



The Implementation of EMAR 21 into the UK MAA Regulatory Publications

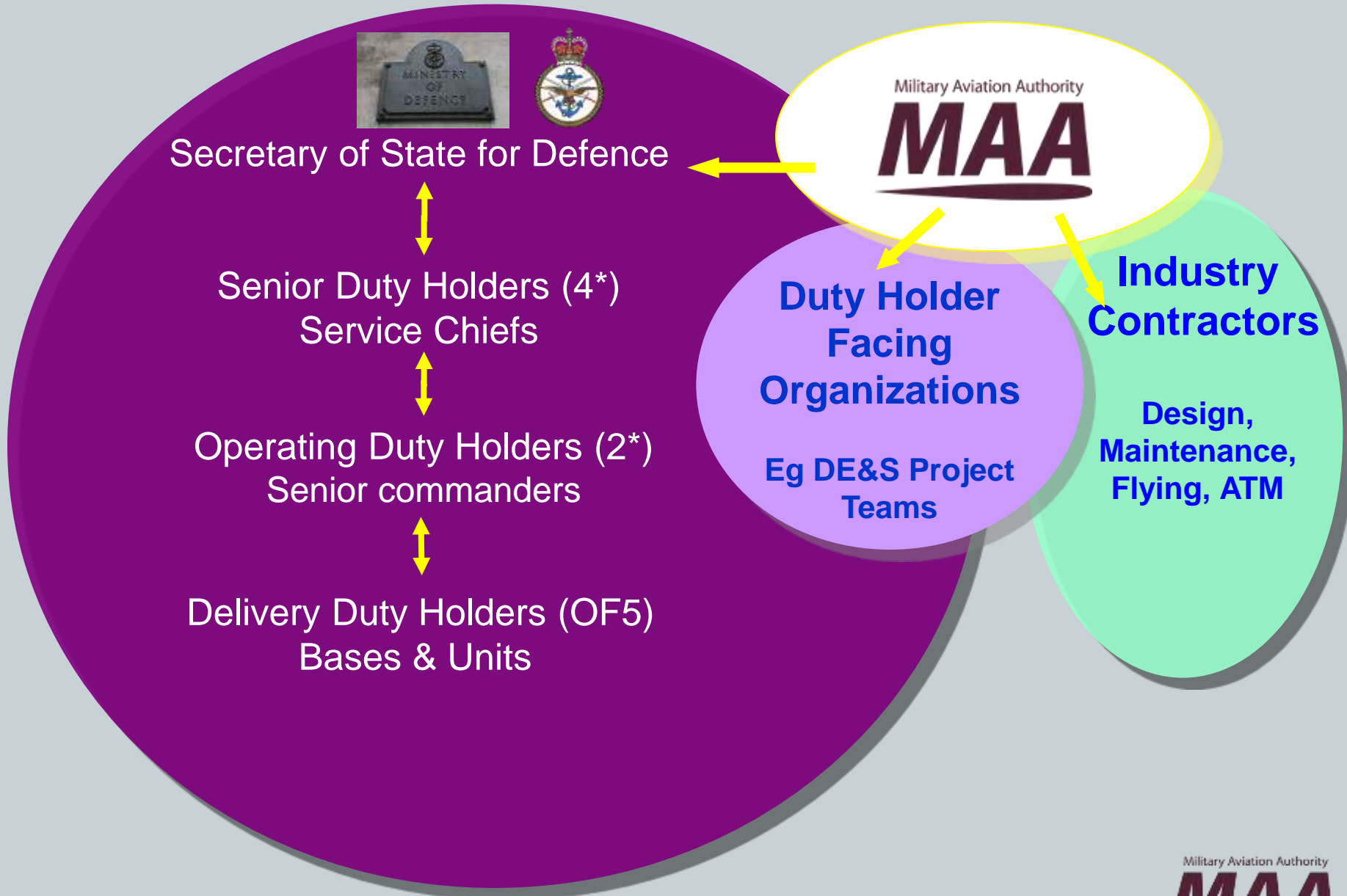
Mr Paul Robinson
(UK MAA Regulation - Design Airworthiness
and TF2 Chair)

Overview

The presentation will cover:

- Context of our structure and extant regulations.
- Rationale for Partial Compliance.
- Implementation Strategy (really, how difficult can it be?).
- Progress so far.
- EMAR 21 Implementation Workshop.
- Some personal thoughts.

