

# MODEL R182 AND TR182 SERVICE MANUAL

## WARNING

For maximum safety, check that the magneto switches are OFF, the throttle is closed, the mixture control is in the idle cut-off position, and the airplane is secured before rotating the propeller by hand. Do not stand within the arc of the propeller blades while turning the propeller.

- m. Before starting the engine, rotate the propeller by hand no less than four complete revolutions.

- 2-44. **UPHOLSTERY AND INTERIOR** cleaning prolongs the life of upholstery fabrics and interior trim. 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 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.
- 2-45. **PROPELLER.** The propeller should be wiped occasionally with an oily cloth to remove grass and bug stains. In salt water areas this will assist in corrosion proofing the propeller.
- 2-46. **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.
- 2-47. **LUBRICATION.**
- 2-48. **GENERAL DESCRIPTION.** Lubrication requirements are shown in figure 2-5. Before adding lubricant to a fitting, wipe fitting free of dirt. Lubricate until grease appears around part being lubricated, and wipe excess grease from parts. The following paragraphs supplement figure 2-5 by adding details not shown in the figure.
- 2-49. **TACHOMETER DRIVE SHAFT.** Refer to Section 15.
- 2-50. **WHEEL BEARINGS.** Clean and repack the wheel bearings at the first 100-hour inspection and at each 500-hour inspection thereafter. If more than the usual number of takeoffs 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 bearings shall be accomplished at each 100-hour inspection.
- 2-51. **NOSE GEAR TORQUE LINKS.** Lubricate nose gear torque links every 50 hours. When operating from a dirt strip or in extremely dusty areas, more frequent lubrication of the torque links is required.

## MODEL R182 AND TR182 SERVICE MANUAL

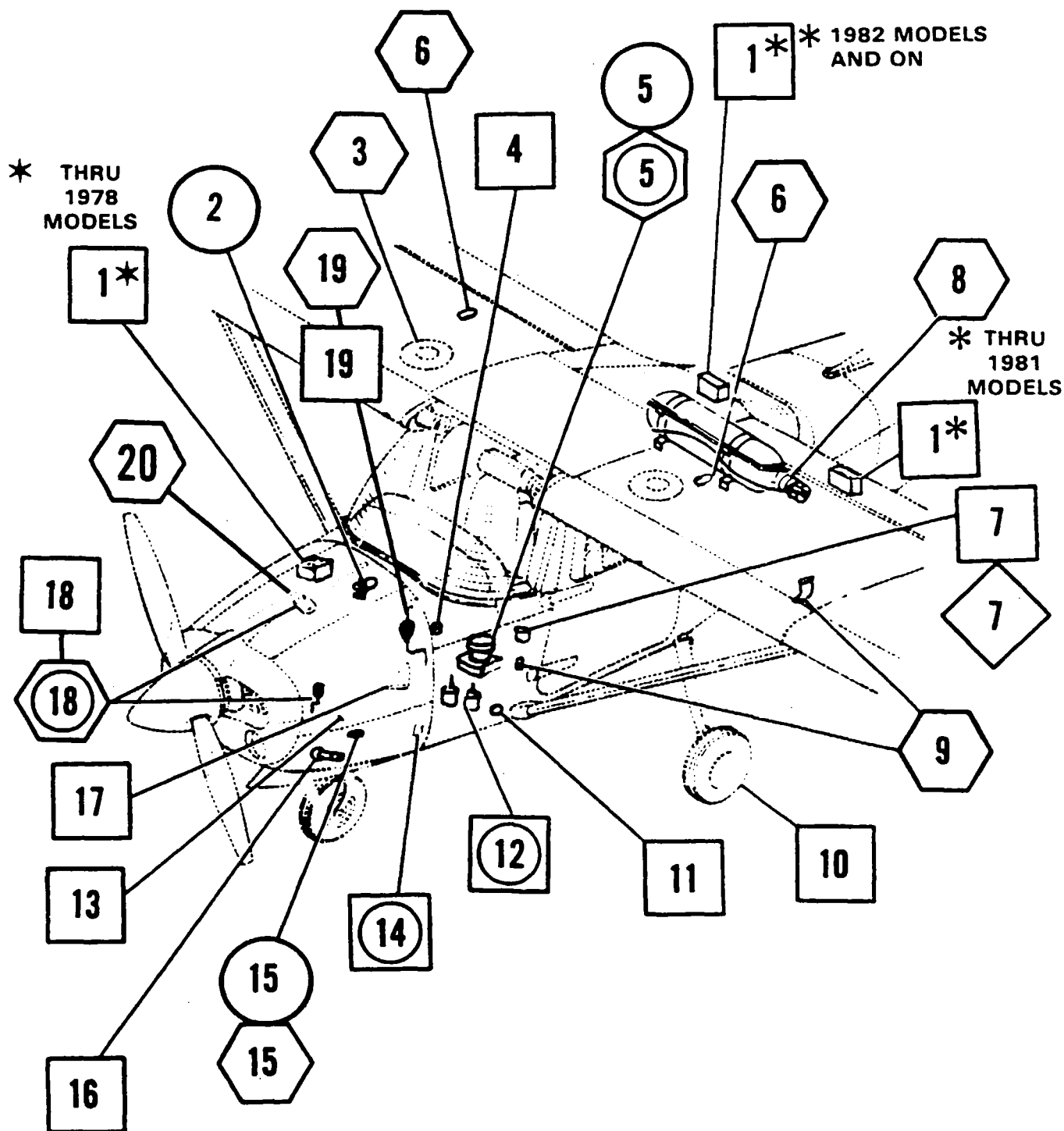
- 2-52. **WING FLAP ACTUATOR.** Clean and lubricate wing flap actuator jack screw each 100 hours as follows:
- Expose jack screw by operating flaps to full down position.
  - Clean jack screw threads with solvent rag and dry with compressed air.

