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Enhancing Aviation Security: Using Smart Security and TOPSIS

By Eugene EG Tan and Damien D. Cheong

Synopsis

The alleged attempt to bring down Daallo Airlines Flight 159 on 2 February 2016 was the latest in a long line of politically-motivated terrorist attacks on the aviation industry. Smart Security and TOPSIS could be employed to enhance aviation security.

Commentary

THE ALLEGED attempt to bring down the Somali-owned Daallo Airlines Flight 159 flying out of Mogadishu on 2 February 2016 was the latest in a long line of politically motivated terrorist attacks on the aviation industry. Preliminary investigations named al-Shabaab, an al-Qaeda affiliate, as the primary suspect in the incident, and traces of TNT were detected around the blast area. There was significant damage to the plane - a gaping hole in the fuselage - but the pilots successfully returned the stricken plane to its airport of origin, Mogadishu, with the only loss of life that of the suicide bomber.

In October 2015, Metrojet Flight 9268 was en route to Moscow from Sharm el-Sheikh when it was allegedly brought down by an improvised explosive device. Intelligence reports from Russia, United Kingdom, and the United States suggest that the bombing of the Metrojet was carried out by the self-styled Islamic State (IS). Although the view of terrorism being the cause of the crash has been disputed by Egyptian investigators, no other plausible causes have been surfaced as to why Metrojet 9268 crashed abruptly in good weather.

Aircraft as Prime Targets

Historically, commercial aircraft have often been prime targets for groups/people with political vendettas. In the 1970s, for example, aircraft hijacking was a major tactic used by armed groups such as the Popular Front for the Liberation of Palestine (PFLP). In recent times, the September 11 attacks underscored how the aircraft itself could be used as a weapon.

Although security has been enhanced throughout every facet of air travel from intrusive passenger screening to the installation of complicated locking mechanisms on cockpit doors, it appears that individuals/groups are not deterred from attempting to use aircraft, and more importantly, passengers as leverage in political conflicts.

This can be seen from several instances where individuals have attempted to use creative means to get past security. Just months after 9/11, a British national who affiliated himself with al-Qaeda, Richard Reid, tried to ignite a bomb hidden in his shoe, only to be foiled by an attentive flight attendant. In 2009, a Nigerian man, Umar Farouk Abdulmutalib, hid explosive material in his underwear, but the bomb failed to ignite properly.

Focussing on the Minutiae

Aviation security has been reactive thus far; strategies have largely been premised on past incidents, and tip-offs on potential threats. Baggage reconciliation, for example, whereby airlines ensure that a passenger who has checked-in luggage is actually on-board the flight, was only introduced after the Lockerbie bombing. Similarly, shoe checks and liquid and gels restrictions were put in place only *after* failed bomb plots.

In the Metrojet case, the bomb allegedly used to bring down the plane was concealed in a soda can, something commonly found in planes. Although passengers are forbidden to bring liquids and gels up to a certain size on the aircraft, there is a possibility that the soda can could have been smuggled on board.

According to various news reports, cameras monitoring baggage handling at the airport were allegedly off half the time, and it was easy to pay officials to skip the security checks altogether. In the Daallo Airlines case, Somali investigators have identified a laptop-like device being passed, possibly with complicit airport workers, to the alleged bomber after he had cleared security checks.

Smart Security and Threat Oriented Passenger Screening Integrated System (TOPSIS)

A comprehensive and future proof relook of aviation security is therefore necessary to ensure that all airports, regardless of size and location, have rigorous security regimes that significantly minimise human error. Smart Security, an initiative by the Airports Council International (ACI) and the International Air Transport Association (IATA), is a revolutionary checkpoint system that envisages the centralisation of baggage imaging offsite, the use of less intrusive secondary scanning techniques, and the heightened use of risk-based assessments to improve security effectiveness, passenger experience and operational efficiencies.

This system is based on the theory that by removing the interaction between the person scanning and the person being scanned, there is less chance of collusion among individuals, as seen in the Daallo Airlines case. This concept is being tested in some major airports around the world, such as Amsterdam Schiphol and London Heathrow.

The use of risk-based assessment, however, remains the primary point for maintaining a rigorous security regime at airports, irrespective of the amount of technology available. Singapore currently co-opts all personnel working at the airport as part of its Threat Oriented Passenger Screening Integrated System (TOPSIS) in addition to having sophisticated security screening systems to prevent threats.

This system ensures that all airport personnel have a part to play in ensuring the overall security of the airport, and to detect any suspicious activity in the airport. By putting the responsibility of policing onto the airport community, TOPSIS also ensures that behavioural changes or suspicious activity among airport personnel can be detected, reducing the possibility of insider threats.

The different threat perceptions that each individual working in the airport might have can improve the threat detection capabilities in airports. The shoe bomber, Richard Reid, was initially denied boarding by airport authorities in Paris the day before the failed attack based on his dishevelled looks and lack of check-in baggage. Though Reid was ultimately allowed to board, the initial assessment made by airport officials flagged him as a suspicious character.

TOPSIS, with Smart Security, can thus form the basis of a lasting airport security system, with many eyes on the ground, yet reduce the potential collusion with airport officials. The recent spate of IEDs brought onto planes because of collusion is worrying to international aviation, and swift action needs to be taken to ensure another IED does not get on board another aircraft.

The implementation of TOPSIS and Smart Security is costly and requires specialised training of airport staff. These may not be feasible or viable to many countries, yet a strong case can be made for implementation given that aircraft are still prime targets of armed groups. A cost-sharing method between IATA, the country and the airlines could be a way to overcome this challenge. But ultimately, industry as well as government should be moving from reaction to pre-emption where aviation security is concerned.

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