Symposium



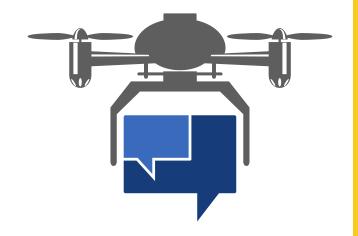
EMBRY-RIDDLE Aeronautical University

Certification Discussion

Rules of the Game

Moderator: Earl Lawrence

- Dorenda Baker
- John Duncan
- Andy Thurling
- Todd Graetz



Send questions to talkUAS@faa.gov – include breakout session topic in subject line

Aircraft Certification Service (AIR)

Development of Standards and Policy

 Certification and Production propellers, aircraft parts and appliances;

 Continued operational safety (COS) management





UAS Safety – From Experience

Successful history of integrating new technologies into the National Airspace System (NAS) safely



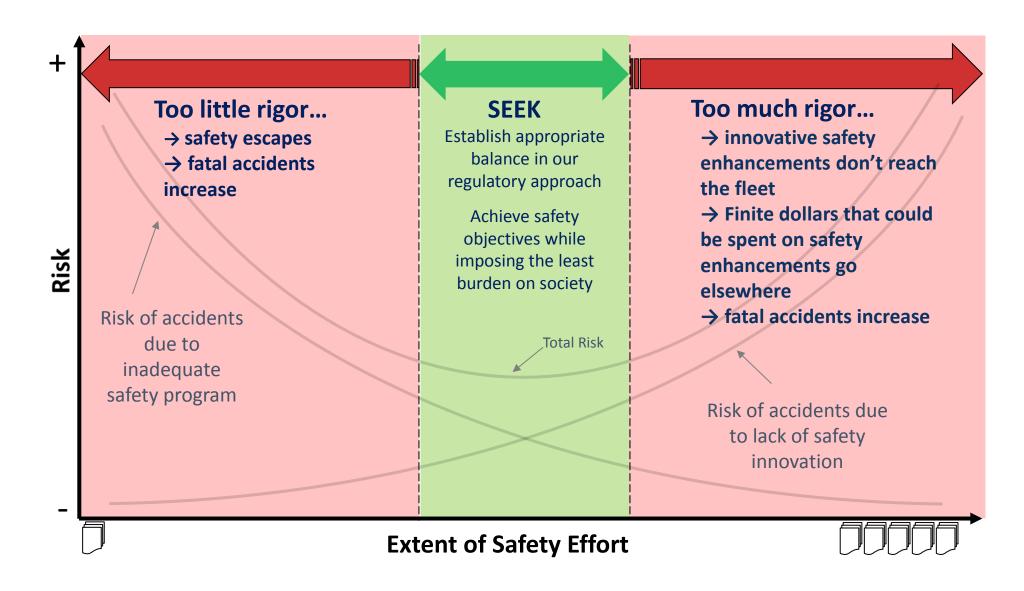
Proven risk-based approach to safety

Balance of acceptable level of safety with societal safety demands

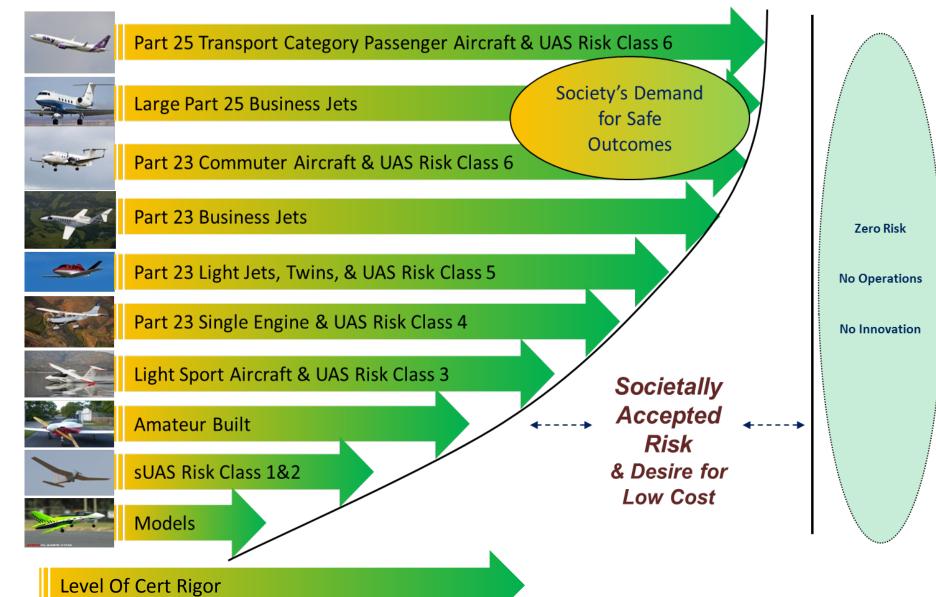


FAA will apply a risk-based approach to UAS Certification

System Safety – The Safety Continuum

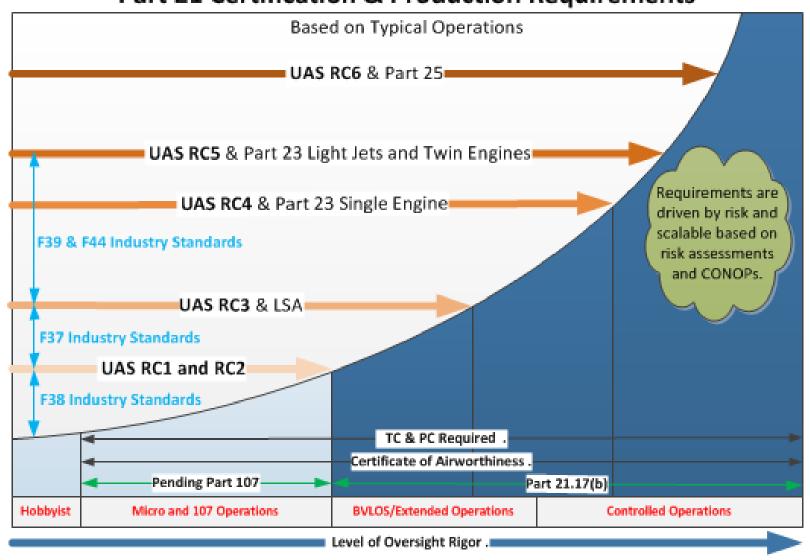


Applying Our Safety Continuum

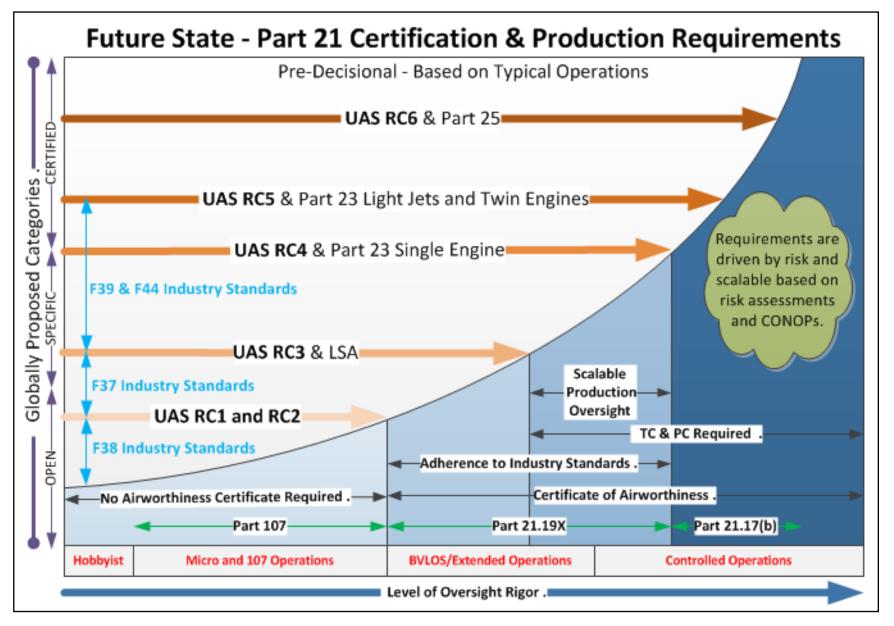


Existing Regulatory Framework

Part 21 Certification & Production Requirements



Future Regulatory Continuum



Scalable Production Oversight

- Establish production certificate (PC) risk categories similar to the type certificate (TC) risk classes
 - Current resources will not accommodate PCs for all UAS
 - Scalable approach allows the dedication of FAA resources where the risk is highest

Strategic Goal, Risk-Based Certification

Rising to the Challenge

- Creating Our Regulatory Continuum Now
 - Working pathfinders and 13 projects under the current regulatory structure
 - International Collaboration ICAO, EASA, etc.

Ready for the Future

- Our certification projects inform future rule changes
- Considering further changes for low and medium risk UAS

Importance of Industry Engagement

- Engage EARLY and OFTEN about new technologies
- Upfront involvement will help the FAA determine the certification basis and get out of the critical path to certification









www.faa.gov/uas/





FAA Mission & Responsibilities

The FAA's mission is to protect life and property within the National Airspace System (NAS).

The Flight Standards Service fulfills its part of the FAA mission through:

- Standards (pilots, mechanics, air carriers, air operators, training facilities)
- Certification ("licensing" of those who meet standards)
- Continued Operational Safety (risk-based decision-making)

The goal of these functions is to provide protection for operators, passengers, and non-participants (people and property on the ground).



