



WHS 02-07

***General Aviation
Manufacturers Association***

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Docket Management System
U.S. Department of Transportation
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**Subject: Docket Number FAA-2001-11032; GAMA's Comments on
Security Considerations in the Design of the Flightdeck**

The General Aviation Manufacturers Association (GAMA) is a national trade association representing over 50 American manufacturers of fixed-wing aircraft, engines, avionics, and components. In addition, GAMA member companies also operate aircraft fleets, airport fixed-based operations, pilot and maintenance technician training facilities across the nation. GAMA submits the following comments in response to FAA's Notice of final rule - *Amendment 25-106, Security Considerations in the Design of the Flightdeck on Transport Category Airplanes*, published in the Federal Register (67FR2118) on January 15, 2002.

As directed by the Aviation and Transportation Security Act, this final rule improves flight deck security of transport category airplanes engaged in passenger transportation as Part 121 air carriers. GAMA applauds the actions of the FAA and U.S. airlines and manufacturers to quickly and efficiently improve the security of airline travel. The following comments are provided in response to FAA's request for additional information regarding potential future rulemaking to improve the security of general aviation and do not reflect upon the specific amendments of this final rule which apply to aircraft operating under part 121.

The general aviation industry stands ready and willing to provide solutions to the security issues faced by our nation. At the direction of Congress, FAA has focused on improving the security of passenger air transportation through the implementation of a combination of requirements related to airport access, passenger screening, air carrier operations, and (with this final rule) flightdeck design. This "systemic" approach maximizes security while balancing the impact upon passengers and industry. GAMA advocates a similar approach to improve the security of general aviation in a manner that recognizes the wide diversity and unique attributes of general aviation operations, user needs and aircraft types. Therefore, the following provides some general information with regard to improving general aviation security followed by specific comments in response to this rulemaking which addresses security considerations in the design of the flightdeck.



GENERAL AVIATION - DEFINITION

General aviation is defined as all aviation other than military and commercial airlines. It is one of our nation's most important and dynamic industries, carrying 145 million passengers annually on general aviation aircraft ranging from two-seat training aircraft to intercontinental business jets. There are over 200,000 part 23 and part 25 general aviation aircraft in the United States operating under part 91, 125 and 135. This includes personal and recreational flying, traffic observation and news reporting, crop dusting, emergency medical evacuation and business air travel. General aviation is relied on exclusively by more than 5,400 communities for their air transportation needs (scheduled airlines serve about 600) and approximately 70 percent of the hours flown by general aviation are for business purposes.

IMPROVING GENERAL AVIATION SECURITY

GA Industry Recommendations: Enhancing the Security of General Aviation Operations

The general aviation industry (AOPA, EAA, GAMA, HAI and NBAA) asked security expert and former head of security for the Federal Aviation Administration, Admiral Cathal Flynn, to assess the vulnerability of our industry. With Flynn's input, we developed a set of recommendations which were sent to Under Secretary Magaw of the Transportation Security Administration for *Enhancing the Security of General Aviation Operations* (attached). These recommendations contain actions with regard to aircraft, passengers, pilots and airports that can improve security without diminishing general aviation's nearly \$65 billion contribution to our nation's economy nor the personal mobility it facilitates. For the reasons discussed in the following section, the general aviation industry (both operators and manufacturers) does not recommend any design or operating requirement for the installation or strengthening of flightdeck doors.

DOT Report to Congress: Improving General Aviation Security

Section 132(b) of the Aviation and Transportation Security Act directed the Department of Transportation to provide a report to congress "on airspace and other security measures that can be deployed, as necessary, to improve general aviation security." The DOT's report to congress, dated December 2001, provides an overview of general aviation; a summary of its potential vulnerabilities; and identification of the range and basic types of measures that may be taken to increase security in proportion to the assessed threat. The methods identified to increase general aviation security fall into four areas: airspace and operational restrictions; intercept assets; increased scrutiny of pilots, crews, passengers and aircraft on the ground; and education efforts aimed at increasing security vigilance. The DOT report does not recommend any design or operating requirement for the installation or strengthening of flightdeck doors.

FUTURE RULEMAKING - FAA REQUEST FOR COMMENTS

This final rule implements two security design requirements (flightdeck door ballistic and intrusion protection) for part 25 transport category airplanes operating in part 121 air carrier service. However, the preamble states that FAA is considering future rulemaking to expand the requirement for installation of a flightdeck door to other domestic operations and solicits

comments from the general aviation industry. The preamble discusses two different groups of airplanes under consideration;

First, require strengthening flightdeck doors on transport category airplanes operated under parts 91, 125 and 135 (part 25 airplanes). GA operating rules do not require these airplanes to have a flightdeck door between the passenger and pilot compartments. However, many manufacturers incorporate a cockpit door\curtain for concealment of the cockpit area for aesthetics and noise/light attenuation. These doors and associated bulkheads are not designed to prevent access/intrusion into the cockpit.