### NOTE

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

- With oil can, apply light coat of No. 10 weight non-detergent oil to threads of jack screw.
- 2-53. **ROD END BEARINGS.** Periodic inspection and lubrication is required to prevent corrosion of the bearing in the rod end. At each 100-hour inspection, disconnect the control rods at the aileron, flap and nose gear steering bungee, and inspect each rod end for corrosion. If no corrosion is found, wipe the surface of the rod end balls with general purpose oil and rotate ball freely to distribute the oil over its entire surface and connect the control rods to their respective units. If corrosion is detected during the inspection, install new rod ends.
- 2-54. **NOSE GEAR STEERING COLLAR.** Lubricate nose gear steering collar spindle links at each 100-hour inspection.
- 2-55. **NOSE GEAR PIVOTS.** Lubricate all nose gear pivot points at each 100-hour inspection, including the drag link pivot points. More frequent lubrication may be required when operating in dusty areas.
- 2-56. **MAIN GEAR PIVOT POINTS.** Lubricate main landing gear pivot assembly at each 500-hour inspection. If more than the usual number of takeoffs and landings are made, lubrication of the pivot assembly should be accomplished at each 100-hour inspection.

# MODEL R182 AND TR182 SERVICE MANUAL



## NOTE

Refer to Sheet 2 for specified Hydraulic Fluid, Oxygen, Fuel and Oil.

Figure 2-4. Servicing (Sheet 1 of 5)

# MODEL R182 AND TR182 SERVICE MANUAL

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

OXYGEN:  
SPEC. NO. MIL-O-27210

SPECIFIED AVIATION GRADE FUELS:

