EASA
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EASA-FAA International Aviation Safety Conference
13-15 June 2023

SMS Implementation in Design and Manufacturing

Technical Session

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IMPLEMENTATION OF SAFETY MANAGEMENT SYSTEM (SMS) IN THE EUROPEAN UNION

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EASA

SMS requirements in the EU for design and production

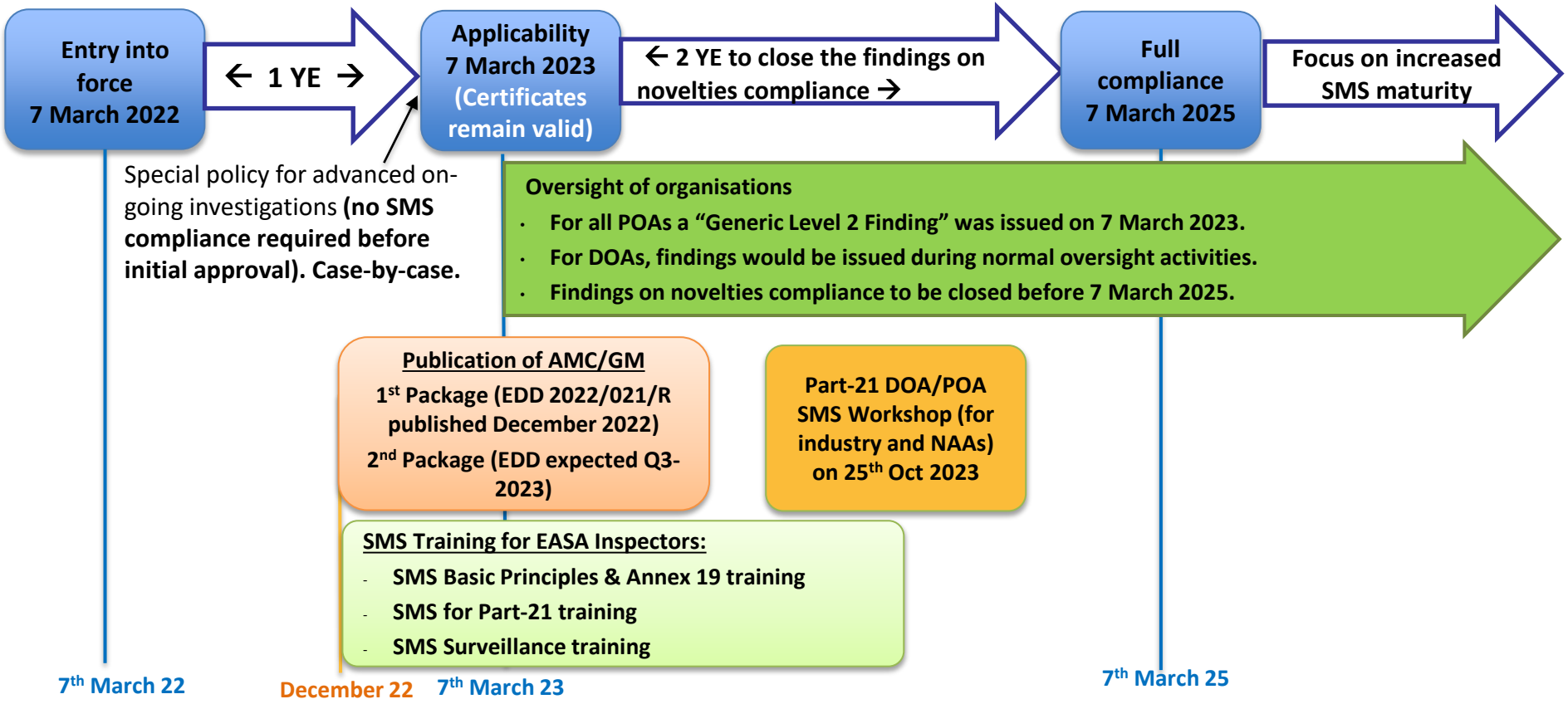
REGULATIONS

- **Commission Delegated Regulation 2022/201** (DOA & POA organization requirements and EASA DOA authority requirements)
  - **Commission Implementing Regulation 2022/1253** (derogations for certain production organisations and for certain organisations producing products, parts or appliances without an approval certificate)
- **Commission Implementing Regulation 2022/203** (POA authority requirements for EASA and NAAs)

ACCEPTABLE MEANS of COMPLIANCE / GUIDANCE MATERIAL

- **ED Decision 2022/021/R (first package AMC/GM) published in December 2022**
- **2nd ED Decision (second package AMC/GM) expected 2023 Q3**

SMS Implementation and Timelines



SMS Implementation Policy

- Implementation of SMS may be a significant change to the organisation's Design Management System. To be determined by the organisation based on a gap analysis.
- Implementation of SMS is always a significant change to the organisation's Production Management System.

