

# CRS Report for Congress

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## Homeland Security: Protecting Airspace in the National Capital Region

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### Summary

Since September 11, 2001, several actions have been taken to monitor and protect the airspace around Washington, DC. However, many general aviation (GA) interests have protested that extensive airspace restrictions and complex procedures exceed what is necessary to protect critical assets from possible terrorist attacks using aircraft. Policymakers have struggled to address airspace protection needs without unduly impeding air commerce or compromising safety. While the administration is currently seeking to make the airspace restrictions in the National Capital Region permanent, Congress has pushed for an easing of restrictions on GA aircraft at Ronald Reagan Washington National Airport (DCA) and nearby GA airports through legislation and oversight. However, a few high profile airspace breaches have prompted some in Congress to seek stiffer penalties for violators and mandatory training for pilots (see H.R. 3465). Better pilot training and technologies to improve pilot situational awareness may help curtail inadvertent airspace violations that complicate surveillance and protection efforts. Further assessment of airspace design and special flight procedures around Washington, DC, may be undertaken to determine whether an appropriate balance exists between homeland security and defense requirements and air commerce and safety. This report will be updated as needed.

The presence of numerous high profile targets in and around Washington, DC, has raised significant policy concerns over how to effectively defend these sites from possible terrorist threats involving aircraft. Domestic airspace protection, particularly in the National Capital Region (NCR) has become a significant focus of homeland security and homeland defense efforts following the terrorist attacks of September 11, 2001.<sup>1</sup> However, airspace restrictions and special flight rules implemented to address security

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<sup>1</sup> See CRS Report RS21394, *Homeland Security: Defending U.S. Airspace* by Christopher Bolkom.

concerns in the NCR have been contentious because of their impact on air commerce, particularly general aviation (GA) operations.<sup>2</sup>

Congressional action and oversight has sought to strike a balance that adequately meets the critical needs to protect high-profile assets in the NCR while minimizing economic impacts. Vision 100 (P.L. 108-176) mandated a security plan to resume GA flights at Ronald Reagan Washington National Airport (DCA) and congressional oversight, in part, led to the easing of flight restrictions at the three GA airports lying within the 15-mile restricted airspace around Washington, DC. While these actions have served to enhance accessibility to the NCR by GA aircraft in furtherance of air commerce in the region, the Capitol Airspace Enforcement Act (H.R. 3465) seeks to impose statutory suspensions of pilot licenses and increase civil and criminal penalties for airspace violators. The bill would also require mandatory pilot training in an effort to curtail inadvertent airspace violations that complicate the task of defending the NCR airspace from possible aerial attack. Critics of this measure argue that stiff penalties will do little to curb inadvertent violations and extensive pilot education efforts are already underway.<sup>3</sup> GA advocates also worry that harsher penalties will further damage aviation-related businesses in the area.

In August 2005, the Federal Aviation Administration (FAA), in consultation with the Department of Homeland Security (DHS) and the Department of Defense, proposed to make permanent the special flight rules — that currently exist on a temporary basis — to monitor flights over a wide area around the NCR.<sup>4</sup> GA user groups, who had hoped the temporary restrictions would be eased or lifted, have decried this move as largely unnecessary and overly restrictive and fear that the proposal would negatively impact GA pilots and further jeopardize aviation-related businesses in the region.<sup>5</sup>

**Airspace Restrictions and Special Flight Rules.** The airspace in the NCR has been placed under close surveillance and special flight restrictions primarily affecting GA aircraft ever since September 11, 2001. Previously, the airspace around Washington, DC was relatively open and accessible to GA as well as commercial aircraft. While the airspace directly above some sensitive locations — like the White House and the Capitol — was then and still is prohibited airspace (i.e., off-limits to all civil aircraft), this comprised a relatively small portion of the total airspace in the NCR. Before September 11, 2001, GA aircraft were routinely permitted to operate over Washington, DC, and the surrounding area so long as these prohibited areas were avoided and applicable air traffic procedures were followed. DCA, in close proximity to downtown Washington, DC, and key federal facilities, was open and accessible to most GA aircraft. However, over the past 4 years, airspace restrictions in the Washington, DC region have gone through several significant changes to address heightened security concerns.

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<sup>2</sup> General aviation includes most operations other than scheduled airline and military flights.

<sup>3</sup> Spencer S. Hsu. “Bill Targets Errant Pilots.” *The Washington Post*, July 27, 2005, p. B1.

<sup>4</sup> Federal Aviation Administration. “Washington, DC Metropolitan Area Special Flight Rules Area; Proposed Rule.” *Federal Register*, 70(149), 45250-45261 (August 4, 2005).

