



# GUNPOWDER, TREASON AND PLOT

ON 10 August 2006 it was announced that British security agencies had thwarted a terrorist plot to blow up to ten transatlantic flights using bombs composed of a liquid explosive. The terrorists' plan was reportedly to detonate the explosives onboard American carriers enroute to the United States, waiting until the aircraft were over major metropolitan areas in the hope of creating ground casualties. The attack was to involve waves of synchronised attacks using three aircraft per wave. During their initial sweep, authorities arrested 24 suspects of Pakistani descent in London, Birmingham and High Wycombe, and are most likely searching for others. Pakistani authorities arrested an additional 17 suspects in Pakistan.

The number of would-be bombers and the sophistication of their plan bear the hallmarks of al-Qaeda. Recent reports from Pakistan indicate that officials believe this plan was at least endorsed by the umbrella organisation, despite earlier reports that none of the arrested individuals have participated in terrorist training camps. The suspects appear to be members of a home-grown cell in the UK whose members taught themselves the art of explosives from books and the Internet. On 14 August, British authorities downgraded the country's threat level to severe, citing intelligence that an attack was not imminent. However, the alert level remained at severe, indicating that an attack remained highly likely.

The opening salvo of the Jihadist terrorist campaign in the UK came with

the July 2005 attacks, both of which were carried out by UK home-grown cells. The UK has of late become a high-priority target for terrorists, largely due to its involvement with US activities in Iraq and Afghanistan. However, it would be a mistake to consider this most recently foiled plot a "local" problem.

Although airports around the world have dramatically heightened their security measures and re-examined their security procedures following the 11 September 2001 attacks, it is not surprising that civil aviation aircraft were selected again as targets for suicide bombers. As a critical part of any country's infrastructure, the aviation industry has been targeted for decades by terrorists, using methods as varied as hijackings, bombings and missile attacks on aircraft and airports. Attacks on civil aviation interests damages public confidence, economic stability, political willpower and overall sense of security, while providing the terrorists with extensive media coverage.

The threat presented by liquid explosives is real, a fact known by security agencies throughout the world for quite some time. A liquid explosive was used in the bomb that exploded onboard a Philippines Airlines flight on 11 December 1994 enroute from Manila to Tokyo. The nitroglycerin bomb, hidden in a contact lens case, detonated in mid-air. The explosion tore a two square-foot hole in the aircraft fuselage, killing a Japanese businessman and injuring five other passengers. The Captain of the Boeing 747 made an

emergency landing in Okinawa. It was later revealed that Ramzi Yousef (who was among the masterminds of the 1993 attack on the World Trade Center in New York) was a passenger on the aircraft. While the Abu Sayyaf Group took responsibility for the attack, it is believed that the bombing of the flight was an al-Qaeda dry run for a much larger plot to detonate bombs on 11 US-registered aircraft over the Pacific Ocean, known as Operation Bojinka.

Investigators of the 29 November 1987 downing of Korean Air flight 858 believe that liquid explosive (Picatinny liquid explosive or PLX) was one of the chemicals responsible for the air disaster. Investigators suspected that North Korean agents planted a bomb aboard the Boeing 707 using liquid explosive concealed in an alcohol bottle carried aboard the aircraft in a carry-on bag. During the flight's second leg the aircraft, which was carrying 115 passengers and crew, exploded over the Indian Ocean, killing everyone onboard. The terrorists had left the carry-on bag on the aircraft before disembarking. Authorities detained the agents – a father/daughter team – in Bahrain, where they attempted suicide by swallowing cyanide ampoules concealed in cigarette filters. The 70-year-old agent died but the younger female agent survived the attempt.

X-ray machines currently used at airports cannot reliably differentiate between beverages and liquid explosives. As such, the initial reaction to the UK plot was an outright ban on all forms ►

# GUNPOWDER, TREASON AND PLOT

► of liquids from carry-on luggage. While there are machines that can detect liquid or gel-based explosives, they are not commonly employed at airports due to both the cost and the significant increase in screening time the additional equipment would require. An explosive detector would require every piece of carry-on baggage to be placed in a special drawer for analysis. Also, many of the machines produce a relatively high number of false-positive alarms, slowing down the screening process further.

In March 2006 it was revealed that investigators for the US Government Accountability Office conducted tests between October and January to determine how vulnerable US airlines are to suicide attacks using cheap, readily available materials. All 21 of the airports tested failed. Despite some of the investigators' carry-on baggage being swabbed for chemical testing, all of the bomb materials made it to the passenger cabin.

A report named "Detection of Explosives on Airline Passengers: Recommendations of the 9/11 Commission and Related Issues" dated February 2005 warned that many existing chemical detection mechanisms are slow, expensive and unreliable. The report specifically mentioned devices that use puffs of air to dislodge particles from luggage surfaces and tested the particles for explosive residue. These machines cannot detect "novel" or "binary" explosives (for example, a chemical that needs to be combined with another chemical to become volatile), and they can be subverted by taking precautions to ensure no explosive residue has a chance to come into contact with luggage or clothing surfaces.

There are many different chemicals that can be combined to create explosives, making detection by security screeners quite a challenge. In the short term, it is likely that passengers will simply have to endure the ban on most liquids. But there are solutions that could be implemented to increase the chances of detecting dangerous chemicals. These solutions should be implemented as rapidly as possible; long lines at airports can become terrorist targets in themselves, as evidenced by the July 2002 attack in Los Angeles airport.



*Extra security measures are still in place in many airports* ©Getty Images

A simple solution would be to divide the security checkpoints into "liquid" and "non-liquid" lines, allowing passengers the option of a faster screening by choosing to not bring liquids on their carry-on baggage. Any passenger attempting to carry a liquid through the faster "non-liquid" checkpoint would be subject to additional screening and sent to the back of the slower "liquid" line. This should dissuade those simply wanting a faster line.

Passengers wishing to carry on liquids would be made to place a sample of each liquid directly into a chemical detector. This eliminates the "clean room" method of getting around machines that only check surfaces, and provides the screener with the opportunity to visually examine the liquid for discrepancies. For example, a bottle of contact lens fluid producing a thick yellow gel is highly suspect.

The best solution, of course, is to improve screener training in the area of passenger profiling. This is not to be confused with simple racial profiling, but rather involves detecting physiological nuances that may reveal a terrorist by his actions well before he or she is subjected to the technological barrier. Even something as simple as excessive sweating in a cold, air conditioned airport could provide the key tip to a trained screener.

Simple racial screening is unreliable,

as it provides an easy blueprint showing which terrorists should not attempt to slip by security. For example, in 1986 terrorists used a pregnant Irish woman to smuggle explosives onto an aircraft. On the other hand, Richard Reid, the failed "shoe bomber", was delayed by alert security agents due to suspicious behaviour but was later released. His case can also be used to demonstrate that terrorists will continue to develop ingenious ways to bypass technology, making the training we give our security personnel of primary importance in the ongoing struggle with those who would seek to destroy our commercial aircraft.

Lastly, a critical necessity is the standardisation of security technology and training throughout the world. All the improved security measures in the US and the UK can be easily negated if the airports in other countries are more permeable. Terrorists have been known to learn from their mistakes. **I**

*Amir Lechner is the director of the Aviation Assessment Division, which provides safety and security reviews of commercial airlines and charter operators. He served in the field intelligence of Israeli Defense Forces (IDF). He moved to the United States in 1991, where he was recruited to the security department of the Consulate General of Israel in New York City.*