Backgrounder

Published by The Heritage Foundation

No. 2051
July 13, 2007

Keeping the Skies Friendly: Next Steps for General Aviation Security

James Jay Carafano, Ph.D.

Since the 9/11 terrorist attacks, air security has focused overwhelmingly on commercial aviation, and on passenger airlines in particular. Also flying in America's skies every day, however, are thousands of small airplanes, many of them owned and operated by individuals.

A national air security plan should ensure that the skies are as secure as possible from the most likely threats—and like every measure intended to protect the homeland, air security should be implemented in a manner that helps to keep the nation safe, free, and prosperous. In some cases, this will require rolling back excessive measures, such as the overly restrictive air zone restrictions placed over the Washington, D.C., area. In other areas, existing programs for accrediting pilots and tracking aircraft should be strengthened to prevent general aviation from being used to transport illicit materials (from drugs to bombs) or to smuggle people.

The General Aviation Industry

General aviation (GA) is an industry that comprises 5,288 community airports in the United States and supports 1.3 million jobs, totaling just over 1 percent of GDP.[1] The approximately 219,000 general aviation aircraft in the United States account for 77 percent of all U.S. air traffic.[2] General aviation is both important to the economy and growing.

Safeguarding this dynamic, decentralized, and diversified sector of the U.S. transportation network in a manner that provides reasonable security and does

Talking Points

- General aviation comprises 5,288 U.S. community airports and supports 1.3 million jobs, totaling just over 1 percent of GDP. Approximately 219,000 general aviation aircraft account for 77 percent of all U.S. air traffic.
- It is highly unlikely that a general aviation incident would resemble a 9/11–like suicide attack. Most general aviation aircraft would make poor weapons platforms. The real threat is that private planes will be used to transport "bad things" or "bad people."
- Congress should bolster the DHS, the Coast Guard, and local law enforcement air assets to patrol for threats from general aviation aircraft. Integrating border security into general aviation security will benefit both sectors equally.
- A Trusted Pilot Program and interoperable databases between government agencies will also streamline the general aviation security process. New technologies, such as GPS locators and biometric pilot's licenses, should be used to their full potential.

This paper, in its entirety, can be found at:
www.heritage.org/Research/HomelandDefense/bg2051.cfm

Produced by the Douglas and Sarah Allison Center for Foreign Policy Studies of the Kathryn and Shelby Cullom Davis Institute for International Studies

Published by The Heritage Foundation
214 Massachusetts Avenue, NE
Washington, DC 20002–4999
(202) 546-4400 • heritage.org

not hamstring the enormous advantages of a growing general aviation sector is no easy task. There are several obstacles that have to be overcome.

- **Americans are not familiar with the industry.** Despite the fact that the general aviation industry accounts for over three-quarters of all air travel, the average American knows little about it. Everything from test aircraft to cargo transport, gliders, and even crop dusting and parachuting fits within the general aviation sector.

  Security incidents or concerns in the general aviation domain could engender significant but unwarranted anxiety, much as the general lack of public knowledge about maritime affairs contributed to the unjustified uproar over the 2006 proposed sale of some U.S. port facilities to a foreign-based company.[3] Thus, the need to educate the public on the industry, its value to the economy, and the actual risks and concerns associated with general aviation is the first obstacle to overcome.

- **One size does not fit all.** The sheer size and diversity of the general aviation sector makes it difficult to craft a single comprehensive security policy for the industry. Of the over 200,000 general aviation aircraft registered in the U.S., 90 percent are powered by a single engine and have a short travel range. They weigh and hold about the same amount of cargo as a Honda Civic.[4] Ten percent are medium-size jets that weigh over 12,500 pounds and are usually chartered for business travel. Some have intercontinental range.

