

Sofema Aviation Services Logistics Workshop Thursday Jun 27th 2024

Sofema Aviation Services (SAS) www.sassofia.com is pleased to present the following content for discussion during the workshop.

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Approval of Stores Inspection Staff within an EASA Part 145 Organisation

Introduction

It is a requirement under EASA Part 145 that personnel performing incoming inspections be authorized by the Quality Manager. This is in line with the regulations governing maintenance organizations to ensure that only competent and approved individuals carry out inspections.

- According to EASA Part 145.A.30 (Personnel requirements), the maintenance organization is required to have a system in place to ensure that all personnel are competent to perform their tasks.
- The Quality Manager, or an appropriately authorized representative, typically has the responsibility to ensure that personnel performing incoming inspections are adequately trained and authorized.

Specifically, the regulation states:

- 145.A.30(e): The organization shall ensure that all personnel are trained, competent, and have appropriate authorization for the tasks they perform.

- 145.A.35(d): The organization shall establish and control the competence of personnel involved in maintenance, including establishing a procedure to ensure that such personnel are capable of performing their tasks.

This implies that the Quality Manager or an equivalent position must establish and verify the competence of store personnel performing incoming inspections and formally authorize them to carry out these inspections.

In practice, this authorization process often includes:

- Verification of the individual's qualifications and experience.
- Completion of relevant training.
- Assessment of the individual's capability to perform incoming inspections.

This ensures that the quality and safety standards required by EASA are consistently met.

Typical Stores Inspection Training:

- Initial - Store personnel must undergo initial training specific to their role, including training on incoming inspection procedures, recognition of parts and materials, and understanding of documentation and regulatory requirements.
- Recurrent Training: Regular refresher training to keep up-to-date with changes in regulations, procedures, and technology.

Competence Assessment

- Practical Assessment: The organization should conduct practical assessments to evaluate the ability of personnel to perform incoming inspections effectively.
- Knowledge Assessment: Written or oral tests to ensure understanding of relevant regulations, company procedures, and technical information.

Example Stores Inspector Authorization by the Quality Manager

- **Documentation Review:** The Quality Manager reviews the training and assessment records of the store personnel.
- **Formal Authorization:** Upon satisfactory review, the Quality Manager issues a formal authorization document, which may include an authorization card or certificate indicating the scope of tasks the individual is approved to perform.
- **Record Keeping:** The organization must maintain detailed records of training, assessments, and authorizations. These records should be readily available for review during audits and inspections by regulatory authorities.

Concerning Shelf Life and the use of Chemicals within an EASA Part 145 Organisation

Introduction

Under EASA Part 145 regulations, the usage of chemicals beyond their expiry date is not generally permitted.

Here are some key points regarding the storage and usage of chemicals, including Non-Destructive Testing (NDT) penetrant chemicals, in a maintenance organisation approved under EASA Part 145:

- **Compliance with Manufacturer's Recommendations:** The chemical manufacturer provides a specific shelf life for their products based on stability and effectiveness data.
 - Usage beyond this date may compromise the chemical's performance and safety.
- **Regulatory Requirements:** EASA Part 145 mandates that all materials and products used must be within their specified shelf life unless an extension is authorized by the manufacturer.
 - **145.A.42(a)** and **145.A.42(c):** These sections of EASA Part 145 outline the general requirements for the storage and use of components and materials, ensuring they are used within their specified shelf life as per the manufacturer's instructions.
 - **AMC 145.A.42(c)** and **GM 145.A.42(c):** Provide additional guidance on how to implement these requirements, emphasizing the importance of adhering to shelf life limitations and the procedures to manage them.
 - In practice, maintenance organisations must have robust procedures in place to track and manage the shelf life of all materials and components, ensuring compliance with these regulatory requirements.
- **Authorization and Re-certification:** If an expired chemical is to be used, the maintenance organisation must seek re-certification or authorization from the manufacturer.
 - The manufacturer might conduct tests to determine if the chemical still meets the necessary standards.
- **Quality Control Procedures:** Maintenance organisations must have strict quality control procedures in place.
 - These procedures include ensuring all chemicals are within their shelf life and stored according to the manufacturer's specifications.
- **Documentation and Records:** Proper documentation and records must be maintained for all chemicals, including their shelf life and any extensions granted by the manufacturer.

- **Storage Conditions:** Even if the chemical is within its shelf life, improper storage conditions (e.g., temperature, humidity) can reduce its effectiveness. Organisations must adhere to storage guidelines provided by the manufacturer.
- **Risk Assessment:** A risk assessment should be conducted before using any chemical beyond its expiry date. The assessment should consider potential impacts on safety, effectiveness, and regulatory compliance.

Specific Steps for NDT Penetrant Chemicals:

- Review Manufacturer's Shelf Life and Storage Instructions:
- Seek Manufacturer's Extension:
 - If an NDT penetrant chemical is beyond its shelf life, contact the manufacturer to inquire about the possibility of an extension.
 - They may require samples for testing to verify continued efficacy.

Internal Procedures and Approval:

- Establish internal procedures for handling expired chemicals. These should include obtaining approval from relevant authorities within the organisation, such as quality assurance or engineering departments.

Conduct Performance Tests:

- Perform tests to ensure the chemical still meets the required performance standards. This may include sensitivity tests for penetrants to ensure they still function correctly.

