Security Awareness for Public Bus Transportation: Case Studies of Attacks Against the Israeli Public Bus System

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Government regulators and transportation operators of public bus systems are concerned about terrorist

> **MTI's Report provides a statistically valid and detailed account of terrorist bus attacks in Israel.**

attacks. Bus attacks in Israel between late September 2000 and the end of 2006, a period known as the Second Intifada, are particularly well known. A number of observations and questions can be drawn from studying these attacks. While MTI's report pointedly raises the question of how applicable these attacks are for U.S. and other public bus transportation regulators and operators, its detailed case studies of 16 actual or attempted attacks, and its statistical analysis of bus attacks in Israel, yield relevant observations that address the following questions:

- Which security measures were effective against suicide and non-suicide attacks?
- Which terrorist bombs were most and least lethal?
- Which terrorist methods of delivering bombs were most and least lethal?

Study Methods

This research project was the result of collaboration between MTI and an Israel security expert who painstakingly culled publicly released information to gain a unique perspective on 16 attempted or actual bus attacks.

The 16 cases were selected not because they are statistically representative, but because they provide a variety of interesting observations. They include both lethal and non-lethal attacks, attacks where security measures were effective or were not followed or were ineffective, and attacks in which the attackers' tactics and/or devices were lethal or failed or reduced the lethality of the attacks.
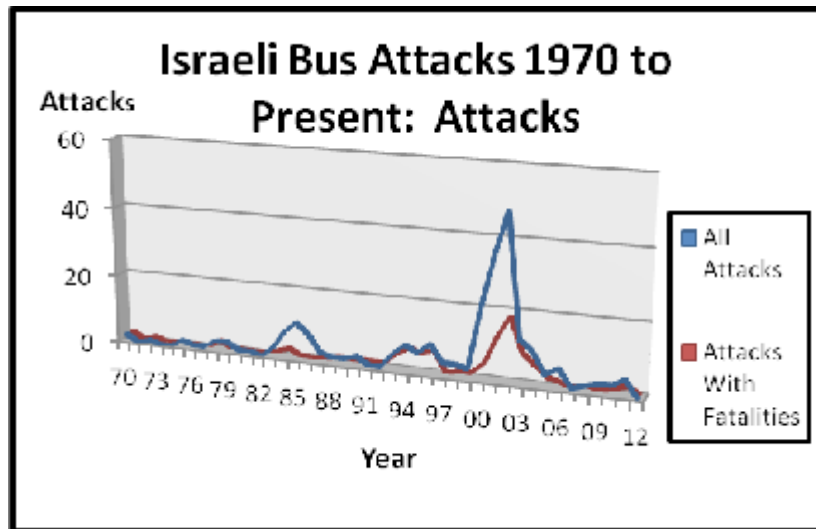
The authors also utilized the MTI Database on Terrorist and Serious Criminal Attacks against Public Surface Transportation to identify statistical trends in bus attacks in Israel since 1970, and during the Second Intifada in particular. The MTI Database is a unique and proprietary resource that MTI created to provide quantitative analysis on which attacks happen most frequently and which attacks are most lethal.

Findings

Bus attacks in Israel constitute a high percentage of all bus attacks around the world, a percentage that grew during the Second Intifada.

Since 1970, 251 attacks have been made against buses in Israel and the West Bank and Gaza, which constitute 16.8 percent of all attacks against bus targets in the world. During the Second

Intifada between late September 2000 and the end of 2006, there were 136 attacks, which constituted 21.7 percent of all attacks, 23 percent of all fatalities, and 39 percent of all injuries suffered in bus attacks around the world during these years. Bus attacks in Israel were the most lethal of any country in the world with 20 attacks or more, peaking – as the following chart shows – between 2001 and 2003.

While not necessarily representative, the cases show certain patterns.
Suicide delivery of bombs dominated in the attacks (13 out of 16). 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 nine of those same cases, poor attacker techniques and bomb-making were also factors.

Policy Recommendations

The authors recommend that transportation regulators and operators study these attacks to determine their applicability to systems operating in the United States and in other countries, and they emphasize the importance of security awareness for transportation employees and passengers.

About the Authors

Brian Michael Jenkins is Director of, and Bruce R. Butterworth is a Research Associate with, MTI's National Transportation Security Center of Excellence. Shalom Dolev is an independent security expert in Israel and has advised many Israeli government agencies.

To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/project/2978.html