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SURFACE TRANSPORTATION

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This month's issue of *The CIP Report* highlights the Transportation Sector, focusing specifically on surface transportation.

First, the Truck Renting and Leasing Association (TRALA) reveals their proactive approach to security. Next, we include two reprinted articles from the *National Transportation Security Center of Excellence* (NTSCOE) *Communicator* that highlight two research projects supported by the NTSCOE, including The Engagement of Minority Communities in Awareness Programs (EMCAPS) and the development of transportation case studies. The President of Carlini & Associates advocates for the standardization of definitions, prioritizations, and terms across multiple disciplines and industries to ensure that the risks of surface transportation projects are minimized and benefits are maximized. We then discuss the current state of safety and security for buses in the United States, and review the consequences of the 2005 London bombings with regards to security. Finally, we examine how human fatigue factors into surface transportation accidents.

This month's *Legal Insights* traces the history and analyzes the political challenges of the current surface transportation bill.

We would like to take this opportunity to thank the contributors of this month's issue. We truly appreciate your valuable insight.

We hope you enjoy this issue of *The CIP Report* and find it useful and informative. Thank you for your support and feedback.



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Truck Renting and Leasing Industry's Proactive Approach to Security

by Thomas M. James, President and CEO, The Truck Renting and Leasing Association (TRALA)

Whether aimed at preventing criminal activity or stopping terrorist plots, security remains a top priority for the truck renting and leasing industry. The Truck Renting and Leasing Association (TRALA) spearheads industry-wide efforts to ensure that companies remain aware of the security environment surrounding their vehicles and places of business. These efforts include industry-led initiatives as well as cooperative programs with Federal, State, and local governments and have been successful in preventing the use of rented and leased trucks in terrorist activities as well as significantly limiting the ability to use such vehicles in criminal activities over the past decade.

The truck renting and leasing industry plays a major role in meeting our Nation's transportation needs. The vehicles in the rented and leased fleet range in size from cargo vans to medium- and heavy-duty commercial trucks weighing up to 80,000 pounds. Smaller trucks, under 26,000 pounds, are available for rent to the general public for moving personal and household items, while trucks of all sizes are both rented and leased to small businesses and motor carrier fleets for commercial transportation purposes. Overall, TRALA represents more than 550 truck renting and leasing companies and its members own approximately 20

percent of all commercial trucks operating on our Nation's roads.

TRALA member companies range in size from multi-billion dollar publically traded companies to small, family-owned businesses with only a few employees. With such a wide disparity of security exposure and resources among member companies, TRALA understands that a one-size-fits-all industry-wide security plan would not be effective or even feasible.

Accordingly, TRALA provides its members with security resources, assessment tools, and menus of successful security practices from which companies can choose to employ based on their individual security needs. These are provided to members through TRALA's website and through printed publications.

In general, TRALA's security focus is comprehensive and covers five areas: management, employee information, training, vehicle and facility security, and communication. In support of individual member company security efforts, TRALA has developed and distributed thousands of copies of the planning tool, the *Truck Renting and Leasing Security Awareness and Self-Assessment Guide* to its member companies. In addition to providing awareness information on terrorist methods of operation, this

planning tool enables companies to assess their current security plans against each of the five areas previously mentioned. This guide has been developed in consultation with the U.S. Department of Homeland Security (DHS) and its Transportation Security Administration (TSA). The *Truck Renting and Leasing Security Awareness and Self-Assessment Guide* is always available on TRALA's website at <http://trala.matrixredesign.net/wp-content/uploads/2011/10/Security-Awareness-and-Self-Assessment-Guide.pdf>. After a review of the limited history of acts of terrorism involving rental trucks, specific challenges facing the industry, and a brief review of current knowledge about how terrorists operate, the Guide forces companies to take a good, hard look at their security and anti-terrorism practices by completing a thorough questionnaire.

TRALA and TSA also worked closely together to develop the publication *Safeguarding America's Transportation System, Security Guide for Truck Rental Company Employees*. This publication is focused on the short-term truck rental segment of the industry. The guide identifies certain behaviors and actions consistent with terrorist activity that employees of truck rental companies should be

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Engagement of Minority Communities in Campaign Awareness Programs (EMCAPS)

This article was originally published in the March 2012 issue of the National Transportation Security Center of Excellence Communicator.

In July 2010, DHS launched a national “If You See Something, Say Something™” public awareness campaign. The campaign seeks to raise public awareness about potential signs of terrorism and violent crime, with a strong emphasis on the importance of reporting suspicious activity to law enforcement. The “If You See Something, Say Something™” slogan, created by New York’s Metropolitan Transportation Authority (NY MTA), is licensed to DHS.

In support of the national launch of “If You See Something, Say Something,™” the TSA, Transportation Sector Network Management (TSA-TSNM) Mass Transit and Passenger Rail Security Division reached out to the National Transportation Security Center of Excellence (NTSCOE) to identify opportunities to enhance the effectiveness of public security awareness campaigns in the mass transit sector. A review of existing efforts raised concerns as to whether the security awareness messages were reaching all riders or, rather, if additional approaches were needed to attract the attention of certain market segments, particularly minority communities.

The Engagement of Minority

Communities in Awareness Programs (EMCAPS) research project is a collaborative effort including three of the seven NTSCOE institutions: Tougaloo College; the Center for Transportation Safety, Security and Risk at Rutgers, The State University of New Jersey; and the Mineta Transportation Institute (MTI) at San José State University. The EMCAPS project explores the security awareness campaigns on the African American market segment which comprises a significant percentage of mass transit ridership, especially in large urban areas.

The research has been organized into two phases. Phase I, completed in August 2011, explored the engagement of African Americans in public awareness campaigns in collaboration with the Metropolitan Atlanta Rapid Transit Authority (MARTA). Phase II, which is currently underway, involves field research in the National Capital Region (DC, MD, and VA).

The Phase I research findings indicated that existing security awareness campaigns are reaching African Americans. However, additional strategies can be implemented to enhance the impact of campaign materials, remove obstacles to reporting, and build a positive relationship between an agency and its customers that will increase the likelihood that minority riders, as well as all riders,

will actually “say something.”

