

Amir Lechner and Louis Adesso III assess the impact of suicide bombers on the aviation industry

26

27

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TERROR IN THE SKIES

WE ARE all aware of the threat of suicide bombers, a growing phenomenon in today's society. The modern roots of this phenomenon can be tracked to Lebanon of the early 1980s, where a wave of suicide bombings ensued, and has since spread to include attacks in more than 30 countries worldwide.

While several countries in the Middle East (most notably Iraq), Sri Lanka in South-east Asia and the Russian republic of Chechnya still have the highest number of attacks to date, suicide attacks have by no means been limited to countries in any particular economic bracket. Suicide attacks have occurred in the United States, Europe and Africa. One can no longer dismiss suicide attacks as a Middle Eastern problem; both the targets and the repercussions of these attacks are most definitely global.

The suicide attack is one of the most efficient methods of inflicting physical and psychological damage with a minimal financial cost to the attacker. The explosives and materials used in suicide bombings are inexpensive and relatively easy to obtain and assemble.

The suicide bombers themselves are easily recruited from a large pool of willing fanatics, and capable of carrying out their mission with minimal training and no monitoring.

Rather than simply going after a physical target to eliminate personnel or equipment, the suicide bomber's true target is mass psychology. The attack is meant to decrease the confidence of the targeted group or population, damaging their economic stability, political willpower and overall sense of security.

As with all forms of warfare, the method of suicide attack is evolving. Suicide terrorism does not always include the use of explosives. In several past incidents, perpetrators have been responsible for the deaths of innocents by causing an accident, knowing that they have limited or no chance of survival. Such incidents are considered "sacrifice missions". A prime example of such missions would be the 11 September 2001 attacks in New York City and Washington DC, in which the perpetrators commandeered four aircraft with utility knives, using three of the hijacked aircraft as kinetic bombs. A less

elaborate sacrifice mission occurred on 6 July 1989 when a terrorist riding in a bus en-route from Tel Aviv to Jerusalem grabbed the wheel from the driver and sent the bus careening over a steep ravine, killing 16 passengers and wounding many more.

The aviation industry has been targeted for decades by terrorists because it is so critical to modern society. They use methods as varied as hijackings, bombings and missile attacks on aircraft and airports.

As recent attacks have illustrated, aviation security professionals and terrorists are engaged in their own form of arms race. Terrorists attempt to conceive of a counter to every imaginable form of defence. To counter the common X-ray and security search, the 11 September 2001 attackers brought simple, small weapons onto the aircraft, using the aircraft itself as their primary weapon. Although security checks became more stringent after these attacks, several months later Richard C. Reid successfully smuggled an explosive hidden in his shoe onto an aircraft.

While airports around the world have

dramatically heightened their security measures and re-examined their security procedures following the 11 September 2001 attacks, an inventive mind can come up with ways to subvert current security procedures. At most airports in security-conscious nations, where passengers pass through metal detector gates and their carry-on baggage is X-rayed, it is unlikely that one person would be able to pass through security with a ready-to-operate IED. However, several people, each carrying a part of the device that can be assembled onboard the aircraft, can indeed pass through such security checkpoints. Terrorists might carry out a sacrifice mission onboard an aircraft using chemical or biological weapons smuggled inside a beverage or food container. A similar method was successfully employed in a terrorist attack by the Japanese religious cult Aum Shinrikyo (known today as Aleph) on Tokyo's subways on 20 March 1995. A dozen people were killed in that incident, with many more injured.

A similarly inventive mind would then be compelled to come up with solutions to these problems. For example, the

forementioned biological attack could be strongly discouraged with a simple, cost-effective solution: by implementing a general rule that all bottles or containers must not be carried in passengers' carry-on luggage. Passengers may obtain bottled beverages at the departure halls where supply chain security is supposedly observed.

One can divide the threat into two main segments: the device and the delivery system. The device is the actual weapon used in the attack, such as a firearm, explosive device or biological agent. The delivery system is the method used to bring the device past security and onto the aircraft.

With regard to the manner and design of the device, the initiative is always on the side of the attacker. One trip through airport security will show a potential attacker nearly every security measure in place. The device can then be adapted to bypass or subvert these defensive measures.

This is not to say that physical security measures are useless. Far from it; the more physical security checks there are, the more complex any

successful attack must be – and the more complex the plan, the better the chance of failure. But while the effectiveness of physical security measures cannot be denied, it should not be the main focus of an aviation security team. To launch virtually any form of attack on the inside of a passenger aircraft successfully, terrorists need an adaptive, human delivery system. Therein lies the critical advantage aviation security teams have over the terrorists: humans are fallible. It only takes one aviation security professional to notice a high-threat passenger and pull them aside, whereas the terrorist has to pass every security checkpoint, every camera and every security officer without arousing suspicion.

