

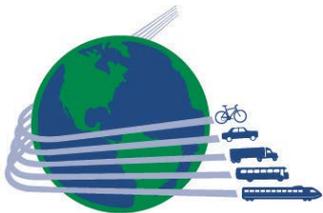
NATIONAL TRANSPORTATION SAFETY AND SECURITY CENTER

TRENDS IN TERRORIST ATTACKS ON RAIL TARGETS AND THE POSSIBLE ROLE OF INSIDERS IN FUTURE ATTACKS

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WORRISOME TRENDS OVERALL

- * **Jihadist networks, including al Qaeda and the Islamic State, have expanded across Middle East, North Africa, and South Asia**
- * **Conflicts in Syria and Iraq will be a continuing source of terrorism worldwide. These have attracted an estimated 30,000 foreign fighters, including more than 5,000 from Europe, North America and Australia—an estimated 30 percent have returned to Europe.**
- * **The United States and Europe are back at war, engaged in a bombing campaign directed at the Islamic State and other jihadist groups, which will increase the threat of retaliatory terrorist attacks.**

(cont.)

- * **We are seeing a Taliban resurgence as the foreign forces withdraw from Afghanistan.**
- * **The declaration of an Islamic State has excited and emboldened Islamist extremists worldwide, injecting new spirit into individuals who disengaged from terrorist activities years ago.**
- * **Terrorist attacks and plots involving both homegrown terrorists and fighters returning from jihadist fronts are increasing in Europe and stretching counter-terrorist resources.**
- * **These terrorist attacks are also provoking backlashes that could lead to violence and exacerbate social tensions.**

TACTICS AND TARGETS REMAIN UNCHANGED OLD TACTICS STILL WORK

- * **Bombings remain the most prominent tactic and the source of most casualties.**
- * **Over the long run, terrorist attacks on surface transportation targets are becoming more successful--the most effective terrorist bombers are delivering more bombs to their targets and are achieving more lethal results.**
- * **Lethality is increasing in attacks by jihadist and non-jihadist groups, although attacks by jihadist groups are more than three times more lethal.**

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- * **Suicide attacks comprise a small but increasing proportion of the total number of attacks, and are usually a more lethal tactic, but not always so.**
- * **High lethality attacks have increased. Attacks (on trains and buses) with 25 or more fatalities grew from two between 1975-1985, to nine between 2005-2015.**

REGIONAL DISTRIBUTION

- * **Between January 1, 1970 and December 31, 2015, the MTI database has recorded a total of 4,690 terrorist and serious criminal assaults on all public surface transportation targets (trains, buses, ferries) worldwide.**
- * **The countries of South Asia, especially India and Pakistan, account for 1,274, or 37.4% of these attacks.**
- * **The Middle East follows with 810 attacks, or 23.8% of the total, and Southeast Asia with 319, or 9.4% of the total.**

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- * **Not only the sheer number of attacks that is relevant here, but also their average lethality.**
- * **Attacks in South Asia, for example, killed an average of 3.6 people per attack, while in Western and Eastern Europe, the ratios were significantly less—1.4 and 0.7 respectively.**

TRENDS IN ATTACKS ON SURFACE TRANSPORTATION TARGETS IN EUROPE AND NORTH AMERICA

- * Although attacks in Europe are few compared to South Asia and other regions, the volume of attacks on both train and bus targets has been increasing since 1970.
- * At same time, the lethality of all these attacks has decreased owing to the increased volume of low-level attacks.
- * Lethality here refers to the overall average of fatalities per attack. If the volume of attacks increases while the number of attacks with one or more fatalities climbs slower or declines, the average number of fatalities per attack will decline.

(cont.)