Regulatory Parts – Rules of the Road

Part 91 – General Operating Rules

Part 61 – Pilot Knowledge & Skill Requirements

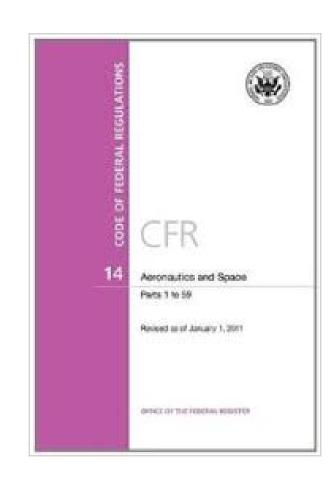
Part 135 – Air Transportation – Small Aircraft

Part 121 – Air Transportation – Large Aircraft

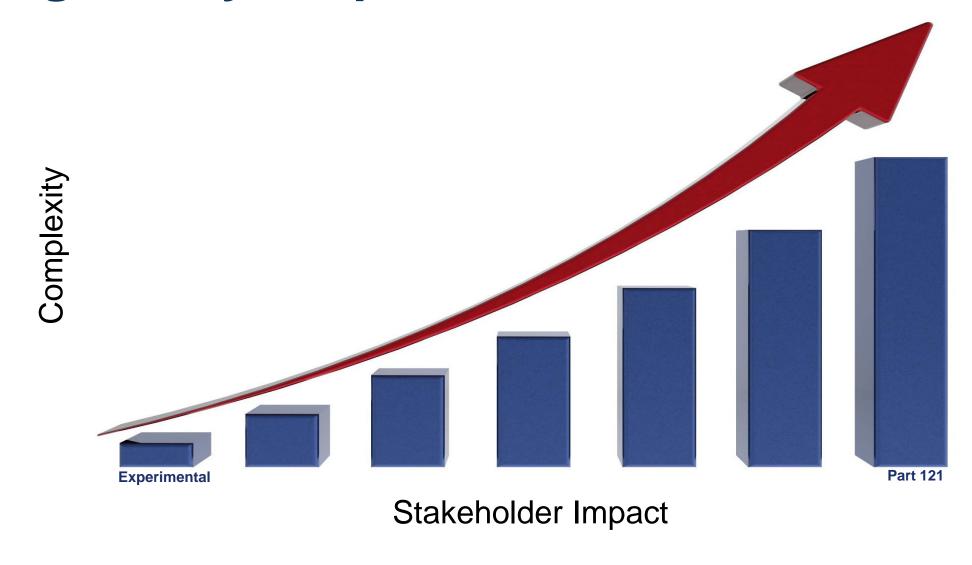
Part 137 – Agricultural Operations

Part 133 – External Load Operations

Part 141 - Pilot Schools



Regulatory Requirements



FAA Vision for UAS Integration

Safe, efficient, and timely integration of UAS into the National Airspace System (NAS)

- The FAA did not envision UAS when today's prescriptive civil aviation safety regulations were developed.
- As UAS activity increased, the FAA recognized the need for integration of these aircraft into the NAS.
 - We have begun to set standards for full integration of UAS, which will eventually be treated like any other aircraft.
 - In the near term, the FAA is accommodating the demand for UAS operations by creating a niche in the NAS (part 107 and section 333 exemptions) to enable UAS activity.
 - This approach allows UAS to operate as the FAA works to create performance-based (vice prescriptive) standards that enable UAS operations.

Looking Ahead

- UAS are becoming more complex and more capable. We expect UAS to further evolve in size and complexity that will be comparable to that of manned aircraft.
- Next steps will involve expanding the scope of operations under part 107.
- To achieve the goal of full integration into the NAS, however, the FAA will have to make broad changes in the structure and scope of existing rules to accommodate UAS.
- These changes will shift regulations from the existing prescriptive approach to a performance-based standard.







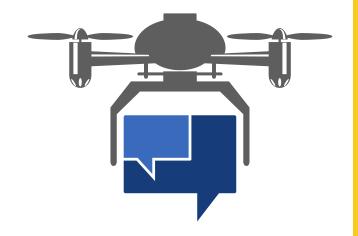


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Aviation Lifecycle

Continued Standards Design Operational Produce People **Operations** Maintenance Safety Establish safety Continual and certification Oversight and regulations and Surveillance of: - Air Carriers policy - Manufacturers Provide - Repair Stations quidance on - Designees Certify Determine Evaluate Approve Air Approve ways to meet the - Airmen Airmen: Carrier design manufacturer Repair - Air Traffic intent of the meets s quality and ➤ Pilot operations Stations and regulations and Organization performanc production ➤ Mechanics Maintenance Apply tools to policy e and systems Issue Facilities manage risk and certification Issue Appoint recurrent **Promote** gain compliance: Designees: airworthiness Issue Repair standards production - Airworthiness voluntary and > Individual certificates Station engagement and **Directives** Issue airworthiness > Organization Certificates cooperation with - Precursor design approvals for enhanced safety identification aircraft. approvals - Data Sharing programs (type engines, and - Enforcement certificates) parts AVS is actively involved throughout the life-cycle of every aviation product