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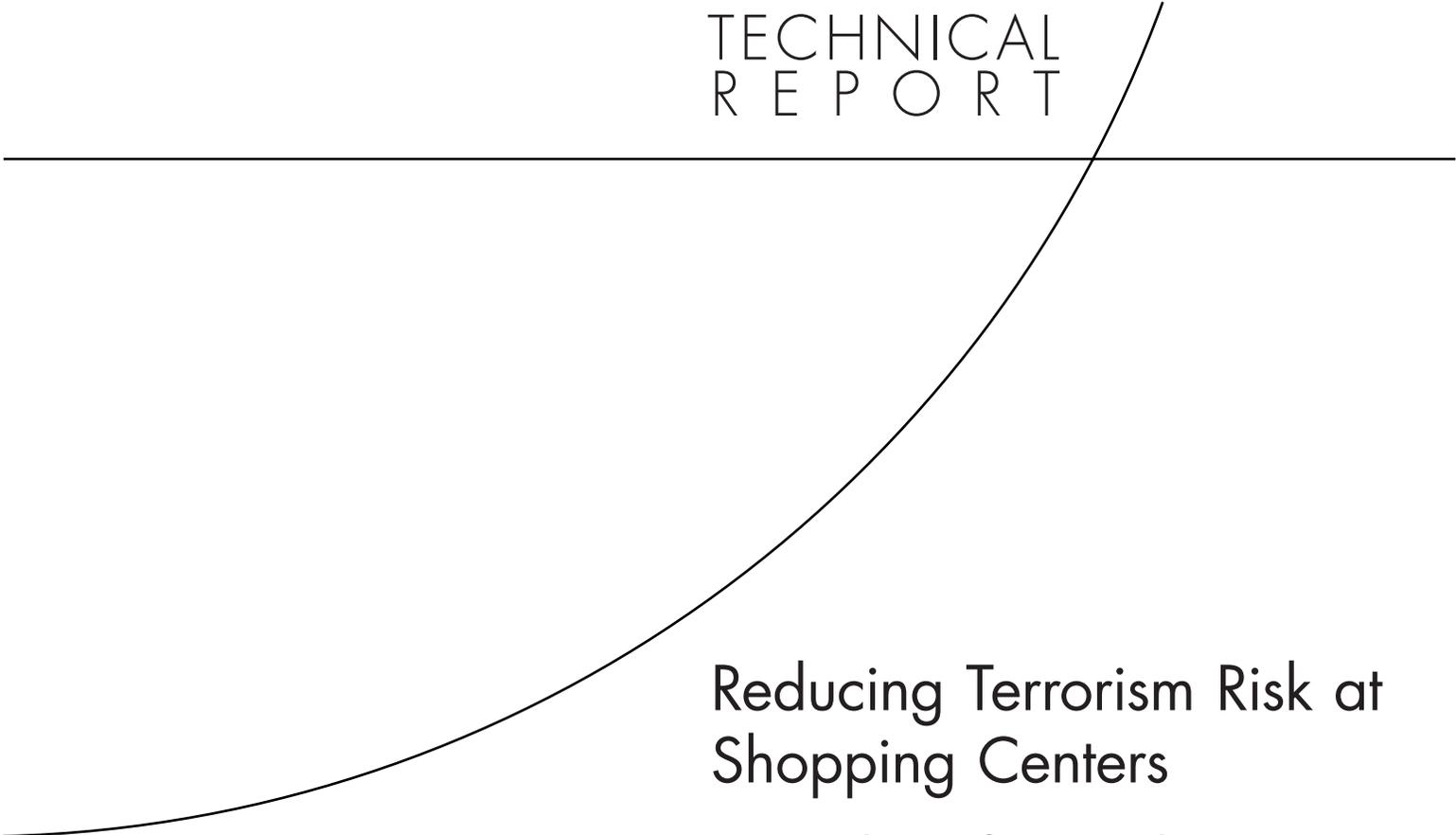
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TECHNICAL
R E P O R T



Reducing Terrorism Risk at Shopping Centers

An Analysis of Potential
Security Options

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Summary

The threat of terrorism at commercial shopping centers is a prominent concern, with over 60 terrorist attacks against shopping centers in 21 countries since 1998. Because of this threat, shopping center operators are beginning to explore and implement increased security efforts specifically designed to combat terrorism. In order to help understand methods for reducing the risk of terrorist attacks in shopping centers, we have used a modeling approach to help shopping center operators evaluate candidate security options in terms of their effectiveness at reducing terrorism risk.

