

Aircraft Design, Manufacturing and Operation: Regulator's Perspective on Design Approval, Manufacturing Oversight and Continued Operational Safety

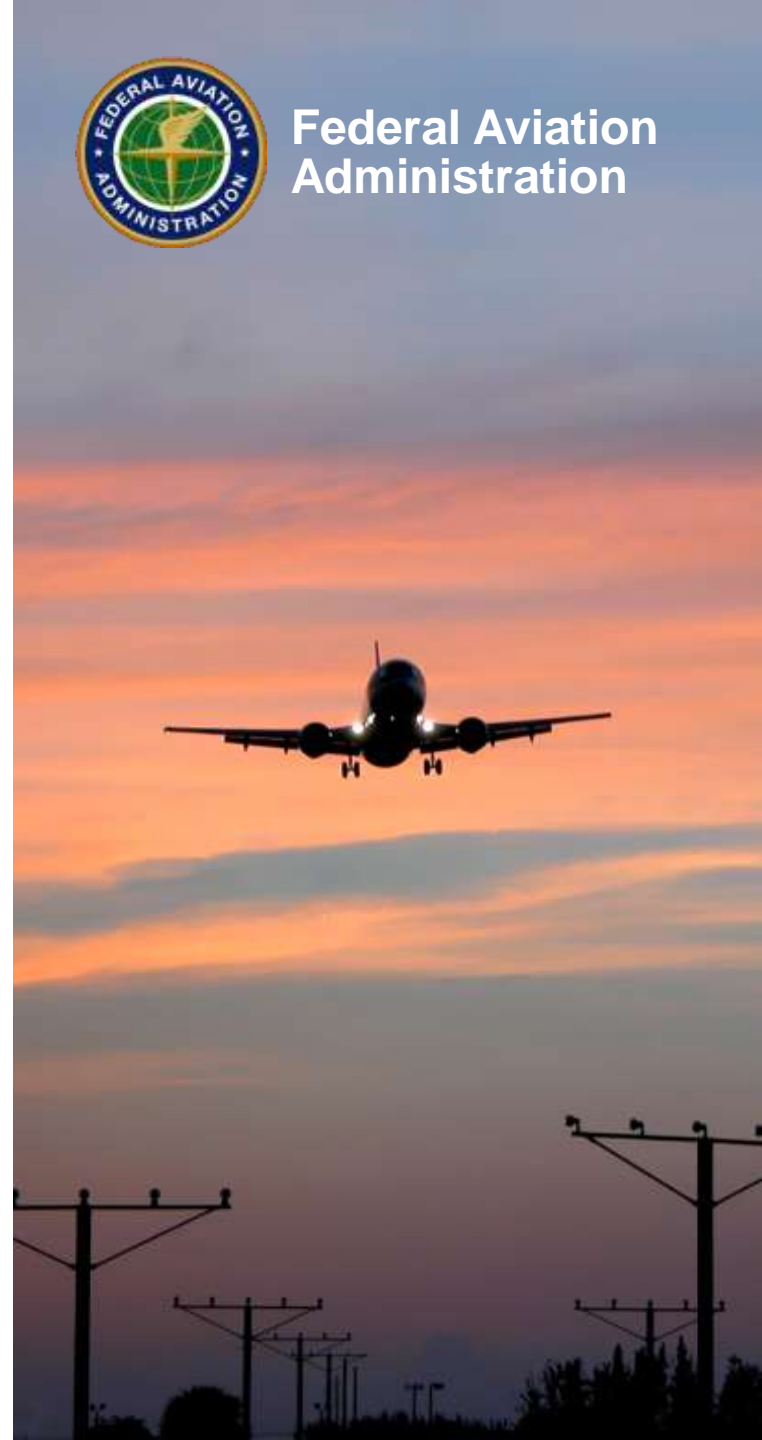
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**Federal Aviation
Administration**



