

COMMENT RESPONSE DOCUMENT

EASA PAD No. 19-117

[Published on 05 July 2019 and officially closed for comments on 02 August 2019]

Commenter 1: RUAG Schweiz – André Wallimann – 05/07/2019

Comment # 1

- A. We have some doubts that the Serial Number range in SB 1000 and Appendix 1 of this PAD is correct. We have ELT P/N 453-5061 S/N 13535 installed since **2014**. According to Appendix 1 only S/N 252-02321 are concerned. According to this, our ELT would be not concerned, but according to SB 1000 the design Introduction of the new G-Switch was in **Dec/2016**. Thus it is not possible that our ELT with S/N 13535 has the new G-Switch installed. There is no label SB 1000 on our ELT. Applicability of the SB is therefore unclear or misleading.
- B. For the recurring inspection required by this AD it would be of great importance to have a margin of 10% (30 days on the 12 months operational check of the ELT). This is important because an Annual Avionics Inspection is anyway required every 12 months (+30 days) in most countries. Transponder and Air Data Computer Testing is required every 24 months (+60 days) in most countries. The use of the 10 % margin makes it possible to perform all Avionics Inspections in one single event. To omit the margin in this AD could lead to the problem that the ELT has to be removed many times more which could lead to an early deterioration of the part.

EASA response:

- A. **Comment agreed. The Final AD and ACR Electronics, Inc. SB1000 have been amended to identify all groups of serial numbers.**
- B. **The AD requirement aligns with US Federal Airworthiness Regulations (FAR 91.207) and Canadian Aviation Regulations (CAR) Part VI, Standard 625, Appendix C Section 1, which both require an annual inspection. A grace period may be granted by the national authority. No changes have been made to the Final AD in response to this comment.**

Commenter 2: ASL Airlines France – Samuel Cardon – 05/07/2019

Comment # 2



We have several ELT P/N 453-5002 with S/N concerned by this AD, but they are installed on B737 aircraft (Part 25 aircraft). Does this AD also applicable to Part 25 aircraft ?

EASA response:

Comment noted. The AD is an ‘equipment’ AD and applies to all affected ELT (P/N and s/n as identified in the AD) installed on helicopters, and to those ELT installed on fixed-wing aircraft, if the ELT installed on such aircraft was, at any time in the past, installed on a helicopter and has therefore been subject to vibration that may cause the unsafe condition.

The definition of ‘affected part’ has been amended in response to this comment to improve clarity.

Commenter 3: Flying Group – Sander Janssens – 05/07/2019

Comment # 3

Does PAD No.: 19-117, only affect Emergency locator transmitters which are installed or known to have been installed on a Part 27 or Part 29 (FAR, JAR, CS) helicopters? Or does the PAD affect **ALL** Emergency locator transmitters G406-4, C406-1, C406-1HM, C406-2, C406-2HM, C406-N and C406-NHM identified by Part Number (P/N) and serial number (s/n) in Appendix 1 of this AD.

EASA response:

Comment noted. See EASA answer to Comment # 2 above.

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

Commenter 4: Cobham Aviation Services UK – Mark Wilkinson – 08/07/2019

Comment # 4

With reference to the Applicability section, could EASA clarify whether the PAD applies to helicopters only or helicopters and aeroplanes? We raise this question as ACR Electronics SB1000 Revision#: A states within the Applicability section: ARTEX C-406 Helicopter Models (HM) or C-406 and G-406 ELTs used in helicopter applications.



EASA response:

Comment noted. See EASA answer to Comment # 2 above. The fact that ACR Electronics, Inc. SB1000 only refers to helicopters is not relevant for the purpose of the AD. For an affected ELT installed on a fixed-wing aircraft and subject to this AD, the SB instructions can be considered approved data and adequate for compliance with the AD requirements.

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

Commenter 5: Swiftair – José M. García – 08/07/2019
Comment # 5

Regarding PAD applicability, a per the PAD test, it is not clear if it applies only to Part 23, 27 and 29, or to all types of aircraft, due to the "Not Limited To" statement. Is it possible to exclude Part 25 aircraft in the applicability section? And if the AD is going to be applicable to aircraft installed ELTs, the Service Bulletin is not valid for Part 25 as it applies to Helicopter ELTs or Helicopter Installed ELTs only.

EASA response:

Comment not agreed. See EASA answer to Comment # 4 above.

