EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2015-0069 **Date: 29 April 2015** 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.

This AD is issued in accordance with EU 748/2012, Part 21.A.3B. In accordance with EU 1321/2014 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 [EU 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].

Design Approval Holder's Name:	**Helicopter Type/Model designations:**
AGUSTAWESTLAND S.p.A.	AW109SP, AB/AW 139, AB412 and AW189
BELL HELICOPTER TEXTRON, Inc.	212, 214 and 412
BELL HELICOPTER TEXTRON CANADA Ltd.	429 and 430
AIRBUS HELICOPTERS	AS 365 N3, AS 332 L2, EC 225 LP and EC175 B
AIRBUS HELICOPTERS DEUTSCHLAND GmbH	MBB-BK 117, EC135 and EC635
MD HELICOPTERS, Inc.	MD900
SIKORSKY AIRCRAFT CORPORATION	S-61, S-76 and S-92A

TCDS Numbers:	EASA.IM.R.001, EASA.R.002, EASA.R.005, EASA.R.006, EASA.R.009, EASA.R.010, EASA.R.105, EASA.R.150, EASA.R.510 and EASA.IM.R.506; USA 1H15, H1NE, H19NM, H4SW and H6SW; Canada H-88; and Italy A 157.
Foreign AD:	This AD is related to FAA AD 2013-06-51 dated 25 March 2013.
Supersedure:	This AD supersedes EASA AD 2014-0254 dated 21 November 2014.

ATA 25	**Equipment / Furnishings – Hoist – Test / Replacement**
Manufacturer(s):	AgustaWestland S.p.A.(AW), Bell Helicopter Textron Inc. (BHTI, formerly Bell Helicopters, Inc.), Bell Helicopter Textron Canada Ltd. (BHTC), Airbus Helicopters (AH, formerly Eurocopter, Eurocopter France, Aerospatiale), Airbus Helicopters Deutschland GmbH (AHD, formerly Eurocopter Deutschland GmbH), American Eurocopter (AEC), MD Helicopters, Inc. (MDHI, formerly McDonnell Douglas Helicopter Systems), Sikorsky Aircraft Corporation.
Applicability:	This AD applies to the following helicopters, when equipped with a Goodrich hoist having a Part Number (P/N) as listed in Table 1 of this AD: AW109SP, AB139, AW139, AB412 and AW189 (all Models) helicopters, all serial numbers (s/n); BHTI 212, 214 and 412 helicopters, all Models, all s/n; BHTC 429 and 430 helicopters, all s/n; AH AS 365 N3, AS 332 L2, EC225 LP and EC175 B helicopters, all s/n; AHD MBB-BK117 C-2 and D-2, EC135 and EC635 (all Models) helicopters, all s/n; MDHI MD900 helicopters, all s/n; and Sikorsky S-61 (all Models), S-76 (all Models) and S-92A helicopters, all s/n.

Reason:	During a maintenance check flight with a MBB-BK 117 C-2 helicopter, a dummy load of 552 lb (250 kg) was picked up in order to conduct a “maximum load cycle” on the rescue hoist. The cable reeled-out without further command of the operator, causing the test dummy load to impact the ground. The results of further examinations on the subject hoist determined that the overload clutch had failed. The overload clutch design is common to all Goodrich externally mounted rescue hoists listed in Table 1 of this AD. This condition, if not detected and corrected, could lead to further cases of in-flight loss of the hoist load, possibly resulting in injury to persons on the ground or in a hoisting accident. To address this unsafe condition, EASA issued Emergency AD 2013-0065-E to require identification of the installed hoist and, for affected hoist installations, a one-time load check test of the externally mounted hoist. The original AD was superseded by AD 2013-0077-E and then revised to 2013-0077R1 to adjust applicability and compliance time. Since EASA AD 2013-0077R1 was issued, the investigation identified that another uncommanded cable reel-out with loss of load had occurred in 2007. An additional hoist also failed the overload test required by the AD. The cause for this failure has not yet been determined. Prompted by these findings, EASA issued AD 2013-0275 (later revised), retaining the requirements of EASA AD 2013-0077R1, which was superseded, requiring implementation of operating restrictions, repetitive tests and introducing a reduced time between overhauls for the affected hoists. Since EASA AD 2013-0275R1 was issued, other hoists failed the required load check. The investigation also determined that a stack-up of production tolerances, in combination with operational factors, could result in degraded performance of the clutch. Prompted by these findings, EASA issued AD 2014-0201, retaining the requirements of EASA AD 2013-0275R1, which was superseded, to require closer monitoring of the clutch through enhanced load checks and, in case of a partial peel out, removal of the hoist. Since EASA AD 2014-0201 was issued, AH and AHD revised their service publications, providing more detailed instructions which are considered necessary to ensure continued safe hoist operation. Consequently, EASA issued AD 2014-0254, retaining the requirements of EASA AD 2014-0201, which was superseded, to require operators to use the latest instructions of the design approval holder, as applicable. That AD also removed reference to Goodrich Alert Service Bulletin (ASB) 44301-10-18 because 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. Since EASA AD 2014-0254 was issued, field load checks and additional testing have confirmed a high scatter of clutch setting values and sensitivity to certain environmental factors. In two occasions, field load checks with high load setting clutches have also resulted in cable ruptures on ground. For the reasons described above, this AD retains the requirements of EASA AD 2014-0254, which is superseded, but raises the acceptable lower limit of the clutch setting and requires a reduction of the maximum load on the hoist for colder temperatures. It also requires replacement of cables that have been load-tested at 1 500 lb [680 kg] or more. This AD is still considered an interim action and further AD action may follow.
Effective Date:	06 May 2015

Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Within 10 hoist operating cycles or 13 hoist lifts (as applicable, see Note 1 of this AD) after the effective date of this AD, determine the P/N of the hoist installed on the helicopter and, if a Goodrich hoist is installed with a P/N listed in Table 1 of this AD, accomplish a records check to determine whether, during any previous hoist load check/test, a cable was load-tested (average of 5 pulls) at 1 500 lb [680 kg] or more. If any cable is identified to have exceeded this limit during three or more hoist load checks/tests, before next hoist operation, replace the affected cable with a serviceable cable. If any cable is identified to have exceeded this limit during two hoist load checks/tests, within 30 cycles / 40 lifts replace the affected cable with a serviceable cable. For replacement of a cable, see figure 1 (flowchart) of this AD.

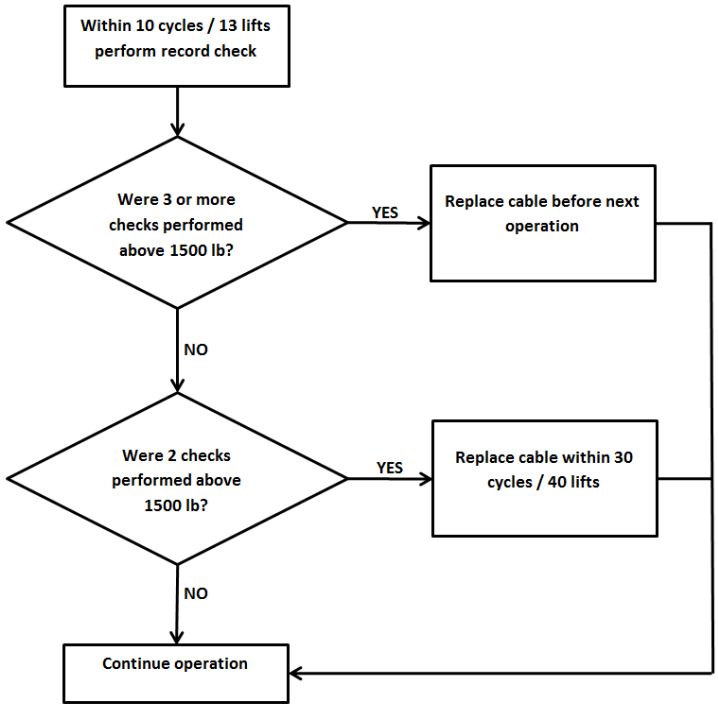

Figure 1

(2) Within 30 days after the effective date of this AD, 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. The acceptable lower load limits are provided in Appendix 1 of this AD.

Table 1 – Affected Goodrich Hoists P/N

(all suffixes, unless specified)			
42315	44301-10-5	44301-10-10	44315
42325	44301-10-6	44301-10-11	44316
44301-10-1	44301-10-7	44311	44318
44301-10-2	44301-10-8	44312	
44301-10-4	44301-10-9	44314	

Note 1: Hoist operating cycles or hoist lifts are defined in the aircraft maintenance instructions. Whether hoist operating cycles or hoist lifts are being tracked as part of the aircraft maintenance instructions determines the applicable limits in this AD (cycles or lifts respectively).

