

SERIOUS INCIDENT

Aircraft Type and Registration:	Airbus A330-243, G-TCCF
No & Type of Engines:	2 Rolls-Royce Trent 772B-60 turbofan engines
Year of Manufacture:	1998 (Serial no: 248)
Date & Time (UTC):	6 February 2019 at 1720 hrs
Location:	In flight over North Atlantic Ocean, west of the Republic of Ireland
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 11 Passengers - 326
Injuries:	Crew - None Passengers - None
Nature of Damage:	VHF radio unit damaged
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	49 years
Commander's Flying Experience:	13,135 hours (of which 1,050 were on type) Last 90 days - 98 hours Last 28 days - 45 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and operator investigation

Synopsis

Coffee was spilled onto the commander's audio control panel (ACP). This resulted in failure of his ACP and later, the ACP on the co-pilot's side. During the failures, the ACPs became very hot and produced an electrical burning smell and smoke. The commander decided to divert to Shannon, Republic of Ireland. The failure of two ACPs caused significant communication difficulty for the flight crew. The operator has taken safety action to reduce the chance of spillage.

History of flight

The flight departed from Frankfurt airport in Germany and was scheduled to fly to Cancun in Mexico. Approaching position N5500.0 W02000.0 the flight crew were served coffee in cups without lids (Figure 1). This was normal for this operator and route.

The commander was pilot monitoring. He put the coffee on his tray table while he completed tasks required due to approaching a waypoint. At approximately 1620 hrs, the cup was knocked over. Most of the liquid fell onto the commander's lap and a small amount spilled onto the commander's ACP (ACP1, see Figure 2).



Figure 1

Example of cup used in the aircraft cup holder



Figure 2

Location of the ACP1 and ACP2 boxes

The coffee on the centre console was dried quickly but resulted in immediate malfunction of ACP1 that affected VHF transmissions and public address announcements from this unit. The crew attempted to isolate ACP1 but it was not possible to do this from the flight deck. Subsequently, at approximately 1700, the ACP1 unit became very hot and failed and there was an electrical burning smell in the cockpit.

At approximately 1720 hrs, approaching N5600.0 W03000.0, the audio control panel on the co-pilot's side (ACP2) became hot enough to start melting one of its buttons, and failed. A small amount of smoke was observed coming from the ACP1. The commander decided to divert to Shannon, Republic of Ireland. During the diversion, the flight crew alternately used supplementary oxygen, with one pilot on oxygen at all times.