In Phase II, the research team has the opportunity to conduct field research involving a newly launched public awareness campaign and explore the EMCAPS research questions in more detail. The goal of the NCR campaign is to build on the successful “If You See Something, Say Something™” initiative by giving it a new look and feel and employing traditional and nontraditional media to get the message out. The design and structure of the campaign is consistent with many of the recommendations developed by the result of the Phase I findings. Key research tasks include a quantitative analysis of raw data from MTA’s annual Customer Ridership Survey and a series of customer focus groups in Baltimore, Montgomery County, Maryland, and Washington DC.

The initial analysis of MTA’s 2010 Customer Ridership Survey raw data provided several interesting insights for the ongoing EMCAPS project as well as for MTA. At a very general level, it indicated that, while there may be some distinctions in perception of safety and risk based on demographics, that a more dominant influence appears to be environmental setting (i.e. transport mode). The causes behind why environmental setting, and transport mode in particular,

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TC-NTSCOE Case Studies Provide Valuable Lessons

This article was originally published in the March 2012 issue of the National Transportation Security Center of Excellence Communicator.

Tougaloo College National Transportation Security Center of Excellence (TC-NTSCOE) developed two case studies on national events which resulted in the creation of two videos and educational training materials that will be used to build capacity among transportation professionals, and also highlight possible career paths in homeland security. TC-NTSCOE collaborated with Total Security Services International (TSSI) on researching the Case Studies Project, which also included data gathering to support the ability of the Incident Commanders, transportation professionals, and critical infrastructure owners and operators to make more rapid and accurate decisions during a crisis. The project's purpose was to provide critical information about principles of the National Response Framework and develop best practices based on a man-made and natural disaster situation that affected surface transportation on a city and regional level. The project consisted of two separate analyses of the events combined with videos describing the D.C. Area Sniper Shootings in 2002 (city) and Hurricane Katrina in 2005 (regional) covering the New Orleans flooding.

From the beginning of the project, TC-NTSCOE ensured that the content of the material would serve as a “yardstick” by which to measure success in the creation a premiere Executive Level decision-making analysis tree that was supported by documentation and an interactive video. Close collaboration with TSSI in this effort produced weekly teleconferences and correspondence during the project's lifetime to establish goals that would facilitate the ending of one milestone, which would then lead to the next one, without hindrance. At each milestone, a thorough analysis of timelines and the activities related to each decision was made, and action taken with reference and emphasis on the National Response Framework, as it related to the two studied events. Captain Raymond Brown USCG (Retired) was the Lead Investigator for the Katrina case study while David Mitchell served as Lead Investigator for the D.C. Area Sniper case study. The project received support from TSA by way of inputs from the TSA Steering Committee. Online access to the videos on the case studies can be found at the following links:

<http://www.youtube.com/watch?v=Hs07qMvfZq8>.

<http://www.intelishare.net/>.

<http://www.tssiinc.com/core.cip.php>.

TC-NTSCOE Executive Director, Eduardo Martinez, explained that the ease in exporting the videos and materials to professionals, transit supervisors, law enforcement, and other agency officials made this an ideal project. According to Martinez, “working with TSSI, Tougaloo College made an intelligently aggressive move towards creating a force-multiplier that fulfilled our mission, met the deadlines and captured the objectives that will train current users and enable the next generation — our students — to see how surface transportation security plays a key role in their daily lives.”

For more information, please contact Eduardo Martinez, Executive Director, TC-NTSCOE, emartinez@tougaloo.edu. ❖

Redefining Regional Risk in the 21st Century

by James Carlini

Improving regional sustainability is critical in today's competitive global markets, whether you are in the United States, Europe, Asia, or any industrialized area. Economic viability depends on many factors working in concert with one another. When it comes to infrastructure and road projects, understanding and prioritizing projects can help minimize risks and maximize benefits.

What needs to be understood, before this complex economic engine that supports regional sustainability can be improved upon, is the reduction of risk through the standardization and acceptance of a common set of definitions, prioritizations, and terms across multiple disciplines and industries. By doing this, there is a definite reduction of risk to any project because of poor or mis-communications. Everyone involved understands the basic building blocks of the project and the lines of communications can flow more easily. Clear communications saves time and reduces cost over the life cycle of any project.

A standard definition of terms as well as a common framework defining all layers within an infrastructure needs to be developed and accepted before radical changes

and improvements can be implemented in executive strategies. Today, there are too many single-discipline definitions of terms that do not float across industries as well as economies. The time spent in trying to review, coordinate, and consolidate concepts is costly; it is very costly because of the competitive global environment that surrounds us. There needs to be a greater common understanding of basic project building blocks before more complex issues can be addressed effectively. As long-time executive Kenn Jankowski observes, "[i]t is time to put aside professional territorial egos and unite behind a common economic language."¹

In addition, a critical yet fundamental element that is also linked to every project is "time." The time it takes to complete every phase of the project and the time it takes to keep something off-line, like an existing road, an airport runway, or a bridge, before the completion of the new implementation is finished, is critical. This concept of time also affects a project's success and should be understood.

Time Is Not Money

The old management adage, "time is money" does not apply when it

comes to re-defining risk in public and private infrastructure projects as well as other economic endeavors that include Public/Private Partnerships (P3 projects).

In reality, time is NOT money, because time cannot be replaced, but money can. If you are late on a critical project and lose weeks of time prior to completion, you will lose in a competitive environment. On some contracts, you will actually be penalized or even liable to lose the contract itself. Time burns up money.

On the other hand, many internal government projects are not as susceptible to time pressures because the project executive's attitude is often "what's another week or two?" There is less pressure on getting something in on-time and many time schedules will be allowed to slip without consequence. The pressing reality is that markets do not stand still and the windows of opportunity for various products and services have become smaller and smaller.

A good example of this is when a company like Abbott or Pfizer rushes to get a product approved by the Food and Drug Administration (FDA) in order to be sold into the

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¹ The author is personally acquainted with Kenn Jankowski, the former Global IT Director for case New Holland.

Risk (Cont. from 5)

pharmaceutical market. If two or three companies are working on the same product, the one who gets the product in first for approval wins and the others, who may have spent as much or even more money, have lost.

There could be a \$2 billion upfront investment on research for a product that may reap \$30-\$40 billion in profits when it reaches the market. If you come up late, you do not get the FDA approval for selling the drug. The company who does earn approval creates a solid \$30 billion closed market for themselves.

