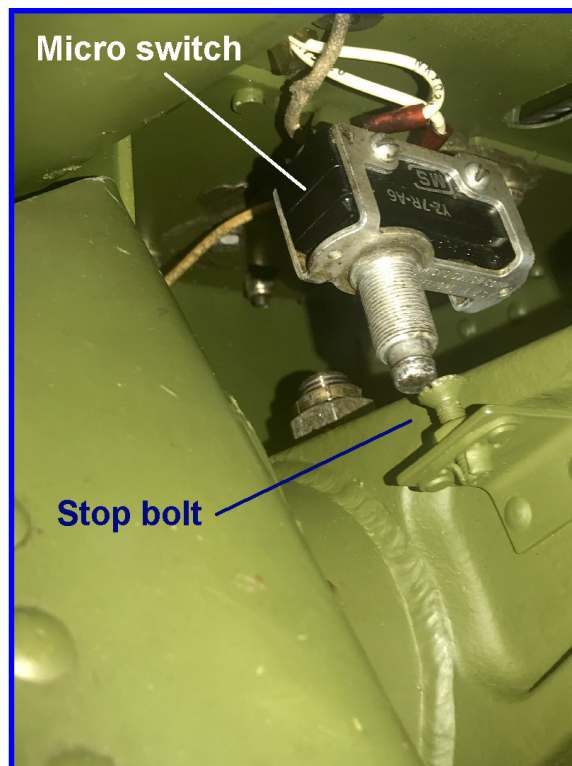


## Main landing gear “down” microswitch

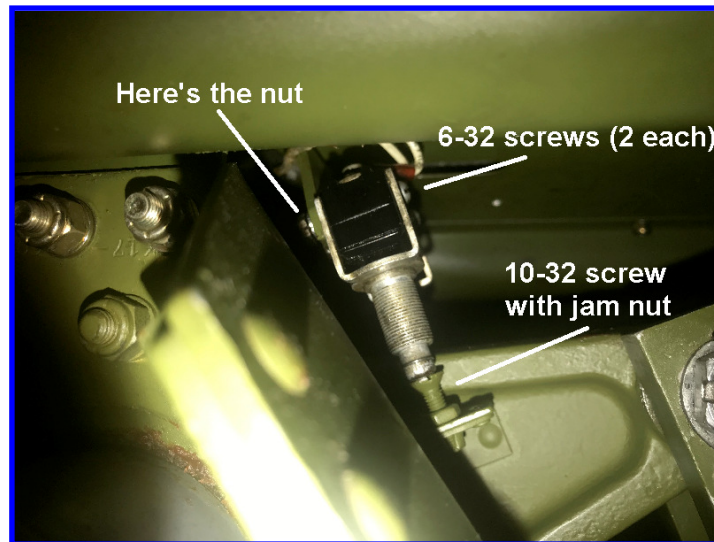
I had a funny thing happen the other day. After we landed the “Check Gear” warning came on over the headset and the green gear down light went out. The landing gear position warning is wired directly to the light hence the aural warning. No worries as it didn’t take 100% power to taxi. Check the bulb; good. So more investigating was necessary.

After opening up the access panels under the rear seats the problem was obvious. The micro switch plunger had shifted away from the stop bolt (see photo below). It literally slipped past the head of the bolt opening the micro switch. “Hmmm, that won’t be so hard to fix”, I said. But hold on! Not so electron breathe!



Landing gear “down” micro switch  
Photo looking up from right hand rear floor panel  
Notice the plunger is off the center of the stop bolt

There are two micro switches for the main landing gear lights; one for the down light (green) and one for the up light (usually red). Depending on the position of the landing gear center coupling will determine which light comes on. There is a stop bolt on either side of the coupling for each position; up and down. They are simply 10-32 flat head screws with a locking nut (jam nut) to hold it in place in the respective bracket. Are they easy to reach? NO! When I did the following procedure it took two guys to reach everything in a very coordinated way. You will need someone with really small fingers that can bend backwards. (Not really but it would have helped).



Side view of "UP" microswitch

Coupling with gear "UP" stop bolt shown  
(This is my spare)

Coupling showing both "UP" and "DOWN" stop bolts

With the rear floor panels removed you can see the "down" switch just forward of the landing gear coupling (you can't see the "UP" microswitch. It's on the other side). If you have a standard Republic Seabee you will need a 3/8" open end wrench, a 5/16" small socket, a small blade screwdriver (like a jewelers screw driver) and that guy with the small fingers.

The micro switch must be removed first unless you want to put the Seabee on its hull stands and retract the gear a little bit as the stop bolt must be removed. The stop bolt needed to be removed to install the modified stop bolt and the only way without the hull stands was to loosen the micro switch and let it hang by the attached wires.





Center coupling with modified stop bolt

There are two slotted 6-32 screws holding the micro switch in position with 5/16" nuts and locking washers. One guy holds the slotted end of the screw and the other guy, with small hands from the rear of the switch, turns the nut with the ratcheting 5/16" socket. It's one of those times that just a few clicks of the ratchet can be done at a time. Fortunately they were not lock nuts and only a few threads showing below the bracket anchor nut. Once it was loose it turned freely by hand. Be careful not to drop the nut and washer, as they are very small and can get lost in the bilge. With both 6-32 mounting bolts loose you can pull the screws out and the micro switch will hang down slightly. Now you have room to removed the stop bolt.

Now, how to modify the stop bolt. The bolts are standard 10-32, 3/4" screws (MS24693-S274 or AN507-10R12). It turns out that a large washer, AN970-3, can be countersunk just enough to silver solder it to the screw. I used a propane torch and silver solder after plenty of flux was applied to the assembly. Make sure the head of the screw is flush with the washer. A slot for the small jeweler's screwdriver was cut in the end of the screw for adjusting the switch later. See photos below.



Stop bolt (screw) with jam nut



Top view of stop bolt



Slot in the end of the screw for adjustment

The screw assembly can now be installed in the gear down bracket. Keep the guy with the small hand close by as you will need him shortly. You can either turn the screw down with the jeweler's screwdriver from underneath or use a low profile Philips head screwdriver ratchet and tighten it from the top of the screw. I chose the former. One guy holds the screwdriver steady and the other guy turns the screw. Each of you will have to be on one side or the other as it is impossible to have both of you on the same side. You'll see. Make sure you go down far enough for the microswitch to clear the new assembly as it would be very difficult to install the microswitch later (plunger pressure).

Once the screw is far enough inside the bracket get the guy with the fingers that go backwards and install the two 6-32 screws through the microswitch and into the mounting bracket. "Small hands" can get behind the bracket to start the nuts (with lock washers) on the screws. With one guy holding the head of the mounting screws and the other guy turning the nuts, snug them down until they are locked. Don't make them too tight as the case of the microswitch is plastic and could crack. Now there should be a slight space between the microswitch plunger and the stop bolt. The "jam" nut should be loose. Turn on the master switch to provide power to the lights. Use the small blade screwdriver to turn the stop bolt up until the green landing gear light comes on. Turn it one more turn and lock the jam nut. If the landing gear light turns green you are done! Clean up your mess and tell "small hands" thanks for his obvious deformity. You couldn't have done it without him.

Total time for this with two guys was about two hours. If you are by yourself you are still there doing it. I hope you don't have to do this but if your green gear light doesn't come on and the bulb is good, check under the rear seat. You might have the same problem I did. Hopefully it's just a loose wire.

All the best!