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Submitted January 29, 2018, to the House Homeland Security Emergency Preparedness, Response, and Communications Subcommittee and Transportation and Protective Security Subcommittee

Chairman Katko, Chairman Donvovan, Ranking Members Watson Coleman and Payne, and distinguished members of the Homeland Security Committee, thank you for inviting me to testify on the important topic of surface transportation security.

Public surface transportation offers terrorist attackers crowds of people concentrated in easily accessible (and escapable) venues. While sabotaging railroad tracks and other right-of-way infrastructure often may be intended as merely disruptive, terrorists see trains, transit systems, and buses as killing fields where attacks are intended to result in large-scale casualties.

Over the past 20 years, the Mineta Transportation Institute (MTI) has built and updated a detailed database that now contains more than 5,000 attacks on public surface transportation (primarily buses, trains, stations, and passenger ferries) since 1970. This database, which supports the Transportation Security Administration's (TSA's) analysis, as well as MTI's own reporting, provides a basis for assessing patterns and trends in terrorist tactics, targeting, and techniques.

My remarks today are largely based on observations from this database. I will focus on the terrorist threat and therefore the relevance of the proposed security measures.

Just yesterday, Secretary of Homeland Security Nielsen underlined that "America is at war" with jihadists worldwide who continue to direct, assist, and inspire attacks. She went on to say that the United States had seen a spike in terrorist attacks and that terrorist were increasingly targeting soft targets which have to be hardened.

Terrorist attacks on aviation have declined, although some terrorist groups remain fixated on sabotaging airliners, attacks targeting public surface transportation have increased. However, the shift from airlines to trains and buses and the underlying reasons are more complex than mere target substitution. Since 9/11, there have been 27 attacks (hijackings and sabotage attempts) on airliners and 110 attacks on airports. Attacking airports instead of airliners may be target substitution. Attacks on airliners resulted in 496 fatalities, while attacks on airports resulted in 195.

During the same period, 2,828 attacks targeted public surface transportation targets, (not including infrastructure) resulting in 7,524 deaths. That is an average of about three fatalities per attack, but it is noteworthy that 14 attacks resulted in 50 or more fatalities each. These are roughly equivalent to 6 "hull losses" or airline crashes. Examples include the 2004 Madrid commuter train bombing, which left 191 dead; the 2005 London

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transport bombings, which killed 52; and the 2007 Mumbai train bombing, in which 207 were killed.

Since 1970 the majority of attacks on surface transportation have taken place in developing countries, which have experienced approximately 4,500 such attacks. These attacks also are more lethal than attacks elsewhere. Europe has experienced 492 attacks since 1970, and the United States and Canada together have suffered 65 attacks, almost half of which were directed against passenger trains, stations, and buses. However, since 9/11, more than 80 terrorist plots against all target categories have been uncovered in the United States, along with more than 21 attacks inspired by jihadist ideology, and surface transportation has figured prominently in their plans.

Law enforcement authorities in the United States have done remarkably well in intercepting terrorist plots. Between 9/11 and 2017, the FBI, working with local police, uncovered and thwarted about 80 percent of all homegrown jihadist plots, often through undercover operations.² These plots provide a window into terrorist targeting preferences—and surface transportation features prominently.

Since 9/11, two surface transportation attacks were actually attempted. In October 2017, an armed white supremacist entered a secure area of an Amtrak passenger train engine and triggered an emergency stop. He was overpowered by train personnel and held for arrest; his ultimate intentions are not known. In December 2017, Akayed Ullah, inspired by ISIS ideology, detonated a crude pipe bomb attached to his body at a busy bus terminal in New York City. The device malfunctioned, injuring only the bomber.

Surface transportation targets were identified by terrorists in at least ten additional reported terrorist plots in the United States. Canadian police also arrested two men charged with plotting to derail a passenger train between Toronto and New York. In addition to these plots, at least one terrorist attack and several shootings by mentally unstable individuals occurred in the public areas of airports.

Few of these interrupted plots reflected mature operational plans. As indicated, only two terrorists succeeded in making an actual attempt on surface transportation targets, and they achieved little result. Several plots were police “stings,” in which the perpetrators identified the transportation targets. However, at least one plot, a planned multiple-attacker suicide bombing in New York in 2009, can be considered a close call. The plot’s leader, who had trained in Afghanistan, reportedly had built suicide vests but destroyed them when he suspected police were about to close in. Collectively, the many plots indicate continued terrorist interest in targeting surface transportation.

Fortunately, America’s post-9/11 cohort of homegrown terrorists have not proved to be especially competent. Their plots, for the most part, can be described as aspirational. Their desire to belong exceeds their concerns about their own security and they end up joining what turns out to be the “FBI branch” of al Qaeda or ISIS. Their bombs seldom work. In two of four bombing attacks, the device did not detonate as expected. In the third attack—the Boston Marathon bombing—the terrorists’ two bombs killed three

² Brian Michael Jenkins, *The Origins of America's Jihadists*, Santa Monica, Calif.: RAND Corporation, 2017.

persons, although many were injured. In a fourth jihadist attack involving bombs in New Jersey and New York, 20 were injured, none were killed. This gives U.S. Jihadist bombers an FPA (fatalities per attack) that is only a fraction of the world average.³ Most jihadist terrorist bombings in the United States are one-offs—there is no learning and no improvement in skills.