Can the 145 Organisations Quality Manager Grant an Extension and if so under what circumstances

While the Quality Manager plays a key role in managing and coordinating the process of extending the shelf life of chemicals, the actual approval must come from the chemical manufacturer. The Quality Manager's responsibility includes ensuring compliance with internal procedures, conducting risk assessments, and maintaining thorough documentation to support the extension request.

- Under EASA Part 145 regulations, the Quality Manager of a maintenance organisation does not typically have the authority to grant extensions for the use of chemicals beyond their expiry date on their own.
- The extension of a chemical's shelf life usually requires validation and approval from the manufacturer.

- The Quality Manager plays a crucial role in ensuring compliance and managing the process of obtaining such extensions.
- Here are the key points to consider:
 - The primary route for extending the shelf life of a chemical is to obtain approval from the manufacturer.
 - The manufacturer may conduct tests to ensure the chemical still meets its specifications and provide an extension if deemed appropriate.

Quality Manager's Role:

The Quality Manager may coordinate the process of obtaining an extension from the manufacturer. This includes submitting samples for testing and ensuring all documentation and records are updated accordingly.

Internal Procedures:

Maintenance organisations should have internal procedures in place for handling requests for shelf life extensions. These procedures should involve the Quality Manager but ultimately rely on the manufacturer's decision.

Important Note In some exceptional circumstances, and where there is a justifiable reason, the Quality Manager might facilitate a temporary extension based on interim measures such as additional testing and monitoring, while awaiting the manufacturer's formal approval.

- Regulatory Compliance: Any extension granted should comply with EASA regulations and be justifiable during audits or inspections.
- The Quality Manager must ensure that all regulatory requirements are met and that proper records are maintained.

Specific Steps for the Quality Manager When Granting an Extension:

- Identify the Need:
- Identify the chemicals that are approaching or have exceeded their expiry date and assess the need for their continued use.
- Reach out to the chemical manufacturer to request an extension. Provide any required samples and documentation.
- If interim use is necessary, arrange for additional tests to verify the chemical's performance. Document these tests thoroughly.
- Ensure all documentation, including storage records, test results, and manufacturer correspondence, is up-to-date and readily available for audit purposes.

- **Implement Controls:** Implement additional controls and monitoring to ensure the chemical's continued efficacy and safety during the extended period.
- **Report and Review:** Regularly review the status of extended chemicals and report any issues or findings to senior management and regulatory bodies as required.

Considerations Related to the Acceptance of Chemicals & Consumables within an EASA Approved Organisation.

Introduction

EASA Form 1 is not applicable for consumable materials including chemicals, nevertheless the obligations to ensure the correctness of the material or product is paramount.

Within an EASA environment, it's crucial to ensure that the release documentation issued by distributors of chemicals and consumables includes a valid CoC, MSDS/SDS, and documentation proving traceability to the OEM.

Regular audits of the distributor's quality management system and meticulous document control are essential to maintain compliance and ensure safety in aviation operations.

See the following example of issues and challenges

Problematic titanium was found in Boeing and Airbus jets. The FAA is investigating how it got there (Jun 2024)

- New York (CNN) — Titanium that was distributed with fake documentation has been found in commercial Boeing and Airbus jets. Now the Federal Aviation Administration, the aircraft manufacturers and supplier Spirit AeroSystems are investigating whether those components pose a safety hazard to the public.
- “Boeing reported a voluntary disclosure to the FAA regarding procurement of material through a distributor who may have falsified or provided incorrect records,” the statement said. “Boeing issued a bulletin outlining ways suppliers should remain alert to the potential of falsified records.”

Certificates of Conformity (CoC) Introduction

In an EASA (European Union Aviation Safety Agency) environment, specific requirements for release documentation in respect of Certificates of Conformity (CoC) issued by distributors of chemicals and consumables are necessary to ensure compliance with regulatory standards. Here's an outline of the key elements and steps involved:

Certificate of Conformity (CoC):

- The CoC should confirm that the chemical or consumable meets the required specifications and standards.
 - It should include the distributor's information, product identification, batch/lot number, and reference to relevant specifications or standards.

Traceability to Original Equipment Manufacturer (OEM):

- Distributors must provide traceability back to the OEM or the original producer of the chemical or consumable.
 - This includes maintaining records that identify the OEM and ensure that the product's history is documented from production to final distribution.

Material Safety Data Sheet (MSDS) / Safety Data Sheet (SDS):

- These documents should be provided and must comply with relevant regulations such as REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) in the EU.
 - They should include information on the chemical properties, handling precautions, and emergency measures.

Notes Concerning REACH

REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) is a comprehensive regulatory framework established by the European Union to manage the production and use of chemical substances. Its primary aim is to protect human health and the environment from potential risks posed by chemicals. Under REACH, companies that manufacture or import chemicals in quantities of one tonne or more per year must register these substances with the European Chemicals Agency (ECHA), providing detailed information about their properties, uses, and safe handling. This ensures that companies are fully aware of and manage the risks associated with the chemicals they deal with.

The framework also involves the evaluation of submitted information by ECHA and member states to ensure compliance and assess potential risks. Certain high-risk substances require authorization for use, compelling companies to demonstrate that these risks can be controlled or that their socio-economic benefits justify their use. Additionally, REACH allows for the restriction of hazardous substances to minimize risks to human health and the environment. Overall, REACH aims to enhance the safety, transparency, and innovation within the EU chemicals industry while promoting safer alternatives and reducing animal testing.

