



Twin Commander Aircraft, LLC

Maintenance Alert

24 JULY 23

Ref MA23001

SUBJECT: INSPECTION FOR CRACKS IN LOWER WING SKINS AROUND MLG TRUSS CUTOUTS.

EFFECTIVITY:

520, 560/A/E/F, 500/A/B/S/U, 680/E/F/FL/FLP/T/V/W	ALL
681, 685, 690/A/B/C/D, 695/A/B	ALL

REASON FOR PUBLICATION: Two reports from the field noted small cracks extending forward and aft from the radii of the lower wing skin cutouts in each nacelle for the FWD portion of the MLG Truss. This Alert is to highly recommend detail visual inspection and either high frequency eddy current inspection (HFEC), or liquid penetrant inspection (LPI) of the lower wing skin at the FWD cutout areas, and to request feedback post inspection to help Twin Commander Aircraft in determining the prevalence of cracks in these locations.

BY WHOM WORK SHALL BE ACCOMPLISHED

FAA A&P Certificated Mechanic or FAA Repair Station

Inspectors shall be certified to a minimum of Level 2 in Eddy Current and Liquid Penetrant inspection in accordance with NAS410 (latest edition).

WHEN WORK SHALL BE ACCOMPLISHED

In the next 6 months after the release date of this document and once per year thereafter.

INSTRUCTIONS:

1. Support wings and tail of aircraft per applicable AMM.
2. Gain access to the upper and lower wing skin surface around the FWD and AFT radii of each cutout. The following suggestions may aid access.
 - a. Removal of the oil tank located in the nacelle structure may expedite access depending on aircraft model. Remove per applicable maintenance manual instructions. Lift or remove, if present, the wing compartment lining from the bottom skin. Clean debris away to enable a visual inspection for cracks around the cutouts.
 - b. Removal of the lower wing access door inside the nacelle may also aid in accessing the cutouts (Figure 1).
3. If cutouts are filled with sealant, carefully remove sealant, using plastic scraper and tools, around FWD and AFT radii of cutout to gain access to edge of cutouts. Clean area and edges of skins.
4. Visually inspect the cutout area for cracks using good light (min 100fc). If possible, take photos of noticeable cracks and include these photos with your compliance card, which can be mailed or emailed to the address shown. See Figure 2 for typical crack locations.

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Note at the nacelle location, the inboard and outboard skin planks overlap each other, so both skins are to be inspected.

5. In addition, perform either,
 - 1) HFEC inspection of the cutout radii following the procedure laid out below,
 - a. HFEC Procedure: Perform High Frequency Eddy Current, on the lower wing skin – both inner and outer skins, and around the entire cutout edge, at the FWD MLG Truss cutouts (see Figure 1). Min detectible flaw length is 0.050” long. Skin alloy is Aluminum Alloy 2000 Series.

OR

- 2) Liquid Penetrant Inspection (LPI) per ASTM E1417 the inner and outer skin surfaces, for cracks. For LPI, the skin surfaces must be stripped of surface finish. Acceptance Criteria per MIL-STD-1907, Grade A.
6. If cracks are found, contact Twin Commander Aircraft, LLC at the address below, and report findings on compliance card.

Twin Commander Aircraft, LLC.
1176 Telecom Dr., Creedmoor, NC 27522
Phone (919) 956-4300
info@twincommander.com

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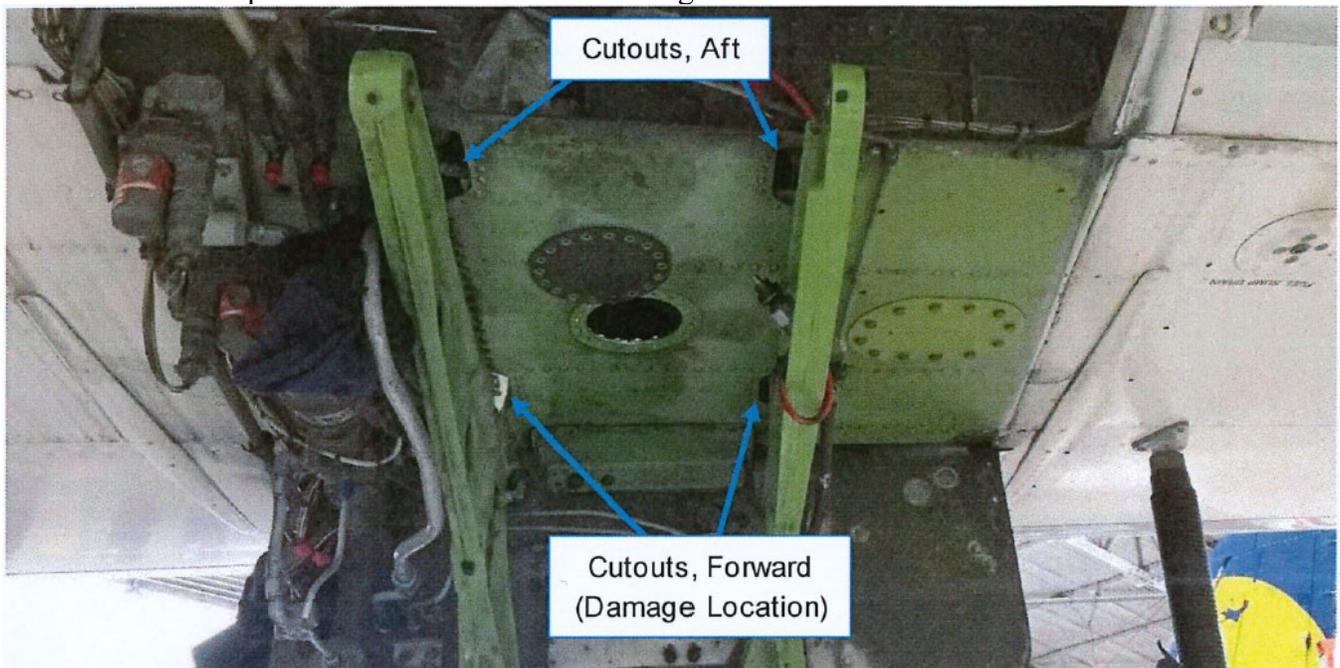


