



Bremerton, WA 98312

April 27, 2023

National Transportation Safety Board
Attn: Starr Blum

Federal Way, WA 98001

Ref: N21RS Fred Ducolon

Dear Starr Blum;

April 20th

I have completed the examination of the landing gear operation for Travel Air N21RS, belonging to Fred Ducolon. April 20th at hanger (4-2) a basic gear operation check was performed to verify landing gear retraction and extension. All aspects of the landing gear retraction performed normally, however the landing gear extension failed to work. When selecting the Landing Gear Position Switch (7) to the down position a Down and Locked Indicator (9) immediately provided a safe to land condition. The landing gear Warning Horn (19) did not respond at this time.

April 26th

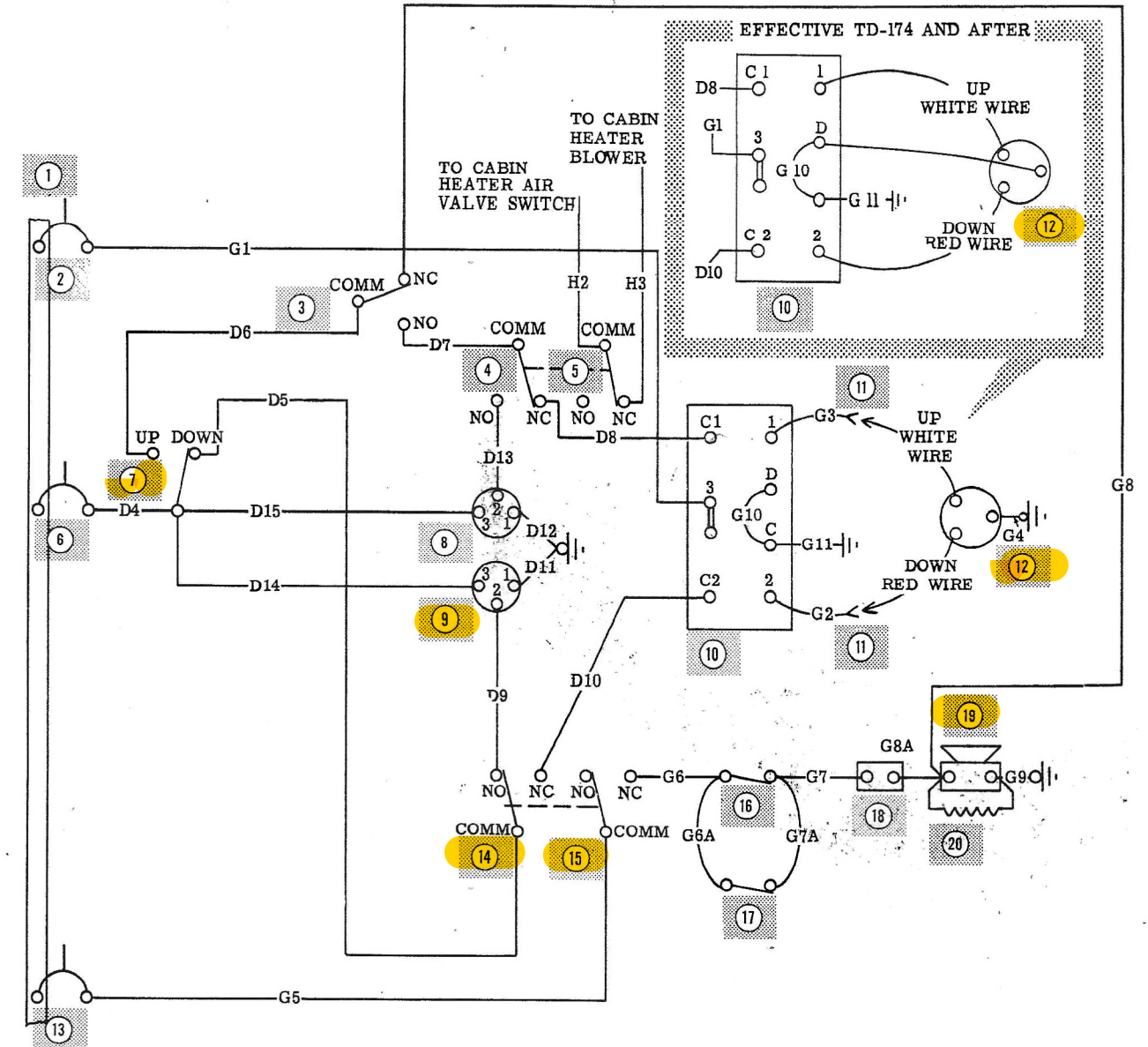
Trouble shoot the landing gear extension anomalies.

Reviewed the wiring diagram and relocated the aircraft to the Avian facility. Remove the necessary interior to access the landing gear electrical switches and motor. Jack the aircraft to conduct a landing gear retraction check.

Analysis: Determined the landing gear Down Limit and Down Indicator Switch (14) and Warning Horn Switch (15) are stuck in the Normally Open (NO) position. This (NO) condition is causing this portion of the electrical circuit to falsely remain in a landing gear down and safe position even though the landing gear is now retracted. This (NO) condition also disables the Landing Gear Motor (12) circuit and the landing gear Warning Horn (19) circuit. In this condition the Down and Locked Indicator (9) only needs the Landing Gear Position Switch (7) selected to the down position to complete it circuit for a gear down indication (green). Restoring normal operation to the Down Limit and Down Indicator Switch (14) corrected the landing gear extension. The gear Warning Horn (19) now operate normally too.

Best regards,

Patrick Heseltine



1. Main Bus Bar
2. Circuit Breaker (30 amp)
3. Safety Switch
4. Up Limit and Up Indicator Switch
5. Heater Blower Switch
6. Circuit Breaker (5 amp)
7. Landing Gear Position Switch
8. Up and Locked Indicator
9. Down and Locked Indicator
10. Dynamic Braking Relay
11. Connectors
12. Landing Gear Motor
13. Circuit Breaker (5 amp)
14. Down Limit and Down Indicator Switch
15. Warning Horn Switch
16. Throttle Warning Horn Switch (RH Engine)
17. Throttle Warning Horn Switch (LH Engine)
18. Flasher
19. Warning Horn
20. Resistor

LANDING GEAR AND WARNING HORN CIRCUIT
TD-1 thru TD-533