<sup>5</sup> Aircraft Owners and Pilots Association. *Air Traffic Services Brief: Security Officials Want Washington, DC, Air Defense Identification Zone (ADIZ) to Be Made Permanent* (August 16, 2005: Frederick, MD).

**The Flight Restricted Zone (FRZ).** As flight operations resumed following the terrorist attacks of September 11, 2001, a no fly zone — 25-nautical miles<sup>6</sup> in radius, extending from the surface to 18,000 feet — around Washington, DC, was established. All civil airports within this area, including DCA remained closed to both the airlines and GA traffic. Commercial flights gradually resumed at DCA starting in early October 2001, and limited GA operations were permitted in the airspace within the 18 to 25-nautical mile ring around DCA. In December 2001, the size of the restricted airspace around Washington, DC, was reduced to roughly a 15-nautical mile radius, the dimensions that continue to exist today for the area known as the flight restricted zone (FRZ).

**The Maryland Three Airports.** In February 2002, the ban on GA operations in the FRZ was eased somewhat, permitting the three GA airports located within its boundaries — referred to as the Maryland three or sometimes the DC-three airports — to reopen on a limited basis.<sup>7</sup> Potomac Airfield, Washington Executive Airport/Hyde Field, and College Park Airport, resumed operations of based aircraft whose pilots were vetted through background checks and adhered to strict security protocols. In February 2005, FRZ restrictions were further relaxed allowing transient aircraft to fly to and from these airports provided that their pilots had passed background checks, received special training, and adhered to specific security procedures.<sup>8</sup> The reopening of these airports has been a politically sensitive issue. Both Washington Executive and Potomac airports are operated by small business entities that have been significantly impacted by the flight restrictions, while College Park airport — established in 1909 as a site for the Wright brothers to train military aviators — is considered the world’s oldest continuously operated airport.

**The Air Defense Identification Zone (ADIZ).** In February 2003, additional steps were taken to secure the skies above Washington, DC, by establishing an outer area, beyond the FRZ, where GA flights must operate under close surveillance and in constant 2-way radio contact with air traffic controllers. This area is known as the Washington, DC Air Defense Identification Zone (ADIZ). The ADIZ came into existence, not immediately following September 11, 2001, as many mistakenly assume, but rather as part of Operation Liberty Shield, launched by the DHS to enhance homeland security during the build-up toward the war in Iraq. The Washington ADIZ was established as a temporary flight restriction, and a similar ADIZ was established around New York City. A smaller scale restricted area was put in place over downtown Chicago during that time. The temporary restrictions in New York and Chicago have since been rescinded, but the Washington, DC, ADIZ remains.

In policy discussions, the ADIZ has often been oversimplified, described as being simply a 30-nautical mile ring around Washington, DC. The dimensions of the ADIZ are, in fact, quite a bit larger than this. The ADIZ, shown in **Figure 1**, roughly consists of the

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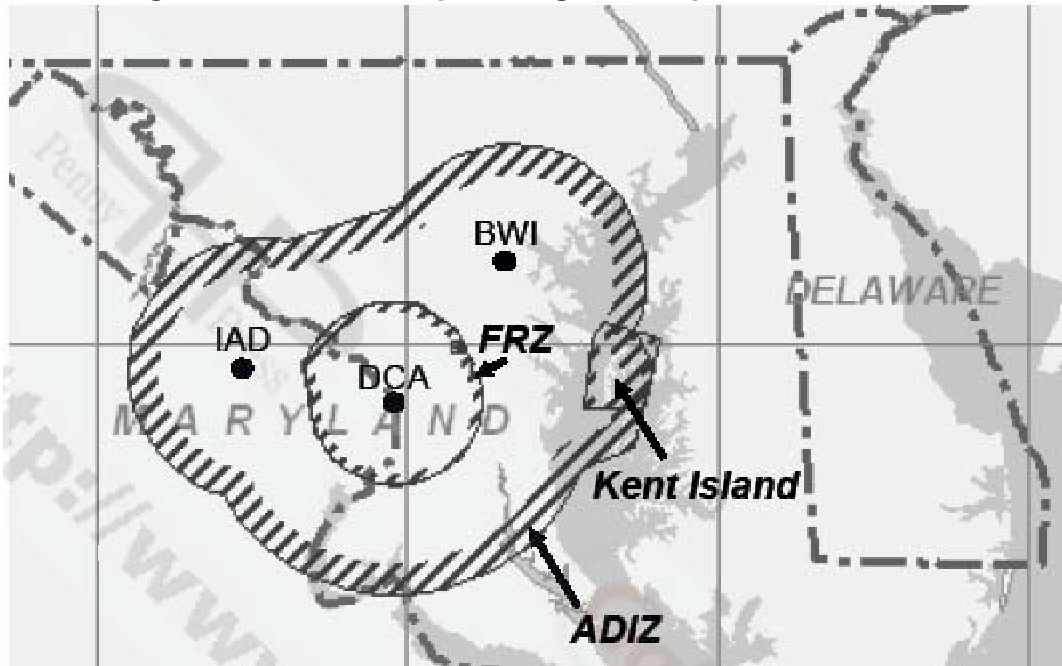
<sup>6</sup> Nautical miles are the standard measure of distance in aviation. One nautical mile is roughly equal to 1.15 statute miles.