## WARNING

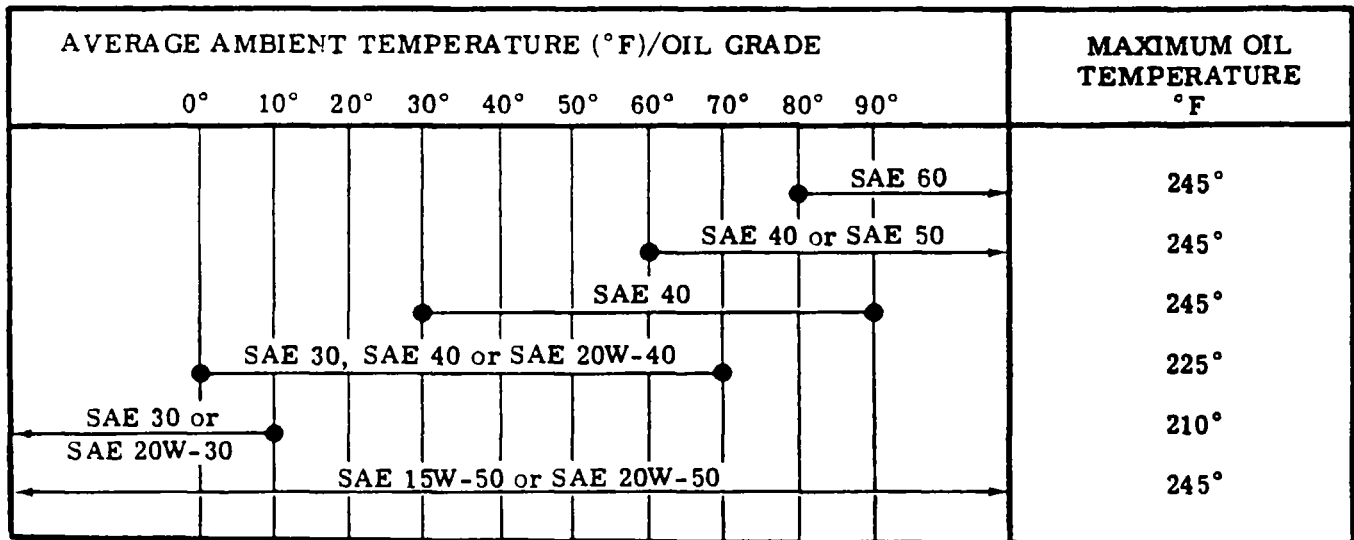
**ONLY AVIATION GRADE FUELS ARE APPROVED FOR USE.**

ENGINE MODEL	APPROVED FUEL GRADES	NOTE
LYCOMING O-540-J or O-540-L	100LL (blue)	1
	100 (green) (formerly 100/130)	1

## NOTE

1. Compliance with Avco Lycoming Service Instruction No. 1070, and all revisions thereto, must be accomplished.

SPECIFIED AVIATION GRADE OIL:



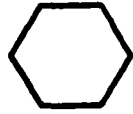
## NOTE

The overlap of oil grades is based on a mid-range of ambient ground temperatures vs. maximum oil inlet temperature. Aviation Grade ashless dispersant oil conforming to Avco Lycoming Service Instruction No. 1014 and all revisions and supplements thereto, **MUST BE USED** except as noted in paragraph 2-23.

CAPACITY (TOTAL)	CAPACITY (TOTAL WITH FILTER)	NORMAL OPERATION	MINIMUM FOR FLIGHT
8	9	6	5

Figure 2-4. Servicing (Sheet 2 of 5)

## MODEL R182 AND TR182 SERVICE MANUAL



DAILY

3

### FUEL CELLS:

Service after each flight. Keep full to retard condensation. Refer to paragraph 2-21.

6

### FUEL CELL SUMP DRAINS:

Drain off any water and sediment before first flight of the day.

19

### FUEL STRAINER:

Drain off any water and sediment before first flight of the day.

20

### OIL DIPSTICK:

Check on preflight. Add oil as necessary. Refer to paragraph 2-23 for details. Check that filler cap is tight and oil filler is secure.

9

### PITOT AND STATIC PORTS:

Check for obstructions before first flight of the day.

8

### OXYGEN CYLINDER:

Check for anticipated requirements before each flight. Refer to Section 14.

15

### NOSE GEAR SHOCK STRUT:

Check on preflight. Check inner barrel showing below outer barrel to be approximately two inches. Deviation from these dimensions is cause to check and service strut per paragraph 2-29.



25 HOURS

18

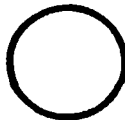
### ENGINE OIL SYSTEM: FIRST 25 HOURS

Refill 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. Refer to paragraph 2-23.

5

### HYDRAULIC POWER PACK:

Check fluid level, and after a gear extension which uses the hydraulic hand pump.



50 HOURS

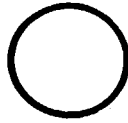
2

### ENGINE OIL FILTER:

Change filter every 50 hours.

Figure 2-4. Servicing (Sheet 3 of 5)

## MODEL R182 AND TR182 SERVICE MANUAL



50 HOURS (Cont.)

- 15** NOSE GEAR SHOCK STRUT:  
Keep strut filled and inflated to correct pressure. Refer to paragraph 2-29.

- 5** HYDRAULIC FLUID RESERVOIR:  
At first 50 and first 100 hours, thereafter at each 500 hours or one year, whichever comes first, a sample of hydraulic fluid should be examined for sediment and discoloration as outlined in paragraph 2-31.



100 HOURS

- 10** TIRES:  
Maintain correct tire inflation as listed in figure 1-1. Refer to paragraph 2-28.

- 16** SHIMMY DAMPENER:  
Check fluid level and refill as required in accordance with paragraph 2-30.

- 13** CARBURETOR DRAIN PLUG:  
Check for thread sealant residue in float chamber. Refer to paragraph 2-22.

- 17** INDUCTION AIR FILTER:  
Clean filter per paragraph 2-25. Replace as required.

- 19** FUEL STRAINER:  
Disassemble and clean strainer bowl and screen.

- 18** ENGINE OIL:  
Change oil at least every 100 hours or every six months.

- 4** VACUUM RELIEF VALVE FILTER:  
Replace each 100 hours.

