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Remote Control Model Airplanes as Terrorist Weapons



[TRADOC G-2 Intelligence Support Activity
\(TRISA\)](#)

Complex Operational Environment and
Threat Integration Directorate (CTID)





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Purpose

- To inform the Army training community of the potential use of remote control (RC) model airplanes by terrorists to deliver explosives.
- To provide a history of past attempts to use RC model airplanes by terrorists.
- To summarize the strengths and weaknesses in the use of RC model airplanes as a terrorist weapon.

Executive Summary

- There is a history of attempts by terrorists to use RC model airplanes to conduct attacks, but most persons have been caught before the actual attempt occurred.
- Rezwan Ferdaus was sentenced in late October 2012 for his attempt to attack the Pentagon and the Capitol building in Washington DC with RC model airplanes carrying explosives.
- RC model airplanes cannot carry large amounts of explosives so any successful attack would likely cause minimal damage to its target, yet there is potential for psychological implications and fear.

Cover photo: F-4 Phantom remote control model airplane similar to one of the two types that Rezwan Ferdaus planned to use on his planned attacks of the Pentagon and Capitol building. (This photo is in the public domain because it was in a governmental publication: NYPD Shield Terrorism Assessment report, 29 September 2011).



Map



Locations of Selected RC Model Airplane Terrorist Incidents since 2002 (This map was created by the Oak Ridge National Laboratory and modified by TRISA, 11 November 2012.)

Introduction

Recently, several incidents of remote control (RC) airplanes being used as a terrorist weapon appeared in open source news stories. Although this occurred at least four times in the last year, this tactic is not new: in 2002, Colombian security personnel raided a Revolutionary Armed Forces of Colombia (FARC) camp that contained model airplanes loaded with explosives. In 2007, the TSA received notification to be on the lookout for passengers carrying RC toys aboard airplanes.

While an attack by an RC model plane is possible, it is unlikely to cause substantial damage to its target because of its lack of capacity to carry a significant amount of explosives. Additionally, it takes many hours for the controller to train to a level where he or she could fly the plane exactly to its target point. The controller also has to remain close by (about 800 yards for most RC model airplanes) and have a clear line-of-sight of both the airplane and the target in order to conduct a successful attack.



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If an RC airplane attack is successful, although the plane and the explosives it carried would probably not cause injury, it would likely cause panic among the people nearby. If the people were to scatter, enough chaos would be created that if shooters were in place and opened fire, many could be killed or injured before the shooters were caught or escaped.

Recent incidents have not resulted in any serious or deadly consequences. As the range and sophistication of RC model planes increase, however, RC planes and other RC toys could become more deadly when used as a terrorist weapon than they are currently.

U.S. Citizen Planned to Bomb the Pentagon and Capitol Building

On 28 September 2011, after almost 18 months of investigation, the FBI arrested Rezwan Ferdaus for planning to attack the Pentagon and the U.S. Capitol building with three RC model airplanes loaded with high-grade explosives. Ferdaus planned to have his accomplices kill survivors of his initial attack who fled from the buildings by shooting them with AK-47s or throwing hand grenades. In July 2012, Ferdaus pled guilty to charges of attempting to supply materials to al-Qaeda (AQ) and to damage U.S. government buildings with explosives. In a plea agreement to avoid a



The F-86 Sabre, the second of two types of model airplanes Ferdaus planned to use in his attack on the Pentagon and Capitol building. (NYPD Terrorism Assessment report, 29 September 2011)

possible 35-year prison sentence, the federal prosecutors dropped the other charges. On 31 October 2012, a judge sentenced Ferdaus to 17 years in prison and ten years of supervision upon his release.



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No one was ever truly in danger from Ferdaus' plan as the FBI conducted a sting operation from almost the start of the lone wolf attacker's attempts to join the *jihad* against the U.S. Initially Ferdaus – an American citizen with a physics degree from Northeastern University in Boston – supplied undercover FBI agents with eight improvised explosive switches made from mobile phones he had modified; Ferdaus believed that he was handing off the modified phones to AQ agents who would use them in subsequent IED attacks. During this initial sting operation, Ferdaus told the undercover agents of his detailed plan to attack the two government buildings in DC using RC model airplanes. In May 2011, Ferdaus took photographs of his two targeted buildings and the potential launch site for the RC planes. The over one-mile direct line distance between the Pentagon and the Capitol Building and the unavailability of any location to see both targets meant there was virtually no chance that Ferdaus could successfully complete his plan. The cost of the RC airplanes Ferdaus planned to use ranged from about \$175 for the single F-86 Sabre like the one in the photo below and about \$400 for each of the two F-4 Phantoms like the one on the cover of this report.

Besides modifying the RC planes to carry explosives, Ferdaus planned to arm approximately six people with automatic rifles and grenades to target survivors as they fled the buildings. The FBI transferred 25 pounds of inert explosive material, six inoperable AK-47 rifles, and several non-functioning grenades to Ferdaus. After Ferdaus took the items and secured them in a storage locker, the FBI arrested him. It appears that Ferdaus was acting alone and had no real connections to any international terrorist groups.

Terrorist Arrested in Turkey and Provides Info on Toy RC Vehicles

On 27 August 2012, while terrorist bomber Baris Kizilcay (aka Ozgur) was on trial in Turkey for his membership in the Kurdistan Workers' Party (PKK), he provided information about improvised explosive devices (IEDs), triggers, and the use of RC airplanes and cars to conduct attacks.

