THE TERRORIST THREAT TO
SURFACE TRANSPORTATION

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PUBLIC SURFACE TRANSPORTATION TARGETS ATTRACTIVE TO TERRORISTS

• Easy access and escape
• Congregations of strangers guarantee anonymity
• Crowds in contained environments vulnerable to conventional explosives and unconventional weapons
• Attacks cause alarm and great disruption
TERRORISTS WHO ATTACK TRANSPORTATION SYSTEMS OFTEN SEEK SLAUGHTER

- Two-thirds of attacks intended to kill
- 37 percent result in fatalities (compared to 20-25 percent of terrorist attacks overall)
- 75 percent of fatal attacks involve multiple fatalities; 28 percent involve 10 or more fatalities
- Every attack in past three years intended to kill
- Bombs kill an average of 20 persons
TARGETS OF ATTACKS

- Buses (32%), tourist and school buses (8%) and bus terminals (7%) = 47%
- Subways and trains (26%), stations (12%), and rails (8%) = 46%
- Bridges and tunnels (5%) and other (2%) = 7%
TACTICS USED

• Bombings (60%), bombs thrown (4%) = 64%
• Ambushes, armed assaults (11%)
• Standoff attacks, shots fired (9%)
• Hostage situations (5%)
• Mechanical sabotage (5%)
• Arson (3%), threats (4%), other (1%)
TERRORIST THREAT HAS FOCUSED ON PEOPLE NOT INFRASTRUCTURE

• Jihadists have contemplated attacks on bridges and tunnels (New York 1993, Brooklyn Bridge scheme in 2003) however…
• No terrorist attacks on bridges, tunnels, or roads
• Only five percent of 900 surface transportation attacks involve bridges or tunnels
• Almost all in on-going conflict zones where smaller bridges have been blown up
TRANSPORTATION TARGETS IN JIHADISTS’ PLAYBOOK

• January 2003 – Plot to release cyanide on New York’s subways
• August 2004 – Plot to bomb subway stations in New York
• April 2005 – Plot to spread ricin on Heathrow express
• July 2005 – Failed attack on London subway
• August 2005 – Plot to release deadly gas in London subway
TRANSPORTATION TARGETS IN JIHADISTS’ PLAYBOOK (cont.)

- November 2005 – Plot to bomb train stations in Melbourne or Sydney
- April 2006 – Plot to blow up a commuter train in Milan
- April 2006 – Plot to seize hostages aboard a passenger ship or ferry in the Philippines
- July 2006 – Plot to blow up subway tunnels in New York
- August 2006 – Bombs discovered aboard a train in Germany
- Recent chatter about attacks on subways
TERRORISTS GET GOOD “RETURN ON INVESTMENT”

- Stavropol – December 5, 2003 (1 bomb – 42 killed)
- Moscow – February 6, 2004 (1 bomb – 40 killed)
- Madrid – March 11, 2004 (10 bombs – 191 killed)
- Russia – August 31, 2004 (1 bomb – 10 killed)
- Mumbai – July 11, 2006 (7 bombs – 207 killed)
- Dewana – February 18, 2007 (2 bombs – 66 killed)
- Average fatalities per bomb – 24
PRELIMINARY LESSONS LEARNED FROM MADRID—TERRORIST PLANNING

• Planning for attack began in late 2002 or early 2003
• Specific operational planning in 2004
• Locals knew schedules—planned to the minute
• Attacks clearly intended to kill (10 kgs of explosives plus 23 oz. of bolts and nails)
• Trial runs?
• Terrorists did not travel with assembled bombs
LESSONS LEARNED FROM MADRID—WARNINGS

• No prior “chatter”
• Terrorist propaganda was a warning
• Publicity surrounding thwarted ETA attacks
• Partially-assembled bomb found day before a possible indicator
OBSERVATIONS FROM LONDON ATTACKS

- Partially inspired by Madrid
- Prior plots involving public transportation
- No prior indicators—cells beneath radar
- CCTV does not deter suicide attackers
- CCTV helped in rapid identification, confirmation of suicide, may have accelerated action by second cell
- Response well done but still some shortcomings
- Random search procedures accepted
ADDITIONAL ISSUES ARISING IN LONDON ATTACKS

• Reaction time?
• Diagnosis
• Communication failure
• Handling massive amounts of information
• Informing the public
• Getting people home
• Ability of second cell to penetrate heightened security
• Psychological effects of second bombing
LESSONS LEARNED FROM THE MUMBAI TERRORIST ATTACK
THE THREAT IS REAL