- 1** BATTERY:  
Check electrolyte level and clean battery compartment each 100 hours or each 90 days.

- 12** BRAKE MASTER CYLINDERS:  
Check fluid level and fill as required with hydraulic fluid.

- 7** VACUUM SYSTEM CENTRAL AIR FILTER:  
Inspect for damage. Refer to paragraph 2-26.

- 11** SELECTOR VALVE DRAIN:  
Remove plug and drain off any water or sediment. Refer to paragraph 2-21.

Figure 2-4. Servicing (Sheet 4 of 5)

## MODEL R182 AND TR182 SERVICE MANUAL

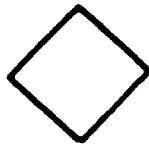


200 HOURS

**14**

### **GROUND SERVICE RECEPTACLE:**

Connect to 24-volt DC, negative-ground power unit. Refer to Section 16.



500 HOURS

**7**

### **VACUUM SYSTEM CENTRAL AIR FILTER:**

Replace every 500 hours or annually. Refer to paragraph 2-26.

# MODEL R182 AND TR182 SERVICE MANUAL

FREQUENCY (HOURS)



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	HIGH AND LOW TEMPERATURE GREASE
OG	MIL-L-7870A	GENERAL PURPOSE OIL
PL	VV-P-236	PETROLATUM
GP		NO. 10-WEIGHT, NON-DETERGENT OIL
OL	VV-L-800A	LIGHT OIL

Figure 2-5. Lubrication (Sheet 1 of 6)



# MODEL R182 AND TR182 SERVICE MANUAL

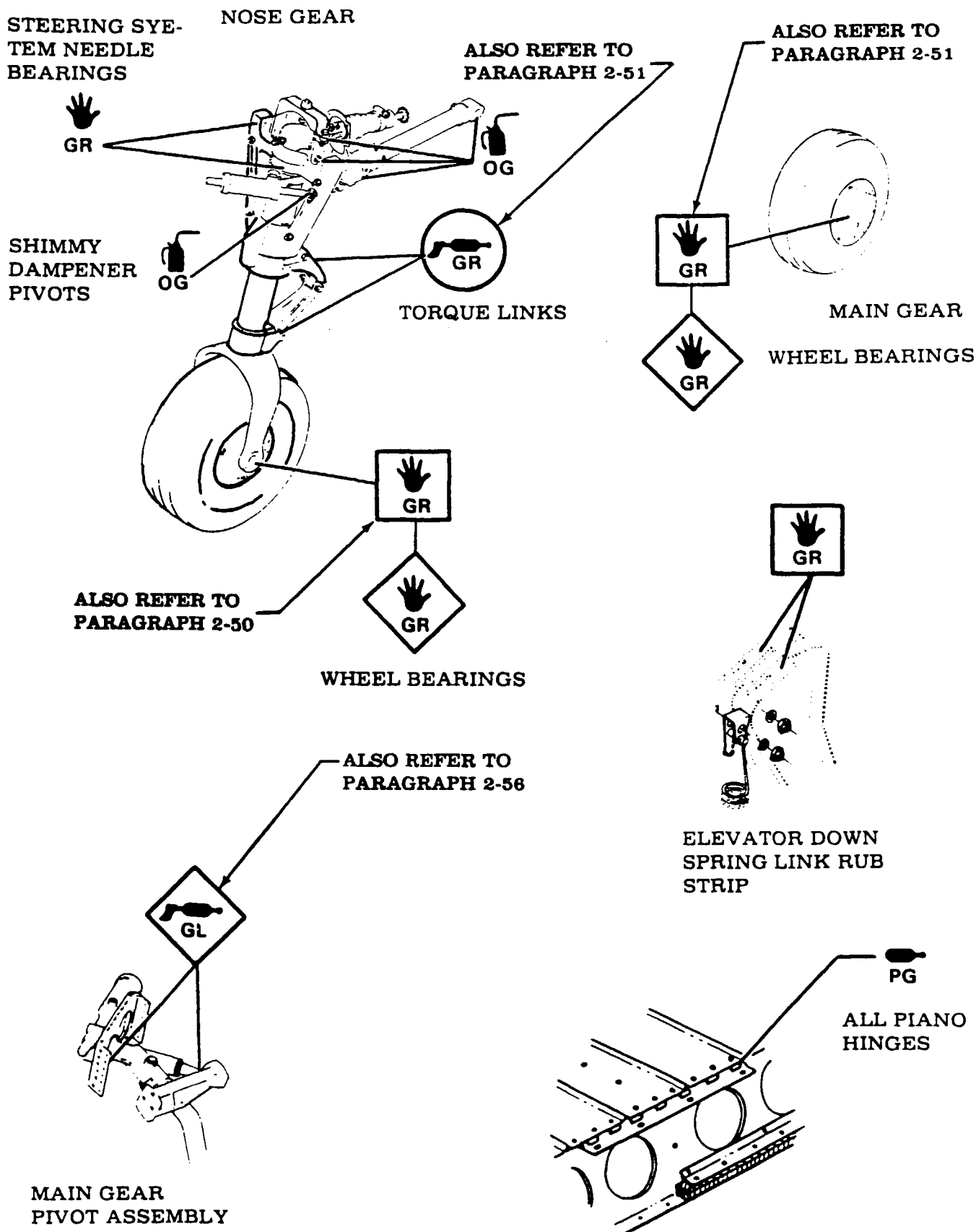
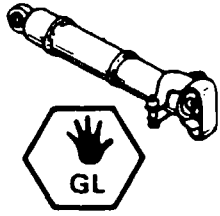


