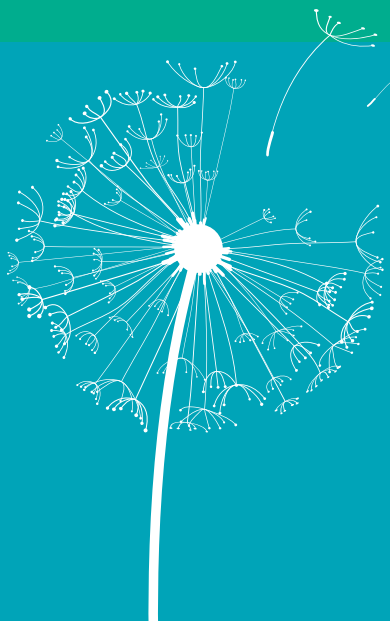
EASA
European Aviation Safety Agency

SEASONAL TECHNICAL COMMUNICATION



INDEX

WELCOME MESSAGE

Dear Readers,

It is with great pleasure that I welcome you to our first edition of the SEASONAL TECHNICAL COMMUNICATION– STC Newsletter, created around the world of Supplemental Type Certificates by the EASA Large Aeroplanes Certification Department.

Why the name SEASONAL TECHNICAL COMMUNICATION – e-STC Newsletter? Because behind each and every letter we see several meaningful words:
S - Sky, Stakeholders, Season
T - Transport, Technical, Transversal, Talk, Technology
C - Communication, Connected, Cooperate, Coordinate

The e-STC Newsletter has been designed as an innovative communication channel. Our intention is to provide a collaborative space for the European/International STC Holders community and the Certification Aviation Authorities to share knowledge, dialogue, critique and debate on STC related subjects.

The advantage of e-based publications like our e-STC Newsletters allows us to be all connected and develop synergies in the certification/validation field. You will be directly involved in technical discussions and on-going knowledge sharing.

Our vision is to use the e-STC Newsletter as a bridge between the different EASA events attracting the STC Holders community (such as STC Workshop, DOA Workshop) enhancing even more the communication and ensuring co-operation continuity.

You will find in our e-STC Newsletter a section dedicated to interesting technical subjects affecting STCs including TIPs from Experts/PCMs, a section on new regulations applicable to STCs and a section describing new initiatives/changes taking place in EASA and relevant to STCs. In the last section you will find an active forum for Q&As.

For this 1st edition the following items have been identified:
1. Technical Subjects - Medical Stretcher and Non-Rechargeable Lithium Batteries
2. New Regulations - EASA-FAA Technical Implementation Procedures (TIP) Rev. 6 and E-Rules for Initial Airworthiness.
3. EASA Initiatives/Changes – STCs-DOAs Synergy project
4. Upcoming EASA Events
5. Question & Answers

I strongly believe that this e-STC Newsletter will become a two-way communication tool enhancing the way we collaborate.
Together we can build the bridges of our present and future co-operation!

Sincerely,
Carla IORIO
(Head of Special Aeroplanes and Projects Section)

INSIDE THE STORY

Carla Iorio has been working in the world of STCs for EASA since February 2007, accumulating 12 years of valued experience as EASA PCM on STCs certification/validation related to various aircraft modifications (i.e. VIP, Structures, Avionics, and Software/AEH).

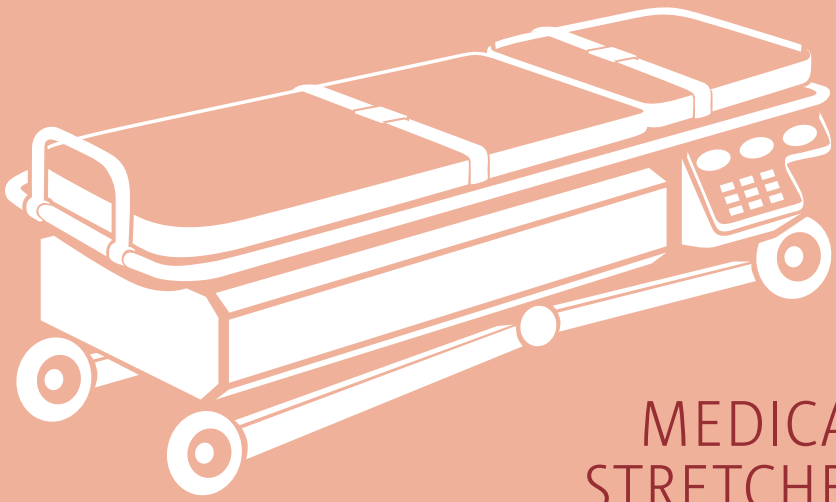
As Section Manager responsible for a Team working on STCs and Special Aeroplanes/Projects she is supervising all core business activities (i.e. Initial and Continued Airworthiness of Type Design, Certification Support & Validation, TACs) furthermore ensuring the development of staff under her direct responsibility.

