

Supplement to MTI Study on Selective Passenger Screening in the Mass Transit Rail Environment



MTI Report 09-05



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**SUPPLEMENT TO
MTI STUDY ON SELECTIVE PASSENGER
SCREENING IN THE MASS TRANSIT
RAIL ENVIRONMENT**

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January 2010

a publication of the
Mineta Transportation Institute
College of Business
San Jose State University
San Jose, CA 95192-0219
Created by Congress in 1991

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. CA-MTI-09-2876	2. Government Accession No.	3. Recipients Catalog No.	
4. Title and Subtitle Supplement to MTI Study on Selective Passenger Screening in the Mass Transit Rail Environment		5. Report Date January 2010	
		6. Performing Organization Code	
7. Authors Brian Michael Jenkins, Bruce Robert Butterworth, Larry N. Gerston		8. Performing Organization Report No. MTI Report 09-05	
9. Performing Organization Name and Address Mineta Transportation Institute College of Business San José State University San José, CA 95192-0219		10. Work Unit No.	
		11. Contract or Grant No. DTRT 07-G-0054 2008 - ST 061 TS 0009	
12. Sponsoring Agency Name and Address <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> California Department of Transportation Sacramento, CA 94273-0001 </div> <div style="width: 45%;"> U.S. Department of Homeland Security Science and Technology Directorate Washington, DC 20528 </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> U.S. Department of Transportation Research and Innovative Technology Administration 1200 New Jersey Avenue, SE, Rm. E33 Washington, D.C. 20590-0001 </div> <div style="width: 45%;"></div> </div>		13. Type of Report and Period Covered Final Report	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract <p>This supplement updates and adds to MTI's 2007 report on Selective Screening of Rail Passengers (Jenkins and Butterworth MTI 06-07: Selective Screening of Rail Passengers). The report reviews current screening programs implemented (or planned) by nine transit agencies, identifying best practices. The authors also discuss why three other transit agencies decided not to implement passenger screening at this time. The supplement reconfirms earlier conclusions that selective screening is a viable security option, but that effective screening must be based on clear policies and carefully managed to avoid perceptions of racial or ethnic profiling, and that screening must have public support. The supplement also addresses new developments, such as vapor-wake detection canines, continuing challenges, and areas of debate. Those interested should also read MTI S-09-01 Rail Passenger Selective Screening Summit.</p>			
17. Key Words Crisis management; Sabotage; Security; Passenger screening; Security measures; Terrorism	18. Distribution Statement No restrictions. This document is available to the public through The National Technical Information Service, Springfield, VA 22161		
19. Security Classif. (of this report) Unclassified	20. Security Classifi. (of this page) Unclassified	21. No. of Pages 72	22. Price \$15.00

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Library of Congress Catalog Card Number: 2010922101

To order this publication, please contact the following:

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ACKNOWLEDGMENTS

This material is based upon work supported by the U.S. Department of Homeland Security under Grant Award Number 2008-ST-061-TS001.

The authors wish to express their thanks to the many organizations and individuals without whose assistance this supplement could not have been produced. The cooperation of the transit community and governmental leaders, along with their willingness to share sensitive information, has been invaluable. Our dialogue with them, both individual and in group settings, enriched the research.

While it would be impossible to list all those who have helped us, we want to recognize the following key individuals:

First, we want to thank Dr. Doug Bauer, leader of the Explosives Division research in the Science and Technology Directorate of the Department of Homeland Security (DHS), for his encouragement and support in initiating this research project.

Second, we want to thank Paul A. Lennon, the former Transportation Security Administration (TSA) General Manager for Mass Transit, and his staff, particularly Sonya Proctor, Security Training and Exercise Coordination, for providing information and guidance and for—along with the Federal Transit Administration (FTA)—inviting us to present our findings to the Transit Safety and Security Chiefs Roundtable. We thank Bridgit Zamperini of FTA and Shelley Lomax of Portland, Oregon's TriMet for helping set up the logistics of that meeting. Tony Tisdale of FTA also gave us invaluable material and assistance. Dave Kontny, Deputy Chief, Office of Bombing Prevention, DHS, along with John Pearce of Auburn University, provided information on canine performance, standards, and quality control.

Third, we want to thank William W. Millar, President of the American Public Transportation Association (APTA), which helped to co-sponsor the 2009 National Transportation Security Policy Summit. We also thank Greg Hull, its Director—Security and Operations Support, along with Stephan A. Parker, Senior Program Manager, Transportation Research Board (TRB), and Sonya Proctor of TSA, who helped to connect us with key players in the government and the transit industry. Their combined support was absolutely invaluable in getting us started.

Fourth, it is not possible to thank individually all the people from transit agencies upon whom we imposed and from whom we asked for information and help. However, we want to thank the following key players: Chief Bill Morange and Chief Michael Coan of the Metropolitan Transportation Authority (MTA) Transit Police; Steve Schwimmer, Director, Security Standards and Procedure, New York City Transit Security; Chief Paul MacMillan and Deputy Chief Lewis Best of the Massachusetts Bay Transportation Authority (MBTA) Transit Police; Acting Chief Joseph Kelley, Deputy Chief Kevin Amberg, and Lieutenant Robert Noble of the New Jersey Transit Police; Chief Mike Taborn and Deputy Chief Erhart Olson of the Washington Metropolitan Area Transit Authority (WMATA); Bill Rooney, former Vice President for Safety and Security at Amtrak, along with Commander Joe Crane

and Ed Phillips; Chief Wanda Dunham, Assistant Chief Joseph Dorsey, and Lieutenant Fred Hammett of the Metropolitan Atlanta Rapid Transit Authority (MARTA); Lieutenant Jason Petersen and Chief Larsen of the Utah Transit Authority (UTA); Jesus Ojeda from Metrolink in Southern California; Win Hoblitzelle, Security Specialist at the San Francisco Municipal Transit Agency (SFMTA); Daniel Hartwig, Manager of Security Programs at Bay Area Rapid Transit (BART); and Donald A. Smith, Jr., Chief Operating Officer, Michael Hursh, Deputy Director, Mark Mahaffey, Operations Manager–Facilities, Maintenance and Security, Catherine Hendrix, Senior Management Analyst, and Michael Brill, Technical Specialist, from the Santa Clara Valley Transit Authority (VTA).

Finally, we wish to thank MTI staff, including Research Director Karen Philbrick, Ph.D., Director of Communications and Special Projects Donna Maurillo, Research Support Manager Meg Fitts, Student Research Support Assistant Chris O'Dell, Student Publications Assistant Sahil Rahimi, Student Graphic Artists JP Flores and Vince Alindogan, and Student Webmaster Ruchi Arya. We would also like to thank Janet DeLand for her editorial assistance.

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EXECUTIVE SUMMARY

KEY OBSERVATIONS AND RECOMMENDATIONS

1. **The value of selective passenger screening.** This research and a review of attacks on public mass transit have reconfirmed the validity of the conclusions of a report issued by the authors in February 2007.¹ That report concluded that
 - a. Selective passenger screening is a viable security option that “can contribute to deterrence, oblige terrorists to take greater risks, complicate their planning, force them to use smaller quantities of explosives, and divert them to less lucrative targets.”
 - b. Selective searches “must be carefully planned and closely managed to reduce the inevitable allegations of discrimination and profiling based upon race or ethnicity.”
 - c. An effective program of selective passenger screening must be “based on clear policies and procedures; must combine random selection, behavioral profiling, and threat information; must maximize unpredictability; must allow for expansion, redeployment, and reduction; and must maximize interaction with riders, but not in a way that is perceived as harassment.”
2. **Deterrence and unpredictability.** When agencies manage selective screening programs so that they are unpredictable and train and employ human and canine resources to monitor all passengers undergoing, bypassing, or avoiding inspection, selective passenger screening has been proven to be an effective method of deterrence and defense.
3. **Legal integrity.** Transit agencies managing selective screening programs will continue to operate in an environment of moderate legal risk. Program management must protect civil liberties, avoid racial profiling, and ensure that inspections stay within the scope of the legal authority granted by the courts. There should be no “mission creep” of inspections from a focus on terrorist weapons to the prevention of other crimes. In addition, some level of documentation is needed to defend against charges that civil rights have been infringed upon.
4. **Local support.** In the absence of a federal mandate or an attack on urban mass transit in the United States, local factors will influence whether a transit agency will be able to implement a selective screening program. In fact, there appears to be no discernible national pattern among those transit agencies that have implemented selective screening programs. In many cases, immediate negative reactions to perceived infringements on civil liberties are weighed against medium- to longer-term security benefits. Therefore, it is important to preemptively create and manage local support within the transit organization, key political actors, and the public.

5. **Line management.** The ability of supervisors to manage the rate of passenger selection to avoid lines is not always understood by transit agencies contemplating these programs.
6. **Deterrence and detection.** Deterrence and detection are mutually supportive, and transit agencies need to maintain high professionalism, not only in the treatment of passengers, but also in the inspection of bags and the observation of passengers and others.
7. **Quality control.** Transit agencies should explore methods of maintaining quality control and should consider moderate programs of “red-team/red-cell” testing, in which highly trained personnel carefully simulate, without warning, the most likely terrorist attacks to determine how security procedures and personnel perform under real world conditions and to determine how performance can be improved. Joint exercises can help transit chiefs identify opportunities to improve their own procedures, as well as help facilitate future cooperation with other agencies for situations of increased threat.
8. **Standards and quality control for canine teams.** All parties must pull together to provide the kind of guidelines and standards—even interim ones—and the kind of oversight needed to ensure that canine teams are properly certified, tested, and recertified to perform well the jobs they have been trained to perform. The Department of Homeland Security (DHS) and the Transportation Security Administration (TSA) should take the lead, because they have the responsibility for ensuring that security is provided in public mass transit. The need for standards, guidelines, and oversight is going to be particularly critical if the vapor-wake-detection canine program is to be expanded, as we believe it should be. DHS and TSA leadership is crucial.
9. **Contingency planning.** TSA and the Federal Transit Administration (FTA) should consider recommending, and transit agencies should consider developing, detailed contingency plans to implement selective passenger screening in situations of increased threat. Without such plans, transit security chiefs may be forced to implement less-than-optimum solutions in crisis environments.

BEST PRACTICES

The following best practices were observed in one or more, and in some cases all, of the transit agencies that we interviewed. We recommended them for further consideration.

1. **Behavioral observation training.** Training for both transit staff and police and security personnel will remain key. The eyes and ears of security and transit staff are crucial. Increased and updated training that enables them to quickly identify unusual or suspicious behavior should be encouraged.
2. **Community policing.** Focused on friendly engagement with passengers, community policing builds trust and public support and also increases the tips and infor-

mation provided by passengers. Transit agencies that have taken steps to connect with local communities—including Islamic communities—outside their stations are demonstrating excellent initiative that should be imitated by other transit agencies, increasing support for programs and increasing their effectiveness and deterrent value. Community policing should be encouraged and enhanced.

3. **Creative ways of maximizing unpredictability and extending deterrence.** TSA should work with transit authorities and legal experts to develop a list of techniques—with examples—that are both unpredictable and legal, for appropriate use by transit authorities. Some transit agencies have adopted practices that could be emulated or that can serve as the basis for other practices.
4. **Plainclothes officers.** The use of plainclothes officers who can blend into the background at and around the inspection process and who are fully trained in behavior observation is an extremely important practice that transit agencies should continue to use and should enhance.
5. **Vapor-wake-detection canines.** The use of canines trained to detect the presence of explosives in the vapor wake of passengers is an exciting new technique for providing deterrence and detection. Given the difficulty of creating reliable standoff passive detection, vapor-wake-detection dogs should be further utilized. Canines trained to perform this function by Auburn University staff have been procured and put to work in two transit agencies. Properly certified, trained, and tested in an operating environment, they can provide significant advantages. Their use therefore should be expanded. However, workable certification and realistic field-testing standards and/or guidelines are needed.
6. **Shows of force.** Shows of force, in which large numbers of police with heavy (SWAT) equipment congregate without notice at stations and in trains, should be continued and expanded. This technique has several benefits. Massive shows of force that appear suddenly and then disappear, only to take place again at another station, increase unpredictability and therefore deterrence, along with public confidence. They also help encourage pre-crisis planning, identifying opportunities for cross-training, deconflicting procedures and jurisdictions, and creating a foundation for mutual support.
7. **Keeping the focus of inspections narrow.** Continuing to focus inspections only on finding deadly and dangerous weapons that terrorists might use is crucial to maintaining legal integrity.
8. **Intelligence and information sharing.** Because of the significance of major transit systems as potential targets for terrorist attack, transit agencies and federal, state, and local law enforcement agencies should encourage the detailing of transit police to Joint Terrorism Task Forces (JTTFs) and fusion centers. They should also establish direct links with transit police. At the same time, TSA should continue to examine ways of increasing the effectiveness and efficiency of information sharing.

9. **Sharing policies, procedures, and practices.** Transit agencies should continue to share policies and general orders, along with lessons learned, to enable continual improvement and tailoring the best of others' experience to meet the unique circumstances of each transit environment. The federal government—TSA and FTA in particular—should continue to provide forums in which such sharing can take place.
10. **A diverse workforce.** Ensuring that inspections are performed by a diverse police force helps guard against both the reality and the perception of racial profiling.
11. **Suspicious Activity Reporting (SAR).** Transit agencies, along with DHS and TSA, should consider supporting a mass transit SAR shared space focused on transit indicators and responses, such as left luggage, suspicious picture taking, and other possible indications of reconnaissance.