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

Commenter 6: ISDEFE – Josefina López Uría – 09/07/2019
Comment # 6

I would like to ask you if the applicability of this PAD affects to helicopters only, or to all aircraft that could have installed one of the ELT's remarked in the table 2.

EASA response:

Comment noted. See EASA answers to Comment # 2 and Comment # 4 above.

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



Commenter 7: Calm Air International LP – Philip Forrest – 10/07/2019

Comment # 7

Regarding PAD 19-117 issued 05 July 2019, we want to be entirely clear whether the intent is for **ALL ELT's** with part number and serial number combinations listed on the PAD are affected, or only the ones that have been operated on rotorcraft. We operate a fleet of ATR42/72 aircraft and use some of these model number ELTs on our aircraft, and would like to be certain that if we are affected we comply with the pending AD.

EASA response:

Comment noted. See EASA answers to Comment # 2 and Comment # 4 above.

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

Commenter 8: HOP! – Olivier Vilain – 11/07/2019

Comment # 8

The first reads of this PAD raise us some questions and remarks. We also contacted ACR to have more details about applicability.

Based on that, we want to share our opinion and concerns about this PAD:

- A. Following discussion with ACR, SB "SB1000" stated as the corrective action to terminate the AD, is applicable to ELT installed on rotary wing. So the corrective action in PAD doesn't match with ACR' SB applicability for operator of fixed wing.
- B. ACR SB applicability leads us to this point : this AD should be applicable to ELT only installed on rotary wings regardless of the history of the ELT. Especially if the ELT installed on fixed wing has been verified in shop and released with a EASA Form 1 or FAA 8130-1 dual release.
- C. For operators of fixed wing airborne having these ELT installed and where the ELTs are managed by a spare parts pool contract, the whole history of an ELT is not given, we don't have LOG CARDS / BOOKS with ELTs delivered. We can't reasonably replace all ELT potentially affected in the time given. What should be operator position when the history of the ELTs is unknown?
- D. How can we demonstrate in case of future audit for example, that ELT currently installed on fixed wing have never been installed on rotary wing and so, not applicable to AD even if they are within AD applicability list?



EASA response:

- A. Comment not agreed. See EASA answers to Comment # 2 and Comment # 4 above.**
- B. Comment not agreed. For an affected ELT, currently installed on a fixed-wing aircraft, with a history of having been installed on a helicopter, the AD applies and action is required, as specified. If the SB1000 terminating action modification has been applied on the ELT, no further action is required for that aircraft, except to comply with paragraphs (7), (8) and (9), as applicable.**
- C. Comment not agreed. The definition section of the AD states that ‘When TIS is unknown, the date of manufacture of the ELT determines TIS.’**
- D. The AD applies to certain ELT (P/N and s/n identified), irrespective of type of aircraft installation. However, for a fixed-wing aircraft with an ELT installed for which it can be demonstrated it has never been installed on a helicopter, no further action is required, except to comply with paragraphs (7), (8) and (9), as applicable. The fact that an AD applies – to certain equipment – does not necessarily mean that (corrective) action is required for ALL aircraft with that equipment installed.**

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

Commenter 9: Star Wings – Claudia Spohler – 12/07/2019

Comment # 9

The Artex SB1000 you refer in your PAD is only applicable for rotary aircraft only. Please see my E-Mail conversation with Artex. It is very confuse that you mention CS23 aircraft in your PAD although these CS23 aircraft are not affected by SB1000. Please correct this in the AD.

EASA response:

Comment not agreed. See EASA answers to Comment # 2 and Comment # 4 above.

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

Commenter 10: Airline Comlux-KZ – Maxim Moisseyev – 15/07/2019



Comment # 10

Our company operates 2 types of aircraft namely: CL-600-2B19 (Challenger 850) and EMB-135BJ (Legacy 650) with ELT model C406-2, P/N 453-5000, s/n below 210-09501 which are effective to the proposed AD 19-117 issued by EASA for consultation. The applicability section states that this ELT model (according to Table 1) is known to be installed on, but not limited to, Part 23 (FAR, JAR, CS) aeroplanes and Part 27 and Part 29 (FAR, JAR, CS) helicopters. However, our type of aircraft is **Part 25 – Transport category aircraft** which is not included into applicability section.

We reviewed reason and required action and understand that a high vibration is a reason off G-switch degradation. Such vibration are generated on small airplanes (part 23) and helicopters (part 27, 29). Also, ACR Service Bulletin (SB) SB1000 is only applicable to ARTEX C-406 Helicopter Models (HM) or C-406 and G-406 ELTs used in helicopter applications. So there are no evidences that this ELT types failed on Part 25 – Transport category aircraft.