The information provided by Kizilcay did not match up with the manufacturer's specifications for the RC toys. Kizilcay claimed that the PKK possessed RC model planes that could be controlled for up to 18.6 miles with the use of a nose camera, could fly 50 meters in the air, and could fly as fast as 12 mph. Kizilcay also asserted that the PKK's Sehit Amed School had seven such planes and planned to use them in future attacks against government targets in Turkey. For the RC car, Kizilcay stated that they could be controlled for up to 18.6 miles by use of a nose camera, travel up to 6.2 mph, and carry up to 7.7 pounds of high-yield explosives.



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None of Kizilcay’s claims in regards to RC model toys can be taken seriously. Any nose camera in an RC model airplane, no matter how small, would reduce the carrying capacity of the plane itself. One remote-controlled helicopter on the market claims it can lift about 20 pounds, but retails for over \$10,000 and cannot get more than a few feet off the ground. Most RC model airplanes would be limited to carrying less than 2 pounds of explosives in order to get the plane into the air. The controllers for almost all RC model airplanes (and RC cars) have a range of only about 800 yards and would take tremendous modification to reach the over 18-mile range claimed by Kizilcay. Both the manufacturer’s label and tests on similar RC toys disproved Kizilcay’s outlandish assertions.

RC Model Plane Loaded with Explosives Found in Egypt

On 17 August 2012, Egyptian security personnel found an RC model airplane loaded with explosives at a terrorist hideout in northern Sinai. The plane measured over 40 inches in length



Model plane loaded with explosives found in northern Sinai in Egypt. The plane appears to be a SAPAC F-22 Raptor Jet. (Terrorists’ Interest in RC Aircraft as IED Delivery Platforms. Realtime Analysis and Publishing of IE Data (RAPIDS), 29 October 2012).



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and could be controlled and the explosives detonated by remote control. In addition, the security force found IED switches, wireless doorbells, and an RC toy car. Limited information is available from open sources on the amount of explosives contained in the RC airplane shown above.

Video Showing AQ Members Practicing RC Plane Flying Found in Spain

On 3 August 2012, Spanish security personnel arrested three AQ operatives for planning to attack a British shopping center in Gibraltar with a paraglider while the 2012 Olympic Games were taking place in London, England. Besides the non-conventional attack method planned, the Spanish authorities also discovered a video that showed a member of the same AQ cell practicing how to bomb targets with an RC model airplane. The video showed the RC model airplane taking off, landing, and dropping bombs in an open field.



Model plane on video found in Spain. (Terrorists' Interest in RC Aircraft as IED Delivery Platforms. Realtime Analysis and Publishing of IED Data [RAPIDS], 29 October 2012).

The suspects included two Chechen Russians and a Turkish engineer. One of the two Russians, Eldar Magomedov, was supposedly a former member of the Soviet Union's Special Forces who



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was considered one of AQ's best-trained experts in making car bombs and conducting attacks against aircraft, trains, and underground railroads. Magomedov and the other Russian, Mohamed Ankari Adamov, were both learning how to fly small passenger planes. The Turk, Cengiz Yalcin, was both a paraglider and an RC model plane enthusiast who was also learning to fly a small passenger airplane.

It would be very difficult for any RC airplane operator to drop bombs on a desired target even within the 800-yard range of the controller due to depth perception issues on the exact location of the airplane, judging the speed of the airplane, and estimating the height of the airplane that would affect the exact time to drop the "bombs" in order to hit the intended target.

Raid on FARC Camp in Colombia Finds 9 RC Model Airplanes

In 2002, Colombian authorities raided a camp that belonged to the FARC and discovered nine RC model airplanes. One of the model planes had already been loaded with explosives. Little



Model plane found at FARC camp in Colombia already loaded with explosives. (Terrorists' Interest in RC Aircraft as IED Delivery Platforms. Realtime Analysis and Publishing of IED Data (RAPIDS), 29 October 2012).



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other open source information is available on this event.

Limitations on the Use of RC Airplanes for Terrorist Attacks

- **Weight:** The RC model planes normally weigh from 6 to 8 pounds. They cannot carry too much extra weight in the form of explosives, so the attack would cause more actual fear than damage.
- **Duration:** Many of the RC model planes can only fly four to five minutes before they need to land to refuel.
- **Range:** Most RC model planes must stay within 800 yards of the controller. Outside of that range, the plane cannot be controlled. Instructions on the boxes for the RC airplanes tell the controller to stay within a limited range such as the size of a “football field.”
- **Line-of-Sight:** Most RC model planes require the controller to observe the plane. A terrorist would likely need to keep both his plane and target in sight to even have a slight chance to make a successful attack so the terrorist would need to be within one-half mile of his target.
- **Skill:** If a terrorist planned to “drop” bombs from the RC plane instead of crashing the plane into the target, the chance of hitting a specific target is almost none. Depth perception and timing issues would most likely cause any planned bombing drop from a model airplane to miss its actual target. Even crashing the model airplane into the intended target would take incredible skill by the RC operator.

Analyst Assessment

Although seemingly benign because of the limited amount of explosives they can carry and the limitations on distance from the target, RC airplanes must not be discounted as a legitimate threat. A two-phased attack such as the one planned by Ferdaus would cause much more damage than an RC model airplane attack alone. The model airplane could frighten people into leaving the targeted building, thus enabling terrorists to kill them with conventional weapons such as machine guns and/or grenades. The psychological implications of this type of attack warrant attention, especially since RC airplanes are inexpensive and accessible.



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