

<b>EASA</b>	<b>COMMENT RESPONSE DOCUMENT</b>
	<p><b>EASA PAD No. 15-086</b>  <b>[Published on 26 June 2015 and officially closed for comments on 24 July 2015]</b></p>

**Commenter 1: Bond Helicopters Australia – Mick Richmond – 28/06/2015**

**Comment # 1**

Is it intentional to remove the existing requirement from 2015-0069 to replace the cable in 30 cycles/40 lifts (figure 1) for a cable that has had two occurrence of a load test greater than 1500lbs with, replace cable before next load check as per this AD 15-086?

**EASA response:**

**Further testing results have concluded that cables having exceeded 1500 lb during two hoist load checks/tests can stay in operation until the next hoist load checks/test, thus the removal of the cable has indeed been aligned with the load check to minimize burden on the operator.**

**No changes have been made to the Final AD in response to this comment.**

**Commenter 2: Bond Offshore Helicopters – Ronnie Wright – 29/06/2015**

**Comment # 2**

Having reviewed the content of the Proposed Airworthiness Directive PAD No.:15-086 affecting the Goodrich Hoist Installation, ( Pt no 42325 in our case )

There is no mention of the mandatory requirement as noted in AIRBUS HELICOPTERS ASB AS332-25.02.70 Rev 5 to reduce the life limit of the hoist gear box lubricating oil.

Revision 5 effectively reduces the life of the gearbox oil by half, Limitation 300 cycles or 6 Months.

I also wish to bring your attention to note 2 paragraph 10 on page 5/6. There is no mention of the AS 332 L2 Aircraft Type in this text.

Please do not hesitate contacting me should you require any further information.

**EASA response:**

**The required actions are to accomplish the load check/test in accordance with approved instructions from the helicopter manufacturer. Part of these instructions in the AIRBUS HELICOPTERS ASB is indeed to change the oil. The reduction of hoist gear box lubricating oil life limit is thus incorporated by reference.**

**Note 2 refers to installations certified after the initial AD 2013-0065-E was issued and thus have incorporated some corresponding elements in their documentation. The AS 332 L2 does not belong to this group.**

**No changes have been made to the Final AD in response to this comment.**

**Commenter 3: Gulf helicopters – Mohammed Al-Badr – 30/06/2015**

**Comment # 3**

Goodrich issued Alert Service Bulletin No. 44301-10-18 REVISION NO. 3, DATED 5/12/15 , is the load check described in this ASB is enough to comply with Item (3) of EASA PAD NO: 15-086 ?

**EASA response:**

**No, the Goodrich ASB is not sufficient for compliance to the AD as type specific considerations might need to be applied. The use of the instructions of that ASB is only acceptable when approved by the applicable helicopter design (change) approval holder, through a specific 'cover' publication and accepted by EASA as reflected in the Reference Publication field of the AD.**

**No changes have been made to the Final AD in response to this comment.**

**Commenter 4: Groupement d'Hélicoptères de la Sécurité Civile– Bruno Dery – 03/07/2015**

**Comment # 4**

We operate 35 EC145 (BK117C-2) at the French Ministry of Interior (Groupement d'Hélicoptères de la Sécurité Civile).

We have some questions regarding this proposed AD.

Required Actions and Compliance times:

- Item (2): Within 30 days after the effective date of thisAD, accomplish an initial hoist load check/test in accordance with approved instructions from the helicopter manufacturer (type certificate holder), or from the hoist installation design approval holder (supplemental type certificate holder), as applicable to installation and helicopter type/model.

Do you mean that, in spite of the actions and plannings already in place, we will have to re-start all the tests within the 30 days following the effective date of the AD?

- Item (9) From the effective date of this AD, if a partial peel out occurs as described in the approved instructions from the type certificate holder, or from the supplemental type certificate holder, as applicable, before next flight, remove or deactivate the hoist or, before next hoist operation, replace the hoist with a serviceable hoist, noting the installation requirements of paragraph (7) of this AD.

