No: 2/87 **Ref: 1a**

Aircraft type and registration:	Boeing 747-136 G-AWND
No & Type of engines:	4 Pratt and Whitney JT9D-7 turbine engines
Year of Manufacture:	1970
Date and time (UTC):	9 March 1986 at 1238 hrs
Location:	London (Heathrow) Airport
Type of flight:	Airline scheduled passenger
Persons on board:	Crew — 17 Passengers — 376
Injuries:	Crew — None Passengers — None
Nature of damage:	Auxilliary Power Unit access doors damaged with rear underside fuselage damage varying from minor skin scratches to non-pressurised bulkhead damage
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	54 years
Commander's Total Flying Experience:	14490 hours (of which 5508 were on type)
Information Source:	Aircraft Accident Report Form submitted by British Airways Safety Officer

The aircraft was operating a scheduled service from London to Anchorage, Alaska and the co-pilot was the handling pilot. As the aircraft rotated during the take-off run on runway 28L, the rear section of the fuselage contacted the runway.

The crew considered that the thump which was heard might have been generated by a problem with the main landing gear tyres and requested Air Traffic Control (ATC) to check the runway for debris. ATC reported finding none and as the take-off was normal in all other aspects, the crew continued the flight to Anchorage.

Upon arrival, the commander requested the emergency services to standby during the landing roll and inspect the landing gear as the aircraft came to rest. The landing on runway 06R was effected without incident and, as no damage was observed, the aircraft taxied to the apron. During the subsequent transit inspection, considerable damage to the underside of the rear fuselage was discovered.

The operator dispatched a team of investigators from London who assessed the damage and, following temporary repairs, the aircraft was ferried back to London.

A full investigation was conducted by the company who state that the accident was caused by the aircraft being rotated too early (at V1) and too rapidly during the take-off run. They further state that the reason for the early rotation was that the commander gave the command ROTATE at V1 (149 knots) rather than at Vr (167 knots), the correct speed. A contributory factor

was that the co-pilot did not crosscheck his ASI immediately before rotating the aircraft. They were unable to discover the reason for the early ROTATE call but attributed the higher than normal rate of rotation to the relatively low B747 experience of the co-pilot, who was flying the first operational sector following attainment of his Operations Certificate.