Regulated Community

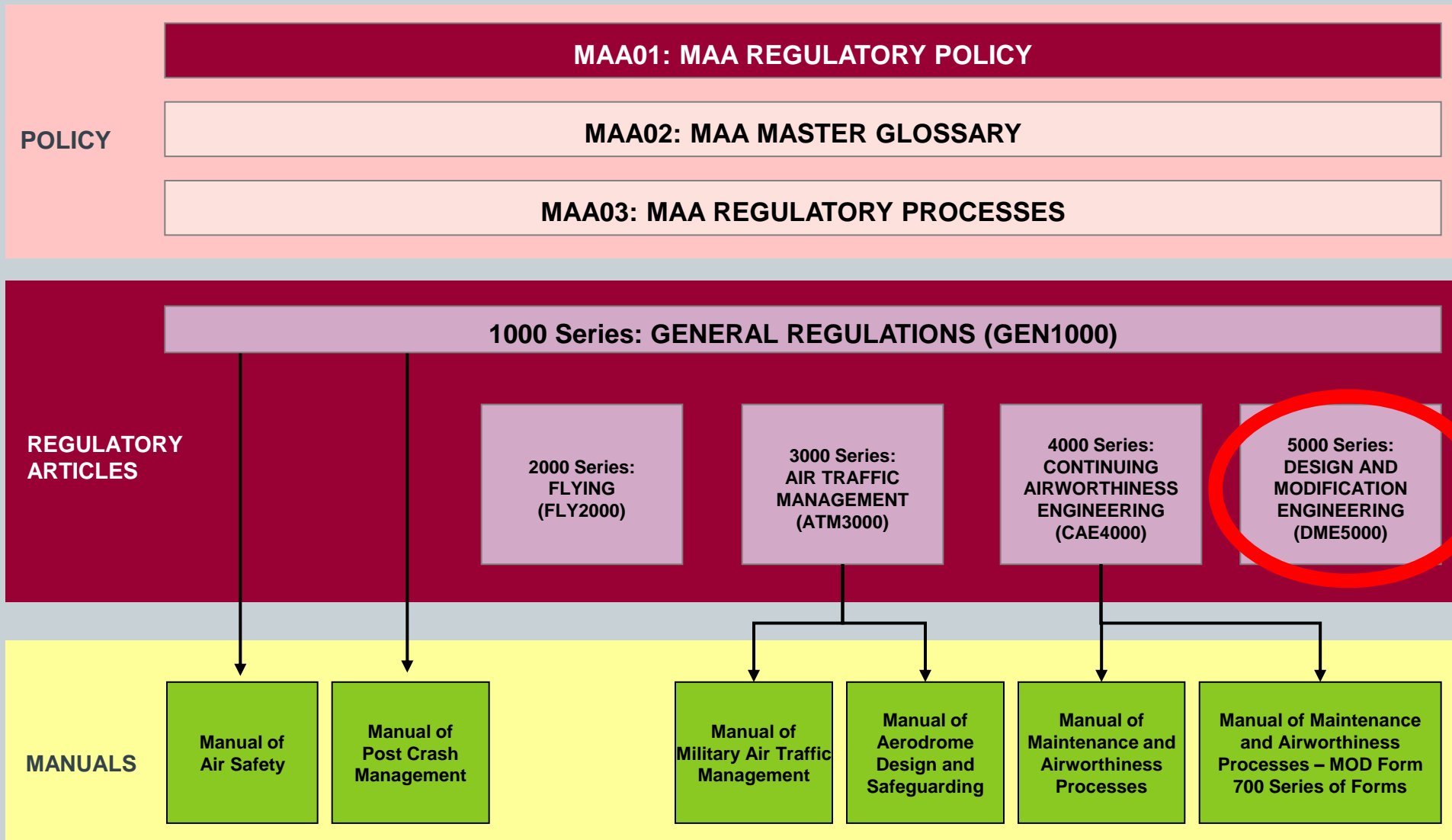


The Challenge

- 35 Duty Holders
- 77 Aircraft Types
- 1876 Military Registered Aircraft
- 42 Continuing Airworthiness Management Organization
- 35 Maintenance Approved Organization Scheme (66 sites)
- 94 Design Approved Organization Scheme
- 16 Contractor Flying Approved Organizations (Accountable Managers (Military Flying))
- 302 DH-facing organizations
- >100,000 Regulated community



MAA Regulatory Publications (MRP)



Current Relationship

DME RA 5000 Series

5000
5100
5200
5300
5400
5500
5600
5700

≠

EMAR 21

Subpart A
Subpart B
Subpart C
Subpart D
Subpart E
Subpart F
Subpart G
Subpart H
Subpart I
Subpart J
Subpart K
Subpart L
Subpart M
Subpart N
Subpart O
Subpart P
Subpart Q

What are we doing with EMAR 21?

