

**ADDRESSING SMART CONTAINER
PREPAREDNESS PROTOCOLS
THROUGH WORKING GROUP
SESSIONS:
A REPORT TO THE CANADA/US CARGO
SECURITY PROJECT
MAY 2007**



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NOTE

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Cargo container security

Recently, US News and World Reports revisited the Nation's security more than five years after 9/11. Not surprisingly, it defined securing the nation's ports as a priority. "Most of America's major cities have been built around water for a straightforward reason: ports are our economic lifelines, with 90 percent of our imports and exports moving by sea."

North American ports are the active conduits of the global supply chain, vital places where the tangible assets of a global economy are transferred between land and sea. This is as true in 2007 as it was a hundred years ago. Today, however, the speed and efficiency with which goods move through the supply chain are extraordinary, thanks in large measure to the containerization of the cargo industry.

Thousands of cargo containers are off-loaded daily from shipping vessels at Canadian and U.S. ports. Railways, highways and inland waterways connect these ports and the cargos they unload from ocean vessels from all over the world, to the Canadian and American heartlands. A cargo container from the port of Montreal can reach any point in either country within 72 hours of arrival in port, by rail, truck, or barge. In 2007, the health of the global economy and its commercial interests depends upon the efficiency of this transportation network.

A 2004 Rand report evaluating the security of the container's supply chain calls for new efforts to insure the supply chain against threats, at ports and through the maritime and land routes that flow in and out of them. Moreover, Rand calls for heightened security without compromising the efficiency and reliability of the container network. In the face of real threat, the network also must be resilient. It must retain its ability to return quickly to normal operations in the wake of an acute event. Failure to attend to efficiency, reliability, and resilience in cargo

security strategy is to risk a cascade of unwelcome global economic consequences in the wake of an acute event.

The cargo container network is a vital piece of infrastructure in both Canada and the United States. A 2007 Congressional Research Services report on maritime security identifies several terror tactics that potentially threaten this crucial infrastructure. Two of those tactics are explosives and Weapons of Mass Destruction (WMDs) in cargo containers. An event involving either explosives or WMDs would harm not only physical assets and threaten human life, it could disrupt the supply network so precious to the workings of the global economy.

As unpleasant a thought as it may be, the same cargo container that is instrumental to the speed and efficiency of modern economic life also can pose a substantial threat. Containers carry goods. They can also carry all manner of menacing materials used by the disaffected and the maliciously-inspired to kill, disable, or disrupt modern life and commerce. It would seem to be prudent to engineer and implement safeguards in the container network to protect its integrity. In an age of asymmetric and target-specific threat, the global economy depends upon the efficacy of those safeguards.

The Canada/U.S. Cargo Security Project is a unique partnership of governmental and private interests directed toward the development and implementation of cargo security safeguards. Among the many strategies currently under consideration by the Project's partners is the *i*-Container. The *i*-Container is a new technology, engineered and tested by Lawrence Livermore National Laboratories, to be installed in each container in the commercial cargo network. A box the size of a small desk telephone, it is an intelligent sensor that detects container intrusion and will have additional sensors for Chemical, Biological, Radiological, Nuclear, and Explosive materials (CBRNE). Moreover, the *i*-Container allows for "geo-fencing," defining the

acceptable and unacceptable spaces through which a container may or may not move without triggering an alarm. The last capability is especially crucial given the mobility of a container over oceans, inland waterways, rail, and highways.

Justiceworks at the University of New Hampshire was contracted by the National Infrastructure Institute Center for Infrastructure Expertise (NI2 CIE) and the Canada US Cargo Partnership, under a grant from the U.S. Department of Commerce, to consider public and private sector response protocols and procedures related to the operation of the *i*Container in the cargo container industry. This report is the outcome of that contract.

Justiceworks

Justiceworks is a research and development unit in crime and justice at the University of New Hampshire, and is co-directed by John T. Kirkpatrick, Ph.D. and Charles Putnam, J.D. A Clinical Professor of Sociology, Kirkpatrick earned his undergraduate degree at Colby College (1977) and his doctorate at the University of New Hampshire (1983). Putnam, Research Associate Professor of Political Science, is a graduate of Yale University (1979) and earned his law degree at the University of Connecticut (1985). Kirkpatrick and Putnam have worked jointly on sponsored research addressing justice system communications interoperability, acute event analysis, emergency preparedness and response systems, and child firesetting behavior in the United States, among other projects. Their clients include the National Institute of Justice, U.S. Department of Defense, New Hampshire Departments of Justice, Safety, and Health and Human Services, and law enforcement agencies throughout the Northeast.

