LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Mobilité
et des Travaux publics

Administration des enquêtes techniques

PRELIMINARY REPORT

Trunnion failure of the left-hand Wing Landing Gear during loading operations of a Boeing B747-8R7F, registered LX-VCF and operated by Cargolux Airlines International S.A., on Apron P10 at Luxembourg Airport (ELLX) on 23 October 2026

DATE OF ISSUE: 23 November 2026

The information in this preliminary safety investigation report is subject to change and may contain errors. It will be supplemented or corrected during the course of the investigation.

ADMINISTRATION OF TECHNICAL INVESTIGATIONS

CIVIL AVIATION – RAILWAYS – MARITIME – RIVER – ROAD



Ministry of Mobility and Public Works

Department of mobility and transports

Administration of Technical Investigations

Report N° AET/AC-2026/P-01

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Administration des enquêtes techniques (AET)

B.P. 1388 L-1013 Luxembourg

Tél: +352 247-84403
Fax: +352 247-94404
Email: info@aet.etat.lu
Web: https://aet.gouvernement.lu/

FOREWORD

In accordance with Annex 13 - Aircraft Accident and Incident Investigation - to the Convention on International Civil Aviation, Regulation (EU) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and Luxembourg amended law dated 30 April 2008 on technical investigations in relation to accidents and serious incidents which occurred in the domains of civil aviation, maritime transport, railways and vehicle traffic on public roads, it is not the purpose of the safety investigation to apportion blame or liability.

The sole objective of the safety investigation and the related reports is the prevention of accidents and incidents.

Consequently, the use of this interim report for purposes other than accident prevention may lead to wrong interpretations.

Note: All times indicated in this report are in Universal Coordinated Time (UTC), unless stated otherwise.

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1. Synopsis

On 23 October 2026 at 08:37:59 UTC, during loading operations of the Boeing B747-8R7F registered LX-VCF, operated by Cargolux Airlines International S.A., at Luxembourg Airport (ELLX), the trunnion of the left-hand wing landing gear failed (LH WLG). The aircraft came to rest with the cowling of the inboard left engine (Nr. 2) touching the ground. The event took place at stand Z09 on apron P10. The crew, and the personnel on board the aircraft or in the vicinity, were not injured.

2. Organization of the Safety investigation

After the evaluation of the initial information gathered by the safety investigators of the Administration des enquêtes techniques (AET) on the day of the event and the following days, the decision to open a safety investigation was taken on 26 October 2026, in accordance with the provisions of Annex 13 to the Convention on International Civil Aviation, Regulation (EU) No 996/2010 of the European Parliament and of the Council and national legislation.

Based on the initial information, the AET notified the serious incident to the NTSB representing the States of Design and Manufacture, the International Civil Aviation Organization (ICAO), the European Commission (EC), and the European Union Aviation Safety Agency (EASA).

3. Safety investigation participants

After notification by the AET, the following Safety Investigation Authority has appointed an accredited representative to the investigation:

- the National Transportation Safety Board (NTSB, USA), representing the States of design and manufacture of the aircraft and the engines;

The following advisers have been designated to participate in the investigation:

- Designated by the AET:
  - EASA;
  - the Directorate of Civil Aviation (DAC);
  - Cargolux Airlines International S.A.
- Designated by the NTSB:
  - the Federal Aviation Administration (FAA);
  - the Boeing Company;
  - GE Aerospace.

4. Flight plan information

The Boeing 747-8R7F, registered LX-VCF, was scheduled to perform flight CLX1/CV6425 to Indianapolis International Airport (KIND/IND) on the day of the occurrence with a crew of 2 pilots.

The estimated off-block time at ELLX was 09:05 UTC and the estimated on-block time at KIND was 17:51 UTC. The planned takeoff mass was 374.463 kg, which was 73.232 kg below the maximum takeoff mass of 447.695 kg. The planned landing mass was 291.370 kg, which was 59.256 kg below the maximum landing mass of 350.626 kg. Payload for the flight was 85.555 kg and the planned block fuel amounted to 95.800 kg.

5. Sequence of events

The sequence of events is mainly based on CCTV footage provided by the aerodrome operator and information provided by Cargolux personnel.