INTRODUCTION

BACKGROUND

Faced with the virtual impossibility of imposing 100% passenger screening in the public mass transit environment, transit operators and government policymakers have been considering since at least 2002 whether selective passenger screening can provide an effective combination of defense and deterrence against terrorist attacks. If it can, how can such programs be managed to reduce the risks of terrorist attacks as much as possible while (1) remaining within the law, (2) maintaining legal, public, and passenger support, and (3) not altering the mass transit systems so that they can neither move masses of people nor move them rapidly?

Since September 11, 2001, transit operators and federal and state policymakers have been actively considering these questions. After all, attacks against trains and train stations are hardly new. The Mineta Transportation Institute's National Transportation Security Center of Excellence (MTI/NTSCOE) long ago identified attacking surface transportation and trains, subways, and their stations as a terrorist tactic used frequently in India, Pakistan, Sri Lanka, Russia, France, and the United Kingdom, among other countries.

The Mineta Transportation Institute's (MTI's) up-to-date but preliminary database of surface transportation attacks substantiates the significance of passenger rail transportation as a terrorist target. Of the 1,613 attacks that took place between 1920 and 2009 (recorded as of January 5, 2010), 650 (40.3%) were directed against train targets, the majority of the targets being scheduled passenger rail transportation (including subway systems) in and between cities.

Among the 1,598 surface transportation attacks that have taken place since 1970, attacks against trains were the most lethal, causing, on average, 5 deaths and 19 injuries. Train attacks involving explosives and incendiaries caused an average of 4 deaths and 18 injuries. Attacks against buses were the next most lethal, with an average of 4 deaths and 10 injuries, and those involving explosives or incendiaries averaged 4 deaths and 12 injuries.

Passenger trains, enclosed train stations, subway stations, and subway trains have been the sites of the most lethal attacks against trains. On average, attacks against passenger trains caused 6.6 deaths and 18.9 injuries, and attacks against enclosed train stations caused 6.4 and 64.3 injuries. Those against subway trains averaged 4.2 and 35 injuries, and those against subway stations averaged 4.2 deaths and 25.9 injuries.

Of the attacks involving explosives or incendiaries, those against enclosed train stations were the most lethal (averaging 7.4 deaths and 74.2 injuries), followed by attacks against subway stations (5.2 deaths and 31.9 injuries), passenger trains (5 deaths and 19.2 injuries), and, finally, subway trains (4.2 deaths and 35.0 injuries).²

In July 2004 and July 2005, first during the Democratic National Convention in Boston and then in response to the Madrid and London subway bombings, transit agencies began to

initiate selective passenger screening programs (generally called “random passenger baggage inspection programs”). The Massachusetts Bay Transit Authority (MBTA) implemented the first (albeit temporary) such program from July 26 to July 29, 2004. The New York Police Department (NYPD) and New York Metropolitan Transit Authority (MTA) instituted a program on July 22, 2005, one day after the second set of attacks against the London Underground. Three months later, the New Jersey Transit Corporation (NJTransit) followed suit after a decision by the New Jersey governor and attorney general. On October 6, 2006, MBTA reinstituted its program on a permanent basis.

These three East Coast transit agencies took difficult stands, understood legal constraints and survived court challenges, and fashioned programs that maintained legal integrity and served as the basis for other transit agency selective passenger screening programs. Two other transit agencies and Amtrak have instituted full time programs that are modeled on these programs, and one major transit system seriously considered a full-time program but was denied support for it.

THE 2006–2007 MTI STUDY

Still, selective passenger screening remains a kind of “elephant in the room.” Most of those concerned with it understand it has value; all understand that it is controversial. It was in this environment that in 2006, MTI initiated a study of selective passenger screening, sponsored by the U.S. Department of Transportation (DOT). The two experts who conducted the study—Brian Michael Jenkins and Bruce R. Butterworth—are not academics. They have had extensive field experience in the study of terrorism and the management of security systems, and they used a realistic approach to the issue. They addressed the following questions:

- If 100% screening is not possible, do selective searches make sense?
- If only some passengers are screened, what should be the appropriate selection process when there is no specific intelligence?
- What combinations of selection methods are appropriate under different conditions?
- What role can current and future technology play in passenger screening?
- What are the characteristics of a good screening program?

In their report, issued in February 2007,³ they concluded that while screening 100% of urban mass transit passengers is not a realistic security option,

- Terrorism alerts on transportation targets may dictate that security measures be rapidly increased, and selective screening offers a flexible response.
- The goal of any security measure is risk reduction, not the prevention of all attacks. Selective searches can contribute to deterrence, oblige terrorists to take greater risks, complicate their planning, force them to use smaller quantities of explosives, and divert them to less lucrative targets.
- Full technological solutions are years away.
- Because selective searches run against Americans’ preference for security that is passive and egalitarian, they must be carefully planned and closely managed to

reduce the inevitable allegations of discrimination and profiling based on race or ethnicity.

- A good selection process must be planned in advance; must be based on clear policies and procedures; must combine random selection, behavioral profiling, and threat information; must maximize unpredictability; must allow for expansion, redeployment, and reduction; and must maximize interaction with riders, but not in a way that is perceived as harassment.
- Vigorous public information programs that outline risk-reduction goals must accompany the introduction of any new security measure that directly engages riders, to allay potential public concerns.

The report was presented at MTI's National Transportation Security Summit in March 2007 to, among others, then Secretary of Homeland Security Michael Chertoff and senior Department of Homeland Security (DHS) staff.

History of This Supplement

Since that time, valuable research on selective screening has been undertaken. Transit agencies that initiated programs continued to refine them; other transit agencies considered them. New court challenges came and were met. The Transportation Research Board (TRB) published a valuable decision guideline⁴ shortly after the MTI study was released. The Transportation Security Administration (TSA) worked with the Federal Transit Administration (FTA) to produce a set of recommended action items for transit agencies,⁵ which followed a set of recommended protective measures keyed to different threat levels published by FTA in November 2006.⁶ Neither set of federal recommendations, however, gave selective passenger screening much prominence or even suggested it as a measure to be instituted in cases of very high threat. TSA did institute the Intermodal Security Training and Exercise Program (I-STEP), which informed transit agencies of the need to plan to institute a number of measures, including selective passenger screening. In addition, TSA placed Visible Intermodal Prevention and Response (VIPR) teams into transit environments starting in 2007, to perform deterrence and some screening functions on an ad hoc basis; instituted an Information Sharing and Analysis Center (ISAC) for public transit through the American Public Transportation Association (APTA); and undertook a host of coordinating efforts through the sector and governmental coordinating committees. Finally, the Science and Technology Directorate of DHS continued research on screening and detection technologies.⁷

To assist these efforts, DHS asked MTI, a DHS Center of Excellence, to update its 2007 study by reviewing current transit agency selective screening programs and identifying best practices and lessons learned. MTI began this research in the fall of 2008. It involved the following steps:

- 1. Reviewing the most recent research literature and governmental programs.**

The literature searched included previously mentioned guidance from TSA and FTA; materials produced by APTA, including draft standards and technology papers; and (3) previous studies from TRB, including its most recent Transit Security Update.⁸

2. Interviewing transit agencies. We identified eight transit agencies, including Amtrak,⁹ that had instituted or attempted to institute selective screening programs:

- Boston's MBTA
- New York's MTA
- New Jersey's NJTransit
- The Port Authority Trans Hudson (PATH) of New York and New Jersey
- The Washington Metropolitan Area Transportation Authority (WMATA)
- The Metropolitan Atlanta Rapid Transportation Authority (MARTA)
- The Los Angeles Area Metrolink
- Amtrak.

We also identified one transit agency that instituted a temporary program for a special event: the Utah Transportation Authority (UTA) in Salt Lake City, which, in collaboration with federal authorities, used selective screening in its security program for the 2002 Winter Olympics.

Finally, we identified three agencies, all in the San Francisco Bay Area, that did not implement selective passenger screening programs:

- Bay Area Rapid Transit (BART)
- The San Francisco Municipal Transit System (SFMTA), otherwise known as SF MUNI
- The Santa Clara Valley Transit Authority (VTA).

MTI sent out a questionnaire to all 12 of these rail transportation providers, asking standard questions and also specific questions tailored to each agency. Personal interviews were conducted with all of the providers except UTA, with which telephone interviews were conducted. Finally, e-mail exchanges supplemented the interviews with answers to follow-on questions and with requests for additional documentation.

3. Observing passenger baggage inspections. We were able to observe passenger baggage inspections conducted by MTA, NJTransit, PATH, MARTA, and Amtrak, which provided valuable insights and opportunities to ask additional questions of the transit police or security personnel who were conducting the inspections.

4. Presenting preliminary findings and gaining input from transit operators. MTI presented its preliminary observations on two occasions. On June 18, 2009, the authors presented their findings in a security policy summit co-sponsored by APTA and MTI as part of its Rail Conference in Chicago entitled "Selective Screening of Rail Passengers: An Evaluation of the Pilot Tests." The presentation was followed by a panel discussion and then evolved into an informal give-and-take session that produced valuable insights. Some of the material in this supplement comes from that policy summit, which provided a unique opportunity for transit operators to discuss the opportunities that selective screening programs present and the practical issues that must be addressed. An edited version of that summit is posted on MTI's website.¹⁰

On July 15, 2009, the authors were invited by TSA and FTA to present their findings to the Transit Safety and Security Chiefs Roundtable, co-sponsored by DOT and DHS, in Portland, Oregon. Again, the presentation was followed by a panel discussion and a lively exchange of views, which increased understanding of the basic issues.

Much information and many comments made during these sessions, particularly during the security summit, have been incorporated in this report.

- 5. Presenting the final supplement.** This supplement therefore presents information gleaned from valuable discussions with transit operators and additional points and issues raised by them.

Definition of Terms

It is important to define the scope of the programs being studied, since some terms are interpreted differently in the security policy, regulatory, and operating communities.

In this study, an inspection or search¹¹ is defined as an examination of a person or an article carried by a person through questioning of the person or an examination of the person or the article by hand, with technology, or by specially trained canines. An inspection or search is active, not passive, and the best criterion for determining whether a search or inspection is taking place is that the passenger knows it is happening; it is interactive.

Screening is a broader term that includes not only inspection or search, but also passive observation of passengers or the articles they are carrying through behavioral observation, CCTV, or other passive techniques.¹² In contrast to an inspection or search, a passenger may not know when he or she is being screened. A passenger whose bags or person is inspected is always, by definition, screened; a passenger who is screened is not always inspected.

Selective describes methods in which less than 100% of passengers are chosen for inspection or search.

In this study, therefore, selective screening of passengers means the use of passenger screening programs that include inspections or searches of passengers or bags, some method of selecting less than 100% of them for inspection, and the combination of these features as a distinct and observable process. All programs that include such a distinct and observable process are examined; programs that use only passive screening methods are not considered in this study.

NATURE AND REVIEW OF THE INFORMATION

Transit agencies were given assurances about how the information provided would be protected. Details of security programs were held closely and considered by the authors to be Controlled Unclassified Information (CUI) (including Sensitive Security Information, or SSI). Care was taken to protect against unauthorized distribution outside of government and transit security officials. Also, great care has been taken not to identify the specifics of any particular transit agency program. Rather, common features and variations of

program components are identified, along with best practices, issues for further discussion, and opportunities for program improvement.

Peer Review

The reviewers of the first report—Stephan Parker of TRB, and Dr. Kelley Leone, Deputy Associate Administrator, Office of Research, Development and Technology for DOT's Research and Innovative Technology Administration (RITA) —who are familiar with the field and are independent, being employees of credible nonprofit research organizations, agreed to conduct a peer review of this supplement. In addition, the transit agencies whose programs were reviewed were given an opportunity to comment. In response to the reviews and comments, some changes were made to earlier drafts.

Organization of This Supplement

The Executive Summary presents key findings and recommendations. The Introduction provides the background and history of the research, describes the steps taken, and defines some of the terms used in the report.

Section 1 outlines key factors that influence the decision on whether or not to implement selective screening programs, touching upon legal authority, resources, perceptions of threat and implementation, public and organizational support, prompting events, how decisions are cast, and whether there are any discernible patterns in these decisions.

Section 2 lays out common variations in different components of selective screening programs. The components are addressed in four “sets”:

- Set 1. Legal, policy, and general procedural matters
- Set 2. Detailed inspection components
- Set 3. Components that involve the interface with the public and possible terrorists
- Set 4. Components that involve program improvement, planning, and perceived benefits, both now and in the future

Section 3 details ten best practices and one possible future best practice and briefly mentions four others that could help make selective screening a more effective and viable option.

Section 4 presents for further discussion six issues that transit operators face explicitly or implicitly in implementing selective screening programs.

The questionnaires used in discussions with transit agencies are reproduced in Appendix A, and Appendix B defines the acronyms and abbreviations that appear in the supplement.

FACTORS INFLUENCING THE DECISION TO IMPLEMENT SELECTIVE SCREENING

Providing security for surface transportation—including and especially mass transit conducted by rail—is a critical public policy issue. Since the events of 9/11, the national government has assumed the lead in managing this issue, because defense and security have long been deemed the province of this level of authority.

Yet, because of the different levels of risks associated with the various means of public transportation, national public policymakers have developed distinctly different approaches to managing the threat of terrorism. For air travel, a top-down approach has generally characterized the solution set. In maritime transportation, uniform inspections take place on passenger and cargo vessels entering U.S. ports—and sometimes they are conducted before the vessels disembark for the United States.

Public mass transit has its own operating conditions and risks. Because it is an open system designed to move millions of passengers swiftly and efficiently, with frequent stops and multiple points of access and egress, it is not compatible with security screening of passengers through queuing. Nevertheless, although it is a valuable and vulnerable transportation target, neither the Congress nor the Administration has required fundamental changes to the way transit systems operate.

