

EASA PAD No. 06 – 146 / 06 - 147
COMMENT RESPONSE DOCUMENT

PAD / DOC PARAGRAPH COMMENTED	COMMENT / PROPOSAL	AUTHOR OF THE COMMENT	DATE OF COMMENT	PCM RESPONSE
Compliance	<p>Please find hereafter the AFR comments about the PAD 06-147 and 06-146 regarding the A330/A340 MLG Retraction Actuator Modification (Chapter 6).</p> <p>Be informed that the MLG retraction Actuator retrofit has been launched since December 2004 on A330/A340 AFR fleet in accordance with SB A330-32-3180 and A340-32-4222, but unfortunately due to the technical difficulties (defect on cylinder), the logistical difficulties (spare provisioning of some parts from Messier-Dowty) and the industrial difficulties (retrofit process - average TAT between 15 and 20 weeks) encountered by Sumitomo (Sub-contractor of Messier-Dowty for this retrofit), the retrofit on AFR fleet has been significantly delayed. Today only 30% of AFR fleet has been modified and 48 MLG retraction actuator have to be retrofitted in accordance with the VSB A33/34-32-227.</p> <p>Consequently and due to the difficulties recorded for this retrofit by Sumitomo (Retrofit process) and Messier-Dowty (lack of spare parts) , AFR request that the mandatory target date be extended integrating the technical, logistical, industrial parameters for the accomplishment of this Retrofit. If Sumitomo, Messier-Dowty and Airbus confirm that all problems (Retrofit process, lack of spare parts) have been solved an extension of minimum 12 months will be necessary for a full accomplishment of MLG retraction actuator retrofit on A330/A340 AFR fleet.</p> <p>Be also informed that the retraction actuator modified by VSB 227 are</p>	<p>D.LEPERE</p> <p>Landing Gear Systems A330/A340 Engineering</p> <p>Air France</p>	15/06/2006	<p>Considering that the inspections in place allow safe operation of the parts, EASA agrees to postpone the retrofit compliance time for piston rod to end of 2007.</p> <p>The MLG retraction actuator piston rod P/N 114256328 is currently limited in the A330/A340 ALS Part 1 revisions 00 to 8080 landings since the initial entry into service of the part.</p> <p>The 10 Years/20000 FC interval applies to the MLG restoration maintenance task, which is independent from the life limitation of the Safe Life ALI.</p>

	delivered by Sumitomo with the Status "REPAIRED/MODIFIED". Nevertheless and according to the VSB A33/34-32-244 recently issued the Retraction actuator will have to be restored within 10Years/20000Fc. Consequently in this condition the retraction actuator post retrofit which reached this threshold will have to be removed for restoration. Could you confirm the AFR analysis and if not confirm could you quickly clarify the maintenance policy requirement on the MLG retraction post retrofit.			Depending on the aircraft utilization and whether an improvement of the life limitation for the P/N 114256328 is possible or not, it may be necessary to remove the MLG retraction actuator twice before the MLG retraction actuator shop restoration.
Compliance	<p>In our department recently raised a question to paragraph 6 Note 9 of PAD: 06-146 and 06-147 and the requirement of re-identification of retraction actuator acc. SB A340-32-4222/ - 3180 to cancel the inspection requirements of these ADs. Previous inspection requirements issued by authorities (CN: F-2005-098 and F-2005-099) referred to Piston Rod P/N 114256309 and 1142563231 but not to P/Ns of retraction actuators.</p> <p>From our point of view the reason for inspection and modification of the MLG retraction actuator is only caused by complaints of the piston rod and should not refer to an actuator P/N but to piston rod P/N as before. Also we want to please you to consider that the time to completion date of modification (30 April 2007) seems to be very short, due to the delivery performance of Messier-Dowty Ltd.</p>	<p>Dennis Fröhlich</p> <p>Aircraft Systems Engineering</p> <p>Lufthansa Technik AG</p>	07/07/2006	<p>Re-identification of retraction actuator with embodiment of new piston rod is necessary for parts management at LRU level as referred to in maintenance program.</p> <p>See previous answer for Compliance time modification.</p>
Compliance	<p>I am writing to you in relation to the PAD's 06-146 and 06-147 concerning the A330/A340 Main Landing Gear Retraction Actuator Piston Rod.</p> <p>Cathay Pacific and Dragonair operate a combined fleet of 56 A330/A340-300 aircraft. Therefore there are 112 actuators in the fleet. At the moment there are 56 piston rods PN 114256321 ISS 6 installed on the CPA fleet, and these are affected by the AD. The remaining 56 actuators are fitted with PN 114256328 (not affected by the AD).</p> <p>By mid 2005, Cathay Pacific had replaced all of the actuators with PN 114256321 ISS 3 piston rods on the fleet, and all of the PN 114256321</p>	<p>Martin Downey</p> <p>Technical Services Engineer – Airbus Fleet</p> <p>Cathay Pacific Airways Ltd.</p>	12/07/2006	<p>Answer to 1: See first comment for compliance time modification.</p> <p>Answer to 2 & 3: Note 2 in AD gives reference to iss. 6 rods sampling. EASA is currently working with A/C manufacturer to alleviate restrictions (inspections and modification) for these parts. Once sampling evidence will be officially</p>

