

**EASA PAD No. 07-171**  
**COMMENT RESPONSE DOCUMENT**  
**[officially closed for comments on 05 November 2007]**

PAD / DOC PARAGRAPH COMMENTED	COMMENT / PROPOSAL	AUTHOR OF THE COMMENT	DATE OF COMMENT	PCM RESPONSE
Compliance	Kindly clarify compliance statement (1) "Within 30 days or 1000 Flight Cycles, whichever occurs later after 26 May 2006 ....." If We refer to AD F-2004-075 and F-2004-076, the [effective] date is 26 May 2004.	Jeni Juniawan Qatar Airways	9/10/2007	Agreed; typographical error to be corrected in Final AD.
General	<p>Following documents had been issued on subject matter, may be some missing here.</p> <ul style="list-style-type: none"> <li>a) TFU: 32.21.11.014, revised 24 times</li> <li>b) MESSIER DOWTY VSB 470-32-708</li> <li>c) MESSIER DOWTY VSB 470-32-709</li> <li>d) OIT 999.0102/03/CL</li> <li>e) Airbus All Operator Telex (AOT) A300-32A6093</li> <li>f) Airbus All Operator Telex (AOT) A310-32A2132</li> <li>g) Airbus All Operator Telex (AOT) A300-32A9009,</li> <li>h) AIRWORTHINESS DIRECTIVE F-2004-075,</li> <li>i) MESSIER DOWTY VSB 470-32-805)</li> <li>j) Airbus All Operator Telex (AOT) A300-32A0447</li> <li>k) AIRBUS Service Bulletin A310-32-2132 R 01-Jun 01/07</li> <li>l) AIRBUS Service Bulletin A310-32-2135</li> <li>m) MESSIER DOWTY VSB can't470-32-813).</li> </ul> <p>None of the above documents, including PAD No.: 07-171 can provide the (root) causes of this failure as well as a single and convenient solution. Moreover, [is] this:</p> <ul style="list-style-type: none"> <li>a) Due to material failure</li> <li>b) Due to design failure</li> <li>c) Poor maintenance</li> <li>d) Due operation which Relates to quick manoeuvring of the aircraft?</li> </ul> <p>Below mentioned are the details, which I can understand on my experience.</p> <p>1. It is kindly requested to please further investigate the causes for the malfunction of bolts and invite the operators for inputs regarding</p>	Farrukh Naeem Pakistan International Airlines	17/10/2007	<p>The Reason section of the AD has been amended in order to identify the root cause having driven to the events.</p> <p>Initially induced by a improper maintenance action (over-torque), the investigation has revealed that the design of the shock absorber was not tolerant to over-torque and needed a dedicated inspection task.</p> <p>Indeed, over-torque creates loss of bolt material characteristics making the bolt weaker until its failure.</p> <p>Please find hereafter answers to the points raised :</p> <p>1. Extensive analysis have been conducted and have demonstrated the root causes of the bolts failure: over-torque generating the failure of the bolt threads or bolt pre-tension loss that can lead to a premature fatigue failure.</p>

	<p>the same.</p> <p>2. Emphasize should be given on inspection of end fitting, Barrel and fixed rod during installation of new bolt in accordance with SB A310-32-2132 R1 &amp; there may be chances improper inspection during last overhaul.</p> <p>3. Due to play at torsion links (major industry problem) and vibration during landing &amp; take off role, the entire shock absorber can distribute the excessive loads to these bolts especially when cams are engaged. The inspection of torsion link axial play is required to be done as per AMM and special washers should be installed as per AMM requirements.</p> <p>4. The NLG creaking noises is also the repeated snag, which make the steering harder along with the rotating tube and sliding rod. The compliance is required for the SB 470-32-803</p> <p>5. There are no instructions available in AIRBUS Service Bulletin A310-32-2132 Revision No. 01-Jun 01/07, Airbus All Operator Telex (AOT) A300-32A0447 &amp; VSB 470-32-805 &amp; AD F-2004-075 for the application of corrosion inhibitor to bolts &amp; end fitting. An improved corrosion inhibitor is required to be introduced to minimize the corrosion.</p> <p>6. The main concern of the issue, to reduce the electrochemical action, the washer can be introduced with a material with lesser potential difference, between the shock absorber fixed rod and end fitting. The mating faces of absorber fixed rod and end fitting have been found corroded at inspection during overhaul.</p> <p>7. The NLG Barrel &amp; End fitting both requires to be reworked, during overhaul concerning the 4 holes for bolt installation, with bushings which might be skipped due to small holes. The care should be taken for the post primer application for these locations as per CMM.</p> <p>8. The report to Airbus should include the above mentioned so that a proper analysis can be obtained.</p> <p>So far PIA concern, we are observing the A310 NLG to convene the requirements of referenced AOT &amp; OIT. We have not found any abnormality on any NLG. Furthermore two NLG was removed in Aug 2006 &amp; Feb 2007 from MSN 587 &amp; 585 respectively for overhaul and there was no pitting/damage observed on the attachment bolt. However pitting observed at the mating faces of fixed rod and end fitting.</p>			<p>2. As far as the bolts are in place, no risk of other parts damage is contemplated.</p> <p>3. The qualification tests and especially fatigue tests conducted on the NLG take into account a vibration spectrum that is representative of the conditions encountered during taxi.</p> <p>4. Creaking noise is not linked to the bolts issue.</p> <p>5. &amp; 6. Corrosion is not at the origin of the defect. No need for improvement on this point has been identified. If an abnormal corrosion is found during maintenance, it can be reported to Airbus Customer Support. As per Airbus maintenance (AMM 32-21-00 PB601), sealant (Material n°09-001) has to be smeared.</p> <p>7. As far as we can understand the contents of this point, it seems out of context regarding the subject PAD, or at least won't question the intent of the PAD.</p> <p>8. This airworthiness issue is considered as understood and addressed.</p>
Compliance	<p>We are missing in the compliance section of PAD 07-171 the general information that the accomplishment of SB A300-32-6099 will cancel the repetitive inspection requirements according AOT 32-6093 and SB 32-6093 and also that the accomplishment of SB A310-32-2135 will cancel the repetitive inspection requirements according AOT 32-2132</p>	Mustafa Akkaya Lufthansa Technik AG	27/10/2007	<p>Agreed, and the Final AD will amended consequently. The AD compliance section will highlight the connections between the accomplishment of SBs (A300-</p>