Transit operators continue to face the lingering issue of what to do, with no solution in sight that significantly eliminates risk. In this context, many individuals concerned with transportation security have contemplated whether or not resources and political capital should be spent on instituting a program of selective passenger screening in which certain passengers are selected for a baggage inspection and more intense observation, within a wider program of passive screening and surveillance.

Our interviews with transit operation and security officials revealed a number of factors that influence the decision to implement, or not implement, selective passenger screening. These factors are described below.

Legal Authority and Court Challenges

A primary factor—if not the primary factor—that transit authorities must address is whether they will be able to sustain legal authority in the face of the inevitable legal challenges that will be posed. Selective screening is a contentious issue that raises understandable concerns on the part of citizens and advocacy groups, which play an important role in our democracy. Although selective screening has been upheld in court, operators do anticipate challenges to any new program and even attempts to overturn current ones. Therefore, the question is not just whether case law exists to sustain a carefully structured selective screening program, but whether in the legal jurisdiction it resides in—or in a higher review—the program's legality will be upheld.

Three early pioneers of these programs, each prompted by the 9/11 attacks and indications of possible plots against transit systems, contemplated some kind of selective passenger

screening prior to implementation. The Madrid subway attacks in March 2004 and the London subway bombings of July 2005 then appeared to bring the issue to a head. Legal authority for the systems implemented by these early pioneers was not clear, however. Boston's MBTA and New York's MTA (and the NYPD) knew with near 100 percent certainty that they would be challenged in court; NJTransit faced less risk, given the lead New York authorities had taken, but in the context of several allegations and cases involving racial profiling, its officials knew they were taking a risk.

In July 2004, the first challenge was brought in the U.S. District Court for Massachusetts. The Arab-American Anti-Discrimination Committee, the National Lawyers Guild, and four individuals filed suit against MBTA when MBTA Transit Police initiated a temporary program during the Democratic National Convention. In a July 28, 2004, decision,¹³ the Court supported MBTA, noting, however, that the program was limited in scope and duration, provided notice to riders, and "ceded no discretion to the officers conducting the inspections." The case was not appealed. This appeared to be an important victory for a temporary program.

The most significant challenge arose from the American Civil Liberties Union (ACLU) in response to the joint implementation by NYPD and MTA of a permanent selective passenger screening program on July 22, 2005, the day after a second attempt was made to bomb the London subway system. The ACLU brought suit against the Police Commissioner in the U.S. District Court for New York two weeks after the program was implemented. The NYPD prevailed. The ACLU then appealed the District Court decision to the U.S. Court of Appeals for the Second Circuit. On August 11, 2006, the Court of Appeals issued a landmark decision in what has become known as *MacWade v. Kelly*, affirming the District Court's decision.¹⁴ Because the case is so important for implementers of future selective screening programs and constitutes the highest level of legal review of selective passenger screening to date, we reproduce some key elements of the decision below:

Plaintiffs appealed timely, raising three claims: (1) the special needs doctrine applies only in scenarios where the subject of a search possesses a diminished expectation of privacy, and because subway riders enjoy a full expectation of privacy in their bags, the District Court erred in applying the special needs exception here; (2) the District Court erred in finding that the search program serves a "special need" in the first instance; and (3) even if the search program serves a special need, the District Court erred in balancing the relevant factors because (a) the searches are intrusive; (b) there is no immediate terrorist threat; and (c) the City's evidence fails as a matter of law to establish that the Program is effective.

... we hold that the special needs doctrine may apply where, as here, the subject of a search possesses a full privacy expectation. Further, we hold that preventing a terrorist attack on the subway is a "special" need within the meaning of the doctrine. Finally, we hold that the search program is reasonable because it serves a paramount government interest and, under the circumstances, is narrowly tailored and sufficiently effective.¹⁵

The District Court concluded with this summary:

In sum, we hold that the Program is reasonable, and therefore constitutional, because (1) preventing a terrorist attack on the subway is a special need; (2) that need is weighty; (3) the Program is a reasonably effective deterrent; and (4) even though the searches intrude on a full privacy interest, they do so to a minimal degree. We thus AFFIRM the judgment of the District Court.¹⁶

A key aspect of the decision which clearly influences all implementers of selective screening programs is the program's being "narrowly tailored and sufficiently effective." Although the court deferred on matters of effectiveness to governmental authorities and their expert witnesses, it did specifically comment on the scope of the inspection program in two parts of its decision. In describing the New York program, the court highlighted the random nature of the passenger selection, the non-intrusiveness of the search, and other factors showing that is narrowly constructed:

In order to enhance the Program's deterrent effect, the NYPD selects the checkpoint locations "in a deliberative manner that may appear random, undefined, and unpredictable." In addition to switching checkpoint locations, the NYPD also varies their number, staffing, and scheduling so that the "deployment patterns . . . are constantly shifting." While striving to maintain the veneer of random deployment, the NYPD bases its decisions on a sophisticated host of criteria, such as fluctuations in passenger volume and threat level, overlapping coverage provided by its other counter-terrorism initiatives, and available manpower.

The officers assigned to each checkpoint give notice of the searches and make clear that they are voluntary. Close to their table they display a large poster notifying passengers that "backpacks and other containers [are] subject to inspection." The Metropolitan Transportation Authority, which operates the subway system, makes similar audio announcements in subway stations and on trains. A supervising sergeant at the checkpoint announces through a bullhorn that all persons wishing to enter the station are subject to a container search and those wishing to avoid the search must leave the station. Although declining the search is not by itself a basis for arrest, the police may arrest anyone who refuses to be searched and later attempts to reenter the subway system with the uninspected container.

Officers exercise virtually no discretion in determining whom to search. The supervising sergeant establishes a selection rate, such as every fifth or tenth person, based upon considerations such as the number of officers and the passenger volume at that particular checkpoint. The officers then search individuals in accordance with the established rate only.

Once the officers select a person to search, they limit their search as to scope, method, and duration. As to scope, officers search only those containers large enough to carry an explosive device, which means, for example, that they may not inspect wallets and small purses. Further, once they identify a container of eligible size, they must limit their inspection "to what is minimally necessary to ensure that

the . . . item does not contain an explosive device,” which they have been trained to recognize in various forms. They may not intentionally look for other contraband, although if officers incidentally discover such contraband, they may arrest the individual carrying it. Officers may not attempt to read any written or printed material. Nor may they request or record a passenger’s personal information, such as his name, address, or demographic data.

The preferred inspection method is to ask the passenger to open his bag and manipulate his possessions himself so that the officer may determine, on a purely visual basis, if the bag contains an explosive device. If necessary, the officer may open the container and manipulate its contents himself. Finally, because officers must conduct the inspection for no “longer than necessary to ensure that the individual is not carrying an explosive device,” a typical inspection lasts for a matter of seconds.¹⁷

Then, in determining that “the search is minimally intrusive,” the court stated the following:

Although a subway rider enjoys a full privacy expectation in the contents of his baggage, the kind of search at issue here minimally intrudes upon that interest. Several uncontested facts establish that the Program is narrowly tailored to achieve its purpose:

1. passengers receive notice of the searches and may decline to be searched so long as they leave the subway ...;
2. police search only those containers capable of concealing explosives, inspect eligible containers only to determine whether they contain explosives, inspect the containers visually unless it is necessary to manipulate their contents, and do not read printed or written material or request personal information ...;
3. a typical search lasts only for a matter of seconds ...;
4. uniformed personnel conduct the searches out in the open, which reduces the fear and stigma that removal to a hidden area can cause...; and
5. police exercise no discretion in selecting whom to search, but rather employ a formula that ensures they do not arbitrarily exercise their authority ...Although defendants need not employ “the least intrusive means,” ...to serve the state interest, it appears they have approximated that model. Given the narrow tailoring that the Program achieves, this factor weighs strongly in favor of defendants, as the District Court properly concluded.¹⁸

NJTransit instituted a program approximately three months after New York implemented its program. The governor of New Jersey made the decision to implement, and the state attorney general issued an order which essentially mirrored the New York program. Although the MBTA Transit Police program was discontinued after the 2004 Democratic National Convention, it was instituted on a permanent basis on October 6, 2006, after

state and city government decided to move forward, buttressed by both perceived risk and the success of the court cases.

Transit agencies that have followed since have been able to take advantage of both the court decisions and the program standard operating procedures (SOPs) and general orders. Officials of many transit agencies considering implementation reported that they had traveled to see the operation of programs already in place and had adopted large parts of these programs, tailoring them to meet particular needs.

It is therefore safe to say that selective screening programs implemented by transit agencies since 2005 and 2006 pass “legal muster.” Nevertheless, the decisions that could be made in courts of different jurisdictions provide a level of uncertainty, and each could provoke a challenge that could lead to judicial review above the Circuit Court level.

Resources

The second issue that transit agencies have to deal with is that of resources. While we do not have full program costs, the available data provide rough, order-of-magnitude figures. One transit agency estimated its direct labor costs for an inspection team of eight to 10 officers at around \$400 an hour. Another agency placed its direct costs without overtime at \$700 an hour for five officers, with an inspection lasting four hours. Another agency estimated the fully loaded rate for a team of more than 10 people, including two canine teams, at just over \$1,000 an hour, which included overhead as well as direct costs.¹⁹ The costs of maintaining canine teams, a key part of selective screening programs, are not trivial. In addition, each explosives trace detector (ETD) currently costs one agency \$27,000, including expendables and supplies for one year.

TSA does provide funding for police officer overtime. According to one transit agency, it allows federal dollars to be used to supplement current programs, but not to create new ones. It provides assistance for the purchase, training, and, most recently, hours spent by canine officers—approximately \$60,000 per team. TSA also helps purchase ETDs, and it recently has given transit agencies funding to send their officers for canine certification training. TSA also pays for interoperable communications, which become critical in joint-agency operations and exercises. Finally, TSA airport screeners and federal air marshals participate in many agency operations, sometimes performing direct duties but also in a support mode. In these instances, some transit agencies provide them training so that they can operate effectively in the unique rail environment.

Clearly, the major cost is that of the labor involved in continuing operations, which is far more than federal funds can offset and apparently still beyond federal policy to offset. This is important, because transit agencies face competing needs for safety, operations, customer service, and maintenance, so funds are scarce.

Nevertheless, costs do not appear to be the primary factor in the decision to implement or not implement selective screening.

Perceptions of Threat and Implementation

Transit authorities—particularly, but not limited to, those that have decided not to implement selective screening programs—have had to weigh perceptions of threat and the political risk of a successful attack, along with the difficulty of implementation. Authorities running major systems in major cities, especially those near the focus of attacks, have perceived the threat to be high enough and have considered selective screening programs to be a reasonable and proportional approach. Those operating smaller systems or systems away from major cities have had a different view. Agencies operating smaller systems located closer to larger systems believe that the larger systems are far more likely targets for terrorists; this, combined with the fact that the smaller systems tend to be more reliant on bus and light rail, which is even more open than heavy rail transit, seemed to decrease the benefits and increase the cost of implementation, although the perception of difficulty may have been exaggerated by failure to consider the limited nature of selective screening programs, i.e., that they do not have to apply to all stops and stations, let alone a majority of them, to be effective.

Community and Political Leadership Support

Perhaps the most immediate concern facing transit security chiefs and transit authorities is the level of support or opposition they will receive from key local actors—first and foremost, in the transit administration and city government, and of equal importance, from key constituencies and advocacy groups and the elected or appointed officials who will be responsive to them. This came through clearly in our interviews.

Local perceptions of security risks on one hand and the risks of infringing upon civil liberties and equal-rights protections on the other seem to strongly influence decisions, unless there have been widely publicized, credible threats or actual attacks on public transportation systems inside the United States. In that case, the mood can change dramatically, from “Why are you doing this?” to “Why hasn’t anything been done?” even if only for a short time. And local factors can be even more powerful. WMATA’s decision not to implement a selective screening program in Washington, D.C., even for the inauguration of the new president, would probably be seen by most as a foregone conclusion, yet it followed deliberations by a complex set of elected officials in certain jurisdictions. And while the option of a selective screening program was not implemented, it was held in reserve in case there was a credible threat of an attack or an attack elsewhere.

In fact, there appears to be no discernible pattern among the transit agencies that have implemented selective screening programs. Two locations—New York and New Jersey—that have strong civil liberties and civil rights advocates but where a large number of citizens suffered from or saw the actual 9/11 attacks moved out first with full-time programs. The other location that suffered in 9/11—the nation’s capital—did not, even when the program would have been implemented to provide extra protection for the inauguration of President Obama. Another East Coast location—Boston—implemented an early temporary program but had to wait until political leadership changed to make the program permanent. Meanwhile, on the West Coast, one large transit service—MetroLink in Southern California—instituted a selective screening program, whereas the oldest heavy rail mass transit system—BART in Northern California—did not. Finally, interviews with

transit security officials in one of the Mountain States suggested that the citizenry, which was as removed from most terrorist attacks as any can be, would support the imposition of a regular program of selective passenger screening.

One clear observation from our interviews is that although the potential of terrorist attacks and the benefits of deterring or interrupting them are considered important in the medium to long term (short-term benefits would usually apply in crisis situations where credible, immediate threats are confirmed), the perception of infringements on civil liberties are immediate—in fact, community leaders and transit leadership have actually been informed by constituency groups that they will face strong opposition.

Faced with a tradeoff of immediate costs in terms of public support and intermediate- and longer-term benefits in terms of protection, those transit leaders and their security chiefs who lean toward selective screening seem to be proactive and legitimately concerned about managing risks, or they have a constituency, a powerful actor or set of actors, or a citizenship base that is focused on reducing security risks and is willing to accept the controversy involved in instituting a selective screening program or are willing to trade minor inconvenience for greater security.

