FAA-01-10770-15

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THE LAW OFFICE OF
SUSAN B. JOLLIE
A PROFESSIONAL CORPORATION

7503 Walton Lane Annandale, VA 22003
Telephone: (703) 354-8450 Facsimile: (703) 354-4945

FACSIMILE TRANSMITTAL

Date: January 10,2002

To; Robert Klothe, Esq.

Firm: DOT Office of the Assistant General Counsel for Regulation and Enforcement

Fax: (202) 366-93 I3

From: Susan B. Jollie

Sender's Fax #: (703) 354-4945

Pages Transmitted: 6 , including cover page

Message or Special Instructions:

Please see attached.

The Federal Aviation Administration Should Not Issue Final Regulations That ignore The Congressional Mandate to Secure Cockpit Doors

FAA staff has stated that an immediately effective final rule Will be issued establishing design standards for retrofit cockpit doors. The rule is the product of an Aviation Rulemaking Advisory Committee (ARAC) which was unduly influenced by airline economic considerations. These standards are deficient and should not be adopted without the legally mandated approval of the Transportation Security Administration.

The law no longer allows the FAA Administrator to ***unilaterally*** adopt aircraft related security regulations. The recently enacted Aviation and Transportation Security Act (ATSA) establishes the Transportation Security Administration (TSA) within the Department of Transportation. The Undersecretary for Transportation Security has the legal obligation to develop aviation security policies, strategies, and plans, including the specific responsibility to prescribe "regulations to protect passengers and property on an aircraft operating in air transportation or intrastate air transportation against an act of criminal violence or aircraft piracy." Section 44903 (b), as amended. Department of Transportation regulations have likewise been amended to make the TSA responsible for "managing and carrying out program and regulatory activities, including administering laws and *promulgating* and enforcing *security-related regulations.*" 49 CFR § 1.4(n)(3).

The design standards embodied in the FAA draft final rule were largely formulated when the defined threat was the risk of an irate or mentally unbalanced passenger lunging into the cockpit door. Despite the obvious implications of the events of September 11, ARAC's stated goal remained one of merely *strengthening* cockpit door resistance to meet threats posed by *historical break-ins*, instead of developing recommendations responding to the new legal mandate to *prevent* cockpit doors from being forced open. (The relevant portion of ARAC December 4, 2001 slide presentation is attached. Note for example that the FAA's own documents indicate which threats will not be deterred, including a question *about* resistance to a hunting knife). The standards chosen were arbitrary since no threat analysis was performed *to* support the standards and the regulatory design parameters are far below what calculations and testing have indicated are necessary to effectively deter terrorist acts.

- The proposed **regulation is based on "increasing resistance."** It is not **designed** to prevent entry. This **means the proposed** door **structure** need not **be strong** enough to withstand tbe **force** of being **rammed** with meal or **beverage** carts or **other objects** available **in** the passenger **cabin.**

- A terrorist can gain entry to the cockpit by **firing** a **gun** into **the** unprotected **bulkhead** on **either side** of tbc door or by **means of** mechanical **sabotage** or a small **explosive charge. This** would trigger a rapid **decompression** event **that** will blow away **panels** of the door or even the **door itself.**

- The **proposed standards** permit **the doors** to **be constructed** with **ballistic** materials that will **delaminate with** multiple **gunshot rounds and lose structural integrity.** If then impacted by **sufficient** force, **terrorists could gain access** to **the cockpit. This means** that **the** doors will **be ineffective against existing** or **new technology** weapons tbat **pass undetected** through **screening** device or **can be** hidden **in the** aircraft **The ARAC** recommended rate inexplicably **allows tests** to **be performed** with two **separate samples,** wbcn **the real world** threat **is that** a door **can** bc **forced** open following multiple **gunshots in** an **area that is structurally** vulnerable.

Advocates *of* the ARAC recommendations do not dispute the scenarios by which terrorists could gain access to the controls of the aircraft. They have suggested that food and beverage carts could bc banned, but that is not part of the draft rule. Credible threat scenarios am dismissed on the dubious assumption that other security procedures will completely eliminate the risk that a firearm can be brought aboard or secreted in the aircraft cabin. Another common rationalization is that pursuit of "perfection" is futile since no security standard can be totally effective in preventing a determined terrorist bent on destroying an aircraft. But the objective of ***preventing access*** to the cockpit is to foreclose any future use of an aircraft as a human guided missile targeted against an important national asset. If the standards are strong enough that an aircraft is structurally compromised in the break-in effort, then that is a tragic end for the passengers and crew, but still an effective deterrent for the defined risk.

Thus far, FAA has failed to adopt more rigorous performance criteria that can be met by products that are currently being demonstrated to potential airline customers:

Instead of the proposed 300-joule door, bolt, and binge impact energy requirement, the door assembly, including tbc structural framing, tie-ins and doorposts as well as the door, must bc tested as an integrated flight deck entry system capable of withstanding a force of a minimum of 500-600 joules or more to effectively deter access to the flight deck. There are reportedly FAA internal studies indicating that 1200 joules may bc the appropriate standard. Reinforcing the door structures to meet the threat may mean that the retrofit could not be accomplished on an overnight stop, which was the economic consideration supporting the ARAC recommendation. The minimum standard was also adopted for the sake of a uniform design product even though many aircraft types appear capable of reinforcement to withstand greater impact forces. Rather than opting for the lowest common denominator, consideration should bc given to mandating higher achievable standards whenever feasible and, given the importance of fuel as an incendiary device, adopring the most exacting standards for larger aircraft types.