	and SB 32-2132. These SBs are mentioned in the applicability section of PAD, but not highlights these connections.			32-00453, A300-32-6099, A310-32-2135 and A300-32-9016) and the cancellation of the inspection requirements. This point is included as a Note (Note 2) because the Applicability section (already) excluded the aircraft modified by these SBs.
Compliance	<p>We submit the following suggestions, provided by ATA member American Airlines, which relate to EASA Proposed Airworthiness Directive 07-171, dated October 8, 2007:</p> <ul style="list-style-type: none"> <li>• The proposed rule requires that a report be submitted to Airbus within 7 days after each inspection that results in re-torque or replacement of bolt(s).</li> <li>• This report provides Airbus with statistical information, but does not enhance safety.</li> <li>• The proposed reporting timeframe presents an excessive administrative burden.</li> <li>• We request that the reporting timeframe be revised to 30 days.</li> </ul> <p>Please see the attached letter [quoted below] for complete details.</p>	Fabian Craig ATA	5/11/2007	Regarding the safety enhancement, EASA, after having required an overview of fleet in order to address a potential unsafe condition (by AOTs), has decided to refine the action plan in order to recover an acceptable level of safety. Confident in this new action plan, which is relatively light to put in place by the operator, EASA will expect data to decide if there is a need to adapt the current mandated measures. However, EASA has no objection in extending the reporting delay to 30 days, taking consideration of the timeframe (threshold and interval) required. The PAD will be amended accordingly.
Compliance	<p>References:</p> <ol style="list-style-type: none"> <li>1. AIRBUS AOT A300-32A0447 original issue</li> <li>2. AIRBUS AOT A310-32A2132 original issue</li> <li>3. AIRBUS AOT A300-32A6093 original issue</li> <li>4. AIRBUS AOT A300-32A9009 original issue</li> <li>5. AIRBUS Inspection Service Bulletin A300-32-0447 revision 1 or later approved revision</li> <li>6. AIRBUS Inspection Service Bulletin A310-32-2132revision 1 or later approved revision</li> <li>7. AIRBUS Inspection Service Bulletin A300-32-6093 revision 1 or later approved revision</li> <li>8. AIRBUS Inspection Service Bulletin A300-32-9009 revision 1 or later approved revision</li> </ol>	H.A. Demarest American Airlines	19/10/2007	See above answer.

	<p>The subject proposed AD would require a torque check of the NLG shock absorber-to-main barrel attachment bolts within 30 months or 3200 cycles from the effective date of the AD, whichever occurs first. In case of bolt(s) not compliant with the drawing torque requirement, this rule requires operators to either retighten the bolts or replace the bolts. The proposed AD requires that repetitive inspections be accomplished at intervals of 30 months or 3200 cycles, which ever occurs first. The proposed rule also requires that within 7 days after each inspection that results in re-torque or replacement of bolt(s), a report be submitted to AIRBUS, using Appendix 01 of ref (5), (6), (7), or (8) as applicable.</p> <p>The purpose of reporting inspection findings to Airbus is for statistical data gathering and does not require the return of a disposition to release the aircraft for service. The seven day requirement is therefore arbitrary. No useful purpose with regard to safety is gained by imposing a regulatory mandate of the reporting time period. The final rule should mandate only those steps necessary to ensure an adequate measure of safety. Reporting, or lack there of would become an administrative burden subject to unnecessary regulatory oversight. Accordingly, American Airlines request that the timeframe for reporting the inspection results be revised to 30 days.</p>			
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