Through their on-line publications, jihadist terrorist groups have urged followers to attack transportation systems. In 2017, both al Qaeda and the Islamic State of Iraq and al-Sham (ISIS) encouraged attempts to derail trains, a long-time ambition of Osama bin Laden. Al Qaeda in the Arabian Peninsula (AQAP) added to its exhortation instructions on how to build a derailing device. Thus far, there has been no noticeable increase in attacks aimed at derailment, however, on Sunday, January 21st, a TGV high-speed train hit a concrete block placed on the rail line in the South of France. Two other blocks reportedly had been placed on the tracks. The train did not derail. French authorities are currently investigating whether there is a nexus to terrorism.

While terrorists have traditionally attacked unprotected targets, they have historically preferred venues with some symbolic importance. That is less and less the case as terrorists move toward what might be called “pure terrorism,” attacking assemblies of people or individuals anywhere, killing simply to participate in bloodshed and make the point that no one is safe anywhere. ISIS, in particular, has attracted self-selecting terrorists whom it encourages with the promise of applause and ex post facto membership.

Bombings, armed assaults, and derailments lead the list of tactics employed against surface transportation worldwide, accounting for approximately 77 percent of all types of attacks and 74 percent of all fatalities. Bombings account for approximately 58 percent of attacks and 51 percent of fatalities. Armed assaults are individually more lethal. They account for about 11 percent of all attacks and 18 percent of all fatalities. We also see a growing number of primitive attacks involving knives and hatchets. Derailments, using bombs or mechanical means of sabotage, constitute almost another 8 percent of all attacks and account for 5 percent of total fatalities.

Although vehicular attacks are not, strictly speaking, attacks on public surface transportation, they are increasingly employed by terrorists worldwide (and some vehicular assaults abroad have been directed against surface transportation targets, for example, driving cars into bus stops or buses).⁴ Both al Qaeda and, more recently, ISIS have urged their followers to drive into crowds of pedestrians. A deadly vehicle attack took place in New York in October 2017, when an individual inspired by ISIS veered a rented truck on to a bike path, killing eight people. Ten such attacks took place between 1996 and 2013, but since 2014, the pace has quickened, with more than 40 vehicular assaults. More than 20 of them occurred in 2017 alone. More than 150 people have been killed by homicidal drivers in the past 19 months, and nearly 800 have been

³ All statistics derive from MTI’s database.

⁴ Brian Michael Jenkins and Bruce R. Butterworth, *Terrorist Vehicle Attacks on Public Surface Transportation Targets*, San Jose, Calif.: Mineta Transportation Institute, 2017.

injured. Seven such attacks have occurred in the United States since 2006. Vehicular assaults pose a major problem for urban planners.⁵

It is difficult to assess the effectiveness of security measures against terrorism. Terrorist attacks are statistically rare and random—there are too few, and they are spread over too many target categories and countries to allow empirical evaluation. Moreover, security measures don't "catch" would-be-attackers like insects in a net. Few attacks are visibly prevented by security.⁶

Nevertheless, it is possible in some cases to discern deterrent effects. For example, as security to protect commercial aviation has increased over the years, there has been a corresponding decline in the number of attempted airline hijackings and bombings. A majority of these since 9/11 have involved mentally unbalanced individuals who, in fact, smuggled no weapons or explosive devices on board, but claimed to possess bombs. By the nature of their mental condition, they would not be easily deterred. Finally, most of the recent events have occurred outside of the United States and Europe, in places where security is less stringent. All of this suggests that deterrence has been effective.⁷

Analysis of foiled terrorist plots, in which apprehended terrorists were questioned about their target choices and planning considerations, has provided some indications of how adversaries evaluate security measures. Terrorists demonstrably favor soft targets where they do not have to penetrate protected perimeters and are unlikely to encounter armed guards. There are ample public spaces that meet these criteria. Anecdotally, we know that terrorists are sometimes aware of CCTV and may try to disguise their reconnaissance efforts. The visible presence of police and other security personnel has caused them to delay attacks.⁸

The terrorists may presume that some kind of surveillance is in place—for example, the presumption of undercover police adds to uncertainty, which adversaries generally abhor. This suggests that robust security presence operating in unpredictable ways, accompanied by the impression that more security personnel might be present, contributes to deterrence, although the actual effect cannot be calculated.

One aspect of security merits further examination and effort. "See something, say something" works and the rate of reporting has been increasing. Observations and reports of suspicious activities or objects by employees, passengers, or others have enabled authorities to prevent 11 percent of terrorist attacks and to disarm or destroy 20 percent of terrorist bombs. Public education programs and intensified campaigns to engage staff and passengers may be able to further improve this performance.

⁵ Brian Michael Jenkins, "Navigating the Latest Terrorist Trend," *U.S. News & World Report*, December 19, 2017.

⁶ Brian Michael Jenkins, *The Challenge of Protecting Transit and Passenger Rail*, San Jose, Calif.: Mineta Transportation Institute, 2017.

⁷ Brian Michael Jenkins and Bruce R. Butterworth, *The Threat to Air and Ground Transportation Posed by Mentally Disordered Assailant*, San Jose, Calif.: Mineta Transportation Institute, 2017.

⁸ Brian Michael Jenkins, *Carnage Interrupted: An Analysis of Fifteen Terrorist Plots Against Public Surface Transportation*, San Jose, Calif.: Mineta Transportation Institute, 2012.