6-44. **Cleaning, Inspection And Repair Of Gear Retraction Transmission.** (Refer to Figure 6-13.)

a. Remove the six screws attaching the transmission cover (7) to transmission housing and remove the cover noting the position of the mounting lug.

b. Wipe all old grease from the transmission housing and from the actuator screw (4) and screw nut (3).

c. Check the gear release arm (1) and ascertain that it will snap lock in place and will require a load of 6 to 12 pounds applied at the end of the arm to release. Adjust by spreading or compressing the arm sides at the round head rivets to obtain proper fit (early PA-24-180 and PA-24-250 airplanes did not have a snap lock arm and requires a strap to hold the arm in place.) Once the arm is released, ascertain that there is no binding through its travel.

d. Inspect the transmission screw and tube nut (2) for end and side play and ascertain that they are not distorted or bent.

e. Check that the screw bearing (9) is not loose on the transmission screw or within the transmission housing. A loose bearing can be determined by holding the transmission and moving the screw up and down. This check can also be made when the transmission is installed in the airplane, with the landing gear partially retracted, by applying a load to the emergency extension handle and noting play.

NOTE

On PA-24-180 and PA-24-250 airplanes, Serial Nos. 24-1 to 24-735 ascertain that bearing retainer Kit No. 754 219 consisting of plate, link, screws and nuts has been installed on the transmission.

f. Check for wear within the transmission by turning the transmission screw (4) by hand and noting end play in the transmission drive shaft (24). End play usually indicates a worn thrust bearing or a loose connection between the thrust bearing and drive shaft. If end play is in excess of 0.015 of an inch, the transmission should be replaced.

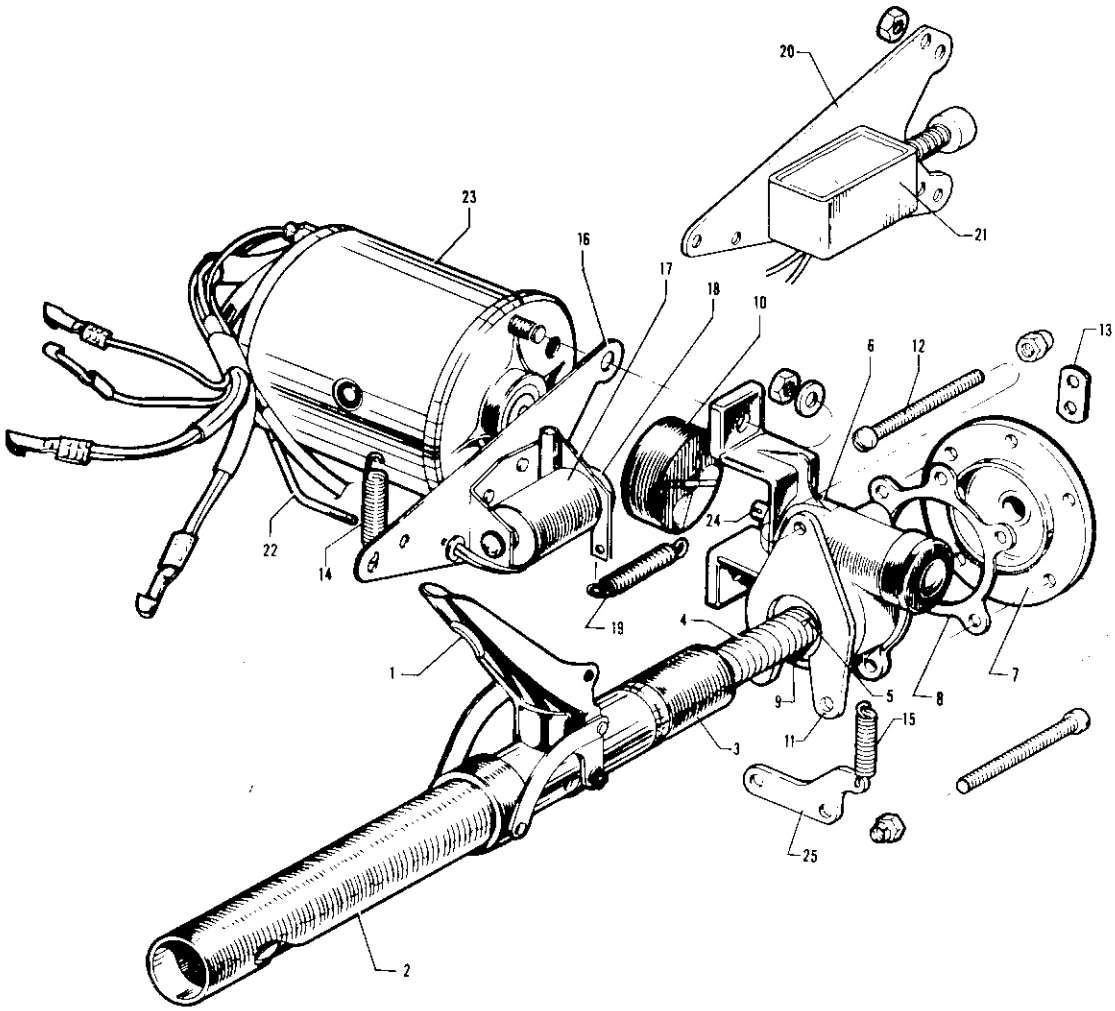
g. The coupling (10) between the transmission and motor may become worn to a point where the metal inserts in the coupling protrude from the rudder, thus causing chatter. This chatter may be eliminated by grinding the metal inserts until they are .010 to .015 below the surface of the rubber. This grinding operation may be repeated until the coupling reaches a minimum diameter of 1 inch and then should be replaced.

