

**SERIOUS INCIDENT**

<b>Aircraft Type and Registration:</b>	Boeing 767-300, D-ABUK	
<b>No &amp; Type of Engines:</b>	2 GE CF6-80C2B6F turbofan engines	
<b>Year of Manufacture:</b>	1999 (Serial no: 30009)	
<b>Date &amp; Time (UTC):</b>	21 July 2017 at 0200 hrs	
<b>Location:</b>	En route from Kangerlussuaq, Greenland to Frankfurt, Germany	
<b>Type of Flight:</b>	Commercial Air Transport (Non-Revenue)	
<b>Persons on Board:</b>	Crew - 4	Passengers - 4
<b>Injuries:</b>	Crew - None	Passengers - None
<b>Nature of Damage:</b>	Window 1R, burnt terminal block and terminal lug and cable loom damaged	
<b>Commander's Licence:</b>	Airline Transport Pilot's Licence	
<b>Commander's Age:</b>	31 years	
<b>Commander's Flying Experience:</b>	5,200 hours (of which 5,200 were on type) Last 90 days - 120 hours Last 28 days - 70 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

**Synopsis**

The aircraft was in the cruise on a positioning flight when the flight crew noticed an unusual smell, followed by smoke from the vicinity of the right windscreen. A MAYDAY was declared and the aircraft was diverted to Newcastle Airport where it landed without further incident. Investigation by the operator identified an anomaly with an electrical connection to the right windscreen heater. The operator has taken safety actions intended to prevent recurrence.

**History of the flight**

The aircraft had previously diverted to Kangerlussuaq Airport, Greenland due to a smell in the cockpit. After extensive inspection the smell was attributed to a heavily contaminated oven in the forward galley and the aircraft was released back to service. The Danish Accident Investigation Board reported on the incident; file number HCLJ510-2017-336 refers.

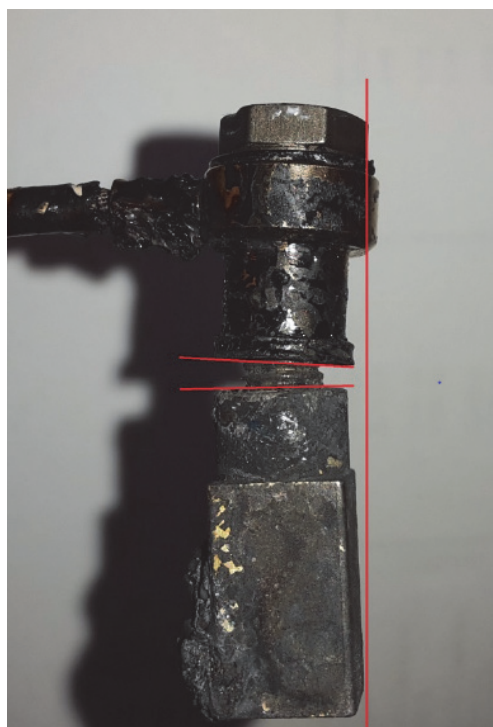
The subsequent flight was a positioning flight to Frankfurt, Germany, with only crew and staff members onboard. During the climb the flight crew noticed an unusual smell, but as it had dissipated by the time the aircraft reached its cruising altitude, they decided to continue the flight as planned. Approximately one-and-a-half hours later, the smell reappeared and remained at a constant level. Whilst the crew were discussing the situation

and their options, the first officer noticed smoke emanating from around Window 1R (the right windscreen). The crew donned oxygen masks, declared a MAYDAY and initiated a diversion to Newcastle Airport. After a few minutes the smoke started to dissipate and the aircraft landed without further incident.

### Aircraft examination

Troubleshooting by the operator revealed that the right windscreen was damaged, its terminal block J5 and terminal lug were burnt and the cable loom was damaged. The aircraft was then ferried to Frankfurt, with the window heat isolated, so the damaged components could be replaced.

Following removal, the operator initiated a more detailed examination of the affected parts. It identified that the terminal lug was not parallel to the terminal block; this could allow the mounting screw to become loose, creating a high resistance connection with the potential for overheating, Figure 1. No reason for the incorrect alignment was identified.



**Figure 1**

J5 Terminal block and terminal lug showing misalignment and heat damage  
(Image courtesy of the operator)

The affected parts were returned to the manufacturer for further examination and any adverse findings will be dealt with by normal continued airworthiness processes.

## Safety actions

Following its investigation the operator took the following safety actions:

- Adopted a double inspection requirement for electrical terminal installation following windscreen replacement;
- Reduced the repeat inspection threshold for windscreen electrical terminals from 500 flight hours to 100 flight hours;
- Introduced an additional engineering condition inspection for all windscreens entering stores;
- Conducted a fleet check to ensure correct installation of windscreen terminal connections;
- Clarified Aircraft Maintenance Manual (AMM) task 56-11-01-404-017, No 1 Window Installation, so that the resistance test of the window heater element is performed before installation to prevent the J5 terminal block connection being made twice;
- Added advice to AMM task 30-41-00-765-046 to use a torque wrench when connecting the wiring to the window terminals;
- Evaluating a coordinated replacement of windscreens not using the later design pin and socket connections.