In the case of the New York and New Jersey areas, transit officials indicated that although New York's actions were challenged in court, most of the population seemed to be supportive of the program. The memory of having more than 2,000 citizens killed in the attacks on the World Trade Center runs deep, years after 9/11.

While New York's police and transit leadership were certainly proactive, transit leaders in Boston, along with the governor, were also legitimately concerned about managing risks, and congressional concerns about improving security were influential in the case of Amtrak.

Prompting Events

The decision to implement a selective screening program has usually followed a combination of the following events: (1) actual attacks overseas (e.g., in Madrid, London, Mumbai, Moscow) or in the United States; (2) credible plots to attack mass transit in the United States (e.g., the 2003 plot to blow up the PATH tunnels); the success of another transit agency in implementing a program or sustaining it legally; special events, such as the Olympics or the Presidential Inauguration; and sometimes a security assessment. In the interviews we conducted, the decision was usually not prompted by a single event, but by a combination of events. The most powerful prompting event appeared to be either a recent and deadly attack (such as the London subway bombings) or a special event, along with the success of other transit agencies and the groundwork laid by them.

Packaging the Implementation Decision

Agencies that consider and decide not to implement a program tend to package the decision in two key ways. First, all available means of passive surveillance (passive screening) are emphasized or even increased. Second, the transit security chief is given the authority to implement a selective screening program if there has been an actual

attack or a credible threat, thus leaving him or her with the burden of deciding how to time a particular emergency measure (bearing the risk if the timing is either too early or too late), rather than the agency taking a proactive policy position that a baseline measure is needed.

We believe that the presumption that a transit chief will have sufficient information and warning to make a perfectly timed decision is not appropriate, and that a policy decision based on longer-term assumptions of threat and risk must be made by transit leadership.

Agencies that decide to implement a program must maintain public and senior-level support. Selective screening may involve a tradeoff between significant risk reduction and minimal infringement of civil liberties. An attack by advocacy groups can generate negative perceptions in an American culture that wants maximum freedom and maximum security without having to make any choices, wants everyone treated equally, and is all too willing to focus on occasional program missteps, without understanding the importance of deterrence and how it works. Communications must be continuously and actively managed to avoid public misperceptions.

A cornerstone of the program for agencies implementing one must be program management that ensures the protection of civil liberties, guards against racial profiling, and stays within the scope of the legal authority granted by the courts. In this regard, we must again emphasize the importance of keeping inspections focused on finding the weapons and explosives that terrorists might use; any other contraband found as a coincidence of such searches could, of course, lead to lawful actions. Security program guidance seems well balanced right now, combining a narrow focus with police flexibility when other contraband is found during an inspection. However, should a transit agency ever specifically expand the purpose of the inspections to include items that terrorists would not use for attacks (e.g., drugs or counterfeit money), it is certain that challenges would be brought in the courts, and it is entirely possible that the courts would rule that such programs had exceeded the basis for their existence.

VARIATIONS AMONG PROGRAMS

This section provides a brief overview of selective screening programs, divided into four related sets of program components:

- The first set contains legal, policy, and general procedural components, all of which primarily involve policy and program management. These components are of particular interest to transit security managers.
- The second set contains components at the ground level, where the inspections actually take place. These components are of particular interest not only to transit security managers, but also to first-line supervisors and police officers.
- The third set contains components that concern the interface with the public and also with potential terrorists. These components would also be of particular interest to both transit security managers and first-line supervisors.
- The fourth set contains components that concern program improvement, quality control, and contingency planning. They would be most relevant to transit security managers.

SET 1: LEGAL, POLICY, AND GENERAL PROCEDURAL MATTERS

Sources of Information and Help

The agencies in the transit security community that are conducting or actively considering selective passenger screening seem to be making use of information on the legal cases won, the policies written, and the general orders and SOPs promulgated by transit agencies that have implemented selective screening programs. The knowledge sharing that takes place bilaterally or through TSA-, FTA-, and APTA-sponsored forums is very positive. Only two of the agencies we interviewed seemed to be only partially informed, and we connected both of them with current program managers and government leaders who could help. The documents cited most often as helpful were the TRB publication *The Case for Searches on Public Transportation*,²⁰ which provides a thorough evaluation of the legal basis and boundaries for passenger baggage inspection in the transit environment, and the 2007 MTI report *Selective Screening of Rail Passengers*.²¹

Policies and General Orders

All the transit agencies with selective screening programs have well-written and well-organized general orders. They have clearly taken advantage of policies and orders made available primarily by Boston and New York and tailored them for the transit environment of each system. Typically, these orders outline key aspects of the program. They specify the authority of transit police, sometimes citing the relevant legal cases. They specify the purpose of the inspections (what they are designed to look for), their scope (what they are not designed to look for), and how they will be conducted. In particular, they specify in considerable detail how passengers will be selected for inspection. All the

agencies indicate the voluntary nature of the inspections, how passengers may decline an inspection, when their cooperation becomes mandatory, and the rare instances when stronger action can be taken against passengers for refusing to cooperate with police orders. They all specify public notifications, including signage, sometimes detailing the number of signs, their exact size, and/or how far away from the inspection post they must be placed. They typically list the controls put in place to ensure that inspections are conducted in accordance with policy. Finally, they specify if, when, and how documentation will be kept on passengers inspected or on instances of additional questioning or inspection of bags based on a possible indication of an explosive or weapon, and certainly always on passenger complaints. In sum, they outline in considerable detail who will be inspected, by whom, how, where, and for what purpose, in language that is operationally understandable and legally defensible.

Maintaining Legal Integrity in Passenger Selection

For good reasons, transit agencies are all mindful of the need to ensure that their inspections are lawful—that, as one transit official put it, their programs maintain “legal integrity.” Some transit agencies seem more concerned than others about how strict this requires controls to be on how passengers are selected, how bags are searched, and how much discretion first-line supervisors should have. However, all transit agencies take extraordinary care to avoid discrimination and racial profiling and to ensure that inspections are conducted according to procedure.

There are two areas where the issue of legal integrity or conformance with case law reveals itself. The first is the scope of the actual inspection; the other, and far more important, is the selection of passengers. All transit operators use a random method of passenger selection, but there is interesting variation on what the random number is, who selects it and how, and when, how, and by whom it can be changed.

Central control and local discretion. In some transit agencies, the transit chief or a similar senior official determines the selection sequence for that day, or a set of selection sequences (options that are based on different passenger throughput). In these agencies, the local inspection supervisor has little discretion to change the selection method, other than when the passenger flow demands a lower rate of selection. In two transit agencies—and one in particular—local supervisors were given additional discretion to choose passengers based on criteria that are not based on any factor derived from an individual’s nationality, gender, race, or color and that seem to add an additional feature of unpredictability and therefore deterrence.

Passengers counted. All systems are based on a combination of passengers and bags, but what is counted varies. One agency counts every passenger, whether or not he or she has a bag; if a passenger is selected, he or she is given a card indicating that had he or she been carrying a bag, the bag would have been inspected. Some agencies count only passengers carrying any kind of bag (other than a very small one), and others count only passengers carrying bags that could likely contain the mass of explosives used in the Madrid and London bombings.

Computer-generated or manually generated sequence. All but one transit agency derived a manual count, such as (hypothetically) every tenth passenger carrying designated bags in off-peak hours, and every thirtieth in peak hours. One agency used a computer-generated program to designate a random sequence of numbers, such as (again hypothetically) the first, fourth, ninth, fifteenth, twenty-sixth, thirtieth, and thirty-fourth passenger. This, like the discretion given to local supervisors by one agency, introduces an added degree of uncertainty.

Inspections and the count. Another variation is based on whether the count restarts after each passenger is inspected or is “continuous.” For example, the restart method might have every seventh passenger’s bags inspected; after that passenger is inspected, the count begins again, with the next seventh passenger inspected, and so on. In a continuous count, the officer in charge of counting the passengers would choose every seventh passenger for inspection regardless of whether the officers conducting the inspection are finished with the last person or persons being inspected. The continuous sequence may be a bit more difficult to predict through immediate observation than the restart sequence.

Supervisor discretion. As noted earlier, the local supervisor can alter the inspection sequence to manage the passenger queue and to avoid delays (and also to avoid creating an additional target for an attack), but only to a different approved sequence. In some cases, supervisors seem to have a bit more discretion over the exact sequence to be used than they have when the actual numbers are centrally controlled. In addition, regardless of how strictly the count is controlled or the inspection is focused, police officers have been trained in behavior observation and have the right to question passengers displaying suspicious behavior, a right that they exercise on occasion. They also have the right to make arrests based on reasonable suspicion and probable cause or to take emergency action based on exigent circumstances. This is part of ordinary law enforcement, not passenger screening.

One of the issues discussed later in this report is the understandable tension between maintaining legal integrity, which usually means constraining local discretion and unpredictability, and the security value of such discretion and unpredictability. This is a tension that has to be managed, and it has no easy answer. However, practices that maximize both legal integrity and unpredictability are to be sought. Altering the sequence of the inspection in unpredictable ways creates significant deterrent value by keeping potential attackers or observers in a quandary as to who will be inspected and when. Allowing officers to use their behavior observation training to engage additional passengers is also vital to good security. Neither mass public transit nor any other asset can be protected by guards walking along a virtual fence in the same way, every day, every hour. Nevertheless, selective screening is also being observed by advocacy groups looking for patterns of discretionary decisions that can form the basis for a legal challenge.

The Nature of Voluntary Screening and the Consequences of Passenger Refusal

A key part of transit screening programs—and the maintenance of their current legality—is the voluntary aspect of inspections. This fact is made clear in internal orders, in audible

announcements, in website postings, and on signs. Passengers approaching an inspection who do not want to be searched may turn around and leave. In fact, signs are posted a significant distance from the inspection point in order to ensure that this can be done. One transit agency dictates that at least one sign be posted at least 50 feet before the inspection point.

However, once a passenger offers a bag to the officer to start the inspection, the inspection ceases to be voluntary and must be completed. The consequences of passenger refusal vary, however, by the type of transportation operation being protected. At large stations, a passenger who refuses inspection will not be allowed to board the train through that entrance but can board through another. At smaller stations, in which all entrances are controlled by transit police during the time of an inspection, passengers who refuse inspection are not allowed to board the system. And operators that provide scheduled transportation (e.g., Amtrak) will not allow such passengers to board that particular train; the passengers will be given a refund. A passenger could subsequently board another train to another destination or go to the same destination at another time of the day or on another day. Any passenger who does not comply with these requirements and refuses to leave the appropriate designated area of the system can be arrested.

At first glance, especially to the general public, the notion of allowing a passenger to avoid an inspection and walk away may seem idiotic. In fact, however, the inspection is merely the event that triggers observable reactions on the part of the passengers. All transit agencies understand this.

Nearly all inspection refusals are benign and are based on strong views concerning personal rights. From observations of actual inspections, it is clear that officers readily recognize this kind of refusal, understand that it poses no threat, and treat it with respect and civility. A far more interesting reaction comes from passengers who furtively avoid the inspection. In nearly all those cases, it is suspected that the passenger is carrying contraband (drugs or an unlawfully carried weapon for non-terrorist purposes) or has an outstanding warrant, but nothing that would indicate a terrorist attack. A particularly determined avoidance would indicate possible surveillance by terrorists, a trial run, or—most important of all—an actual operation. We know of no actual operation being detected thus far, although possible surveillance has been detected.

When there is avoidance or evasion, officers can and do question passengers to determine whether additional action is needed. Often, suspicious-activity reports are taken; on a few occasions, the individual has been asked to come to another location for further questioning.

The Role of Documentation

Documentation can play a major role in program management and in maintaining legal integrity. All transit agencies keep some documentation—typically, on the number of inspections conducted, where they are conducted, and the number of suspicious items found or “hits” generated by ETDs or canines. Some agencies’ general orders require inspection-record notations or field interview reports when hits are investigated or

passengers are interviewed. And, of course, passenger complaints are documented. These records are used for program management, and one transit agency indicated that the records are reviewed to ensure that the inspections are conducted with sufficient randomness to maintain and maximize deterrence.

Some transit agencies also maintain detailed data on the gender, apparent race and ethnicity, and age of all passengers whose bags are inspected. These records are kept to ensure the legal integrity of inspections and to make sure that the transit agency can defend itself against any claims of racial or ethnic profiling. Given the possibility of additional court challenges and the clear mandate of the courts that selection not be based on racial or ethnic profiling, maintaining some kind of documentation on the persons inspected seems like a wise investment for transit agencies to make. Training should also be documented, because proper records can demonstrate that the transit agency has ensured that every officer was properly trained to conduct inspections or observe behavior in a way that avoids any illegal practices.

Intelligence and Information

Not surprisingly, transit agencies have strong views on the timeliness, quality, and conditions under which they receive both intelligence and homeland security information. Although there is no simple definition of intelligence, for purpose of this research, we define it as that information about adversaries' intentions and capabilities that, owing to sensitive sources and methods, is not available in the public domain and usually has a national security classification. While there is no bright line between intelligence and information, the difference might be understood by considering the following: When a terrorist event occurs, who did it and how we know constitutes intelligence. What they did or intended to do and how they did it constitutes information. The designation Homeland Security Information (HSI) applies to all other information—including CUI and SSI—that provides knowledge about events, conditions, plots, and other factors that are not intelligence or classified but are relevant to deterring or preventing terrorist attacks.²⁰

The opinions of transit agencies on intelligence range from a view that the agency is so well connected that its intelligence flow is "perfect," to a belief that the agency it is well connected and gets everything it needs, to a belief that the agency must create its own links with federal, state, and local law enforcement and intelligence agencies and must sift through disconnected and often duplicative homeland security information. However, even in this broad range, certain common opinions stand out.