<sup>7</sup> Federal Aviation Administration. “Enhanced Security Procedures for Operations at Certain Airports in the Washington, DC Metropolitan Area Special Flight Rules Area; Final Rule”. *Federal Register*, 67(33), 7538-7545 (February 10, 2005).

<sup>8</sup> Title 49 Code of Federal Regulations, Part 1562, Subpart A.

30-nautical mile ring around DCA *plus* the additional airspace extending for 20 nautical miles around both Dulles (IAD) and Baltimore-Washington International (BWI) airports. The ADIZ has a lateral extent — not including the flight restricted zone (FRZ) which it completely encapsulates — of more than 3,000 square nautical miles. The FRZ roughly follows a 15-nautical mile radius around DCA and thus blankets an additional 700 square nautical miles. Both the ADIZ and the FRZ extend from the surface to 18,000 feet.

**Figure 1. National Capital Region Airspace Restrictions**



Vision 100 (P.L. 108-176), enacted in December 2003, included language requiring the FAA to justify the continued existence of the ADIZ and identify any possible changes to improve the operational efficiency or minimize the operational impact on pilots and controllers. In January 2004, special procedures were implemented at many of the airports on the outer edges of the ADIZ for aircraft departing the airspace to reduce pilot and controller workload. Similarly, special arrival and departure procedures were instituted at two airports located on Kent Island in the Chesapeake Bay. These measures had been tested during a brief trial period in October 2003, but were implemented on a continuous basis beginning in January 2004, in part, due to the congressional mandate to improve operational efficiency within the ADIZ. Since then, no additional changes have been made to the ADIZ.

**The FAA's Proposed Special Flight Rules Area.** On August 4, 2005, the FAA unveiled plans to create a permanent special flight rules area (SFRA), virtually identical to the temporary flight restrictions currently in place for the ADIZ and FRZ.<sup>9</sup> User groups have decried the move to make these restrictions permanent questioning why such a large restricted area and complex security procedures are necessary on a long-term basis. GA users had long hoped that, instead, the ADIZ would eventually be rescinded and fear that this proposed action will have lasting impacts on aviation-related businesses in the region. According to the Aircraft Owners and Pilots Association (AOPA), business at GA airports in the region has already declined 30% to 50%, and fuel sales are off by

<sup>9</sup>Federal Aviation Administration. "Washington, DC Metropolitan Area Special Flight Rules."

as much as 45% since the temporary airspace restrictions were put into effect.<sup>10</sup> Implementing these airspace protections also involves a sizable federal investment, costing about \$11 million annually according to FAA estimates.<sup>11</sup> Insofar as these measures can help deter or avert a terrorist attack, these costs are likely to be considered reasonable. However, questions remain regarding whether less costly alternatives could provide equally adequate protections. The size and shape of the proposed SFRA and the specific security requirements to operate within this area remain central issues in the debate over how to best protect assets in the NCR from possible attacks using aircraft without unduly impeding air commerce or compromising aviation safety.

**Restoring General Aviation at DCA.** While the FAA has initiated action to make the security features of the NCR airspace permanent, the Transportation Security Administration (TSA) has issued rulemaking to fulfill the congressional mandate to restore GA operations at DCA, albeit on a very limited basis initially. Prior to September 11, 2001, DCA's easy access to downtown Washington, DC and northern Virginia made it a popular destination for GA operators, especially corporate and charter jets. However, the proximity of DCA to critical federal facilities and other high profile targets has long concerned security experts. These concerns prompted special precautions for airline flights and a ban on GA flights at DCA following the 9/11 attacks. As a result, GA takeoffs and landings at DCA fell from a level of about 60,000 in FY2000 to the current level of about 3,500 annually conducted under special waivers.<sup>12</sup> Recognizing the impact of these restrictions on GA operators, Congress included the aforementioned language in Vision 100 (P.L. 108-176) requiring the DHS to develop and implement a security plan to resume GA operations at DCA. That security plan was put into effect on August 18, 2005, and will accommodate up to 48 GA flights per day into and out of DCA, roughly 60% of pre-9/11 levels.<sup>13</sup> Operators will have to adhere to stringent requirements including: submitting all flight crew to background checks; vetting all passengers and crew against terrorist watchlists; undergoing physical screening of all passengers, crew, aircraft, and baggage at DCA prior to departure or at one of 12 designated gateway airports prior to continuing to DCA; and posting armed security officers on each flight. Operators must reimburse the TSA for the costs of these measures. Reimbursable security costs will vary based on the number of passengers, but are expected to average about \$500 per flight. Initially the program will only be available to certain charter and corporate aircraft operators. The TSA may expand the program to privately-owned aircraft in about one year, although, as currently implemented, it is likely to be too costly and burdensome to appeal to typical GA operators.