h. Adjust the motor brake (20) (early type) by adjusting the nut on the brake support rod (22) until the brake disc clears the highest point on the retraction transmission coupling. Hold the brake disc firmly against the brake solenoid while making this adjustment.

i. The only adjustment required for the later type motor is to align the brake solenoid unit with the transmission coupling which is accomplished by adjusting the nut on the brake support rod.

j. Fill the Dura transmission housing with MIL-G-23827 grease and the Dukes transmission housing with Dukes No. 4 lubricant manufactured by Dukes. Duke transmission is identified by label (Dukes Astronautics Co.) on transmission housing. Dura transmission is identified by Part No. 1010250 stamped on transmission housing.

Composite of pages 6-27 and 6-29 used for clarification of this presentation - by: Matt Kurke



1. RELEASE ARM
2. RELEASE TUBE
3. TRANSMISSION SCREW NUT
4. TRANSMISSION SCREW
5. ROLL PIN STOP
6. TRANSMISSION
7. TRANSMISSION COVER
8. TRANSMISSION GASKET
9. SCREW BEARING
10. COUPLING
11. BEARING RETAINER PLATE (DURA TRANS. ONLY)
12. SCREW
13. LINK
14. TRANSMISSION RETRACT SPRING PA-24-180 AND PA-24-250 SERIAL NOS. 24-1 TO 24-3557
15. TRANSMISSION RETRACT SPRING PA-24-180 AND PA-24-250 SERIAL NOS. 24-3558 AND UP, PA-24-260 AND PA-24-400
16. MOTOR BRAKE ASSEMBLY (EARLY)
17. BRAKE SOLENOID
18. MOTOR BRAKE DISC
19. TENSION SPRING
20. MOTOR BRAKE ASSEMBLY (LATE)
21. BRAKE SOLENOID
22. BRAKE SUPPORT ARM
23. TRANSMISSION MOTOR
24. TRANSMISSION DRIVE SHAFT
25. RETRACT SPRING BRACKET

FIGURE 6-13. LANDING GEAR RETRACTION TRANSMISSION ASSEMBLY