Second, require the installation of a flightdeck door on airplanes used in scheduled passenger air transportation that do not have a rigid fixed door with a lock between the passenger and pilot compartments (includes both part 23 and part 25 airplanes). The preamble states that “commuter category airplanes will be a focus of the FAA’s deliberations on potential future applicability.” However, section 104(c) of the Transportation and Security Act makes no such distinction, significantly expanding the number and types of aircraft potentially affected. Manufacturers of part 23 airplanes operated in commercial service have submitted comments and recommendations to better secure this category of airplanes directly to the FAA Small Airplane Directorate.

GAMA offers the following comments/considerations regarding any future rulemaking to require the installation of a flightdeck door meeting the design standards of this amendment with application to the following types of GA airplanes;

- Part 25 GA airplanes which currently have a flightdeck door installed between the passenger and pilot compartments. (i.e. Cessna Citation III/VI/VII/X (Excel/Sovereign), Gulfstream IV/V, Raytheon Hawker/Horizon, Sabreliner, etc.)
- Part 25 GA airplanes that were not designed to have a door between the passenger and pilot compartments. (i.e. Cessna Citation I/II/V (Bravo/Encore), Learjet 25/31/35/45, Raytheon Beechjet, etc.)

Safety

- Emergency Exit - Section 25.772 requires that for airplanes with a lockable door between the pilot and passenger compartments and a maximum passenger seating configuration of more than 20 seats, the emergency exit configuration must be designed so that neither crewmembers nor passengers require use of the flightdeck door in order to reach the emergency exits provided for them. Most part 25 business jets (20 or fewer pax) do not have a separate emergency exit available to the flightdeck. Those airplanes that have been designed with separate pilot and passenger compartments are typically divided by a curtain or frangible door that does not prevent the flightcrew from accessing the emergency exit. The installation of a door resistant to forcible intrusion would prevent access to the emergency exit in the event the door is jammed in the closed position. Any additional barrier or obstruction to the emergency exit has a detrimental affect on safety.
- Rescue Crew Access - As stated above, most of these airplanes do not have a separate emergency exit located within the cockpit. The installation of a door resistant to forcible intrusion would prevent rescue personnel from accessing the cockpit in the event the flightcrew is incapacitated.
- Flightcrew/Passenger Communication - Most corporate operators do not provide crewmembers beyond the pilot and co-pilot. Therefore, the co-pilot acts as the crewmember

responsible for providing safety instructions, re-location of baggage, communication with passengers, etc. This requires the co-pilot to be aware of any activity in the passenger cabin, to be accessible to receive information/questions from passengers and to exit the cockpit as need occurs.

- Rapid Decompression - The installation of a bulkhead/door or strengthening of an existing door would require a means to insure that rapid decompression would not compromise the safety or structural integrity (see comments below) of the airplane.

Practicality

- Access to/from the Cockpit - Small part 25 business jets do not have a “flightdeck” that is separate or independent from the passenger cabin. The relative size of these airplanes would not allow for the separation of the cabin through the use of a bulkhead/door. This is not possible because it would prevent crewmembers from accessing pilot/co-pilot seats. There simply is not enough space to incorporate a bulkhead with a means to enter/exit the pilot/co-pilot seats.
- Environmental Systems - Environmental systems related to the flow of air for pressurization, ventilation, heating and cooling were designed to function with an open cabin. There would be significant engineering and design challenges to ensure the continued safe operation of these systems after the installation of a bulkhead and reinforced door.
- Structural Integrity - The 25.795 impact and penetration standards for the cockpit door exceeds the structural strength of the typical bulkhead that is installed in these airplanes which currently hold a curtain or frangible door. These forces may even exceed the structural strength of the bulkhead’s fuselage attachment points. It would be necessary to evaluate and redesign these areas in order to prevent potential damage to the structural integrity of the fuselage at the bulkhead attachment points,. for airplanes that do not currently. Would likely require a replacement bulkhead with structural integrity and relocation of some equipment adjacent to or attached to the bulkhead.
- Airplane performance - The increased weight of a bulkhead/door will affect an airplane’s performance in terms of fuel efficiency and range. Any weight increase has a disproportionate impact on the performance of a GA airplane as compared to a larger commercial airplane. This could have a detrimental affect on the mission flexibility and utility of certain airplanes.