Generally, the highest value is given to intelligence from transit police officers detailed to and located at JTTFs and fusion centers and to that gleaned from established close relationships with federal, state, and local intelligence and law enforcement agencies, particularly the Federal Bureau of Investigation (FBI). In effect, transit agencies endorse the obvious: Intelligence and information require trust, trust requires networks, and networking works. In addition, several transit agencies give high marks to the current senior management of TSA's Mass Transit Division and certain of its staff (along with FTA staff) for proactively sharing information and resources and helping to forge and build a community of transit agencies. Even though one agency had little use for TSA, the

number of times strong compliments were given—when damning with faint praise could be an easy response—tells us that TSA’s Mass Transit Division and FTA are clearly doing a great deal.

At the same time, some transit agencies expressed concern with the timeliness of information from the intelligence community and with the conditions placed on its use. Throughout our interviews, what came through was the need for practical information—the when, who, what, where, and how of possible attacks, not the characterization of the source or the terrorist group that is being reported on. In an impending attack, and even when an attack is viewed as possible by the local community and its leadership, transit agencies need to take action or offer contingency plans, and they need information to shape responses that are effective and not wasteful. The size of a suspected bomb, for example, and anything about the way it might be introduced into the system would be crucial pieces of information to help focus inspections and screening.

Finally, some transit chiefs express concerns about information sharing. They claim that they get a duplicative flood of information from the government-sponsored Public Transportation Information Sharing and Analysis Center (PT-ISAC) and sources within the government; the information is often not useful, and they therefore often “tune it out.” The managers of PT-ISAC are aware of the issue and are working the problem, which is not easy to solve.

SET 2: DETAILED INSPECTION COMPONENTS

Inspection Team Composition

The typical inspection team at the agencies we observed consisted of three to four officers involved in selecting passengers and conducting inspections, plus one or more additional officers performing observation and passive screening, along with a canine unit nearby. The members of the inspection team itself typically include an experienced supervisor, who, among other things, implements the order of the selection sequence, makes appropriate decisions and ensures the inspections are conducted according to protocol, and deals with or assists other officers in dealing with negative passenger reactions. One officer interfaces with the passengers and implements the actual selection, directing passengers to the inspection table, where one or two officers actually search bags, typically using one ETD or conducting a hand search.

A canine team is typically (but not always) in sight or nearby to surveil passengers (and, if the canine is trained, to perform vapor-wake detection) and also to help search bags and, if required by protocol, examine suspicious items. (Interestingly, most transit agencies appear to move directly to an explosive ordinance disposal (EOD) response when there is a suspicious item and do not use the canines to further investigate the item.)

Finally, additional plainclothes or uniformed police can be in the area, observing passengers as they approach the inspection point, process through it, or attempt to evade it.

There are variations, however. One agency uses eight to 10 officers at an inspection

point, and another—which emphasizes plainclothes countersurveillance and uses more than one canine team—can use up to 16 officers for an entire inspection shift.

Maintaining Team Professionalism

All the transit agencies we interviewed emphasized that their officers are encouraged to maximize customer interaction, to be polite, and to be customer-friendly. The benefits here are twofold. First, wary members of the public have a more positive reaction to the process when the first thing they hear is “Sir, would you mind...” instead of “You, put your bag here.” Second, engaging the public—an aspect of community policing—can bring forth additional information for officers trained in behavior recognition; it therefore adds security value to the process. All agencies emphasize this to their transit police and apparently reinforce it with supervision and training.

In our observations of inspections in three locations, this training and supervisory emphasis seemed to be quite in evidence. The supervisors and officers on the teams seemed to combine many positive features: First, they were very familiar with the transit system and in some cases had worked for a long time at the station they were in. They seemed to possess an inherent ability to know when something is “out of order” in this local context. Second, they are friendly and interactive with passengers, often defusing any negative responses with polite directions. Third, they actively shift to lower rates of inspection to manage the length of the inspection line; the ability of officers to do this, thereby relieving congestion and eliminating missed trains, is something we believe those contemplating selective screening programs must fully understand—and some may not.

With varying degrees of rigor—which in one case approached a standard that seemed beyond even the most rigorous airline bag screening—the officers and staff paid attention to detail, in terms of both the passengers’ demeanor and the bags’ contents. The searches were performed carefully; the officers did not just put their hands into the bag for an aimless search. In fact, one agency has provided its officers additional training on improvised explosive device (IED) recognition. Some inspectors, however, seem to need a better understanding of how to prevent contamination of the ETD equipment and to avoid false positives.

Finally, on the basis of both interviews and observations, we believe that managers, first-line supervisors, and officers are aware that they are conducting an operation in a fishbowl. They have two audiences: the traveling public, for whom politeness and precision is key, and more important, anyone conducting terrorist surveillance, for whom they must create enough uncertainty to divert and disrupt the terrorists’ plans and then stop them if they proceed through that inspection point.

We recommend that transit agencies ensure that the message of professionalism in what is primarily a deterrence-based mission be clearly understood. Deterrence and detection are mutually supportive. Only when officers show that they know precisely what suspicious behavior to look for and precisely what to look for when searching bags can the inspection have the desired impact on the observing terrorist planner. The notion of putting officers out in the field just to go through the motions is a dangerous one. The 9/11

attackers studied airport security; they knew its flaws. The same could happen in surface transportation security. Officers looking for suspicious behavior and possible bombs or deadly weapons must do so professionally to maximize deterrent effect.

The Size of Bags Being Searched

While selective passenger screening is focused on both passengers and bags, current programs do not include passenger searches unless there is probable cause or reasonable suspicion; only bags are searched. The sizes of the bags being searched however differ among programs.

Some transit agencies search even small bags. This may suggest a view that a bomb of any size is too dangerous to be allowed into the system, or it might reflect a need to maintain a simple, more easily observed passenger count. Or it could reflect both. Other transit agencies clearly focus on larger, carry-on bags—the kind that could hold the threat mass used in attacks overseas. For one of these agencies, the integrity of the count is maintained by handing a card to any passenger without a bag large enough to search, indicating that had he or she had such a bag, it would have been searched.

The size of the bag—or more properly, the size of the bomb the inspection is meant to stop—raises a difficult issue of risk management that will be addressed later in this report.

The Purpose of Bag Searches

As specified in court decisions, the specific purpose of every program we examined is to find weapons, explosives, or other prohibited items that could be used in a terrorist attack. The general orders specify that bags and compartments within them can be opened to find such items. However, the search is strictly limited. First and foremost, it is clearly stated that while other contraband that is found incidental to the search can lead to an arrest (this has been sustained in court), the search and the passenger observations must not be focused on finding this kind of contraband. In fact, although ETDs can be set to detect drugs, they are left on only the explosives-detection settings; similarly, the canines used are not cross-trained for drug detection. In fact, the officers conducting the inspection at one transit agency indicated that at certain stations where there is a high prevalence of drug dealers, the passengers moving most quickly away from an inspection are those fearing detection, particularly by canines; yet the officers involved in the inspection do not pursue them. Second, and also of interest, the reading of any personal literature by the officers is strictly prohibited.

The narrow focus of the search is properly constructed to prevent terrorist attacks, and it is important to keep it so focused.

The Method of Opening and Inspecting Bags

There is considerable variation among agencies in whether bags are opened or not and in the techniques used to search them. The typical “toolbox” of search techniques contains

hand search, canine search, and ETD search. All of the inspection programs specify in their SOPs or general orders the desired inspection sequence using these techniques. The sequence does, however, vary.

All but one of the agencies with active programs search only the outside of bags, with ETD as the primary inspection technique, opening a bag only when there is an ETD hit. The purpose here is to use technology effectively, minimize the time involved in inspection, and reduce both the reality and the appearance of personal intrusion.

ETD hits are of four types. First, the ETD can detect an actual explosive in a bag. Second, the ETD can detect the presence of legitimate explosives, which would be considered a benign true positive. For example, military, security, or police personnel may have traces of black powder on the outside of their bags, as can persons involved in legitimate mining and explosives activities. Heart patients who are taking nitroglycerine can also trigger a response, as can persons who work with fertilizer. Third, the ETD can detect a compound that is similar to an explosive, which would also be considered a benign false positive. As manufacturing compounds evolve, certain of them are close enough to explosives that ETDs detect them. Finally, an ETD can be contaminated and can sound an alarm when the bag contains neither an explosive nor any compound related to one. In this last case, a simple quality control or manufacturing problem exists that needs to be addressed.

Additional techniques are used to respond to the second and third types of hits—the benign true positives and the benign false positives. First, the passenger is asked a set of questions to determine if he or she has been in legitimate contact with an explosive compound or if he or she has used one of the materials that is known to create a false positive. Second, the officer opens the bag and continues the search to gain additional information. Third, and most important, the officer observes the reaction of the passenger. Officers have learned to distinguish between innocent curiosity and concern, to identify anxiety provoked by attempting to hide something.

Perhaps the greatest difference among inspection techniques and sequences is in whether bags remain opened or closed and how ETD is used, if it is used. One agency uses ETD and hand-search on both the outside and the inside of the bag and probes small compartments. Another agency uses only hand search, in order to speed the process. Several agencies use only ETD on the outside of bags. The variations are considerable.

The Use of Technology

At present, ETD is the only technology used in selective screening programs. Two models are in use or under discussion: the older GE Itemizer and the smaller and newer SABRE 3000. While the SABRE is more portable than the Itemizer, both are relatively small, especially compared with the larger explosive detection systems used at airports. The ETDs are relatively efficient, taking only 10 to 20 seconds on average to take and process a sample, and about 30 seconds to a minute to complete the entire inspection. Passenger reactions to these devices are generally positive; some passengers are curious, and those who have seen such devices before (e.g., in airports) are mostly bored. As mentioned earlier, while the units have dual settings (for drugs and for explosives), they are set only for explosives.

Almost all hits are benign. One transit operator indicated that only one of 119 hits, or “investigative readings,” since the program began identified explosives and required fuller investigation, and this, too, turned out to be benign. The passenger was a model-rocket maker who helped resolve the hit by allowing authorities to search his premises.

It should be mentioned, however, that on rare but important occasions, transit agencies have reported significant hits. There have also been a few cases in which persons carrying a firearm without authorization were detected.

The Use of Canines

Explosives-detection canines are used in many areas of security and law enforcement, including transit security programs and police departments. All of the transit agencies we interviewed that have selective screening programs use canine teams; in fact, one agency focused its interrogation of passengers solely on identification by a limited number of canines.

Canines provide a valuable combination of detection and deterrence. Properly trained, certified, and subjected to quality control—especially realistic field testing with actual explosives or explosive elements in their working environments—canines are generally viewed as equal to if not better than other methods for detecting the presence of explosives. In addition, they provide a unique feature that no other system has yet provided: the ability to follow the trace of an explosive to its source, even after a significant amount of time, and often over a complex route. When the dogs work, they work very well.

The presence of canines in the transit environment also provides a number of other advantages. Passenger reaction to dogs is generally favorable, particularly when the breeds used are considered, rightly or wrongly, to be non-aggressive; such breeds include labs and beagles. This reduces the non-financial costs of their use and increases the benefits in the transit environment.

There is reason to believe that terrorists fear canines, perhaps irrationally so. Therefore, even when canines are not actively searching for explosives and are resting, they provide deterrent value. Passengers do not know for certain when a dog is working and when it is not, and even if it is are not, passengers do not know whether it can be called into play quickly. A public poster from MTA advertises canines and their detection value to expand deterrence and to encourage passengers to be alert (Figure 1).

The extent to which canines are utilized as a part of passenger baggage inspection differs among programs. All the programs attempt to place a canine team near the inspection area. For some, it is an absolute requirement, while for others, canines are provided if they are available and are used as a backup.

Canines can be used to search people and also the outside and inside of bags. Like ETDs, they can produce false hits. Canines have identified benign explosives used by military and police personnel, as well as other commodities that bear some similarity to explosive compounds, apparently including magic markers.



Figure 1 MTA Poster Announcing Canines

A particularly intriguing and potentially effective use of canines is in vapor-wake detection. In a program initiated by TSA, Auburn University has trained canines to detect explosives in the vapor wakes left by individuals. The canines sniff the vapor wakes of people passing by to detect the presence of explosives, apparently with considerable effectiveness. According to Auburn University managers, in a test conducted by Sandia National Laboratories for DHS in 2005, vapor-wake-detection canines performed very well in realistic testing conditions in an actual operating environment. These canines can add an additional measure of deterrence and detection to the entire inspection process.

Passenger Screening Methods

While passengers are not normally questioned unless suspicious indicators are detected, and they are certainly not searched unless there is probable cause, passengers at a selective screening inspection point are in fact screened in two ways, and this process could be made even more robust.

First, police officers, both uniformed and plainclothes, are trained at various levels, in courses lasting several weeks, to observe suspicious behavior, not only of the passenger being inspected, but also of those watching the inspection, and especially those avoiding it. While only one bag is inspected, 10 or 20 can probably be “screened” in this manner. In fact, one agency creates a particularly tight link between plainclothes officers observing passengers and those conducting the inspection. The training provided by agencies for police officers and countersurveillance specialists in behavioral observation varies, but some agencies take a particularly aggressive approach, providing additional month-long training sessions. Most transit employees are also given a high-quality course developed by the National Transit Institute that can be delivered in a day.

Second, canine vapor-wake-detection teams can screen multiple passengers (and their bags) simultaneously for the presence of explosives.

The combination of actual inspection and passive screening is formidable. As stated

many times before, the greatest value of selective screening is not in the actual inspection, but in the behavior the inspection provokes.

