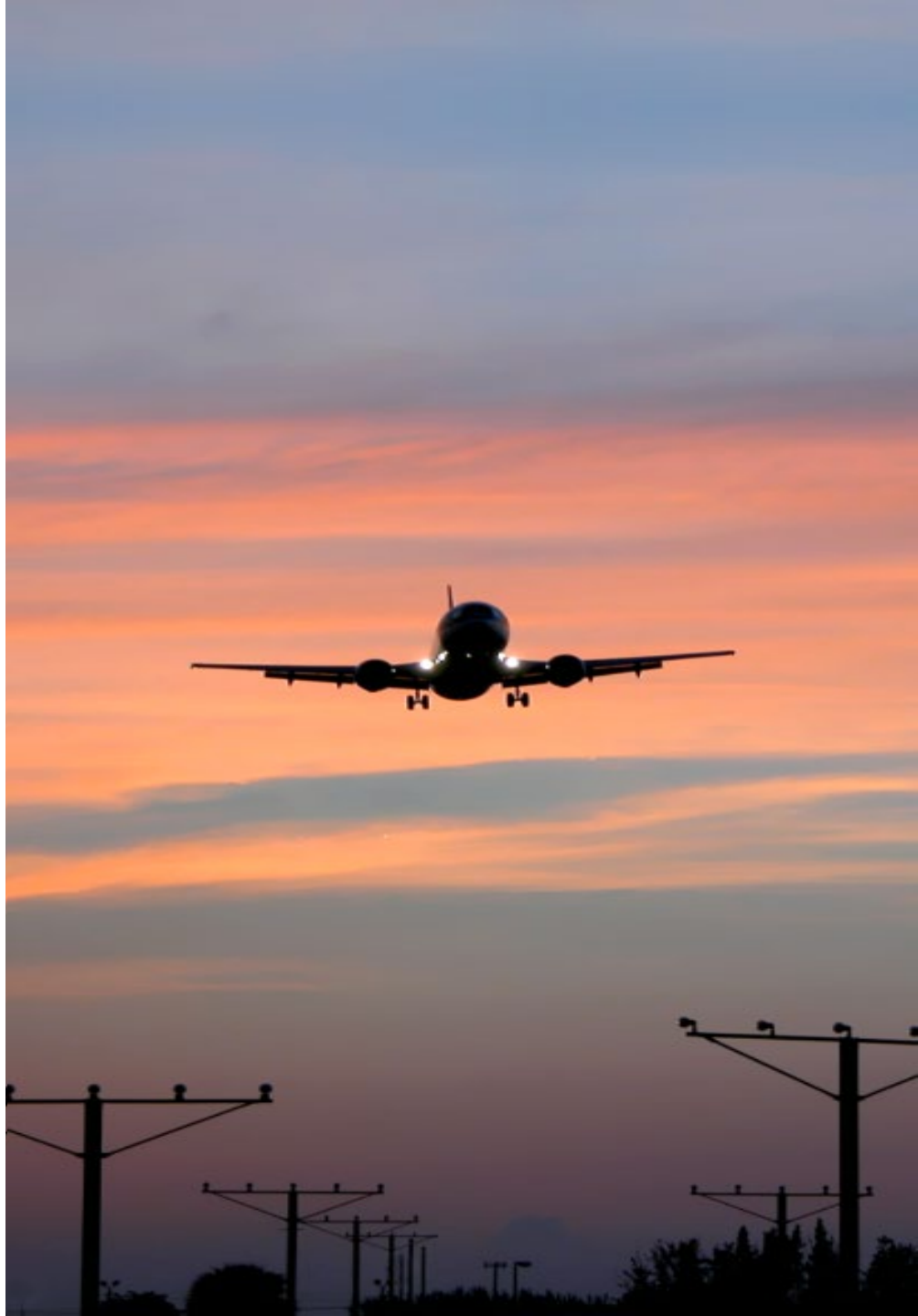
Initial Certification and Continued Operational Safety Workshop