- Extant regulation (RA 5000 Series) aligns with UK Defence Aviation Environment construct.
- We understand the gaps between RA 5000 Series and EMAR 21.
- Implementation of EMAR 21 into the MRP.
 - Creation of a number of new Regulatory Articles.
 - Based on EMAR 21 Subparts.
 - Complement to extant RA 5000.
- Re-launch of the RA 5000 Series.
 - Type Airworthiness Engineering (TAE).

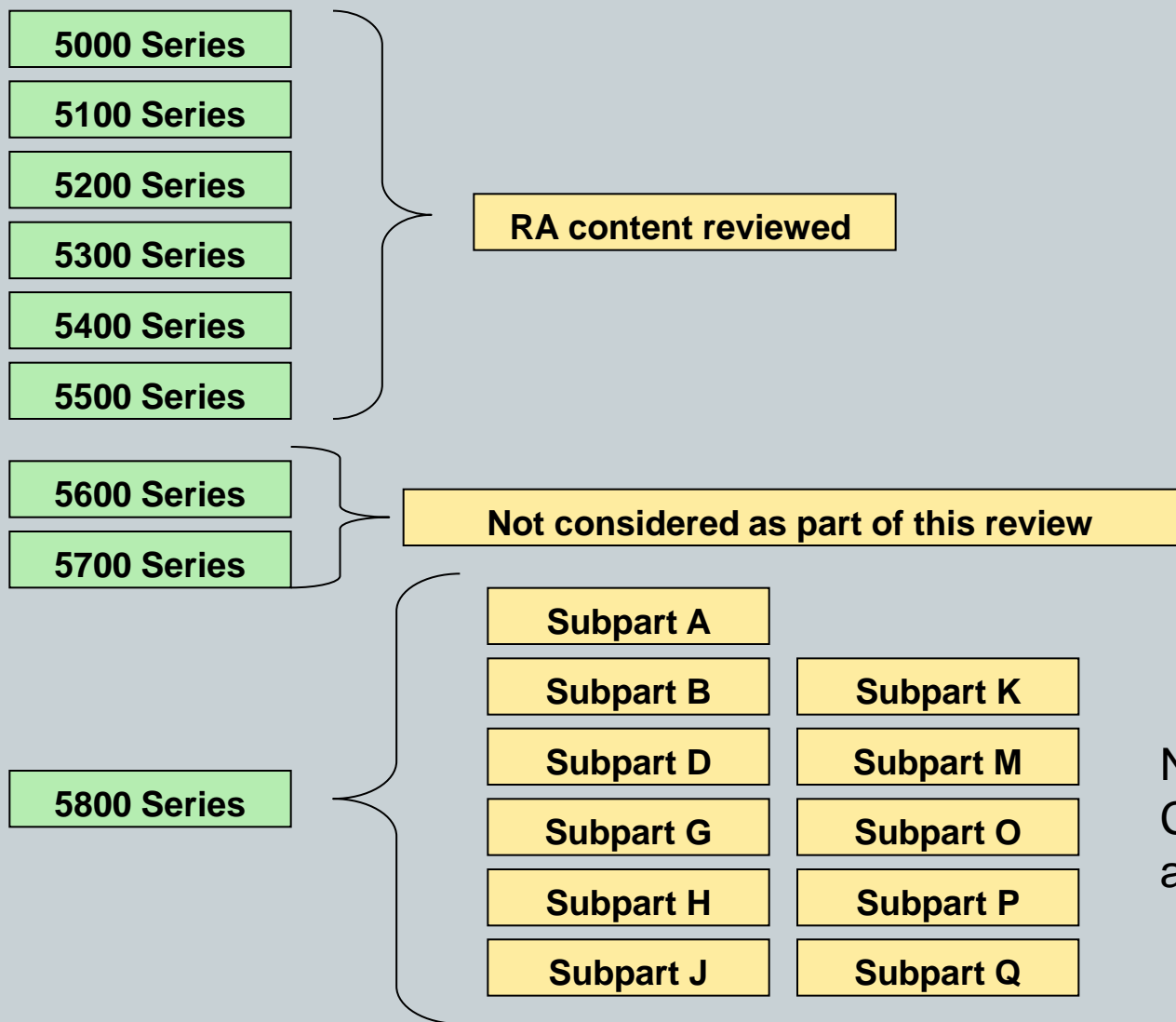
Implementation Philosophy

- The MOD is the MTC holder (Subpart B)
 - MTC not being issued retrospectively.
- All aircraft will follow the Changes to Type Design process (Subpart D).
- Supplemental TC is irrelevant (Subpart E) as TAA requests change.
- Not considering Production without POA (Subpart F).
- Production Approval (Subpart G) - currently rely on Govt QA for conformity to design.
- MAA not acting as Authority to issue CofA (Subpart H).
 - Although recognize when issued by an Authority.

