

From: [Brian Fuchs](#)
To: [Jason Aguilera](#)
Subject: Materials Laboratory Email Factual (CEN25FA006)
Date: Monday, March 31, 2025 1:43:53 PM
Attachments: [Annunciator Panel.JPG](#)
[Warning Panel.tif](#)
[Annunciator Panel \(AP\).zip](#)
[Warning Panel \(WP\).zip](#)

Hello Jason,

Below is the email report for CEN25FA006, concerning the annunciator panels. Please let me know if you have any questions.

Two annunciator panels were submitted to the Materials Laboratory for filament examination. Both panels showed melting and discoloration consistent with fire damage.

The first panel contained lights in 13 of 16 slots, and an additional light was submitted separately from the panel. This was identified as the Warning Annunciators panel. Per the investigator in charge, the panel was found detached from its mounted position. No discerning marks remained that could be used to orient the panel correctly. Thus, a best guess at orientation was established, as indicated by the arrow in the attached picture. The annunciator light casings crumbled under applied pressure. The faceplate was missing from most lights. The glass of the bulbs had melted, though electrodes and filament were still in place and contained in the glass for most bulbs. In some bulbs, the glass was pressed against the filament. These bulbs were still evaluated for hot stretching. The bulbs in the separated light had not melted.

The second panel contained lights in 35 of 36 slots. This was identified as the Caution/Advisory Annunciators panel. The face plates of most lights had melted such that most labels were not legible, but most of the bulbs were intact. The orientation could be determined by comparing the text on legible panels to the standard layout provided by the manufacturer.

Excess material was cut away from the panels using a rotary cutting tool and the lights were extracted for examination with x-ray radiography. Light labeling was based on the layout of a standard panel (as provided by the manufacturer). Lights that did not have a designation in the panel were labeled '--'. In several cases, the full light (each containing two bulbs) could not be extracted, and the bulbs were removed individually. The bulbs were arbitrarily labeled '1' and '2' for tracking purposes. Some lights were missing bulbs; these were classified as 'not recovered'. It was noted that several bulbs in the Caution/Advisory panel were inserted 'backwards' (glass-first) and were classified as such.

Bulbs were further classified based on the appearance of their filaments. Bulbs with a filament that showed a continuous, consistent winding and contact with the electrodes and posts were labeled 'intact'. Filaments that had broken but maintained consistent windings were labeled 'broken'. No filament 'unwinding' consistent with hot stretching was observed in bulbs from either panel.

Table 1 contains a summary of the filament conditions for the Warning Panel (WP), where each light is associated with two bulbs. Table 2 contains the conditions for the Caution/Advisory Panel (AP) in the same format. Radiographs of the lights are attached.

Table 1. Filament conditions for the lights recovered from the Warning Panel. The light submitted separately was labeled 'Unknown'.

Warning Panel (WP)								
L Oil Press		Cabin Door		Inst Inv		R Oil Press		
<i>Not Recovered</i>		<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	
A/P Trim Fail		Bag Door Open		--		A/P Disc		
<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	
L Chip Detect		Pod Door Open		--		R Chip Detect		
<i>Intact</i>	<i>Intact</i>	<i>Not Rec.</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	
L BL Air Fail		--		--		R BL Air Fail		Unknown
<i>Not Recovered</i>		<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Not Recovered</i>	<i>Intact</i>	<i>Intact</i>

Table 2. Filament conditions for the lights recovered from the Caution/Advisory panel. The glass in bulb 1 from the 'Right Ignition On' light had melted.

Caution/Advisory Panel (AP)											
L DC Gen		Hyd Fluid Low		Ext Pwr		Battery Charge		--		R DC Gen	
<i>Intact</i>	<i>Intact</i>	<i>Not Recovered</i>		<i>Broken</i>	<i>Broken</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Not Rec.</i>
L NAC Not Full		L No MTV Flow		Rev Not Ready		Duct Overtemp		R No MTV Flow		R NAC Not Full	
<i>Intact</i>	<i>Intact</i>	<i>Broken</i>	<i>Broken</i>	<i>Broken</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Broken</i>	<i>Broken</i>	<i>Broken</i>	<i>Broken</i>
L Fuel Press		--		--		Prop Sync On		--		R Fuel Press	
<i>Intact</i>	<i>Intact</i>	<i>Broken</i>	<i>Intact</i>	<i>Broken</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Backwards</i>
L Auto Feather		--		Air Cond N1 Low		--		--		R Auto Feather	
<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Broken</i>
L Brake Delce		--		--		--		--		R Brake Delce	
<i>Intact</i>	<i>Broken</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>
L Ignition On		L BL Air Off		--		Fuel Crossfeed		R BL Air Off		R Ignition On	
<i>Not Rec.</i>	<i>Broken</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Intact</i>	<i>Backwards</i>	<i>Intact</i>	<i>Intact*</i>	<i>Intact</i>

Regards,
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