Tom Sciortino, Acting Director

Certification and Airworthiness Division

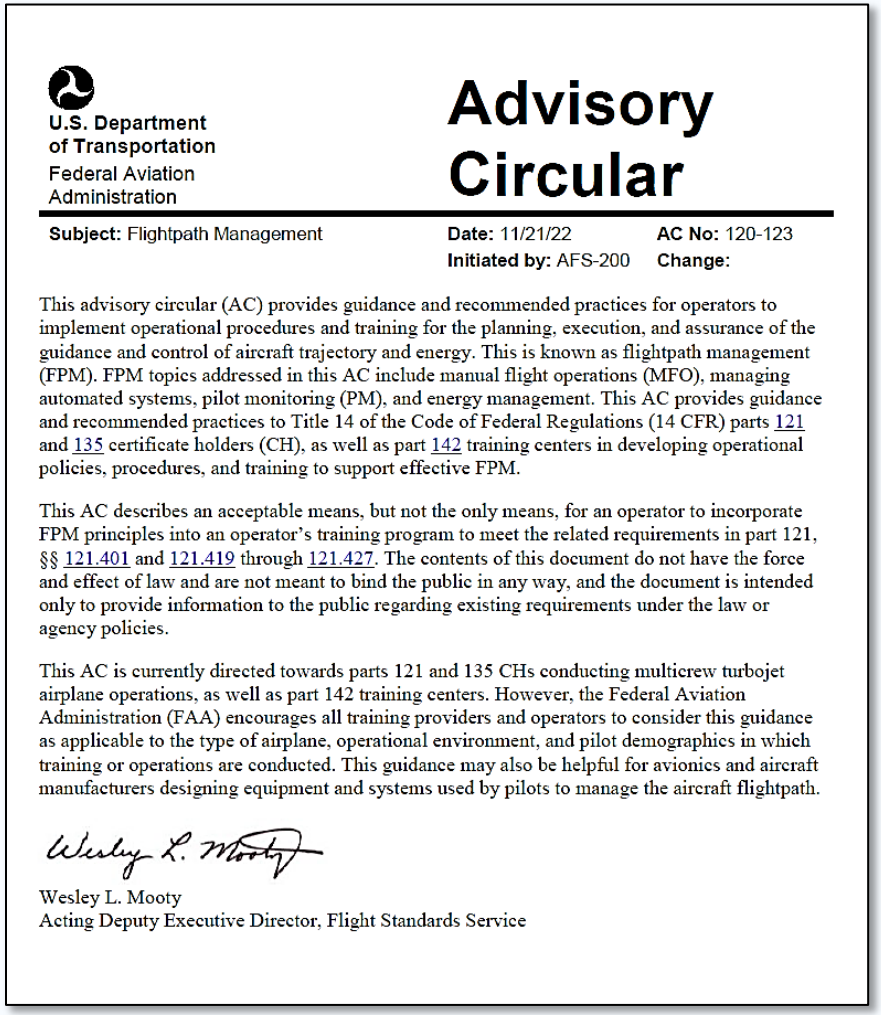
FAA Aircraft Certification Service

23 EASA–FAA International
Aviation Safety Conference
Cologne, 13-15 June 2023



Using Safety Data to Update Regulatory and Guidance Materials: AC 120-123 Flightpath Management

- Provide guidance and recommended practices
  - Planning, execution and assurance of guidance and control of aircraft trajectory and energy
- Topics covered
  - Policy/procedures
  - Manual flight operations
  - Managing automated systems
  - Pilot monitoring (PM)
  - Energy management
- Scope
  - Part 121 & 135 certificate holders
  - Part 142 training centers
  - Multicrew turbojet airline operations



U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: Flightpath Management | **Date:** 11/21/22 | **AC No:** 120-123
Initiated by: AFS-200 | **Change:**

This advisory circular (AC) provides guidance and recommended practices for operators to implement operational procedures and training for the planning, execution, and assurance of the guidance and control of aircraft trajectory and energy. This is known as flightpath management (FPM). FPM topics addressed in this AC include manual flight operations (MFO), managing automated systems, pilot monitoring (PM), and energy management. This AC provides guidance and recommended practices to Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135 certificate holders (CH), as well as part 142 training centers in developing operational policies, procedures, and training to support effective FPM.