Does this mean that, in case of a partial peel out, we will have to replace the whole hoist and not only the cable?

**EASA response:**

- **Item (2):** *The statement in the AD, “Required as indicated, unless accomplished previously”, signifies that you can take credit for the hoist load check/tests performed previously and you can continue on the same schedule.*

- **Item (9):** *A partial peel out could result in degradation of the friction overload clutch if enough energy has been imparted to the device. During the previous PAD consultation EASA has agreed to modify Table 2 to refer to “serviceable overload clutch assembly” to allow replacement of only the overload clutch assembly, possibly in the field. Such a procedure has not yet been proposed.*

*No changes have been made to the Final AD in response to this comment.*

**Commenter 5: UNI-FLY – Per Leth Andersen – 10/07/2015****Comment # 5**

As mentioned in our comment to PAD No.: 14-116 our company have considerable concerns over the required TBO on the overload clutch.

UNI-FLY A/S has great experience with more than 27000 hoists to wind power turbines with EC135.

Our hoist operation are in a controlled environment. We have the exact load and cable length registered for each lift. The load during this kind of operation are not and will never be above 500 LBS, even during rescue hoist. Only during test, the load are above this, but until now not above 1232 LBS and 1340 LBS on our two hoists.

Hoist PN: 44301-10-5 used on EC135 which is certified for 500 LBS did not had the problem. All events that have been found where on hoists certified for a larger helicopter and thus higher load.

A possibility could be to differ the overhaul times for the hoist overload clutch, depending on type of helicopter, results from clutch checks and operation actions (weight on lifts and OAT).

By our opinion, many of these problems could be avoided with more focus on correct maintenance done in accordance with TC holders CMM. Especially having Focus on adjustment of the upper limit switches.

**EASA response: Noted.**

**EASA is conscious of the specificities of hoist operations for wind power turbines servicing. The Agency can approve Alternative Methods of Compliance for this AD based on further limitations compatible with this type of operations.**

**No changes have been made to the Final AD in response to this comment.**

**Commenter 6: Gendarmerie – Daniel Alloncle – 16/07/2015****Comment # 6**

We operate Ec 145 and EC 135 fitted with Hoist 44301-10-7 and 44301-10-6 at the french ministry of interior. (AIR FORCES OF GENDARMERIE NATIONALE)

Question 1

At the fig 1 if we follow the arrows you said "Were two checks performed above 1500 lb " if yes "replace the cable before next check"

If the check could damage the cable why we do not do the last check with the old cable and then replace by a new one before any operation ? we can save 300 cycles on the cable.

Question 2

Item 9 " if there is a partial peel out.... , remove or deactivate the hoist ..and replace the hoist by an serviceable one. we will have to change the hoist or just fitting a new cable ?

**EASA response:**

**Question 1: The existing cable in the case described can indeed be used up to the next check. Changing the cable before the check allows accomplishing only once the conditioning and as the check is no longer performed above 1500 lb the new cable will not be damaged.**

**Question 2: Please see answer to Comment #4.**

**No changes have been made to the Final AD in response to this comment.**

**Commenter 7: Sikorsky Aircraft Corp – J. Philip Perschbacher – 23/07/2015**

**Comment # 7**

Sikorsky supports the primary change embodied in this PAD: the hoist load capacity loss with decreasing temperature.

Sikorsky continues to support the no slip 1200 lb. check and the retirement of cables tested to 1500 lb. or above.

Sikorsky continues to support the 24 month overhaul interval.

Sikorsky also supports the elimination of the overload test. This test was always of secondary importance, and unnecessarily removed many capable hoists from rescue service. The automated (cockpit and cabin) and manual cable cutters are always the first three choices in our flight manuals. [Sikorsky only recommends use of the clutch overload function after the cable cutters have failed.] However, Sikorsky does not see value in the "Caution: overload clutch is unlikely to function in case of overload" statement. Sikorsky believes the term "is unlikely to" is incorrect, "may not" is a more accurate term. Still, this is always the potential for this overload function even if it was previously tested. Therefore, Sikorsky sees no value in adding this to the placard or to a flight manual. [As Sikorsky has stated previously, Sikorsky continues to see no value in the pendulum angle Warning since this is neither controlled nor measured.]

