


EASA	AIRWORTHINESS DIRECTIVE	
	<p>AD No.: 2011-0098</p> <p>Date: 02 June 2011</p> <p>Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.</p>	
<p>This AD is issued in accordance with EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].</p>		
<p>Type Approval Holder's Name :</p> <p>Airbus</p> <p>The Boeing Company</p> <p>Fokker Services</p>	<p>Type/Model designation(s) :</p> <p>A300, A310, A318, A319, A320, A321, A330 and A340 aeroplanes</p> <p>717, 737, 747, 757, 767, 777 , MD-11, DC-9, MD-88 and MD-90 aeroplanes</p> <p>F27 aeroplanes</p>	
<p>TCDS Numbers : DGAC France 145, EASA.A.004, EASA.A.015, EASA.A.064, EASA.IM.A.003, EASA.IM.A.035, EASA.IM.A.120, EASA.IM.A.196, EASA.IM.A.211, FAA A6WE, FAA A2NM, FAA A22WE and EASA.A.036</p>		
<p>Foreign AD : None</p>		
<p>Supersedure : None</p>		
ATA 25	Equipment & Furnishings – Passenger Seat – Replacement	
<p>Manufacturer(s):</p>	<p>Airbus (formerly Airbus Industrie), The Boeing Company (for DC-9, MD-11, MD-88 and MD-90 Series, formerly McDonnell Douglas Corporation), Fokker Services.</p>	
<p>Applicability:</p>	<p>This AD applies to the following aeroplane types and models, all serial numbers:</p> <p>Airbus A310 and A300-600, all certified models;</p> <p>Airbus A318, models -111, -112, -121 and -122,</p> <p>Airbus A319, models -111, -112, -113, -114, -115, -131, -132 and -133,</p> <p>Airbus A320, models -111, -211, -212, -214, -215, -216, -231, -232 and -233,</p> <p>Airbus A321, models -111, -112, -131, -211, -212, -213, -231 and -232;</p> <p>Airbus A330, models -201, -202, -203, -223, -243, -301, -302, -303, -321, -322, -323, -341, -342 and -343;</p> <p>Airbus A340, models -211, -212, -213, -311, -312, -313, -541, -542, -642 and -643;</p>	

	<p>Boeing 717-200 Series;</p> <p>Boeing 737-100, -200, -200C, -300, -400, -500, -600, -700, -700C, -800, -900 and -900ER Series;</p> <p>Boeing 747-100, -100B, -100B SUD, -200B, -200C, -300, -400, -400D, -400F SR, and SP Series;</p> <p>Boeing 757 200, -200CB, and -300 Series;</p> <p>Boeing 767-200, -300 and -400ER Series;</p> <p>Boeing 777-200; -200LR, -300, -300ER, and 777F Series;</p> <p>McDonnell Douglas MD-11 and MD-11F;</p> <p>McDonnell Douglas DC-9 Series, MD-88 and MD-90-30;</p> <p>Fokker F27 Marks 100, 200, 300, 400, 500, 600, 700, 050, 0502, and 0604, if equipped with any passenger seats manufactured by Koito Industries, including all seats modified by third party after the initial delivery, unless a complete certification programme to show that the seats and their installation fully comply with the appropriate certification basis is successfully conducted.</p>
Reason:	<p>The Japan Civil Aviation Bureau (JCAB) have informed EASA that a review of the safety of passenger seats manufactured by Koito industries has disclosed discrepancies which include falsification of static, dynamic and flammability testing, as well as uncontrolled changes to production data (material and dimensional). In addition, JCAB confirmed that Koito records, showing evidence of falsification, could not be deemed complete.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • Fictitious dynamic test pulse plots inserted into test reports following failure to meet required certification requirements. • Flammability test coupons not representative of production parts, for instance by use of alternative adhesive not specified on the approved drawing. • Fictitious deformation values entered in test reports when values exceeded the maximum allowed. <p>JCAB and EASA have concluded that all data (both design and manufacturing) generated by Koito must be treated as suspect.</p> <p>Results from tests performed by Koito with the supervision of JCAB confirmed that a high proportion of seat models failed the requirements for structural, flammability and occupant injury criteria.</p> <p>The level of falsification and the length of time over which the falsification occurred, in combination with the lack of retained records, prompted EASA to deem that all Koito Seats exhibit unsafe conditions of varying degrees.</p> <p>The exact level of airworthiness risk for each seat model can only be determined through further dynamic or static testing (as per the applicable certification basis) and flammability testing.</p> <p>This AD requires the affected seats to be replaced no later than 2 years after the effective date of this AD if no test is performed. However, completion of testing in accordance with the requirements of this AD may allow the seats to remain in service for a longer duration.</p> <p>Two of the involved airframe manufacturers, Airbus and Boeing, may be in a position to assist in complying with the requirements of this AD. This is because many of the seat models affected are similar among different operators, and data gathered to support one seat model may also be used to support other models. Airbus and Boeing have information to show which models are similar to each other, and should be able to assist operators.</p>