- * **Countries in Western Europe account for 313 of the attacks, or only about 9% of the total.**
- * **Another 48 attacks (1.4%) occurred in the countries of Eastern Europe, bringing the European total to 361 (about 11% of the total).**
- * **This figure includes the Baltic States, but not Russia or the other countries of the former Soviet Union.**
- * **Spain accounts for 103 of the attacks in Europe, followed by the United Kingdom with 62 attacks, France with 39 attacks, Germany with 29, Italy with 28, and Greece with 23.**

TRAJECTORY OVER TIME

- * The number of attacks trends upward from the 1970s to around the turn of the 21st century.
- * Spain reaches a high point in 2001, with 17 attacks. The UK reaches its high point in 1992, with eight attacks, and France in 1995 and Germany in 2003, each with five attacks.
- * Around 2001, when the total number of attacks reaches a high of 27, the volume begins to decline but generally remains above the high points of the 1970s and 1980s.
- * Overall, since 1970, terrorists have attacked trains and train stations more frequently than they have attacked buses.

BOMBINGS IN ENCLOSED SPACES CAUSE MOST CASUALTIES

- * **The deadliest incidents occurred in enclosed environments: Subway trains and underground subway stations, and enclosed surface train stations.**
- * **Although there were only 46 (13%) of the 361 attacks in these enclosed environments, they account for 345 (71%) of the 485 fatalities and 2,958 (72%) of the 4,125 injuries.**

(cont.)

- * **Bombings were the most frequently employed terrorist tactic; 243 (67%) of the 361 attacks involved improvised explosive devices (IEDs), vehicle-borne improvised explosive devices (VBIEDs), improvised incendiary devices (IIDs), grenades, or other explosives—they caused 458 (or 95%) of the 485 fatalities.**
- * **While this is roughly the pattern of attacks worldwide, 65% of which were bombings, the percentage of fatalities caused by bombings of surface transportation targets worldwide is much higher—94% versus 70% for terrorist attacks against all target categories.**

THE CHANGING FACE OF THE ADVERSARY: THE LOW-LETHALITY GROUPS

- * **The terrorists carrying out the attacks in Europe comprise a diverse group of actors with diverse motives.**
- * **The Provisional Irish Republican Army (PIRA) and similar groups, and Basque separatist terrorists (ETA) together account for 149 attacks.**
- * **There were 47 PIRA attacks.**
- * **The Basque campaign accounted for 102 attacks, with 25 claimed by or specifically linked to Basque terrorists, and another 77 attacks unclaimed but assumed to be connected with the Basque campaign.**

(cont.)

- * **PIRA conducted a 28-year terrorist campaign from 1973 to 2000, with only four attacks taking place after that year. Ten of the PIRA attacks resulted in fatalities.**
- * **The PIRA was willing to kill, but worried about alienating perceived constituents. This made it cautious about the level of violence.**
- * **The same is true of the ETA in Spain. Although responsible for numerous attacks, most ETA attacks were carried out against empty trains, buses, and stations. The attacks were intended to demonstrate capabilities, cause fear and disruption.**

(cont.)

- * Only two out of 102 attacks on transportation targets by Basque separatists caused any fatalities—a total of four deaths.
- * Therefore, both PIRA and ETA can be placed in the low-lethality group of adversaries.

OTHER LOW-LETHALITY ATTACKERS

- * **Attacks by armed separatists and Marxist terrorist groups in Europe have declined in recent years.**
- * **Others in the low-lethality category include anarchist groups and those motivated by specific issues such as opposition to nuclear power or protection of the environment.**
- * **These almost always are intended to cause disruption and make a political point rather than to kill. Such attacks have increased in recent years.**
- * **Taken together, attacks claimed or attributed to these low-lethality groups are responsible for 216 (or 60%) of the 361 attacks but only 77 (or 16%) of all fatalities.**

HIGH-LETHALITY GROUPS

- * **The second broad category comprises those whose worldviews loosen any self-imposed constraints on their violence. They appear determined to achieve high body counts.**
- * **This category includes the rightwing extremists who, with just 16 attacks, were responsible for 24% of all fatalities in Europe.**
- * **Also in this category are the so-called jihadist groups, including al Qaeda and the Islamic State, which are responsible for just 11 attacks but 50% of all fatalities.**
- * **The determination to kill in quantity reflects ideological views—that the violence is sanctioned by God—with fewer concerns about earthly constituencies.**

(cont.)