SET 3: COMPONENTS THAT INVOLVE THE INTERFACE WITH THE PUBLIC AND POSSIBLE TERRORISTS

The objective of selective screening programs is to reduce the risk of successful terrorist attacks against urban mass transit by creating uncertainty in terrorist planning or reducing the lethality of potential attacks. A number of normal practices and potential best practices have the capability of maximizing uncertainty in terrorist planning and diverting terrorist attacks or reducing their lethality.

Standard Deterrent Practices

- **Location of inspection.** Passenger inspections are focused on major stations, including iconic stations such as Penn Station and Grand Central Station, to maximize both visibility and protective value. However, the entrances of these stations are chosen randomly, and all programs include a healthy dose of smaller stations to ensure the unpredictability of inspection.
- **Time of inspection.** Inspections are focused on rush hour, again to maximize protective value and visibility. (One program that had previously not conducted inspections during rush hour to avoid causing lines has adjusted its practices to include rush-hour inspections.) Inspections also take place at off-peak hours both at major stations and at smaller stations.
- **Sequence of inspection.** The sequence of passenger selection is altered each day, and sometimes during the day, e.g., by passenger load or by inspection post. Systems that use a computer-generated number of inspections each day utilize a continuous sequence rather than a “resetting” sequence and/or allow local supervisors to add neutral discriminators to increase the unpredictability of the sequence.
- **Public information.** Announcements on system websites and public relations campaigns usually accompany the introduction of a program and can be reintroduced periodically. Signs prominently posted in the stations and boarding videos (used by Amtrak) provide additional reminders to passengers (and others) that inspections are taking place. It is possible that the vocal opponents of the inspections even increase the deterrent value of those inspections, creating perceptions of even more police power and surveillance than may, in fact, exist.
- **Passenger involvement.** The “See Something, Say Something” campaigns created by transit systems seem robust and increasingly effective. A series of public relations campaigns created in the New York system appear to be particularly effective. Two of its most engaging signs, which were posted throughout the system, are reproduced in Figure 2.



Figure 2 Signs Used in the New York System

Another transit agency produced not only brochures, but also a poster for each passenger car and a wallet-size card for distribution to passengers.

Public reaction to inspections has been almost overwhelmingly positive. One transit agency that introduced inspections recently indicated that many passengers, when given the option of being in a line that was subject to inspection, choose that line. In that agency, more than 90 percent of the riders viewed the inspections positively. Involving passengers can pay significant dividends and can increase the level of understanding and tolerance for, and support of, inspections. In one system, the regular habits of passengers on commuter trains even provide a security advantage. The riders, who travel on regular trains at regular times, are “territorial” about their seats and have developed strong friendships with their fellow passengers. They sometimes alert authorities when a passenger who usually isn’t in that particular car at that particular time shows up and appears to be “suspicious.” The regular riders thus provide an added deterrent.

In any circumstance, involving the passengers and the public increases the “eyes and ears” that a possible terrorist must consider in planning a potential attack. We were informed of at least four instances in which passengers or crews alerted authorities to suspicious persons who were later determined by JTTFs to be “persons of interest.” Discovering this apparent reconnaissance is hardly a trivial benefit.

- **Community policing, shows of force, and canines.** Several methods are available to increase deterrence, including community policing (discussed below); sending heavily armed SWAT-type units through trains and stations, in single or joint exercises with other authorities or in combination with federal agencies, creating a show of force that gets a great deal of attention and creates additional unpredictability; and the use of canine units.

In addition to these practices, nearly all of which are employed by transit agencies that have selective screening programs, some of the creative practices and their benefits, including some already covered earlier, are highlighted below.

Effective Creative Practices

- **Adding hard-to-understand selection factors.** One agency allows local supervisors to condition the passenger count on a feature (such as the color of a bag, or the side on which the bag is being carried). This, carefully reviewed, would seem to maintain both legal integrity and introduce a wholly unpredictable and hard-to-understand (from the standpoint of the observing operative) sequence. Another agency, as stated earlier, utilizes a computer-generated random number sequence. Again, it would take a great deal of time for an operative to understand the sequence, particularly if it changes every day. Finally, another agency's chief determines where both vehicle and passenger inspections take place, based on seemingly illogical considerations, e.g., every car with a 7 on its license plate, every station with two sets of stairs instead of one, every vehicle of a certain color. Finally, one agency reportedly reviews its inspection locations and sequence to ensure that they cannot be predicted.

These creative practices appear to add significant deterrence at low cost. Transit agencies might want to consider creating a “toolbox” of techniques that pass legal muster and that can be used in any sequence to maximize unpredictability. Steps must be taken to avoid doing the same thing every day, or doing it on the same day, at the same time, and in the same way.

Using Community Policing. Closely related to deterrence is the notion of community policing, which all the transit agencies embrace and consider many parts of the inspection program to be an extension of. Again, these programs have common components and some unusual variations.

In the station boarding areas and elsewhere, we observed officers and staff interacting with passengers and were informed of the training and encouragement to do this. In larger stations (such as Amtrak's), community policing is also extended to vendors and sometimes even to those who can legally seek shelter in those stations. Officers told us that the “regular” homeless can be reliable informants of crimes and other suspicious activities.

Outside the stations, community policing has seen considerable creativity. One agency has embarked on an aggressive campaign to contact the local businesses near each station entrance. Each business is visited, given a flyer (in the appropriate language), and encouraged to report anything suspicious and to call for help. This increases awareness of the inspection program and adds “eyes and ears” for both general crime and suspicious activities that might indicate terrorist planning. Another benefit of community policing of any kind is that it encourages officers and staff to understand, in a way that uses all of their senses, their surroundings and to identify anything that just “seems off.” Suspicious is a relative term, however. What is normal in New York might automatically seem suspicious in other cities, and therefore someone who knows New York and its subway system is needed to determine when something is suspicious and when it is not, e.g., to distinguish between a homeless or deranged person who is often at or near a station and someone

wearing bulky clothing in the wrong season and avoiding police in a furtive manner. **Controlling information provided to the public.** Transit agencies, like all security organizations, face the dilemma of how much information to provide to the general public. On the one hand, maintaining legal integrity, advancing public support, and maximizing deterrence strongly suggest providing a great deal of information to passengers. And, in fact, most agencies do so, in their websites, media campaigns, and posters. Most of the agencies we interviewed either aggressively mounted a public relations campaign or only had to wait for the media—which were clearly ready—to come to them, prompted either by a protest against the program or, conversely, by an actual attack or threat of an attack, in which case the tone of the questions changes dramatically. All agencies seem to have public relations departments and policies established to deal with the press. In general, the random and voluntary nature of the inspections, their purpose and what they are looking for, the time involved, what passengers can do if they refuse to be inspected, and where they can go with a complaint are the standard pieces of information provided.

But how much information should be revealed about the details of inspections? This issue culminates when someone in the public attempts to record visually the actual inspection process. The differing responses to such attempts from the transit agencies provide interesting insights.

One transit agency, upon finding that its inspections had been surreptitiously filmed and placed on YouTube, contacted the filmmaker and offered to further explain the process, believing that broadcasting the inspections—and conveying accurate information—increases deterrence.

At the opposite extreme, another agency prohibits passengers from taking photographs anywhere inside the train system, even photographs of normal subway trains.

Between these two extremes, some transit agencies prohibit any filming of the inspection process—which takes place on transit property or in designated restricted areas—or its personnel and will approach anyone using a camera to ask questions and, if necessary, pursue the matter. Persons taking photos without permission can be evicted from the property and arrested if they resist. All agencies maintain the sensible policy that officers can and will approach anyone taking photographs of restricted areas, even public areas, to ask questions and to ensure that the photos are not being used as part of a reconnaissance effort.

Two points are pertinent here. First, the value of allowing public filming of an inspection depends on how predictable the inspection sequence is. If the same sequence and method are used day after day, the film can assist someone attempting to find out how to get a bomb in a bag through the system. However, if the inspection sequence and technique are highly unpredictable, the film is less valuable to a planner. Second, whatever rationale is used, it makes sense to establish restricted and public areas of the transit system and to use behavior observation to determine if the manner in which pictures are taken requires an interview or an even stronger response. A tourist taking a picture of his family in front of an approaching train hardly seems cause for an alarm.

Two individuals filming different aspects of a station or a train and checking first to see that no one is watching clearly merit an approach and interrogation. In dealing with passengers taking photos, officer training and discretion are key.

SET 4: COMPONENTS THAT INVOLVE PROGRAM IMPROVEMENT, PLANNING, AND PERCEIVED BENEFITS, BOTH NOW AND IN THE FUTURE

Quality Control and Process Improvement

We asked all transit agencies how they monitored program performance and looked for process improvement. With one notable exception, transit agencies relied on the chain of supervision and known inspections to determine whether the program was being implemented properly. Some utilized red-team/red-cell testing, but the protocols of establishing this kind of testing are not easy; a test using a simulated explosive or a person realistically pretending to be suspicious must be allowed to continue long enough to ensure that the test is thorough but stopped before it can result in emergency actions that affect passengers or other agencies.

Most agencies indicated that informal communication with other transit agencies and information gained through the TSA/FTA Safety and Security Roundtable discussions were the main ways by which they obtained ideas on how to improve their programs.

We believe that red-team/red-cell testing should be further explored and that the current methods of determining possible best practices—including the fora such as those reported on in this supplement—should be aggressively utilized so that lessons learned by one transit agency can be incorporated into the programs of others. Joint exercises between agencies also provide a good opportunity to learn about practices that take place elsewhere. MTI could assist in organizing such exercises.

Contingency Plans

Some transit agencies apparently have detailed contingency plans with different levels of intensity for selective screening and different locations, which are keyed to increased threat conditions or an actual attack somewhere. (We were not shown copies of these plans.) At the other extreme, one transit agency had no written contingency plan, but its officials indicated verbally that they would be writing one.

We found only one mention of governmental guidance for passenger baggage inspection. An FTA/TSA publication recommends that at threat condition “Yellow,” agencies “consider random screening of passengers’ bags, backpacks, briefcases, suitcases, etc. at station entrances . . . [and] provide overt warning to potential passengers prior to their entering stations.”²³ At no point in the current guidance are transit agencies encouraged to consider actually implementing such programs. This needs to be addressed.

TSA representatives at the July 2009 Transit Safety and Security Chiefs Roundtable clearly understood the need for additional planning. One representative strongly advocated that each transit agency develop detailed plans to include in a “toolbox” for use in elevated

or changed threat conditions. She pointed out that a need to take action to increase protection, deterrence, and inspection can arise suddenly and that transit agencies that have a plan worked out will be far more likely to maximize benefits and minimize missteps and costs. A transit security chief who arrives at a crisis with a plan is likely to have that plan endorsed. One who arrives without contingency plans on which staff have been trained and exercised could well be instructed to follow a plan that may or may not be effective, efficient, or sustainable.

We encourage transit agencies to develop selective screening programs, and we encourage TSA to strongly recommend that they have these plans in place, or if necessary, even require them to do so.

Benefits Perceived by Transit Operators

We believe that at this point in the discussion, it is important to record the benefits of selective screening programs perceived by transit operators themselves. All the transit agencies we contacted reported the following benefits: increased public confidence, increased deterrence, and a decrease (which some believe can be proven quantitatively) in non-terrorist crime, such as car theft, pickpocketing, and assault. Officials at one transit agency stated that they had clearly seen a decrease in unlawful carriage of weapons. And some officials detailed actual cases in which suspicious activity had been verified by other agencies.

BEST PRACTICES

We identified ten significant best practices in selective screening programs, along with four more that merit consideration. Most of these have been discussed in the preceding sections, so they are summarized briefly here. In addition, one possible future best practice—increased engagement in SAR—is suggested for consideration.

CURRENT BEST PRACTICES

- 1. Behavioral observation training.** Behavioral observation training for both transit staff and police and security personnel is provided by all the transit agencies we interviewed. The training, which appears to be of good quality for both sets of employees, can be refreshed and updated periodically to reflect new information gained from terrorist tactics and attacks throughout the world. The benefits of behavioral observation seem obvious, but the fact that persons of interest apparently conducting surveillance have been detected by transit authorities underscores its value. The eyes and ears of security and transit staff are essential, and training that enables them to determine unusual or suspicious behavior—which also steers them away from illegal, ineffective, and ultimately costly racial profiling—is a practice that should be encouraged. Training should be continually refreshed, validated, and supported by the federal government.
- 2. Community policing inside and outside the station.** Community policing is an established practice that applies well to selective screening. It complements behavioral observation, because it extends the number and variety of contacts into the community, in trains, in stations, and outside stations. Focused on friendly engagement with passengers, community policing builds trust and public support and also increases the tips and information provided to transit personnel. Agencies that have taken deliberate steps to connect with local communities—including Islamic communities—are demonstrating excellent initiative that should be imitated by other transit agencies. Community involvement increases support for selective screening programs, their effectiveness, and their deterrent value.
- 3. Maximizing deterrence and unpredictability.** Creative ways to maximize predictability and extend deterrence include using entirely random inspection sequences; allowing local supervisors to adjust the sequence of inspections based on not-easily-predicted but legally sustainable methods; and establishing inspection points on the basis of randomly selected criteria, such as the direction or depth of entrances or the numbers of left bags. The more difficult inspection and selection are to predict, the more effective the program is, provided a sufficient number of inspections are conducted where the value of the target (and the potential damage of a successful attack) is greatest. We believe that TSA should work with transit authorities and legal experts to develop a “toolbox” of techniques that are both unpredictable and legal, for appropriate use by transit authorities. We emphasize that the use of racial or ethnic profiling is not only illegal, but essentially predictable—and frankly, stupid security. It should be avoided.
- 4. Plainclothes officers.** The use of plainclothes officers who are fully trained in behavior observation and who can blend into the background at and around the inspection

process is an important practice that transit agencies should use and enhance. Although uniformed officers provide more deterrence, plainclothes officers can more discreetly follow individuals who avoid inspection or display other suspicious behavior. Experienced, trained plainclothes officers can help selective screening programs provide the greatest value. One agency we interviewed gives intensive, month-long countersurveillance training to its officers and allows them to communicate remotely with officers conducting inspections. Increased training and increased communication make this best practice even more effective.