Therefore, projects that are a day late or even a week late, which is sometimes acceptable in many industries and government endeavors, could be financial suicide in others. This is a good example of making sure the definitions of “project completion” and “on-time” are clearly understood across

organizations, especially ones working in a global environment with project team scattered across the world (See text-box below).

Extra care should be used in public/private partnerships (P3) made up of both government and private sector organizations. A common “sense-of-urgency” has to be instilled in the entire group because getting to the deadline is imperative.

Local and regional economies are depending more on the “sense-of-urgency” that corporate executives, as well as government officials, have-to-have in their responsibilities.

21st Century Problems Cannot Be Solved with 20th Century Solutions

The quality concept of “best practices” has to be eliminated, or at least re-defined to actually mean something when it comes to infrastructure projects. Total

continual improvement (TCI) on practices is a much more pragmatic and rewarding approach in sustaining regional viability because “best practices” are an ever-moving target. In many cases, what was state-of-the-art last year is obsolete this year.

Organizations that cling to their “best practices” are probably clinging to obsolete ways of work. Obsolescence, whether it is in management processes, road building, products or facilities, will raise the risk factor in any project or endeavor.

Common problems throughout the years on public/private endeavors can be summed up by these elements that include, but are not limited to:

- Lack of commitment (to start the project);
- Lack of follow-through (to finish

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Glossary of Terms Needing Improvements (not a complete list)	
“Being On-Time”	Make sure every reference to time, or elements of time related to a project, is clearly understood by all parties AND interpreted the same way. In multi-cultural international project teams, time has different connotations. Calling a meeting for 3:00PM might get some coming in several hours later because their concept of time is different.
“Best Practices”	This is a well-worn phrase that is supposed to signify that the organization is “really” up-to-date with their management and procedures. In reality, most “best practices” are obsolete. Why? Because “best practices” are a moving target and can change like the weather.
“Final Phase”	The final phase of a project might be interpreted differently depending on who you are talking to. Make sure everyone understands if it is the “final phase” of their work or the final phase of the overall project when making statements about project completion and drop-dead dates.
“Politically Correct”	Most people today are looking for “politically accurate” communications and leadership. No clear management decision can be made with inaccurate, slanted or filtered data.
“Shovel-Ready”	This connotes a 1930s work solution. Skill sets are well-beyond this. Maybe “keyboard-ready” is a more apt phrase in today’s economy, but a more generic phrase might be “pen-ready” as in signing a contract and dispersing project money.

Risk (Cont. from 6)

the project);

- Lack of clarity (to define what the project encompasses);
- Lack of cash (to fund the project through completion);
- Lack of promotion (to get recognition of what has been done or what is now available); and
- Lack of right returns (cash back, revenues, other intrinsic benefits and residual values).

In a recent seminar in New York City on P3 Projects, there were discussions that public/private partnerships need to be well-defined, concise, and well-funded. One of the panelists used the New York subway system as an example of public-private partnerships. Since the agreement was so tightly written at the time it opened in the early 1900s, the cost of a ride could not be raised for 50 years. This became a catastrophe to the operator and had to be modified.

Public policy affects Levels 1 through 5 of the Regional Economic Engine (see Chart 1) and must have a clear strategic unified direction identified and understood

by all interested parties. The Regional Economic Engine is built-upon each layer.

In today’s world economy, regional sustainability relies on several key factors:

- Jobs (and the re-circulation of salaries);
- Education (a trained workforce that can be re-generated and renewed);
- The political/commercial atmosphere (government and private business working together including regulatory environment and taxes); and
- Natural/Man-made resources.

All of these factors rely, support, and build upon infrastructure: the platform for commerce. By defining infrastructure and having all involved understand the basic platform, the element of risk will be reduced in the standard day-by-day development of any endeavor. It needs to be pointed out that today, trade routes have become electronic and critical infrastructure encompasses a whole plethora of

new layers which must be discussed, standardized, and understood to be covered by risk policies. The regional economic engine depends on the rigidity and resilience of the infrastructure.

A standard framework of infrastructure that can be universally accepted is the “platform for commerce” (see Chart 2 on Page 8). This was first discussed and initially described in a white paper entitled, *Intelligent Infrastructure: Securing Regional Sustainability* (2009).

Project Funding Prioritization

With the recent distribution of Federal stimulus money, requests for funding various layers of infrastructure and road projects were solicited. For the most part, these projects were not clearly reviewed and analyzed for their impact to the community in most areas and legislative districts within all the states. In one legislative district in Illinois, a methodology was developed and put into practice. It was a critical step in defining and prioritizing what projects were to be funded. The need for providing a structured approach was considered important in these days of “transparency” and accountability.

With two different funding mechanisms that had to be utilized for maximum benefit (the Federal Stimulus Package and the State’s Capital Funding Program), a structured approach was needed and should have been adopted by

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LAYER	LEVEL	DESCRIPTION
5	The Regional Economy	The overall regional economic climate
4	Jobs	Opportunities and the re-circulation of salaries
3	Political/ Commercial Environment	Regulatory environment, Taxes, Capital Markets and the Media (spotlighting the activities)
2	Infrastructure	The Platform for Commerce: What business builds upon
1	Natural Resources	What the region offers in natural resources

Chart 1: Layers of the Regional Economic Engine. *The Regional Economic Engine Framework*: Source: James Carlini. All rights reserved.

Risk (Cont. from 7)

every legislative office. It should be noted that there are also other factors and selection criteria that cannot be easily structured into this evaluation process. As an initial first step, this process provided a much clearer picture in sorting out over 100 projects that were presented for funding. Some simple questions had to be asked in order to start the evaluation process of this mix of road projects, interchanges, municipal facilities, and other neighborhood beautification projects (parks, centers, and other programs).

approach to analyzing where limited funding can best be applied and utilized for the greater good of the legislative district and the state, instead of a purely subjective approach that most politicians use and abuse. In these financial times, keeping the same level of funding for every agency may be considered a non-attainable accomplishment and in many cases, totally impossible. No agency should expect an automatic increase in funding.

to ask, but many forget to ask it. First, a project should be defined as beneficial using the ICARE © Model, a five-level approach to identifying projects and their impact as developed by the author (James Carlini):

- Individual organization or group
- Community (single Municipality or township)
- Area (several municipalities and/or townships)
- Region (the full legislative district (R1) or multi-regional districts (R2) where a project overlaps two or

Who Benefits from this Project?