The basic modeling approach involves incrementally reducing the risk from terrorism by sequentially implementing security options. Security options are selected by weighing the effectiveness of specific options in reducing the risk of particular terrorist attack scenarios against the costs of implementing those options. Model inputs are derived from multiple sources, including statistical analyses of historical trends in terrorism, case studies of individual shopping centers, and review of security and crime deterrence literature. The model output is a prioritized list of security options and an estimate of the cumulative reduction in terrorism risk associated with the addition of each option.

The modeling results for the three centers examined share several common characteristics that reflect some important general conclusions about terrorism security at commercial shopping centers that can be drawn from our analysis:

- Based on our model and assumptions, implementing security options can substantially decrease the terrorism risk at a shopping center: We find that, if all the security options considered in this study were implemented, the risk of terrorism could be reduced by a factor of 20.
- The prioritization of security options is similar for the different centers examined. Eight of the top 10 options for each of the three centers are the same, and few options are shifted by more than two positions among the three centers.
- The prioritization of security options is strongly driven by the risk of bomb attacks. Because the overall terrorism risk is dominated by bomb attacks, the model selectively chooses options that address bomb attacks.
- Most of the risk reduction occurs with the highest-priority options. The cumulative risk drops steeply with the initial options, then decreases more gradually as additional options

are added. We find that 95 percent of the total reduction achievable with all options is provided by the first 6–10 options (the “high-priority set”).

- Most risk reduction occurs with less expensive options; the average cost of each of the options in the high-priority set is 20–35 percent of the average cost of all the options.
- The overall annual cost of the high-priority set of options ranges from \$0.4 million to \$2.0 million at the three centers examined.
- The high-priority set of security options spans a diverse range of approaches, including communication and education, emergency response, customer entrance management, vehicle management, and building management.

In conjunction with the quantitative model, we also include qualitative estimates of the collateral benefits and detriments of each security option. We also examine some security issues outside the model framework, such as structural hardening considerations and “standby” postures to facilitate the rapid implementation of security options.

Our analysis has some important implications for terrorism security at commercial shopping centers. First, a strategy to reduce the risk of terrorism will be similar for most shopping centers. Our analysis indicates that the principal risk-reducing security options do not differ dramatically across the three types of centers examined in this study.

Second, disaster preparedness plans and exercises that focus primarily on emergency response do little to reduce terrorism risk. The vast majority of terrorism risk derives from attacks using explosives, for which the effects are immediate and the hazard abates very quickly. As a result, little can be done to reduce consequences (casualties or property damage) of a terrorist attack once it has occurred.

Third, centers that move to implement terrorism security options early may experience both challenges and advantages. Some of the high-priority security options identified in the analysis are expected to have negative collateral effects that, if great enough, may cause some shoppers to shop elsewhere. On the other hand, were the threat from terrorism to be perceived as increasing, the psychology may be reversed and customers may feel safer in centers with increased security. As terrorism security is increased in the United States and elsewhere, it would be instructive to examine the customer responses to increasing terrorism security.

Fourth, a tiered implementation may be the best strategy. One way to approach the problem of reducing the risk of terrorist attack is to implement a set of security options that are most appropriate for today’s environment and develop plans today for further measures to take if the environment changes for the worse. Those plans could address precontracting for equipment and services, collecting data needed to implement options efficiently, educating staff on the measures, and planning public relations efforts. Such efforts would reduce the time and disruption involved in implementing future measures.

Finally, decisions about when to implement security options will depend on perceptions of the absolute risk of terrorism. This analysis provides useful guidance about prioritizing security options to reduce terrorism risk, but it does not address the risk of terrorism overall or when to begin implementing terrorism security options. Despite the best analytical efforts, the evolution of this perception is likely to be guided by indirect indicators, such as government actions and guidance, political changes, press coverage, or industry trends.