For Carla working on STCs has always represented a unique opportunity to engage with a large variety of stakeholders and become familiar with the implementation of many different innovative aircraft changes. This last point opens the door to the excellent skills that PCMs and Experts have developed when working on several STCs in parallel. Thanks to their amazing work hundreds of approvals are issued every year by the Agency.

Interesting fact related to workload in the STC team: 90% of all STC-related applications received in 2017 have resulted in the issuance of an EASA approval certificate.

For this first issue of the e-STC Newsletter special thanks to:

Lilyana KAMBUROVA
Gabriele CARDONE
Phillip BROOKE



MEDICAL STRETCHER

Large Aeroplanes are frequently used to transport persons on a temporarily installed stretcher being, in an Ambulance conversion configuration or in larger numbers configuration for Medical Evacuation.

An important point for the applicant is to define the primary purpose of flights because if the airplane is used for the majority of operating time in a Medical Evacuation/ Ambulance configuration it would be considered “permanent”.

However, all those configurations share several common design peculiarities not contained in JAR/CS-25 requirements. A special condition on Medical Evacuation and accompanying text are offered by EASA to be used as guidance for other types of installations such as Ambulance conversation or Temporary Stretcher installation configuration.

Stretchers and their support units are compliant with §25.561 but do not comply with §25.562. According to Appendix J of JAR/FAR/CS 25, the evacuation demonstration required to comply with §25.803, does not address evacuation of incapacitated patients transported on a stretcher.

Therefore EASA expects the applicant to provide a concept of evacuation. This concept should include the number of able bodied persons involved in evacuation.

At same time, the installation of medical oxygen system provisions (e.g. pressure regulators) and or Lithium Batteries as part of the approved configuration require particular safety considerations, e.g. Fire Protection per §25.869.

In addition, the stretcher design must comply with the following paragraphs of JAR/CS 25: 25.561 Emergency Landing Conditions, 25.625 Fitting factors, 25.785 Seats, berths, safety belts and harnesses, 25.787 Stowage compartments, 25.789 Retention of items of mass in passenger and crew compartments and galleys, 25.791 Passenger information signs, 25.807 Passenger Emergency Exits, 25.812 Emergency Lighting, 25.813 Emergency exit access, 25.815 Width of aisle, 25.853 Compartment interiors, 25.1501 General 25.1529 Instructions for Continued Airworthiness and 25.1541 Markings and placards. Depending on the design contact, additional requirements may apply. EASA, considering the cushion function of the stretcher mattress, requires the stretcher mattress to comply also with CS §25.853(c), and therefore successfully pass flammability testing of Part II of Appendix F on JAR 25.

PCM Tips

Air medical services is a comprehensive term covering the use of air transportation, airplane or helicopter, to move patients to and from healthcare facilities and accident scenes.

Installation of Stretchers in a Large Aeroplane is a Major Design Change for EASA.

Have a look to the Special Condition on Air Medical Services for Large Aeroplanes https://www.easa.europa.eu/sites/default/files/dfu/SC%20D-xx%20Iss%204%20Consultation.pdf

Special care to be exercised for any part affecting an Oxygen System.

Be sure to know the pre-requisite conditions (e.g. LOPA) and the operational context.

Stretcher installations are not considered as standard configuration, the operational impact is therefore not addressed through OSD changes.

NON-RECHARGEABLE LITHIUM BATTERIES

Understanding the risk introduced by the installation of this technology is a key factor in meeting the safety objective.