Compliance with Regulatory Standards:

- Ensure that the product complies with EASA regulations and any other relevant aviation standards.

- This may include specific certifications or approvals required for use in aviation.

Distributor's Quality Assurance:

- Distributors should have a quality management system in place that aligns with EASA requirements, ensuring the consistency and reliability of the products supplied.

Steps to Ensure Compliance:

- **Request CoC from Distributor:**
 - Always obtain a Certificate of Conformity from the distributor for each batch/lot of chemicals or consumables received.
- **Verify Traceability:**
 - Confirm that the CoC includes sufficient information to trace the product back to the OEM.
 - Request additional documentation from the distributor if the CoC does not adequately demonstrate traceability.
- **Review and Maintain MSDS/SDS:**
 - Ensure that the latest version of the MSDS/SDS is available and accessible.
 - Check that the safety information is up to date and compliant with current regulations.
- **Audit Distributor's Quality System:**
 - Periodically audit the distributor's quality management system to ensure it meets EASA and any other relevant standards.
 - Verify that the distributor maintains accurate records and can provide traceability documentation upon request.
- **Document Control:**
 - Maintain a controlled and organized system for storing and retrieving CoCs, MSDS/SDS, and any other relevant documentation.
 - Ensure that documentation is readily available for inspections and audits by regulatory authorities.

Considerations related to the use of ATA 106 within FAA and EASA jurisdictions

Introduction

It should be noted that ATA Standards are both relevant and highly respected, but they are not mandatory under the regulatory frameworks of the Federal Aviation Administration (FAA) in the United States or the European Union Aviation Safety Agency (EASA) in Europe.

Instead, their adoption is voluntary. Here's a detailed discussion on the relationship between ATA standards and the regulatory requirements of the FAA and EASA consider the following:

Note - Both the FAA and EASA recognize the benefits of these standards and often refer to them in their guidance, highlighting their role as best practices for industry compliance and operational excellence.

ATA Standards: Voluntary but Influential

1. Industry Adoption:

- **Widespread Use:** Despite not being mandatory, ATA standards are adopted by many airlines, maintenance organizations, and manufacturers because they provide clear benefits in terms of standardization, efficiency, and safety.
- **Best Practices:** The standards are considered best practices within the industry, often integrated into the internal processes and documentation systems of aviation companies to streamline operations and improve communication.

2. FAA Jurisdiction:

- **Regulatory Requirements:** The FAA has its own set of regulations and standards that govern aviation operations, maintenance, and safety. These regulations are codified in Title 14 of the Code of Federal Regulations (CFR), commonly known as the Federal Aviation Regulations (FARs).
- **Guidance and Compliance:** While the FAA does not mandate the use of ATA standards, it acknowledges their value. The FAA may reference ATA standards in its advisory circulars and guidance documents as acceptable methods for complying with regulatory requirements.

3. EASA Jurisdiction:

- **Regulatory Framework:** EASA has established its own set of regulations under the European Union Basic Regulation and its associated Implementing Rules. These regulations cover all aspects of aviation safety, including design, production, maintenance, and operation of aircraft.
- **Reference to Standards:** Similar to the FAA, EASA recognizes the usefulness of industry standards like ATA. EASA may refer to ATA standards in its guidance material, but it does not make them a regulatory requirement.

Benefits of Using ATA Standards

1. Efficiency and Clarity:

- **Operational Efficiency:** Using ATA standards helps aviation organizations improve efficiency in logistics, maintenance, and overall operations by providing a common language and standardized processes.
- **Reduction of Errors:** Standardization reduces the likelihood of errors in parts identification, ordering, and maintenance procedures, enhancing overall safety.

2. Interoperability and Communication:

- **Global Operations:** For airlines and maintenance organizations operating globally, adopting ATA standards ensures interoperability and effective communication with international partners and regulatory bodies.
- **Documentation Consistency:** Consistent documentation across different organizations and jurisdictions simplifies audits, inspections, and regulatory compliance checks.

Practical Implications

1. Voluntary Adoption:

- **Organizational Policies:** Many aviation companies incorporate ATA standards into their internal policies and procedures voluntarily due to the operational benefits they provide.
- **Training and Education:** Organizations often train their staff to understand and use ATA standards, ensuring that everyone is familiar with these best practices.

2. Regulatory Compliance:

- **Harmonization:** While not mandatory, ATA standards help organizations harmonize their practices with regulatory expectations, making it easier to demonstrate compliance during regulatory reviews and inspections.
- **Enhanced Safety:** Adopting recognized industry standards contributes to overall safety and reliability, aligning with the safety objectives of both the FAA and EASA.

Considering the Importance of Temperature and Humidity Control in an EASA Part 145 Compliant Store

Introduction - EASA Part 145 Regulatory Requirements

EASA Part 145.A.25 Facility Requirements:

- Paragraph (d) of 145.A.25 states:

- "The working environment must be appropriate for the tasks being undertaken and shall ensure effective separation of activities in order to avoid cross-contamination. It shall also ensure protection from the weather elements. Special requirements of temperature, humidity, and cleanliness must be observed when specified in the maintenance data."