  The over 19,000 landing facilities that service general aviation exhibit similar diversity: Some have grass runways and are located in the wilderness, while others are fully functioning international airports in large cities.[5] In addition, airports are scattered throughout the United States, including Alaska and the Hawaiian islands. Because there is no standard size, shape, or function of a general aviation airport, it is difficult to devise uniform security standards.

  Transportation patterns are likewise diverse and fluid. Aircraft flights range from the occasional pleasure flight or hobby flight to the semi-regular chartered activity of corporate business jets. Depending on the size, speed, and destination of the aircraft, pilots might need to file formal flight plans or simply radio the control tower when they reach their final destination. This distinction makes it virtually impossible to track the majority of aircraft when they are in transit. The single characteristic that all general aviation flights share is that, unlike commercial flights, they operate on an on-demand basis and are not routinely scheduled.

- **Americans do not fully comprehend the threat.** It is highly unlikely that a general aviation incident would resemble a 9/11–like suicide attack. Most general aviation aircraft are too light and slow to cause significant damage to people or infrastructure. For example, a fully loaded Cessna 172 weighs 2,400 pounds and carries 56 gallons of fuel. A Boeing 767, such as one of the aircraft used in the 9/11 attacks, can weigh more than 400,000 pounds and carry 25,000 gallons of fuel.[6]

1. Aircraft Owners and Pilots Association, "A Critical Sector of the U.S. Economy," at *www.gaservingamerica.com/our_economy/economy.htm* (March 8, 2007).
2. Aviation Security Advisory Committee Working Group, "Report of the Aviation Security Advisory Committee Working Group on General Aviation Airports Security," October 1, 2003, p. 2, at *www.tsa.gov/assets/pdf/ASAC_Working_Group_11-2003.pdf* (July 4, 2007).
3. James Jay Carafano, Ph.D., and Alane Kochems, "Security and the Sale of Port Facilities: Facts and Recommendations," Heritage Foundation *WebMemo* No. 997, February 22, 2006, at *www.heritage.org/Research/HomelandDefense/wm997.cfm*.
4. Aviation Security Advisory Committee Working Group, "Report of the Aviation Security Advisory Committee Working Group on General Aviation Airports Security," p. 2.
5. U.S. Department of Homeland Security, *Report to Congress on General Aviation Security: In Accordance with the FY 2006 DHS Appropriations Act (P.L. 109-90)*, May 2006, p. 2.
6. Aircraft Owners and Pilots Association, "General Aviation and Homeland Security," at *www.aopa.org/whatsnew/newsitems/2002/020621_homeland_security.html* (March 29, 2007).

Most general aircraft can do only a fraction of the damage that a large commercial airliner could cause. The recent crash of New York Yankees pitcher Cory Lidle shows that small aircraft do not cause significant damage to buildings or the people inside of them. The only people to die in the crash were Lidle and his instructor on board the aircraft.[7] Even an aircraft packed with explosives would have modest potential as an air-delivered weapon. Most critical infrastructure is resilient enough to withstand such attacks. For example, nuclear power plants are designed to sustain an accidental crash from a commercial airliner.[8]

Another often overstated threat in the realm of general aviation is that crop dusters could be used to disseminate biological or chemical weapons. Experts, however, doubt the practicality of such a tactic. Conventional sprayers on crop dusters or air tankers that are used to fight forest fires, for example, probably would not be very effective at dispensing biological agents. Mechanical stresses in the spraying system might also kill or inactivate a large percentage of particles—by some estimates, up to 99 percent.[9] Nor could they carry sufficient volume to conduct a significant chemical attack.

Focusing on the Right Problem

The most worrisome threat from general aviation comes from using aircraft as a transportation platform—a means to convey "bad things" or "bad people." General aviation is a fairly discreet means to move cargo in a short amount of time over a long distance, and the security standards for travelers, particularly passengers, is much more lax than for commercial airliners. While private pilots have their identities and credentials checked on a regular basis, passengers may not be screened, even when they fly internationally. On domestic flights, cargo is virtually never inspected.