Two main points are to be taken into account:

1) Adequate battery qualification.
2) Awareness of all risk introduced at the installation stage and conduct rigorous analysis to validate the location selected inside the aircraft.

RTCA/DO-227A Minimum Operational Performance Standard for Non-Rechargeable Lithium batteries was published on 21st September 2017 after more than 2 years of work involving authorities and industry world-wide.

ETSO-142 will be updated to issue B and will refer to DO-227A within the next regular CS-ETSO update.

Special attention should be given to Thionyl Chloride, Manganese Dioxide and Bromine Chloride battery technologies, testing has demonstrated that they represent high risk in case of failure. EASA recommends to use batteries qualified to DO-227A as soon as they are available in the market. DO-227A address some of the risks introduced by this technology that were not included in the previous DO-227. This includes the thermal run away threat. DO-227A requests testing activities at cell, battery and end item level, raising the level of confidence. In consonance, this leads EASA to be in a position of accepting alleviated risk assessment at A/C installation level, compared with the ones expected nowadays.

The applicant may propose Alternative Means of Compliance for compliance demonstration with the SC's in the answer to the EASA CRI and agreed by EASA on a case by case basis.

In accordance with 21.A.91 GM a special condition is driving automatically to a major change classification. Consequently the change is to be classified Major unless the Special Condition is recorded within the TCDS of the aircraft or the battery is below the 2 Watt-hour limit given in note 3 of the special condition.

Expert Tips

The current requirements governing the installation of batteries in Large Aeroplanes are covered under (CS) 25.1353(c). Requirements from (CS) 25.1353(c) are essentially unchanged from initial JAR code and do not adequately address several failure, operational, and maintenance characteristics of Li-Batteries that could affect safety and reliability of those battery installations.

For this reason New Installations will be requested to comply with the established Special Conditions available on EASA website (https://www.easa.europa.eu/system/files/dfu/SC%20F-xx%20Issue%201.pdf).

The intent of this Special Condition is to ensure that these non-rechargeable Lithium battery installations are not unsafe, to the extent necessary to support issuance of an airworthiness certificate.

NEW REGULATIONS

EASA-FAA Technical Implementation Procedures (TIP) Rev. 6

The European Aviation Safety Agency (EASA) and the Federal Aviation Administration (FAA) signed on 22 September 2017 Revision 6 to the Technical Implementation Procedures (TIP) for airworthiness and environmental Certification, during the Certification Management Meeting held in Ottawa (Canada). This Revision of the TIP is the first milestone of the implementation of the validation improvement roadmap signed between EASA and FAA in February 2016.

All design changes now have common approval path:

- Accepted (There is no need for application and the design change will be accepted by the Validating authority (VA) without any review. In these cases, the certifying authority (CA) will approve these design changes in accordance with its own procedures against the certification bases of both the CA and the VA. These design changes are considered approved by the VA, and are included in the design approval holder type design data and shall be provided to the VA on a regular basis)

- Streamlined validation (Basic) (The validating authority issues its certificate on the basis of the certificate issued by the certifying authority without technical involvement)

- Technical Validation (non-Basic) (The technical validation is performed by the validating authority according to a work plan defining the scope and depth of the VA level of involvement in a risk based approach)

Entry into force: 22nd March 2018. Click here to open directly the TIP 6 and please click here for the SEI List.

E-Rules for Initial Airworthiness

At the following link are now available the e-Rules for Initial Airworthiness for Part-21, CS-MMEL, CS-GEN-MMEL, CS-CCD, CS-FCD, CS-SIMD, CS-APU, CS-AWO:
https://www.easa.europa.eu/document-library/general-publications?publication_type%5B%5D=2397

EASA INITIATIVES/ CHANGES

The idea of a synergic cooperation between Product Certification Departments and DOA Department was intensively discussed at the end of the year 2017 based on lessons learnt from actual STCs certification and DOA surveillance processes on large aeroplane category.

The main focus of the discussion was related to the need for a synchronization of the DOA and STC processes to make better use of resources and to share information and knowledge.

The result of this discussions has been the creation of the EASA STCs-DOAs Synergy Project aimed to highlight, by means of pilot cases, the benefits of an enhanced integration of the DOA processes (Initial investigation, Significant Changes and Surveillance) and Product Certification activities.