BENEFITS AND COSTS - FAA REQUEST FOR COMMENTS

The costs of developing, certifying and installing a flightdeck bulkhead/door modification in a general aviation airplane is greatly disproportional to that of a larger air carrier airplane operating in revenue service. This is especially the case for older “legacy” airplanes. As discussed above, many business aircraft do not have a separate pilot/passenger compartment. Those airplanes that do incorporate a bulkhead/cabin separation were not designed to handle the loads associated with mounting an intrusion resistant door. For most business aircraft, redesign would be necessary to install a reinforced door to insure the integrity of the structure and safety of the crew. FAA stated that “some certification costs will be incurred to prove compliance of the new door, but these costs are expected to be relatively small...” This may be the case for large commercial airliners. However, there are significant technical challenges related to the retrofit installation of a reinforced bulkhead/door into a GA airplane that was not designed to incorporate one.

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The following cost estimates do not include those airplanes for which it would be impractical to install a bulkhead and door due to their size. Engineering design and certification would be between \$140,000 - \$270,000 per model depending on the surrounding structure. The installation costs to the operator, not including the purchase of an STC, would range between \$15,000 - \$35,000 per airplane. However, these cost estimates only account for those airplanes for which this type of modification is deemed to be practical. In addition, the out of service time necessary to accomplish these modifications would range from a couple days to four weeks. Unlike most commercial airliners, this modification can not be accomplished by simply replacing the existing cockpit door with a reinforced door.

The preamble stated that "FAA cannot provide a reasonable quantitative estimate of benefits because the extremely high benefits that are involved in avoiding another similar attack..." However, there is a significant difference in the level of risk between different types of aircraft and different types of operations. A secure flightdeck reduces the risk of a hijacking. However, general aviation operations are not as prone to this type of threat. Requiring the installation of a reinforced bulkhead/door in a general aviation airplane will not provide a commensurate increase in public safety.

Rather than concentrating our efforts on developing complex new security design standards which could potentially impact aircraft reliability and operational safety, GAMA offers that public safety would be better served by emphasizing passenger and crew security screening and providing general aviation operators with comprehensive training in risk reduction techniques.

GAMA appreciates the opportunity to comment on potential future rulemaking which would affect the design and operating requirements for general aviation airplanes. We hope this response and the enclosed industry recommendations for *Enhancing the Security of General Aviation Operations* provides the basis for further discussions.

Please feel free to contact me at wdesrosier@generalaviation.org or (202) 393-1500 or if there are any questions or comments.

Sincerely,



Walter Desrosier
Director, Maintenance & Engineering

Enhancing the Security of General Aviation Operations

AOPA, EAA, GAMA, HAI and NBAA Recommendations to the Transportation Security Administration

Aircraft

To prevent unauthorized use of aircraft, each owner/operator will take steps appropriate to the specific type of aircraft to secure it when unattended.

The identity of individuals renting or purchasing an aircraft or joining a flying club should be validated by checking a government-issued photo ID. The Transportation Security Administration (TSA) should evaluate creating a system to electronically compare these names against the federal government's "watch list."

Only authorized personnel should issue keys to rental/flying club aircraft, or an alternate system should be implemented by these clubs to protect against unauthorized use of an aircraft.

The TSA, in consultation with other appropriate government agencies, should develop and distribute a profile to identify individuals requiring additional scrutiny before they are allowed to buy, rent, receive pilot training or be employed in areas where they are routinely allowed access to general aviation aircraft.

The FAA should ensure its database of aircraft owner information includes the name and mailing address of the primary operator(s) of each aircraft. Using the procedures it deems appropriate, the U.S. government should then review this operator registry to ensure these individuals or corporations are not associated with or supportive of any terrorist groups.

Passengers

Prior to engine start, the Pilot In Command (PIC) of flights operated under CFR 14, Part 91 should ensure that the identity of all occupants is verified, all occupants are aboard at the invitation of the owner/operator, and that all baggage and cargo is known to the occupants.

Pilots

The FAA pilot certificate should be modified to include a photograph of the pilot using a format that is difficult to counterfeit.

All first-time applicants for a U.S. pilot certificate should be required to show one form of government-issued identification that includes a photo. This form of identification must indicate country of citizenship.

Using procedures it deems appropriate, the U.S. government should immediately review the existing FAA registry of all active U.S. pilots and review new pilot applicants to ensure these individuals are not associated with or supportive of any terrorist groups.

Airport

Outdoor signage should be prominently displayed near areas of public access warning against tampering with aircraft or unauthorized use of aircraft. In addition, signage indicating the phone number for reporting suspicious activity should be placed in areas where pilots and/or ramp personnel gather.

Pilots should be advised to be on the lookout for suspicious activity on or near airports, including:

- Aircraft with unusual or unauthorized modifications;
- Persons loitering for extended periods in the vicinity of parked aircraft or in air operations areas;
- Pilots who appear to be under the control of other persons;
- Persons wishing to obtain aircraft without presenting proper credentials or persons who present apparently valid credentials but do not have a corresponding level of aviation knowledge; or
- Anything that doesn't look right! (i.e. events or circumstances that do not fit the pattern of lawful normal activity at an airport.)