Figure 1, View looking forward and slightly up.

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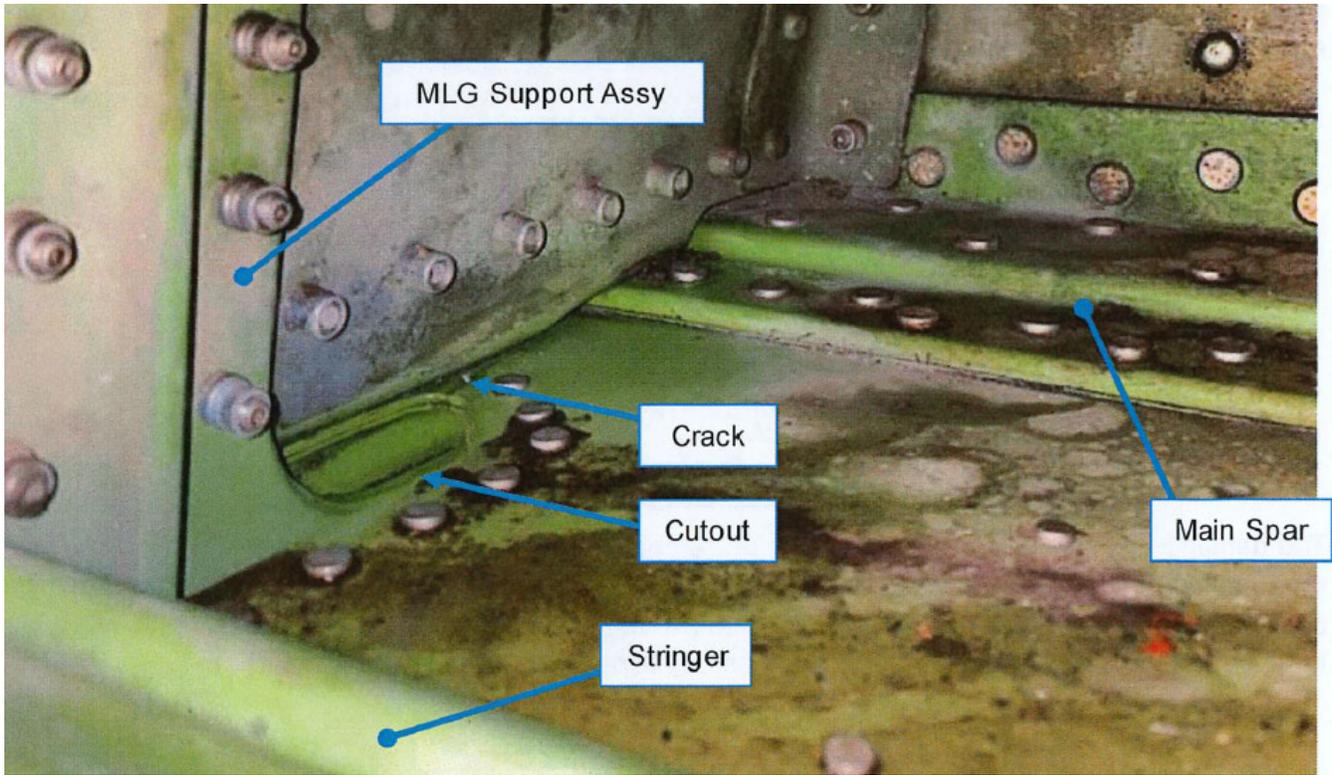


Figure 2. View inside the nacelle, looking forward and slightly down (crack propagating forward of FWD cutout radius towards front spar).

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COMPLIANCE CARD

Inspection For Cracks in Wing Skins Around MLG Truss Cutouts

Please fill in the requested information and mail this card to Twin Commander at the address on the other side, fax it to 919-682-3786, or email it to info@twincommander.com

AIRCRAFT MODEL _____ SERIAL NUMBER _____

AIRCRAFT REGISTRATION _____ TOTAL TIME _____ (HOURS)

OWNER'S NAME AND ADDRESS: _____

TELEPHONE: _____ FAX: _____

EMAIL ADDRESS: _____

COMMENTS: _____

INSPECTION RESULTS

left wing skin cutouts

right wing skin cutouts

OTBD INBD

OTBD INBD

Yes _____

QTY _____

No _____

Length, shortest _____

Length, longest _____

WORK PERFORMED BY (NAME, COMPANY NAME, AND ADDRESS):

TELEPHONE: _____ EMAIL: _____

DATE: _____ SIGNATURE: _____

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POSTAGE WILL BE PAID BY ADDRESSEE

Twin Commander Aircraft LLC
1176 Telecom Dr
Creedmoor NC 27522-9912