This AC describes an acceptable means, but not the only means, for an operator to incorporate FPM principles into an operator's training program to meet the related requirements in part 121, §§ 121.401 and 121.419 through 121.427. The contents of this document do not have the force and effect of law and are not meant to bind the public in any way, and the document is intended only to provide information to the public regarding existing requirements under the law or agency policies.

This AC is currently directed towards parts 121 and 135 CHs conducting multicrew turbojet airplane operations, as well as part 142 training centers. However, the Federal Aviation Administration (FAA) encourages all training providers and operators to consider this guidance as applicable to the type of airplane, operational environment, and pilot demographics in which training or operations are conducted. This guidance may also be helpful for avionics and aircraft manufacturers designing equipment and systems used by pilots to manage the aircraft flightpath.

Wesley L. Mooty
Acting Deputy Executive Director, Flight Standards Service

Recent FAA Actions Regarding Human Factors Considerations

- Additional human factors specialists in three FAA groups:
  - Aircraft Certification: Policy & Standards Division
  - Aircraft Certification: Compliance & Airworthiness Division
  - Flight Standards: Aircraft Evaluation Division (AED)

- Increased FAA involvement in certification/validation projects
  - For domestic projects, FAA reviews human factors assumptions for safety critical system design features for which the failure could be catastrophic or hazardous, per Congressional requirements in Aircraft Certification Safety and Accountability Act (ACSAA) Section 106
  - In April 2022, FAA added Human Factors related regulations to the Safety Emphasis Items (SEI) List for European transport category airplanes for new TCs, derivatives, and significant changes