Implementation Philosophy

- Extant Design Organization Approval scheme bolstered by Subpart J.
- Parts and Appliances – will be aligned with Subpart K.
- Repairs (Subpart M) - bolstered with our extant regulation.
- Have extant Certificate of Design process for EMTSO (Subpart O).
 - Although recognize (E)TSO when issued by an Authority.
- Already have Military Flight Test Permit process (Subpart P).
 - Reconfigure using Mil Permit To Fly procedure with a RTS template.
- Identification of Products, Parts & Appliances (Subpart Q) - bolstered with our extant regulation.

What will it look like?



Softer Issues

- Need to amend the language and style.
 - EASA 21 and EMAR 21 based on European 'English' language.
 - MRP written in MAA regulatory publication 'English' as a common language to both MOD and Industry.
 - Manipulation of text to align with MRP style and convention.
 - Retain the intent of Requirement in the new Regulation.
- Re-launch of RA 5000 Series as Type Airworthiness Engineering.
 - Taking account of extended scope (Certification).
 - Aligns with RA 4000 Series as Continuing Airworthiness Engineering.
- Wider desktop review of other corresponding RA.
 - To ensure new RA 5800 series does not conflict or duplicate.

EMAR style

EMAR 21 SECTION A - CERTIFICATION OF MILITARY AIRCRAFT AND RELATED PRODUCTS, PARTS AND APPLIANCES, AND DESIGN AND PRODUCTION ORGANISATIONS

SUBPART Q — IDENTIFICATION OF PRODUCTS, PARTS AND APPLIANCES

21.A.801 Identification of products

(a) The identification of products shall include the following information:

1. Manufacturer's name;
2. Product designation;
3. Manufacturer's Serial number; and
4. Any other information the Authority finds appropriate.

(b) Any organisation that manufactures an aircraft or engine under [EMAR 21 Subpart G](#) or [Subpart F](#) shall identify that aircraft or engine by means of a fireproof plate that has the information specified in paragraph (a) marked on it by etching, stamping, engraving, or other approved method of fireproof marking. The identification plate shall be secured in such a manner that it is accessible and legible, and will not likely be defaced or removed during normal service, or lost or destroyed in an accident.

(c) Any organisation that manufactures a propeller, propeller blade, or propeller hub under [EMAR 21 Subpart G](#) or [Subpart F](#) shall identify it by means of a plate, stamping, engraving, etching or other approved method of fireproof identification that is placed on it on a non-critical surface, contains the information specified in paragraph (a), and will not likely be defaced or removed during normal service or lost or destroyed in an accident.

(d) (Reserved)

21.A.803 Handling of identification data

(a) No person shall remove, change, or place identification information referred to in [EMAR 21.A.801\(a\)](#) on any aircraft, engine, propeller, propeller blade, or propeller hub, or in [EMAR 21.A.807\(a\)](#) on an APU, without the approval of the Authority.

(b) No person shall remove or install any identification plate referred to in [EMAR 21.A.801](#), or in [21.A.807](#) for an APU, without the approval of the Authority.

(c) By way of derogation from paragraphs (a) and (b), any organisation performing maintenance work under the applicable associated implementing rules may, in accordance with methods, techniques and practices established by the Authority:

1. Remove, change, or place the identification information referred to in [EMAR 21.A.801\(a\)](#) on any aircraft, engine, propeller, propeller blade, or propeller hub, or in [EMAR 21.A.807\(a\)](#) on an APU; or
2. Remove an identification plate referred to in [EMAR 21.A.801](#), or [21.A.807](#) for an APU, when necessary during maintenance operations.

(d) No person shall install an identification plate removed in accordance with subparagraph (c)(2) on any aircraft, engine, propeller, propeller blade, or propeller hub other than the one from which it was removed.

EMAR style

SUBPART Q – IDENTIFICATION OF PRODUCTS, PARTS AND APPLIANCES

GM 21A.804(a)(1) Identification of parts and appliances

It is not the intent of EMAR 21A.804(a)(1) to introduce an obligation for a production organisation (manufacturer) to mark new parts or appliances with information which is not identified by the military design approval holder. Therefore, the physical marking of parts and appliances is only required when established by the military design approval (MTC, MSTC, EMTSO, repair, minor change) holder.

