum system breather lines
15. Electrical wiring
16. Vacuum pump and oil separator
17. Vacuum relief valve filter (cabin area)
18. Engine controls and linkage
19. Engine shockmounts, mount structure and ground straps
20. Cabin heat valves, doors and controls
21. Starter, solenoid and electrical connections

		SPECIAL INSPECTION ITEM		
		EACH 200 HOURS		
		EACH 100 HOURS		
		EACH 50 HOURS		
22.	Starter brushes, brush leads and commutator			•
23.	Alternator and electrical connections	•		
24.	Alternator brushes, brush leads, commutator or slip rings			7
25.	Voltage regulator mounting and electrical leads	•		
26.	Magnetos (externally) and electrical connections	•		
27.	Magneto timing			8
28.	Carburetor and drain plug	•		
29.	Firewall		•	
30.	Engine cowling	•		
FUEL SYSTEM				
1.	Fuel strainer, drain valve and control	•		
2.	Fuel strainer screen and bowl		•	
3.	Fuel tank vents, caps and placards	•		
4.	Fuel tanks, sump drains and fuel line drains		•	
5.	Drain fuel and check tank interior, attachment and outlet screens			5
6.	Fuel vent valves		•	
7.	Fuel vent line drain		•	
8.	Fuel selector valve and placards	•		
9.	Fuel valve drain plug		•	
10.	Engine primer		•	
LANDING GEAR				
1.	Main gear wheels and fairings	•		
2.	Nose gear wheel, torque links, steering rods, boots and fairing	•		
3.	Wheel bearings			9
4.	Nose gear strut and shimmy dampener (service as required)	•		
5.	Tires	•		
6.	Brake fluid, lines and hoses, linings, discs, brake assemblies and master cylinders			•
7.	Parking brake system			•

SPECIAL INSPECTION ITEM

EACH 200 HOURS

EACH 100 HOURS

EACH 50 HOURS

8. Main gear springs
9. Steering arm lubrication
10. Torque link lubrication
11. Park brake and toe brakes - operational check

AIRFRAME

1. Aircraft exterior
2. Aircraft structure
3. Windows, windshield, doors and seals
4. Seat belts and shoulder harnesses
5. Seat stops, seat rails, upholstery, structure and mounting
6. Control "U" bearings, sprockets, pulleys, cables, chains and turnbuckles
7. Control lock, control wheel and control "U" mechanism
8. Instruments and markings
9. Gyros central air filter
10. Magnetic compass compensation
11. Instrument wiring and plumbing
12. Instrument panel, shockmounts, ground straps, cover, decals and labeling
13. Defrosting, heating and ventilating systems and controls
14. Cabin upholstery, trim, sunvisors and ash trays
15. Area beneath floor, lines, hoses, wires and control cables
16. Lights, switches, circuit breakers, fuses and spare fuses
17. Exterior lights
18. Pitot and static systems
19. Stall warning system
20. Radios, radio controls, avionics and flight instruments
21. Antennas and cables
22. Battery, battery box and battery cables
23. Battery electrolyte
24. Emergency locator transmitter

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