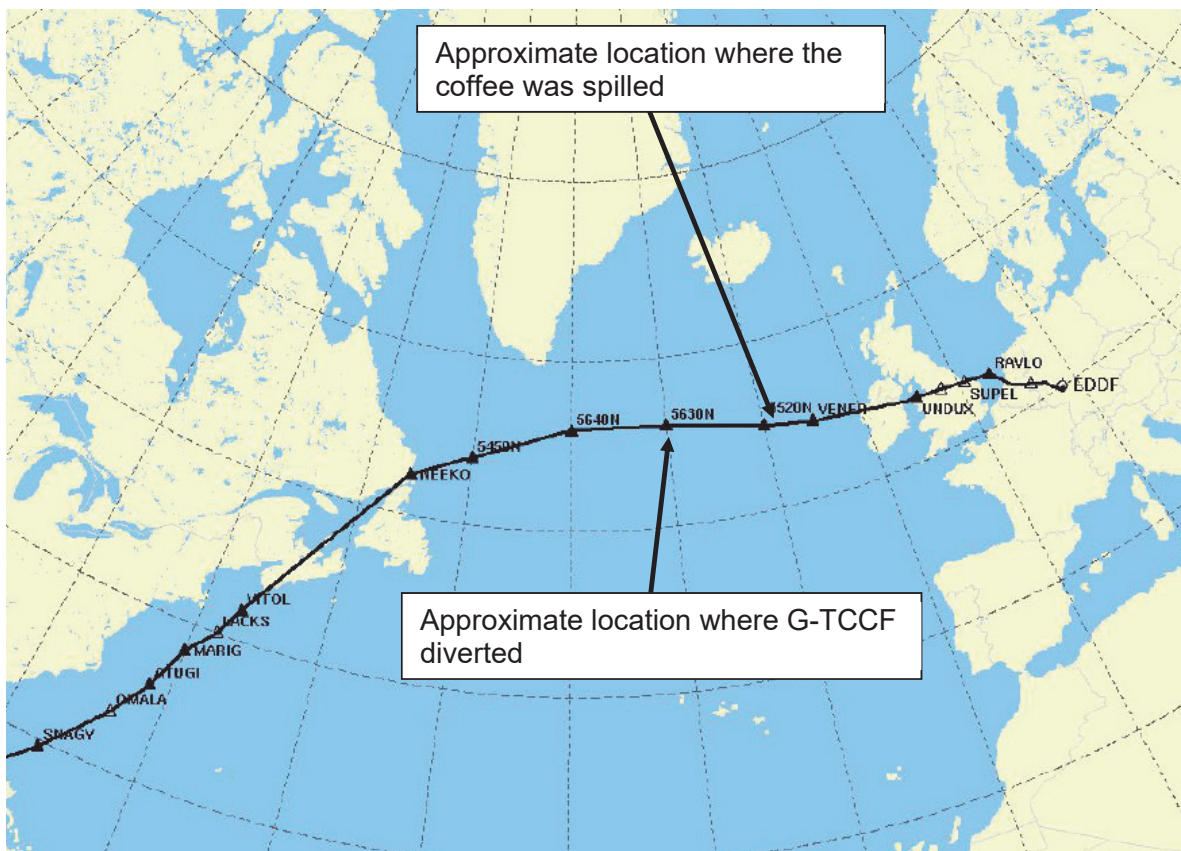


Figure 3

Planned route and approximate location where the commander decided to divert

The various ACP failures resulted in communication difficulties. The commander was not able to receive or transmit and could only hear transmissions through the co-pilot's speaker. There was no interphone between the pilots.

The aircraft diverted to Shannon without further incident. The smoke stopped and though there was a residual burning smell, the fumes did not result in injuries to anyone on board.

Airbus flight crew techniques manual

The A330 flight crew techniques manual states:

'Airbus highly recommends that the flight crews put and store all objects in their dedicated area in the cockpit: Cups in the cup holders.'

Engineering action

ACPs 1 and 2 were removed and stripped by the vendor. The strip report for ACP1 confirmed component failures attributed to liquid contamination. The strip report for ACP2 listed the failed components but did not offer potential causes these failures. The area below the centre console was inspected and no further areas were found that had been affected by liquid contamination.

Analysis

The strip report indicated that the failure of ACP1 and the smoke and fumes were the result of electrical shorting caused by liquid contamination. The reason for the failure of ACP2 was unclear from the strip report.

The aircraft manufacturer recommends using the cup holder. The size of cups used by this operator on this route made it more difficult to take cups in and out of the cup holder than larger cups that have a bigger area at the top of the cup holder to grasp. This incompatibility generally discouraged use of the cup holder, despite the policy. In the A330, flight crew were provided with a table in front of them, and it was a natural place to put a drink momentarily. However, objects here are vulnerable to being knocked over because it is a fold out table in a small space. It is also a convenient place to put other things that are likely to be moved during flight, such as the pilot's log. A lid properly secured on the top of the cup may have reduced the amount of liquid spilled on the centre console.

Conclusion

A spillage of coffee on to the centre console led to the failure of ACP 1 and 2 resulting in communication difficulties for the flight crew. The resulting electrical burning smell and smoke in the cockpit necessitated a diversion to Shannon Airport.

Safety actions

The operator changed their procedure to ensure that cup lids are provided for flights on all routes and reminded cabin crew of the requirement to use them. The operator also issued a flight crew notice reminding pilots to be careful with liquids. The operator raised an action to source and supply appropriately sized cups for the aircraft's cup holders.