

EASA	COMMENT RESPONSE DOCUMENT
	EASA PAD No. 14-116 [Published on 16 July 2014 and officially closed for comments on 16 August 2014]

Commenter 1: HELOPS Srl – Graziano LUISI – 28.07.2014

Comment # 1

In reference to the PAD 14-116, [] confirm that the Rev.4 SB 44301-10-15 is still being processed by Goodrich.

The tool you need for the 'application of AD / PAD is still under construction by Goodrich. How should we respond to the 'application of this PAD?

EASA response: Noted.

Please see response to Comment #7.

Commenter 2: Cobham Aviation Services – Pete Scanlon – 28.07.2014

Comment # 2

1. The EASA PAD is more restrictive if we are to track hoist operating Cycles (1200), rather than Hoist Lifts (1600). - Q. Is this an error in the EASA PAD? Can Hoist lifts ever be “more than” than hoist cycles?
2. The EASA PAD and the AD 2013-0275 R1 states: Serviceable Goodrich Hoists: “A hoist having a P/N as listed in Table 1 of this AD, which has accumulated less than 24 months, or 1 200 hoist cycles / 1 600 hoist lifts since new, or since last overhaul” - Q. Please confirm that it is only the “Hoist Clutch Assy” the AD will be referring to, not the hoist assembly, and would the PAD read – A hoist clutch assembly (having a P/N as listed in Table 1 of this AD?), which has accumulated less than 24 months, or 1 200 hoist cycles / 1 600 hoist lifts since new, or since last overhaul.....
3. The EASA AD and EASA PAD introduce a reduced time between overhauls of the affected Hoists. - Q. Please confirm the overhaul period for the Hoist Assembly will remain the same. The Hoist Clutch Overhaul will be reduced to 24 months only.
4. Terminating action for the EASA AD - Q. Is there any proposed terminating action for the EASA AD.
5. Serviceable hoist in stock/storage - Q. If a hoist is installed from Overhaul (or Hoist Clutch Overhaul) fitted to an aircraft, then removed and placed into storage in a controlled environment, will the calendar time stop for the purposes of the Clutch Inspection/Overhaul? i.e. Calendar time only accumulates while hoist is installed on the aircraft for the purposes of the EASA AD requirements. We often have a hoist returned from Goodrich, that we installed to the aircraft only to ensure its serviceability. It then goes into storage until required. Also please note that transporting / shipping a hoist from Goodrich (USA) can sometimes take several days or

even weeks. If the calendar time starts from when Goodrich certify it as serviceable, days or weeks will be lost to its next “calendar due overhaul date”.

6. Q. Can the hoist load check be carried out without using the proposed “load cell” equipment ? i.e. use an external load.
7. Q. Ref required Actions –para 8. Can you define a “partial peel out” for those operators who do not any information to refer to?
8. Appendix 1 – table of defects – “if the load decreases from initial test result” - Q. Can the corrective actions be better defined instead of “contact the (S) TC holder”? Our experience has shown that we may have to wait several days before Goodrich contact us, once we have submitted a question to them. Why not state “return hoist to Goodrich” and in the Goodrich ASB include a RMA specifically for the hoist failing the AD requirements. The 24 month overhaul requirement can be communicated to Goodrich under normal procedures.

EASA response: Partially agreed.

1. The risk analysis developed for EASA AD 2013-0275 was time based and used the standard Goodrich/UTAS equivalency for cycles and lifts. During the commenting period it was highlighted that this equivalency was overly penalizing for high usage operators and the AD was issued with an equivalency based on actual fleet usage from the Type Certificate Holders (TCH) that are using cycles/lifts respectively. The different fleet usage between these TCH results in the numbers given in the final AD 2013-0275 which have been carried over in this PAD.

2. The focus of this AD is indeed the clutch assembly. The Final AD has been amended to clarify this. Please see also response to Comment #7.