Drug smuggling demonstrates the potential to exploit the general aviation sector for illicit activity. For years, small private planes have been used to transport narcotics from South America to Mexico and the United States. In fact, private aircraft have long been the most popular means of transport for cocaine from Colombia to Mexico. In 1975, only two years after President Richard Nixon declared the "war on drugs," Colombian officials made the largest narcotics seizure in history, seizing over 600 kilograms of cocaine from a private aircraft.[10]

In addition to the transport of illicit material, general aviation can be an effective means to smuggle people. With thousands of landing facilities in the United States plus innumerable fields, open spaces, and roads that could serve as impromptu landing sites, there are seemingly endless locations to which passengers can be delivered covertly.

Principles for General Aviation Security

Crafting the right solutions for making the skies safer and maintaining a vibrant general aviation sector that has room to grow and innovate requires principled proposals that address the threat in the most efficient and cost-effective manner. Specifically:

- **Eschew "silver bullet" solutions.** Because of the enormity and diversity of the general aviation sector, no single measure can adequately address security concerns.
- **Adopt a layered approach.** The best approach will be one that incorporates layers of security. General aviation security requires different layers of protection at different stages. For example, security measures at flight schools, hangars, and airports should be organized to screen for bad actors before they get access to the skies. The best way to stop illicit exploitation of general aviation is to keep malicious actors out of the cockpit.

7. James Fallows, "The Cory Lidle Crash in New York City," *The Atlantic Online*, October 11, 2006, at *www.theatlantic.com/doc/200610u/lidle-crash/2* (March 29, 2007).
8. Robert M. Jefferson, "Nuclear Security: General Aviation Is Not a Threat," Airline Owners and Pilots Association, May 16, 2002, p. 1, at *www. aopa.org/whatsnew/newsitems/2002/02-2-159_report.pdf* (July 5, 2007).
9. Seth W. Carus, *Bioterrorism and Biocrimes: The Illicit Use of Biological Agents in the 20th Century* (Washington, D.C.: Center for Counterproliferation Research, National Defense University, 1998), p. 24.
10. National Public Radio, "Timeline: America's War on Drugs," April 2, 2007, at *www.npr.org/templates/story/story.php?storyId=9252490* (July 5, 2007).

- **Employ a menu of measures.** A security program that works for corporate business jets would not necessarily be effective for small Cessna planes or hobby aircraft. Programs must be tailored to different types of aircraft, airfields, and aviation services.
- **Establish a reasonable role for the private sector.** Security activities should be dictated by a comprehensive assessment of risks. Washington, not the private sector, is responsible for preventing terrorist acts through intelligence gathering, early warning, and counterterrorism efforts. The private sector is responsible for taking reasonable anti-terrorism precautions in much the same way as society expects it to take reasonable safety and environmental precautions.

  The government has a role in defining what is reasonable and facilitating information sharing. A model public–private regime for the aviation industry would (1) define what is reasonable through clear performance measures, (2) create transparency and the means to measure performance, (3) establish ways for the market to reward good behavior, and (4) ensure that any "fix" does not cripple the economic viability of the aviation industry.

Implementing these principles will require rethinking what has been done since the 2001 terrorist attacks on New York and Washington to make the skies safer.

The State of Security

Some of the new security measures that have been established since 9/11 reflect principled security. Others do not.

One of the first security improvements was the "Airport Watch" program. Airport Watch is a joint venture between the private and government communities and was co-founded by the Aircraft Owners and Pilots Association (AOPA) and Transportation Security Administration (TSA). This partnership resulted in an elaborate "neighborhood watch"–like program at thousands of local airports nationwide: a network that includes over 650,000 pilots, as well as airport officials, who serve as eyes and ears for observing and reporting suspicious activity to state and local law enforcement. Airport Watch includes warning signs for airports, informational literature, and a training video to teach pilots and airport employees how to enhance security at their airports. The program has prevented theft and break-ins at airports in Kansas, Missouri, Ohio, Georgia, Arkansas, and Minnesota.[11]

Initiatives like Airport Watch are important because they provide a decentralized network for reporting security threats. By making the everyday pilot the eyes and ears at his airport, it provides an additional layer of security on the ground. It is also cheaper than training thousands of additional government security officers and deploying them at airports around the country. Airport Watch is successful because it turns the everyday pilot into a security asset available to local, state, and federal law enforcement.