EASA Part 145.A.42 Acceptance of Components:

- Paragraph (a) of 145.A.42 emphasizes the need for proper storage conditions to prevent deterioration:
 - "The organization shall establish procedures to ensure that only components in satisfactory condition and released on an EASA Form 1 or equivalent, as specified in 145.A.42(c), are installed. The organization shall ensure that components are stored and handled in accordance with the manufacturer's instructions and in a manner that prevents damage and deterioration."

EASA AMC 145.A.25(d) to Part 145:

- The Acceptable Means of Compliance (AMC) to 145.A.25(d) provides additional guidance:
 - "The working environment should be such that the effectiveness of personnel is not impaired. Temperature and humidity control should be appropriate to the different types of work being carried out (e.g., avionics, painting, etc.)."

Key Points:

- **Temperature and Humidity Control:** Both the regulation and the AMC highlight the importance of controlling temperature and humidity to ensure that parts and materials are stored in conditions that prevent their deterioration.
- **Manufacturer's Instructions:** The regulation mandates adherence to the manufacturer's instructions regarding storage conditions, which often specify the required temperature and humidity ranges.
- **Separation of Activities:** Effective separation of activities and protection from environmental elements are emphasized to avoid cross-contamination and ensure the quality and safety of aircraft components.

Whilst these regulations are intended to ensure that EASA Part 145 organizations maintain high standards of storage conditions, thereby preserving the integrity and functionality of aircraft parts and materials, organizations typically develop detailed internal procedures based on these regulatory requirements and the specific needs of the parts they handle.

Maintaining strict control over temperature and humidity within an EASA Part 145 compliant store is crucial for several reasons:

- Corrosion of Metal Components: High humidity levels can lead to the oxidation and corrosion of metal parts, which can compromise the structural integrity and functionality of aircraft components.
- Moisture can damage sensitive electronic components, causing malfunctions and failures.
- Temperature fluctuations and high humidity can degrade composite materials, affecting their strength and durability.
- Rubber and plastic components can deteriorate under unsuitable environmental conditions, leading to leaks and mechanical failures.
- Avoidance of Mold and Mildew:
 - Humid environments can foster the growth of mold and mildew, which can damage materials and pose health risks to personnel.
- Warranty and Compliance: Many manufacturers specify storage conditions for their parts. Non-compliance with these specifications can void warranties and result in non-compliance with regulatory standards.
- Proper environmental control can extend the shelf life of stored parts, reducing waste and ensuring parts are fit for use when needed.

Optimum Conditions

- **Temperature:** The recommended storage temperature for most aviation parts is between 15°C and 25°C (59°F and 77°F). Extreme temperatures should be avoided.
- **Humidity:** The ideal relative humidity level should be kept between 35% and 55%. Levels above 60% can accelerate corrosion and mold growth, while very low humidity can cause brittleness in some materials.

Monitoring and Recording Data (Daily Data Collection):

- Use calibrated sensors to continuously monitor temperature and humidity levels within the store.
- Install data loggers to record environmental conditions at regular intervals (e.g., every 30 minutes).
- Conduct regular audits to ensure that the monitoring equipment is functioning correctly and that recorded data is accurate.
- Implement an alert system to notify personnel of any significant deviations from the set environmental parameters, allowing for immediate corrective actions.

PMA Acceptance by EASA

Did you know that FAA-PMA parts are approved by EASA? Under the European system, they are not merely accepted – they are actually approved under Technical Implementation Procedures Revision 7 - Section 3 – Design Approval Procedures

3.3.4 PMA Parts

EASA shall directly accept all FAA PMA approvals, without further showing, for modification and/ or replacement parts for installation on products certified or validated by EASA in the following cases:

3.3.4.1 The PMA part is not a “critical component” (see definition, paragraph 1.13) and the PMA design was approved via:

- (a) Identity without a licensing agreement per 14 CFR section 21.303; or
- (b) Test reports and computations per 14 CFR section 21.303.

3.3.4.2 The PMA part conforms to design data obtained under a licensing agreement from the TC or STC holder according to 14 CFR section 21.303 and the TC or STC has been validated by EASA.

3.3.4.3 The PMA part is a “critical component” and the PMA design was approved via:

- (a) An FAA-issued STC and EASA has validated the STC; or
- (b) Identity without a licensing agreement per 14 CFR section 21.303 and EASA has issued an equivalent STC; or
- (c) Test reports and computations per 14 CFR section 21.303 and EASA has issued an equivalent STC.

PMA Availability of Parts

There are a lot more PMA parts than many people realize.

- An FAA PMA is the normal approval mechanism for any company that wants to produce and sell civil aircraft parts to the marketplace but that does not possess a production certificate for a complete aircraft, engine or propeller.
- Major companies like Honeywell produce aircraft parts under PMA; so it is important to ensure that parts produced under this approval mechanism can be accepted in order to ensure that aircraft can keep flying with safe (approved) replacement parts.
- The European Union (EU) regulations require that EASA issue certificates for the design of parts and of their installation into products subject to those EU regulations.
 - This created a problem because when EASA was formed, several significant EU member states had long-standing agreements to accept FAA-PMA parts from the United States.

- This made sense for supporting European air carriers who were already using such parts.
- In order to deal with this legally – while at the same time forbearing from unnecessarily inhibiting trade – EASA issued a decision that automatically approves certain FAA-PMA parts. This decision was known as EASA Decision No. 2007/003/C (now superseded)

Critical Part Definition

A part identified as critical by the design approval holder (DAH) during the product certification process or otherwise by the Authority for the State of Design (SoD).