(3) Within the time interval, or hoist operating cycles/hoist lifts specified in the approved instructions from the type certificate holder, or from the supplemental type certificate holder, as applicable, whichever occurs first after the initial load check as required by paragraph (1) of this AD, and, thereafter, at intervals not to exceed the values (calendar time, or hoist operating cycles/hoist lifts, whichever occurs first) as specified in those same instructions, as applicable, accomplish a hoist load check/test (see Note 1 of this AD) in accordance with the instructions for on-going testing. The acceptable lower load limits are provided in Appendix 1 of this AD.

(4) If, during any test as required by paragraph (2) or (3) of this AD, as applicable, a cable used for operation is load-tested at 1 500 lbs [680 kg] or more, before next hoist operation, replace the cable with a serviceable cable.

(5) If, during any hoist load check/test as required by paragraph (2) or (3) of this AD, as applicable, the hoist fails the test, deactivate the hoist and, before next hoist operation, replace the hoist with a serviceable hoist, as defined in Table 2 of this AD.

Table 2 – Serviceable Goodrich Hoists

A hoist having a P/N not listed in Table 1 of this AD
A hoist having a P/N as listed in Table 1 of this AD, with an overload clutch assembly which has accumulated less than 24 months, or 1 200 hoist cycles/1 600 hoist lifts since new, or since last overhaul
A hoist having a P/N as listed in Table 1 of this AD, with an overload clutch assembly which has accumulated less than 24 months, or 1 200 hoist cycles/1 600 hoist lifts since 04 December 2013 [the effective date of EASA AD 2013-0275]

(6) If a hoist test as required by paragraph (2) or (3) of this AD cannot be accomplished for lack of approved instructions from the helicopter manufacturer (type certificate holder), or from the hoist installation design approval holder (supplemental type certificate holder), as applicable, before next hoist operation, remove or deactivate the hoist.

(7) 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 (8) of this AD.

(8) From the effective date of this AD, it is allowed to install an affected Goodrich hoist, having a P/N as listed in Table 1 of this AD, on any helicopter, provided that it is a serviceable hoist, as defined in Table 2 of this AD and, prior to hoisting operation, the hoist has passed a test as specified in paragraph (2) of this AD. Following installation, the repetitive actions required by this AD must be accomplished.

(9) From the effective date of this AD, 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

Correct functioning of the overload clutch is not guaranteed throughout the operating envelope

	For 600-lb [272 kg] rated hoists: **OAT at or above 0°C** - Maximum hoist load 600 lb [272 kg] **OAT between -20°C and 0°C** - Maximum hoist load 550 lb [249 kg] **OAT at or below -20°C** - Maximum hoist load 500 lb [227 kg] For 500-lb [227 kg] rated hoists: **OAT at or above 0°C** - Maximum hoist load 500 lb [227 kg] **OAT between -20°C and 0°C** - Maximum hoist load 450 lb [204 kg] **OAT at or below -20°C** - Maximum hoist load 400 lb [181 kg] 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 (9) of this AD. Alternatively, insertion of revised pages, if included in approved instructions from the type certificate holder, or from the supplemental type certificate holder, as applicable, into the applicable Rotorcraft Flight Manual (Supplement) is acceptable to comply with the requirement of paragraph (9) of this AD. (10) 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 (8) of this AD. (11) From the effective date of this AD, it is acceptable to install a replacement cable on a hoist / helicopter, provide that, prior to installation, it is determined that the cable was not previously load-tested at 1 500 lb [680 kg] or more. Note 2: For EC 225 LP, EC175 B, MBB-BK117 D-2 and AW189 helicopters, the applicable Component Maintenance Manual also contains relevant information for the subject addressed by this AD.
Ref. Publications:	AHD ASB No. MBB-BK117 C-2-85A-038, Revision 3, dated 19 November 2014. AHD ASB No. EC135-85A-058, Revision 4, dated 23 April 2015. AH ASB No. AS365-25.01.25, Revision 4, dated 19 November 2014. AH ASB No. AS332-25.02.70, Revision 4, dated 19 November 2014. AH ASB No. EC225-25A133, Revision 4, dated 19 November 2014. AgustaWestland BT 139-390, Revision A, dated 20 November 2014. AgustaWestland BT 109SP-077, Revision A, dated 20 November 2014. The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD. Bell Helicopter Textron Canada Ltd. ASB 429-14-15, Revision A, dated 6 January 2015. Bell Helicopter Textron Canada Ltd. ASB 430-14-54, Revision A, dated 6 January 2015.

