



COMMENT RESPONSE DOCUMENT

EASA PAD No. 15-035

[Published on 08 April 2015 and officially closed for comments on 06 May 2015]

Commenter 1: Swiss Airlines – Thomas Rey – 10/4/2015

Comment # 1

Referring to your PAD# 15-035, “Amending the AFM can be accomplished by inserting a copy of this AD into the Emergency Procedures Section of the applicable AFM.” and “Table 1 – AFM Procedure” amendment (see below). If the standby compass is confirmed to be the origin of smell and/or smoke, remove power from standby compass. On an Airbus A330/A340 it is not possible to “remove power from standby compass” as an emergency procedure by pulling a circuit breaker (C/B), as they are located in the avionics compartment (which is below the cockpit). It is neither policy nor procedure that FCMs step down to the avionics compartment to pull a C/B. As a conclusion:

- The 3rd bullet point should be modified. E.g.: “...remove power from standby compass (if possible/accessible in the cockpit). Or
- Is the 3rd bullet point fulfilled by switching off the STBY compass light? (REMARK: It is not Swiss’ understanding that switching OFF is considered as “remove power”.) Hence, if switching OFF STBY compass lighting is the intension of this PAD, please clarify and adapt the wording.

EASA response:

Comment agreed. Since the PAD was issued, it has been determined that most aircraft have adequate AFM procedures in place for flight crew action in case of smoke in the cockpit, and that for those not having one, a specific procedure is not needed.

This fact, combined with the absence of new occurrences, has resulted in the determination that the condition is no longer considered as unsafe and in the decision to withdraw the PAD.

Commenter 2: Cathay Pacific – Liza Lee – 10/4/2015

Comment # 2

A. [EASA PAD 15-035] paragraph (2), (3) (4) and (6) refers to “instructions of the SB”. Is this a Airbus SB or vendor SB? Can a SB reference be added to



PAD?

- B. Vendor SB CE2-A26-34-001 revision 02 dated 02 Apr 2015 is not available on Airbus World site nor SIRS vendor web site to date. CPA will contact these parties but may take some time to correspond and evaluating the technical content, so can consultation period be adjusted?
- C. In paragraph (7), should the condition be changed from 'or' to 'and', in order to achieve the aim of this AD?

EASA response:

Comments not agreed.

- A. The Reason section of the PAD states that "SIRS published Service Bulletin (SB) CE2-A26-34-001, now at Revision 02 (hereafter referred to as 'the SB' in this AD)". This makes adequately clear that 'the SB' is NOT an Airbus SB – reference to the SB is also found in the section 'Ref. Publication(s)' of the AD.**
- B. SIRS may not be a regular vendor to Airbus, which may explain the absence of the SB on Airbusworld. The duration of the consultation period is deemed sufficient.**
- C. Comment understood, but not agreed. Replacing 'or' with 'and' might lead to the interpretation that one (install compass) is only allowed in combination with the other (install lead). The purpose of the paragraph is to make clear that either action separately, or both at the same time, would be acceptable "provided that...etc."**

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 3: Sirio – Davide Carina – 10/4/2015

Comment # 3

I'm writing you because in PAD 15-035 - Required Action (1), first P/N listed is CE2-A26. Inside SIRS Navigation SB CE2-A26-34-001 Rev. 2, Table 1.0 (page 2 of 8) are shown two Codes CE2-A26, one with Insulation Resistance Test Required and the second one not required.

Going ahead into SB, para 3.2 sentence that "The 'Electrical Lead and Socket Assemblies' listed in Table 1.0 and identified as 'Require Test', must be tested for electrical insulation resistance in accordance with Fig. 3.0".

In this case, if we will verify installed on an aircraft in our fleet, P/N CE2-A26, have we to perform in any case an IR test, as per para 3.2 ?

EASA response:

Comment understood to be addressing the SB. The AD already makes clear that, only when no markings are found on a P/N CE2-A26, is a 500V test



required.

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 4: Sabena Technics – Andre Loic – 14/4/2015

Comment # 4

Following the issue of the PAD 15-035, I have some comments with the step requirement. The §1 requires to amend the AFM if lead assy P/N CE2-A26, P/N CE2-A26E, P/N CE2-A26L, P/N CE2-A52-2, or P/N CE2-A52-3 are fitted, within 30 days after effective date of AD. The §2 requires to determine whether a marking is present within 6 months after effective date of AD, so we can say it corresponds to an identification of the lead assy. The best way, it should be to identify before any action, shouldn't it? Because here, we will amend AFM without to know if the AD is really effective or not.

