Aviation Safety Investigation Report 199702281

Boeing Co
B767

14 July 1997

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NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

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The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number:	199702281	**Occurrence Type:**	Incident
Location:	204km S Brisbane, Aerodrome		
State:	NSW	**Inv Category:**	4
Date:	Monday 14 July 1997		
Time:	0942 hours	**Time Zone**	EST
Highest Injury Level:	None		

Aircraft Manufacturer:	Boeing Co		
Aircraft Model:	767-277		
Aircraft Registration:	VH-RMD	**Serial Number:**	22692
Type of Operation:	Air Transport Domestic High Capacity Passenger Scheduled		
Damage to Aircraft:	Nil		
Departure Point:	Brisbane QLD		
Departure Time:	0932 EST		
Destination:	Sydney NSW		

Approved for Release: Friday, September 12, 1997

As the aircraft climbed through FL380, approximately 110 NM from Brisbane, the crew heard a loud bang and observed the left engine Exhaust Gas Temperature (EGT) rise to 1100 degrees C. The crew carried out a precautionary engine shut down and the aircraft was returned to Brisbane where it landed safely.

Analysis of the aircraft's Flight Data Recorder (FDR) showed that until the EGT rise, the engine operation was stable with indicating parameters within the normal range. The EGT rise was accompanied by the overall decrease of other engine parameters.

The engine strip examination revealed that most of the high pressure (HP) turbine blades and guide vanes were either missing or burned away, while the rest of the engine was free of damage.

Examination of the blades revealed that failure of the turbine was precipitated by failure of one blade, which was found to have contained a fatigue fracture initiating from inter granular oxidation inside the blade's cooling channel. The separated blade then damaged the rest of the HP turbine. The blade part number was 1778M31G01.

The engine had accumulated 505 hours after overhaul during which all of the HP turbine blades were replaced by a mixture of new and overhauled blades. The blades were supplied by the engine manufacturer.

The damaged blades were returned to the engine manufacturer for examination.

Safety action:

The aircraft operator experienced a similar blade failure in 1995, where the blade part number was the same. As a result of this occurrence, the operator has discarded all HP turbine blades of that particular part number.