3. Confirmed as per above.

4. Not at this time. This AD is still considered an interim action and further AD action may follow.

5. Calendar time is for now defined since last overhaul as ageing has not been dismissed as possible contributor to the incident. Please note however Comment #8 from Goodrich/UTAS “This provides the future opportunity to replace an overload clutch assembly in the field” proposal that would cut on shipping time. EASA ADs in general do not apply to non-installed equipment (i.e. in storage, on the shelf) but must be complied with before installation on an aircraft.

6. The “dead weight” or external load method is no longer part of this AD, however other tools than the Goodrich/UTAS Load Check Tool can be proposed to the Agency. Please see response to Comment #7.

7. “Partial peel out” will be defined in the Goodrich/UTAS and/or TCH Service Bulletins.

8. As the hoists are under the responsibility of the (S)TC holder as per Part 21 they should review the test results and dispose accordingly of the hoist/ inform the Agency.

Commenter 3: French National Gendarmerie Force – Major David Sempé – 04.08.2014

Comment # 3

In what concerns us, this PAD would be applicable only if :

- o The totality of our aircrafts are equipped with the tool before the AD is issued by EASA (15 EC135 + 15 EC145)

OR

- o The delays of application of the initial and repetitive tests are substantially extended (in that case we would need around 10 tools before the AD is issued by EASA)

EASA response: Noted.

Please see response to Comment #7.

Commenter 4: Sikorsky Aircraft Corp. – J. Philip Perschbacher – 08.08.2014

Comment # 4

Sikorsky supports EASA's efforts on the hoist slip clutch issue but has serious concerns with parts of the AD.

1. Paragraph (7) - Sikorsky supports a hoist operation limitation based on bank angle. This is most appropriately placed in the RFM; until that time a temporary cockpit placard is acceptable. Sikorsky does not support a pendulum angle limitation. This angle cannot be reliably measured nor controlled. This value is inherently part of the analysis that is done to determine the bank angle limitation.
2. Appendix 1 - Sikorsky objects to EASA's abdication of responsibility for the procedures of this appendix. EASA cannot, in the absence of a TCH SB, compel one. If the details of such a procedure are not currently known, the AD should be delayed until they are negotiated between the supplier, TCH, and the appropriate airworthiness authority(s).
3. Appendix 1 acceptable load range- Sikorsky believes this procedure is not appropriate (overly complicated and conservative) for aircraft operations and does not promote further safety. Sikorsky's requirement is a simple, acceptable slip load range: must slip no lower than x, must slip no higher than y, where y is greater than x. The current "within limits" proposal is an engineering test activity (to determine the reliability/variability of the load setting mechanism), not a plan for safe operation. The current proposal is burdensome for the operator in that it requires a specialized load measuring device (as opposed to a dead weight). Each operation would need to purchase such a device. It is not conceivable that enough devices can be made available to meet the needs of the SAR fleet within 30 days. This would have the unintended consequence of removing potentially lifesaving hoist equipment from service.

EASA response: Partially agreed.

1. A Rotorcraft Flight Manual Supplement (RFMS) revision is the preferred way to convey the information but a temporary placard is also offered as an acceptable mean in the current AD. Please see the response to Comment #7 regarding the pendulum angle. Other means, such as a combination of limitations on airspeed/radius of turn/cable length/etc., can also achieve the objective of limiting load factor on the hook but have been deemed more cumbersome and thus not included. RFMS that offer alternate approaches will however be considered by the Agency for compliance to this AD.

2. Responsibility of EASA is to mandate actions to be performed on an aircraft to restore an acceptable level of safety, when evidence shows that the safety level of this aircraft may otherwise be compromised (Refer to Commission Regulation (EU) No 748/2012). Assessment of the criticality of the unsafe condition and determination of the corresponding response time is not "negotiated between the supplier, TCH, and the appropriate airworthiness authority(s)".

Service Bulletins have been extensively discussed with Goodrich/UTAS and affected Type Certificate Holders, including Sikorsky, in a number of meetings in preparation of the PAD. Goodrich/UTAS ASB N° 44301-10-15 Revision N° 4 draft 10 forms the basis for the appendix of the PAD. The Agency has been now informed that Goodrich/UTAS wishes to introduce a new number ASB N° 44301-10-18 to supersede the existing bulletin rather than revise it. The Type Certificate Holders can adopt this ASB to build their Service Bulletins. Paragraph (4) of the PAD foresees the case of no Service Bulletin being released by the TCH.

