



MINISTRY OF TRANSPORTATION

National Transportation Safety Committee

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Reference : KNKT/372/VIII/KTJ/08 Jakarta, 6 August 2008
Classification : --
Attachment : --
Subject : PK-GZN Recommendation To: **Boeing Company**
Air Safety Investigation
Boeing Commercial Airplanes
PO Box 3707
M/C 67-PR SEATTLE,
WA 98124-2207

Dear Sir,

The National Transportation Safety Committee's investigation into a failed main landing gear assembly on Boeing 737 aircraft, registration PK-GZN, Serial number 29209, that occurred at Syamsudin Noor Airport of Banjarmasin, South Kalimantan on 23 July 2008, found a crack in one of the brake mounting holes propagating inwards. The crack resulted in the fracturing of the inner cylinder and collapse of the axle. The landing gear assembly had been in service for 9 years 7 months and 8 days and 15,218 cycles.

The Boeing Company Overhaul Manual (32-11-11 page 301) states:

Examine the brake attachment flange on inner cylinder (62) for signs of cracks. If there are cracks, they will start from the brake mounting holes and could go inwards (toward axle) or outward (toward outer edge of brake flange). No more than four holes can have cracks that go outward. Refer to SB 32-1081 for more data.

The overhaul inspection is required in accordance with the Boeing Overhaul Manual at intervals not exceeding 10 years time in service or 21,000 cycles.

On 5 August 2008, Garuda Indonesia informed the National Transportation Safety Committee that it had taken the following safety actions.

- a) Amended its inspection policies and procedures (Continuous Airworthiness Maintenance Program) with respect to Boeing 737-300/400/500 series aircraft main landing gear assemblies, which requires maintenance inspection to:
- b) Conduct one time inspections, in accordance with Garuda Indonesia Engineering Order B3/P32-00-0354R1, on Landing Gear Assemblies on all Garuda Indonesia Boeing 737-300/400/500 series aircraft which have accumulated 15,000 Cycles Since Overhaul as of 23 July 2008, are to be performed before 17 August 2008. The inspections are non destructive using ultrasonic method for the outer surface of the axle root and eddy current method for the flange area (including brake attach flange, flange holes and adjacent axle surfaces).

- c) In accordance with Garuda Indonesia Engineering Order B3/S32-00-0355 perform non destructive inspection on Main Landing Gear Brake Attachment Flange on Inner Cylinder Assembly using Eddy Current method and outer surface of axle root using Ultrasonic method during every “C” Check.
- d) If during inspection, crack or severe damage indicates in one or more brake mounting holes, or any other parts of the assembly, the Landing Gear Inner Cylinder Assembly should be replaced with a serviceable one.

The NTSC concurs with this timely safety action by Garuda Indonesia and makes the following recommendation.

Recommendation KNKT/ 08.16.07.03 D

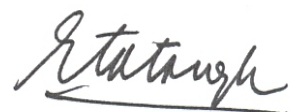
The National Transportation Safety Committee of the Republic of Indonesia recommends that the Boeing Company amend the Boeing 737 Overhaul Manual (32-11-11 Page 301) to require operators of Boeing 737-200/300/400/500 series aircraft affected by The Boeing Company Overhaul Manual (32-11-11 page 301) instructions to:

- a) Conduct one time non destructive inspections on Landing Gear Assemblies on all Boeing 737-300/400/500 series aircraft which have accumulated 15,000 Cycles Since Overhaul. Specifically, the should be conducted on the outer surface of the axle root and the flange area (including brake attach flange, flange holes and adjacent axle surfaces).
- b) Conduct Eddy Current inspections of the brake attachment flange on inner cylinder and Ultrasonic inspections of the outer surface of axle root of Boeing 737-200/300/400/500 series aircraft at each ‘C’ check inspection;
- c) Replace Inner Cylinder/Sliding Member assemblies whenever a crack is found in one or more brake mounting holes or any other part of the assembly.

In accordance with Annex 13 Para 6.10, I request that you inform me, via the NTSB, of safety action taken by the Boeing Company in response to this recommendation, if possible within 60 days of the date of this letter.

Yours sincerely

**NATIONAL TRANSPORTATION
SAFETY COMMITTEE
Chairman**



TATANG KURNIADI