This model provides a structured

This seems to be a simple question

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LAYER	LEVEL	DOMINANT INITIAL DRIVER OF IMPLEMENTATION IMPORTANCE
Space (Interplanetary Future)	8	Just Beginning to be Built (Space shuttles, space station, and satellite networks) Future: mid-21st century, 22nd century? (United States, Russia, Japan, China?)
Broadband Connectivity Network (Cyberinfrastructure)	7B (wireless) 7A (wired)	China, Japan, S. Korea, Netherlands, United States (beginning 21st century, IBCs and IIPs)
Airports	6	Europe and United States (mid-20th century)
Power (Grids, Nuclear Power, Oil)	5B (Nuclear) 5A (everything else)	United States (beginning/ mid-20th century)
Telephone Network (Analog Voice Only)	4	United States (beginning/mid-20th century)
Railroads	3	United States (mid-1800s)
Roads/Bridges	2	Roman Empire (500BC- 476AD)
Ports/Docks/Water	1	Phoenicians (1200BC-900BC) Egyptians (3000BC-1400BC)

Chart 2: Infrastructure: The Platform for Commerce. *Five Thousand Years in the Making*. Source: James Carlini, 2009, 2012. All Rights Reserved.

Risk (Cont. from 8)

more legislative districts)

- Everyone in the State (statewide)

This first evaluation of the project would be to designate where the project’s footprint for benefits are covered:

- An individual group (I),
- A single community or municipality (C),
- A group or area of municipalities (A),
- A full legislative district comprising of multiple municipalities (R1 or R2), or
- The entire state (E).

The next step was defining the project cost as a Mega, Significant, Major, Large, or Small cost (see Table 1).

Total or partial funding could be at the discretion of the executive or committee based on various factors: access to other funding, internal funding, revenues generated (tolls, fees), or other alternatives.

Once the initial benefit analysis was established, a tertiary criterion could be applied to prioritize to each project ranking within that level:

- Critical
- Necessary
- Optimal

This three-level ranking approach provides a second sorting refinement to prioritize road and infrastructure projects and afford a realistic gauge as to what should be best for each category that focuses on individual organizations, communities, areas (multiple legislative districts), and regions (full legislative districts). Those factors would be applied after the objective sorting process was completed, including the use of the Critical, Necessary, and Optimal Categories. The terms are defined as the following:

Critical: Provide critical services that should not be cut. Examples would include, but not limited to, public safety (first responders), public health, infrastructure (critical platform for commerce and economic development), critical bridge, or interchange.

Necessary: Provide necessary services. Examples would include, but not be limited to, schools, community colleges, and other public works.

Optimal: New social, educational program or benefit, expansion of existing public services, park expansion, bike paths, or anything that is not considered Critical or Necessary services.

The distillation of each project’s priority can start with this ICARE ©Matrix. As stated earlier, this would not be the total review or final review performed on each project, but would be the initial steps in identifying, categorizing, and prioritizing projects using a structured, objective approach as a foundation for selection criteria instead of something less positive or totally subjective.

The sample chart of Project Funding Matrix (see Chart 3 on Page 15), where each project submitted would be categorized into the above matrix, helps sort out and prioritize all the endeavors of various organizations, agencies, and municipal entities.

Legislative Impact

Another measure that is more subjective is to define Impact. How do we first define societal/political Impact and then measure it or at least give it some type of value? Impact is also a multi-faceted measure:

Political: Obvious; how many votes does this directly impact?

Economic: Does it create jobs, and if so, how many, for how long, and what type?

Environmental: Positive, negative,

(Continued on Page 15)

Mega	(over \$10,000,000 in funding costs)	MEGA
Significant	(over \$5,000,000 to \$10,000,000)	SIG
Major	(over \$1,000,000 to \$5,000,000)	MAJ
Large	(over \$250,000 to \$1,000,000)	LRG
Small	(\$250,000 or less in funding)	SMA

Table 1.

U.S. Buses: Are They Safe and Should We Care?

by Kendal Smith, J.D., CIP/HS Research Associate

While Americans may have become accustomed to long lines, luggage searches, confiscated liquids, and body scans before boarding an airplane, we still expect to be able to chase a bus down the street à la Sandra Bullock in *Speed*, hopping on at the last second with our backpack and coffee. Despite the ensuing plot of that and many other movies, most Americans do not appear to be particularly concerned that a bomb may be hidden under the engine or beneath the clothes of the person next to us.

Yet, buses are among the most attractive terrorist targets. The Mineta Transportation Institute (MTI) recently released a study finding that since 1970, 55 percent of all fatalities and 41 percent of all injuries caused by terrorism resulted from attacks against buses, bus stops, and bus stations.¹ While TSA released a two page bulletin last fall reminding law enforcement officials of “Terrorist Concerns Regarding Mass Transit Bus Systems,”² less than two percent of its eight billion

dollar budget is allocated towards surface transportation as a whole.³

On its face, this fact is rather troubling. If more than half the people killed by terrorists in the past 40 years died while riding or waiting for the bus, it stands to reason that we should pay that area more attention. Testifying before the House Subcommittee on Transportation Security this May, Greyhound COO William C. Blankenship argued this point, noting “it is difficult to conclude that a [F]ederal security program that makes billions of dollars available for aviation security and nothing for intercity bus security is well balanced.”⁴

But statistics cannot be read in a vacuum. Surface transportation security is primarily the job of local governments, not the TSA, and even withstanding that truth, airport security measures are not feasible at every bus stop around the country. As Chairman Mike Rogers contended in the same hearing,

“...our surface systems are inherently accessible to millions of people every day. They have to remain open for many reasons, not least of which is to keep our economy on track.”⁵ In fact, while terrorists may have attacked multiple buses abroad, there has never been a successful terrorist assault against the U.S. public bus system.