	Bell Helicopter Textron, Inc.: None. MD Helicopters, Inc.: None. Sikorsky Aircraft Corporation: None.
Remarks:	1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication. 3. Enquiries regarding this AD should be referred to the Safety Information 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 one of the following, as applicable to helicopter (TC holder) or hoist installation approval (STC holder): AgustaWestland S.p.A. Customer Support, Via del Gregge, 100 - 21015 Lonate Pozzolo (VA) – Italy Telephone + 39 0331 664600, Fax + 39 0331 664684 E-mail: custserv@agustawestland.com. Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, Texas 76101, USA. Telephone +1 817-280-3391, Fax +1 817-280-6466. Bell Helicopter Textron Canada, Engineering Department, 12800 rue de l'Avenir, Mirabel, Québec J7J 1R4, Canada, Telephone +1 450-971-6500, Fax +1 450-437-6382. Publications for both BHTI and BHTC types are available at http://www.bellcustomer.com/bulletins.cfm. Airbus Helicopters (STDI) - Aéroport de Marseille Provence 13725, Marignane Cedex, France. Telephone +33 (0) 4 42 85 97 97, Fax +33 (0) 4 42 85 99 66, E-mail: Directive.technical-support@airbus.com. Airbus Helicopters Deutschland GmbH, Industriestrasse 4, 86607 Donauwörth, Germany. Telephone + 49 (0)151-1422 8976. MD Helicopters Inc., Attn: Customer Support Division, 4555 East McDowell Road, Mail Stop M615, Mesa, Arizona 85215-9734, USA. Telephone +1-800-388-3378, Fax +1-480-346-6813, or on the Web at http://www.mdhelicopters.com. Sikorsky Aircraft Corporation, Commercial Product Support, 6900 Main Street, P.O. Box 9729, Stratford, Connecticut 06497-9129, USA, Telephone +1 203-416-4299, E-mail: sikorskywcs@sikorsky.com.

Appendix 1 – Acceptable lower limits for hoist clutch setting

Table 1-A: Lower Load Limit, 600-lb [272 kg] rated hoists

°C	lb	°C	lb	°C	lb
0	1200	17	1255	34	1310
1	1203	18	1258	35	1313
2	1206	19	1262	36	1317
3	1210	20	1265	37	1320
4	1213	21	1268	38	1323
5	1216	22	1271	39	1326
6	1219	23	1275	40	1330
7	1223	24	1278	41	1333
8	1226	25	1281	42	1336
9	1229	26	1284	43	1339
10	1232	27	1287	44	1343
11	1236	28	1291	45	1346
12	1239	29	1294	46	1349
13	1242	30	1297	47	1352
14	1245	31	1300	48	1356
15	1249	32	1304	49	1359
16	1252	33	1307	50	1362