Effective Date:	01 August 2011
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless already accomplished:</p> <p>(1) Within 2 years after the effective date of this AD, for each affected passenger seat, perform one of the following three actions;</p> <p>(1.1) Successfully complete a full certification programme to show that the passenger seat and its installation comply with the appropriate certification basis. The certification programme plan and results must be presented to EASA for agreement. In addition it must be shown, through a process agreed by EASA, that each seat installed on an aeroplane is in conformance to the approved seat design. Following successful completion of the agreed programme, no further action is required, or</p> <p>(1.2) Remove the seat, or</p> <p>(1.3) Determine whether the seat is eligible to remain in service for a longer period in accordance with the relevant requirements of paragraphs (2) and (3) or (2) and (4) of this AD. The test/analysis plan and results, must be presented to EASA for agreement. If it has been demonstrated that the seat may remain in service for a longer period, at any time during that period the seat and its installation may be shown to fully comply with the appropriate certification basis, i.e. paragraph (1.1) above may still be followed.</p> <p>(2) Within 3 years after the effective date of this AD perform testing to determine whether the seat cushions (here defined as seat bottom and seat backrest, excluding head and leg rest cushions) comply with CS/JAR/FAR 25.853(c) (i.e. Appendix F Part II).</p> <p>(2.1) Remove Koito Industries seat cushions that are not shown to be compliant with the flammability testing defined by CS/JAR/FAR 25.853(c) (i.e. Appendix F Part II).</p> <p>Note 1: In order to account for unknown production non-conformities, test articles should be constructed from in-service cushions. The guidance in FAA AC 25.853-1 is applicable. It is also acceptable to test brand new test specimens, provided that it is shown that the in-service cushions consist of foams/ covers which were supplied to Koito and marked by a different production organisation approved by EASA and/or FAA. Test reports issued by any qualified design organisation acceptable to EASA, including Koito under JCAB supervision, will be acceptable. Any tests performed in the Koito seat cushion oil burner test facility before 23rd May 2011 are not acceptable. Replacement cushions for seats installed on aeroplanes required to meet CS/JAR/FAR 25.562 requirements (either by their original Certification Bases or Post TC Modifications) must have consistent seat bottom geometry, stiffness and density (measured according to accepted industry standards) as compared with the cushions they replace. However, compliance with CS/JAR/FAR 25.562(c)(2), i.e. lumbar load, does not need to be shown.</p>

(3) For aeroplanes required to meet CS/JAR/FAR 25.562 requirements (either by their original Certification Bases or Post TC Modifications) perform dynamic and/or static testing on passenger seats.

- (3.1) Within 10 years after the effective date of this AD remove Koito Industries passenger seats that have been shown to be compliant to CS/JAR/FAR 25.562(b)(2) and (c)(7),
or
- (3.2) Within 6 years after the effective date of this AD remove Koito Industries passenger seats that have been shown to be compliant to CS/JAR/FAR 25.561(b)(3)(ii) and (b)(3)(iii) but have not been shown to be compliant to CS/JAR/FAR 25.562(b)(2) and (c)(7),
or
- (3.3) Within 2 years after the effective date of this AD remove Koito Industries passenger seats for which:
- i) tests have neither been performed in accordance with CS/JAR/FAR 25.561(b)(3)(ii) and (b)(3)(iii), nor CS/JAR/FAR 25.562(b)(2) and (c)(7),
or
 - ii) tests in accordance with CS/JAR/FAR 25.561(b)(3)(ii) and (b)(3)(iii) and have been performed but failed,
or
 - iii) tests in accordance with CS/JAR/FAR 25.561(b)(3)(ii) and (b)(3)(iii) have not been performed but tests in accordance with CS/JAR/FAR 25.562(b)(2) and (c)(7) have been performed and have failed.

Note 2: With regards to the load factors to be applied when testing to the CS/JAR/FAR 25.561 paragraphs specified above, it is acceptable to consider the airworthiness code amendment included in the original certification basis of the aeroplane or that used for the approval of the Koito Industries seat installation, as appropriate.

The use of an EASA Part 21 DOA holder to develop and conduct the test programme (in accordance with their procedures, including the control and oversight of the test facility) will facilitate the EASA approval process.

The use of a new build test article is acceptable for static testing. However, in order to account for unknown production non-conformities, test articles for dynamic testing must be seats removed from service or spare seats delivered at the same time as the aeroplane shipset.

