

PIPER CHEROKEE SIX SERVICE MANUAL

SECTION VIA

LANDING GEAR AND BRAKE SYSTEM
PA-32R-300

6A-1. INTRODUCTION. In this section are instructions for the overhaul, inspection and adjustment of the various components of the PA-32R-300 landing gear and brake system. Also are adjustments for the electrical limit, safety and warning switches. This section though does not cover the hydraulic function of the landing gear, except brakes, and this information may be found in the hydraulic section listed as Section VA.

6A-2. DESCRIPTION. The PA-32R-300 airplane is equipped with a retractable tricycle air-oil strut type landing gear which is hydraulically operated by an electrically powered reversible pump. A selector handle on the instrument panel to the left of the control quadrant is used to select gear UP or DOWN positions.

Gear positions are indicated by three green lights located above the selector lever for gear down and locked, and a red light located at the top of the instrument panel for gear unsafe positions. There is no light to indicate the gear has fully retracted other than all lights are out. As the landing gear swings to the down position and each downlock hook moves into its locked position, a switch at each hook actuates to the switch normally closed (NC) circuit to indicate by a green light that the individual gear is safely down and locked. The activation of all three downlock switches will also shut the hydraulic pump off. As the instrument lights are turned on, the green lights will dim. When the gear begins to retract and the downlock hook disengages, the down limit switch actuates to the NC circuit and in series with the NC circuit of the up limit switch allows the gear unsafe light to come on. The gear unsafe light will remain on until the gear is up and all up limit switches are actuated to their normally open (NO) circuit.

The red gear unsafe light also operates simultaneously with the warning horn, and in conjunction they have a twofold purpose. Their primary purpose is to give warning when power is reduced below approximately 14 inches of manifold pressure and the landing gear has not reached the down and locked position. This circuit is controlled by the three paralleling down limit switches connected in series with a throttle switch (Switch "A") located in the control quadrant. The secondary function of the warning light and horn is to give warning when the gear selector handle is up when the airplane is on the ground or airspeed is below that required to close the hydraulic valve and the pump switch of the backup gear extender unit. When the airplane is setting on the ground, the warning circuit is controlled through the NO side of the safety switch (squat switch) located on the left gear and the up position of the selector lever. Should the airplane be raised from the ground, such as in flight, far enough to move the safety switch to its NC position, then current is directed in series through the hydraulic pressure switch, the pump switch (providing airspeed has actuated the switch to its NO position), throttle switch (Switch "B") and the up positioned selector lever. Throttle switch "B" is located forward of the instrument panel directly below the arm of the throttle lever. The up limit, safety, throttle, pressure and

LANDING GEAR AND BRAKE SYSTEM
Revised: 11/4/83