**Curbing Airspace Violations.** While security measures are being implemented authorizing certain GA operations within the restricted airspace, curtailing frequent inadvertent airspace violations by unauthorized aircraft that complicate surveillance and defense efforts is an ongoing challenge. According to NCR Command Center statistics,

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<sup>10</sup> Aircraft Owners and Pilots Association. *Air Traffic Services Brief: Security Officials Want.*

<sup>11</sup> Federal Aviation Administration. "Washington, DC Metropolitan Area Special Flight Rules."

<sup>12</sup> Federal Aviation Administration. *Terminal Area Forecast (TAF) database.*

<sup>13</sup> Transportation Security Administration. "Ronald Reagan Washington National Airport: Enhanced Security Procedures for Certain Operations; Interim Final Rule. *Federal Register*, 70(137)41586-41603 (July 19, 2005).

there were almost 3,500 airspace incursions between January 27, 2003, when the center first opened, and July 17, 2005 — a rate of almost 4 incidents per day.<sup>14</sup> On 655 of these occasions, “government assets” were deployed or diverted to intercept the intruding aircraft. Based on this experience, about 1 in every 5 to 6 incursions requires an intercept, and this occurs about 5 times a week. However, all but one of these incidents was inadvertent.<sup>15</sup> In three high profile incidents, all inadvertent, the U.S. Capitol was evacuated, raising concerns over the adequacy of airspace protections among lawmakers.

Curbing inadvertent violations is likely to become increasingly important as more GA operations return to DCA and the Maryland three airports making the task of surveillance and tactical response all the more critical. Pilot training is likely to be an important tool for mitigating these inadvertent airspace violations. In fact, significant efforts have been made already by user groups such as the AOPA, in coordination with the FAA, to increase pilot awareness and understanding of the airspace restrictions. Since these airspace violations are still routinely occurring despite these efforts, additional measures to improve in-flight situational awareness may be needed. Available technologies may provide GA pilots with improved positional awareness to avoid airspace violations. For example, global positioning satellite (GPS) moving map displays can provide pilots with precise navigation capabilities. These systems are now widely available for use in GA aircraft and could be programmed to include features to raise situational awareness regarding airspace restrictions and requirements. A more controversial option under consideration is stiffer penalties and stepped-up enforcement for airspace violations. User groups oppose additional punitive actions beyond those already available to the FAA and point out that the threat of a shoot-down is already a strong enough deterrent for pilots to take heed.<sup>16</sup>

**Finding the Right Balance.** Determining an acceptable balance between airspace restrictions and alternative security measures — such as vetting and security screening for certain flight operations — that will maintain effective airspace protection in the NCR without unduly impeding air commerce or compromising safety continues to play a central role in policy debate over NCR airspace restrictions. While most agree that blanket airspace restrictions for all non-airline users creates a significant impediment to air commerce in the region, there are varying opinions on whether the derived security benefits outweigh these concerns and whether alternative measures create unacceptable security risks. Detailed risk-based assessments, examining the various different types of GA operations conducted in the NCR, may be undertaken to identify airspace controls and alternative security measures that strike an appropriate balance between meeting security needs and maintaining a vibrant GA industry in the region.

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<sup>14</sup> Opening Statement of Chairman Tom Davis, Committee on Government Reform, U.S. House of Representatives. *Controlling Restricted Airspace: An Examination of the Management and Coordination of Our National Air Defense*. July 21, 2005.

<sup>15</sup> *Ibid*; Statement of Robert Sturgell, Deputy Administrator, Federal Aviation Administration, Before the Committee on Government Reform, U.S. House of Representatives. *Controlling Restricted Airspace: An Examination of Management and Coordination of Air Defense*. July 21, 2005.

<sup>16</sup> Aircraft Owners and Pilots Association. “AOPA Opposes Another Pilot Penalty Bill.” Frederick, MD: July 27, 2005.