In this case how to understand correctly the words **but not limited to**? Is this PAD and future AD will be applicable to our PART 25 aircraft with ELT installed according to Table 1?

EASA response:

Comment not agreed. See EASA answers to Comment # 2 and Comment # 4 above.

The wording ‘but not limited to’ is frequently used in equipment ADs, to signify that – in many cases unknown to equipment manufacturer or even aviation authorities – such equipment can easily be ‘moved’ from one aircraft type to another (e.g. minor modification). Only the operator is expected to know which equipment is installed and (ideally) the provenance and history of such equipment.

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

Commenter 11: Babcock España – Pablo Esteban Hernandez – 15/07/2019**Comment # 11**

Applicability of EASA PAD No. 19-117 shows the following statement: Emergency locator transmitters (ELT) G406-4, C406-1, C406-1HM, C406-2, C406-2HM, C406-N and C406-NHM identified by Part Number (P/N) and serial number (s/n) in Appendix 1 of this AD, installed or known to have been installed on a Part 27 or Part 29 (FAR, JAR, CS) helicopter; except those for which it has been determined that they have been modified in-shop, installing a new hermetically-sealed longitudinal G-switch P/N A1-12-0135, which includes those marked with a label (see Figure 1 in Appendix 1 of this AD) stating that SB1000 has been implemented. These ELT are known to be installed on, but not limited to, Part 23 (FAR, JAR, CS) aeroplanes and Part 27 and Part 29 (FAR, JAR, CS) helicopters.



On a first sight, it seems it only applies to ELT installed or known to have been installed on any helicopter, but the second paragraph confuses me, because you mention these ELT models are known to be installed also on aeroplanes. Does it mean this PAD (and its future AD) apply to aeroplanes also?

EASA response:

Comment noted. See EASA answers to Comment # 2 and Comment # 4 above.

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

Commenter 12: Leonardo Helicopters – Paolo Catarzi – 16/07/2019

Comment # 12

We have a comment related to point (2) of the PAD in subject. This point states: “If, during any inspection/test as required by paragraph (1) of this AD, discrepancies are detected, before next flight, accomplish the corrective actions in accordance with the instructions of section 7 of the SB.”

Section 7 of the SB states:

“Operators using ARTEX ELTs, listed in Table 1 on page 3, operated in a rotary-wing environment and with more than five (5) years in-service, shall review any previous service records related to G-switch replacements to verify the current switch configuration.

- Unless the updated G-switch is proven to be installed, the part must be returned to the ASC for replacement of the original G-switch with an updated switch.
- Alternatively, the operator must increase the inspection frequency of the ELT in accordance with the alternative means of compliance (AMOC), below.”

Our question is: if an ELT doesn't pass the test described at point (1.1) of the PAD because it doesn't activate the g-switch, or the test at point (1.2) because it doesn't have a sufficient radiated signal, is the operator allowed to keep it in service, provided he is compliant with the second bullet of section 7 of the SB (i.e. increased inspection frequency)?

EASA response:

Comment noted. The reference to section 7 of the SB is replaced by section 7.1 of the SIL. In case of failing a test as required by paragraph (2) of the AD, 'corrective action' is required. The SIL states that “If the throwing motion does not activate the ELT after 2 throws, then the ELT must be sent to an ARTEX



authorized service center for evaluation”, *i.e. replaced with another eligible ELT. This does NOT need to be a post-SB1000 ELT – see paragraph (7) and (8) of the AD.*

Paragraph (3) of the AD ‘regulates’ the reduced interval implementation of the action required by paragraph (1.1), which is valid as long as there are no discrepancies detected, i.e. no test failures.

Paragraphs (6), (7) and (8) of the AD ‘regulate’ which replacement ELT is allowed (or not) to be installed and, if so, under which conditions.

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

Commenter 13: euroAtlantic Airways– José Brito – 16/07/2019

Comment # 13

Regarding the PAD 19-117, I have a question that requires clarification: Currently we’ve identified that we have installed on 3 of euroAtlantic B767 aircraft, P/N ELT453-5002. These units were installed thru a EASA STC 10015638. I have seen that this PAD refers to helicopters. Small airplanes are also mentioned, on the applicability.

Then more info: **Affected part:** An ELT as identified in the Applicability section of this AD. Yet, per the SB1000 applicability, again it mentions helicopters installations. Although I believe that the PAD is addressing ELT that have operated on Helicopters, I need to be sure that any ELTs that have been operating on our B767 are not reason to concern and therefore any action is required per this PAD (and future AD).