Figure 2-5. Lubrication (Sheet 2 of 6)

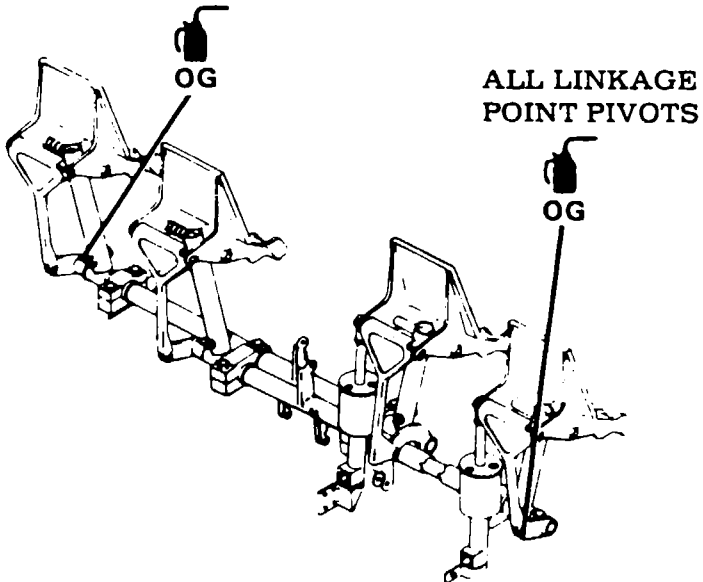
## MODEL R182 AND TR182 SERVICE MANUAL



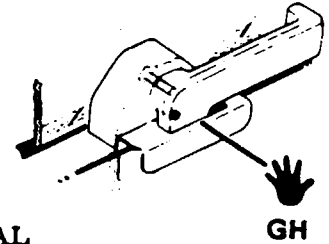
ELEVATOR TRIM  
TAB ACTUATOR

ALSO REFER TO INSPECTION  
CHART IN THIS SECTION AND  
TO SECTION 9 OF THIS MANUAL.

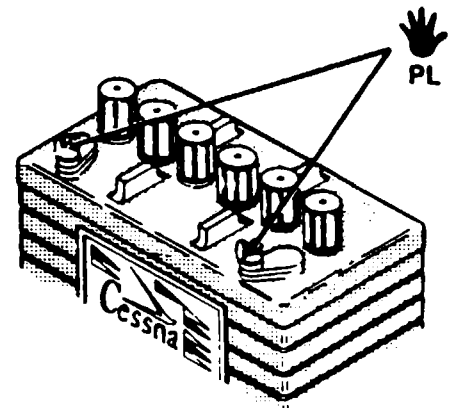
OILITE BEARINGS  
(RUDDER BAR ENDS)



