HIGHLIGHTS OF RTCA PAPER DO-329, AIRCRAFT SECONDARY BARRIERS AND ALTERNATIVE FLIGHT DECK SECURITY PROCEDURES, PUBLISHED SEP 28, 2011

RTCA SC-221 met from December 2008, through September 2011. See http://www.rtca.org/ for more information on how to obtain DO-139.

Secondary Barrier System (SBS): a combination of people, procedures and/or equipment onboard the aircraft that provide a protected space behind the flight deck door for the minimum time needed to accomplish door transition or to react to and thwart an attempt to breach the flight deck (1.8).

SBS- term used to define and describe how Air Carriers comply with current CFR requirements. SBS's are categorized as IPSB, INSB or human barrier (1.8, 2).

Installed Physical Secondary Barrier (IPSB): a secondary barrier that is installed as a permanent physical feature of an aircraft (1.8, 2.3).

Improvised Non-installed Secondary Barrier (INSB): a physical device or object on an aircraft that is temporarily used to provide supplementary security for the flight deck during door transition. A galley cart plus crew procedures constitutes an INSB (1.8, 2.4).

Threat Mitigation Time (TMT): the total time required to recognize, react and respond to a threat by closing and locking the flight deck door (1.8, 2.1.4.2, 2.1.5).

The most serious credible threat to the flight deck is posed by a team of highly trained, armed, athletic individuals who are intent on using deadly force to defeat all security measures preventing their ability to infiltrate the flight deck. (1.3)

Goals of SC-221 (1.1):

1) Develop consensus-based recommendations on how best to interpret applicable regulatory requirements (CFR 121.584, 121.587, 121.313, 121.547; see DO-329, appendix H)
2) Review procedures and equipment currently in use by U.S. Carriers to secure flight deck and adjacent area during door transitions
3) Recommendations and guidance for IPSB applications
4) Recommendations for standardization of procedures for SBS

The minimum recommended TMT for any SBS is 5 seconds (2.1.5).

Evaluation of SBS alternatives:
Human Barrier: use of a human-only barrier without additional equipment did not produce satisfactory results (2.5).
INSB: results are SSI, Contact FAA's AFS-007 for more information (2.4).
IPSB: The IPSB, accompanied by appropriate crew procedures, meets all regulatory requirements for the SBS (2.3).

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Summary and plan forward:

The purpose of SC221 was to bring together aviation industry stakeholders and take a fresh look at what was being done to protect commercial airplanes from the threat of an unauthorized breach of the flight deck. We identified the most serious credible threat, which we determined to be a coordinated, planned violent attack on the flight deck during door transition inflight. We reviewed current regulatory guidelines and rules, and evaluated practices put into place by commercial air carriers to comply with those rules.

The FAA specifically highlighted the installed physical secondary barrier, or IPSB, designed and implemented by United Airlines. The committee was tasked with developing design and performance guidelines for air carriers who chose to adopt this as their secondary barrier system.

It should be noted that our committee's evaluation was the first time this had been done since post-9/11 security regulations were put into place. A broad cross-section of industry stakeholders, led by industry-appointed representatives, evaluated the efficacy of current procedures, and did so in cooperation with the FAA, TSA and various federal law enforcement and intelligence agencies. What SC221 accomplished was extraordinary and should not be trivialized. In the 10 years since 9/11, no federal agency, including the newly created DHS, the TSA, or the reconstituted Federal Air Marshals attempted to do what this group of volunteers did, on their own time, with their own resources. This was done in a spirit of transparency and collaboration.

The committee completed a comprehensive analysis of the vulnerability of the flight deck environment during flight. We evaluated best practices, including the use of galley carts, human-only barriers, curtains, camera systems, and the IPSB. We addressed various factors that affect reaction and response time, and the effectiveness of current procedures. Our final conclusions, based on the data we collected from numerous tests, were that a SBS needs to protect the flight deck for at least 5 seconds, and that the IPSB is the most effective solution.

The FAA is planning to publish an OPSPEC shortly, to be followed up with other guidance, probably in the form of an advisory circular. Contact Pat Hempen, AFS 007 at (202) 267-9679.

On a personal note, I was very fortunate to work with some very talented individuals, especially my co-chairman, Rick Schiefelbein of the Boeing Company. Among the many valuable participants on SC221 two individuals stood out for their leadership and significant contribution to our work: Scott Graham, from ALPA, and Candace Kolander of the AFA.

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