3. As the root cause of the incident has not yet been determined this procedure has been developed by Goodrich/UTAS and the Type Certificate Holders to capture any large reduction in clutch holding capability. Please note that the thresholds have been relaxed since publication of the PAD (Response to

Comment #8). Sikorsky is welcome to propose an alternative method to achieve the same objective; however, no proposal has been received during the different meetings held in preparation of the PAD. Please see response to Comment #7 regarding the availability of tools as well as effect on SAR operations.

Commenter 5: RUAG Schweiz AG / RUAG Aviation – Stefan Bürki – 11.08.2014

Comment # 5

The Swiss Air Force and its maintenance organization RUAG Aviation would like to submit a feedback to EASA PAD No.: 14-116. With the explanations given in the attached letter [text copied below], we hope to illustrate the impact and our concerns. With EASA PAD No.: 14-116 the tight TBO of only two years seems to remain and that is why by end of 2015 several hundred worldwide used hoists will be due for overhaul and must be shipped to the OEM. Since Goodrich has not yet shown a plan on how to handle the enormous amount of hoist to be repaired/overhauled, we believe that during this time the Search & Rescue missions of the Swiss Air Force could be jeopardized. We hope that an alternative repair procedure as a field repair or for an approved I-Level shop can be established with final release of the AD.

[following copied from letter]

Swiss Air Force and its maintenance organization (RUAG Aviation) would like to express our concerns about the planned implementation of the EASA PAD 14-116. The Swiss Air Force is operating 20 EC135/635 built by Eurocopter Germany. Even though the operation is done under military approval, the civil technical and operational guidelines are followed. Up to now, especially flight safety concerning cases, which are covered by an EASA AD are followed without an exception.

Eighteen of twenty EC635 are equipped with hoist attachments. The affected Goodrich hoists are used frequently on these helicopters for search and rescue missions. Currently, the Swiss Air Force has 12 hoists in operation with PIN 44301-10-5 (Serial numbers 717,716,195,190,189,185,184,178,162,161,141,188). Besides the training of personal, the Swiss Air Force takes over missions from 3rd party organizations such as e.g. Search & Rescue missions from some of the Swiss EMS operators, law enforcement organizations etc. Therefore, the imposed restrictions and their consequences will have far-reaching and devastating impact on the mandate of the Swiss Air Force. Thus, we cannot accept the required actions and the limitations in EASA PAD No.: 14-116 in their current form.

Specially Search & Rescue missions, which can't be done by the local EMS operator are often urgent and decide about survival or loss of an injured person. At all-time, there is an Swiss Air Force helicopter ready to fulfil such missions within Switzerland, where a hoist with PIN 44301-10-5 is used.

Main concerns:

(1) EASA PAD No.: 14-116; Required Actions Page 2/5 (Item 1)

- Alert Service Bulletin ASB EC135-85A-058 specified an one-time inspection of the external mounted hoist i.a.w. the Goodrich Alert Service Bulletin 44301-10-15, which has been performed on the Swiss Air Force Fleet accordingly based on an established, alternative procedure on the hoist test bench. This alternative procedure was approved by Airbus Helicopter. When EASA AD No. 2013-0275R1 was published, the mandatory repetitive load check was done consequently according to this alternative procedure on the which test bench as well. Due to the fact that the Swiss Air Force operates their aircrafts in remote locations and the local personal is not trained and allowed to perform the load cycle test on site on the helicopter, this alternative means of testing on the test bench became even more important for the operation of the Swiss Air Force. With new AD and the Goodrich ASB No. 44301-10-15, Revision 4 to be published, the Swiss Air Force and its maintenance organization RUAG Aviation hope to be able to rely also in future on the alternative procedure on the test bench. RUAG Aviation holds an I-Level Goodrich repair approval for this type of hoist and does therefore have very good detail knowledge of these hoists. For more than 5 years, during annual inspection a complete load check is done on the test bench.