QUESTION: based on the above, can I consider the PAD/AD not applicable due to installed ELTs are fitted on a 767 hence not being installed on helicopters?

EASA response:

Comment not agreed. Part 25 aeroplanes were not mentioned in the PAD as it was unknown at the time of PAD issuance whether the affected P/N were installed on those aeroplanes.

The Final AD has been amended in response to this comment by adding specific reference to Part 25 aeroplanes.

See also EASA answers to Comment # 2 and Comment # 4 above.

Commenter 14: Helikopter Air Transport – Harald Messirek – 17/07/2019



Comment # 14

- A. Since we have a fleet of 34 helicopters all with Artex C406 ELTs equipped (mostly of them are installed since A/C delivery), the 30 days limit will be a very short time frame, even only for point 1 the inspection. As I stated before most of them are installed since A/C delivery which means year 2001-2009. Under point 4 Modification it says that for ELTS which are exceeding 10 years TIS or 30 days after effective date the parts should be replaced. This would be in our case a total of 22 ELTs within 30 days. This wouldn't be only a challenge for us, also ACR ARTEX will get in serious trouble by such a workload.
- B. We are carrying out an ELT test according to LTH40, where also the G-switch is tested. Couldn't this testing be seen as an approval for continuous monitoring of the ELTs or specially the G-switch.

EASA response:

- A. Comment agreed. The AD has been amended to extend the limit to 90 days.**
- B. Comment noted. The AD does not prescribe in detail which instructions MUST be used to accomplish the ELT testing, since there are many acceptable methods. The current ELT testing done by the commenter may be adequate, subject to acceptance by the State of Registry of the affected aircraft on which the affected ELT is (to be) installed. Note however that the test must cover the steps 1.1 and 1.2 of the ELT. No changes have been made to the Final AD in response to this comment.**

Commenter 15: SR Technics – Miroslav Mutić – 18/07/2019**Comment # 15**

According to recently issued PAD 19-117, affected Emergency Locator Transmitters [manufactured by ACR Electronics, Inc (C406 and C406G)] needs to be removed and inspected for battery corrosion and test the longitudinal one-axis G-switch for correct activation. Please clarify if PAD 19-117 is applicable to ELTs that have spent any amount of time on Part 27 or Part 29 helicopters, or only on ELTs that have spent 5 years or longer on mentioned helicopters?

EASA response:

Comment noted. The AD applies to all ELTs (P/N and s/n identified) that are, or have been, installed on a helicopter for any amount of time. First action is required within 12 months TIS, or (if already more TIS than that) within 90 days (PAD stated 30 days) after AD effective date. See EASA answer to Comment #14, point A.



The Final AD has been amended to redefine TIS as accumulated calendar time installed on one or more helicopters.

Please note that the AD does not require all ELTs to be modified (rather, replaced with eligible ELT) within 90 days, except those that have 10 years or more TIS, or those that fail a test – paragraph (1.1) of the AD. ACR Electronics, Inc. has informed EASA that sufficient eligible ELTs (or new replacement ELT, maybe a different P/N) will be available to avoid AOG.

Commenter 16: RUAG Schweiz – Roland Lörtscher – 18/07/2019

Comment # 16

According to our understanding, required action (4) – Modification – has to be executed within 30 days after issue date of the AD on all ELT's older than 10 years.

- Especially for operators with bigger aircraft fleets older than 10 years and equipped with the original ELT's, all ELT's will become due more or less within the same time.
- We assume that not enough spare units < 10 years will be available worldwide to cover the massive demand which will be generated by such a narrow time schedule.
- We see a significant risk that the OEM of the ELT will not be able to execute the modification on all affected ELT's within these 30 days.
- In our point of view, a massive aircraft / helicopter grounding has to be expected if this action of the AD will be scheduled as proposed.

We recommend to lengthen the time schedule for the modification to e.g. 12 months, but to add an initial functional check of the G-Switches / Sensors which has to be executed initially within a shorter time (e.g. 15 days), and to be repeated every 2 months for all ELT's older than 10 years. This would give the operators and the equipment OEM the possibility to prioritize the modification of the affected ELT's accordingly.

EASA response:

Comment agreed. The AD has been amended to reflect a 12 months modification time and a 30 days interval defined for units older than 10 years.