	<p>ISS 6 piston rods were less than 3 years old (the ISS 6 piston rod entered service at CPA in Sept 2003). The majority of the PN 114256321 ISS 6 piston rods in our fleet were fitted as replacements required by the 8080LDG Fatigue Limit (ref ALS 1).</p> <p>At the point that all the PN 114256321 ISS 3 piston rods were removed from our fleet, Messier-Dowty (supported by Airbus) told us that there would be a programme to extend the inspection threshold from 3 years to 5 years and potentially to 10 years for PN 114256321 ISS 6 piston rods.</p> <p>The programme to replace those remaining actuators fitted with PN 114256321 ISS 6 piston rods was put on hold, mostly because Messier-Dowty were concentrating on replacement of ISS3 rods over 3 years old at other operators.</p> <p>Cathay Pacific agreed to suspend the retrofit because Messier-Dowty had a high degree of confidence that the protective coatings on ISS 6 piston rods were adequate and the problems of internal corrosion would not occur.</p> <p>Cathay Pacific freely agreed to provide 2ea actuators to Messier-Dowty to support the sampling programme, and the actuators were provided in March/April 2006. These actuators were our oldest/highest FC actuators fitted with ISS 6 piston rods. We understand that another two operators were approached to support this programme (1ea per operator) but as of today, they have not removed the actuators for return for sampling.</p> <p>It is our understanding that the results of the sampling of the actuators provided by Cathay Pacific were very favourable, with no deterioration of the internal bore of the piston rod. It was indicated to us by Messier-Dowty as recently as June 2006 that there was a high degree of confidence that the threshold would be escalated.</p> <p>In terms of corrosive effect, Cathay Pacific operates in a hot humid tropical maritime environment, with comparatively high levels of atmospheric pollution. It is our experience that the conditions in Hong</p>			<p>presented by the Type Certificate holder (A/C manufacturer), then the AD content could be revised.</p>
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	<p>Kong and South East Asia generally are very conducive to moisture ingress and corrosion. Therefore the good condition of the sampled actuators is strongly indicative that the ISS 6 piston rod offers a very significant improvement over the ISS 3 piston rod.</p> <p>We are very concerned that there is no reference to any differentiation between the requirements for PN 114256321 ISS 3 and PN 114256321 ISS 6, because it has been demonstrated by sampling that there is an appreciable difference in the manufacturing quality and process, and consequently the piston rod PN 114256321 ISS 6 has greatly superior resistance to corrosion.</p> <p>Furthermore we are very concerned that EASA plans to mandate the terminating action (retrofit of PN 114256328 piston rods) before 30 April 2007:</p> <ul style="list-style-type: none"> - Logistically Messier-Dowty has advised that it will be virtually impossible to meet this schedule. - The PN 114256321 ISS 6 piston rod has been shown to be considerably improved compared with ISS 3. This has been demonstrated by the results from the sampling carried out by Messier-Dowty on the CPA fleet Note: All piston rods from SN A1200 onwards are ISS 6 - these items are tracked by SN due to the mandatory time limited item tracking requirements of ALS 1. - The retrofit timescale adds considerably to maintenance burden (assuming that spares are available). Given the compressed timescale for the retrofit, the majority of the actuators for removal will have to be done in a line maintenance environment rather than a hangar maintenance environment. This adds significantly to the burden and operational impact of the retrofit. <p>Therefore:</p> <p>Whereas, CPA welcomes the closing action being rendered mandatory, as it will alleviate the punitive inspection requirements on this part, and remove this unacceptable failure scenario;</p> <p>CPA requests EASA to:</p> <ol style="list-style-type: none"> 1. Consider the extension of the compliance date for the retrofit of the terminating action (introduction of PN 114256328 piston rod) to 18 months from the effective date of the revised AD. This will allow a 			
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	<p>reasonable time for the retrofit to take place, and allow the majority of the replacements to be performed during hangar maintenance.</p> <p>2. Consider to extend the inspection threshold for PN 114256321 ISS 6 piston rods, based on the favourable results of the sampling on the CPA A330 fleet.</p> <p>3. If a fleetwide extension of the threshold for PN 114256321 ISS 6 piston rods is not possible, we would like EASA to consider the issue of an AMOC applicable to the Cathay Pacific and Dragonair fleets to extend the inspection threshold to 5 years based on the sampling results on our fleet. I understand that Messier-Dowty will be able to provide a sampling report for the two actuators that were provided by CPA for sampling.</p> <p>We would like you to consider our position in the final rulemaking for this AD.</p>			
Compliance	<p>During implementation of the One-time ultrasonic NDT inspection according Para 4. of the referenced PAD I figured out that there is a difference of the inspection results in 4.2 and the Inspection Standards (Para 6) in MD SB A33/34-32-222 Appendix F. Messier Dowty gives a limit for this inspection between 7 and 9.5 on the Time Base for the Circumferential Inspection.</p> <p>The PAD gives limits between 5 and 7 in Time Base for the Longitudinal Inspection as well as Circumferential Inspection.</p> <p>I would appreciate a clarification within a short time which limit will be the one to follow, because we are already in state of implementation.</p>	<p>Dennis Fröhlich</p> <p>Lufthansa Technik AG Dept. FRA WE23 Aircraft Systems Engineering ATA 32 Landing Gear A330 / A340</p> <p>Phone: +49 (0) 69 696 94708 Fax: +49 (0) 69 696 89490 E-Mail: dennis- marco.froehlich @lht.dlh.de</p>		AD introduces a one-off NDT inspection consisting in a longitudinal and circumferential ultrasonic inspection. References to circumferential limits have been missed. Final AD will be corrected to reflect appropriate references for acceptable time base.