The aircraft was parked on apron P10 at stand Z09 since its arrival on 22 October 2026. In the morning of 23 October 2026, the installation of the tail support stanchion[1] began at 06:02 UTC and fueling at the left-hand wing started at 06:07 UTC and went on until 06:24 UTC. Loading of the main deck began at around 07:20 UTC at the nose cargo door and at 07:43 UTC at the side cargo door. The side cargo door was closed at 08:34 UTC, while loading through the nose cargo door was not yet completed.

The flight crew boarded the aircraft at 08:35 UTC. At 08:37:55 UTC, hydraulic pressure was released from the tail support stanchion by maintenance personnel. The tail can then be seen moving slightly down before the aircraft starts tilting to the left at 08:37:59 UTC. At the same time, the LH WLG collapses and the gear truck can be seen moving backwards (Fig. 1). During the tilting movement of the aircraft, the engine pod of the inboard left engine (Nr. 2) contacts the ground, then moves back up again before coming to rest on the lower cowling. After the event, the LH Body Landing Gear (BLG) strut was found fully compressed and depressurized (Fig. 2).



Fig. 1 (Source: AET)



Fig. 2 (Source: AET)

[1] The tail support stanchion was installed by the operator due to the slope on apron P10 at stand Z09.

6. Component failure

The collapse of the LH WLG was caused by the failure of the trunnion at the junction with the outer cylinder of the shock strut (Fig. 3). The shock strut subsequently separated from the trunnion and punctured the panel assembly of the upper wing skin. The RH WLG is shown mirrored in Fig. 4 for comparison. Further damage was caused to the LH WLG assembly, bearing assembly and multiple components and parts surrounding the area of the failure.

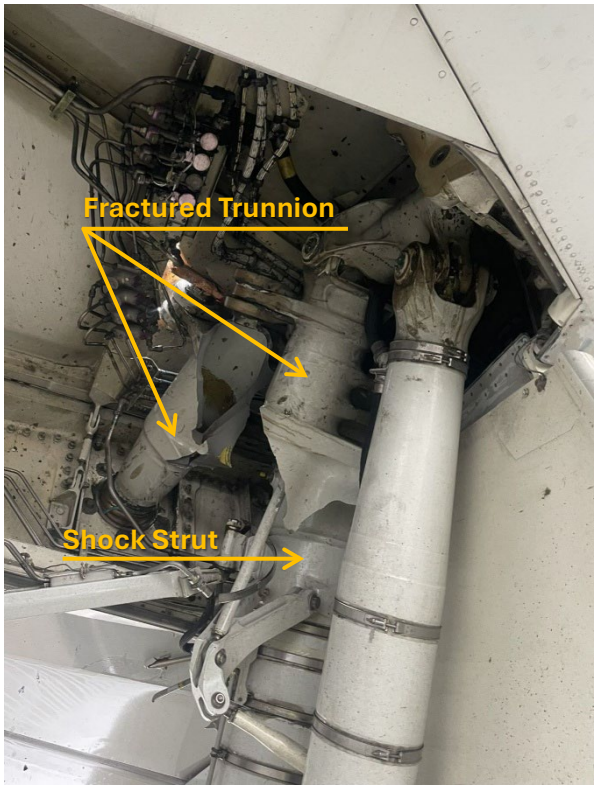

Fig. 3 (Source: AET)

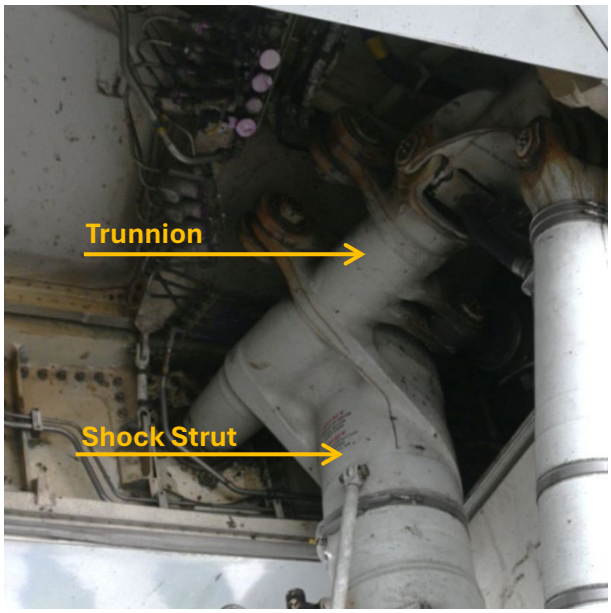

Fig. 4 (Source: AET)

According to Boeing, this was the first wing landing gear trunnion failure of this type on the B747-8/8F fleet.