Commenter 17: ADAC Luftfahrt Technik – Sarah Hamacher – 22/07/2019

Comment # 17



As per our knowledge there are only 2 shops in Germany available to support the required inspections for the ELTs. Nearly all of our customers are affected by this AD, therefore we will run into an operational disaster. Therefore we require to extend the interval! We recommend an interval of 12 months or the next base maintenance inspection (whichever comes first) for NON COMMERCIAL OPERATED aircraft!!! That way we will have the commercial operators first in line and the non-commercials – who often are not as good coordinated with spare units – have more time to fulfil the requirements.

EASA response:

Comment partially agreed. See EASA answer to Comment #16 above.

Commenter 18: KLM Cityhopper – Daan Westerhuis – 23/07/2019

Comment # 18

- A. As explained in the Applicability section of the PAD, it applies to units which are- or have been installed on a Part 27 or Part 29 helicopter. Accordingly, the definition of 'TIS' should reflect this also. On page 2 following the aforementioned, our proposal would be to change the definition of TIS to: "Time in service (TIS) is the calendar time accumulated by an ELT while installed on a **Part 27 or Part 29 (helicopter)** aircraft),(..)".
- B. Even fixed wing aircraft may be fitted with pre-used ELTs that have at one point in their life been operated on a helicopter for a certain amount of time. If such units can be identified, per this PAD they may require to be tested (paragraph (1) and (3) of the PAD) even if they are currently installed on a fixed wing aircraft (NB. If this understanding is incorrect, please clarify this further in the final AD).
- C. Please note that the required tooling and documentation (ACR installation manual) to perform these tests on-wing are not (yet) available to KLC. The ELT is tested per MRB requirements which refer to the applicable Aircraft Maintenance Manual (AMM) task to perform the testing. Herein the documentation and tooling referred to in this PAD are not used (Note: Recommendations from SIB 2019-09 are still under KLC assessment). It may be challenging to obtain these items within the compliance times specified (which may be as soon as 30 days after effective date of the AD).

EASA response:

- A. Comment agreed. The Final AD has been amended accordingly. See EASA answer to Comment # 15 above.**
- B. Comment agreed. See EASA answers to Comment # 2 and Comment # 4 above.**
- C. Comment not agreed. See EASA answer to point B of Comment # 14 above.**



Commenter 19: Altenrhein Luftfahrt – Alexander Pichler – 25/07/2019**Comment # 19**

As stipulated in the paragraph “Applicability” of this PAD AD is stipulated that this is for the effected ELTs which are installed or known to have been installed a Part 27 or Part 29 (FAR, JAR, CS) helicopter. PN and SN listed in Appendix 1 of this AD. In the last paragraph is stipulated “These ELT are known to be installed on, but not limited to, Part 23 (FAR, JAR, CS) aeroplanes and Part 27 and Part 29 (FAR, JAR, CS) helicopters. That means for us as an Operator of a Part 25 (CS) aeroplane we are also effected when the ELT PN is listed in Appendix 1 due to last paragraph wording “but not limited to”. The ARTEX SB1000 dated 1/14/2019 Revision A, Form 03-CS-06-04 Rev. A is under paragraph 4. “Applicability” following stipulated: ARTEX C-406 Helicopter Models (HM) or C-406 and G-406 ELTs used in helicopter applications. In our Embraer 170-100STD is the effected ELT Model C406-2 with PN 453-5003 installed.

Is this now also applicable to Part 25 (CS) aeroplane or only when the effected ELT is used in a rotary-wing operations as stipulated in the ARTEX SB1000?

EASA response:

Comment noted. See EASA answers to Comment # 2 and Comment # 4 above.

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

Commenter 20: Cathay Pacific Airways – Dickson Ying Ho Ma – 30/07/2019 and 01/08/2019**Comment # 20**

We have confirmed one of the AC B744, AC Reg: B-HUS have PN 453-5002 installed. Below are some of the feedback:

- A. It is not very clear if Passenger Aircraft within the Applicability.
- B. ACR Installation Manual is mentioned in (1.2). ACR Installation Manual is not referenced in PAD 19-117.
- C. [paragraph] (8) is unclear, both aircraft and helicopter wording are used. Please clarify.

To further supplement, B-HUS is a Passenger converted Freighter Aircraft.



D. After reviewing ACR SB1000 REV A, we have found **contradiction** between ACR SB1000 and PAD 19-117 in Applicability. ACR SB1000 REV A applicability is only for helicopter.