So, is there anything we should be doing to improve bus security? While the MTI report does not advocate for any specific changes, the authors anticipate that by analyzing attacks that occurred elsewhere, it will at least foster discussion within U.S. borders about possible parallels and potential risks. As the report states, “[i]t is hoped that the case studies presented here and the accompanying analysis will increase understanding of what can happen and what can deter, prevent, and/or mitigate the occurrence of terrorist

(Continued on Page 16)

¹ Bruce R. Butterworth, Shalom Dolev, and Brian Michael Jenkins, *Security Awareness for Public Bus Transportation: Case Studies of Attacks Against the Israeli Public Bus System*, (Mineta Transportation Institute, March, 2012), <http://transweb.sjsu.edu/PDFs/research/2978-israeli-bus-public-transportation-attacks.pdf>.

² See Mickey McCarter, “TSA Warns of Terrorist Interest in Attacking Buses During Busy Holiday Season,” *HSToday.US*, (November 11, 2011), <http://www.hstoday.us/briefings/today-s-news-analysis/single-article/tsa-warns-of-terrorist-interest-in-attacking-buses-during-busy-holiday-season/2a198ccb0399cab8d0e250a5a3e1db24.html>.

³ Matthew Harwood, “Industry, Lawmaker Question TSA Surface Transportation Security Programs,” *Security Management*, (June 1, 2012), <http://www.securitymanagement.com/news/industry-lawmaker-question-tsa-surface-transportation-security-programs-009942>.

⁴ *TSA’s Surface Inspection Program: Strengthening Security or Squandering Scant Resources?: Hearing Before the Subcommittee on Transportation Security*, 112th Congress (May 31, 2012), (Statement of Mr. William C. Blankenship, Greyhound Lines, Inc.).

⁵ *Ibid.*, (Statement of Representative Mike Rogers, Subcommittee Chairman).

Effects of the 2005 London Bombings on Surface Transportation Security

by Kiera Russell, CIP/HS Intern

In the aftermath of September 11, government agencies worldwide put in place permanent safety measures, both in manpower and technology, to ensure the public's safety while flying. Since then, with such a concerted focus on aviation, surface transportation has seemingly not been viewed as a top priority; however, according to a Congressional Research Report, surface transportation systems, especially public transit, account for one-third of the world's terrorist attacks.¹ Today, other terrorist attacks on transportation systems, such as the 2004 Madrid and 2005 London bombings (referred to as 7/7), are unrelenting reminders to the vulnerability of mass transit systems.

Looking specifically at the 2005 London bombings, changes in surface transportation security systems and techniques were questioned, critiqued, and updated with a variety of temporary security measures. However, no significant, permanent security changes were implemented. While the British discovery of liquid explosives on a trans-continental flight in 2009 prompted major changes in aviation security, why is it that the London

and Madrid bombings did not spur such decisive and permanent reforms in surface transportation security? William Johnston, a writer for *Issues in Science and Technology*, answers this question by stating heightened rail and transit security was a "short-lived priority" after the London and Madrid bombings.²

Although the four suicide bombers who detonated three bombs in London's underground train and one on a double decker bus emphasize the continuous threat to mass transit systems, heightened security and significant changes in security measures have only been implemented for short periods of time. High density of commuters, ease of public accessibility to train stations, the sheer volume of train stations, and the lack of cost-effective solutions are major obstacles to enacting and enforcing permanent security changes and methods similar to those in aviation transportation. In fact, data from MI5's website depicts the United Kingdom's fluctuating threat levels from August of 2006 to July of 2011. The ascending possible threat levels are: low, moderate, substantial, severe, and critical. From 2006 to 2011, threat levels

shifted each month between substantial, severe, and critical. This supports Johnston's point that like threat levels, corresponding elevated security measures, especially for surface transportation, are only temporarily elevated.³

If security measures such as passenger and baggage screening were administered in London's underground train stations, passenger flow and transportation efficiency would be severely disrupted due to the number of people commuting on trains each day. For example, just one station in the United Kingdom, London's Waterloo station, handles four times as many passengers a day as Heathrow airport.⁴

After the London train bombings, vigilant police presence increased in train stations. Flyers were distributed with passenger safety and emergency plans, police randomly used hand-held explosives scanners on passengers, bomb sniffing dogs were deployed, and a temporary x-ray screening process at the Heathrow Train Station commenced in 2006.⁵ It is

(Continued on Page 18)

¹ Congressional Research Service, *Transportation Issues in the 108th Congress*, (October 19, 2004), http://assets.opencrs.com/rpts/IB10032_20041019.pdf.

² William R. Johnstone, "Not Safe Enough: Fixing Transportation Security," *Issues in Science and Technology* 23(2), (2007), 51.

³ Threat Levels, Security Service MI5, last modified July 2011, <https://www.mi5.gov.uk/output/threat-levels.html>.

⁴ Homeland Security News Wire, "Trend: London Rail to Test Sophisticated Screening Methods," (November 15, 2005).

⁵ Department for Transport, *Transport Security Measures- Attitudes and Acceptability Trial at Heathrow Express*, (June 24, 2008), <http://www.dft.gov.uk/publications/security-measures-heathrow-express/>.

Fatigue Risk

On June 28, 2004, a Union Pacific freight train carrying a pressurized tank of liquefied chlorine ignored a signal to stop and crashed into a BNSF Railway Company freight train in Macdonia, Texas. The accident derailed 40 freight cars and punctured the tank loaded with chlorine, causing the release of a vaporized cloud of poisonous gas. Three people, including two local residents, died from inhaling the chlorine gas and 30 more individuals were treated for injuries related to either the crash or respiratory distress caused by inhalation of fumes.

Environmental clean-up costs were estimated to be \$150,000 and the losses attributable to equipment were estimated to be \$5.7 million dollars.¹

After a two year investigation, the National Transportation Safety Board (NTSB) released its Railroad Accident Report,² which found that the probable cause of the collision was “Union Pacific Railroad train crew fatigue.” The report found that fatigue was caused by both employee misuse of time meant for restorative sleep as well as crew scheduling practices that did not place enough emphasis on fatigue management.