• Terrorist adversaries think in terms of endless war—long-term planning horizons
• Remain determined to carry out attacks—they are opportunistic
• Until jihadist enterprise completely destroyed, operative presumption must be that attack will occur at some time
• Surface transportation clearly part of terrorist target set
MUMBAI SUBURBAN RAILWAY SYSTEM

• Comprises three systems (Indian, Railways Western, Railways Central Railways)
• 303 kilometers; approximately 100 stations
• 2067 daily trains; electric powered
• Carries 6.1 million commuters daily
• Passenger per kilometer density greater than Tokyo; 52 x Long Island RR
MUMBAI SUBURBAN RAILWAY SYSTEM (cont’d)

• Overcrowding--during peak hours, 9-car train carries 4,700 passengers against designed capacity of 1,700 (550 persons on coach designed for 200)

• Known as “Super-Dense Crush Load” of 14-16 standing passengers per square meter of floor space

• Dangerous--3,500 accidental fatalities a year-13 every weekday (hit by trains, fall off trains, electrocuted on train roofs)
SECURITY AT TIME OF ATTACK

- Multiple jurisdictions--Mumbai police, state forces, Railway Protection Force--with different tasks
- Little security in place
- No access control to platforms; no passenger screening
- Mumbai police lack the resources to secure trains
- Few police focus primarily on gropers
PREVIOUS ATTACKS ON UNATTENDED SURFACE TRANSPORTATION TARGETS

- December 2002 - Two persons killed, 31 injured by bomb in municipal bus outside suburban railway station in Mumbai
- December 2002 - 25 persons injured by a bomb in the food plaza at the Bombay Central Railway Station
- January 2003 - 30 people injured by bomb planted on a bicycle outside Vile Perle Station in Mumbai
- March 2003 - 11 persons killed and 65 injured by a bomb in the ladies special train entering Mulund Railway Station
PREVIOUS ATTACKS ON SURFACE TRANSPORTATION TARGETS (cont’d)

- March 2006 - Simultaneous bombings at a railway station (2 bombs) and Hindu temple in Varnasi; two other devices found and defused. Total casualties: 23 dead, at least 62 wounded
- March 2006 - Bomb found and defused inside an unattended bag on the platform of central Mumbai commuter rail station
- February 2006 - Explosions on Samjhawta Express kill 68 persons
THE JULY 11, 2006 ATTACK

• Western Line targeted during evening rush hour
• Seven bombs on trains; all placed in first class coaches
• Bombs consisted of metal pressure cookers each packed with RDX high explosive; bombs were in leather suitcases placed in overhead racks
• Detonated with digital countdown timers from Germany--not a suicide attack
THE JULY 11, 2006 ATTACK - (cont’d)

• First of seven explosions at 18:24, subsequent explosions at 18:24, 18:25, 18:26, 18:29, 18:30, 18:35
• Detonation sites spread out over 18 miles of rail line
• 209 persons killed, more than 700 injured
• Police suspected Lashkar-e-Toiba (Army of the Righteous) a jihadist extremist group linked with al Qaeda
• Students Islamic Movement of India also believed to be involved
• Bombings preceded by hoax calls from perpetrators to test responses (bags of old clothes left) and followed by usual hoax bomb threats
EMERGENCY RESPONSE

• Mumbai unprepared for mass casualty attack (despite 1993 bombings in which 250 persons were killed)
• Each train station had two stretchers and first-aid box
• Slum dwellers bordering tracks and stations were the first responders--little involvement by police
• Police stretched thin--unable to muster adequate manpower
EMERGENCY RESPONSE (cont’d)

• No perimeter controls for several hours at any locations
• No crime scenes established for several hours (and damaged coaches removed within one hour)
• No traffic control plans implemented
EMERGENCY RESPONSE - 2

• Civilians swarmed all locations to look for relatives and evacuate injured
• Heavy rain made evidence collection and establishing order difficult
• After life safety operations, trains moved in their entirety to rail yards for examination
• Victims received little medical treatment on site to stabilize critical injuries or prepare patients for transport--this increased the death toll
• Emergency room doctors admitted they were unprepared for high volume of critical injuries
EMPHASIS ON RAPID RESTORATION OF VITAL SERVICE

• Clearing rails took precedence over crime scene investigation--crime scenes massively contaminated anyway by rescue effort, heavy rains
• Trains with damaged coaches moved to yard in approximately one hour
• By 22:45, service on affected line, four hours after blast, restored
• By late next morning, service almost entirely back to normal
HEIGHTENED SECURITY MEASURES

