

Session F Report

Safety and Separation Standards

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Session Statistics

- 5 papers were presented, an infinite increase for this seminar from Saclay in 1997
- Session attendance approximately 50
- 2 papers with quantitative analysis, 3 using qualitative assessment
- 3 European, 1 Euro/US, 1 US

Session Overview

- Blom et al., Human Cognition Modeling in ATM Safety Assessment
 - model based (TOPAZ), human error, subsystem performance, blunder detection
 - collision risk vs. airway spacing in controlled airspace
- Ternov, Reliability Analysis of Air Traffic Control
 - quantitative failure analysis, latent failures, insufficient safety barriers
 - procedures and responsibilities unclear or impractical
 - analysis of new ATC automation system, limited safety improvements

Session Overview (continued)

- Bonnemaison & Zeitlin, Managing Criticality of ASAS Applications
 - criticality assessment of functions, allocation to aircraft and ground elements, quantitative discussion
- Reynolds & Hansman, Analysis of Separation Minima Using a Surveillance State Vector Approach
 - surveillance accuracy and current separation standards
 - intent information and agent goals
 - quantitative assessment
- Kos et al., Probabilistic Wake Vortex Induced Accident Risk Assessment
 - model based (TOPAZ), wake vortex evolution, traffic encounter model
 - risk criteria need to be established
 - local airport/runway conditions significant

Observations and Future Needs

- Safety assessment can be a two-edged sword
 - prevent change or enable system improvements
 - analysis needed to drive consensus
- Safety assessment can support ATM operational concept exploration
 - early identification of failure conditions to improve concept and increase probability of implementation success
- More effort is required to apply safety assessment in ATM
 - TOPAZ is the only ATM computational safety model that currently represents “positive control” airspace
 - European/US cooperation planned to improve safety model (TOPAZ and MIDAS)
 - additional analysts are needed to support safety analysis need

Observations and Future Needs (continued)

- ATM safety and throughput are interlinked
 - integrated assessment needed to achieve higher performance in high-density complex airspace
- Joint European/US approach to safety of integrated air/ground operations is essential
 - build confidence in the analysis assumptions
 - ensure interoperability of systems