After 9/11, the private sector worked with the Federal Aviation Administration (FAA) and the TSA to make flight training a more transparent and secure process. The first step was advanced screening of pilot databases against the TSA threat watch lists. This regulation was adopted on January 24, 2003, and means that individuals who show up on TSA watch lists can have their certificates suspended or revoked. While this improvement is not completely interoperable between the FAA and TSA, it is certainly a good first step.

Another security measure created by many private flight schools applies to foreigners who are training for pilot certificates. All foreign nationals applying for flight training will now be subject to a Department of Justice (DOJ) background check before entering their training programs. A more stringent screening process is in place for foreigners seeking to learn to fly jet aircraft over 12,500 pounds. This rule, dubbed by experts the "Twelve-Five Rule," became law as part of the FAA reauthorization legislation in 2002. In addition, the Vision 100—Century of Aviation Reauthorization Act (P.L. 108-176) requires that flight school instructors be

11. Aircraft Owners and Pilots Association, "Airport and Aircraft Safety," at *www.gaservingamerica.com/Airport-Security2.htm* (March 30, 2007).

trained in identifying "suspicious circumstances and activities of individuals enrolling or attending a flight school."[12]

On the domestic end, U.S. student pilots must show a government-issued photo I.D. to verify their identity before enrolling in flight school, and many flight schools require instructors to be present any time a student pilot is on the tarmac or near training aircraft.

In 2003, at the TSA's request, the Aviation Security Advisory Committee published a report on General Aviation Security Guidelines that provides municipalities, owners, and operators in charge of general aviation airports a set of federally endorsed recommendations to enhance security.[13] Just as it does for major commercial airports, the TSA issues security advisories to GA airports, giving them a summary of relevant facts on security that are designed to increase security awareness.

In terms of airport infrastructure security, on June 15, 2006, the TSA issued its *Recommended Security Guidelines for Airport Planning, Design and Construction*.[14] This document contains security guidelines on airport layout, security screening, emergency response, access control, and communications.

The TSA is also working on the General Aviation Vulnerability Identification Self Assessment Tool (GA–VISAT), a comprehensive, Web-based airport risk assessment tool that is available on-line via an authorized account.[15] The program consists of a series of pull-down menus and check-boxes that provide a virtual checklist for airport security. When the lists are completed, the program tallies the results and scores the airport's "target attractiveness" to terrorists. The score will also explain the social, political, and economic impacts of improvements in security that are tailored to the user's specific airport. GA–VISAT is being tested and should be available to GA airport personnel in the coming months.

Less meaningful to promoting aviation security is the "Air Defense Identification Zone" (ADIZ). Established after 9/11, the ADIZ is a 30-nautical mile ring around the Washington, D.C., greater metropolitan area and has proved to be more of a burden than an asset. Not only does it restrict private pilots from having reasonable access to D.C. airspace, but the ADIZ costs an estimated $11 million per year to maintain.[16] For all that cost and inconvenience, there is arguably very little security benefit to the restriction. As the many inadvertent penetrations have shown, a small plane intent on covertly entering the District's airspace could likely evade detection and reach its target before it could be intercepted.

After 9/11, general aviation was also banned from Ronald Reagan Washington National Airport. In order to restore access to the area, the TSA established a "gateway" program that allowed general aviation flights into Washington to resume in October 2005. GA aircraft flying into Reagan National must first fly through pre-designated gateway airports and meet strict requirements:

- Pilots must be prescreened;
- Flight plans and crew manifest must be submitted 24 hours in advance;
- Aircraft, crew, baggage, and passengers must be screened; and
- An armed law enforcement officer certified by the TSA must accompany flights with passengers.