FAA Aviation Safety (AVS) Focus

- **The AVS organization oversees the entire aircraft life cycle**
- **The FAA Aircraft Certification (AIR) and Flight Standards Services (AFS) share that responsibility**
- **The FAA is an oversight agency exercising discretion in what we look at**
- **Oversight is based on an Accountability Framework grounded in the FAA Statutes**



Accountability Framework

FAA promotes (not ensures) Aviation Safety by:

- Establishing safety objectives
- Issuing regulations
- Providing guidance on acceptable means of compliance
- Specifying the certification basis for approvals
- Overseeing compliance (initial and ongoing)
- Issuing certificates and approvals
- Taking enforcement actions as necessary, and
- Mandating corrective action as necessary



Accountability Framework

Aircraft Owners & Operators have a regulatory obligation to:

- Operate in accordance with applicable regulations and policy
- Maintain the airworthiness of the aircraft i.e.; ensure that it conforms and is safe for operation
- Report product failures, malfunctions, and defects



Accountability Framework

Applicants for a design approval have a regulatory obligation to:

- **Show compliance** to all applicable regulations
- Use **means of compliance** acceptable to the FAA
- **Make a Statement of Compliance** certifying that their product meets all applicable regulations



Accountability Framework

Design Approval Holders have an ongoing regulatory obligation to:

- **Maintain compliant designs** with no unsafe features
- **Promulgate required design changes** that the FAA find necessary to correct unsafe conditions
- **Report** product failures, malfunctions, and defects



Accountability Framework

Production Approval Holders have an ongoing regulatory obligation to:

- **Maintain** an approved **Quality System**
- **Manufacture conforming products** with no unsafe features
- **Report** product non-conformities, defects, and changes to the Quality System



What is FAA's Discretionary Function?

- **The Administrator has discretion to:**
 - **Promulgate airworthiness regulations and standards in the interest of safety, and**
 - **Define, by regulations and directives, how the FAA will oversee compliance by those who we regulate.**
- **FAA employees have the discretion to apply data and judgment in making decisions and reasonable choices as we perform FAA work within the bounds of the statutes, regulations, and FAA directives that prescribe how the FAA will perform its work**



How Does FAA Decide What to Look at?

- **FAA does not look at everything**
- **We use a combination of:**
 - **Employees skilled in technical disciplines and system evaluation and oversight**
 - **Experienced private and company designees**
 - **System based organizational delegations**
 - **Competent foreign authorities under bilateral agreements**
 - **Data driven risk based tools to identify highest risk areas for oversight (e.g.; Risk Based Resource Targeting)**
 - **Data mining, risk analysis and causal analysis tools (e.g.; Monitor Safety Analyze Data)**



How Does FAA Maintain Its Expertise?

- **Hiring from the highly skilled industry workforce**
- **Extensive training both in person and online**
- **Heavy use of SME teams for standards development, certification projects and ongoing oversight**
- **Cross-organizational manager and program management teams**
- **FAA Technical Specialist and CSTAs programs**
- **Use of Designees skilled in technical specialties and program management**
- **Collaboration with Industry groups to develop standards and solve complex airworthiness problems**



How Does FAA Improve Its Processes?

- **Using Safety Management Systems (SMS) principles to apply lessons learned from accidents, approval projects, audits and corrective actions to:**
 - All applicable product types
 - New and revised standards
 - FAA and approval holder work processes and training
 - Data monitoring and risk based resource targeting systems to look for precursors of future risks
- **FAA's QMS combines ISO with risk and root cause analyses for continuous organizational performance improvement**



What does the Future Hold?

- **Increased application of:**
 - **Safety Management Systems and principles by FAA and Industry**
 - **Data mining and data sharing**
 - **System and organizational performance evaluation methods**
 - **Values based management**



Ultimately Our Values Will Define Us

- **Safety** is our passion
- **Excellence** is our promise
- **Integrity** is our touchstone
- **People** are our strength
- **Innovation** is our signature



Thank You!

Questions?