7. Aircraft recovery

After the occurrence, the operator's first objective was to stabilize the aircraft to provide a safe environment for further proceedings. To achieve this, main tank 2 and reserve tanks 1 and 4 were defueled. Remaining fuel was transferred to main tank 3 and the right-hand body landing gear and wing landing gear struts were deflated to lower the right-hand side and level out the aircraft as much as possible.

The LH WLG was then removed from the aircraft before the freight was offloaded, reweighed and retagged. The reweighing of the pallets only showed minor discrepancies.

The aircraft was finally towed to the operator's hangar on apron P8 for inspection and damage assessment.

8. Landing gear maintenance history

The LH WLG was installed on LX-VCE when it was delivered to Cargolux in May 2012. In March 2022, it was removed from LX-VCE after 9350 cycles and returned to Boeing for overhaul. The overhaul was performed at REVIMA in France in accordance with applicable Boeing Component Maintenance Manual (CMM) provisions (i.e. CMM 32-11-94 R35 for the LH WLG Buildup Assembly). The LH WLG was released to service In May 2022 and installed on LX-VCF the same month. At the time of the occurrence, LX-VCF had operated 3636 cycles since March 2022.

According to the Structural Maintenance Program set out in the 747-8/8F Maintenance Review Board Report, the interval of the wing landing gear restoration shall not exceed 10 years or 12000 flight cycles.

9. High acceleration landing events

In order to identify landings warranting further review, the operator queried its Flight Data Monitoring (FDM) system for recorded "High normal acceleration (landing)" events from the date of installation of the LH WLG in June 2022 until the day of the occurrence. The query identified 25 exceedances of the FDM threshold defined by the operator for this monitoring parameter, with "Vertical G - largest"[2] values ranging from 1.53 g to 1.94 g.

These events are used as part of the operator's routine flight data monitoring program and are not to be considered as hard landings. According to the Operations Manual[3], Boeing has not defined any accelerometer values that the operator can use on its fleet in defining a hard landing and flight crew judgment is the only approved method for reporting a hard landing.

The evaluation of the results is ongoing.

10. Actions by the operator

As a proactive measure and in coordination with Boeing, the operator mandated a General Visual Inspection (GVI) on all B747-8F aircraft within its fleet, with focus on the following areas:

- Trunnion to shock strut junction area;
- Landing gear support beam attachment area;
- Wing rear spar attachment area.

Further to the GVI, a 360-degree Detailed Visual Inspection (DVI) was mandated by the operator utilizing a 10x magnifier around junction areas, fillet radii, and attachment lugs to verify the absence of cracks, corrosion, or other structural abnormalities.

[2] "Vertical G – largest" is defined by the operator as the most positive going value that was encountered (a single sample) from 1 to 3 g.
[3] Operations Manual Part B Volume 1, p. 3.2.5

Between 23 and 25 October 2026, the remaining fourteen B747-8F aircraft were inspected according to the trunnion inspection instructions put in place by the operator on 23 October 2026. The inspections were documented on a Non-Routine Task Card and resulted in one aircraft showing paint flaking on the outer cylinder of the LH WLG strut. The cause of the paint flaking is currently under review and corrective actions are being coordinated with Boeing.

11. Investigation status

The safety investigation is currently ongoing and in coordination with the NTSB, fractured and damaged LH WLG parts have been sent to the Boeing Equipment Quality and Analysis (EQA) Laboratory in Renton (Washington) for analysis, under the oversight of the NTSB. The examinations at the laboratory are expected to be performed either by mid-December 2026 or early 2027, depending on the availability of resources.

At the time of publication of this Preliminary Report, no safety recommendation had been issued.

An updated or final report is scheduled to be published no later than one year after the date of the occurrence.