- Standard SM-0001 issue B:
  - *Means of Compliance to 21.A.139(c) and 21.A.239(c) (safety management elements of the production and design management systems).*
  - *If used, its implementation is also subject to EASA/NAA oversight.*

- Standard oversight cycle is 2 years.
  - *May be shortened in cases of reduced performance.*
  - *May be increased to 3 or 4 years under certain conditions.*
  - *Decision may be impacted by previous oversight experience (POA coming from 2-year cycle, DOA coming from 3-year cycle)*

- Redefined Level 1 and 2 findings. Observations instead of Level 3 findings. Observations not to be used for "small findings" (they should be also Level 2)

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FAA'S PROPOSED RULES ON SMS AND SMS RELATED ACTIVITIES

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FAA's proposed rule on SMS

- The Federal Aviation Administration (FAA) issued a Notice of Proposed Rulemaking (NPRM) on Safety Management Systems.
  - **Published** in the *Federal Register* on January 11, 2023.
  - **Focus:** Part 135 operators, § 91.147 air tour operators, and certain holders under part 21.
  - **Public comment period:** January 11 — April 11, 2023.
    - FAA is currently dispositioning the ~200 comments submitted.

Two major themes of public comments

- **Suggested Applicability:**
  - Commenters: FAA should consider excluding “small entities” (e.g., balloons).
  - Commenters: FAA should expand to holders of Supplemental Type Certificates (STC), Parts Manufacturer Approvals (PMA), and Technical Standard Order (TSO) Authorizations.

- **Suggested Additions / Changes to Requirements:**
  - Require a safety information-sharing (provide notice of hazards to other entities that could address the hazard or mitigate the risk).
  - Develop an organizational “system description” to align with ICAO practices (i.e., a roadmap).
  - Include organizational “interfaces” that influence the management of safety.
  - Include a code of ethics in safety policy (as per ACSAA).
  - Summarize confidential employee safety reports (as per ACSAA).

ACSAA = Aircraft Certification, Safety, and Accountability Act, Dec. 2020

FAA SMS activities related to design & manufacturing (D&M)

- **Guidance Material:**
  - Proposed Advisory Circular included with NPRM.
- **Voluntary SMS** (vSMS) program:
  - Informing proposed regulations, guidance, and policy.
  - Increasing cooperation with D&M (5 companies with FAA-recognized vSMS and ~30 implementing vSMS) and Maintenance and Repair Organizations (MRO).
- **FAA preparing for proposed 14 CFR part 5**:
  - Training the FAA workforce.
  - Engaging industry through SMS Design and Manufacturing Focus Group and working group for International Industry Standard (SM-0001).

FAA accelerating preparations for industry adoption of SMS

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IMPLEMENTING A SAFETY MANAGEMENT SYSTEM IN DESIGN, MANUFACTURING AND MAINTENANCE ORGANIZATIONS

SM-0001

Tony FAZIO
President
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Implementing a Safety Management System in Design, Manufacturing and Maintenance Organizations, SM-0001

- Sponsored by the Aviation Associations: AIA, AIA-Brazil, AIA-Canada, ASD and GAMA with Observers from ANAC, EASA, FAA, TCCA and ICAO.
- The Standard was developed to be an Internationally Accepted Means of Compliance with ICAO Annex 19 and SMS regulations from Aviation Authorities or for voluntary SMS implementation.
- Over 70 technical experts/organizations/associations have participated in the Standard Development over the last 6 years.
- 2 Versions have been published (2018, 2022).
- Balloting for Version C will begin shortly. Publication is expected by the end of September, 2023.

Authority Recognition/Industry Adoption

- Recognized by EASA as an Alternate Means of Compliance for DOA and POA holders.
- Accepted by FAA, TCCA and ANAC as a basis for a Voluntarily Implemented SMS for Design and Manufacturing Organizations.
- ICAO has Published Standard in Chapter 9.2 of its Implementation Guidance.
- We Seek Additional Recognition as other Authorities adopt Regulations (FAA, ANAC, TCCA, UK-CAA, etc.).

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THE SAFETY MANAGEMENT SYSTEM (SMS) AS A SOLUTION IN RESPONSE TO SOCIETY'S NEW EXPECTATIONS

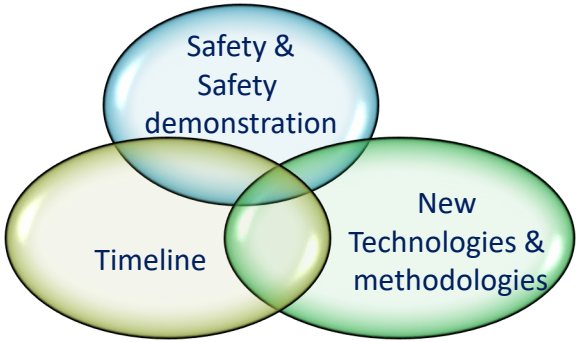
Christophe ROBIN
Head of Design
DAHER Aircraft Division

How can new products with new technologies or breakthrough technology satisfy the market in a timely manner (in no more than 5-7 years)?

