



ECA
Piloting Safety

– Concept Paper –

Safeguarding Pilot Authority as a Cornerstone of Air Transport Safety

Executive Summary

The airline pilot is the ‘safety conscience’ of the air transport system, a critical and irreplaceable component in its safety architecture. Despite advancements in automation and artificial intelligence, the pilot’s role as an independent decision-maker ensures the adaptability, resilience, and safety of flight operations in dynamic and unpredictable environments.

This paper explores the designed role and purpose of airline pilots, the regulatory framework that safeguards their autonomy, and the challenges that threaten to erode their authority. By highlighting the pilot’s role as the safety conscience of the system, the paper makes a compelling case for preserving pilot authority and independence in decision-making. The conclusion provides a concise “Ethics of the Airline Pilot” defining the airline pilot’s role in modern aviation



Introduction

The air transport system relies on a delicate balance of human expertise, technology, and robust regulations. The pilot’s role as the safety conscience of the system is essential, serving as the final arbiter in decisions that directly impact safety. While automation enhances operational efficiency, it cannot replicate the nuanced judgment, ethical decision-making, and adaptability of a human pilot, working together with other crew members.

This paper argues for a comprehensive approach to safeguarding pilot authority and accountability, emphasizing their role not only as operators but as stewards and agents within the aviation ecosystem. It reaffirms the critical importance of the pilot’s independent decision-making and final authority, framing them as the safety conscience of the aviation system and advocating for sustained investment in their training, authority, involvement, and ethical responsibility.

1. The Designated Role & Purpose of the Pilot

While the role of the airline pilot has evolved over the last decades, the emphasis on safety, leadership, teamwork and decision-making remains. However, the pilot’s responsibilities extend well beyond the technical operation of an aircraft.

1.1 Operational Decision-Making

Pilots are entrusted with making critical decisions that prioritize flight and passenger safety, including:

- **Real-Time Adaptability:** Pilots assess and respond to evolving situations such as weather changes, mechanical issues, and traffic conflicts.

- **Balancing Conflicting Goals:** They weigh safety, efficiency, and operational demands, always prioritizing the former.
- **Ethical Leadership:** As the moral compass of flight operations, pilots need to ensure that safety is never compromised by commercial pressures.

1.2 Human-Centered Safety Oversight

The pilot's role as the safety conscience is especially evident in:

- **Interpreting Ambiguity:** Automated systems often fail to address novel or ambiguous situations, requiring human judgment.
- **Overriding Automation:** Pilots serve as a check on automated systems, stepping in when these systems fail or act unpredictably.
- **Leadership in Crisis:** Pilots lead both the aircrew and passengers through emergencies with a calm and authoritative presence.

1.3 Emergency Authority

Regulations, such as ICAO Annex 2 and EASA CAT.GEN.MPA.105, formalize the pilot's authority to deviate from procedures in emergencies. This legal framework reinforces their role as the ultimate safety decision-makers.

1.4 Ethical Stewardship

Pilots embody a unique moral responsibility as stewards and caretakers of safety. Their decision-making extends beyond technical and operational execution and operational calls to include ethical considerations, ensuring the well-being of passengers and the integrity of the wider air transport system.

2. Regulatory Frameworks Supporting Pilot Autonomy

The final authority of the Pilot-in-Command is a regulatory imperative and a central pillar of aviation safety.

2.1 International Standards

- **ICAO Annex 2:** Establishes the Pilot-in-Command as the final authority over all flight decisions.
- **ICAO Annex 6:** Requires operators to ensure pilots are trained and empowered to make independent safety-critical decisions.

2.2 EU Regulations

The European Union Aviation Safety Agency (EASA) reinforces pilot autonomy through:

- **CAT.GEN.MPA.100:** Assigns the Pilot-in-Command ultimate responsibility for the safety of the aircraft and its occupants.
- **CAT.GEN.MPA.105:** Authorizes pilots to deviate from rules in emergencies.
- **ORO.FTL.205:** Regulates Flight Duty Times and gives authority to the Commander to address fatigue issues, ensuring they can operate safely and independently.
- **ORO.GEN.200:** Mandates Safety Management Systems (SMS) to promote a culture of safety and ethical decision-making.

