

DA40 N40XE Notes

These are specific things to help finishing the project:

- N40XE has an airspeed-based squat switch emulator used to effect the transition of the ADS-B out KT74 between GND and ALT/AIR transmission modes. It taps the pitot line to operate and resides lashed to the airspeed indicator lines. I didn't think to check when I was there the other day, but it should remain installed and operative. However, in GND mode I don't know if the transponder emits pressure altitude so it might need to be temporarily defeated in the transponder/encoder recert. It can be done by transponder configuration but in the past we've defeated it by pressurizing the pitot line a bit.
- The emergency battery pack we talked about should be retained for the flood light. But as we discussed it is superfluous for the Aspen (and various other electronic replacements). It also could be harmful to the Aspen. Nominally, it's a 42 volt pack but in reality the measured open-circuit voltage is a measured 44.5 volts. And it might not provide enough amperage for the Aspen, anyway. Hence I showed the Aspen power feed bypassing the switch but the flood light feed retained in the diagram I sent you.
- A reminder: This may have already been taken care of but in case it hasn't yet, the magnetometer for the original HSI is mounted inside the right wing outboard of the outer fuel cell. It is attached to what looks like an inspection cover underneath the wing. It and its wiring should be removed without disturbing the wiring for the fuel level and low fuel probes and of course the wiring for the wingtip-mounted Orion.
- N40XE has the 2646/2535 lb. MTOW/MLW modifications done to it, which should be retained in the new W&B.
- When sitting unladen in the hangar N40XE sits about 5 deg. nose up. The AI that was removed (check the part number on the instrument) was for a zero-degree panel tilt and was perfectly situated when in normal level flight. This was a good thing because it lacked any provision for the pilot to adjust this. I mention this because there have been several different panels used by Diamond and they have been known to give inaccurate information on the value for panel tilt for a given aircraft. This information might help during calibration and presumably to aid in construction of the RSM wedge, which may not need as severe angles as one might think. Especially with the 10 deg leeway about the lateral and longitudinal axes.
- There is a description in Section 8 of the DA40 Maintenance Manual about leveling the plane for weighing purposes. I presume when level for this purpose the flight longitudinal axis is horizontal also, but I'm not sure. The procedure describes fabricating a wedge tool to get it level. I have one of these from a previous weighing. But just so you know the tool provides an angle of 3 deg. So if the upper edge of the tail boom just ahead of the vertical stabilizer is 3 deg tail down, this would be the levelling position. This is just for your reference, in case it's helpful. I don't figure we'd be reweighing the plane as part of this exercise.