What is at stake ?

As a 110+ year-old aircraft manufacturer, Daher needs to:

1. Answer the decarbonisation expectations of society
   → A low-carbon product in 2027 (Daher's strategic plan)
2. Master new technologies (Such as high-voltage propulsion systems)
   → Ongoing: EcoPulse Technologies Demonstrator
3. Be accountable and transparent on the safety throughout their lifecycle



⇒ **The SMS should be the meeting point of the authorities and the aircraft manufacturer**

It should **NOT** be:

1. Another layer of regulation that is applied without linkage between DOA / POA / MOA / OPS
2. An administrative process that is applied differently depending on the local authorities.

Safety throughout an international organization

FAA & EASA as the primary airworthiness authorities

→ Multiple agreements through the two major authorities and multiple surveillances bodies

SANDPOINT IDAHO USA

KODIAK's TC

TARBES HAUTES-PYRENEES FRANCE

TBM's TC

<u>Managing safety at the company level</u>

How?

1. Simplify processes: KISS / Not adding another layer…
2. Capitalize on the different cultures , community and competencies on both sides of the Atlantic
3. Put a company safety management strategy in place throughout the legal entities

This cannot be done without bringing together both of the primary airworthiness authorities and Daher at its management level to oversee the system being put in place.

⇒ **A significant company challenge that cannot be achieved without "partnering" with both airworthiness authorities.**

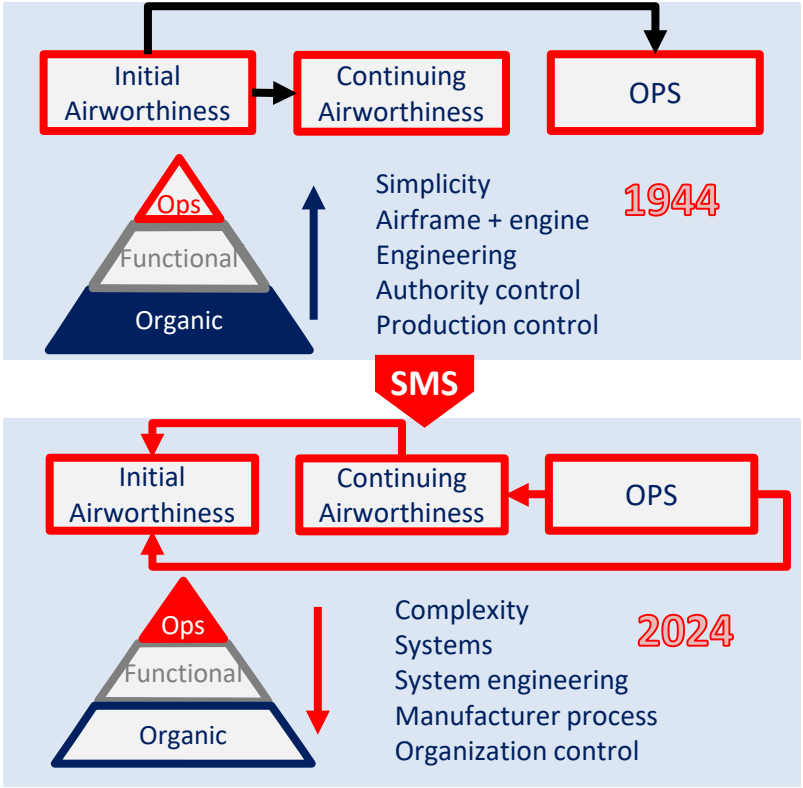
Safety throughout the lifecycle

Only “real-life” safety matters vs theoretical safety in a perfect world

How?

1. System engineering in a system defined as [design + certification + production] of a platform (TBM, Kodiak)
2. Digital continuity on key safety parameters
   → Common language throughout the company’s functions
3. Monitoring during operation to identify adverse trends
   → To be used as a method of compliance for certification of new technologies
4. Proactive measure loop into the initial airworthiness phase as design specifications overwhelm the theoretical aspect

➔ All stakeholders are involved in a positive safety culture including a private pilot flying in non-commercial operation



⇒ **A long-term transformation plan that must reach intermediate milestones such as March 2025 (DOA/POA implementation) and 2027 (Daher’s target for its first low-carbon aircraft product)**

Thank you for your attention