Fatigue issues are a common

problem in the rail industry; a 2006 report from the Federal Railroad Administration found that fatigue played a role in 10 percent of all accidents in the preceding five year span.³

Recognizing the dangerous consequences of improper fatigue risk management, the Center for Infrastructure Protection and Homeland Security and DB&A recently held a joint half-day executive seminar on the topic. The day began with Dr. Melissa M. Mallis providing a scientific grounding on the determinants of fatigue and its biological effects. Fatigue, as Dr. Mallis presented, is a function of the amount and quality of recent sleep, the period of time since the last sleep period, the circadian rhythm, and the time an individual has been working on a particular task. She then described the biological impacts of fatigue, including comparisons to alcohol consumption, and demonstrated the evidence-based link between increased fatigue and incident risk.

In the next session, Dr. Mallis highlighted some strategies to minimize risk associated with fatigued workers. The session began with a background on the science of sleep and associated biological rhythms. She then linked

together work schedules with scientific evidence to demonstrate how certain schedules, such as shift work, inhibit the full restorative power of sleep. Using these relationships, she then provided some guidance on how best to develop scheduling strategies and other policies to minimize fatigue.

Moving from the biological to the legal field, Gregory S. Walden, J.D. discussed the liability risks involved with fatigue related accidents. He examined the potential risks to both employees and employers from multiple angles. Employees have the potential to lose professional licenses, their jobs, and can face both civil and criminal trials. Employers in highly regulated fields can be held responsible by the government and face fines and potential suspension or revocation of operator certificates. Civilly, the employer may be held liable to a third party for the action of its employee, and may also owe compensation to its employee through worker’s compensation laws. Finally, Walden mentioned trends in potential criminal prosecution of companies which have been found to be negligent and discussed this development in various

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¹ National Transportation Safety Board, *Collision of Union Pacific Railroad Train MHOTU-23 With BNSF Railway Company Train MEAP-TUL-126-D With Subsequent Derailment and Hazardous Materials Release Macdonia, Texas June 28, 2004*, (July 3, 2006), available at <http://www.nts.gov/doclib/reports/2006/RAR0603.pdf>.

² Ibid.

³ U.S. Department of Transportation, *New Fatigue Study Findings Focus on Train Crew Work Schedules to Reduce Human Errors that Cause Train Accidents*, available at <http://www.fra.dot.gov/Pages/press-releasesold/121.shtml>.

LEGAL INSIGHTS

Surface Transportation: Legislation

On July 6, 2012, after months of political wrangling and short-term extensions, President Barack Obama signed a new surface transportation bill, “Moving Ahead for Progress in the 21st Century,” (MAP-21) which authorizes approximately \$50 billion per year in transportation spending for two years.¹ No new transportation spending bill has been passed by Congress since 2005, a sign of how difficult political compromise has become. This is indicative of how difficult it is to reach political compromise with regards to surface transportation.²

Passing the bill has been hailed as an example of bipartisan spirit, but achieving this step has been a challenge. The previous transportation authorization bill, “The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users,” was extended a total of ten times given that it was going to expire without a new authorization bill in place. The debates over this bill mirrored those that have taken place in various other forms in the halls of Congress; protecting the environment versus

reducing the regulatory burden for businesses, promoting alternative fuels versus increased off-shore drilling, and increased taxes versus reductions in spending.

In fact, much of the rancor around funding issues were concerned with the future of the Highway Trust Fund (HTF), with many concerned that MAP-21 simply delayed a serious problem. According to a Congressional Business Office report from January 2012, the HTF account used for highways and highway safety programs will be depleted sometime in fiscal year 2013, and the mass transit account will be exhausted sometime in fiscal year 2014.³ The HTF is largely funded by fuel taxes (18.4 cents per gallon of gasoline and 24.4 cents per gallon of diesel fuel) and the combination of rising costs of aging infrastructure and less revenue from more people driving fuel efficient vehicles will lead to a funding gap unless something more is done. As one commentator put it, “while better fuel-efficiency is good news for Americans’ wallets and less driving good for the country’s air, for its highways and mass-transit

systems, it is something of a disaster.”⁴

Funding, and other issues, led to the parties having very different views of what the bill should look like. Democrats initially pushed for large scale spending to serve as an investment and as a jobs program while Republicans urged for large, in this case 35 percent, cuts to spending in order to maintain the HTF without raising taxes. In addition to fiscal concerns, timing was also an issue. At one point, James Oberstar, the Chairman of the House Transportation and Infrastructure Committee, advocated for \$500 billion, six year bill in order to provide stability for transportation funding and allow states to plan for long-term projects without the uncertainty of multiple reauthorizations.⁵ In contrast, the Secretary of Transportation, Ray LaHood, recognizing the political difficulties of major reforms, asked for an 18 month extension in order to ensure funding for the HTF.

Ultimately, compromise won

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¹ H.R. 4348.

² Keith Laing, “League of Cities: Highway Bill Shows the Possibilities of Bipartisanship,” *The Hill*, (July 7, 2012), <http://thehill.com/blogs/transportation-report/highways-bridges-and-roads/236477-league-of-cities-highway-bill-shows-the-possibilities-of-bipartisanship>.

³ Congress of the United States, Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012 to 2022*, (January 2012).

⁴ “The Efficiency Conundrum: A Combination of Less Driving and More Fuel-Efficient Vehicles is Imperiling America’s Highway System,” *The Economist*, (November 19, 2011).

⁵ Josh Voorhees, “Oberstar, Mica Plan \$500B, 6-Year Transportation Reauthorization,” *New York Times* 18 June 2009.

TRALA (Cont. from 2)

on the lookout for during the workday. This guide contains important contact information for DHS's Transportation Security Operations Center (TSOC), which truck rental company employees use to report suspicious activity. More than 180,000 copies of the employee guide have been distributed to TRALA members in hard copy form, and it is also available on TRALA's website at <http://trala.matrixredesign.net/wp-content/uploads/2011/10/EmployeeGuidetoRentalTruckSecurity.pdf>.

In addition to these comprehensive publications that were developed by TRALA, its members, and DHS/TSA, TRALA's proactive approach to security and anti-terrorism practices is also carried out by its Security Committee. TRALA's Security Committee is comprised of top executives of TRALA's major independent renting and leasing companies and leasing systems. TRALA receives materials from Federal government agencies, including Joint Intelligence Bulletins (JIB) from DHS and the Federal Bureau of Investigation. These are typically Unclassified // For Official Use Only (UFOUO) documents that are shared with Security Committee members, who then distribute it to the appropriate employees in their company to ensure that necessary steps are taken to remain vigilant while facing a security-related or terrorist threat.

