

SERVICE BULLETIN 40

SUBJECT: RELOCATION OF HYDRAULIC PRESSURE GAUGE SENSING POINT

APPLICATION: Glasair I RG aircraft

REFERENCES: Glasair I RG Instruction Manual page D-224 (FIGURE [D-157]) and page D-227 (FIGURE [D-159])

DESCRIPTION: The Glasair I RG Instruction Manual instructs the builder to install the hydraulic pressure gauge in the "up" hydraulic line.

If one of the landing gear micro switches (located on the main gear sidebraces and nose gear dragbrace) fails in a closed (green light) condition or is rigged improperly, it is possible for the micro switch to deactivate the hydraulic pump before the landing gear is firmly down and locked by hydraulic pressure. With the hydraulic pressure gauge monitoring only "up" system pressure, the pilot will be unaware of the possible landing gear problem. If a microswitch were to fail with the hydraulic pressure gauge installed in the "down" line, however, hydraulic pressure would read zero, indicating a problem.

SOLUTION: RELOCATION OF THE HYDRAULIC PUMP PRESSURE LINE

The hydraulic pressure gauge can be moved from the "up" line to the "down" line by switching the positions of the AN832-4D union and the AN804-4D Tee fitting on the Union Attach Fitting on the nose wheelwell box (refer to FIGURES [D-157] and [D-159]). By placing the AN832-4D union in the "up" line and the AN804-4D Tee fitting in the "down" line, the hydraulic pressure gauge will monitor the down pressure in the landing gear system which provides an additional confirmation of the landing gear down and locked condition. The hydraulic system can reach maximum operating pressure only when the landing gear is in the fully down and locked position.

NOTE: To simplify confirmation of landing gear down pressure when reading the hydraulic pressure gauge, mark a green line on the face of the hydraulic pressure gauge at the normal (500-800 lb.) hydraulic system down pressure range.

If a gear unsafe condition is suspected because three "green lights" are showing but the pressure gauge indicates no hydraulic pressure, follow the emergency landing gear extension procedures listed in the Owners Manual.



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OPTION 1: MOMENTARY HYDRAULIC PUMP SWITCH

A failed or improperly rigged side brace or nose gear drag brace microswitch can deactivate the hydraulic pump and necessitate emergency gear down procedures. These procedures will lower the gear but, even with the hydraulic gauge installed in the down line, there will be no positive confirmation that the gear is locked, because the gauge will indicate zero pressure.

If the builder desires, a momentary contact, "push-to-test" switch (Stoddard-Hamilton P/N 10 PA080) can be installed in an accessible position on the instrument panel with leads running between a positive power source (a convenient circuit breaker) and the positive terminal on the "down" solenoid. This allows a pilot who suspects that the landing gear is not down and locked to override the automatic hydraulic pump switching system (actuated by the same switches that control the landing gear light indication system) and momentarily activate the hydraulic pump. The pilot can run the hydraulic pump until normal down pressure, as indicated by the hydraulic pressure gauge, is achieved. This confirms that the landing gear is down and locked since the pump will reach its operating pressure only when the landing gear is fully extended and locked.

NOTE: This improvement to the Glasair RG hydraulic system will be of benefit only if you visually check both the green gear down lights and the hydraulic pressure gauge as part of your pre-landing check list.



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