12. Aviation Security Advisory Committee Working Group, "Report of the Aviation Security Advisory Committee Working Group on General Aviation Airports Security," pp. 4–5.
13. U.S. Government Accountability Office, *General Aviation Security: Increased Federal Oversight Is Needed, but Continued Partnership with the Private Sector Is Critical to Long Term Success*, November 2004, pp. 1–2, 42, 45, and 54, at *www.gao.gov/new.items/d05144.pdf* (July 6, 2007).
14. U.S Department of Homeland Security, Transportation Security Administration, *Recommended Security Guidelines for Airport Planning, Design and Construction*, revised June 15, 2006, at *www.aci-na.org/docs/Airport%20SDG-%20June%2015%202006%20WP.pdf* (July 6, 2007).
15. Bart Elias, "Securing General Aviation," Congressional Research Service *Report for Congress*, December 15, 2005, p. 20, at *www.securitymanagement.com/library/aviation_crs0306.pdf* (July 6, 2007).
16. Aircraft Owners and Pilots Association, "Operation ADIZ," at *www.aopa.org/adizalert/* (July 4, 2007).

Facilities already serving as gateway airports include Seattle–Tacoma in Washington, Boston Logan in Massachusetts, Houston Hobby in Texas, White Plains and LaGuardia in New York, Chicago Midway in Illinois, Minneapolis–St. Paul in Minnesota, West Palm Beach in Florida, San Francisco in California, Teterboro Airport in New Jersey, Philadelphia in Pennsylvania, and Lexington in Kentucky. Airports to be added include Dallas–Love Field Airport, Memphis International Airport, and Milwaukee's General Mitchell International Airport.

The costs associated with the gateway program place significant burdens on general aviation. The TSA requires operators to pay for security screening, background checks, and the on-board security officer. The procedures remain too expensive and complex for average general aviation aircraft.

Next Steps for General Aviation Security

While some practical and reasonable measures have been taken, other requirements, particularly with regard to security in the Washington area, require refinement. In addition, more attention needs to be given to preventing a recurrence of what happened after 9/11, when aviation was indiscriminately suspended in the wake of the attacks on New York and Washington. The suspension created as many problems as it solved. Many specialized emergency responder groups, such as urban search and rescue teams, could not deploy quickly to the World Trade Center because commercial and general aviation flights were grounded.

Improving the layers of general aviation security should include the following:

- **Eliminate the post-9/11 ADIZ in the Washington, D.C., area**. Instead, the FAA should require general aviation flights to comply with the more limited Flight Restricted Zone (FRZ) that was in place before 9/11 as the standard no-fly procedure over critical infrastructure in Washington, D.C. In the event of an emergency or special circumstance, the government should have the right to re-impose the ADIZ as part of the protocol for a National Security Special Event (NSSE), as was the case during the Republican National Convention in 2004.
- **Make the gateway program more flexible.** The "Maryland Three"—the three general aviation airports (College Park Airport, Potomac Airfield, and Washington Executive–Hyde Field) within the current ADIZ—should be made more accessible to the general public to provide a realistic alternative for noncommercial general aviation flights that cannot afford the security costs of landing at Reagan National Airport. In addition, the TSA should consider more flexible and cost-effective options for implementing the gateway program, including eliminating requirements that law enforcement officers accompany each passenger flight.
- **Establish a Trusted Pilot Program.** This program would be vital in preventing general aviation from shutting down completely in the event of another terrorist attack or natural disaster. A trusted pilot program with certification for first responders, for example, would ensure that they are always granted access to the air to respond to emergencies that might shut down U.S. airspace. This program would also speed up customs inspections for trusted pilots when they re-enter American airspace from abroad. In addition, it should allow credentialed general aviation pilots easier access to the Baltimore–D.C. airspace, as well as to the "Maryland Three."
- **Focus on an interoperable database for registered aircraft and airmen.** With the numerous databases already in use in the Department of Transportation, the TSA, the FAA, and the private sector, interoperability is the key to interagency security cooperation. Making the databases and watch lists available to everyone in the GA sector will ensure that pilots and flight students are checked against every source of information before they are allowed in the sky.