Because a terrorist cam induce a cockpit decompression event, decompression venting must bc achieved without the full door opening or panels blowing away in a manner tbat creates an opening and sufficient time for an assailant to gain access to the flight deck. The engineering solution is a metal barrier that permits venting but continues to prevent entry and a requirement that ballistic panels re-engage after deployment. Because metal structures add weight, and fuel cost expenditures would correspondingly increase, the reinforced metal door design was evidently deemed undesirable from an operating cost perspective.

Because ballistic materials are prone to delamination and the structural integrity of tbc door entry system can be undermined by multiple attacks on the door, a single representative test article must be subjected to both ballistics and impact testing in a sequential fashion, with the minimum 500-joule impact test following the ballistic test. A metal barrier would prevent entry, but a truly effective barrier adds weight-- operating cost-- so the ARAC approach is to deny the possibility of firearms in the cabin or to assume that terrorists are unable tu comprehend the vulnerabilities of the ballistic materials.

Manufacturers of aeronautical products can readily produce retrofit doors that perform to these significantly higher standards. But these products will never come to market when the government authorizes (and pays) airlines to begin immediate purchase of fuel efficient but ineffective light-weight doors whose operating costs are less than more robust door systems that actually counter real world terrorist threats.

The mistaken promise behind the FAA draft rule is that the airlines are the ultimate customers, so their preference for tho least *costly* approach should bc respected in the interests of achieving "industry consensus." However, the customer is really the American public because the Administration has pledged millions of dollars in direct federal aid to fund *the* new aircraft security measures. Given the enormity of the that, there is no justification for permitting airlines to acquire cockpit doors with glaring deficiencies at taxpayer expense.

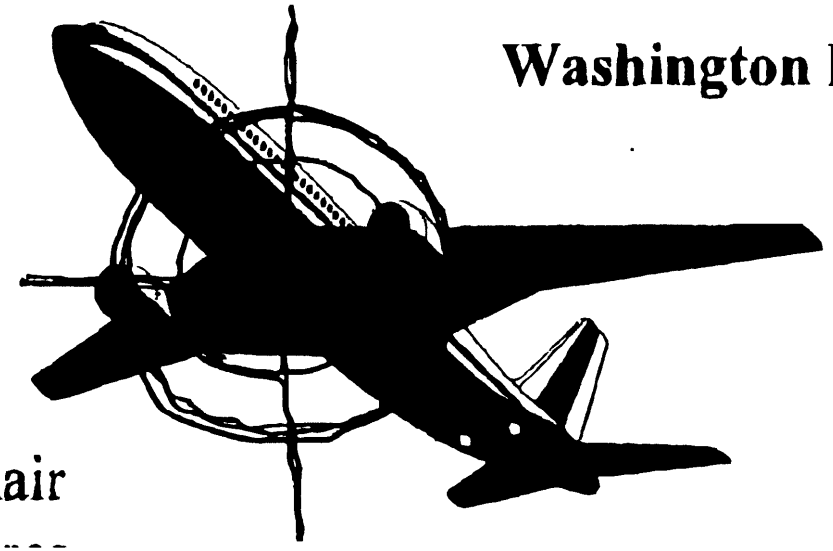
Cockpit security regulations must provide the greatest degree of protection available to prevent terrorists from ever again seizing control of an aircraft. Special Federal Aviation Regulation (SFAR) 92-2 permits airlines to install any devices that would protect against entry, thus responding to the most immediate security threat. The actions now being proposed relate to permanent redesign of cockpit doors to incorporate requirements that satisfy other regulatory objectives, such as emergency egress for the flight crew and rapid decompression. The desire to respond rapidly led to a process which compromised the far more critical objective that aircraft be made secure against terrorist acts. Given the economic life of aircraft, these security weaknesses will pose a threat to commercial aviation and the nation for the next 25-30 years.

The ARAC dictated FAA rule does not represent tha will of the American people as expressed in the Aviation and Transportation Security Act. Meaningful consultation and collaboration with security experts haw evidently not been part of the FAA process to date since it is difficult to believe that any agency with expertise in terrorism threats would knowingly endorse a rule that is based on a non-existent or deficient threat analysis. Hasty enactment of the ARAC proposals without public comment or TSA involvement may serve to deter production of superior technologies. Publication of a final rule that could be construed as an attempt to preclude oversight by the newly established Transportation Security Administration will not restore public confidence. FAA should not be permitted to assert regulatory jurisdiction that has been fundamentally altered. At a minimum, the ARAC proposal should be published as a Notice of Proposed Rulemaking so that TSA will have an opportunity to collect technical data and coordinate with other agencies with the requisite expertise to develop effective security regulations. Publication of the FAA rule will perpetuate the mistaken approaches of the pact,

Design for Security ꝑWG

Summary Update

Transport Airplane and Engine Issues Group



Washington D.C.

Mark Allen - Chair
Boeing - Structures

Dec 4, 2001

Flight Deck Intrusion

- Design for Resistance, not Impenetrable Barrier
- Protection Follows NILECJ Standard 0306.
  - High Door Security (Plus)
  - Based on Historical Break-Ins
  - Two Impacts Each (300 Joules)
    - Door Hinge
    - Door Center
    - Door Latch
  - 250 lb. Pull on Doorknob
- Blow-out Panels Permitted
- Separate Doors for Each Test Acceptable

Penetration Resistance

Flight Deck Protection From any Passenger Compartment

No Acceptable Baseline Approved in AC

Protection Follows NIJ Standard 0101.04 Level IIIA

- *.44 Magnum & 9mm @ 1430 fps*
- *Six Shots Each Bullet Type*
- *0º and 30º Impact Angles*
- *No Penetrations Allowed*

Enhanced Designs (by analyses) Need not be Tested