Justiceworks has executed successfully over five million dollars of grants and contracts since its founding in 1999. Included in its portfolio is the Technical Analysis Group, which has developed a nationally recognized expertise in cyber crime and cyber terror. The current NI2

CIE contract is a product of Justiceworks' proven capacity to serve as third party, neutral convenors of agencies representing multiple missions and jurisdictions to enhance public and private safety and security in the post 9/11 world.

The report authors would like to recognize the work of Kevin Sousa, Operations Coordinator in Justiceworks, in the working sessions and in the assembly of this report. Jonathan Jangro, a UNH senior intern on the project, was helpful as well.

The Focus

The ongoing work of the Canada/US Cargo Security Project has promoted a constructive partnership among private shipping interests and governmental agencies, including first responders, in both Canada and the U.S. The partnership is premised upon a shared desire among the partners both to better address threats to the integrity of the cargo container network, and to develop a set of operational procedures to engage in the face of a real acute event or chronic condition that disrupts the shipping network.

The precise nature, definition, and implementation of those protocols is not within the scope of this Justiceworks report. Rather, this report and the work leading up to it addresses areas in need of close attention among Project partners if they are to be successful in meeting their desired aims of effective preparedness and response.

This report, then, helps to define for Project Partners areas of challenge and points of opportunity as they work collaboratively to develop and implement effective threat preparedness and response protocols.

The Method

The principal authors reviewed the existing literature on cargo container security. Trade publications in the container industry, government reports, media reports, and technical reports produced by research and development units are examples. An inventory of the literature is included in Appendix A. The authors also attended a one-day conference in Manchester, NH hosted by NI2 CIE for Project partners. There, the *i*-Container technology was introduced and discussed at length.

Next, Justiceworks worked in tandem with NI2 CIE to convene three separate working group sessions. The first was held in Concord, NH on October 6, 2006; the second in Montreal, Quebec on December 8, 2006; and the last in Portland, ME on January 26, 2007. Those invited to the sessions included local, state, and federal law enforcement officials, customs officials, port authority representatives, U.S. Coast Guard, and private shipping industry executives. Lists of participants at each session can be found in Appendix B. Those invited to participate were chosen for two reasons. First, the agencies or interests they represented would be instrumental to any collaborative effort to prepare and respond to container threat. Second, most participants enjoyed some history in coordinated activities related to protections against other threats to public safety or security. Once each key participant was identified, an invitation to participate was extended either by the US Attorneys in New Hampshire and Maine or by provincial officials in Quebec. All invitations were a result of discussions among NI2 CIE, Justiceworks, and Project partners.

At each session, Justiceworks employed a dynamic, interactive scenario-based working group method. Each session included from twelve to twenty participants seated at a large conference-style table. Kirkpatrick served as session facilitator, Putnam as the scenario presenter,

and Sousa as session recorder responsible for a log of the content and character of a session's proceedings. Each session began at 8:30 am and ended by 3:00 pm. A session schedule can be found in Appendix C. NI2 CIE representatives attended each session as observers, but participated in discussion only when participants required assistance with technical questions. This practice was intended to preserve Justiceworks' requirement that each session be conducted by neutral convenors (Justiceworks) and free of any intrusion of bias, unintended or otherwise. The value of the report for Project partners is likely to be greater if no one partner is perceived as the session sponsor.

Session participants were presented with a fictitious scenario, developed by Justiceworks, addressing a breach of cargo container security. The scenario assumed that containers in the supply chain were equipped as *i*-Containers. This is to say that it assumed that the "smart box" developed by Lawrence Livermore National Laboratory was installed in all cargo containers in the global transportation network. The scenario was tailored to the particular jurisdiction of the participants at each of the three working group sessions. All three scenarios emphasized the potential for harm to public safety, the possibility of disruption to the shipping industry, and the mobility of the threat after a "smart box" alarm has sounded, given the impressive intermodality and speed that are signal strengths of the cargo container industry. These very assets of the industry may also pose the greatest challenge to container security and safety. A "bad" container may move as quickly throughout the system as a "good" one.

The scenarios were presented in a sequential fashion. Details of the event were revealed to the participants in pieces, representing the way in which they would be likely to hear or learn of an actual container breach in real time. After a set of details were revealed, participants were asked to respond individually and collectively. Those responses were recorded by Justiceworks,

allowing for later assessment of the synchronicity and diacronicity of the multi-agency multijurisdictional responses to a reported threat to the integrity of a single cargo container. Great care was taken to enlist the participation of all session participants in order to inventory the pace and character of response, as separate responders and collectively. In all three scenarios, the potential for harm increased as time passed and further details of the event were revealed. Descriptions of the three scenarios can be found in Appendix D. A final segment of each session was devoted to a post-event discussion in order to allow participants a chance to provide Justiceworks with their assessments of the strengths of and gaps in coordinated responses to cargo container threats. Participants also were invited to email Justiceworks with any late observations they believed to be important to this report.