(2) EASA PAD No.: 14-116; Required Actions Page 3+4/5 (Item 5/8)

• Based on previous experiences with our allocated Goodrich hoist vendor in the USA, the average TAT for a hoist repair is at least 10-14 weeks. We believe, that with effectiveness of the decreased TBO to only 24 month the huge demand of hoists to be overhauled will further increases the TAT for a longer period in time. This situation will finally jeopardize allocated helicopter missions. By December 2015 most of the hoist's will be due together with most of the other - 1500 hoists from the worldwide operators. We clearly request a local or field solution, which provide the possibility to bring back unserviceable hoist to a service condition.

Suggested or acceptable measures:

- a. Usage of alternative means to verify the condition of the clutch such as a test bench procedure must be acceptable and available.
- b. Define maintenance actions to be able to change the unserviceable to serviceable condition at a repair shop with I-Level approval. This will allow RUAG Aviation to react fast and to support the customer within acceptable TAT and therefore help to fulfil the planned helicopter missions.

EASA response: Partially agreed.

(1) As long as the hoist cable has been previously conditioned and the bench includes means to actuate the hoist, the Agency has no objection to a bench test. Specific procedures must be approved by the TCH. A new draft of the Goodrich/UTAS ASB has been received by EASA with incorporation of this option.

(2) Please note Comment #8 from Goodrich/UTAS "This provides the future opportunity to replace an overload clutch assembly in the field" that would satisfy your need. It is understood that Goodrich/UTAS will also work with the Type Certificate Holders on developing their safety assessment to be submitted to EASA for review and possible extension of the current intervals.

Commenter 6: Sécurité Civile Aéroport Nîmes-Arles-Camargue-Cévennes – Bruno Dorny – 12.08.2014

Comment # 6 [translation into English of comments submitted by Mr. Jacquet d'Arras on 01.08.2014]

- 1 This PAD, in Appendix 1 introduces very short delays for the first requested inspection (30 days or 50 hoist cycles...): French Civil Security Helicopter Group (GHSC) has 35 aircrafts BK117C-2/EC145 operated on 23 different sites within France (with 3 sites overseas). The problem of the availability of the tools will be, at least, very difficult to solve. In fact, with a ratio of 5 cycles day, we will be impacted very soon, around 10 days after the final AD issue date. For us the delay for the first inspection should be highly increased and the availability of the tool(s) is very important.
- 2 For the same reasons as above, we will have a repetitive inspection (300 cycles) every two months, which is very short too.
- 3 Depending of the values found at each inspection we could have a reduced interval for the next inspection (by half if the measured value is between 100 and 200 lbs).
- 4 According to the enforcement and the acuteness of the "proposed" inspections in this PAD, can we expect the cancellation of the TBO actually fixed at 24 months or 1200 cycles, for our hoists ?
- 5 All the hoists recently sent for overhaul to GOODRICH/UTAS have been declared unserviceable regarding these clutch limitations. Introducing sharp values in the tests to be performed on our hoists let us think we will have a high level of non-conformity.

HOW UTAS WILL MANAGE THIS ?

Regarding our activity of rescue mission to the person, GHSC insists on the fact that the hoist is really essential in most of our interventions.

EASA response: Noted.

1. Please see response to Comment #7 on initial intervals and availability of tools.

2. Noted.

3. Noted. Please also see response to Comment #8 on relaxation of the thresholds.

4. Monitoring of the values measured in the field will indeed feed the safety analysis and possible modifications of the intervals.

5. Goodrich/UTAS states that the clutches of all hoists returned by Sécurité Civile for overhaul were within limits and the friction disks were only replaced as part of the normal overhaul process. Clarification has been requested to the Type Certificate Holder.

Please also note response to Comment #7 regarding the remit of EASA.