Is it not possible to require either

- A first step to identify the lead assy if P/N of standby compass is listed in the appendix with a certain delay.
- and in 2nd step, dependent on the result of 1st step, apply an action like amend AFM or other...

Or more simple, in 1st step requires to amend AFM if P/N of standby compass is listed in the appendix, regardless the lead assy fitted.

EASA response:

Comment agreed. Identification whether a certain P/N lead is installed could be determined by a records check, i.e. without a visual inspection.

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 5: ATR – Didier Cailhol – 23/4/2015

Comment # 5

Further to the publication of this referenced PAD ATR will have the following comments:

- A. Applicability: ATR has determined that all ATR models are equipped with a Magnetic Standby Compass having a P/N KCA0105W. Then ATR aircraft (ATR42 and ATR72) should be added within the Appendix 1 listing the affected compass P/N and Aircraft manufacturers. Similarly the table



- presented on page 1 of the SIRS SB CE2-A26-34-001 should be updated accordingly, in adding ATR42 and ATR72 for the compass P/N KCA0105W.
- B. Required action: The Compass P/N and S/N are the only information tracked for the aircraft configuration management. Subpart of the compass (i.e. the lead assembly) are not tracked, then the operator cannot rely on the documentation attached to the aircraft to determine if the AD is applicable or not. The first required action (1) of the AD is to insert the AD within the AFM if the lead assembly of the compass is one of those provided in this paragraph (1). The only way to determine if the AD is applicable is then to remove the compass and check the identification of the lead assembly. The second required action (2) is to again identify the P/N of the lead assembly (within 6 months) for further inspection depending on the P/N (written or not).
- C. Among the potentially affected leads, 4 of them are not marked (P/N CE2-A26E, P/N CE2-A26L, P/N CE2-A52-2 and P/N CE2-A52-3) according to the information included within the Service Bulletin. This will not ease the recording of the effective application of the AD. A specific marking should be defined in the SB to identify that the lead has been checked/tested and then is airworthy.

EASA response:

- A. **Comment agreed. The information is appreciated. However, for the record, it should be noted that the Final AD would have applied to ATR aircraft, even without inclusion into the Appendix. The AD is not an aircraft AD, but applies to “compasses [which] are known to be installed on, but not limited to, aircraft manufactured by a company as identified in Appendix 1 of this AD.”**
- B. **Comment agreed. Identification of P/N is the same action as inspecting for markings. However, EASA was informed by SIRS that in some aircraft, “[It should be possible to leave] the compass [] in its mounted position to determine if the fitted lead is marked. However, marked leads have only been available since the beginning of March 2015. If the aircraft is less than 3 years old, it is highly likely that the electrical lead will be OK – although it still needs to be I/R tested in case the lead had been replaced [in service with] an older version”. See also EASA answer to Comment # 1.**
- C. **Comment understood. Despite that fact that the SB does not contain instructions to mark leads as ‘inspected’ or ‘tested’ (i.e. passed), the AD does not preclude or prohibit taking such marking actions.**

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 6: Cityjet – Allan Hennessy – 23/4/2015

Comment # 6

Regarding PAD 15-035 which refers to SIRS Standby Compass Electrical Lead Assembly, I would like to make the following comments:

- A. SIRS SB CE2-A26-34-001 Rev 2 dated 02 Apr 2015 - This SB is not EASA part 21 approved, therefore is not considered airworthiness data. Can the fact that the SB is referred to as part of the AD required actions, can it be considered to be approved for use to comply with the AD? Or is separate EASA



part 21 approval required?