The foreseen testing phase involving some EU STC Holders should allow:

- to identify those areas where the exchange of data between the DOATLs and Certification Teams is deemed necessary;
- to refine relevant processes, if needed;
- to extrapolate general guidance applicable to the PCMs, Experts and DOATLs daily activity.

Benefits of an enhanced integration would be for all parties involved: Certification Teams, will gain better awareness on the frame in which the demonstration of compliance is provided and its acceptability. DOA teams will have the possibility to verify, in practical applications, the processes set up by the organisation to ensure exhaustiveness of provided demonstration of compliance. Finally STC Holders/ DOAs will have a collective and thorough co-operation from EASA side including comprehensive feedbacks.

PHASE 4
Final report/ Technical visa and issue of the Change approval

PHASE 3
Compliance determination

PHASE 2
Agreement of the certification programme and level of involvement

PHASE 1
Technical familiarisation and establishment of the initial certification basis

PHASE 0
Definition and agreement of the working methods with the applicant

NEXT EVENTS

The **EASA 2018 STC Workshop** will take place on the 4th - 5th June at the EASA Headquarters Cologne.

This EASA event is fully dedicated to the STC Holders and to the world around STCs and Major Changes to STCs.

It represents the most important event for the European and International community of Aviation Authorities, Applicants, and Operators dealing with STCs work.

We will meet and discuss in an open forum the most challenging, innovative, critical topics relevant to the STCs World and of interest for all.

The event will be chaired this year by Carla Iorio and will have a core team supporting the overall organisation:

Ms. Angela Cojocaru – Executive assistant / event coordinator
Mr. Nicolas Duprez – Quality Manager/Consultant
Ms. Francesca Scaramuzzino – Operational Manager
Mr. Carlo Cardu – Technical coordinator presentations on PCMs topics
Mr. Nicolas Durandeu - Technical coordinator presentations on Experts topics
Ms. Magda Lola - Technical coordinator presentations on general topics

The EASA Core Team is pleased to welcome you all and is looking forward to meet you at the event!

QUESTIONS ANSWERED

1. My organisation defined a STC providing Alternative Means Of Compliance (AMOC) with the tasks mandated by an AD. This was certified by EASA. How can I get it validated by the FAA?

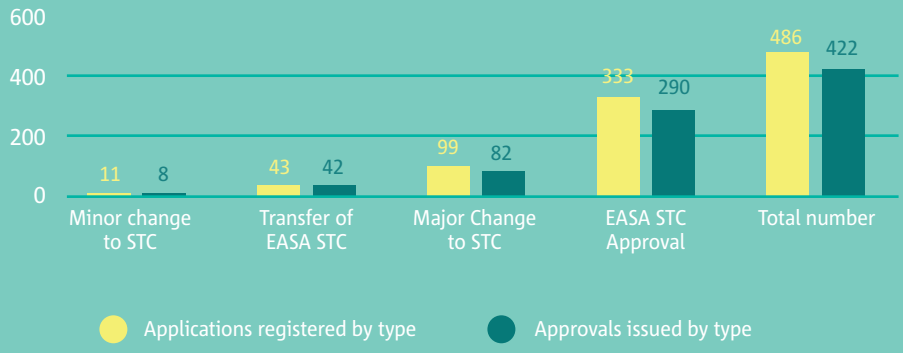
In a nutshell, you cannot take credit for the EASA AMOC approval.

You have to apply for an equivalent FAA AMOC.

The reason is that as STC holder, you are not the "design approval holder of the product(s)" as mentioned in TIP Rev5 or by the Article 4 of EASA Decision 2004/04/CF (https://www.easa.europa.eu/sites/default/files/dfu/Decision_ED_2004_04_CF.pdf)."

2. How many applications and approvals does the STC team manage per year?

Total number of STC applications vs. STC approvals in 2017:



3. If I wish to contribute, propose topics, comments, questions or any kind of relevant contribution. Who should I contact?

Following the idea of this newsletter, to have a two-way communication and cooperation, we kindly invite you to share by e-mail to: STC_news@easa.europa.eu.

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