TRALA also regularly meets with senior DHS officials at either TRALA or DHS headquarters, and also during quarterly meetings of

the Critical Infrastructure Partnership Advisory Council (CIPAC) sector focused on surface transportation, the Highway and Motor Carrier Sector Coordinating Council (HMC-SCC). Additionally, senior DHS and TSA officials have attended meetings of the TRALA membership to discuss current and proposed security and anti-terrorism programs specific to the industry. Those meetings where industry and government come together are so valuable because they open the door to discussion and information sharing. In turn, this allows both sides to ensure that their respective security and anti-terrorism efforts are not duplicative, but are working together efficiently.

TRALA and its members are very pleased with the industry-developed, proactive security, and anti-terrorism practices currently in place. The industry welcomes any opportunity to engage in discussion and information sharing with government officials so the industry can take the knowledge or intelligence it has received from the government and apply it to the industry's security practices.

TRALA is a voluntary, non-profit national trade association founded in 1978 to serve as a unified and focused voice for the truck renting and leasing industry. TRALA's mission is to foster a positive legislative and regulatory climate within which companies engaged in leasing and renting vehicles and trailers, as well as related businesses, can compete without discrimination in the North American marketplace.

To learn more, call TRALA at (703) 299-9120 or visit www.trala.org. ❖

Risk (Cont. from 9)

or neutral for the environment?

Revenue: Any revenues involved? Potential sales tax or user fees?

Operational: Getting government better, more efficient, cost reduction.

A weighted approach to addressing each one of these criteria further defines where a project fits within a project funding list.

The vast majority of different State and congressional districts used a much less structured and purely subjective approach, but it is hoped that in future distributions of project money or annual project funding reviews, a more structured framework and objective prioritization process could be used. By using these concepts and frameworks in analyzing projects, municipalities and State agencies can better determine objectively what projects should be funded first and given a higher priority, which distills the process into a “must have versus hoped for” lists.

Only then will projects be implemented for their impact on the economic sustainability of the region as well as a more objective, prioritized sequence of choices that they should be selected by for funding. ❖

James Carlini, MBA, is a certified infrastructure consultant and is President of CARLINI & ASSOCIATES. His last white paper, “Intelligent Infrastructure: Securing Regional Sustainability” that appeared in “The CIP Report” in 2009 covered concepts he presented at the US Department of Homeland Security’s Conference on Aging Infrastructure at Columbia University in New York City in July, 2009.

He has worked on various high-tech real estate and infrastructure projects, including the Chicago 911 Center project as well as planning the broadband connectivity for the 800-Acre DuPage National Technology Park, the Rosemont Entertainment Complex, and the Terra Business Park in Illinois.

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	CRITICAL			NECESSARY			OPTIONAL		
	MEGA	SIG MAJ LARG	SMA	MEGA	SIG MAJ LARG		MEGA	SIG MAJ LARG	SMA
INDIVIDUAL	Project 1,2			Project 4			Project 8		
COMMUNITY					Project 6				
AREA	Project3							Project 7	
REGION				Project 5					
EVERYONE									

Chart 3: Project Funding Matrix (Sample): Source: James.Carlini@sbcglobal.net.

Buses (*Cont. from 10*)

attacks against public bus systems.”⁶ Thus, the report details 16 planned or committed attacks against the Israeli bus system during the Second Intifada. While not statistically representative, the chosen cases provide insight into terrorist tactics and surveillance, the efficacy of various security measures, and the results of weapon choice and placement on lethality.

In 11 of the studied cases, suicide delivery was used or attempted more than devices “left behind,” and, on average, resulted in more casualties. This is because suicide bombers have greater control over the placement and timing of the detonation, while “[g]eneral public security awareness can be very effective in countering the modus operandi of ‘left behind’ IEDs.”⁷ Security measures such as refusing to allow last second passengers to board and stopping the bus some distance before a specified stop, which enables drivers to examine waiting passengers, was also effective. In several cases, the bus driver’s adherence to training procedures, including awareness of suspicious indicators and questioning passengers as they boarded, was enough to stop an attack altogether or greatly reduce its harm.⁸ Overall, basic awareness, whether on the part of law enforcement officials, drivers, or the public, proved essential in counteracting the attacks.

The report further notes that terrorists generally choose a target that the planner or dispatcher is familiar with, which preemptive security measures cannot detect because the requisite access to the area already exists. In this instance, it is important to avoid habitual or predictable security patterns and instead “create a deterrent effect strong enough to stop a hostile operation dead in its tracks and cause the operatives to focus their efforts elsewhere.”⁹ The authors emphasize that while this notion is not new, it requires intentional effort and planning to counteract the human proclivity for routine.¹⁰

Are these kinds of security measures being implemented in the United States? Should they be? It is true; no one has ever successfully attacked one of our buses. Thus, perhaps security measures for buses do not need to be enhanced. However, there is great merit in generating this discussion; no one had ever flown a plane into one of our buildings — until they did. ❖

⁶ Bruce R. Butterworth, Shalom Dolev, and Brian Michael Jenkins, *Security Awareness for Public Bus Transportation: Case Studies of Attacks Against the Israeli Public Bus System*, (Mineta Transportation Institute, March, 2012), <http://transweb.sjsu.edu/PDFs/research/2978-israeli-bus-public-transportation-attacks.pdf>.

⁷ Ibid., 72.

⁸ Ibid., 12, 16, 21, 26.

⁹ Ibid., 92.

¹⁰ Ibid.

Fatigue Risk (*Cont. from 12*)

jurisdictions.

Dave Buczek, President of DB&A, then presented during the last three sessions, which discussed fatigue countermeasures, organizational methods for assessing fatigue management capabilities, and concluded the day by discussing fatigue management systems. He began by examining methods to increase worker and management awareness of fatigue related issues, risks, and countermeasures and discussed software and hardware tools that are being used to detect fatigued workers. The SmartCap is one example of a tool used to assess fatigue; the device is used by heavy equipment operators and is worn like a normal baseball cap. The cap monitors electroencephalogram (EEG) information of the operator and reports the information back to a central server. Data from all operators can then be viewed in real-time and an operator can be replaced if high levels of fatigue manifest.