After all three sessions were concluded, Justiceworks assembled and collated the recorded notes. The three sets of notes were reviewed carefully to determine clear patterns among the three discussions. This exercise required a loose quantitative tally of frequencies of observations among the three sessions. It also involved a qualitative analysis of the nature of the response by individual agency and as an interoperating system of agencies responding to the same event and conditions. Once these analyses were completed, Justiceworks identified what it believed to be the salient observations of the working group sessions and the constructive recommendations to Project partners aimed at strengthening cargo container security.

Once a draft of this report was assembled, all session participants were sent a copy, as was NI2 CIE, and asked for comment. When and where appropriate, revisions to the draft were made based upon responses from participants. This final report is a product of that process.

What follows next is a set of observations culled from the three working group sessions. The second substantive section that follows addresses gaps and shortcomings in preparedness

and response that may call for special attention among Project partners. Lastly, Justiceworks sets forth recommendations that may be helpful to the overriding goal of the project to insure the safety and security of a global supply chain so dependent upon cargo containers.

Observations

We address first some general observations relating to the working group participants and the context in which they operate should a compromised container present itself. Often, neutral observers are especially well positioned to do so, free of any interest that sometimes obscures the obvious. We offer the following:

- Participants demonstrated a clear willingness to work collaboratively on cargo security.
- There is ample history of collaboration among participants.
- Participants understand well that public safety and security are matters that require their close attention and vigilance.
- Among the three groups, there was a clear understanding of the role that time plays in responding to an acute event.
- Among the three groups, there was not as clear an understanding of the role that threat mobility plays in responding to a container alarm.
- Some participants representing local interests enjoy strong relationships with state and federal interests. Some do not.
- Canadian and U.S. federal agencies enjoy a healthy and constructive working relationship.
- Most participants subscribe to the general idea and importance of using the Incident Command System (ICS) in preparedness and response.

- Information and intelligence passed between and among agencies travels by multiple routes daily.
- Precisely how, when, and why information is traded is less clear.
- Commercial shipping interests collect an abundance of information relating to cargo containers.
- Government agencies often have little understanding of the worth of that information. Neither would they often think to include accessing that information as a routine protocol in cargo security.
- The US Coast Guard is a ready partner in cargo security efforts.
- It is unclear whether or not this is the case with the US Customs and Border Protection.
- Canada enjoys a very efficient interplay of municipal, provincial, and federal interests in public safety and security matters.
- Elected and appointed political officials in the US enjoy a higher security clearance than do their counterparts in Canada.
- Participants understand the weaknesses inherent in a system where information is siloed and not shared.

Gaps and Shortcomings

Justiceworks believes that it best serves clients by addressing gaps and shortcomings clearly and directly. Anything short of clarity and directness in a report such as this one leaves clients with an ambiguity that compromises their success in crafting of remedies. The following represents a set of weaknesses that should be addressed by partners in future cargo security initiatives.

- The US Customs and Border Protection leaves other partners in cargo security with senses of reticence and isolation from collaborative work.
- The cooperation of agencies in some jurisdictions appears to be both more organized and effective than it is between and among other jurisdictions.
- While there is an understanding that information silos are not ideal, they exist nevertheless.
- Little attention has been paid to anticipated behavior among private actors who labor at ports (longshoreman, for example) in an instance of an acute event at a port.
- Some, although not all, governmental agencies know relatively little about the types and formats of tracking information collected by commercial shippers.
- Insufficient attention has been paid to the temporal and mobility challenges posed by the concept of the cargo container as a weapon. The efficiency of the container industry that is so prized by commercial interests can work against the interests of public safety and security issues. Cargo containers move rapidly across geospace.
- The FBI relies upon the human resources of state and local law enforcement in a great many acute events. Usually those events are confined to a relatively small territory. The relative speed with which the FBI can access those same resources over multiple jurisdictions as a container moves across jurisdictions is not as evident.
- There is a worrisome lack of agreement between and among some, although not all, participants as to who makes what decision as a crisis unfolds. At times, there is a coincidental lack of knowledge about who makes what decision when.
- In Canada, there is apparent forethought to the role of media in the face of acute and chronic events that threaten public safety. That same forethought was not apparent among

US participants. Despite the fact that all US agencies have public information officers, it appeared that US decision makers were somewhat reluctant to engage with the press as critical incidents unfolded.