- Typically, such components include parts for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section or certification maintenance requirements of the manufacturer's maintenance manual or Instructions for Continued Airworthiness.

Note - Typically PMA parts do not have hard times associated with them, so most PMA parts are not critical components. For these parts, EASA requests that the statement "This PMA part is not a critical component" be written in the Remarks Block of the FAA Form 8130-3.

A second category of FAA-PMA parts that are automatically considered to be approved by EASA are those for which the design data comes from a licensing agreement from the holder of the FAA design approval (type certificate or supplemental type certificate). Such parts can be identified in the FAA's PMA database, because they will indicate that the design approval basis is a licensing agreement.

PMA Development

- Under the Technical Implementation Procedures (TIP), EASA is more specific in its approach to acceptance of PMA eligibility. The TIP explains that PMA approvals are directly accepted for installation on products "without further showing."
 - In addition, EASA has stated that it will accept repair data from the United States on non-critical components when it comes in the form of a PMA
- The TIP explains that the data is considered to be EASA-approved following its approval/acceptance by the FAA; and the process does not require application to EASA, nor does it require any compliance finding to the EASA certification basis.
- Where the installation of an FAA-PMA represents a major repair, the FAA data is accepted when it is presented in the form of an 8110-3 (a common

- form used for the approval of design data underlying a PMA part) or when it is substantiated in an FAA letter (such as the letter granting PMA).
- Licensed non-critical parts can be accepted into the EU, at the discretion of the contracting parties.
 - EASA requests that the statement “Produced under licensing agreement from the FAA design approval holder” be written in in the Remarks Block of the FAA Form 8130-3 for licensed parts.

A third category is for non-licensed critical FAA-PMA parts. These are only automatically approved by EASA if the PMA holder can show that the part has received an explicit approval by means of a design change or STC from EASA.

- This is normally accomplished when the PMA holder applies for an EASA STC through the local FAA Aircraft Certification Office, and in response EASA issues an STC to validate the PMA design.

PMA Eligibility

- One feature of a FAA-PMA which makes it different from a Technical Standard Order Authorization (TSOA) is that a FAA-PMA has an inherent installation eligibility.
- On the PMA supplement, there is a designation of one or more types on which the PMA is eligible, and a statement about the part number(s) that the FAA-PMA part replaces.
- In the United States, this statement support the installers obligation to make a finding of eligibility under 14 CFR 43.13 (the installer’s obligation to ensure that the part will return the product to a condition at least equal to original or properly altered condition).

In Europe, there is a similar obligation for eligibility. The manufacturer certifies eligibility (EASA 21.A.307) and the installer ensures eligibility before installing (EASA 145.A.42(b)).

EASA Design – Manufacture and Certification of Placards

Introduction

As a general comment - If a company other than the OEM manufactures an item they must identify who they are.

- Also to strictly adhere to the Manufacturer design data you would need to ensure that the information is at the latest revision and also have access to the certification data.

Here we consider the authority of a Part 21 DOA to create a placard and annotate with the OEM P/N - is this acceptable for Form 1 certification - or must we go the EPA route - mean annotate with OEM P/N plus letters EPA?

The Responsibilities of the DOA - Regulation (EU) No 2021/699

(a) Each part or appliance which is eligible for installation in a type-certified product shall be marked permanently and legibly with:

- 1. a name, trademark, or symbol identifying the manufacturer in a manner identified by the applicable design data;
- 2. the part number, as defined in the applicable design data; and
- 3. the letters EPA for parts or appliances produced in accordance with approved design data not belonging to the type-certificate holder of the related product, except for ETSO articles and for parts and appliances covered under point (b) of point [21.A.307](#).

(b) By way of derogation from point (a), if the Agency agrees that a part or appliance is too small or that it is otherwise impractical to mark a part or appliance with any of the information required by point (a), the authorised release document accompanying the part or appliance or its container shall include the information that could not be marked on the part or appliance.

DOA Procedures

The DOA should use their own numbering system as per their procedures and yes it must include the letters EPA (21.A.804(a)).

- If their procedures say they can put OEM part numbers on parts, then that would be OK (again with the letters EPA included)

Concerning 145 Fabrication of Parts

If a 145 organisation makes a part to an OEM drawing then they could legitimately put the OEM part number on it. (again, it should be identified with a suffix related to the 145) – (possible licensing issues)

- Such parts cannot be sold or provided with an EASA Form 1

EASA FAQ n.20095 - Why and how must Parts and Appliances be marked, when are the letters EPA required, and which exceptions are acceptable?

- To comply with EASA Part-21, Subpart D, 21.A.109, Subpart E, 21A.118A (b) and Subpart M, 21A.451(a) and (b), it is the obligation of the respective Holders of a Minor Change Approval, a STC, or a Major Repair Design Approval, to specify

the required markings, including EPA letters as applicable, in their Design (read, 'Approved Data'), according EASA Part-21, Subpart Q.