Buczek then discussed different assessment frameworks and the applicability of more or less thorough assessments dependent on industry context and risks. Methods of assessment involve both subjective and objective tests to be used alongside tools like post-accident reports in order to create changes in organizational policies or culture. In the final session, Buczek recommended that the previously discussed science, methods, tools, and assessments should collectively become part of a Fatigue Risk Management System (FRMS). While management must have a commitment to minimize fatigue risk, he underscored that responsibility for fatigue management is shared between management and employees.

On April 17, 2011, two BNSF trains collided with human fatigue cited as the cause. NTSB Chairman Deborah A.P. Hersman reiterated that, “this investigation draws attention to the dangers of human fatigue.” The danger of fatigued crews is clear and mitigating this risk will require the cooperative efforts of academicians, policy-makers, and the private sector. ❖

For information on future seminars, please contact Dave Buczek at dave.buczek@dbainnovation.com.

London Bombing (Cont. from 11)

common practice for these types of safety procedures to occur after such attacks or to be used at major events such as the Queen's recent Diamond Jubilee or the upcoming 2012 London Olympics.

Despite the absence of permanent security procedures, the only form of security measures that have remained consistent in the U.K. rail industry has been the use of closed-circuit television (CCTV). Over 2,000 cameras watch over the London railway system and an additional 6,000 cameras are used to monitor the London Underground and bus system. It is the most comprehensive monitoring system of mass transit in the world, equipped with facial recognition and "suspicious-behavior recognition" software, which alerts human operators of suspicious behavior on train platforms.⁶

Even though the CCTV system was credited for recording the actions of the 2005 London bombing terrorists throughout the train station, Civil Libertarians argue that the extensive use of CCTVs is an invasion of privacy.⁷ As a result, while increased surveillance is a possible option for permanent security change, it will closely border issues concerning lack of civil liberties.

Over time, the measures used to secure surface transit passengers have proven to be more reactive and temporary compared to air travel security which has been more

reactive and permanent. This is understandable considering the vast differences in these two industries with respect to the volume of passengers handled and the physical constraints of securing the perimeter as well as monitoring ingress and egress of train stations versus airports. In addition, while there has been tragic loss of life in both sectors at the hands of terrorists, tragedies in the air, starting as far back as the Hindenburg, will always be seen as more sensational than tragedies on the ground. As a result, we will probably continue to see priority given to securing safe skies over safe ground transportation.

More often than not, a terrorist threat directed at the aviation industry is immediately followed by changes to passenger rules. The public has become accustomed to seeing airport policies evolve and become permanent. This is in stark contrast to rail transport, where loss of life has not led to a quantum shift in the commuting process. Simply stated, rail commuters have not had to endure drastic changes in commuter rules after the 2005 London Commuter bombings. This is partly attributed to the existing surveillance and security practices that were already the best in the world, and partly because working class commuters did not want to be inconvenienced by regulations that had no guarantee of working better than the existing systems in place prior to the bombings.

Based on previous incidents, the UK public will most likely continue to resist tighter restrictions, rules, and regulations until such time when another catastrophic loss occurs, or the frequency of losses of life occurs. If, and when it does, will temporary measures be put in place to placate the public only to be withdrawn in the short-term, or will the government move to enact permanent changes that will mirror more those currently in place at airports worldwide? Unfortunately, only another incident such as the 2005 London bombings will reveal the answers to these questions. ❖

⁶. "Surveillance Society: CCTVs in the U.K.," *Homeland Security News Wire*, <http://www.homelandsecuritynewswire.com/surveillance-society-cctvs-uk?page=0,1>.

⁷. Matthew Taylor, "CCTV website alarms civil liberty campaigners," *The Guardian*, October, 4, 2010, <http://www.guardian.co.uk>.

EMCAPS (*Cont. from 3*)

may be a critical driver of perceptions of safety and risk could not be discerned from this limited examination of the 2010 MTA data. However, it pointed to the need for further examination of this question and, as a result, provided input into the design of the protocols for focus groups that will take place later in the project. In addition, the 2010 data analysis contributed to the development of some additional questions regarding security and safety in general, and the new campaign in particular, that were added to MTA's 2011 Customer Ridership Survey.

The customer focus groups offer the research team a valuable opportunity to identify similarities and differences in customer perceptions, key issues, and concerns with regard to transportation security in general, and more specifically, the NCR public awareness campaign. In addition, the findings will be compared with the focus groups completed in Atlanta as part of Phase I.

MTA's willingness to incorporate the NTSCOE developed questions into their annual survey and the regional collaboration on the planning and implementation of the focus groups demonstrates how

DHS S&T COE institutions working with other DHS components, such as TSA-TSNM, and industry partners can produce research results of direct and immediate benefit to all parties involved and the industry as a whole.

Principal Investigators: Renee Haider, Mineta Transportation Institute; Sharon Reed, Tougaloo College; and Judy Shaw and Jeanne Herb, Rutgers University. ❖

Legal Insights (*Cont. from 13*)

the day. Republicans, initially insisting on including authorization for the Keystone XL oil pipeline and for additional off-shore oil drilling, withdrew that demand in exchange for Democrats removing \$1.4 billion for land purchases intended for conservation efforts as well as accepting lower levels of infrastructure spending. Some of the major transportation related components of MAP-21 include:

- Extending authorization of fuel, and other highway-related taxes at current levels to September 30, 2016;
- Filling the funding gap for the HTF with money from the General Fund;
- Consolidating 87 programs to under 30;
- Reducing the number of projects subject to environmental review in order to streamline projects; and
- Allocating the majority of the fines associated with the 2010 Gulf Coast Oil Spill to restoration activities.

Passing MAP-21 was necessary and will help promote some stability in the transportation sector. However, the long path to passage and the relatively modest vision embodied in the bill highlight the difficulties in legislation, particularly in Washington DC. ❖

The Center for Infrastructure Protection and Homeland Security (CIP/HS) works in conjunction with James Madison University and seeks to fully integrate the disciplines of law, policy, and technology for enhancing the security of cyber-networks, physical systems, and economic processes supporting the Nation's critical infrastructure. The Center is funded by a grant from the National Institute of Standards and Technology (NIST).

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