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11/22/2010

aviation security expert Sheldon Jacobson

Sheldon H. Jacobson, a U. of I. computer science professor and expert on aviation security, discusses what the future of airport security screening might look like, and what can be done to eliminate the threats of today, with **News Bureau reporter Phil Ciciora**.

If aviation security checkpoint operations could be re-created from scratch, what would they look like? What technologies would they require, and how effective would they be?



Aviation security screening can be summarized into the three I's: Items (threats), Identity (passengers), and Intent (people). Screening for threat items and validating passenger identity are essentially just surrogates for measuring the intent of people to cause harm within the air system.

Advanced imaging technologies such as full-body scanners and explosive trace devices are deployed to prevent threat items from being carried onto airplanes, while checking government-issued IDs and developing terrorist-watch and no-fly lists are designed to keep individuals with malicious intent from gaining access to airplanes.

However, what's really needed are better methods to measure intent. The Screening Passengers by Observation Techniques (SPOT) program and behavioral screening are moves in this direction. A new paradigm of thinking is required to create technologies and procedures that can accurately anticipate nefarious intent.

What would the checkpoint of, say, 2030 look like relative to what's in operation in 2010?

There will be a radical shift away from screening for items and more focus on identity and intent screening. The checkpoint of 2030 would have a sizeable proportion of passengers requiring no threat-item screening at all. Pilots are an obvious group that would be exempt from threat-item screening, but others, for which identity and intent screening place them in the non-threat category, would also be exempt or subject to minimal threat-item screening.

If threat-item screening is used across a broader group of passengers, it will be done in real-time as passengers move towards their departure gates. Significant technological advances will be required to make this possible, far beyond the current antiquated paradigm in operation today.

Generally, how effective are full-body scanners and pat-downs?

They are effective for what they are intended to do – namely, screen for threat items. They are also symptomatic of the incessant rush to stop threat items, rather than rethink aviation security strategies so that such devices and approaches can be more effectively utilized.

For example, using full-body scanners for primary screening serves only to slow airport screening operations, and make it even more difficult to identify people who may have malicious intent.

If a pre-screening system coupled with SPOT were used along with behavioral screening to identify people who cannot be cleared of malignant intent, then full-body scanners and pat-downs are appropriate. Using such approaches for primary

screening is ill-conceived and symptomatic of the TSA's limitations in dealing with new and emerging threats to the system.

In light of the events in late October, when a printer cartridge was shipped as an improvised explosive device, should we be focusing our attention more on finding suspicious objects instead of suspicious people?

Absolutely not. The printer cartridge was prepared by people; knowing who passengers or shippers are is critical in keeping the system safe and secure.

There is a large and growing list of threat items, which will always stay ahead of the technologies deployed at airports. What remains are the people behind the threat items and their intent to inflict harm to the air system.

On the TSA's recent decision to ban toner and ink cartridges, a former CIA officer said that the U.S. always seems to be trying to stop the last event after it's already happened. Do we need to inject a measure of creativity into the screening process?

Creativity and reason. If we keep chasing yesterday's threat, we will be destroyed by tomorrow's terrorist attack. Keeping perspective and setting appropriate priorities on the goals of aviation security will make the system more secure for everyone.

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