AMC 21A.804(a)(3) Identification of parts and appliances

Mark "EMPA" (European Military Part Approval) is a generic designation that is to be adapted by each Nation. Thus, the letter "E" should be replaced by the ISO 3166-1:2006 (or STANAG 1059 Edition 8)* three letter code in order to distinguish identification of parts and appliances produced under each nation approval.

GM 21A.804(a)(3) Identification of parts and appliances

"EPA" (European Part Approval) mark, for parts and appliances produced under EASA approval that can be installed in military aircraft, should be considered as an recognized mark instead of "EMPA" (European Military Part Approval) in the same manner as defined on AMC EMAR 21A.804(a)(3) for parts and appliances produced under each nation approval.

RA style

RA 5885 – Identification of Products, Parts and Appliances (MRP 21 Subpart Q)

Rationale *To comply with configuration control requirements, each product¹, part or appliance to be fitted on an Air System must be individually identified. There are important safety, operational and economic benefits if the possibility of recurrent failure of a product, part or appliance can be confined to identifiable material batches, components, equipment or aircraft. To achieve this, traceability and interchangeability are required for selected parts.*

← The why to do it

Contents

- 5885(1): Identification of Products
- 5885(2): Handling of Identification Data
- 5885(3): Identification of Parts and Appliances
- 5885(4): Identification of Critical Parts
- 5885(5): Traceability of Identifiable Parts

Regulation 5885(1)

Identification of Products

5885(1) The identification of products **shall** include the specific information of Manufacturer's name, Product designation, and the Manufacturer's Serial Number.

Acceptable Means of Compliance 5885(1)

Identification of Products

1. Any organization that manufactures an aircraft or engine **should** identify that aircraft or engine by means of a fireproof plate that has the information specified in RA 5885(1) marked on it by etching, stamping, engraving, or other approved method of fireproof marking. The identification plate **should** be secured in such a manner that it is accessible, legible and not likely to be defaced or removed during normal service, or lost or destroyed in an accident.
2. Any organization that manufactures a propeller, propeller blade, or propeller hub **should** identify it by means of a plate, stamping, engraving, etching or other approved method of fireproof identification that is placed on it on a non-critical surface, contains the specified information, and is not likely to be defaced or removed during normal service or lost or destroyed in an accident.

Guidance Material 5885(1)

Identification of Products

3. Nil.

Regulation 5885(2)

Handling of Identification Data

5885(2) Only MAA approved Design or Maintenance Organizations **shall** remove, change, or place identification information on any aircraft, engine, propeller, propeller blade, propeller hub or Auxiliary Power Unit (APU).

¹ For explanation of what constitutes a product, refer to RA 5800 – General Requirements – Project Teams and Organizations (MRP 21).

→ The what to do

→ The how to do it

→ Guidance

Implementation Strategy

- A fundamental change in regulatory philosophy will generate challenges.
- Build upon lessons learnt through implementation of other Regulation (CAMO & CFAOS).
- Need to consider a transition period rather than a 'big bang' approach.
- Developed an Implementation Strategy to deal with the change.
- Implementation Strategy based on 4 simple tenets.

The 4 tenets (not tents)

Communication



Familiarization



Engagement

Compliance

How will it affect the regulated community?

- Recognize this is evolution not revolution.
- It will drive a change in regulatory philosophy.
- Encourage different (positive) behaviours in the roles & responsibilities of practitioners.
- Regulatory intent is the same; it is the implementation that differs.
- Impact on existing contracts

Progress so far

- Published Notice of Proposed Amendment 2nd Qtr 2015 (originally 3 months – extended to 4.5 months).
- Over 300 pages of regulatory material.
- Numerous briefing sessions held.
- Workshops held for a line-line review.
- Regulatory Notice for a transition period (6 months).
- Notice of Authorized Amendment anticipated in 2nd Qtr 2016.

Implementation Workshop (9-11 June 15)

- TF2 & EIG agreed need for Workshop – Sep/Oct 14.
- EMAR 21 DOA/POA Questionnaire sent to pMS.
 - Slow response, but received 12 responses.
 - 9/12 have DOA scheme aligned with EMAR 21 Subpart J.
 - 6/12 have POA scheme compliant with EMAR 21 Subpart G.
- Workshop held in Jun 15 over 2.5 days.
- Discussion identified some ‘quick-wins’ – but no need to change EMAR 21.

Implementation Workshop (9-11 June 15)

Convergent Thinking:



Many facts, one right answer

Back to Softer Issues