Commenter 7: Airbus Helicopters / AgustaWestland – Martin Lawall / Matteo Ragazzi – 13.08.2014

Comment # 7

Please [see below] the commenting on PAD 14-116 from Airbus Helicopters and AgustaWestland – [following text copied from submitted attachments]

References:

[1] EASA PAD 13-155, issued 04.10.2013

[2] EASA CRD of PAD No. 13-155

[3] EASA AD 2013-0275, issued 27.11.2013

[4] EASA PAD 14-116, issued 16.07.2014

Service Life Limit

The following chapter comments on the introduced service life limit of the rescue hoist.

Section (5) of currently published PAD 14-116 [4]:

“**Within 24 months, or 1 200 hoist operating cycles / 1 600 hoist lifts accumulated after 04 December 2013** [the effective date of EASA AD 2013-0275], or at the next scheduled hoist overhaul, whichever occurs first, and, thereafter, at intervals not to exceed 24 months, or 1 200 hoist operating cycles / 1 600 hoist lifts, whichever occurs first, **replace the hoist with a serviceable hoist, as defined in Table 2 of this AD.**”

To recall the complete context, the equivalent section of PAD 13-155 [1] and currently valid AD 2013-0275R1 [3] are shown.

Section (6) of PAD 13-155 [1]:

“Within 24 months, or 22 hoist operating hours, or 200 hoist lifts, whichever occurs first after the replacement as required by paragraph (4) or (5) of this AD, as applicable, and, thereafter, **at intervals not to exceed 24 months, or 22 hoist operating hours, or 200 hoist lifts, whichever occurs first, replace the hoist with a serviceable hoist.**”

Section (4) of AD 2013-0275R1 [3]:

“**Within 24 months, or 1 200 hoist cycles / 1 600 hoist lifts accumulated after the effective date of this AD**, or at the next scheduled hoist overhaul, whichever occurs

first, and, thereafter, at intervals not to exceed 24 months, or 1 200 hoist operating cycles / 1 600 hoist lifts, whichever occurs first, **replace the hoist with a serviceable hoist, as defined in Table 2 of this AD.**”

EASA statement on commenting of PAD 13-155 in regards of reduction of service life limit [2] – page 23:

“Assessment on need for service limit reduction The Agency does not agree that the proposed reduction of the service limit is not a safety supporting measure. At this time the **root cause of the incident that prompted the original AD is not known** and the hoist overhaul allows **a visual inspection of the clutch** and a **measurement of the clutch setting**, thus allowing **trending and detection of degradation**. The interval for the load check has been determined using GM 21.A.3 and further testing is required to demonstrate that clutch degradation can be captured timely by load check only. The interval for the clutch inspection will be reconsidered once the results of this testing are presented. Alternatively other means than an overhaul to achieve the above objectives can be presented to EASA for compliance with AD paragraph (4).”

Within the following subchapters, feedback on above referenced PAD commenting feedback is given, in order to update on the root cause investigation and its influence on the currently proposed measures in PAD 14-116.

1. root cause of the incident that prompted the original AD is not known

Significant efforts have been made to investigate in detail all potential root cause scenarios and to determine all potential root cause contributors.

Results have been presented and shared with authorities.

Main root cause contributors can be categorized in

- initial production related (e.g. overload clutch settling, compression of friction discs, ATP measurement accuracy)
- operational related (e.g. partial-peel)

Both main categories have been reviewed and protective measures have been discussed and agreed:

With the new revision 4 of UTAS ASB 44301-10-15, the following updated measures will be distributed:

- return of a hoist after detection of a partial peel
- keep latest filled oil to avoid potential slippage point variation
- measurement of actual overload clutch slippage point with dedicated tool (Field Load Check Tool - FLCT).

Especially the last mentioned point has a significant advantage in terms of protective measure. By measuring the actual overload clutch slipping point, compliance to the initial ATP requirement can be checked and a significantly increased safety margin can be achieved (for 600 lbs hoist: **max.** 1050 lbs dead weight is applied compared to **at least** 1275 lbs value with FLCT measurement is ensured).

2. visual inspection of the clutch

In the frame of investigations on returned hoists from service, further data has been gathered. It can be concluded that a visual inspection of a returned hoist / overload clutch does not allow to conclude about its condition just by a visual inspection.

In general the repetitive checking of the clutch slippage point combined with operational limitations (which also requests the return of a hoist after detection of a partial-peel) provide appropriate results.