Compliance	<p>1. The compliance of paragraph 4. One-time ultrasonic NDT inspection at page 5, "At the latest when each concerned retraction actuator reaches the three years old in service usage" is still vague. It is very difficult for the operator to comply with it because the aircraft which have the applicable actuator piston rod 3 years in service should be inspected at the latest,i.e. before next day in our thought. In this regard, is it okay if KAL understands that Airbus still recommends to perform the inspection at a convenient opportunity either before or at the 3 years in service limit for the piston rods which have not yet accumulated 3 years in service?</p> <p>2. Paragraph 6. Modification compliance, 30 April 2007, is too tight to comply with it. KAL would like to propose that at least 2 years should be given for this modification. For your reference, KAL attached the status of KAL's MLG retraction actuator piston rods.</p> <p>3. The last thing is just to notify that there is a typo error at page2. Note 2 "Mean Landing Gear overhaul" is required to be changed to "Main Landing Gear Overhaul".</p>	Korean Airlines	12/05/2006	<p>1. The inspection must be performed without exceeding 3 years in service usage; it may be performed at a convenient maintenance opportunity before reaching 3 years in service usage. For Retraction Actuator which has 3 years in service or exceeded this threshold, a grace period is given in AD (compliance of paragraph 4)</p> <p>2. See first comment for compliance time modification</p> <p>3. Agreed, text will be corrected</p>
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