



AIR TRANSPORT ASSOCIATION

May 1, 2010

Process Support
Rulemaking Directorate
EASA
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Attention: Comment-Response Tool (CRT) at <http://hub.easa.europa.eu/crt/>

Reference: (a) EASA TCAS NPA 2010-03

Subject: ATA Comments on EASA Notice of Proposed Amendment 2010-03 re: "Introduction of ACAS II Software Version 7.1"

The Air Transport Association of America, Inc. (ATA), on behalf of its airline members¹, appreciates this opportunity to provide comments on the Notice of Proposed Amendment entitled, "Introduction of ACAS II Software Version 7.1" The NPA solicits public comments to develop an Opinion on the Implementing Rule for the mandated carriage of ACAS II with collision avoidance logic version 7.1 and a Decision on related Acceptable Means of Compliance (AMC).

Safety is our members' foremost priority. ATA member airlines have embraced safety management processes mandated by global civil aviation authorities and have historically gone beyond mere compliance to voluntarily develop and implement aggressive, data-driven, risk-oriented safety programs to detect adverse events or trends and take timely corrective action. Thus, ATA and its members have a vested interest in the outcome of this rulemaking.

U.S. airline operators were quick to realize the safety advantages of ACAS (commonly referred to as "TCAS" in this country) soon after its development. Passenger air carriers were immediately followed by air cargo carriers in implementing TCAS I, followed by TCAS II Version 7.0. Incremental costs of upgrading were easily justified by substantial risk reductions

¹ ATA is the principal trade and service organization of the major scheduled air carriers in the United States. ATA members and affiliates account for more than ninety percent (90%) of the passenger and cargo traffic that U.S. scheduled airlines carry annually. ATA airline Members are: ABX Air, Inc.; AirTran Airways; Alaska Airlines, Inc.; American Airlines, Inc.; ASTAR Air Cargo, Inc.; Atlas Air, Inc.; Continental Airlines, Inc.; Delta Air Lines, Inc.; Evergreen International Airlines, Inc.; Federal Express Corporation; Hawaiian Airlines; JetBlue Airways Corp.; Southwest Airlines Co.; United Airlines, Inc.; UPS Airlines; and US Airways, Inc. ATA Airline Associate Members are: Air Canada; Air Jamaica Ltd. and Mexicana.

pertaining to mid-air collision. However, the continuing maturation of the algorithm was accompanied by concerns over transient Resolution Advisories generated by airspace configurations that lead to momentary traffic conflicts. Often, as described in reference (a), page 10, Section 3.1, because the TCAS is unable to communicate with the aircraft's own flight management system, high rates of climb or descent in the last 1,000 feet before level-off are observed to trigger an RA in Reduced Vertical Separation Minimums (RVSM) airspace. TCAS RAs have also been experienced on closely-spaced parallel approaches.

TCAS II Version 7.1 vs. Version 7.0

ATA's member carriers acknowledge the advantages of TCAS II Version 7.1 over version 7.0, namely the mitigation of the potential hazard known as the "Uberlingen phenomenon":

- Failure of one flight crew to properly comply with a TCAS resolution advisory (RA) received during "SA01 type" mid-air encounter geometries
- Misinterpretation by crews of the current "adjust vertical speed, adjust" RA

The EASA risk assessment concludes these two hazards, if left unaddressed, will result in one midair collision every three years in European airspace. However, a sophisticated data collection and analysis effort by the U.S. Commercial Aviation Safety Team (CAST) concluded:

- The event rate is 8 to 16 times lower than the European rate, resulting in a worst case prediction of one midair collision every 20-25 years
- V7.1 will not mitigate other significant TCAS issues, such as "hot spot" areas of high RA rate near certain U.S. airports

Further, during development of the V7.1 standards, the Radio Technical Commission for Aeronautics (RTCA) assessed the relative effectiveness of V7.1 in resolving SA01 encounters, in comparison to other mitigations:

- V7.1 is 1.1 to 1.6 times more effective than V7.0 when one flight crew does not respond properly (such as in the Uberlingen scenario)
- Proper compliance to the RA's by both flight crews is 2 to 30 times more effective than reliance on V7.1 when one flight crew does not respond properly

TCAS II Version 7.2 "Hybrid System"

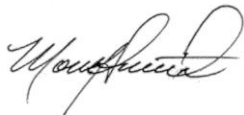
A forthcoming ADS-B hybrid surveillance technique will enable TCAS to reduce its active interrogation rate by using position information received passively via ADS-B. The basic surveillance logic inside the TCAS unit is modified. Interference-limiting algorithms are being developed to Minimum Operational Performance Standards (MOPS) by three avionics manufacturers to minimize TCAS utilization of transponders in the civil aircraft environment to less than 2% of present activity. This capability will likely be required by about 2015 to 2017 to reduce frequency congestion on 1090 MHz. Otherwise, the intended potential of ADS-B IN and other functions using 1090 MHz "squitters" would be capped.

- NEXGEN and SESAR operations will likely require changes to TCAS by 2020, which would naturally incorporate V7.1 modifications
- Mandating V7.1 by 2014 will require repetitive retrofits of the same equipage (with attendant sharp economic impact on air carriers) in an unacceptably short time period

ATA wished to see a harmonized plan for single-visit upgrades for forward and retrofit of TCAS II Version 7.2, featuring future compatibility with hybrid surveillance, ASD-X functionality, and any opportunistic consolidation of TCAS and ADS-B hardware, software, and functions.

The U.S. Federal Aviation Administration and ATA firmly believe “*additional assessments of the data, assumptions, and presumed root causes of the hazardous conditions justifying ACAS II Version 7.1 should be conducted to resolve the discrepancy in predicted midair collision rates before moving forward with mandated equipage changes.*”² Otherwise, a mandate for TCAS II Version 7.1 onboard U.S. air carriers by March 1st, 2012 shall constitute an unreasonable economic penalty not justified by a substantial risk reduction, nor compatible with near-term future TCAS improvements.

Very respectfully submitted,

A handwritten signature in dark ink, appearing to read "Mont J. Smith", written in a cursive style.

Mont J. Smith
Director, Safety
Air Transport Association

² U.S. Department of Transportation. Federal Aviation Administration. (2010) “FAA Position on EASA Proposal to Mandate TCAS Version 7.1.” [email attachment]