4. APPLICABILITY: ARTEX C-406 Helicopter Models (HM) or C-406 and G-406 ELTs used in helicopter applications.

Whereas PAD 19-117 applicability is **not limited to** Part 23 Part 27 and Part 29.

Applicability:

Emergency locator transmitters (ELT) G406-4, C406-1, C406-1HM, C406-2, C406-2HM, C406-N and C406-NHM identified by Part Number (P/N) and serial number (s/n) in Appendix 1 of this AD, installed or known to have been installed on a Part 27 or Part 29 (FAR, JAR, CS) helicopter; except those for which it has been determined that they have been modified in-shop, installing a new hermetically-sealed longitudinal G-switch P/N A1-12-0135, which includes those marked with a label (see Figure 1 in Appendix 1 of this AD) stating that SB1000 has been implemented.

These ELT are known to be installed on, but not limited to, Part 23 (FAR, JAR, CS) aeroplanes and Part 27 and Part 29 (FAR, JAR, CS) helicopters.

Please clarify if Freighter Aircraft is affected.

EASA response:

A. Comment noted. See EASA answers to Comment # 2 and Comment # 4 above.

B. Comment noted. The relevant installation manual is now defined in the Table 1 of ACR Electronics, Inc. SB1000.

C. Comment noted. Since the affected ELT are eligible for installation on ANY aircraft (fixed-wing or rotorcraft), paragraph (7), (8) and (9) regulate which ELT is allowed to be installed and under which conditions.

D. Comment not agreed. See EASA answers to Comment # 2 and Comment # 4 above.

The Final AD has been amended in response to this comment to include reference to the applicable ACR installation manual.

Commenter 21: CHC Ireland DAC – Paul Gavin – 01/08/2019



Comment # 21

In relation to the above PAD I need to advise that there is some confusion over the serial number applicability stated in SB1000 which the PAD relates to.

1. **EFFECTIVITY:** Models affected by this notice: G406-4, C406-1, C406-1HM, C406-2, C406-2HM, C406-N, and C406-NHM used in rotary-wing operations. See Table 1 below.

ELT Model	Part Number	Original G-Switch on ELTs by S/N (up to & including)	Updated G-Switch Design Introduction	IMM
G406-4	453-5012	210-08575	Dec/16	570-5012
C406-1	453-5002	210-09438	Feb/17	570-5001
C406-1HM	453-5003	All S/Ns	No current production	570-5001
C406-2	453-5000	210-09501	Oct/17	570-5000
C406-2HM	453-5001	210-09936	Dec/16	570-5000
C406-N	453-5060	252-01689	Jan/17	570-5060
C406-NHM	453-5061	252-02321	Dec/16	570-5060

Table 1: Part Number Effectivity

Original Date: 1/14/2019
Revision #: A
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The above effectivity extracted from SB1000 states applicability to Part Number 453-5061 up to and including serial number 252-02321. Section 8 of the SB states that the original G-switches must be replaced before 10 years' time in service. We have several ELT units of Part Number 453-5061 and they are above serial number -02321, however some of these units have 10 years' time in service and do not show compliance with SB1000 within their records, the "updated G-switch design Introduction" stated in the SB of December 2016 means nothing as this would only be for units coming out of ARC and there is no requirement for the units to be returned to ARC during it life. The following extract was obtained from "ARC" and the first 3 digits don't mean anything in relation to serial numbers so it's the dash number we are to look at.



2: The COSPAS-SARSAT 15-digit ELT Identifier allows manufacturers 16,383 possible serial numbers. Artex has reached that limit with the C, B, G, and ME Series. For ELTs that pass serial number 16,383 and move on to a 3-digit prefix, different COSPAS-SARSAT numbers will be assigned to that ELT. See Table 2.

Table 2: ELT Serial Number Continuations

ELT Series	COSPAS-SARSAT #	Manufacturing Serial #	ELT Programmed Serial #
C, B, G	112	00001 to 16383	00001 to 16383
	170	170-00001 to 170-16383	00001 to 16383
	210	210-00001 to 210-16383	00001 to 16383
ME	152	00001 to 16383	00001 to 16383
	188	188-00001 to 188-16383	00001 to 16383
	197	197-00001 to 197-16383	00001 to 16383
	242	242-00001 to 242-16383	00001 to 16383
C406-N	135	00001 to 16383	00001 to 16383
	252	252-00001 to 252-16383	00001 to 16383
ELT 1000	251	251-00001 to 251-16383	00001 to 16383
	TBD	TBD-00001 to TBD-16383	00001 to 16383
ELT 345	267	267-00001 to 267-16383	00001 to 16383
	TBD	TBD-00001 to TBD-16383	00001 to 16383
ELT 3000	272	272-00001 to 272-16383	00001 to 16383
	TBD	TBD-00001 to TBD-16383	00001 to 16383
ELT 4000	298	298-00001 to 298-16383	00001 to 16383
	TBD	TBD-00001 to TBD-16383	00001 to 16383

The following is a picture of the data plate on an ELT and as you can see the serial number is 06336, with a DOM of week 30 in 2008, this serial number is outside the serial number applicability of the PAD & SB.



