



Enhancing U.S. Defenses Against Terrorist Air Attacks

The potential threat of terrorist air attacks against the continental United States (CONUS) became painfully apparent on September 11, 2001. In addition to using commercial aircraft, terrorists may try to use general aviation aircraft (such as cropdusters armed with chemical or biological agents), cruise missiles, or man-portable heat-seeking missiles to attack the U.S. homeland. Dealing with such threats requires an unprecedented cooperative effort between military and civilian organizations. The U.S. Air Force, law enforcement authorities, the Federal Aviation Administration, airport security personnel, and many other agencies share responsibility for closing gaps in our national air defenses and for preventing and foiling future attacks.

The Air Force must consider the roles of all these agencies as it plans its future investments in air defense capabilities.

For example, civilian initiatives such as improving security in airports and on board commercial aircraft may reduce the need for more severe and costly military measures such as flying combat air patrols (CAPs) over major U.S. cities. Unfortunately, it is difficult to make such decisions because there is currently insufficient coordination between the various agencies involved in CONUS air defense. Many organizations develop plans, procedures, and capabilities in isolation from each other and do not consider how individual initiatives fit into the total national effort. This situation may create gaps and redundancies in the nation's air defenses and increase the strain on limited funding resources.

RAND Project AIR FORCE (PAF) examined the U.S. air defense posture before and after September 11. Researchers developed a framework to help the Air Force—and government decisionmakers in general—make reasonable investments in

Abstract

The United States faces the ongoing threat of terrorist air attacks. Protecting the U.S. homeland from such attacks requires unprecedented cooperation between many military and civilian agencies. This study outlines ways in which the U.S. Air Force can take a leading role in these efforts. Critical steps include improving interagency collaboration and developing special concepts and methods to coordinate individual contributions to an overall national air defense posture.

future air defenses that complement efforts by other agencies and optimize our national resources.

The Air Force should take steps to improve interagency collaboration within any future defense posture.

Critical steps include redefining intelligence information requirements necessary to maintain an effective CONUS air defense force posture; helping to develop a prioritized list of critical sites that need to be protected; formalizing a process for declaring an air contact a potential threat and initiating a military response; and continuing to enhance command, control, communications, intelligence, surveillance, and reconnaissance capabilities to create a single integrated air picture over CONUS.

The Air Force should advocate an interagency process to coordinate individual contributions within an overall national air defense posture.

PAF suggests that the Air Force use two approaches to accomplish this coordination:

- *Employ a "defense-in-depth" concept.* This concept envisions multiple layers of defense that reduce

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the likelihood of a terrorist attack occurring or succeeding. For example, the Air Force and other military services may be responsible for the first layer (offensive military operations against terrorist groups abroad) and the last layer (CAP operations or surface-to-air missiles to shoot down hijacked aircraft). Law enforcement, intelligence, airport security, and onboard security personnel may provide many layers of defense in between. This concept can help the Air Force and other agencies clarify where they should concentrate their individual resources for maximum effectiveness.

- *Develop play books, game books, and game plans.* This framework provides a bottom-up method of integrating and balancing national air defense capabilities and resources. The Air Force and other military services would develop *play books*, which describe alternative defense postures (e.g., number of aircraft on CAP or ground alert) and their expected performance as a function of

cost. NORAD and USNORTHCOM would then select force options from among the play books and integrate them into *game books* that describe broader defense operations. The departments of State, Commerce, Transportation, and Justice would develop similar game books based on inputs from their organizations. The Secretary of Homeland Security would use these inputs to set an overall investment strategy, known as the *game plan*. This national-level plan would ensure that the United States maintains an air defense posture that is both operationally effective and fiscally efficient.

This integrated approach to operations and planning should enable the Air Force and other government agencies to optimize current air defense capabilities and to develop alternatives for enhancing such capabilities in the future. ■

This research brief describes work done for RAND Project AIR FORCE and documented in *Enhancing Air Defense Capabilities to Counter Terrorist Air Threats to CONUS: Focus on C3ISR* by Myron Hura, Gary McLeod, William Williams, Jody Jacobs, Marc Dippold, Richard Mesic, and Marvin Schaffer, MR-1779-AF, 2004, 138 pages. Restricted distribution: not for public release. Copies of this research brief are available from RAND Distribution Services (phone: 310-451-7002; toll free: 877-584-8642; or email: order@rand.org). The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. RAND® is a registered trademark.

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