- Subpart Q, 21.A.804(a), and related GM, require proper identification of each Part and Appliance that is designed or redesigned, including parts designed to be incorporated in repairs (21A.451), by 'permanent and legible marking' hereof, and is applicable for Design Organisations and Manufacturers.
- 21.A.804(a) 1 and 2 clearly require marking of Parts and Appliances with 'name, trademark, or symbol identifying the Manufacturer' and 'Part number', as defined in the applicable Design Data.
- According to the GM the Design Approval Holder shall identify in all its Design (TC, STC, ETSO, Repair, Change) approved after 28 December 2009, how the Manufacturer has to mark subject Parts and Appliances in accordance with 21A.804(a) 1; which can be limited to identifying a marking field and the method, without prescribing the actual text or symbols.
- 21.A.804(a) 3 requires additionally marking with the letters 'EPA' of all parts produced (manufactured) in accordance with data 'not belonging to the TC holder of the related product'.

EPA Marking

- Each interchangeable or removable Part or Appliance that is manufactured in accordance with a design issued by the Design Organisation, shall be permanently and legibly marked according to 21.A.804.

Note 1- The EPA marking was introduced in 2004; this was done to clearly identify any 'not original' Part, (which means any Part or Appliance not designed by the TC- or ETSO- Approval Holder), as a trigger for Maintenance Organisations and Accident or Incident investigators, in the light of Continuing Airworthiness.

Note 2 The intention was certainly not to require adding of the letters 'EPA' to mark repairs. In this context, EPA marking only applies to the new designed and manufactured parts to be incorporated in the repair. Especially where repairs have an impact on interchangeability, identification of incorporated new Parts is very important, and DO Procedures should address this item.

Note 3 That for parts referred to in 21.A.307(b), as amended with (EU)2021/699 (applicable from 18.05.2022), the EPA marking is not required as stated in 21.A.804(a)(3).

Small Parts Marking

- The only accepted exception with regard to Marking (including EPA), is defined in 21.A.804(b). This subparagraph offers the possibility to not physically mark the Part of Appliance, when it is too small or when marking hereof is otherwise impractical, but only after “Agency agreement”.
 - This wording allows an Applicant/Holder of a Design and the Agency to further define in detail how this ‘agreement’ can be obtained and will be formalised. DOATL should however ensure that the DOA Applicant/Holder reflects this approach in its DO Handbook or Procedures, requiring at least a justification of the reason for not marking physically, and details of the alternative way chosen for the identification, in accordance with 21A.804(b), to know on the authorised release document accompanying the Part or Appliance, or on its container.

C of C or EASA Form 1?

- In the case of Placards which are manufactured by a Part 21G Organisation (holding the applicable scope of approval), the expected release will be on EASA Form 1
 - Placards shall comply with flammability and traceability requirements.

Note - A Certificate of Conformity is only applicable to Standard Parts with traceability to source, therefore such a release is not acceptable for Placards.

EASA Part 145 Organisation – Aircraft Component Robbery Procedures Considerations

Introduction – The use of EASA Form 1

AMC1 145.A.50(d) Certification of maintenance ED Decision 2022/011/R

The purpose of the certificate is to certify maintenance work carried out on assemblies / items / components/parts (hereafter referred to as ‘item(s)'). It also allows the removal from aircraft of items in a ‘serviceable’ condition in accordance with AMC2 145.A.50(d) in order to fit them to another aircraft/aircraft component.

- The certificate is to be used for export/import purposes, as well as for domestic purposes, and serves as an official certificate for items from the manufacturer/maintenance organisation to users.
- It can only be issued by organisations approved by the particular competent authority within the scope of the approval.
- The certificate may be used as a rotatable tag by utilising the available space on the reverse side of the certificate for any additional information and dispatching the item with two copies of the certificate so that one copy may be eventually returned with the item to the maintenance organisation.

Note 1 The alternative (Sofema Recommended solution) is to use existing Rotatable tags and also supply a copy of the certificate.

Note 2 A certificate should not be issued for any item when it is known that the item is unserviceable except in the case of an item undergoing a series of maintenance processes at several maintenance organisations approved under Part-145 and the item needs a certificate for the previous maintenance process carried out for the next maintenance organisation approved under Part-145 to accept the item for subsequent maintenance processes.

- In such a case, a clear statement of limitation should be endorsed in Block 12.
AMC2 145.A.50(d) Certification of maintenance

Ref ED Decision 2020/002/R

- A component which has been maintained off the aircraft needs the issuance of a certificate of release to service for such maintenance and another certificate of release to service in regard to being installed properly on the aircraft when such action occurs.

Note 3 - When an organisation maintains a component for use by the same organisation, an EASA Form 1 may not be necessary depending upon the organisation's internal release procedures defined in the maintenance organisation exposition.

Aircraft Removed From Service

In the case of the issue of EASA Form 1 for components in storage before Part-145 and Part-21 became effective and not released on an EASA Form 1 or equivalent in accordance with 145.A.42(a) or removed serviceable from a serviceable aircraft or an aircraft which has been withdrawn from service the following applies:

- An EASA Form 1 may be issued for an aircraft component which has been:

- Maintained before Part-145 became effective or manufactured before Part-21 became effective.
- Used on an aircraft and removed in a serviceable condition. Examples include leased and loaned aircraft components.
- Removed from aircraft which have been withdrawn from service, or from aircraft which have been involved in abnormal occurrences such as accidents, incidents, heavy landings or lightning strikes.
- Maintained by an unapproved organisation.