This unit was entered into service on September 2009 and therefore my view is that it would need SB1000 carried out before September 2019, if I was to take the serial number listing in SB1000 and the PAD as the deciding factor we would mark these documents as N/A by serial number and do no inspections or modifications. Some guidance needs to be given on the 10 year requirements, also the turnaround time for compliance within the proposed 30 days will not be possible, I have spoken to a UK agent of ARC and they are stating a 6 to 8 week turn time.

- A. Can you please advise if we can ignore this PAD & SB due to serial number window regardless of time in service being over 10 years?
- B. Do we have a released date of this EASA AD?
- C. Can the compliance window be raised from 30 days to 90 days to allow incorporation of the SB1000?

EASA response:

- A. Comment not agreed. See EASA answers to Comment # 1, Comment # 2 and Comment # 4 above.***
- B. Comment noted. Standard EASA procedure is to publish the Final AD only after comments (if any) have been answered and any applicable changes applied. Both AD and CRD are published at the same time. The exact date of publication usually cannot be 'predicted' with any accuracy.***
- C. Comment noted. See EASA answers to Comment # 14 and Comment # 16 above.***

Commenter 22: ADAC Luftrettung – Stefan Lison – 01/08/2019

Comment # 22

Our fleet of 51 helicopter has 31 affected ELT installed. 24 ELT's with TIS > 10 Years, rest between 7 – 10 Years, that means 50 % within 30 days to remain airworthy. We started exchange program of g-sensor 3 weeks ago. There is only 1 certified MRO in central Europe (Nayak CSC GmbH) and barely no spare worldwide for that old kind of ELT.

Duration for 1 ELTs is approx. 10 days: 5 days for repair at MRO; 3 days change of registration at local authority (only Fridays); and 3 days minimum for installation at aircraft including bringing old ELT to MRO.

After release of AD all (EMS) operators will send their ELT's to Nayak and I'm not sure if anybody knows, how many ELT's are really affected. I guess even the MRO has no idea, how many spares parts of g-sensors will be needed. We suspect that the strict limit of 30 days for the ELT's with TIS > 10 Years may lead into AOG situation in Europe. We kindly suggest to establish an inspection interval for ELT TIS > 10 Years.

Please take in account, that the ELT is an emergency equipment that is used in crash situation, which we all try to avoid every day.



EASA response:

Comment noted. See EASA answer to Comment # 16 above.

Commenter 23: Polish Medical Air Rescue – Robert Chadaj – 01/08/2019
Comment # 23

Polish Medical Air Rescue is state entity and only HEMS provider in Poland. We have analysed PAD 19-117 and here are results:

- we have identified on our EC135 helicopters 23 ELT units exceeding 10 years TIS, to be modified i.a.w. SB1000;
- at the moment repair shops declare 2-4 days TAT for SB introduction. Adding shipping time all together we have minimum 7 calendar days for modification of 1 unit;
- there is limited number of spares for SB1000 (the hermetically-sealed G-Switches) available on stock. Expected delivery time is now 2-4 weeks;
- we do not have spare, serviceable units. For the purpose of modification campaign we can use only 2 ELTs from the helicopters grounded for scheduled checks.

Taking into account all aforementioned we insist to change the time condition of removing affective parts from service for modification **from 30 days to 90 days** (item (4) on page 3 of PAD).

EASA response:

Comment partially agreed. See EASA answer to Comment # 16 above.

Commenter 24: PANH Helicopters – Roman Maslov – 01/08/2019
Comment # 24

Could you please provide to us more details related to the requirements are in PAD No.: 19-117 , Issued: 05 July 2019. I guess an effective date is 19 July 2019 is it. Is it mean that an effected part must be replaced with serviceable new one part before 19 august 2019 , is it right?



