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What have we learned from terrorist attacks on buses? Free report highlights 16 case studies in Israel.

Insights could help deter, prevent, mitigate attacks in other countries.

San Jose, Calif., March 1, 2012 – The [Mineta Transportation Institute](http://transweb.sjsu.edu) (transweb.sjsu.edu) has published a report that presents 16 case studies of attacks against Israeli bus targets between 2000 and 2005, along with detailed statistical data. [*Security Awareness for Public Bus Security: Case Studies of Suicide Attacks Against the Israeli Public Bus System*](#) could help increase understanding of what can happen and of what can deter, prevent, and/or mitigate terrorist attacks against bus transit. Principal investigators were Bruce Robert Butterworth, Shalom Dolev, and Brian Michael Jenkins. The 104-page report is available for free PDF download from transweb.sjsu.edu/project/2978.html

The statistical data come from Mineta's (MTI) proprietary Database on Terrorist and Serious Criminal Attacks against Public Surface Transportation. The report also analyzes the effectiveness of different improvised explosive devices and methods for delivering them, and it raises questions for further discussion.

“Public surface transportation has been and remains a primary target for terrorists throughout the world,” said Mr. Butterworth. “MTI’s database records 2,287 attacks against public surface transportation between January 1, 1970 and November 1, 2011, in which 7,581 people were killed and 29,212 were injured. Of these attacks, 65 percent were against buses, bus stations, and bus stops. They accounted for 51 percent of the fatalities and 41 percent of the injuries resulting from terrorist attacks during this period.”

Some key findings include:

- Suicide delivery was the dominant method of attack. In 12 cases, devices were worn by or carried by the attacker. In one case, a vehicle-borne improvised explosive device (VBIED) was detonated by a suicide driver alongside a bus. In three cases, bombs were concealed in bags or other items left behind.
- The two most lethal and successful attacks, one of which was the suicide VBIED attack, each killed 17 people. Among the other successful attacks, one killed 16 people, one killed 15, and one killed 14. Six of the attacks were considered unsuccessful, and four were considered partially successful. One case involved only pre-attack surveillance, with no attack.
- In eight of the attacks that were considered failures or only partial successes, security measures and awareness played a role in stopping the attack or mitigating its consequences. In seven of those cases, poor attacker techniques and bomb-making were also factors.

All 16 cases raise questions, which are purposely left for further discussion. Two questions are especially important, particularly for security officials and transportation operators in the United States: How applicable are these cases to the current environment in the US? And how does Israel’s experience compare with that of India, Pakistan, or Sri Lanka?

“While one might conclude that Western nations are not likely to experience the kinds of intense terrorist campaigns against public surface transportation experienced in Israel or in other developing countries,” said Mr. Butterworth, “these targets remain attractive and must be considered in security planning.”

The complete 104-page report includes 64 maps, photographs, and other figures that illustrate each case study.

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ABOUT THE PRINCIPAL INVESTIGATORS

Bruce Butterworth has had a distinguished government career, working at congressional, senior policy, and operational levels. With Brian Michael Jenkins and Karl Shrum, he co-authored *Terrorist Attacks On Public Bus Transportation: A Preliminary Empirical Analysis* for the Mineta Transportation Institute in March 2010. He also co-authored other studies, including *Keeping Bombs Off Planes: Securing Air Cargo, Aviations Soft Underbelly* with P.J. Crowley, senior fellow and director of Homeland Security at the Center for American Progress. Mr. Butterworth was awarded an MS from the London School of Economics in 1974.

Shalom Dolev is an expert in security methodologies and in developing security strategies, with special emphasis on countering improvised explosive device (IED) threats. Lt. Col. Dolev has more than 25 years of experience in the field. He has worked for several governmental agencies and has served as a security consultant on issues including aviation, seaports, maritime activities, mass-transit transportation, border crossings, and high-risk institutions. He has a degree in electronics engineering from Tel Aviv University and is a graduate of Tel Aviv University Law School. He retired recently from reserve military service (25 years) and full service (7 years) in the Israeli Defense Forces combat-engineering special forces.

Brian Michael Jenkins is an international authority on terrorism and sophisticated crime. He directs MTI’s National Transportation Security Center of Excellence, which focuses on research into protecting surface transportation against terrorist attacks. He is also a senior advisor to the president of RAND. From 1989-98, Mr. Jenkins was deputy chairman of Kroll Associates, an international investigative and consulting firm. Before that, he was chairman of RAND’s Political Science Department, where he also directed research on political violence. He has authored several books, chapters, and articles on counter-terrorism, including *International Terrorism: A New Mode of Conflict* and *Will Terrorists Go Nuclear?*

ABOUT THE MINETA TRANSPORTATION INSTITUTE

The Mineta Transportation Institute (MTI) conducts research, education, and information and technology transfer, focusing on multimodal surface transportation policy and management issues, especially as they relate to transit. MTI was established by Congress in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA) and was reauthorized under TEA-21 and again under SAFETEA-LU. The Institute has been funded by Congress through the US Department of Transportation’s (DOT) Research and Innovative Technology Administration, by the California Legislature through the Department of Transportation (Caltrans), and by other public and private grants and donations, including grants from the US Department of Homeland Security. DOT selected MTI as a National Center of Excellence following competitions in 2002 and 2006. The internationally respected members of the MTI

Board of Trustees represent all major surface transportation modes. MTI's focus on policy and management resulted from the Board's assessment of the transportation industry's unmet needs. That led directly to choosing the San José State University College of Business as the Institute's home. Visit transweb.sjsu.edu

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