3. a measurement of the clutch setting, trending and detection of degradation

Chapter 1 above has already listed the clutch slippage measurement by using the Field Load Check Tool. This fulfils the need expressed by PAD comment feedback for “measurement of the clutch setting” and “trending” which will be part of UTAS ASB 44301-10-15 (Revision 4).

“Degradation” has also been a major point of the root cause investigation and dedicated tests have been performed. The results show a good stability of the clutch in terms of degradation, but as the parameters of a partial slip are not recorded (cable peel-out length, cable speed etc.), it is concluded to remove hoists on which a partial peel is detected, from service. It is instead confirmed that environmental factors influence the clutch behaviour and the new proposed Service Bulletins address

properly this issue.

4. Additional considerations on this section

In addition to the above considerations three more supporting points need to be listed:

- The population subject to this AD has already been subjected to at least 2 load checks even though with a lower load. This means that the worst cases have been already filtered while the new methods and tools will guarantee a better monitoring of the rest of the population. As a matter of fact the initial check of the new bulletin and its repetition every 6 months guarantee a better control than a 2 years TBO.
- In both operational overload events reported in 3 months where the cable got tangled on a ship the clutch that had been subject to the original load checks, performed as required.
- The term “serviceable hoist” should be clarified. In fact, in the frame of this PAD, the proposed TBO of 24 months, 1200 cycles/ 1600 lifts does not pertain to the hoist itself but to the overload-clutch. Therefore it is recommended to associate aforementioned limits to the overload-clutch itself. This will help reduce TATs significantly as no complete overhaul on hoist-level will be required to render a hoist “serviceable” again.

Conclusion

Airbus Helicopters and AgustaWestland propose to remove the cycle based limitation in section (5) of PAD 14-116 [4], as the reason for return of hoist is not cycle number driven scenario. New protective measures (e.g. FLCT measurement, return of hoists after detection of a partial-peel) are introduced which address the determined contributing causes. If instead it is still EASA intention to retain the limitation in the new AD, the request is at least to extend it in order to allow the necessary logistic actions to take place in a compatible amount of time.

Hoist operation limitations

PAD states in Required Action (7):

(7) From 04 December 2013 (...), apply the following hoist operation limitations and inform all flight crew members and hoist operators accordingly :

Operation with extended cable and load on the hook:

- Maximum permissible bank angle in turn is 20°
- Warning: exceeding 15° of lateral pendulum angle / helicopter vertical axis can lead to clutch slippage

Installation of a placard with these limitations, in full view of the pilot(s) and hoist operator, is acceptable to comply with the requirement of paragraph 7) of this AD.

Status of recently certified Flight Manual:

New Goodrich hoist reference P/N with a similar clutch design has been EASA certified with the following content inside the Flight Manual Supplement.

Extract of EC225LP FLM:

Maximum bank angle in turn with cable not fully retracted 20°

WARNING

IN CASE OF SIGNIFICANT LOAD FACTOR ON THE HOOK OR ABNORMAL MANEUVER DURING HOIST OPERATION WHICH RESULTS ON A POTENTIAL OVERLOAD CLUTCH SLIPPAGE, PERFORM A HOIST MAINTENANCE IN ACCORDANCE WITH THE DOCUMENTATION BEFORE THE NEXT FLIGHT.

CAUTION

TO PREVENT SLIPPAGE OF THE HOIST CABLE DUE TO ACTIVATION OF THE OVERLOAD CLUTCH, ANY SIGNIFICANT LOAD FACTORS ON THE HOOK SHALL BE AVOIDED:

- MINIMIZE CABLE PENDULUM AND AVOID ABRUPT MANEUVERS AND RAPID TURNS.
- AT HIGH SPEEDS OF HOISTING, SUDDEN REVERSALS OF HOISTING DIRECTION OR SUDDEN STOPPING OF THE CABLE SHALL BE AVOIDED.

This, or any other new certified Flight Manual Supplement, should be considered as acceptable by the new AD, for both new and previously certified hoists.

