

**Aviation Safety Investigation Report
198903916**

Boeing 747-238B

7 March 1989

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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.

Occurrence Number: 198903916
Location: Brisbane QLD
Date: 7 March 1989
Highest Injury Level: Nil
Injuries:

Occurrence Type: Incident

Time: Approx. 0800

	Fatal	Serious	Minor	None
Crew	0	0	0	0
Ground	0	0	0	-
Passenger	0	0	0	0
Total	0	0	0	0

Aircraft Details: Boeing 747-238B
Registration: VH-EBP
Serial Number: 21658
Operation Type: Regular Public Transport
Damage Level: Minor
Departure Point: Brisbane QLD
Departure Time: 800
Destination: Cairns QLD

Approved for Release: 4 August 1989

Circumstances:

The crew reported hearing/feeling a thump during flap retraction after takeoff. As all cockpit indications were normal the noise was interpreted as a bird strike and the flight proceeded uneventfully. A post flight inspection revealed damage to the the right hand inboard leading edge device (including a section of flap missing) and impact damage to the leading edge of the right horizontal stabilizer. The aircraft's last major servicing was conducted overseas by an overseas organization on 13 December 1988. The servicing was inspected by company engineers. Some time later a loss of drive to a section of leading edge flaps occurred. The drive unit output shaft had disconnected at the drive coupling there was no evidence of three coupling retaining screws having been fitted. This fault was rectified and the aircraft was later inspected by a different overseas organization at a different location. In the message requesting the inspection the company had asked for all leading edge flaps to be inspected assuming that all leading edge devices would be checked. However the devices between the fuselage and the inboard engines are known as "krueger flaps" and were not inspected by the overseas organization. Analysis of the damage to the starboard krueger flaps indicated that the following sequence occurred. During taxi for departure when the flaps were extended to setting one all leading edge devices extended automatically. At this time the torque tube between the hinges on the inboard krueger flap panel became disconnected at its outboard end. This disconnection allowed the inboard hinge of this panel to travel over-centre during takeoff. This hinge then remained fully extended for the duration of the flight. On flap retraction after takeoff the outer two krueger flap panels retracted normally together with the outboard hinge of the inboard panel. At some time during this retraction the inboard panel may have cracked and drive was lost in the area of the torque tube between the gearbox and the inboard end of the centre krueger flap panel. This torque tube showed no obvious damage and is believed to have become disconnected at one end. The movement of the inboard panel resulted in a section breaking off and striking the starboard horizontal stabiliser.

Significant Factors:

The following factors were considered relevant to the development of the accident

1. Inadequate maintenance and inspection during major servicing.
2. Inaccurate terminology used in request for maintenance inspection.
3. Torque tube(s) not correctly secured.