**EASA response: Partially agreed.**

**The term "is unlikely to" has been chosen based on the results of the field inspection mandated by the AD, as well as the analysis of the portion of the operating envelop still covered when taking into account the dependencies of the overload clutch. The Agency considers that it is important for the operator to be aware that the overload clutch is unlikely to function as designed as additional operational precautions can then be taken. Occurrences have**

***shown that a cable entanglement is not always recognized in time for the cable cutter to be activated before an overload occurs.***

***The comment “Sikorsky only recommends use of the clutch overload function after the cable cutters have failed.” is not understood as the overload clutch should not be used intentionally and cannot release an untangled cable but only temporarily relieve the load on the hoist.***

***It is agreed 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. 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 S-92A, have already been accepted and others can be considered by the Agency.***

***No changes have been made to the Final AD in response to this comment.***

**Commenter 8: Airbus Helicopters Deutschland & AgustaWestland – Martin Lawall & Matteo Ragazzi – 24/07/2015**

### **Comment # 8**

Please find attached our comments on EASA PAD 15-086.

As mentioned in the last paragraph of the section “Reason”, the hoist manufacturer and the approval holders are reviewing the reported data of the tests to confirm effectiveness of the initiated measures.

The comment on PAD 15-086 (reference [1] ) is separated into three main chapters.

The first chapter summarizes the general feedback on PAD 15-086 from AgustaWestland (AW) and Airbus Helicopters (AH) - also named "EU TC Holders" in the following chapters.

The second chapter provides some comments on the way ahead which will influence the future EASA Airworthiness Directives.

The third chapter of this document gives statements and information on the individual PAD action paragraphs.

#### **1. General Feedback on PAD 15-086**

Within EASA AD 2015-0069 (see reference [2] ) the following main elements were introduced:

Cable exchange (depending on last load check/test result) - see paragraph (1)

Modified lower limit in accordance with Appendix 1- see paragraph (3)

Introduction of new placards for de-rating of hoists (depending on OAT) - see paragraph (9)

The above mentioned topics are also addressed in the European TC Holder bulletins and are now mentioned as reference publications in the PAD 15-086.

Regarding the updated test instructions, a safety assessment has been created by the EU TC Holders to evaluate the influence for unknown (untested) slip-point.

In a nutshell this assessment concluded that the overload-clutch is a safety-feature which is not required explicitly by CSN /29, thus not necessarily required to perform safe hoisting operation. The safety-feature has been implemented as an element which can, under specific operational circumstances, prevent potentially hazardous or even catastrophic overload conditions for the rotorcraft. The "proper" functioning (i.e. in the sense of reliably preventing overload conditions) currently cannot be

guaranteed throughout the complete certified operational envelope. In order to avoid providing an incorrect level of confidence into the proper functioning of the overload-clutch, it is recommended to make the hoist operators aware of aforementioned facts (e.g. placard - see page 5) and to currently not mandate a test of the actual slip-point of the overload-clutch.

Further remarks on the topic above will be given in the next chapter.

#### Conclusion:

In summary EASA PAD 15-086 aligns with the latest instructions from the European TC Holders.

This step taken in EASA PAD 15-086 is therefore fully supported.

#### 2. Next steps

A Field Load Check Tool (FLCT) modification is in progress which allows testing to higher values without having impact on potential damages to the cable.

The European TC Holders will evaluate the possibility to re-introduce the testing of the upper clutch slipping point, when the modified FLCT is available. As shown by the safety assessment, the testing at short intervals is not required and specifically not in the same interval as the lower limit testing.

The lower limit testing and its interval guarantee the safe operation of the hoist (with overload clutch installed) in regards of the failure mode " loss of load".