5. **Vapor-wake-detection teams.** Given the difficulty of standoff passive detection, the use of canines trained to detect the presence of explosives in the vapor wake of passengers passing by is an exciting new method for providing deterrence and detection that should be further utilized. Staff at Auburn University has trained canines to perform this function, and the dogs have been procured and put to work in two transit agencies. Properly certified, trained, and realistically tested in an operating environment, they can provide significant advantages.

Government efforts to formally certify this use of canines—and perhaps other uses as well—and to recertify the canines using realistic field testing are in need of urgent review. Our interviews with DHS, transit agency, and Auburn University personnel revealed that not even interim standards and guidelines to ensure that canines are detecting what they are trained to detect exist. This is a serious problem that TSA and DHS need to address. Other agencies, including the National Institute of Standards and Technology (NIST), and nonprofit organizations, such as the National Academies of Science, TRB, and interagency working groups, should also be involved in this effort.

The transit security community should remember the adage from robotic space missions: “Fly what you test, test what you fly.” All parties need to work together to provide the kind of guidelines, standards, and oversight needed to ensure that canine teams are properly certified, tested, and recertified. DHS/TSA should take the lead because they are the agencies responsible for ensuring that security is provided in public mass transit.

The need for standards, guidelines, and oversight will be particularly critical if the use of vapor-wake-detection canines is expanded, as we believe it should be.

6. **Shows of force.** Transit agencies in large metropolitan areas with significant resources can mass a relatively large number of armed police officers, sometimes with SWAT uniforms and tactical weapons, to flood certain stations and trains. Often, these exercises are performed jointly with police from other transit agencies or from other jurisdictions. In New York area, such exercises are termed “Hercules,” “Sentinel,” or “Mass” operations.

This is a practice that should be continued and expanded, as it provides several benefits. First, having large numbers of police appear and then disappear, only to reappear at yet another station, increases unpredictability and therefore deterrence. Second, such shows of force increase public confidence. Third, some transit agencies indicated

that the exercises help partnership and planning at both headquarters and field level, identify the need for cross-training, and deconflict procedures between jurisdictions. They can also create a foundation for mutual support for emergencies and special events. One transit official said, “We do this for natural disasters; why shouldn’t we do it proactively [for security]?” WMATA, for example, credited many transit agencies for providing additional presence during the 2009 Presidential Inauguration.

- 7. Continue to narrowly focus inspections.** Continuing to focus inspections only on finding deadly and dangerous weapons that terrorists might use is crucial to maintaining legal integrity. While transit agencies certainly can take legal action when other contraband is found as a consequence of selective passenger screening, they must resist any temptation to expand the purpose and scope of the inspections beyond that of deterring and stopping terrorist acts. The training that sworn officers (as opposed to unsworn officers) receive may be an important factor in ensuring that searches remain narrow.
- 8. Increase links with JTTFs, fusion centers, and state and local law enforcement.** In view of the significance of major transit systems as potential targets, transit agencies and federal, state, and local law enforcement agencies should encourage the detailing of transit police to JTTFs and fusion centers and the establishment of direct links with transit police.
- 9. Share policies, general orders, and best practices.** Transit agencies should continue to share policies and general orders, along with lessons learned, so that continual improvement can take place and the best of others’ experience can be tailored to meet the unique circumstances of each transit environment. The federal government—TSA and FTA in particular—should continue to provide forums to encourage and facilitate such sharing.
- 10. Utilize a diverse workforce.** Ensuring that inspections are performed by a diverse police force helps guard against both the reality and, equally important, the perception of racial profiling.

Four additional best practices, each of which has been demonstrated by one or more agencies, should be considered and advanced by both the government and transit agencies:

- Procurement of more portable and reliable trace equipment, wherever appropriate.
- Performance of deterrence-based duties by transit police who are domiciled away from their inspection sites on trains on the way to those sites, thus making full utilization of their time.
- Allowing appropriately briefed law enforcement officers to ride trains free of charge if they are willing to perform law enforcement duties on the train.
- Where appropriate, joint exercises and inspections in collaboration with TSA screeners.

A POSSIBLE FUTURE BEST PRACTICE: EXPAND SAR

Some transit agencies, particularly in major cities, file suspicious-activity reports when they encounter an event, person, or circumstance that does not rise above the level of probable cause (which would prompt detainment or arrest) but is suspicious enough to report at least to the local police. The value of Suspicious Activity Reporting (SAR) for the transit community seems clear. If the transit police are able to place into a shared space their properly sanitized suspicious-activity reports and their responses and view the reports of other transit agencies, the transit community at large, its individual members, and DHS might be able to detect patterns that signal possible terrorist reconnaissance or activity. SAR may also assist transit police in reducing common crime.

A national SAR initiative is now being led by the Office of the Director of National Intelligence. The initiative is improving national data reporting, analysis, and dissemination. Technical standards and computer interfaces have been developed so that legacy systems can be used to place reports into “federated” or “shared” space; local authorities can control the information placed into this space and can also access the reports offered by others.

Currently, state and local police, including the Miami-Dade Police Department, the New York State Intelligence Center, and the Virginia Fusion Center, are becoming involved in SAR programs. Some of the data being collected involves trains and buses. According to the SAR program manager for DHS, both terrorist and criminal cases have been opened as a result of these reports.

Transit agencies, along with DHS and TSA, should consider encouraging and endorsing a mass transit SAR shared space focused on transit indicators and responses, such as those pertaining to left luggage, suspicious picture taking, and other possible indications of reconnaissance. The SAR program manager at DHS is working with TSA to reach out to the transit police community to encourage involvement in this bottom-up information-sharing program. We believe this effort should be seriously considered and, if appropriate, supported by both government and transit agencies.

ISSUES FOR FURTHER CONSIDERATION

Public mass transit is a valuable target for terrorists, and it has been attacked frequently enough in other countries that if it could be run with airline-type security, it probably should be. But it cannot be so protected and continue to function as a rapid mass transit system. It would be neither rapid nor mass, but rather a system of trains running intermittently that would significantly increase the number of deaths by automobile due to the changed mode of travel and would create lines that themselves would become potential terrorist targets.

In view of these facts, voluntary, selective passenger screening may be a more cost-effective form of security than mandatory 100 percent search. If agencies manage selective screening programs so that they are unpredictable, and if they train and employ the human and canine resources to monitor everyone going through a transit station, bypassing and especially avoiding inspections, selective screening can be very effective. The benefits of a properly and professionally managed selective screening program may not be obvious to the public and may even be counterintuitive, but they definitely exist.

Nevertheless, every security program has its dilemmas, and we would be remiss if we did not place some of the key dilemmas and issues on the table for future discussion. We believe transit agencies and government should consider the following questions.

Should bag search be limited to large bags? If the purpose of selective screening is to deter and find the bags that carry the amount of explosives used in mass transit attacks of the past (roughly 10 pounds or more), searches of small bags may be a waste of resources. To cause significant lethality in trains and stations, bombs must be larger than those that would be effective in pressurized aircraft; this provides an inherent advantage to security managers. Also, programs whose selection sequence does not focus on passengers carrying larger bags may be suboptimal. To maintain legal integrity, inspections are taking place where they are not needed, while other inspections that should take place are not occurring. At the same time, it is difficult for security managers to consciously focus their searches on larger explosives, thereby inherently increasing the possibility that someone carrying a smaller bomb or device could enter the system. This is a difficult dilemma for transit managers, but we believe that focusing on the most likely threat, the one that would cause the most casualties, is the right approach.

Do officers have sufficient latitude to search bags and question people whom they view to be suspicious? The formal answer to that question is yes. Orders are clear. The authority of police officers to react to suspicious circumstances is paramount. However, an unintended consequence of a system that focuses heavily on maintaining the integrity of a sequence or count may be that officers are passively discouraged from interrupting the sequence. This tendency needs to be carefully monitored by transit officials. Suspicion that is not based on racial profiling should trump the sequence every time. The discretionary tools that pass legal muster and can be used by first-line supervisors could help solve this issue.

How can more unpredictability be incorporated into the selection sequence without compromising legal integrity? Best practices in which the discretion of individual supervisors or of a security chief can increase unpredictability are discussed above. In theory, all sequences could be gamed, so it is important to maximize their unpredictability. Again, the “toolbox” referenced earlier could be useful.

How much should a deterrence program be based on detection? There is a distinct tendency in transit agencies not to focus on the precision of searches, but to perform them for deterrence. In nearly all transit agencies, there is little or no realistic testing—certainly no red-team testing. But terrorists do observe programs, and they dissect methods. The 9/11 hijackers studied aviation security in detail, did trial runs, and took trial flights. They knew the holes in the security systems. Transit agencies need to remember that deterrence and detection are mutually supportive and that building a Potemkin Village to boost public confidence will provide neither protection nor confidence but may open a door to exploitation.

How should unsworn officers, such as TSA airport screening personnel, be used in selective screening programs? TSA airport screeners, who are not sworn law enforcement officers, have been used by various transit agencies in formal and informal cooperative programs with TSA. One transit agency indicated that it had utilized a fairly large number of TSA screeners, along with its own employees, to serve as extra “eyes and ears” as they rode the transit system every day, observing and reporting on suspicious activity. However, this same transit agency has made it clear that these employees cannot assume the role or carry out the responsibilities of sworn police officers, and they cannot detain or apprehend individuals, collect evidence, or investigate crimes. Thus, while the availability of TSA and other personnel provides a valuable resource that should be utilized, it is vital that proper legal controls be retained over those who normally screen passengers and inspect baggage to prevent them from investigating and responding to crimes, and that the actual screening and inspections in transit administrations be limited to sworn law enforcement officers. This is an issue that has been treated in important TRB publications²⁴ and needs further examination.

How much access should be given to those seeking to record inspections? If selective screening programs increase, members of the public will inevitably want to film inspections and know more about them. How much information should be provided? Should filming be allowed? There is no easy answer. However, it seems clear that if a random selection can be subjected to easy reverse-engineering that results in a reliable diagnosis of the system every day, the system is weak, and information provided about it increases its weakness. A system that emphasizes, even advertises, being arbitrary, however, may benefit from being broadcast, because the message received may be “We will never be able to tell where they are going, what they will do, and how they are going to do it.”

APPENDIX A

MTI NTSCOE QUESTIONNAIRES: “TOPICS FOR DISCUSSION” AND “SURFACE TRANSPORTATION SECURITY QUESTIONS”

The questionnaire reproduced below was used in discussions with East Coast transit agencies that had implemented selective screening or similar programs or had seriously considered them.

A separate set of questions used in interviews with three San Francisco Bay Area transit agencies that had not implemented selective screening programs is reproduced at the end of this appendix.

TOPICS FOR DISCUSSION

MTI NTSCOE’s task: Purpose, timeline, control of information, DHS as customer, potential further use of information. Any concerns?

Note: We will carefully safeguard any information provided to us.

1. Transit Agency’s Selective Screening Program: We are looking for updates on the information previously provided, but in particular we are looking for lessons learned and best practices.
 - a. Legal authority: What’s the basis for the legal authority and how was that authority attained?
 - b. Timeframe: When was the program implemented? How long will it last?
 - c. Program outlines: We’re looking for a program document that outlines procedures and controls.
 - d. Contingency plans: What kind of events would trigger more intense inspections, and when? What would more intensive inspections be?
 - e. Budget: What is cost impact of selective screening on personnel and equipment budgets? Does the authority have a fully costed budget for the program and if so, what is it? Is there federal, local, or other jurisdictional Law Enforcement Officer (LEO) support for normal or emergency operations?
 - f. Passenger flow: Any impact so far on flow of passengers?
 - g. Chain of authority: Who can implement what, and when?

2. Topics of Particular Interest:

- a. Information and intelligence: How are intelligence and other information relative to selective screening acquired by the transit agency from federal and other sources? Any thoughts on how to improve this flow? Any thoughts on the value of SAR programs/systems?
- b. Observation of all passengers: What methods and technologies are applied to observing all passengers? In what stations and at what times does this take place?
 1. Is behavioral observation used? If so, what program or method is used? Who does it? How do you take advantage of local police who know a particular station or area? How is racial profiling avoided?
 2. How is CCTV used?
 3. For any method or technology, what procedures are followed, and what training is offered to ensure that the procedures are implemented? For first-line supervisors, police, or others?
- c. Selective inspection: What methods and technologies are applied to the selective inspection of passengers or their belongings?
 1. Is K9, ETD, X-Ray or hand search used? If technology is used, what protocols are used?
 2. Is there interest or investment in other technologies?
 3. What questions are used to create a passenger response by passengers being inspected?
 4. Is the inspection voluntary? What happens to those who refuse inspection?
- d. Public relations: What kind of outreach was done or is done for the general public to increase understanding and support for it [the selective screening program]? What kind of additional security benefits are suggested? How is the topic of profiling dealt with?
- e. Quality control: Is there a formal or informal method of testing the system to ensure that it can detect passengers or objects as intended, and is it efficiently and effectively administered?
- f. Top-level support: How firm is the support at the top for this program? What could endanger that support?

3. Other Topics:

- a. What transit agencies did you consult before implementing the program?
 - b. What programs and studies were the most influential and most helpful?
 - c. How helpful were DHS and TSA? How could that help be improved?
 - d. What forum is the most efficient way in which program lessons and improvements are communicated within the transit community
4. Advice: Are there additional topics or questions you think we should explore?
Are there additional assurances we will have to provide to secure information that will be helpful to our work?

