

Terrorism risk greatest for subway/rail commuters, says MIT paper at INFORMS conference

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Despite homeland security improvements since September 11, 2001, subway and rail commuters face higher risks of falling victim to terrorists and mass violence than frequent flyers or those engaged in virtually any other activity. And while successful criminal and terrorist acts against aviation have fallen sharply, those against subways and commuter trains have surged. These are among the findings of a new study by Arnold Barnett, George Eastman Professor of Management Science at MIT's Sloan School of Management, who will deliver a presentation titled "Has Terror Gone to Ground?" at the INFORMS Annual Meeting in Phoenix on October 15.

Barnett found that during the period 1982-91 deliberate acts of malice caused 1,327 deaths worldwide among [air travelers](#), but none on subways/commuter trains. But between 2002-11, the pattern reversed: there were 203 aviation deaths and 804 among subway/rail commuters.

Further statistics depict the implications of this reversal. A recent subway/rail commuter in the Developed World has faced twice the annual [death risk](#) of a frequent flyer, while the risk per mile traveled by subway/commuter rail was ten times as high as by air. Criminal and terrorist acts account for about 8% of the overall death risk of air travel, but they account for 88% of the [mortality risk](#) on subways and commuter railroads.

Barnett contends that this reversal does not imply that aviation security measures are less necessary; instead, it might suggest that the success of such measures has displaced criminal/terrorist activity to other venues like commuter rail systems.

Barnett paid special attention to the events on 9/11. He noted that the number of air passengers killed on that day—at 232—was similar to the death tolls in later bombings on the commuter rail systems of Madrid and Mumbai, and in an arson attack on a South Korean subway. What made 9/11 singularly horrible was the enormous death toll on the ground (2,700 killed).

Subsequent measures to secure airline cockpits may be the reason that there have been no further attacks that used commercial airlines as weapons. Indeed, Barnett notes, the most publicized of the recent air-terror plots—the shoe bomber, the underwear bomber, the liquid-explosives plot, the ink-cartridge bombs—have reverted to trying to blow up airplanes, the primary tactic that was used before 9/11 with greater success.

Barnett notes that even among subway/rail commuters, the risk of falling victim to terrorism or mass violence was very low in the last decade, at approximately 1 in 2 million per year. But because successful terrorism has such far-reaching consequences, Barnett argues, the prevention of rail terrorism warrants high priority. Stopping attackers once they reach stations and trains has proved difficult, so the most realistic way to prevent attacks might be to uncover and thwart terror plots at earlier stages. It was good intelligence work that averted a planned 2009 attack on the New York subway, not security measures at Times Square or Grand Central Terminal.

The [INFORMS annual meeting](#) will take place in Phoenix from Sunday, October 15-Wednesday, October 17. Over 4,000 academics and

professionals are scheduled to attend the conference.

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