  A database organized like the current driver's license databases at the state level would allow the federal government to do systematic analysis of all U.S. registered aircraft. It will also allow the government to look at a pilot's history in terms of flight time and possible illegal activity. Finally, interoperability is essential to integrating the FAA and DOJ databases so that background checks on foreign and domestic

flight students can be completed in a timely manner.

- **Establish secure credentials for pilot certificates and credentials.** National standards for these credentials and for "breeder" documents (such as birth certificates) required to obtain pilot credentials should be similar to those for driver's licenses as established under the REAL ID Act.[17]
- **Build up the Department of Homeland Security aviation law enforcement capacity.** The Department of Defense is responsible for protecting U.S. airspace, and this is an expensive and inefficient use of high-performance aircraft that are not optimized for domestic air security missions, such as interdicting hijacked and stolen planes and guarding restricted airspace. The long-term investment strategy should look to building up appropriate civilian law enforcement capabilities in the Coast Guard and the Customs and Border Protection agency (CBP) and getting the Defense Department out of the domestic air security business.
- **Integrate Coast Guard modernization and the Secure Border Initiative.** Preventing the illegal crossing of U.S. land and sea borders by general aviation aircraft will be an imperative in the years ahead. Both the CBP Secure Border Initiative (SBI) and the modernization of U.S. Coast Guard aviation assets could potentially play an important role in air security along the border.

  Securing the borders will require more than an investment in land border assets. It will also require strengthening sea and air borders. The Coast Guard plays a central role in immigration control along the U.S. coasts. Thus, its modernization program should be a priority component of the Secure Border Initiative, and Congress should fully fund Coast Guard modernization programs to enhance homeland security.[18]
- **Adapt new technology.** Global Positioning System units are becoming more common in general aviation aircraft. Congress and the Administration should promote the voluntary adoption of GPS throughout the general aviation sector. The more widespread use of GPS will provide greater situational awareness of aviation activities, enhancing both public safety and law enforcement.

The Road Ahead

Improving general aviation security should be part of the national effort to make the skies safer.[19] Much has been done since 9/11 to establish security measures that are appropriate for the threat. More needs to be done, however, to ensure that general aviation remains a vibrant and secure industry.

—James Jay Carafano is Assistant Director of the Kathryn and Shelby Cullom Davis Institute for International Studies and Senior Research Fellow for National Security and Homeland Security in the Douglas and Sarah Allison Center for Foreign Policy Studies at The Heritage Foundation. The author would like to thank Heritage Foundation intern Austin Knuppe for his research and assistance in preparing this paper.

17. James Jay Carafano, "Making REAL ID a Reality—Concerns, Challenges, Choices, Solutions," statement before the Committee on the Judiciary, U.S. Senate, May 8, 2007, at *www.heritage.org/Research/HomelandDefense/tst050807.cfm*.
18. James Jay Carafano, Ph.D., "Coast Guard Modernization Is Integral to the Success of the Secure Border Initiative," Heritage Foundation *Executive Memorandum* No. 1009, August 7, 2006, at *www.heritage.org/Research/homelanddefense/upload/em_1009.pdf*.
19. James Jay Carafano, Ph.D., "America Needs a Security Strategy for Safer Skies," Heritage Foundation *Executive Memorandum* No. 996, March 21, 2006, at *www.heritage.org/Research/NationalSecurity/em996.cfm*.