- B. PAD Required actions paragraph (2) - "exceed certain criteria". This phrase is vague. It is unclear whether it is referring to the Visual Check (SB section 3.1) or the Insulation Resistance Test (SB Section 3.2).
- C. If what I assume is the intent of the PAD, PAD Required actions paragraph (2) should refer explicitly to SB section 3.1.
- D. PAD Required actions paragraph (3) should refer explicitly to SB section 3.2.
- E. PAD Required actions paragraph (2) states that for all effective P/Ns, if there is no marking, then perform the visual check. The SB states to perform the Visual Check on all effective P/Ns. The SB also states that all effective P/Ns have no P/N identification markings, with the exception of lead P/N CE2-A26 which is available both with and without markings (according to the SB, this is the only P/N available in both conditions). Therefore the SB states that P/N CE2-A26 with P/N identification markings is required to have the Visual Check performed. Therefore the PAD and the SB disagree on the instructions for P/N CE2-A26 with P/N identification markings. The PAD required actions paragraph (6) also disagrees with paragraph (2) by stating that P/N CE2-A26E can only be considered serviceable if it has passed inspection/test iaw the SB.
- F. The SB states that the problem Lead Assemblies were manufactured before 01 Jan 2013 and later states that the problem Lead rubber moulding was manufactured in 2011. Is it possible to limit the group of Lead Assemblies effective to the AD based on the date of manufacture? If an operator can prove through their records that the Lead Assemblies that are installed on their aircraft were installed prior to a certain date, or after a certain date, can they declare their Lead assemblies to be serviceable without further inspection?

EASA response:

- A. Comment understood. EASA concurs that the SB does not refer to an explicit approval authorisation. Nevertheless, SIRS is the holder or ETSO Authorization Nr. EASA.21O.1008 Rev. A and the SB is considered approved and published under that same authorisation. For modification actions on an aircraft (e.g. replacement of lead with another P/N lead, or replacement of compass with another P/N compass) approved aircraft modification instructions are necessary.**
- B. Comment accepted. The full sentence is to “determine that the condition of the part does not exceed certain criteria, in accordance with the instructions of the SB”. The intent was to make clear that the relevant criteria are part of the “instructions of the SB”.**
- C+D. Comments understood, partially agreed. Making reference to explicit SB paragraphs in an AD is usually avoided, as it means that, for a future SB revision (which is normally acceptable to comply) the approval holder would not be able to change the SB paragraph numbering or, if they did, EASA would have to re-publish the AD to re-establish a ‘match’ with the revised SB.**
- E. Comments partially agreed. See also the SIRS statement in the EASA answer to point 2 of Comment # 5. The visual inspection required by the AD has two parts, (1) check for P/N marking (granted, only P/N CE2-A26 exists with and without) and (2), only those with no P/N markings, an inspection for condition. In EASA view, there is no disagreement between SB and AD on these aspects. For clarification, affected leads (i.e. those with no P/N markings) can be installed, provided the lead has passed the visual inspection and/or IR test, as applicable. Nevertheless, SIRS has**



revised and clarified the SB.

F. Comments understood. However, further investigations have shown that other batches of leads (manufactured between 2005 and 2012) could also be affected, and that traceability of a specific lead assembly and/or installation thereof on a compass cannot be guaranteed. The potentially affected population can therefore not be reduced.

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 7: SAAB – Mikael Persson – 28/4/2015

Comment # 7

Saab AB, Aeronautics, have a comment on PAD 15-035. Please add in Appendix 1 that P/N WL1001KCA1 is known to be installed on aircraft manufactured by Saab AB, Aeronautics (formerly Saab Aerosystems). The applicable P/N is installed on both SAAB 340 and SAAB 2000.

EASA response:

Comment agreed. The information is appreciated. See also EASA answer to Comment #5, point A.

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 8: Airbus Helicopters (France) and Airbus Helicopters Deutschland – Ulrich Lauer – 30/4/2015

Comment # 8

- A. AH and AHD would like to ask if some electrical protections installed on the A/C (like fuses, circuit breakers or any other design feature leading to power off the lighting of the standby compass in case of detected overcurrent) may prevent from the occurrence of the described unsafe condition “smoke and fire in the cockpit affecting the flight crew”. If yes, what are, according to SIRS suppliers, the characteristics those design features shall comply with to offer the relevant protection? AH & AHD would like to have the opportunity to investigate this question on their A/C installations (to be analysed on all kind of different installations) before EASA declares an unsafe condition, which does not actually exist on AH / AHD Aircraft.
- B. Taking credit from the large fleet of different aircrafts on which those standby compasses are installed, AH and AHD would like to know what is the estimated probability considered (nb of failure per flight hour) of occurrence for the unsafe condition.



C. AH and AHD consider as problematic for the operators the fact that, from the time being when it has been established that no marking exist on the lead assembly, it can be requested in some cases to test and replace the lead assembly before next flight. Indeed, in order to guarantee the availability of the aircraft before next flight, operators will be then forced to purchase in advance lead assemblies (which cost 165\$ per lead assembly) as the operators cannot predict neither the result of each test even nor the occurrence rate they will have to face changing the lead assembly. In addition, the replacement of the standby navigation compass wiring could require a processing and customisation with contacts / connector / tubing / label.