2.3 National Regulations

In the U.S., the Federal Aviation Administration (FAA) supports pilot authority through:

- **FAR 91.3(a):** Grants the Pilot-in-Command authority to take necessary actions for safety, even if it means breaking operational rules.

2.4 Pilot Expertise

EASA, EU Commission & other EU institutions recognise pilots as aviation stakeholders and regularly consults their front-end expertise through ECA - the European Cockpit Association. IFALPA, as the recognised Global Voice of Pilots is an observer to the Air Navigation Commission at ICAO.

3. Challenges to Pilot Authority

The pilot's role as the safety conscience faces challenges that threaten the pilot's independent decision-making and authority.

3.1 Increasing Automation

- **Overreliance on Technology:** Excessive dependence on automation can undermine and erode flying skills and decision-making.
- **Skill Degradation:** As systems handle more routine operations, pilots risk losing the hands-on skills critical for managing emergencies.
- **Notable Failures:** Events like the Boeing 737 MAX accidents highlight the dangers of poorly integrated automation that sidelines pilot judgment and adequate information to the pilots.

3.2 Operational Pressures

- **Economic Incentives & Corporate Culture:** Airlines may prioritize commercial considerations, incl. efficiency and cost savings, thereby creating subtle or open pressures and/or instilling ambiguities that conflict with safety priorities.
- **Cultural Barriers:** Overly hierarchical organizational structures may lack a psychologically safe environment and can discourage open communication, safety feed-back, and critical decision-making.

3.3 Legal & Public Scrutiny

- **Unjust Accountability:** Pilots at times may face blame for failures in the broader system, which can deter assertive decision-making.
- **Litigation Risks:** Fear of legal consequences may inhibit pilots from taking necessary actions in ambiguous situations.

4. Strengthening Pilot Authority & Independent Decision-making

To reinforce the pilot's role as the safety conscience of aviation, several measures are necessary:

4.1 Redefining Automation's Role

- **Collaborative Systems:** Design automation to assist rather than replace human decision-making, preserving the pilot's authority and enhancing its unique role as safety conscience within the system while optimizing the use of the human's unique skills.
- **Transparency & Feedback:** Ensure systems provide clear information that pilots can interpret and act upon effectively.

4.2 Enhancing Training & Pilot Involvement

- **Safety Management Systems:** Involve the pilot's experience in SMS structures, incl. airlines' Fatigue Safety Action Groups, ensuring their operational front-end expertise feeds into SMS.

- **Scenario-Based Training:** Focus on complex scenarios where pilots must demonstrate adequate judgment rather than predefined procedures.
- **Ethical Decision-Making:** Integrate ethical considerations into training to reinforce the pilot's role as a safety leader.

4.3 Fostering a Sound Safety-First Culture

- **Positive Corporate Culture:** Airlines' top management need to promote and live a positive corporate & safety culture where safety professionals act as a team without fear of reprisals.
- **Whistleblower Protections:** Provide and strengthen legal safeguards for pilots reporting safety concerns.
- **Confidential Safety Reporting:** Regulators need to provide secure, confidential reporting channels for corporate malpractices that can harm safety, and to follow-up on reports.
- **Incident Investigations:** Establish fair and transparent processes to evaluate pilot actions, emphasizing systemic improvements.

4.4 Regulatory Alignment

- **Global Standards:** Harmonize international regulations to consistently support pilot decision-making authority.
- **Proactive Oversight:** Regulators should audit airlines to ensure they uphold and implement a positive culture of safety and respect for pilot authority.

5. Conclusion – Defining the Pilot's Role

The airline pilot is more than a 'system operator': they are the ethical and operational cornerstone of aviation safety. Their role as the safety conscience of the air transport system demands independence, authority, and unwavering commitment to safety-focused decision-making.

The Ethics of an Airline Pilot

"As airline pilots, we consider ourselves as the safety conscience of the air transport system, entrusted with the lives of our passengers, and the final authority to safeguard the safety of the flight and the integrity of the aviation safety system. We are decision-makers, leaders, and stewards of the trust the regulators, the industry and the traveling public put into us, committed to acting with skill, independence, and an uncompromising dedication to safety."

Airline pilots are the independent safety conscience of the air transport system, entrusted with lives, goods and system integrity - we deliver safety.

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