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Mineta Transportation Institute Wins DHS Science & Technology Impact Award

MTI's Butterworth and Jenkins created terrorism attack database, plus briefings for TSA's bomb appraisal officers.

San Jose, Calif., April 11, 2011 – The [Mineta Transportation Institute](#) (MTI) has won the Department of Homeland Security's (DHS) Science & Technology Impact Award for 2010 for taking its academic research to the front lines of the fight against terrorism. DHS recognized MTI for developing and then using its unique database of terrorist and serious criminal attacks against public surface transportation targets since 1970 – with close to 3,000 incidents now recorded – to brief the Transportation Security Administration Bomb Appraisal Officers (BAOs) working in the field.

The award for “Analytical Support to TSA Explosives Training” was accepted by MTI Research Associate Bruce Butterworth and the Director of MTI's National Transportation Security Center of Excellence (NTSCOE) Brian Michael Jenkins during DHS's Fifth Annual University Network Summit: Catastrophes and Complex Systems in Transportation, which took place the last week in March in Washington DC. Mr. Butterworth, working with Mr. Jenkins, designed and developed the unique database and also developed and gave nearly all the briefings. Six were given at various locations around the country in the federal government's FY2010, and six will be conducted by the end of its FY2011. The MTI briefing, which is based on outputs from its database, is updated before each briefing to keep it current and relevant.

Mr. Butterworth said, “The briefings help these operational field officers understand how, where, by whom, and against which targets terrorist attacks have been conducted against the world's public surface transportation systems and, more important, which attacks have been most lethal. The briefings also give key information on the explosive devices used in these attacks, such as how they were delivered to the target, charge amounts (if known), how many devices were found before they exploded and by whom, and how many multiple devices were designed to kill Explosives Ordinance Disposal (EOD) personnel and first responders.”

Approximately 20 BAOs attend each two-day session, which are organized by TSA's Explosives Operations Division. The MTI briefings have been cited as a key contribution in these sessions. The manager of this division noted that the briefings and materials were “exceptionally well received” and will be “extremely helpful in their work.” He went on to say, “This is an excellent example of DHS funded academic research providing an immediate, tangible and highly relevant benefit for our explosives specialists.”

After the training, BAOs from throughout the country will be working with a variety of other federal explosives experts as well as state, local, and transportation system law enforcement EOD officers.

“We are justifiably proud of what MTI has accomplished and that DHS has recognized our work,” said Mr. Jenkins, who has studied terrorism and attacks against public surface transportation for many decades. “To see a hard-fought piece of continuing research provide

insights that help front line people in the field is enormously gratifying, and it makes all the painstaking work worthwhile.”

Background: The database supports transportation security analysis

MTI began developing its unique database in the spring of 2009, building on ground-breaking chronologies of attacks against public surface transport authored by Mr. Jenkins and published before September 11, 2001. It is unique because it is designed for transportation security analysis.

“In fact, MTI has reviewed every publicly available list and database,” said Mr. Butterworth. “Data on each attack has been painstakingly analyzed, and attacks have been organized using 56 target categories, 52 attack categories (with 21 specific to explosive attacks), 25 bomb delivery methods and seven different outcomes for each device.”

With a desire to use the “best of the best” for this project, MTI contracted with NASA software engineering consultants Constellation Engineering Services to provide this carefully designed database architecture. It allows MTI to empirically analyze – for both broad and narrow sets of data – where, how and against what, and by whom most attacks take place.

But more important, it allows MTI to determine which attacks have been most lethal, measured in terms of average and median fatalities and injuries per attack, and – for attacks using explosive devices – fatalities and injuries for each bomb involved, and for each bomb that exploded on target. This latter feature has allowed MTI to determine which delivery method – including the use of suicide bombers – is most lethal, with sometimes surprising results.

“While the MTI database – like any others – has its limits, it is already a powerful tool and can be made even more powerful with additional funding, as it allows us to drill down to different combinations of time, place, target, attackers, and attack methods,” said Mr. Butterworth. “While other databases are essential for broader analysis, I’m not aware of any other transportation-specific tool that can give this kind of meaningful empirical data.”

Database has generated broad interest

The database and the briefings have generated broad interest. MTI and the Surface Transportation and Public Transportation Information Sharing and Analysis Centers (ISACs) are now planning to provide to transportation operators a set of current briefings. They also plan to engage in a dialogue so MTI can provide data analysis wherever possible to answer operators’ risk mitigation questions. There has been international interest in the database, including from the United Kingdom.

Finally, the program generated additional interest within the rail sector. MTI Research Associate Chris Kozub was invited to co-present a four-day classroom and hands-on session with CSX on tactical rail response to approximately 25 SWAT team members from 12 state and metropolitan police departments from throughout the US at the annual National Tactical Officers Conference in Pittsburgh PA in September 2010.

Mr. Kozub was also invited to provide a briefing at the Fourth Annual Passenger Rail Security Conference in Newark NJ in November 2010. The conference was sponsored by CSX and attended by all the Class 1 freight railroads, federal and state homeland security officials, and representatives from Amtrak and various commuter railroads and transit systems from throughout the US.

For more information about the Mineta Transportation Institute, go to transweb.sjsu.edu. For more information about the Department of Homeland Security, go to dhs.gov

ABOUT THE EXPERTS

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

Brian Michael Jenkins is director of the Mineta Transportation Institute's National Transportation Security Center of Excellence (NTSCOE) and one of the world's leading authorities on terrorism and sophisticated crime. He works with government agencies, international organizations, and multinational corporations as an analyst, investigator, and crisis management consultant. Mr. Jenkins is a former paratrooper and captain in the Green Berets. He obtained his BA in fine arts and his MA in history from the University of California, Los Angeles. He has also studied at the University of Guanajuato in Mexico and the University of San Carlos in Guatemala, where he was a Fulbright Fellow and the recipient of a second fellowship from the Organization of American States.

ABOUT THE MINETA TRANSPORTATION INSTITUTE

The Mineta Transportation Institute (MTI) was established by Congress in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA) and was reauthorized under TEA-21 and again under SAFETEA-LU. The institute is funded by Congress through the US Department of Transportation's (DOT) Research and Innovative Technology Administration, by the California Legislature through the Department of Transportation (Caltrans), and by other public and private grants and donations, including grants from the US Department of Homeland Security. DOT selected MTI as a National Center of Excellence following competitions in 2002 and 2006. The internationally respected members of the MTI Board of Trustees represent all major surface transportation modes. MTI's focus on policy and management resulted from the Board's assessment of the transportation industry's unmet needs. That led directly to choosing the San José State University College of Business as the Institute's home. MTI conducts research, education, and information and technology transfer, focusing on multimodal surface transportation policy and management issues. Visit www.transweb.sjsu.edu

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