This will lead to additional costs for the operators. A supply shortage is likely to occur if this high amount of lead assemblies has to be ordered in advance by operators, possibly resulting in grounding of operators who actually face the issue.

D. In addition, for AH and AHD helicopters, the wiring installation is done by AH/AHD. We don't expect our operators being able to perform the test and to replace the wiring in accordance with SIRS SB.

E. For those reasons, AH and AHD would like EASA to consider a compliance time (to be discussed with SIRS) allowing:

- the operator to purchase lead assemblies only if the test result is negative (considering the purchase order will be performed by the operator in the few hours immediately after the test result).
- The operator to request AH/AHD support to perform the test and replace the wiring.

EASA response:

A. Comment agreed. EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

B. Insufficient information is available for the Agency to determine an estimated probability: the number of affected leads is unknown, the affected fleet operations and resulting flight hours exhibit large discrepancies. The number of occurrences is also undetermined, as the Agency has been made aware thanks to the PAD publication that at least one other event happened. However it was not reported because, following smoke source determination, the crew managed to switch off the compass lighting before any flame appeared. It is suspected that other similar events may have not been reported.

C. The ordering and cost of replacement parts is a matter between SIRS and the operator.

D. An AD does not specify who must accomplish the actions. Regulations and company qualifications/capabilities determine who is authorised to accomplish AD-required actions.

E. Comment agreed.

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.



Commenter 9: Lufthansa Technik – Lars Weinerth – 30/4/2015**Comment # 9**

- A. To (1): To be able to do an update of the emergency procedure section of the AFM Procedure we need an Airbus guideline and a certified document (AFM TR) to implement an AFM update. Also it is important to know which fleet and tailsign is direct affected for the AFM documentation update. It would also be helpful to give a clear procedure, if the standby compass is confirmed to be the origin of smell, how to remove the power from the compass etc.
- B. To (2) – (8): We received the information from SIRS that the production of the labeled/marked lead assembly started in March 2015. That means that almost every A/C is affected by the inspection which has the mentioned lead assembly installed. With this information we think that an accomplishment time frame within 6 month is very challenging. We suggest that an inspection within 12 month is more feasible.
- C. Also we received the information that this issue shall be an ageing problem. To cover an ageing problem, a one-time inspection is not enough. We suggest to have an Airbus procedure for accomplishment the insulation test on wing.
- D. Our investigation shows that the access is very challenging. Once inspected a lead assembly we miss a procedure to mark the inspected lead. This would help to identify already inspected leads for example received from the spare pool, before next installation on an aircraft.
- E. If a replacement of an inspected lead is necessary we definitely miss the Airbus reference, or an Airbus procedure which covers an exchange of a standby compass lead assembly exchange including applicable tests. Our suggestion and statement for the PAD 15-035 is to review this PAD with Airbus.

EASA response:

- A. **Comment understood. See also EASA answer to Comment #1.**
- B. **There appears to be some misunderstanding. The SB states that the ‘problem’ lead assemblies (i.e. those suspected to have deficiencies) were manufactured before 01 January 2013, which is unrelated to the (later) introduction of having P/N markings on the leads. It is true that all ‘unmarked’ leads must be inspected for condition and tested, but this can be done while the compass remains installed on the aircraft. See also EASA answers to Comment #8, points C and E.**
- C. **The subject addressed by this AD does not involve ‘aging’, but concerns leads made of non-conforming material – a one-time action is sufficient to find the non-conforming material leads and remove them from service. For further details, see EASA answer to Comment #12, point B. Whether Airbus (or any other TC holder) chooses to introduce a maintenance procedure is a matter outside the scope of this AD.**
- D. **See EASA answer to Comment # 5, point C.**
- E. **Airbus (like several other major TC holders) has reviewed this PAD and submitted comments to EASA [see Comment #12]. Please note that this is**



an equipment AD, not an AD exclusively applicable to Airbus aircraft.
EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 10: Bombardier – Ryan Laborce – 4/5/2015

