

# **Boeing 747-200, G-BDXA, 23 May 1996**

**AAIB Bulletin No: 8/96 Ref: EW/C96/5/15 Category: 1.1**

**Aircraft Type and Registration:** Boeing 747-200, G-BDXA

**No & Type of Engines:** 4 Rolls-Royce RB211-524D-19 turbofan engines

**Year of Manufacture:** 1977

**Date & Time (UTC):** 23 May 1996 at 1400 hrs

**Location:** Indira Gandhi International Airport, Delhi

**Type of Flight:** Public Transport

**Persons on Board:** Crew - 18 Passengers - 334

**Injuries:** Crew - Nil Passengers - Nil

**Nature of Damage:** Minor damage to left hand wing/body fairing

**Commander's Licence:** Airline Transport Pilot's Licence

**Commander's Age:** 48 years

**Commander's Flying Experience:** 11,073 hours (of which 8,535 were on type)

Last 90 days - 81 hours

Last 28 days - 38 hours

**Information Source:** AAIB Field Investigation

During the climb out from Delhi a muffled bang was heard, accompanied by a jolt. Following this the aircraft handled normally and all systems were serviceable. The flight was continued to London Heathrow without further incident.

Subsequent inspection of the aircraft found that a panel above the left hand overwing slide position had broken up from its leading edge. About 30% of the panel was missing. The panel forms part of the wing/fuselage fairing at the trailing edge of the wing, and is of non-metallic honeycomb bonded construction. At the leading edge of the fairing, where the breakup had initiated, several fasteners were missing.

In February 1996, a repair scheme had been embodied which required removal of the fairing. The repair scheme was approved by the manufacturer, and required the removal of a longeron splice fitting and part of a butt strap and doubler inside the skin, to remove local corrosion. Replacement

parts were fitted and an external repair plate 0.300 inches thick was fitted to carry the loads around the repair. This repair was local to the leading edge of the fairing panel at the position where its fasteners were found missing. The fairing panel was attached with a number of fasteners which engaged in anchor nuts. The addition of the repair plate displaced the panel locally and required that the fasteners be 0.3 inches longer. It was not possible to determine whether the missing fasteners had migrated out of position due to inadequate thread engagement or if, possibly, they had not been fitted. However the period of operation between the work being carried out in February, and the date of the incident, strongly suggested that most or all of them had been fitted.

Two other aircraft had been subject to a similar repair, and on examination it was found that the longer fasteners had been fitted locally and that their threads were adequately engaged in the self-locking portion of the anchor nuts. The repair scheme has been amended to include reference to the fastener requirements and the affected aircraft have been stencilled locally to indicate that longer than standard fasteners are required.