- Additional security personnel deployed to the stations including police armed with automatic weapons
- Random searches focusing on persons with luggage, backpacks, shoulder bags; bags searched, their names recorded
- Additional explosives-sniffing dogs deployed
- Posters put up admonishing public to be vigilant
- Non-passengers no longer allowed on train platforms
- CCTV with smart cameras installed, initially at three most sensitive stations
• Trains locked when taken to the yard overnight
• Persons sending parcels via rail required to have them open and seal them only at the station in the presence of security personnel
• Announcement of integrated surveillance and security systems being developed for Mumbai stations (No details given.)
• Railway Protection Force expanded, training increased
HEIGHTENED SECURITY (cont’d)

• Metal detectors deployed (no numbers available)
• Claim that “every commuter is checked,” but given volume of passengers, that cannot mean searched
• Claim that all bags inspected is also doubtful
SOME OBSERVATIONS ON THE MUMBAI ATTACK

• Despite record of large scale terrorist attacks over previous 14 years (in Mumbai and against surface transportation nationwide), there was little security

• Despite the 1993 Mumbai bombing, with a thousand casualties, Mumbai did not appear to have a well-rehearsed crisis management plan or adequate emergency response capabilities

• Limited resources clearly are one reason

• High volume and extraordinary passenger density impede security measures

• Restoration of full-service on this vital lifeline appeared to take precedent over all considerations
SABOTAGE OF RAILS ON MOSCOW - ST. PETERSBURG TRAIN

• 2 kg of TNT placed 100 feet on track 100 feet ahead of bridge 60 feet above roadway
• Device identical to one used in 2005 rail bombing
• Clearly intended to derail train and cause casualties
• High speed of train enabled train to cross bridge before derailing
• 12 cars derailed
• More than 20 injured (if train had gone off bridge, casualties would have been greater)
MARCH 2007 MTI PROJECT—“SELECTIVE SCREENING OF RAIL PASSENGERS”

• Explores if screening – particularly selective screening – is a viable security option in urban mass transit.

• Asks five key questions:
  1. If 100 percent screening not possible, do selective searches make sense?
  2. If only some passengers are screened, where there is no specific intelligence, what should be the appropriate selection process?
  3. What combinations of selection methods are appropriate under different conditions?
  4. What role can current and future technology play in passenger screening?
  5. What are the characteristics of a good screening program?
SELECTIVE SEARCHES:
KEY JUDGMENTS

• One hundred percent passenger screening is not a realistic security option for surface transportation.
• Screening some passengers by conducting selective searches, is a viable security option.
• Terrorist alerts, specific threat information, or attacks on transportation targets elsewhere may dictate that security measures be rapidly increased to discourage copycats and reassure riders.
• Selective screening provides a flexible response that can be implemented immediately and reduced as the threat evolves.
SELECTIVE SEARCHES:  
KEY JUDGMENTS (cont.)

• The goal of any security measure is risk reduction, not the prevention of all attacks. Selective searches contribute to deterrence, oblige terrorists to take greater risks, complicate their planning, and divert them to less lucrative venues, thereby reducing casualties.

• Existing technology and the use of canine teams can facilitate security inspections, but we are still years away from technological solutions—security will remain labor intensive.
SELECTIVE SEARCHES:
KEY JUDGMENTS (cont.)

• The introduction of any passenger screening security program, especially one that involves selection, runs against public preference for security that is passive and egalitarian, and therefore must be carefully planned and closely managed to reduce inevitable allegations of discrimination or profiling based upon race or ethnicity.

• Legal challenges to selective screening should be anticipated. A recent U.S. court decision upholds the selective searches but only if they incorporate certain features.
Vigorous public information programs must accompany the introduction of any new security measure that directly engages riders to outline risk reduction goals and allay potential public concerns.
THE SELECTION PROCESS MUST BE:

- Planned in advance;
- Based upon clear policies and procedures;
- Combine intelligence, selection, and behavioral observation;
- Maximize unpredictability and deterrence;
- Allow for expansion, redeployment, and reduction;
- Utilize existing technology, and
- Maximize interaction with riders, but not in a way perceived as harassment.
CONCLUSIONS

- Threat is real, but not easily quantifiable; difficult to determine the “right level of security.” Security will be reactive.
- Effective security includes not only deterrent and preventive measures, but all efforts to mitigate casualties, damage, and disruption.
- Deterrence and prevention difficult to achieve given nature of terrorism and inherent vulnerability of public transportation. More attention to measures to mitigate casualties, damage, and rapidly restore service.
CONCLUSIONS (cont.)

• Crisis management essential.

• Advance planning essential to effective response to threats and incidents.

• Must communicate accurate information to users and public; provide continuing information and assistance to relatives and friends of victims—an extremely difficult task, not always done well.