

## COMMENT RESPONSE DOCUMENT

EASA PAD No. 21-076

[Published on 21 May 2021 and officially closed for comments on 18 June 2021]

### Commenter 1: TAP Air Portugal – David Martins Lopes – 18/06/2021

#### Comment # 1

I am a Power Plant engineer for TAP. I have been analysing the PAD NO.: 21-076, which mandates the EEC software upgrade to version 3.1 on Trent 7000 engines of the A330neo aircraft.

- A. This is the second software upgrade that this engine has witnessed so far. However, due to the light nature of the previous version (3.0.1), it was not mandated through an AD, meaning that some operators have not implemented Airbus SB A330-73-3061. Additionally and technically speaking, there is no need to apply SB A330-73-3061 for SB A330-73-3062 (software 3.1) to be successfully implemented. This means that an operator that chose not to apply A330-73-3061 may go directly to A330-73-3062, without any intermediate step. Furthermore and to corroborate this, Rolls-Royce SB TRENT 1000 73-K517 does not refer to any concurrent requirement towards Rolls-Royce SB 1000 73-K301 (the engine SB that is instructed by A330-73-3061). Therefore, I would suggest a revision of the concurrent requirements of this AD in order to eliminate the concurrent requirement for the embodiment of SB A330-73-3061. Note that in the specific case of TAP, SB A330-73-3061 has already been applied to our whole fleet and we are fully compliant with this concurrent requirement. However, other operators have not, and this may pose some technical challenges without any effective benefit, as the software 3.1 can be implemented successfully on an engine with software 2.2.2 without needing to install 3.0.1 in between. This requirement would require that operators would have to declare the implementation of a mod they did not implement.
- B. Finally, and trusting that this typo has been reported before, the original issue date for A330-73-3061 was 12 March 2020 and not 12 March 2021. If the concurrent requirement is kept, please correct this date.

#### EASA response:

- A. Comment not agreed. Technically speaking, at engine level, as specified by Rolls Royce, EEC software 3.1 can be installed on EEC software 3.0.1 or previous version. However, at aeroplane level, and this Final AD is at aeroplane level, accomplishment of SB A330-73-3061 which introduces EEC software 3.0.1 is a pre-requisite in order to apply SB A330-73-3062 which introduces EEC software 3.1.**

***The objective of requiring accomplishment of SB A330-73-3061 as a pre-requisite is to ensure that all aeroplane operational documentation makes the correct link to each EEC software, in accordance with the principle of the modification stacking up.***



**B. Comment agreed. The Final AD has been corrected accordingly.**

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

**Commenter 2: Delta Air Lines, Inc. – Cecilia Teeuwen – 18/06/2021**

### **Comment # 2**

Reference:

- (1) EASA Proposed Airworthiness Directive: PAD No. 21-076, dated 21May 2021
- (2) Airbus Service Bulletin (SB) A330-73-3062
- (3) Rolls-Royce SB Trent 1000 73-K517
- (4) Airbus Service Bulletin (SB) A330-73-3061

### **SUMMARY:**

During A330-941 airplane re-light flight tests in very cold temperature conditions, an ECAM warning “ENG OIL LO PR” appeared twice. It was later determined that this warning should not have appeared in these conditions. This ECAM warning would prompt the crew to shut down the affected engine, which could lead to dual engine in-flight shut-down.

To address this potential unsafe condition, Rolls-Royce developed new EEC software for the affected Trent 7000 engines and published Rolls-Royce SB Trent 1000 73-K517, Ref (3). This SW is embodied at airplane level on the production line through Airbus mod 209142 and Airbus Service Bulletin (SB) A330-73-3062, Ref (2).

For the reasons described above, PAD 21-076, Ref. (1), requires installation of serviceable EEC SW. This PAD also allows intermix / interchangeability of EEC SW until a certain period and, after that period, prohibits (re)installation of affected EEC SW.

### **DELTA'S COMMENTS**

**Comment A.** PAD ‘Serviceable EEC SW’ definition, ‘The SB’ definition and PAD paragraph (1) Modification

PAD 21-076 paragraph (1), requires the EEC SW to be modified in accordance with Airbus SB A330-73-3062, Ref (2). This Airbus SB includes ‘Required for Compliance’ steps in which mandatory language (“in accordance with”) is used when requiring Rolls-Royce SB Trent 1000 73-K517, Ref (3) for uploading the EEC software. Rolls-Royce SB Trent 1000 73-K517 is a standalone document that includes instructions for SW upgrade via three methods: On-Wing: download SW to the existing (already installed) EEC, On-Wing: remove existing EEC from on-wing engine and replace with EEC with upgraded SW, and In-Shop: remove existing EEC from in-shop engine and replace with EEC with upgraded SW. The instructions in Rolls-Royce SB Trent 1000 73-



K517 include job-setup instructions per the AMM or Engine Manual, such as gaining access to avionics compartment, tagging circuit breakers, opening and closing steps that also use mandatory language (“in accordance with”) vs. flexible (“refer to”) language.