InfoShare Aviation Safety Human Factors Sessions

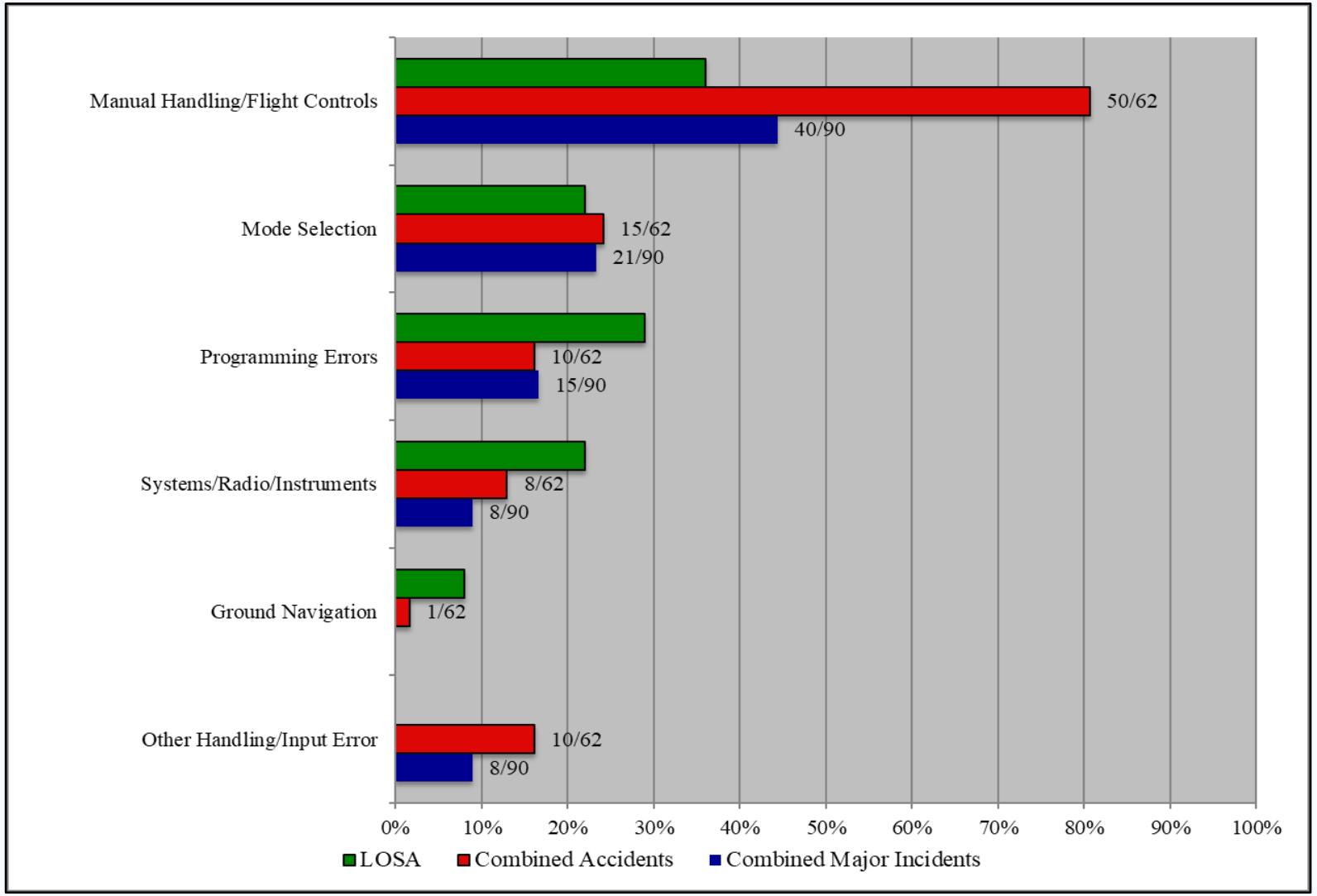
ACSAA Section 119(c)(2)(F). Domestic and International Pilot Training:

… a process for aviation stakeholders, including pilots, airlines, inspectors, engineers, test pilots, human factors experts, and other aviation safety experts, to provide and discuss any observations, feedback, and best practices

- InfoShare provides central forum for broad range of FAA stakeholders to discuss HF related observations, feedback, data, best practices, including:
  - Pilot response assumptions relied on by the FAA and manufacturers
  - Design and certification of transport category aircraft
  - Human factors related to design, training and operational use of pilot/aircraft interface and interaction
  - Effects that new technologies have on pilot interactions with aircraft systems
- Four InfoShare HF sessions held since Nov 2021

Data Example – Handling/Input Errors: Line Operations Safety Audit (LOSA), Accident and Incident Data

Data inform our understanding of where we need to integrate human factors considerations into our certification and COS work



Certification Policy Harmonization Efforts

Current: Certification Authorities for Transport Airplanes (CATA) Worklist (WL) Items

- CATA WL Item EASA-003 – Installed Systems and Equipment for Use by the Flightcrew (25.1302)
  - Follow-on industry standards activity (SAE G-10) being launched to identify aerospace recommended practices for compliance with 25.1302
- CATA WL Item EASA-007 – Human Factors in System Safety Assessment (25:1309)
- CMT Task Specific Team (TST) Report on Flightcrew Alerting (25.1322)

Future: Advisory Circulars Needing Additional Guidance/Updates, Based on Certification Projects

- AC 25.1302-1 Installed Systems and Equipment for Use by the Flightcrew
- AC 25.1322-1 Flightcrew Alerting
- AC 25.1523 Minimum Flight Crew

Essential Elements: (1) Close coordination between authorities and with industry; (2) Comprehensive approach – fragmentation may overwhelm industry or result in gaps.