For test articles consisting of a seat from the fleet (or from spares), conformity checks should confirm aspects such as matching the seat part number to that noted in the test plan, of noting the general condition of the seat, of noting revisions/modifications that have been made to the seat (typically noted on modification placards), and of verifying the date of manufacture.

It is not required to test all in-service seat part numbers. The use of similarity is acceptable to show that the results obtained from a chosen test article are valid for other seat part numbers. Koito interface loads reports/test plans/drawings may be used as input data for the similarity analysis. The similarity methodology does not necessarily need to follow standard practice, i.e. all guidelines in FAA AC 25.562-1B, however, the methodology must be agreed with the Agency.

The generation of sharp edges or injurious surfaces during the structural testing performed to comply with this AD may also be considered failure criteria. Therefore test results must include full recording of any post-test sharp edges and injurious surfaces.

- (4) For aeroplanes NOT required to meet any CS/JAR/FAR 25.562 requirements (either by their original Certification Bases or Post TC Modifications) perform static testing on passenger seats.

- (4.1) Within 10 years after the effective date of this AD remove Koito Industries passenger seats that have been shown to be compliant to CS/JAR/FAR 25.561(b)(3)(ii) and (b)(3)(iii),
or
(4.2) Within 2 years after the effective date of this AD remove Koito Industries passenger seats that are not shown to be compliant to CS/JAR/FAR 25.561(b)(3)(ii) and (b)(3)(iii).

Note 3: With regards to the load factors to be applied when testing to the CS/JAR/FAR 25.561 paragraphs specified above, it is acceptable to consider the airworthiness code amendment included in the original certification basis of the aeroplane or that used for the approval of the Koito Industries seat installation, as appropriate.

The use of an EASA Part 21 DOA holder to develop and conduct the test programme (in accordance with their procedures, including the control and oversight of the test facility) will facilitate the EASA approval process.

The use of a new build test article is acceptable for static testing.

However, if a test article consisting of a seat from the fleet (or from spares) is used, conformity checks should confirm aspects such as matching the seat part number to that noted in the test plan, of noting the general condition of the seat, of noting revisions/modifications that have been made to the seat (typically noted on modification placards), and of verifying the date of manufacture.

It is not required to test all in-service seat part numbers. The use of similarity is acceptable to show that the results obtained from a chosen test article are valid for other seat part numbers. Koito Interface Loads Reports/test plans/drawings may be used as input data for the similarity analysis. The similarity methodology must be agreed with EASA.

The generation of sharp edges or injurious surfaces during the structural testing performed to comply with this AD may also be considered failure criteria. Therefore test results must include full recording of any post-test sharp edges and injurious surfaces.

- (5) After the effective date of this AD, do not install any Koito Industries passenger seat or seat component on any aeroplane, unless in compliance with the requirements of this AD.
Koito Industries passenger seats that successfully complete the relevant requirements of paragraphs (3) or (4) of this AD are permitted to remain in service for the defined length of time but are limited in how they can be used as follows:

	<p>i) They may remain installed on the aeroplane;</p> <p>ii) New seats/components and seats/components removed from service may be installed as direct spares for the same part number seats or components;</p> <p>iii) Re-arrangement of the existing installed seats is acceptable following the same installation instructions and limitations as the original certification (e.g., if the original limitations allowed 32" to 34" pitch, the new layout shall be pitched within that range);</p> <p>Any other use, including installation on aeroplanes that do not have Koito seats installed on the effective date of this AD, would be considered a new installation approval and must comply with all regulations.</p> <p>(6) Design Changes to Seats Wear-out component replacement parts such as food trays, arm rest covers, and other non-structural members may be approved by minor modification and installed on seats affected by this AD, until the compliance time as specified in this AD.</p> <p>Any other category of change (e.g. In-Flight Entertainment upgrade) must be discussed with EASA.</p>
Ref. Publications:	None
Remarks:	<ol style="list-style-type: none"> 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. This AD was posted on 22 September 2010 as PAD 10-101 for consultation until 17 November 2010. The Comment Response Document can be found at http://ad.easa.europa.eu/. 3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail ADs@easa.europa.eu. 4. For any question concerning the technical content of the requirements in this AD, please contact: <ul style="list-style-type: none"> AIRBUS SAS – Airworthiness Office – Fax +33 5 61 93 44 51, E-mail: account.airworth-eas@airbus.com; airworthiness.A330-A340@airbus.com ; account.airworth-A380@airbus.com. Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; E-mail: me.boecom@boeing.com ; Internet https://www.myboeingfleet.com. Fokker Services B.V., Technical Services Dept., P.O. Box 231, 2150 AE Nieuw-Vennep, The Netherlands; telephone (31) 252-627-350; facsimile (31) 252-627-211; E-mail: technicalservices.fokkerservices@fokker.com.