Initial hoist load check/test

PAD states in Required Action (1):

(1) Within 30 days (...) accomplish an initial hoist load check/test in accordance with approved instructions from the helicopter manufacturer or from the hoist installation design approval holder (...)

(...)

Note 1: Goodrich ASB N° 44301-10-15 Revision N° 4 contains information pertaining to the subject addressed by this AD.

Problematic of the tool necessary to perform the test:

Goodrich ASB N° 44301-10-15 Revision N° 4 requests the use of a Load Check Tool to be supplied by Goodrich to the customers. The effective date of the AD and the time delay for performing this first check should take consideration of the availability of the tool for the customers. Otherwise there would be a high risk of grounding some aircrafts dedicated to SAR missions with a much more important general concern for safety. Risk associated to the cancelation of a mission dedicated to save people in distress would be much higher than the risk of slippage of a clutch.

EASA response: Partially agreed.

Service Life Limit

While the investigation has been able to identify a sensitivity of the clutch to production and operational factors, the root cause of the incident has not been determinedly identified and testing is ongoing. It is however agreed that measurement of the actual clutch slip point will be a marked improvement thus its introduction in this new AD. The investigation has also determined that the clutch exists in a large number of configurations and includes unknown and formally uncontrolled friction disk material. Testing has also shown that in disks having experienced a large number of slips, rapid degradation can occur. A contribution of wear out cannot be excluded at this stage of the investigation. For the above reasons the current calendar time and cycle/lift limitations are retained until a risk assessment is presented to EASA to justify a relaxation of the current requirements. It is expected that such analysis incorporates the planned introduction of conforming disks. It is accepted to apply the limits to the clutch only, while we note that no proposal has been received yet for a clutch replacement procedure.

Hoist operation limitations

It is understood that 15 degrees pendulum angle cannot at this time be measured by the hoist operator, hence the incorporation as a warning rather than a limit in the previous AD. EASA is still awaiting proposals that would allow recognition of having reached this angle. Alternate Rotorcraft Flight Manual Supplements, such as the one for the EC225LP, have already been accepted and others can be considered by the Agency.

Initial hoist load check/test

Goodrich/UTAS ASB N° 44301-10-15 Revision N° 4 draft, now superseded by 44301-10-18, does indeed refer to a specific Load Check Tool. The Type

Certificate Holders are however free to use any tool that is compatible with their hoist and can accurately measure the clutch slip point. Operators can have alternate tools approved under the AMOC process.

EASA notes that the Load Check Tool was already incorporated in Goodrich/UTAS ASB N° 44301-10-15 Revision N° 3, dated 19 November 2013. It was also communicated to the Type Certificate Holders at an earlier date and in subsequent meetings that actual measurement of the clutch slip point would be required in the next revision of the AD to replace the dead weight test. The Agency is thus concerned that a logistics plan is not yet in place. Taking into account the important role that the hoists serve, EASA has revised their GM21.A.3B(d)(4) analysis that was driving the initial compliance time to give partial credit to the current test, resulting in a 60 day compliance time after the effective date of this AD. The Final AD has been amended accordingly. Please note however that according to Article 1 of Regulation (EC) No 1108/2009 "2. This Regulation shall not apply to: (a) products, parts, appliances, personnel and organisations referred to in paragraph 1(a) and (b) while carrying out military, customs, police, search and rescue, firefighting, coastguard or similar activities or services." SAR missions are thus outside the remit of EASA.

Commenter 8: UTC Aerospace Systems – Nicholas Demogines – 14.08.2014

Comment # 8

The following comments are provided from UTC Aerospace Systems in response to the EASA PAD 14-116, dated 16 July 2014. The comments will be provided sequentially, following the sections outlined in the PAD.

Section: Required Action(s) and Compliance Time(s)

Item (5): "Within 24 months, or 1 200 hoist operating cycles or 600 hoist lifts accumulated after 04 December 2013 [the effective date of EASA AD 2013-02751. or at the next scheduled hoist overhaul, whichever occurs first, and, thereafter, at intervals not to exceed 24 months, or 1 200 hoist operating cycles or 600 hoist lifts, whichever occurs first, replace the hoist with a serviceable hoist, as defined in Table 2 of this AD."