As such, PAD 21-076, by requiring a serviceable EEC SW “in accordance with” Airbus SB A330-73-3062, which in turn requires the EEC SW to be uploaded “in accordance with” Rolls-Royce SB Trent 1000 73-K517, is requiring compliance with RR SB Trent 1000 73-K517 in its entirety and does not allow any flexibility for operators to deviate from the instructions, even for the opening and closing engine for access steps.

- i) DAL Requests that the ‘Serviceable EEC SW’ definition, ‘The SB’ definition and/or PAD paragraph (1) include the following language or similar:
 

“Where RC instructions in Airbus Service Bulletin (SB) A330-73-3062 include ‘in accordance with’ ref. Rolls Royce PLC VSB Trent 1000 73-K517, this AD requires using “refer to” ref. Rolls Royce PLC VSB Trent 1000 73-K517.”
- ii) DAL also requests that PAD paragraph (1) be revised to use ‘refer to’ in lieu of “in accordance with” when calling out the SB, as shown below, since the unsafe condition is addressed by installing a ‘serviceable EEC SW’ as already called out in PAD paragraph(1), independent on whether the SW modification is accomplished On-Wing with EEC installed, On-Wing by removing and replacing the EEC or by the In-Shop SW upgrade.
 

“Modification:

(1) Within 24 months after the effective date of this AD, modify the aeroplane by installing on each engine a serviceable EEC SW, as defined in this AD, ‘refer to’ in accordance with the instructions of the SB.”

#### **Comment B. PAD Paragraph (2) Replacement**

PAD 21-076 paragraph (2) approves the replacement of both engines as an acceptable method to comply with the EEC SW modification requirement of paragraph (1). It would be easier and more economical for operators to replace both EECs containing affected EEC SW with EECs containing serviceable EEC SW.

DAL requests that paragraph (2) also approves the replacement of both EECs as an acceptable method to comply with the installation of a serviceable EEC SW requirement of paragraph (1).

#### **Comment C. PAD Paragraph (3) Concurrent requirements**

PAD 21-076 paragraph (3) requires the prior or concurrent modification of the aeroplane “in accordance with” Airbus SB A330-73-3061, Ref (4). The mandatory language in this paragraph makes Airbus SB A330-73-3061 required for compliance in its entirety. The additional Airbus SB A330-73-3061 was not intended to be AD related, and therefore, does not contain RC steps.

DAL requests either changing the mandatory language (“in accordance with”) to the flexible language (“refer to”) OR indicating which steps in Airbus SB A330-73-3061 are required for compliance.

#### **Comment D. PAD Paragraph (6) EEC SW Installation Prohibition:**

PAD 21-076 paragraph (6) prohibits the installation of engines with affected EEC SW or uploading any affected EEC SW on any aeroplane/engine. Installation of any engines with the affected EEC SW to an aircraft is prohibited after 24 months from the effective date of the AD. In a case of a spare



engine with affected EEC SW, operators may choose to install the engine and upgrade the EEC SW after engine installation, referring the On-Wing instructions in the Rolls-Royce SB Trent 1000 73-K517 already included in PAD 21-076.

DAL requests changing the language in paragraph (6) to "... do not operate any aeroplane with affected EEC SW installed, ..." in lieu of "... do not install on any aeroplane an engine with affected EEC SW installed".

***EASA response:***

***A. Comment not agreed. EASA system does not recognize RC markings and when the Final AD says 'Modify the aeroplane.... in accordance with the instructions of the SB', this means to require accomplishment of the modification instructions part of the SB. All side items like opening (preparation) and closing actions are not part of the 'modification instructions' of the SB and can therefore be accomplished at the discretion of the operator.***

***B. Comment agreed. The Final AD has been amended accordingly.***

***C. See EASA answer to point A of this comment.***

***D. Comment agreed. The wording of the final AD has been amended accordingly.***

***No changes have been made to the Final AD in response to Points A and C of this comment.***