Comment # 10

- A. PAGE 1, REASON, PARAGRAPH 4: To align with the SIRS SB CE2-A26-34-001 REV 2, Bombardier recommends that the statement, “inspection and testing of each P/N CE2-A26...” be revised to, “visual check and testing of each P/N CE2-A26...”
- B. PAGE 1, REASON, PARAGRAPH 4: Bombardier recommends that the statement, “depending on findings, replacement of the lead assembly.” be revised to, “depending on findings, either re-use the cable assembly or replace it.”
- C. PAGE 2, REQUIRED ACTION (S) AND COMPLIANCE TIME(S), PARAGRAPH (2): Bombardier recommends that the statement, “as installed on the compass, to determine whether a marking is present...” be revised to, “as installed on the standby compass, to determine whether a marking is present...”
- D. PAGE 3, REQUIRED ACTION (S) AND COMPLIANCE TIME(S), PARAGRAPH (6): Bombardier recommends that the statement, “For the purpose of this AD, a serviceable lead assembly is a P/N CE2-A26 ...” be revised to, “For the purpose of this AD, a serviceable lead assembly to a P/N CE2-A26...”
- E. PAGE 3, REQUIRED ACTION (S) AND COMPLIANCE TIME(S), PARAGRAPH (6): To align with the SIRS SB CE2-A26-34-001 REV 2, Bombardier recommends that the statement, “lead assembly that has passed the inspection/test in accordance...” be revised to, “lead assembly that has passed the visual check/electrical insulation test in accordance...”

EASA response:

- A. Comment not agreed. The Reason of the AD ‘describes’ the required actions but does not constitute the requirements. In addition, the AD requires more than a ‘visual check’ (which is to verify the presence of P/N markings), i.e. an inspection for condition of the lead assembly. Finally, an AD does not necessary have to ‘align’ with the wording of an SB – in case of (possible) differences, the AD (required actions) text prevails over the SB text.**
- B. Comment not agreed. The required action to replace depends on findings – if there are no findings, no corrective action is required. From that, it logically follows that a lead that has passed an inspection and test can be re-used (i.e. remain installed). An AD states what is required and when, and by default does not (have to) state what is NOT required.**
- C. Comment agreed.**



D. Comment not agreed. The referenced P/N are those of the affected lead assemblies, not the P/N of affected standby compasses.

E. Comment not agreed.

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 11: Thales Avionics – Cedric Chevrel – 5/5/2015

Comment # 11

- A. Thales recommends that the SB be amended as follow at the paragraph 3.1.2 :
- Present wording: «3.1.2 The rubber connector surface shall not show signs of overheating, deformation or decomposition. »
 - Modification: «3.1.2 The rubber connector surface shall not show signs of overheating, deformation or decomposition. **Every side of the connector surface need to be inspected.** »
- B. In addition of what is stated in the PAD and SB, which address mainly Airlines, Repair station and Aircraft Manufacturers, Thales recommend that all the organization that could have SIRS leads in hand be addressed such as other Maintenance organization (spare centers) and avionics suppliers/integrators.

EASA response:

- A. **Comment understood, but not agreed. In addition, the comment is against the SB, not the PAD. Where the SB refers to the “rubber connector surface” that should be understood to be the entire surface, i.e. on all sides of the lead assembly. Nevertheless, SIRS has been requested to revise the SB for clarification.**
- B. **Comment understood, but not agreed. It remains the responsibility of whoever installs a (replacement) lead assembly to comply with the AD, whether this is the aircraft owner, operator or maintenance company. See also EASA answer to Comment # 8, point 4. Since no laws exist that regulate the buying and selling of parts, it is the recipient of such parts that must determine whether a part is compliant (or not) with an existing AD for that part.**

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 12: Airbus – Florence Llibre – 6/5/2015



Comment # 12

Airbus questions the need to have this AD applicable to Airbus aircraft since the unsafe condition is not confirmed for Airbus aircraft. Indeed an occurrence on an A330 (ref. ISO150121) showed that there is no unsafe condition linked to this issue: On the 15th of January 2015, smoke emanated from the standby compass P/N KCA0105W of the A330 MSN 1310. The flight crew switched off the standby compass. Smoke dissipated shortly afterwards. Investigations showed that the smoke was due to low electrical insulation of the socket rubber moulding. Airbus assessed that there is no unsafe condition linked to this issue. No worse consequence is expected on other Airbus programs, therefore:

- A. Can EASA explain the unsafe condition?
- B. Could EASA provide details on the investigation that led to declare the unsafe condition?
- C. How was the list of affected P/Ns defined?
- D. Could EASA provide the rationale of the compliance time of the 6 months?
- E. Airbus was not involved in the issuance of the PAD. If the AD is confirmed relevant for Airbus aircraft, an Airbus cover SB would be necessary to enable Operators to perform the inspection and test on aircraft (a splicing procedure has to be created). In addition, via the PAD, EASA requests an update of the AFM with a very short notice.
- F. To summarise, Airbus position is that the unsafe condition for Airbus aircraft is not confirmed, and has to be further assessed depending on the data provided by the EASA. At this stage, Airbus does not expect a smoke or fire issue that would reduce the control of the airplane. Therefore, Airbus expects that there will be no unsafe condition for all impacted Airbus aircraft, as for A330/A340.

Airbus requests not to publish the AD pending confirmation of the unsafe condition for Airbus aircraft.

Note: For Airbus aircraft, the P/Ns listed in appendix 1 of the PAD are certified on:

- A300/A310/A300-600/A330/A340/A350/A380/A400M for P/N KCA0105W
- A400M for P/N 1007KCA1.

A320 family aircraft has none of the P/Ns listed in appendix 1 of the PAD.

In the case that the unsafe condition would be confirmed for Airbus aircraft, here are our comments on the PAD:

- G. The paragraph (1) should be modified as follows: For aircraft that have a P/N CE2-A26, P/N CE2-A26E, P/N CE2-A26L, P/N CE2-A52-2, or P/N CE2-A52-3 lead assembly installed on the magnetic standby compass, within 30 days after the effective date of this AD, amend the Emergency Procedures Section of the applicable AFM as indicated in Table 1 of this AD, unless the existing Fire/Smoke procedures already ask to identify the fire/smoke source. In case amendment needed, inform all flight crew and, thereafter, operate the aircraft accordingly. Amending the AFM can be accomplished by inserting a copy of this AD into the Emergency Procedures Section of the applicable AFM.



Indeed, for [all Airbus designs] the AFM procedure enables to handle a smoke/fumes issue in the cockpit.

H. Both tables are referred to as “table 1”.

EASA response:

To specific questions and statements:

- A. The deficiency affecting the standby compass lead assembly can result in a fire. Fire located below the overhead panel and near the primary field of view of the crew was feared to alter the ability of the crew to cope with adverse operating conditions. This triggered the PAD release. However, further investigations with aircraft manufacturer and return from the field following SIB 2015-24 permitted to confirm Airbus position.**
- B. A CS-25 aircraft experienced smoke/smell during flight without being able to identify the origin. The smell intensified during the approach. Smoke was noticed from beneath the stand by compass during taxi, before flames erupted a few seconds later. The crew used the fire extinguisher to resolve the situation. It was therefore feared that a defective lead assembly sets itself into fire in a short time, before the crew notice the source of smoke and shuts down standby compass power. The standby compass manufacturer has identified the root cause as its subcontractor having manufactured for a period of time the lead rubber moulding with an excess of graphite, resulting in a “conductive” isolator. The duration of the flawed production, the lead assembly being unmarked, not serialized and sometimes provided independently of the compass removes any mean to trace accurately which installation are affected, except by conducting the proposed inspection.**
- C. The list of affected P/N is defined from all the compasses which are installed with the type of lead assembly which is affected.**
- D. A compliance time of 12 months was determined by engineering judgement to be acceptable, also in view of the affected fleet and the work to be completed.**
- E. In EASA view, the replacement of a certain P/N lead with another P/N lead (provided these are eligible and interchangeable, from the ETSO approval perspective) can be considered (technically) to be a minor change, not only at equipment level, but also at aircraft level. However, whether Airbus chooses to develop and publish an SB for this action, this would not delay publication of a Final AD. Regarding the AFM change, see EASA answer to Airbus comment G. below.**
- F. This position is acknowledged, and the PAD is withdrawn.**

To reply to the Airbus comments:

- G. Noted. See also EASA answer to Comment #1.**
- H. Comment noted and agreed.**

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.