EASA Form 1 Authority

- An appropriately rated maintenance organisation approved under Part-145 may issue an EASA Form 1 as detailed in this AMC subparagraph as appropriate, in accordance with procedures detailed in the exposition as approved by the competent authority.
- The appropriately rated organisation is responsible for ensuring that all reasonable measures have been taken to ensure that only approved and serviceable aircraft components are issued an EASA Form 1 under this paragraph.
- For the purposes of this AMC No 2 only, appropriately rated means an organisation with an approval class rating for the type of component or for the product in which it may be installed.
- An EASA Form 1 issued in accordance with this paragraph 2 should be issued by signing in block 14b and stating 'Inspected/Tested' in block 11. In addition, block 12 should specify:
 - When the last maintenance was carried out and by whom.
 - If the component is unused, when the component was manufactured and by whom with a cross-reference to any original documentation which should be included with the Form.
 - A list of all airworthiness directives, repairs and modifications known to have been incorporated. (If no airworthiness directives or repairs or modifications are known to be incorporated, then this should be so stated).
 - Detail of life used for life-limited parts and time-controlled components being any combination of fatigue, overhaul or storage life.
 - For any aircraft component having its own maintenance history record, reference to the particular maintenance history record as long as the record contains the details that would otherwise be required in block 12. The maintenance history record and acceptance test report or statement, if applicable, should be attached to the EASA Form 1.

New/unused aircraft components

- Any unused aircraft component in storage without an EASA Form 1 up to the effective date(s) for Part-21 that was manufactured by an organisation acceptable to the competent authority at that time may be issued with an EASA Form 1 by an appropriately rated maintenance organisation approved under Part-145.
- The EASA Form 1 should be issued in accordance with the following subparagraphs which should be included in a procedure within the maintenance organisation manual.

Note 4: It should be understood that the release of a stored but unused aircraft component in accordance with this paragraph represents a maintenance release under Part-145 and not a production release under Part-21.

- It is not intended to bypass the production release procedure agreed by the Member State for parts and subassemblies intended for fitment on the manufacturers' own production line.
 - An acceptance test report or statement should be available for all used and unused aircraft components that are subjected to acceptance testing after manufacturing or maintenance as appropriate.
 - The aircraft component should be inspected for compliance with the manufacturer's instructions and limitations for storage and condition including any requirement for limited storage life, inhibitors, controlled climate and special storage containers. In addition or in the absence of specific storage instructions the aircraft component should be inspected for damage, corrosion and leakage to ensure good condition.
- The storage life used of any storage life-limited parts should be established.
 - If it is not possible to establish satisfactory compliance with all applicable conditions specified above:
 - The aircraft component should be disassembled by an appropriately rated organisation and subjected to a check for incorporated airworthiness directives, repairs and modifications and inspected/tested in accordance with the maintenance data to establish satisfactory condition and, if relevant, all seals, lubricants and life-limited parts should be replaced.

- Upon satisfactory completion after reassembly, an EASA Form 1 may be issued stating what was carried out and the reference of the maintenance data included.

Used aircraft components removed from a serviceable aircraft

Subject to satisfactory compliance with the following an EASA Form 1 may be issued and should contain the information as specified in including the aircraft from which the aircraft component was removed.

- Serviceable aircraft components removed from a Member State registered aircraft may be issued with an EASA Form 1 by an appropriately rated organisation subject to compliance with this subparagraph.
 - The organisation should ensure that the component was removed from the aircraft by an appropriately qualified person.
 - The aircraft component may only be deemed serviceable if the last flight operation with the component fitted revealed no faults on that component/related system.
 - The aircraft component should be inspected for satisfactory condition including in particular damage, corrosion or leakage and compliance with any additional maintenance data.
 - The aircraft record should be researched for any unusual events that could affect the serviceability of the aircraft component such as involvement in accidents, incidents, heavy landings or lightning strikes.
 - Under no circumstances may an EASA Form 1 be issued in accordance with this paragraph if it is suspected that the aircraft component has been subjected to extremes of stress, temperatures or immersion which could affect its operation.
 - A maintenance history record should be available for all used serialized aircraft components.
 - Compliance with known modifications and repairs should be established.
 - The flight hours/cycles/landings as applicable of any life-limited parts and time-controlled components including time since overhaul should be established.
 - Compliance with known applicable airworthiness directives should be established.

Important – Non Member States

- Serviceable aircraft components removed from a non-Member State registered aircraft may only be issued with an EASA Form 1 if the components are leased or

loaned from the maintenance organisation approved under Part-145 who retains control of the airworthiness status of the components.

- An EASA Form 1 may be issued and should contain the information as specified in paragraph 2.4 including the aircraft from which the aircraft component was removed.

Used aircraft components removed from an aircraft withdrawn from service.

Serviceable aircraft components removed from a Member State registered aircraft withdrawn from service may be issued with an EASA Form 1 by a maintenance organisation approved under Part-145 subject to compliance with this subparagraph.

- Aircraft withdrawn from service are sometimes dismantled for spares. This is considered to be a maintenance activity and should be accomplished under the control of an organisation approved under Part-145, employing procedures approved by the competent authority.
- To be eligible for installation, components removed from such aircraft may be issued with an EASA Form 1 by an appropriately rated organisation following a satisfactory assessment.
- As a minimum, the assessment will need to satisfy the standards set out above as appropriate.
 - This should, where known, include the possible need for the alignment of scheduled maintenance that may be necessary to comply with the maintenance programme applicable to the aircraft on which the component is to be installed.

Note 5 - Irrespective of whether the aircraft holds a certificate of airworthiness or not, the organisation responsible for certifying any removed component should ensure that the manner in which the components were removed and stored are compatible with the standards required by Part-145.