- * **Their attacks include the 2004 bombing (involving 13 devices) of a commuter train in Madrid in which 191 people died and the 2005 bombings targeting London's transport system in which 52 people were killed by four bombs. (The 2016 Brussels attack now adds 32.)**
- * **Of the 11 jihadist attacks through 2015, only two killed anyone, but spectacularly. These are the Madrid and London attacks, which were inspirational and led to a number of jihadist plots to carry out similar bombings on trains and in train stations.**

(cont.)

- * **This is evidenced in the Brussels attack.**
- * **Failed attempts or interrupted jihadist terrorist plots indicate a continuing threat.**
- * **Following the July 7, 2005 bombings in London, a separate jihadist cell attempted to carry out a second round of suicide bombings on London transport on July 21, 2005. However, their devices failed to detonate.**

(cont.)

- * **Two explosive devices planted aboard German commuter trains by homegrown jihadists in 2006 also failed to explode.**
- * **And what appears to have been a planned mass shooting aboard the high-speed train from Brussels to Paris instigated by IS was thwarted when passengers subdued the heavily armed attacker.**
- * **Police thwarted other terrorist plots in London, Barcelona, and Milan. All of these plots aimed at causing mass casualties.**

(cont.)

- * **In December 2015, German authorities evacuated and shut down two train stations in Munich in response to intelligence indicating the possibility of suicide attacks.**
- * **Future attacks may involve combinations of suicide bombings and armed shooters, as seen in Paris.**

TERRORIST ATTACKS IN CANADA AND THE UNITED STATES

- * **Since 1970, there have been few terrorist attacks against trains or buses, and none against passenger ferries in the United States and Canada, but there have been a growing number of terrorist plots.**
- * **Only 12 attacks in the United States and only four in Canada have occurred during this time period.**
- * **Only three attacks in the United States and one in Canada caused fatalities.**

THE THREAT AHEAD

- * **Transportation security is driven today not by what terrorists have done historically, but by what they could do.**
- * **The high casualty attacks that have occurred in the past 15 years, combined with the failed attempts and foiled plots, suggest a continuing threat that differs from that of the 1970s in its aim for high body counts.**
- * **Despite the good news that lethality has statistically declined, the threat of high casualty incidents appears higher than ever.**

(cont.)

- * **Jihadist groups in the Middle East continue to exhort their supporters in Europe to carry out attacks there, and they often have pointed to transportation as a soft target.**
- * **Thousands of Europeans have traveled to join the so-called Islamic State. Some have and will return, determined to continue the campaign.**
- * **We are also seeing an increased number of attacks by individuals, some are mentally-disturbed, some motivated by Islamist exhortations—mostly low level, but can be lethal.**

THE ROLE OF INSIDERS IN CRIME

- * **MTI's current database currently does not code for "insiders" as participants in terrorist attacks on transportation systems.**
- * **However, other research enables us to identify some hypotheses.**
- * **Traditional industrial sabotage (during labor disputes and as part of resistance struggles) almost always involves insiders--this applied to past railroad labor disputes.**

(cont.)

- * According to RAND study, “high-value heists”—sophisticated thefts and robberies—involved insider assistance in at least one-third of the cases—we now see high-value cyber thefts.
- * According to a 1990s analysis by Kroll Associates, more than 90 percent of the cases of economic espionage were carried out by insiders, who had access to the information stolen—we now see a high volume of cyber espionage.

