

INCIDENT

Aircraft Type and Registration:	BAe.ATP, G-MANG	
No & Type of Engines:	2 Pratt & Whitney Canada PW126 turboprop engines	
Year of Manufacture:	1989	
Date & Time (UTC):	20 August 2002 at 1714 hrs	
Location:	Prestwick Airport, Scotland	
Type of Flight:	Public Transport	
Persons on Board:	Crew - 4	Passengers - 39
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Nil	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	42 years	
Commander's Flying Experience:	7,902 hours (of which 3,363 were on type) Last 90 days - 110 hours Last 28 days - 31 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

History of flight

The aircraft, which was carrying a 'deferred defect' for fuel seepage from the right wing, departed Glasgow Airport for Belfast and was established in the cruise at FL100 when a 'RIGHT HAND LANDING GEAR BAY OVERHEAT' warning light illuminated. The checklist called for the landing gear to be lowered, after which the overheat warning light extinguished. The crew were then directed by the checklist to complete the 'ENGINE FIRE IN FLIGHT DRILL' for the engine on the affected side, which resulted in the right engine being shut down. The crew transmitted a 'MAYDAY' call and the aircraft diverted to Prestwick where a single engine landing was carried out on Runway 31. At no time was there any warning of an engine fire and the senior cabin crew member, who visually inspected the engine from the cabin, reported nothing unusual.

The aircraft, brought to a stop on the runway by the use of firm brake application alone, was approached by the airfield fire service (AFS) who reported small flames and smoke emanating from between the two right main wheels. The commander shut down the left engine and ordered an

emergency evacuation which proceeded without incident except for one elderly passenger requiring oxygen.

After approximately 15 minutes, the commander inspected the aircraft with the fire chief and saw no signs of physical damage. There was no ATP tow-bar available at Prestwick and after taking advice from the airline's fleet manager and station engineer, the flight crew restarted the left engine and taxied the aircraft clear of the runway.

The company station engineer from Glasgow attended the aircraft later that day and although he could not find anything unusual with the aircraft he believed that the location of the reported flames around the wheels was consistent with there having been a heat pack fire. He subsequently arranged for the replacement of both wheels and brake units, and a full inspection of the landing gear bay and overheat detectors. The removed brake units were sent for a full strip examination and report.

On 22 August 2002 the aircraft was ferried with its landing gear down to Glasgow for further investigation and rectification of the fuel seepage problem.

Four days later, as the aircraft departed Glasgow with four crew on board, 'RIGHT HAND LANDING GEAR BAY OVERHEAT' warning illuminated. The checklist was followed as before and the aircraft returned to Glasgow Airport with the right engine shut down. During the landing roll the 'RIGHT HAND INNER BRAKE OVERHEAT' warning illuminated but there were no signs of fire.

Subsequent engineering action

The brake control valve and No 3 'maxaret' unit were replaced as a result of the subsequent engineering investigation. Furthermore, manipulation of the 'over heat sensors' electrical wiring loom was found to activate the overheat warning and further checks detected a chafed and damaged cable. Replacement of this cable rendered the system fully serviceable.

Checklist philosophy

The sensor used to detect a landing gear bay overheat, is also that used to detect flames brought about by engine torching. The checklist assumes that, if the caution disappears after landing gear lowering, it is an engine torching problem and not a landing gear problem and thus an engine shutdown is required. Service Bulletin ATP-71-12-10368A introduces a flame guard which allows a torching flame to be detected by a separate dual 'firewire' system rather than the landing gear bay overheat sensor. This modification, originally issued in May 1995, permits the use of a revised checklist procedure that does not involve an in-flight engine shutdown.

The company is in the process of introducing the flame guard modification across the aircraft fleet but at the time of the incident this aircraft had not been subject to modification.