

aircraft and successfully use that aircraft as a weapon. Of the four aircraft involved in the events of September 11, none of the flight crews were able to switch to the designated hijack alert code, thus delaying ATC awareness of the unfolding situation. Further, the transponders on three of the four airplanes ceased replying to ATC radar interrogations within minutes of departing from their assigned routes. These events have changed profoundly the way in which a future hijack situation may be handled, and more generally, our concept of what is considered appropriate aviation safety and security.

In response to the events of September 11, the Secretary of Transportation established the Rapid Response Teams (RRT) for Aircraft Security and Airport Security to identify measures to improve aviation security. The Aircraft Security Team was composed of individuals from the aviation industry, including airplane designers and manufacturers, airline operators, airline pilots, and flight attendants. Additionally, the teams consulted with and considered input from concerned private citizens and other sectors of industry. The RRT for Aircraft Security considered changes to aircraft design and operation that could (1) deny or at least delay any unauthorized access to the flight deck, (2) better train crewmembers to deal with security risks, and (3) ensure the flow of information from an aircraft to ATC. The RRT for Airport Security focused on such issues as improved screening of passengers, baggage, and aircraft and airport personnel prior to direct contact with an aircraft.

On October 1, 2001, the RRT for Aircraft Security submitted its report to the Secretary of Transportation for consideration. [This report is available in Docket No. FAA-2002-14081.] The report included 17 recommendations to help counter a situation in which an airplane might be hijacked and used as a weapon. Recommendation No. 16 called for the creation of an FAA-industry task force to determine the necessary modifications for airplane transponders to assure continuous transmission of a hijack signal, even if the flight deck-selected code or function is disabled. The task force was to examine the following: all alternatives that would allow pilots the ability to set and lock-in the hijack code so that a hijacker could not disable it; a "panic button" that would initiate the hijack code during an emergency situation; and an independent transponder that could not be disabled by the hijacker.

Based on that RRT recommendation, the Air Transport Association of America (ATA) volunteered to facilitate formation of an FAA-Industry Transponder Task Force. The Task Force was composed of representatives from U.S. and foreign passenger and cargo airlines; FAA; Transport Canada; various industry associations; research and development centers funded by the U.S. Government; and manufacturers of airplanes, transponders, and transponder controls.

At the time the Task Force was formed, several design concepts that could potentially satisfy RRT Recommendation No. 16 had been formulated. In evaluating these concepts and other suggestions, the Task Force assumed as its basis that any transponder system modifications should (1) allow for the rapid selection of the hijack alert code, and (2) assure continuous transmission of this code once it had been activated. The Task Force also assumed that the flight deck doors on airplanes operated under part 121 would be modified for increased strength, allowing additional time for the flight crew to initiate the hijack alert code.

The Task Force evaluated the three most promising design concepts and submitted a final report to the FAA on November 5, 2001. The report also identified potential vulnerabilities in the various design concepts, and therefore, because of national security considerations, the details of this report are not being released to the general public for review or placed in the public docket. However, this proposed rule is based, in part, on the efforts of the Task Force. A redacted version of this report is available in Docket No. FAA-2002-14081.

These actions taken by the FAA and the aviation industry following the events of September 11 are directly in line with the Aviation and Transportation Security Act of 2001 (Act), Public Law 107-71. Section 104, Paragraph (b), Sub-Paragraph (2), of the Act states that "the FAA Administrator may develop and implement methods to ensure continuous operation of an aircraft transponder in the event of an emergency."

Related Activity

In response to the September 11 attacks, the FAA has initiated several regulatory actions. On January 10, 2002, the FAA issued a final rule temporarily authorizing variances from existing flightcrew compartment door design standards for the doors and allowing for approval for return to service of modified airplanes without prior

approved data if the modification constitutes a major alteration. This rule mandated these modifications on aircraft in certain passenger and cargo carrying operations. Also on January 10, 2002, the FAA issued a final rule requiring certain airplanes operated under part 121 to be equipped with a means to protect the flight deck from unauthorized intrusion and small arms fire or fragmentation devices. The FAA believes these related rulemaking activities will significantly reduce the danger to the flying public by preventing future terrorists from gaining access to an airplane's flight deck.

Since this document was drafted, a number of other security measures have been adopted in response to the Aviation Security Act of 2001. The FAA welcomes and encourages comments about how this proposal, when considering these other security measures that have been adopted, would contribute further to safety and security and how this additional proposal would affect the aviation industry.

Current Requirements

All air carrier aircraft are required to be equipped with an ATC transponder (see 14 CFR 91.215 and 121.345), which in normal operation provides a radar beacon identity code and altitude (Modes 3A/C) for ATC use in controlling aircraft in en route and terminal areas of operations. During normal operations it is expected that a flight crew could manually dial-in a new ATC-directed Mode 3A transponder radar beacon code, through the transponder control panel, in roughly five to ten seconds. However, under the stress of a hijack situation it may take considerably longer than ten seconds to dial-in the designated hijack alert code, or it may not be possible at all if the flight crew is distracted by a flight deck intruder. In addition, during a hijack situation, the current requirements do not prevent an airplane's ATC transponder from being switched to the "standby" position, or having its circuit breaker "pulled"—actions which would disable the transponder's response to an ATC ground radar beacon interrogation.

The designated hijack alert code is "7500," which is defined in section 2.1.4 of Volume IV of the International Civil Aviation Organization (ICAO) Annex 10 as the appropriate code to indicate to ATC that an aircraft is being subjected to unlawful interference.

General Discussion of the Proposal

If an aircraft were to be used as a terrorist weapon, there are numerous