- A structured plan should be formulated to control the aircraft disassembly process.
- The disassembly is to be carried out by an appropriately rated organisation under the supervision of certifying staff who will ensure that the aircraft components are removed and documented in a structured manner in accordance with the appropriate maintenance data and disassembly plan.
- All recorded aircraft defects should be reviewed and the possible effects these may have on both normal and standby functions of removed components are to be considered.

- Dedicated control documentation is to be used as detailed by the disassembly plan, to facilitate the recording of all maintenance actions and component removals performed during the disassembly process.
- Components found to be unserviceable are to be identified as such and quarantined pending a decision on the actions to be taken.
- Records of the maintenance accomplished to establish serviceability are to form part of the component maintenance history.
- Suitable Part-145 facilities for the removal and storage of removed components are to be used which include suitable environmental conditions, lighting, access equipment, aircraft tooling and storage facilities for the work to be undertaken.
- While it may be acceptable for components to be removed, given local environmental conditions, without the benefit of an enclosed facility, subsequent disassembly (if required) and storage of the components should be in accordance with the manufacturer's recommendations.

Used aircraft components maintained by organisations not approved in accordance with Part-145.

- For used components maintained by a maintenance organisation not approved under Part-145, due care should be taken before acceptance of such components.
- In such cases an appropriately rated maintenance organisation approved under Part-145 should establish satisfactory conditions by:
 - Dismantling the component for sufficient inspection in accordance with the appropriate maintenance data;
 - Replacing all life-limited parts and time-controlled components when no satisfactory evidence of life used is available and/or the components are in an unsatisfactory condition;
 - Reassembling and testing as necessary the component;
 - completing all certification requirements as specified in 145.A.50.

Used aircraft components removed from an aircraft involved in an accident or incident.

- Such components should only be issued with an EASA Form 1 when processed in accordance with the above and a specific work order including all additional necessary tests and inspections deemed necessary by the accident or incident.
- Such a work order may require input from the TC holder or original manufacturer as appropriate. This work order should be referenced in block 12

EASA Stores Inspection Considerations and Best Practices

Here we consider the processes, procedures and best practices for performing the Initial Quality Inspection of Aircraft Components and Consumables in a Storage Setting

Introduction

Performing a thorough and systematic initial quality inspection of aircraft components and consumables upon arrival in a storage setting is crucial to maintain airworthiness and safety standards.

Here we look at the procedures and best practices to guide personnel in conducting these inspections effectively.

Inspection Process

- **Step 1: Initial Package Assessment**
 - Check the package(s) for transit damage.
 - Examine the package carefully for any signs of damage during delivery. Note any superficial damage and take appropriate action.
- **Step 2: Unpacking and Contents Verification**
 - Check packaging/container for smaller units inside.
 - Ensure a thorough check of contents to find all items, including smaller units.
 - Look for warning signs on the exterior of the package.
 - Note any special handling instructions indicated on the package.
 - Check unit(s) for damage.
 - Examine the unit for any evidence of damage.
- **Step 3: Order and Documentation Verification**
 - Check units received are correct to order.
 - Verify contents against the supplied order for correctness.
 - Check the documentation is correct.
 - Ensure all documentation complies with EASA requirements.
 - Check system details match.
 - Verify receipt system details and compliance with repair order instructions.
- **Step 4: Packaging and Storage Preparation**
 - Ensure units are correctly packed before storage.
 - Ensure proper packaging as per standard procedures before sending to storage.

- Distribute copies of the certification as per procedures.
- Manage incoming documentation and ensure Form 1's are entered into the Continuing Airworthiness Technical Records System.
- **Step 5: Shelf Life Administration**
 - Administer shelf lives where applicable.
 - Guidance: Check expiry dates on expendable parts and seek guidance if unsure.
- **Step 6: Special Items Inspection**
 - Check history matches return to stock form information.
 - Ensure return to stock form information matches the unit's history.
 - Look for signs of transport damage on aircraft engines.
 - Examine data plates and match them with the certification.
 - Ensure cylinder details are recorded for aircraft slides and rafts.
 - Ensure block 13 of the CRS records cylinder details, date of manufacture, and last overhaul date.
 - Check standard parts against the standard parts manual.
 - Verify standard parts against the type certificate holder's manual or parts catalogue.
 - Ensure safety pins and warning lanyards are fitted to slide assemblies.
 - Fit safety/transportation pins and warning lanyards before receipt and dispatch.
- **Step 7: Additional Verifications**
 - Inspect modification kits against contents list or Service Bulletin.
 - Check mod kit contents, stamp, sign, and indicate when inspection is complete.
 - Verify raw material certificates of conformance.
 - Verify certificates of conformance from the supplier and manufacturer.
 - Record hydrostatic test dates for aircraft fire extinguishers.
 - Ensure the last hydrostatic test date and weight check date are recorded on the approved certificate.
 - Verify elastomer seals' shelf life and re-inspection dates.
 - Check data plates for part number, serial number, mod state, and company name/logo.
 - Check data plates for proper marking without amateur alterations.

Next Steps

Sofema Aviation Services (www.sassofia.com) and Sofema Online (www.sofemaonline.com) provides Classroom, Webinar and Online EASA Compliant Logistics Training. Please see the websites or email team@sassofia.com