SURFACE TRANSPORTATION SECURITY QUESTIONS

(Bay Area Agencies)

1. Do you currently have or have you had in the past a baggage or passenger screening and/or inspection program?
2. Have you ever considered implementing a baggage and/or passenger screening and implementation program? If not, why not?
3. To what extent do you believe that your current efforts protect passenger safety from terrorist efforts?
4. What government authority (i.e., public agency, elected officials) authorizes your screening efforts?
5. Which organizations and/or policymakers tend to favor such programs? Who tends to oppose them, and why?
6. To what extent is your passenger screening/inspection mandate clear or unclear?
7. Are you screening/inspecting the way you would like to? If so, why? If not, why not?

ENDNOTES

1. Brian Michael Jenkins and Bruce R. Butterworth, MTI Report #06-07: Selective Screening of Rail Passengers, San Jose, CA: Mineta Transportation Institute, San José State University, 2007.
2. Train attacks involving explosives and incendiaries—such as those against tourist trains have been the most lethal (averaging 8 deaths and 40 injuries), but there have been very few of these, and they appear to be a statistical anomaly relevant in only certain areas of the world.
3. Brian Michael Jenkins and Bruce R. Butterworth, MTI Report #06-07: Selective Screening of Rail Passengers, San Jose, CA: Mineta Transportation Institute, San José State University, 2007.
4. Transportation Research Board, National Research Council, Public Transportation Passenger Security Inspections, Vol. 13: A Guide for Policy Decision Makers. TCRP Report 86, Washington, D.C., 2007.
5. TSA/FTA Security and Emergency Management Action Items for Transit Agencies, available online at <http://transit-safety.fta.dot.gov/Security/SecurityInitiatives/ActionItems/default.asp>, accessed December 11, 2009.
6. Federal Transit Administration, Transit Agency Security and Emergency Management Protective Measures, prepared by Battelle, TotalSecurity. US, and Transportation Resource Associates, November 2006. Available online at <http://transit-safety.volpe.dot.gov/publications/security/ProtectiveMeasures/PDF/ProtectiveMeasures.pdf> (accessed December 11, 2009).
7. The authors tried to secure briefings on research and development (R&D) from TSA staff but were unsuccessful.
8. Transportation Research Board of the National Academies of Science, Transit Security Update: A Synthesis of Transit Practice, TCRP Synthesis 80, Project J-F, Topic SF-13, ISBN 1073-4880, 2008.
9. In this report, Amtrak is considered a transit operator, even though it offers intercity train service.
10. See <http://www.transweb.sjsu.edu/MTIportal/research/publications/summary/S0804.html> , accessed December 11, 2009.
11. At least one agency, and probably more than one, makes a point of calling these inspections rather than searches, because of the broadly held view of a search as being more intrusive.
12. If a transit environment allows examination of data associated with a person or purchased tickets, this also constitutes screening, in this case, passenger pre-screening.
13. U.S. District Court for the District of Massachusetts, American-Arab

Anti-Discrimination Committee et al. v. Massachusetts Bay Transportation Authority, Civil Action No. 04-11652 GAO, July 28, 2004.

14. U.S. Court of Appeals for the Second Circuit, Brendan MacWade et al.v. Raymond Kelley, Commissioner of the New York City Police Department, and the City of New York, Docket No. 05-6754-cv, Decided August 11, 2005.
15. Ibid., pp. 3–4.
16. Ibid., p. 25.
17. Ibid., pp. 5–7.
18. Ibid., pp. 20–21.
19. It is assumed that these costs do not include the cost of the canine teams.
20. Jocelyn Waite, The Case for Searches on Public Transportation, Transportation Research Board, Legal Research Digest 22, October 2005.
21. Jenkins and Butterworth, op. cit.
22. The terms national intelligence and intelligence related to national security refer to intelligence that involves threats to the United States, its people, property, or interests; the development, proliferation, or use of weapons of mass destruction; or any other matter bearing on U.S. national or homeland security. See definitions in the Intelligence Reform and Terrorism Prevention Act of 2004 http://www.nctc.gov/docs/pl108_458.pdf; HSI is defined as any information possessed by a federal, state, or local agency that relates to the threat of terrorist activity; relates to the ability to prevent, interdict, or disrupt terrorist activity; would improve the identification or investigation of a suspected terrorist or terrorist organization; or would improve the response to a terrorist act, see http://www.dhs.gov/xlibrary/assets/hr_5005_enr.pdf at p. 121.
23. Measure 2.58 of FTA/TSA, Transit Agency Security and Emergency Management Protective Measures, 2006.
24. E.g., TRB Report No. 86, Vol. 13, and Waite, op. cit.

ACRONYMS AND ABBREVIATIONS

ACLU	American Civil Liberties Union
APTA	American Public Transportation Association
BART	Bay Area Rapid Transit (San Francisco)
CUI	Controlled Unclassified Information
DHS	U.S. Department of Homeland Security
DOT	U.S. Department of Transportation
EOD	Explosive Ordnance Disposal
ETD	Explosives Trace Detector
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FTA	Federal Transit Administration
HSI	Homeland Security Information
I-STEP	Intermodal Security Training and Exercise Program
IED	Improvised Explosive Device
ISAC	Information Sharing and Analysis Center
JTTF	Joint Terrorism Task Force
MARTA	Metropolitan Atlanta Rapid Transit Authority
MBTA	Massachusetts Bay Transportation Authority (Boston)
MTA	Metropolitan Transportation Authority (New York)
MTI	Mineta Transportation Institute
MTI NTSCOE	Mineta Transportation Institute's National Transportation Security Center of Excellence
NIST	National Institute of Standards and Technology
NJTransit	New Jersey Transit Corporation
NYPD	New York Police Department
PATH	Port Authority Trans Hudson (New York and New Jersey)
PT-ISAC	Public Transportation Information Sharing and Analysis Center
R&D	Research and Development
RITA	Research and Innovative Technology Administration (DOT)
SAR	Suspicious Activity Reporting
SFMTA	San Francisco Municipal Transit Agency
SOP	Standard Operating Procedure
SSI	Sensitive Security Information
SWAT	Special Weapons and Tactics
TRB	Transportation Research Board
TSA	Transportation Security Administration
UTA	Utah Transit Authority
VIPR	Visible Intermodal Prevention and Response
VTA	Santa Clara Valley Transit Authority (San Francisco)
WMATA	Washington Metropolitan Area Transit Authority
WTO	World Trade Organization

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BRIAN MICHAEL JENKINS

Brian Michael Jenkins, Director of MTI NTSCOE, received a Bachelor's degree in fine arts and a Masters degree in history, both from UCLA. He studied at the University of Guanajuato, Mexico, and in the Department of Humanities at the University of San Carlos, Guatemala, where he was a Fulbright Fellow and received a second fellowship from the Organization of American States.

Commissioned in the infantry at the age of 19, Mr. Jenkins became a paratrooper and ultimately a captain in the Green Berets. He is a decorated combat veteran, having served in the Seventh Special Forces Group in the Dominican Republic during the American intervention and later as a member of the Fifth Special Forces Group in Vietnam (1966–1967). He returned to Vietnam on a special assignment in 1968 to serve as a member of the Long Range Planning Task Group and remained with the Task Group until the end of 1969, receiving the Department of the Army's highest award for his service. Mr. Jenkins returned to Vietnam on a third special assignment in 1971.

In 1983, Mr. Jenkins served as an advisor to the Long Commission, convened to examine the circumstances and response to the bombing of the U.S. Marine barracks in Lebanon. In 1984, he assisted the Inman Panel in examining the security of American diplomatic facilities abroad. In 1985–1986, he served as a member of the Committee of the Embassy of the Future, which established new guidelines for the construction of U.S. diplomatic posts. In 1989, Mr. Jenkins served as an advisor to the national commission established to review terrorist threats following the bombing of Pan Am 103. In 1993, Mr. Jenkins served as a member of the team contracted by the New Jersey–New York Port Authority to review threats and develop new security measures for the World Trade Center following a bombing in February of that year.

In 1996, President Clinton appointed Mr. Jenkins to the White House Commission on Aviation Safety and Security. From 1999 to 2000, he served as an advisor to the National Commission on Terrorism, and since 2000 he has served as a member of the U.S. Comptroller General's Advisory Board. Mr. Jenkins also is the Director of the National Transportation Security Center of Excellence at the Mineta Transportation Institute and since 1997 has directed the Institute's continuing research on protecting surface transportation against terrorist attacks.

Mr. Jenkins serves as a special advisor to the International Chamber of Commerce (ICC) and is a member of the advisory board of the ICC's investigative arm, the Commercial Crime Services. Over the years, Mr. Jenkins also has served as a consultant to or carried out assignments for a number of government agencies, including the Department of Homeland Security. As part of its international project to create a global strategy to combat terrorism, the Club of Madrid in 2004 appointed Mr. Jenkins to lead the international working group on the role of intelligence.

Mr. Jenkins is the author of *International Terrorism: A New Mode of Conflict*, the editor

and co-author of *Terrorism and Personal Protection*, co-editor and co-author of *Aviation Terrorism and Security*, and a co-author of *The Fall of South Vietnam*. His latest books are *Unconquerable Nation: Knowing Our Enemy, Strengthening Ourselves* and *Will Terrorists Go Nuclear?* He is also the author of numerous articles, book chapters, and published research reports on conflict and crime.

BRUCE ROBERT BUTTERWORTH

Bruce Butterworth, MTI Research Associate, has had a distinguished government career working at congressional, senior policy, and operational levels. From 1975 to 1980, as a professional staff member for the House Government Operations Committee, he ran investigations and hearings on many transportation safety issues, particularly in aviation. He spent 11 years in the Department of Transportation, eight of them in the Office of the Secretary. He managed negotiations on air and maritime services in the General Agreement on Tariffs and Trade (GATT), now the World Trade Organization (WTO), chaired U.S. delegations to United Nations Committees, dealt with transport and aviation issues related to border inspections, and was part of the response to Pan Am 103. Mr. Butterworth held two executive posts in aviation security and in both worked closely with Congress as the informal but primary liaison. He was Director of Policy and Planning (1991–1995), establishing strategic, long-term, and contingency plans and federal rules. As Director of Operations (1995–2000), he was responsible for federal air marshals, hijacking response, and 900 field agents; he worked to improve security and the performance of security measures by U.S. airports here and by U.S. airlines everywhere. He ran the Federal Aviation Administration's (FAA's) aviation command center, successfully managing the resolution of hijackings and security emergencies. He launched a successful program of dangerous-goods regulation and cargo security after the 1995 ValuJet crash, oversaw the conversion of the air marshal program to a full-time program with high standards, was a key player in the response to the ValuJet and TWA 800 accidents, and was a frequent media spokesperson. He worked closely with Congress, the National Security Council staff, the intelligence community, law enforcement agencies, and authorities of other nations.

Mr. Butterworth was an associate director at the United States Holocaust Memorial Museum (2000–2003), responsible for security and building operations. He designed and implemented a “best practice” procedure to deal with mail that might contain anthrax powder and developed and conducted new, comprehensive emergency planning and exercises. Between January 2003 and September 2007, he was one of two deputy directors in a 1,300-person Engineering Directorate at NASA's Goddard Space Flight Center, managing workforce planning, budgeting, and human capital management for complex robotics space missions, substantially reducing overhead and improving workplace safety there. In addition to helping the Department of Homeland Security in information sharing, he is a research associate at the Mineta Transportation Institute. With Brian Michael Jenkins, he co-authored a peer-reviewed report on the security risks created by highway transportation of hazardous materials for the state of California.

He co-authored, along with Mr. Jenkins, *Selective Screening of Rail Passengers*, a monograph published by the Mineta Transportation Institute, San José State University, in February 2007. He also co-authored a May 2007 study, *Keeping Bombs Off Planes*:

Securing Air Cargo, Aviation's Soft Underbelly, with P. J. Crowley, Senior Fellow and Director of Homeland Security at the Center for American Progress. In February 2009, he published with Mr. Jenkins "A Campaign the Secretary Must Win," an opinion piece on information-sharing.

Mr. Butterworth received a Masters degree from the London School of Economics in 1974 and a Bachelor's degree from the University of the Pacific in 1972. He was a California State Scholar and a Rotary Foundation Fellow and has received numerous special achievement and performance awards.

LARRY N. GERSTON

Larry Gerston, MTI Research Associate, leads two lives: as an academic and as a communications specialist. A political science professor at San José State University, he covers the public policy process at the national and state levels. Many of his books have won praise. *Public Policy Making in a Democratic Society: A Guide to Civic Engagement* has been heralded as a breakthrough in promoting "hands on" citizen participation. Recall! California's Political Earthquake (with Terry Christensen) was selected as "outstanding book of 2004" by the American Library Association. His eleventh and most recent book, *Confronting Reality: Ten Issues Threatening to Implode American Society*, discusses the consequences of inattention to a series of pressing problems. He has written more than 100 op-ed columns in newspapers, including the San Jose Mercury News, the San Francisco Chronicle, and the Los Angeles Times. He has also appeared on NBC Nightly News, BBC, NPR, and CNN's Inside Politics.

Away from the academic setting, Dr. Gerston specializes in media training, message development, presentation skills, crisis communications, speech writing, and strategic thinking. His abilities stem in part from his role as the political analyst at NBC11 (the Bay Area NBC television station), where he appears on a regular basis. He is also a political analyst at KCBS radio. In these settings, he conveys complex messages in layman's terms.

On a lighter note, Dr. Gerston has written *The Costco Experience: An Unofficial Survivor's Guide*. Like his more serious writings, this book focuses on individual empowerment.

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