Commenter 13: Bombardier – Ryan Laborce – 6/5/2015**Comment # 13**

Please see below additional Bombardier comments regarding the EASA PAD 15-035:

- A. PAGE 3, REQUIRED ACTION, PARAGRAPH 6: Based on the AD, it is unclear if the CE2-A26 lead assemblies with “PNR IDENTIFICATION” are considered serviceable as implied by the SB’s “NO” TEST status. For AD/ SB clarity and consistency regarding lead assembly serviceability, Bombardier recommends that the SB clarify that CE2-A26 lead assemblies with “PNR IDENTIFICATION” have been tested in accordance with the instructions of the SB before delivery and are considered serviceable. The current AD para (6) statement would then be considered to include these CE2-A26 lead assemblies with “PNR IDENTIFICATION” as serviceable. Alternately, para (6) could be revised to indicate that lead assemblies CE2-A26 with “PNR IDENTIFICATION” are considered serviceable and CE2-A26 lead assemblies with “NO IDENTIFICATION” are not.
- B. PAGE 2, REQUIRED ACTION, PARAGRAPH 4: In Table 1 Bombardier recommends that the statement, “Part condition exceeds criteria” be revised to “Part condition does not pass visual check” to be consistent with the SB terminology.

EASA response:

- A. *Comment agreed.*
- B. *Comment partially agreed.*

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

Commenter 14: Dassault Aviation – Sege Bez – 1/6/2015**Comment # 14**

DASSAULT was not informed by SIRS Ltd about the issue potentially impacting the electrical lead assembly of the standby compass despite the fact that this equipment is installed on nearly all Falcon: F10, F200, F50, F900 and F2000 series. 7X is not affected. We have discovered the issue with the published PAD 15-035 and initiated an investigation focusing mainly on the feasibility of the required actions for Falcon operators. Up to now no incident has ever been noticed in the Falcon fleet.

Comments:

- A. **Emergency smoke removal procedure** - The PAD proposes an operational procedure (Table 1) to be run in case of generation of smoke or smell



originating in the standby compass. The crew shall remove power from the defective standby compass.

On certain Falcon models (F50EX, F900EX, F2000 and F2000EX) wiring lay-out the standby instruments (including the standby compass, the Meggitt standby horizon) are electrically supplied by a dedicated standby instrument battery. In order to ensure the availability of the standby instruments, even in case of failure of the primary power generation, the lay-out design does not include a manual capability to disconnect the standby battery from the standby instruments. However internal fuses would disconnect the battery in case of hard electrical shortages. The proposed procedure cannot be applied on those previous models.

On other older Falcon models (F10, F100, F200, F50B and F900B/C) there is a possibility to remove power from the standby instrument. Even in case of confirmed default there still exists a possibility to contain the smoke generation. The post-failure situation is at worst considered as MAJOR and does not necessarily call for mandatory actions.

B. Inspection and Test - The PAD requires inspection and test of the electrical lead as described in SIRS Ltd Service Bulletin CE2-A26-34-001. If the insulation test outcome is correct (resistance >20 M Ohms), SIRS Ltd Service Bulletin does not describe how to tag the performed check on the electrical lead before reconnection. The PAD should also reflect this marking after inspection in order to allow this part as a serviceable part.

C. Scope of the inspection campaign - As described in SIRS Ltd Service Bulletin the issue originates in a manufacturing default during year 2011. There seems to be a limited batch of suspect electrical leads produced during that year.

From SIRS Ltd SB CE2-A26-34-001: From there on EASA and SIRS Ltd determine that all parts produced before year 2013 must be checked. Facing this typical basic electrical issue we are not convinced technically that a part which was produced well before 2011 and which have been in service for many years would turn suddenly defective. There is little risk that a Falcon 50 which has been flying for many decades without issue with the standby compass would tomorrow face this insulation issue.

From our point of view the batch of suspect parts may be more accurately identified and described by SIRS Ltd in order to limit the mandatory actions to those really concerned.

D. Need for Aircraft Manufacturer Service Bulletins - Disconnecting electrical leads of the standby compass requires first to access the equipment behind the front deck panel. This front deck removal and reinstallation is time consuming and therefore costly. There are alternate ways to check the resistance value as described by SIRS Ltd which are more practical. DASSAULT wish to provide Service Bulletins for certain models to accomplish the PAD required actions.

Conclusion:

DASSAULT AVIATION believes that additional work taking into account our above concerns needs to be achieved at SIRS Ltd, Aircraft Manufacturers' and EASA before the final AD can be published.

EASA response:



A. Comment agreed. See also EASA answer to Comment #1.

B. Comment partially agreed. See EASA answer to Comment #5, point C.

C. Comment not agreed. See EASA answer to Comment #6, point F.

D. Comment noted.

EASA has decided to withdraw the PAD. See EASA answer to Comment #1.