From the perspective of the attacking terrorist, the approach to the target marks the defining moment in the suicide bomber's life. All of their faith, all of the theory and planning and time spent on the attack is about to be tested in an event that will almost certainly result in their own death. This creates stress that most people never experience during their entire life; stress that is likely



Detection better than cure ©Smiths

► to have detectable manifestations.

While it is possible to attempt to create a technological solution (one can envision simple devices designed to measure heart rate and skin conductance becoming part of the security process), the best resource available to any security team is its personnel. Personnel can be trained to spot individuals whose behavior and/or appearance place them in a high-risk group. These people can then be pulled aside for more in-depth searches.

A significant emphasis of aviation security should be placed on the selection of security employees. The El Al security department, for instance, accepts applicants to security positions only if they are current students at academic institutions and have served in the Israeli Defense Force. While these factors do not ensure that the new recruits will become the best security personnel, it is easier to train and get better results from someone who already has a security background. Background checks and interviews should be conducted in-depth. The selected candidates should be treated as if they have just been admitted to an "elite unit," thus boosting their self-confidence and motivation, but at the same time building high expectations for them, emphasising the impact of their work on national security.

Training, therefore, must not be a one-time experience for security employees. In this, the aviation security field would do well to emulate long-term medical training and awareness programs. Training should include an in-

depth understanding of explosives and bomb-making materials. As noted above, the mission of aviation security personnel includes identifying bomb-making ingredients before they are turned into an actual bomb.

Profiling has become a very charged word of late, often taken exclusively to mean racial profiling. While it is nonsensical for a security force to limit its definition of high-risk passengers to a single racial appearance, it is equally nonsensical to eliminate all forms of profiling from its training programme. Profiling can include such skills as determining the difference between a nervous first-time flier and a nervous terrorist, noting suspicious discrepancies in a person's travel documents, or detecting a relationship between persons ostensibly flying separately.

The United States has long been regarded as an enemy of radical Islamist groups throughout the world, a view that has been confirmed by repeated terrorist attacks on US interests, both on and off US soil. The war in Iraq, the ongoing military operation in Afghanistan, and recent arrests of extremist Muslims throughout Europe should be considered inspiration for radical groups to carry out more attacks on the United States and its European allies.

Regardless of the manner in which we choose to meet this threat, we must assume that as our detection methods grow in effectiveness, we can expect a matching increase in the sophistication of the methods of terrorist groups. We therefore need to ensure constant vigilance and ongoing education and research, never resting on our laurels or believing that our security measures are impermeable – they are not. **I**

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Recent suicide attacks and planned attacks on civil aviation

24 July 2001: Approximately 10 separatist Tamil Tiger rebels carried out a suicide attack on Sri Lanka's main military airbase and its only international airport, which are located next to each other just north of Colombo. The rebels accessed the airport grounds dressed in military uniforms. Explosions and automatic gunfire lasted six hours. Five government soldiers were killed in the fighting, and all the guerillas were killed either from military gunfire or from blowing themselves up. Three Sri Lanka Airlines Airbus aircraft and eight military aircraft were damaged beyond repair in the attack.

11 September 2001: Terrorists wielding small knives hijacked four domestic commercial flights. The terrorists assumed control of the aircraft, and flew two into the World Trade Center in New York City, and one into the Pentagon in Washington DC. Passengers on the final aircraft overwhelmed the terrorists, and the aircraft subsequently crashed into a field in Pennsylvania. The World Trade Center was completely destroyed, contributing to the bulk of the attacks' 3,000 casualties.

22 December 2001: During a failed suicide mission, Richard Reid, also known as the shoe bomber, was overpowered by flight attendants and passengers while attempting to ignite an improvised explosive device (IED) hidden in his shoe while onboard an American Airlines Paris-Miami flight.

5 April 2002: Singaporean officials stated that members of the terrorist group Jemaah Islamiyah plotted to hijack an aircraft from Malaysia, Thailand or Indonesia in order to crash it into Changi International Airport in what appears to have been a would-be suicide mission.

24 August 2004: Two Chechen female suicide bombers boarded an aircraft belonging to two Russian air carriers, Sibir Airlines and Volga-Aviaexpress. While both aircraft were in flight, they almost simultaneously detonated smuggled explosives, killing a total of 90 passengers and crew members on both aircraft. Investigations into this incident revealed that bribes were issued to bypass most airport security.

10 February 2006: During a speech to the National Guard Association in Washington, President Bush revealed that an operative of the terrorist group Jemaah Islamiyah, with ties to al-Qaeda, planned to crash an aircraft into the Library Tower – Los Angeles' tallest building – using a shoe bomb. The attack was originally planned for October 2001, but al-Qaeda could not train enough terrorists in time. The plot was foiled in early 2002 when an unnamed Southeast Asian nation arrested a key al-Qaeda operative.