BOEING 757-300, 4X-BAU	Gatwick Airport	03 October 2000	Serious Incident

Investigation Synopsis

Aircraft burst two tyres on landing.

Safety Recommendation 2002-013

Safety Recommendation 2002-013

It is recommended that BF Goodrich Aerospace comprehensively reassess their measures aimed at ensuring that aircraft wheel fusible plugs are correctly tightened and do not loosen in service, consider the need for positive locking of all plugs and valves and revise their requirements as necessary.

Date Safety Recommendation made: 17 June 2002

LATEST RESPONSE

Response received: 31 August 2011

Reference 2 requested the status of a recommendation to reassess measures aimed at ensuring fusible plugs are correctly tightened and do not loosen in service, consider the need for positive locking of all plugs and valves, and revise requirements as necessary.

Several measures currently exist to ensure plugs and valves are properly tightened and remain tight in service. First, torque valves for plugs and valves are specified in a single location in the Component Maintenance Manual, to prevent conflicting information in the manual and to provide operators with a clear discrete location for these types of installation instructions. Second, wheel and tire assemblies must undergo a tire pressure retention test before the wheel can be certified for service, providing an opportunity to identify incorrectly torqued components. Third, regular tire pressure checks required in the Aircraft Maintenance Manuals are carried out by operators allow for the discovery of slow pressure losses in service. Diagnostic procedures in the wheel CMMs allow for the source of the leak to be identified if due to the wheel. Last, service experience gathered by Goodrich on dozens of wheel assemblies does not suggest that positive locking features are required on these programs in service.

Safety Recommendation Status **Closed**

AAIB Assessment **Adequate**

RESPONSE HISTORY

N/A

Safety Recommendation 2002-014

Safety Recommendation 2002-014

It is recommended that Airworthiness Authorities such as the JAA and FAA consider implementing the measures outlined in AAIB Safety Recommendations 99-11 and 99-12 concerning requirements for tyre pressure monitoring and warning systems

Date Safety Recommendation made: 17 June 2002

LATEST RESPONSE

Response received: 03 March 2021

With amendment 14 of the certification specification CS-25 (effective on 20 December 2013, applicable to new certification projects of large aeroplanes), the European Union Aviation Safety Agency (EASA) introduced new certification specifications to upgrade the protection against the damaging effects of tyre and wheel failures.

After that, EASA initiated rulemaking task RMT.0586 to propose a regulatory change to better ensure that the inflation pressures of tyres of large aeroplanes remain within the pressure specifications defined by the aeroplane manufacturer.

The terms of reference and the rulemaking group composition wer published on 30 May 2017 on the EASA website: https://www.easa.europa.eu/document-library/terms-of-referenceand-group-compositions/tor-rmt0586

This safety recommendation has been taken into account in this rulemaking task. Notice of Proposed Amendment (NPA) 2020-05 ('Tyre pressure monitoring') was published for consultation on 6 March 2020: https://www.easa.europa.eu/document-library/notices-of-proposedamendment/npa-2020-05

Executive Director (ED) Decision 2020/024/R on amendment 26 of CS25 was published on 22 December 2020. https://www.easa.europa.eu/document-library/agency-decisions/eddecision-2020024r

This therefore applies to the certification of new large aeroplane designs.

A new objective based certification specification CS 25.733(f) has been created to require that the applicant provides a means to minimise the risk that a tyre is below its minimum serviceable inflation pressure during operation. The corresponding new acceptable means of compliance AMC 25.733(f) indicates how the applicant can demonstrate compliance.

These new provisions are not prescriptive and do not universally mandate the installation of a system indicating the tyre inflation pressures in the cockpit. The applicant should use one, or a combination, of the following means:

(a) Provide a task in the Instructions for Continued Airworthiness (ICA) that requires tyres inflation pressure checks to be performed at a suitable time interval,
(b) Install a system that monitors the tyres inflation pressures and:
(1) provides an alert to the flight crew, in compliance with CS 25.1322, whenever a tyre inflation pressure is below the minimum serviceable inflation pressure, or
(2) allows the tyres inflation pressures to be checked prior to the dispatch of the aeroplane, and a tyre inflation pressure check task is included in the Aeroplane Flight Manual (AFM) pre-flight procedures.

Concerning already certified large aeroplanes, EASA plans to issue an Opinion to the European Commission that intends to propose an amendment to Part-26 (Annex I) to Commission Regulation (EU) 2015/640 to require operators of large aeroplanes to minimise the risk that a tyre is below its minimum serviceable inflation pressure during operation. Certification specifications to comply with this requirement is also planned to be adopted by EASA in an amendment to CS-to26. Flexibility would be provided to the operators who may choose to include a task in the aeroplane maintenance programme (AMP) to perform tyre inflation pressure checks at a suitable time interval, and/or install a system that monitors the tyres inflation pressures. The Opinion is scheduled for publication during Q3 2021.

Safety Recommendation Status	**Closed**
AAIB Assessment	**Adequate**
Action Status	**Planned Action Completed**

RESPONSE HISTORY

Response received: 22 June 2020

With amendment 14 of CS-25 (Certification specifications and acceptable means of compliance for large aeroplanes) (effective as of 20 December 2013, applicable to new certification projects of large aeroplanes), the European Union Aviation Safety Agency (EASA) introduced new certification specifications to upgrade protection against the damaging effects of tyre and wheel failures.

After that, EASA initiated rulemaking task RMT.0586 to propose a regulatory change to better ensure that the inflation pressures of tyres of large aeroplanes remain within the pressure specifications defined by the aeroplane manufacturer.

The terms of reference and the rulemaking group composition were published on 30 May 2017 on the EASA website:https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt058

This safety recommendation has been taken into account in this rulemaking task. Notice of Proposed Amendment (NPA) 2020-05 (‘Tyre pressure monitoring’) was published for consultation on 6 March 2020:

https://www.easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2020-05

This NPA proposes to amend CS-25 to require applicants to provide a means to ensure that no tyre is below its minimum serviceable inflation pressure during operation. This can be achieved either by providing a task in the instructions for continued airworthiness (ICA) that requires operators to perform tyre pressure checks at a suitable time interval (i.e. daily or at another substantiated interval), or by installing a tyre pressure monitoring system that alerts the flight crew in the case of a tyre with an unsafe pressure. It also proposes to amend Annex I (Part-26) to Commission Regulation (EU) 2015/640) and CS-26 (Certification specifications and guidance material for additional airworthiness specifications for operations) to require the same objective to be implemented by operators of large aeroplanes, i.e. either by including in the aeroplane maintenance programme (AMP) tyre inflation pressure checks at a suitable time interval, or by installing a tyre pressure monitoring system. The related EASA Decision and Opinion are scheduled for Q1/2021.

AAIB Assessment – Adequate Closed

Response received: 14 July 2017

With the amendment 14 of CS-25 (effective on 20 December 2013, applicable to new certification projects of large aeroplanes), the Agency introduced new certification specifications to upgrade the protection against the damaging effects of tyre and wheel failures.

However, the Agency has initiated a new rulemaking task, RMT.0586, to propose a regulatory change to better ensure that the inflation pressures of tyres of large aeroplanes remain within the pressure specifications defined by the aeroplane manufacturer.

The terms of reference and the rulemaking group composition were published on 30 May 2017 on the EASA Website:https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0586

Mandating the installation of a tyre pressure monitoring system is one of the elements to be considered among the objectives of RMT.0586.

The next step of RMT.0586 is the publication of a Notice of Proposed Amendment (NPA) which is envisaged during 03Q2018.

AAIB Assessment – Open