THE ROLE OF INSIDERS IN ATTACKS ON AVIATION

- * **Airline employees (as well as airport security personnel) have been involved in theft and smuggling rings.**
- * **Also some deadly attacks carried out by insiders.**
- * **1982—Deliberate crash of Japanese airliner by pilot.**
- * **1984—Deliberate crash by pilot of Royal Air Maroc flight—cause disputed.**
- * **1987—Former employee shoots pilot and co-pilot during a flight causing it to crash with all on board—an elaborate suicide-insurance fraud scheme.**

(cont.)

- * **1997—Deliberate crash of SilkAir flight.**
- * **1999—Deliberate crash of an Egyptian airliner by first officer—Egyptian authorities dispute this.**
- * **2006—A computer engineer who had worked for BA and British police, provided inside information to al Qaeda, applied for a job as a flight attendant, and sought to recruit other ground crew members to smuggle a bomb aboard an airliner.**
- * **2007—JFK terrorist plot to blow up jet fuel supply tanks involved former airport employee.**

(cont.)

- * **2009—Former Garuda mechanic involved in Indonesian terrorist bomb plot.**
- * **2015—Deliberate crash of a German airliner by suicidal pilot.**
- * **2015—Insiders linked to jihadist extremists suspected of assisting in placing a bomb on board Metrojet flight in Egypt.**
- * **2016—Brussels Airport bomber had worked at airport for five years; authorities discovered 50 radicalized employees at the airport.**

THE ROLE OF INSIDERS IN TERRORIST ATTACKS

***2003—Terrorist bombings at two Jakarta hotels carried out by insider**

***2004—Radicalized U.S. soldier offered al Qaeda information about U.S. Army.**

***2007—Radicalized U.S. Navy veteran provided information on U.S. naval vessels to al Qaeda.**

***2008—Homegrown terrorist and former employee of LIRR offered to assist al Qaeda in attack on the railroad.**

(cont.)

- * **2009—Radicalized U.S. Army major shot 44 fellow soldiers at Fort Hood.**
- * **2015—Radicalized government employee and wife shot 38 persons at his office.**
- * **However, ease of access to unprotected targets and terrorists' own determination to participate in attacks make insiders less important.**
- * **Attacks in Madrid (3/11), London (7/7), Paris (1/15 and 11/15) and Brussels (3/16) did not include insiders.**
- * **With the exception of the 2008 plot mentioned above, none of the major terrorist plots against rail targets involved insiders.**

CONCLUSIONS

- * Passenger rail and transit systems will continue to be targets of terrorists worldwide—in particular those seeking high body counts.
- * Bombings and mass shootings

WHAT CAN WE CONCLUDE FROM THIS BRIEF OVERVIEW?

- * **Insiders may for a variety of personal and group motives (greed, ideology, vengeance, etc.) be suborned to participate in criminal or terrorist activity.**
- * **Insiders play a more important role in attacks on targets where security is more formidable—airports, heavily secured facilities.**
- * **Conversely, insiders are less important in attacks on “soft” targets where there is easy access both for reconnaissance and the actual assault.**

(cont.)

- * **Given the determination of contemporary terrorists to kill in quantity and willingness to kill indiscriminately, inside assistance is not a prerequisite to success.**
- * **Espionage and theft can now be accomplished remotely via the Internet and these forms of cyber crime have increased. Insiders may still play a significant role, but uncertain.**
- * **Physical sabotage theoretically may be carried out remotely via the Internet, but few cases seen thus far.**

(cont.)

- * For now, the current threat to passenger rail remains that of low-tech physical attacks carried out with guns and bombs.
- * The greatest danger would be if terrorists were able to disrupt rail control systems, especially involving high-speed passenger traffic, to replicate the kinds of human failures seen in deadly accidental collisions and derailments.

CONCLUSIONS

- * Passenger rail and transit systems will continue to be targets of terrorists—in particular, those seeking high body counts.
- * Bombings, mass shootings, and other low-tech tactics will dominate.
- * Public access makes the involvement of insiders unnecessary.
- * Remote sabotage via the Internet will require detailed knowledge of operations and systems, making inside assistance more of a necessity.

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Questions?



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Created by Congress in 1991