

BAe 146-200, G-JEAS

AAIB Bulletin No: 2/97 Ref: EW/C96/7/2 Category: 1.1

Aircraft Type and Registration:	BAe 146-200, G-JEAS
No & Type of Engines:	4 Lycoming ALF 502-R5 turbofan engines
Year of Manufacture:	1984
Date & Time (UTC):	4 July 1996
Location:	Birmingham International Airport
Type of Flight:	On the ground during night stop
Persons on Board:	Crew - N/A - Passengers - N/A
Injuries:	Crew - N/A - Passengers - N/A
Nature of Damage:	Hydraulic leak and passenger cabin equipment contaminated with skydrol hydraulic fluid
Commander's Licence:	Not Applicable
Commander's Age:	Not Applicable
Commander's Flying Experience:	Last 90 days - Not Applicable Last 28 days - Not Applicable
Information Source:	AAIB Field Investigation

On a night stop at Birmingham the crew reported 'condensation'dripping on a passenger seat at row 6A; further inspection of the frame 25 area above the seat revealed skydrol contamination of ducting, insulation and emergency oxygen equipment. Corrosion was noticed on a stainless steel hydraulic pipe supplying pressure to the lift spoiler system. A temporary repair was carried out in accordance with the maintenance manual and the aircraft was flown to the company's main base for repair.

The temporary repair instructions required the removal of a small section of pipe around the leak, and although the removed section was retained, the cutting and dressing operation had destroyed the majority of the failure. The pipe was taken to the manufacturer's metallurgical laboratories by the AAIB where another 1.84 mm long crack was found, however this crack did not appear to break through to the inner surface of the pipe. This fracture appeared to have resulted from initiation and growth of fatigue cracks from an extremely localised area of chlorine induced corrosion fissures.

In the absence of the primary crack the investigation was unable to provide a definite explanation, however it is clear that extremely localised pitting and associated fissuring had occurred in the region of the failure. The identification of chlorine ions in the products of corrosion suggests a possible cause of failure, but the source of the contamination and the reason the damage was limited to such a relatively small area cannot be explained.