RUDDER BARS AND PEDALS

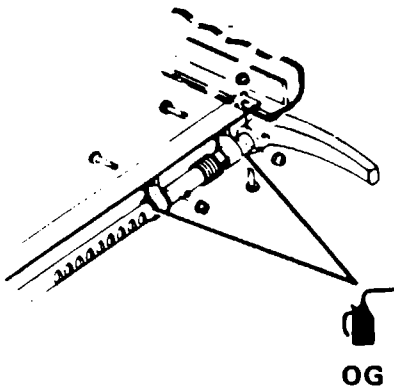


TYPICAL  
CABIN DOOR WINDOW  
INSERT GROOVES

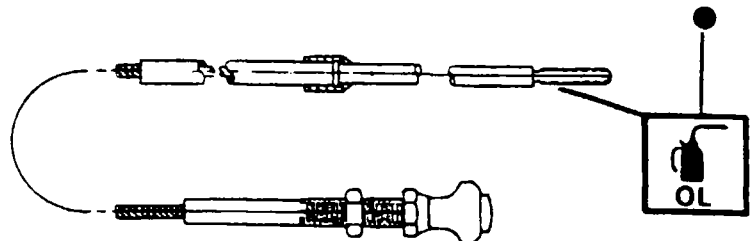


BATTERY TERMINALS

- DO NOT OIL IF OPERATING  
IN EXTREMELY DUSTY CONDITIONS



PARKING BRAKE  
HANDLE SHAFT

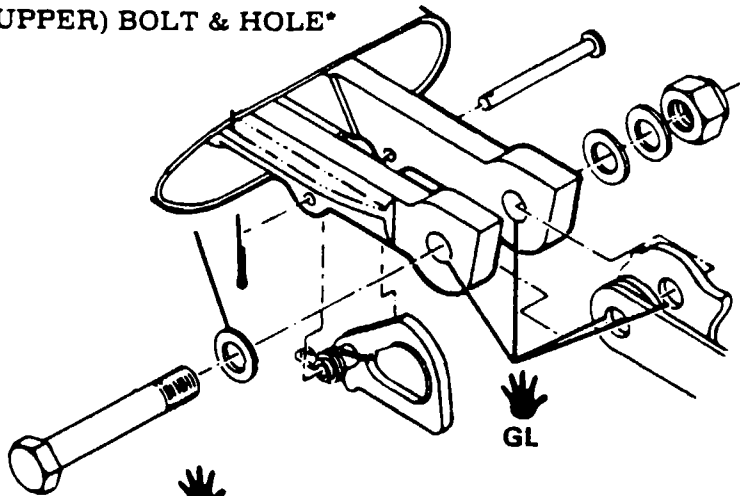


ENGINE CONTROLS

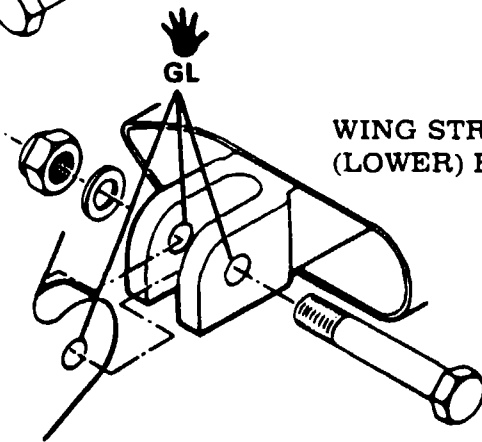
Figure 2-5. Lubrication (Sheet 3 of 6)

## MODEL R182 AND TR182 SERVICE MANUAL

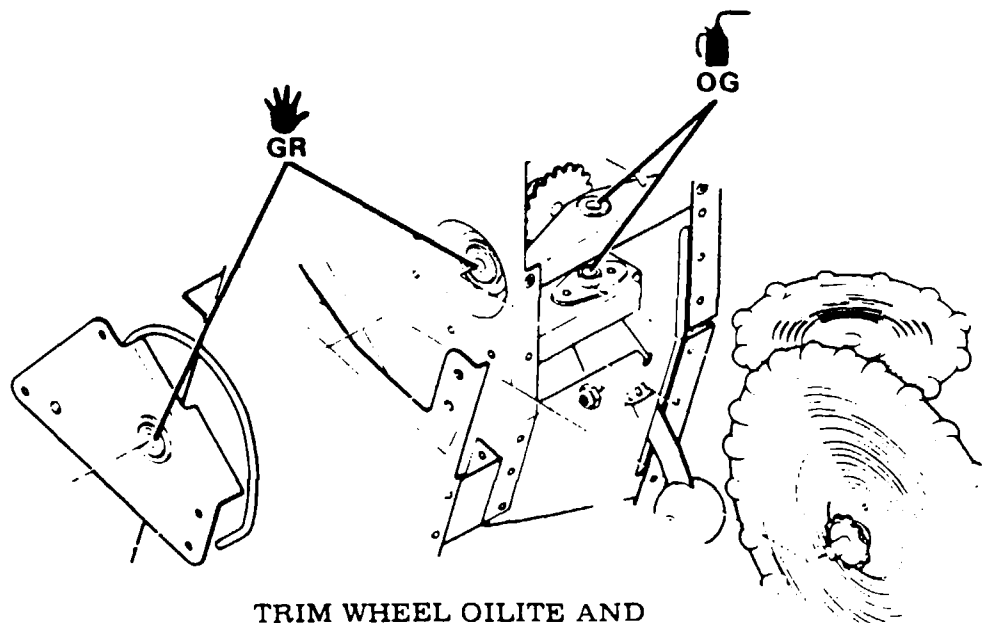
### WING STRUT-ATTACH (UPPER) BOLT & HOLE\*



