

## N805DC Gear Exam

- Began by applying nitrogen gas to the landing gear hydraulic down line. The gear was being held up by the up lock and when nitrogen was applied, the gear fell down.
  - The nitrogen gas was turned off
  - The gear appeared to lock into place but when force was applied to the outboard side of the tire, the gear collapsed inward.
  - We hooked a multi-meter to the ground wire and confirmed the wire had complete continuity. This proved that the cockpit indication would have been "gear down and safe"
  - When the gear was "down" or pushed up, the wire still had continuity. The Cockpit indication would have been "gear down and safe" no matter what the position of the gear was.
  - We removed the landing gear actuator from the wheel well to examine further.
  - Confirmed wire continuity for all of the "down" wires.
  - The actuator cylinder was moved in and out and the wires still indicated that the gear was down and locked.
  - The switch was still indicating "down and locked" no matter what the position of the actuator was.
  - The gap distance of the switch was measured at .388 inches.
  - We connected the multi-meter to the down wires and unscrewed the switch from the cylinder.
  - As the switch was unscrewed, it took 1/8 of a turn until the meter lost connection.
  - Next, the cylinder was manually extended to the full extension position and the switch was screwed into its original position. The switch was then unscrewed and the connection was lost at 3/4 of a turn.
  - We had to use the nitrogen gas to unlock the cylinder. Manual actuation was not possible like earlier.
  - When we unscrewed the switch the first time, we believe that allowed the dogs to drop into place and lock the actuator.
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- We determined that since the switch was screwed in too far (about a 180 degree turn too far) then the dogs were being inhibited from dropping into place and allowing the gear to lock.
  - Once we got the switch screwed into the correct position, the actuator worked as advertised and locked into place.