The European TC Holders have commented during the last PADs on the mandated retirement date of the overload clutches which is mentioned in paragraph (6) of PAD 15-086.

(6) 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, noting the installation requirements of paragraph (7) of this AD.

This paragraph was also part of the previous Airworthiness Directives.

The European TC Holders are working together with UTA5 and in close cooperation with EASA on actions which allow an extension of the above mentioned time interval of 24 months. This should prevent a large number of hoists to be sent back on 4 th December 2015.

In addition, industry is implementing from September 2015 a new overload clutch configuration which features the full scope of critical parts control. This population of overload clutches will be installed on all hoists returned to a UTAS repair & overhaul facility.

The European TC Holders plan to update their corresponding Alert Service Bulletins to notify the operators about these steps in September 2015.

This will also have impact on the EASA Airworthiness Directive and will drive a new release of the Airworthiness Directive.

#### 3. Comments on the individual paragraphs of section "required actions" for PAD 15-086

Reason

PAD 15-086

The approval holders have removed in their service publications the instruction to return the clutch if it does not slip by 1500 lb, therefore allowing a clutch set higher,

up to totally jammed, to remain in operation. If jammed, the overload clutch will not function in case of overload, e.g. shock load or untimely recognized cable entanglement. Structural elements could then be stressed beyond certified limits, possibly leading to rupture or in case of a broken cable rebound, to the loss of the helicopter. Since the hoists were originally certified with an overload clutch the Agency considers that this dormant failure should be removed through the already implemented reduced Time Between Overhaul of the overload clutch assembly.

Proposed wording:

The approval holders have removed in their service publications the instruction to return the clutch if it does not slip by 1500 lb. Due to the fact that the high limit of the clutch is not being tested, there is a potential for a no slip condition to occur if an overload condition is realized in-flight. Potentially structural elements could then be stressed beyond certified limits, possibly leading to rupture or in case of a broken cable rebound, to the loss of the helicopter. Since the hoists were originally certified with an overload clutch the Agency considers that a no-slip tested overload clutch should be removed through the already implemented reduced Time Between Overhaul of the overload clutch assembly.

Paragraph (1)

No dedicated comment on paragraph (1)

Paragraph (2)

The European TC Holders have understood, that this section (2) does not require a new initial load check/test within 30 days, as this was already accomplished through the previous EASA ADs.

Nonetheless industry has received questions from operators and has been asked for confirmation of the understanding. Providing reference on the AD which was considered as starting point of this task might improve further the understanding of this paragraph.

Paragraph (3)

No dedicated comment on paragraph (3)

Paragraph (4)

No dedicated comment on paragraph (4)

Paragraph (5)

No dedicated comment on paragraph (5)

Paragraph (6)

See comment on page 3.

Paragraph (7)

No dedicated comment on paragraph (7)

Paragraph (8)

The placard introduced in the EU TC Holder bulletin provides information about the mission role of the hoist operator. It should draw attention to the following points:

1. Awareness of potential entanglement obstacles
2. Proper execution on controlling the hoist-cable
3. Readiness to cut the cable, if required

Hoist operators shall prevent hazards to the aircraft resulting from a cable snag as correct functioning of the overload clutch is not guaranteed.

Paragraph (9)

No dedicated comment on paragraph (9)

Paragraph (10)

No dedicated comment on paragraph (10)

References:

[1] EA5A PAD 15-086, issued 26.06.2015

[2] EASA AD 2015-0069, issue date 29 April 2015 (correction: 30 April 2015)

***EASA response:***

***Chapter 1 and 2: Noted.***

***Chapter 3:***

***Reason: Agreed.***

***Paragraph (2): Partially agreed. See answer to Comment #4. This is standard wording for EASA AD thus no changes have been made to the Final AD in response to this comment.***

***Paragraph (8): Noted. The placards in EASA accepted Service Bulletins are acceptable for compliance with this paragraph.***

***The Reason paragraph of the Final AD has been amended in response to this comment.***