UTAS overhaul and repair data, and Weibull analysis indicate overload clutch disc wearout is not a demonstrated failure mechanism when hoists are operated within defined requirements. UTAS position is that without a wearout condition, a one-time field inspection for slip force is appropriate to identify and remove any non-compliant overload clutches from the fleet.

Without a wearout condition, additional inspections or replacement of overload clutches provide no further benefit once the non-compliant overload clutches are removed. Although the one-time inspection is adequate to remove non-compliant overload clutches and bring the fleet within safety criteria, UTAS recommends a one-time overload clutch replacement within 50 months of AD effective date to provide the most current production standard of overload clutch assembly. Based on the UTAS safety assessment performed for this incident, evaluated against Loss of Aircraft Life and to the Transport Category criteria from FAA AC39.8, the proposed one time inspection and one time overhaul within 50 months is consistent with FAA AC39.8 safety criteria.

UTAS recommends item (5) delete specific AD requirements for periodic overhauls as these are defined in manufacture operating manuals.

UTAS recommends changing the AD wording to replace "serviceable hoist" with "serviceable hoist or serviceable overload clutch assembly". This provides the future opportunity to replace an overload clutch assembly in the field, resulting in a serviceable hoist.

UTAS recommends item (5) is restated as follows: "Within 50 months, or 2500 hoist Operating cycles / 3333 hoist lifts accumulated after AD effective date resulting from PAD 14-116. or at the next scheduled hoist overhaul. whichever occurs first, replace hoist with a serviceable hoist or replace overload clutch with a serviceable overload clutch assembly."

UTAS would appreciate the opportunity to further discuss these comments and review the most recent supporting technical data in person at EASA in Cologne

Germany on August 27 and 28, 2014.

EASA response: Partially agreed.

The Weibull analysis and MRO data provided so far to EASA do not allow us to exclude wear out as a contributing factor. MRO data shows that a relatively high number of hoists returned for overhaul exhibit clutch holding capability below the minimum threshold approved in the type design. The Weibull analysis presented to EASA in the meeting requested by Goodrich/UTAS on August 27 was based on un-validated assumptions and did not result in a safety level for loss of life consistent with the regulation. Additionally, since the clutch exists in a large number of configurations and includes unknown and formally uncontrolled friction disk material, EASA cannot accept the above conclusions without further demonstration.

It is understood that Goodrich/UTAS will work with the Type Certificate Holders on developing their safety assessment to be submitted to EASA for review and possible extension of the current intervals.

EASA agrees to refer to “serviceable overload clutch assembly” to allow replacement of an overload clutch assembly in the field, while noting that such a procedure has not yet been proposed. The Final AD has been modified accordingly.

EASA also notes that the ASB intended for release differs from the draft presented in June and attached in appendix of the PAD. The supporting documentation for relaxation of the threshold values of Table 3 has been reviewed and accepted for this AD, while further testing will be necessary to determine the extent of possible variations in clutch holding capacity.

Commenter 9: UNI-FLY A/S – Hans Skov Hermansen – 15.08.2014

Comment # 9

With regard to the PAD No.: 14-116 our company have considerable concerns over the TBO set forth as Required Action (5).

Viewed in the light of the proposed intervals for hoist load checks/tests it appears as an overly cautious requirement also to set the TBO interval to 24 mth. /1200 cyc./1600 lifts, given that the regular hoist load check/test is considered to reveal if the clutch fails to meet the required limits.

As present and expected future overhaul times are considerable the proposed TBO will in time have a widespread negative impact on the operational capability of the helicopter hoisting community.

EASA response: Partially agreed.

EASA agrees to refer to “serviceable overload clutch assembly” to allow replacement of an overload clutch assembly in the field, rather than overhaul of the whole hoist. The Final AD has been modified accordingly. It is also understood that Goodrich/UTAS will work with the Type Certificate Holders on developing their safety assessment to be submitted to EASA for review and possible extension of the current intervals.