### WING STRUT-ATTACH (LOWER) BOLT & HOLE\*



\*UPON INSTALLATION



### TRIM WHEEL OILITE AND NEEDLE BEARINGS

Figure 2-5. Lubrication (Sheet 4 of 6)

## MODEL R182 AND TR182 SERVICE MANUAL

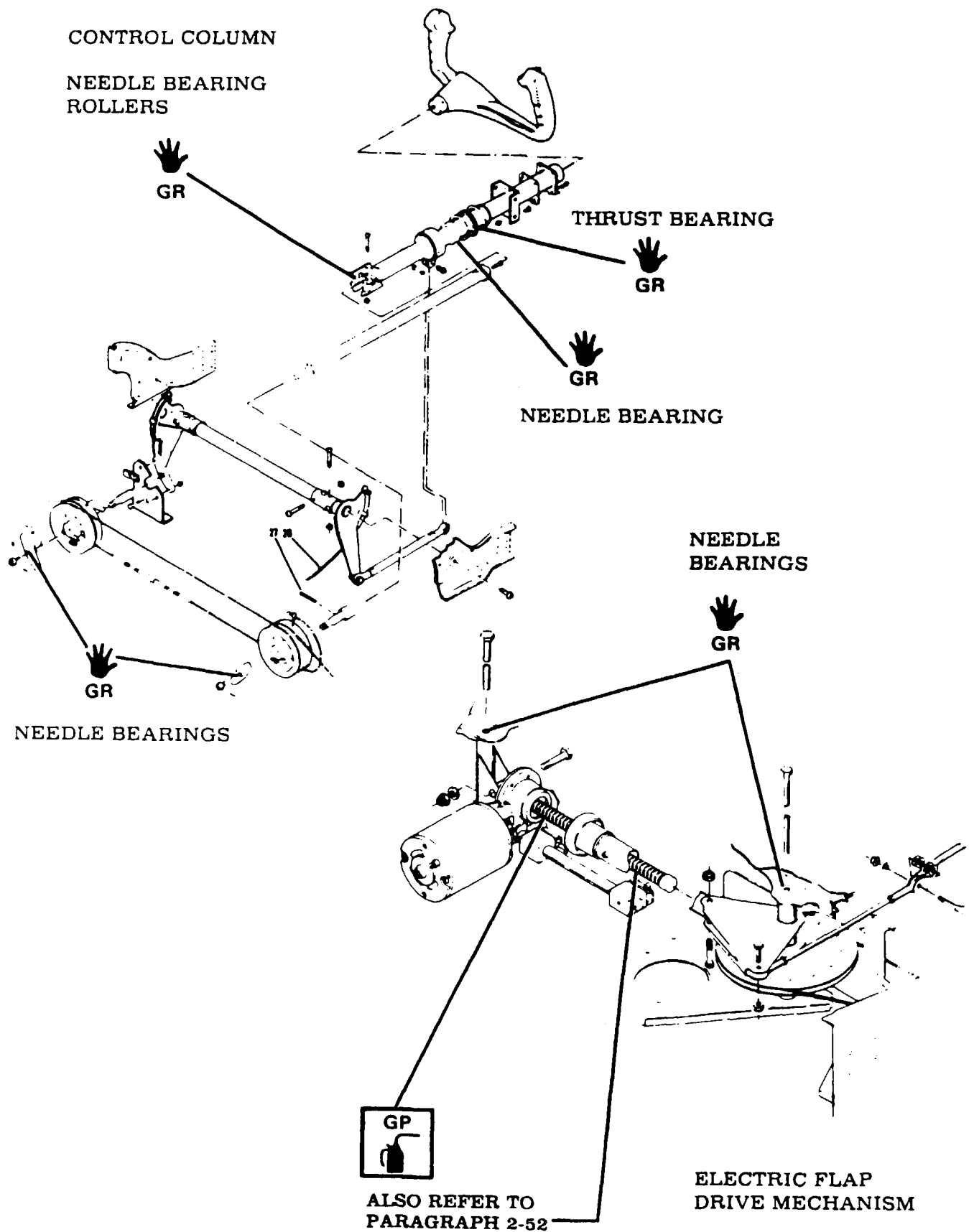
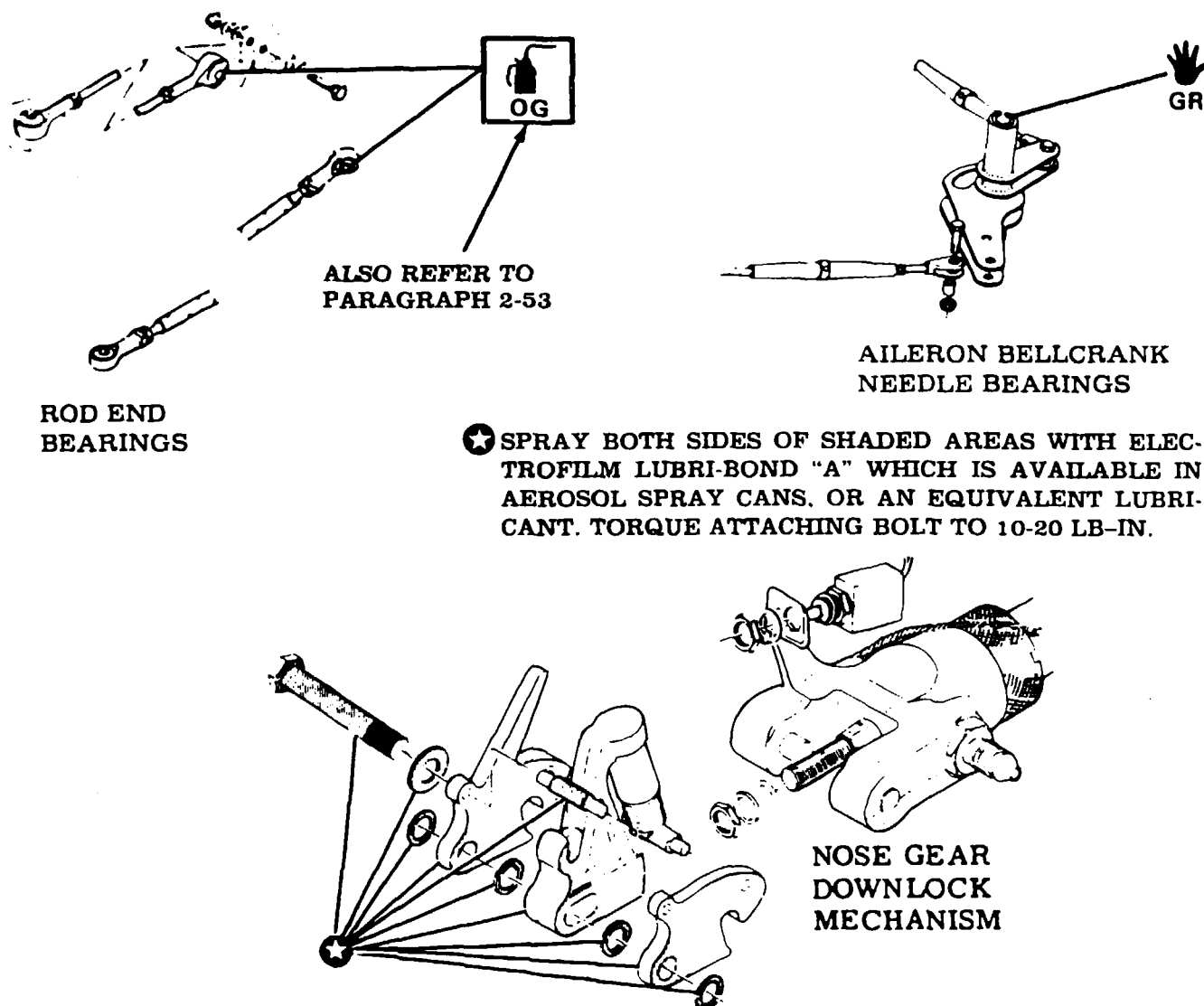


Figure 2-5. Lubrication (Sheet 5 of 6)

## MODEL R182 AND TR182 SERVICE MANUAL



### NOTES

Sealed bearings require no lubrication.

Do not lubricate roller chains or cables except under seacoast conditions. Wipe with a clean, dry cloth.

Lubricate unsealed pulley bearings, rod ends, Oilite bearings, pivot and hinge points, and any other friction point obviously needing lubrication, with general purpose oil every 1000 hours or oftener if required.

Paraffin wax rubbed on seat rails will ease sliding the seats for and aft.

Lubricate door latching mechanism with MIL-G-81322A general purpose grease, applied sparingly to friction points, every 1000 hours or oftener, if binding occurs. No lubrication is recommended on the rotary clutch.

Figure 2-5. Lubrication (Sheet 6 of 6)