EASA response:

Comment not agreed. PAD 19-117 is not an AD, but (as the heading of the document indicates) a ‘Notification of a Proposal to issue an Airworthiness Directive’. For that reason, a PAD does not legally require any action and there is no effective date. This is only provided in a Final AD.

No changes have been made to the Final AD in response to this comment, except by (standard) introducing the effective date.

Commenter 25: China General Aviation – Yang Zhen – 05/08/2019
Comment # 25

We checked that many helicopters were affected by this AD. For this AD, I would like to know the following questions:

- A. When will EASA officially release this AD?
- B. This AD requires 10 years of ELT, so it must be returned to the factory to replace the G switch. This time requirement is too strict, the original SB time is not so strict. If so, many helicopters will be unseaworthy and AOG. Can you change the execution time so that the operator has enough time to execute the work?

EASA response:

A. Comment noted. See EASA answer to point B of Comment # 21 above.

B. Comment agreed. See EASA answer to Comment # 16 above.

Commenter 26: Spairliners GmbH – Timo Knust – 20/08/2019
Comment # 26

As a pool provider for Embraer E170/190 and A380 spare parts, our customers already started to ask how we can manage the units installed on their fleets and in our stock.

Apparently nobody is able to ensure a complete back to birth traceability for such kind of units.

Due to this we already faced some questions/cases not considered in PAD or in associated ACR SB1000:



- A. How to handle units which had for example a shop visit for repair or overhaul in the past and up from this shop visit it can be tracked that no installation on helicopter was done – e.g. last shop visit 5 years ago and since that time installed on non-helicopter AC without any issues.
- B. How to manage units which are installed for longer period (e.g. 12 years) on non-helicopter AC but no further history known.
- C. Is there a minimum timeframe given how long a potential unit had to be installed on a helicopter to be affected? – ACR SB1000 is giving 5 years installation on helicopters to face potential problems with the old G-switch but nothing mentioned inside this PAD.

Example: Unit manufactured in 2010, but history for non-helicopter use is available since 2013 – gap of 3 years not know if helicopter use or not. How to manage such units?

EASA response:

- A. **Comment not agreed. The time installed on non-helicopter AC without any issues is providing no relief as the root cause is resulting from a cumulative wear. See EASA answer to Comment # 8.**
- B. **Comment not agreed. See EASA answer to Comment # 8.**
- C. **Comment noted. See EASA answer to Comment # 15. The TIS is now defined as “the calendar time accumulated by an ELT while installed on one or more helicopters. When unknown, TIS can be determined by taking the time since the date of manufacture of the ELT and subtracting the time while installed on aeroplane and/or in storage, as applicable”. No minimum TIS on helicopters can be defined.**

The AD has been amended to allow subtraction of the time while installed on aeroplane and/or in storage from the time since manufacture, to determine the TIS.

Commenter 27: Luxembourg Air Ambulance S.A. – Frank Schmitz – 27/08/2019

Comment # 27

Can you please specify the abbreviation TIS. If time in service means time since new the industry will face big problems.

If TIS means the time since the last ovh / Inspection the timeframe to apply this AD will be extended and will fit into the maintenance plan for a lot of operators / MRO.

For your information: We operate a fleet of 7 MD 900 Helicopters and 6 Learjet 45, all these A/C are equipped with ACR Artex ELTS, 90% of the ELTS are affected by the AD. Based on NAA requirements and incorporated in the AMPs s we have to send our ELT on an annual basis for ovh / Inspection (including ELT Battery and G-Switch Test). Having the limitation to comply with this AD 1max 1 year after overhaul would help us and as well the Industry very much.



EASA response:

Comment noted. TIS is defined in the AD. The time to perform the test has been extended to 90 days after the effective date of the AD. See EASA answer to Comment # 14.

Commenter 28: Castle Air Ltd – Sara Glastonbury – 02/09/2019**Comment # 28**

I appreciate that the comment period has ended, but one critical issue I need to raise is the compliance time of the repair/replacement of the G-Switches. We have a fleet of 35+ aircraft, all with Artex ELTs, and if the majority are all within the applicable S/N range/age range, they will all be grounded pending replacement within 30 days. Please see attached the quoted lead times from our local Artex service centre for purchase (4-6 weeks) or repair (3 weeks). Please can I request that you acknowledge the above and please could I ask you to advise your proposed release date for the SB?

EASA response:

Comment noted. The time to perform the test has been extended to 90 days after the effective date of the AD (see EASA answer to Comment # 14) and the time to perform the modification to 12 months (see EASA answer to Comment # 16).