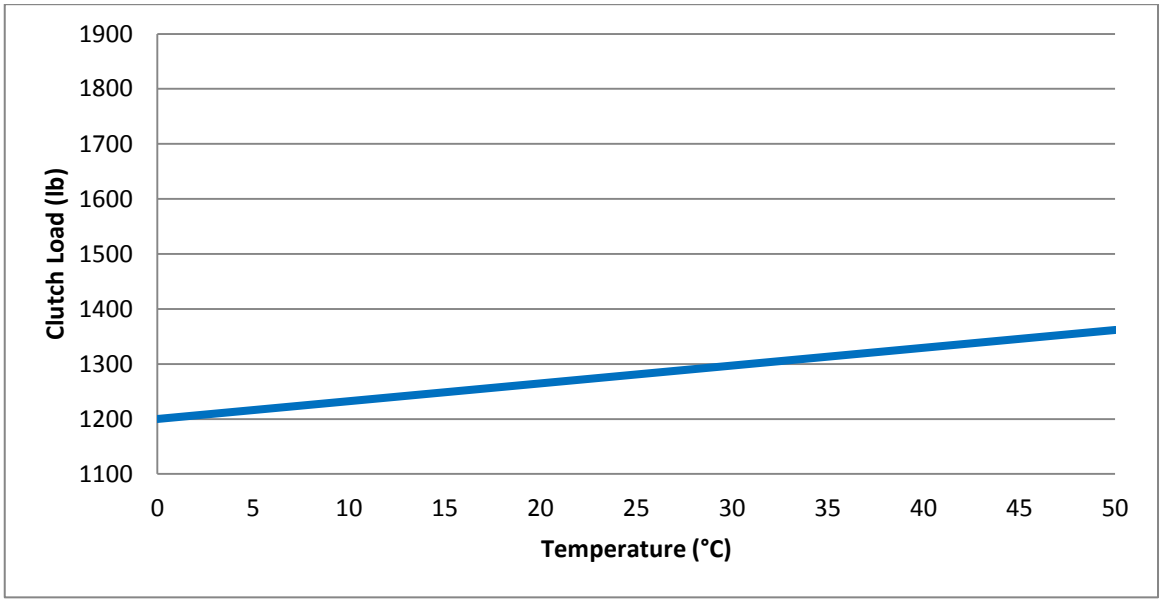

Figure 1-A: Acceptable lower load limit for 600-lb [272 kg] rated hoists

Table 2-A: Lower Load Limit, 500-lb [227 kg] rated hoists

°C	lb	°C	lb	°C	lb
0	1000	17	1055	34	1110
1	1003	18	1058	35	1113
2	1006	19	1062	36	1117
3	1010	20	1065	37	1120
4	1013	21	1068	38	1123
5	1016	22	1071	39	1126
6	1019	23	1075	40	1130
7	1023	24	1078	41	1133
8	1026	25	1081	42	1136
9	1029	26	1084	43	1139
10	1032	27	1087	44	1143
11	1036	28	1091	45	1146
12	1039	29	1094	46	1149
13	1042	30	1097	47	1152
14	1045	31	1100	48	1156
15	1049	32	1104	49	1159
16	1052	33	1107	50	1162

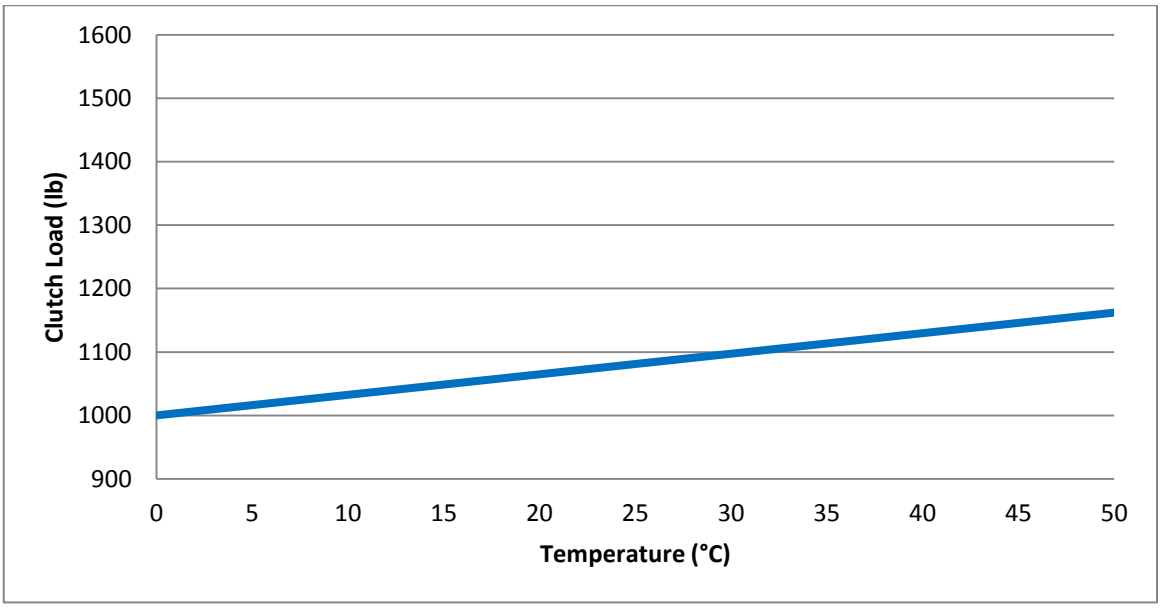

Figure 2-A: Acceptable lower load limit for 500-lb [227 kg] rated hoists