- There is an absence of a concerted and coordinated effort in the United States to engage in planning with the public health communities who might play a vital role in the face of an acute or chronic event.
- A clear understanding of when and how decision-making authority must be transferred among and between jurisdictions as a container moves through territories is lacking.
- There is an uneven distribution of safety technologies and protocols across the agencies whose personnel may be placed in harm's way. Radiation detection devices are one example.
- The role of local and state transportation and fire agencies are under-appreciated in crisis preparation and response protocols relating to cargo container threats.

Recommendations

Justiceworks acknowledges that the Canada-United States Cargo Security Project is an extraordinary initiative, bringing together private and public partners from multiple agencies and jurisdictions to strengthen the security of the cargo container industry. The fact that so many working professionals devoted and continue to devote considerable efforts and resources toward this end is immensely constructive.

At the same time, Justiceworks has been asked to make recommendations to Project partners that it sees as vital to the advancement of the initiative. The following list includes the recommendations that are the most crucial, in our view.

- Establish a standing group of public and private agency representatives to serve as a steering committee to direct the Project partnership. The group should be selected based upon jurisdiction and agency (FBI, USCG, CBP, RCMP, State Police, Port Authority, municipal police, State Fire Marshal, Department of Transportation (DOT), public health, and at least two representatives from the shipping industry).
- Conduct a survey of existing cargo container security measures currently in place at selected ports across Canada and the United States.
- Establish best practices in container security measures.
- Conduct a survey of commercial cargo container shipping interests to determine the nature and method of information collected and stored by those interests.
- Establish clear regional and bilateral structures specifically set up to address breaches in container safety and security.
- Review the efficacy, costs, and benefits of unique identifiers for all containers in the supply chain.
- Establish a clear role or line responsibility for the “30,000 feet view” in the event of a breach of cargo container security. A real event undoubtedly will trigger actions among many agencies simultaneously and quite possibly in several jurisdictions. It seems prudent to make certain the protocols include a delineation of responsibility for the macro-level assessment and management of the terrorism potential of any given event.
- Be certain to include fire, transportation, and the public health communities for inclusion in the development and implementation of incident command protocols.

- Periodically brief key elected officials in state, provincial, and federal governments on existing protocols and threat assessment in the Canadian-United States Cargo Security Project (CUSCSP).
- Determine with certainty that the *i*-Container prototype is consistent with industry inclinations and is the optimal mode to insure safety and delivery.
- Several lingering although extremely important questions remain when assessing the large scale implementation of “smart boxes.”
 - Who buys them?
 - Who is responsible for their maintenance?
 - What third party logistics will be necessary for their successful implementation and operation?
 - What is the rate of false positives during wide-scale testing?
 - How will training about *i*Container operation occur? Who will do it and how?
- Significant thought must be given to the role of media if and when an acute event occurs. Canadian partners appear to be more proactive in this regard. US partners would be wise to follow suit.
- The US Coast Guard appears to be more engaged in the partnership. US Customs and Border Protection must play as large a role in cargo container security efforts and should be encouraged to do so
- Establish a clear and pragmatic time line for the introduction of the *i*-Container into the supply chain, including set benchmarks with which to gauge progress.

Appendices Table of Contents:

Appendix A: Bibliography of Related Literature

Appendix B: List of Participants for Three Sessions

Appendix C: Session Schedule

Appendix D: Descriptions of Three Scenarios

Appendix A

Available Reference Materials

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Appendix B

Working Group One, Concord, NH, October 6, 2006

Backhaus, Robert	United States Coast Guard
Boothby, Nathan	New Hampshire Highway Patrol & Enforcement
Carr, Scott	NH Sheriffs Association
Clark, Kenneth	New Hampshire Army National Guard
Colantuono, Thomas	United States Attorney, District of New Hampshire
Degnan, J. William	New Hampshire State Fire Marshal's Office
Ellston, Cliff	US Bureau of Alcohol, Tobacco, Firearms and Explosives
Fallon, Jay	Federal Bureau of Investigation
Garrity, Stephen	United States Coast Guard
Goodwin, Sean	New Hampshire Div. Of Emergency Mgt. & Homeland Security
Greenwood, Richard	NH National Guard Counter Narco-Terrorism Task Force
Kelly, David	New Hampshire State Police
Kennedy, Donald	New England State Police Information Network (NESPIN)
Major, Kevin	New Hampshire Army National Guard
Monier, Stephen	United States Marshal
Perreault, Wayne	New Hampshire Highway Patrol and Enforcement
Pope, Christopher	New Hampshire Div. of Emergency Mgt. & Homeland Security
Pugliese, Thomas	US Immigration and Customs Enforcement
Valiquet, James	New Hampshire Association of Chiefs of Police

Working Group Two, Montreal, QC, December 8, 2006

Bergeron, Félixpier	Port Authority – Montreal
Chevry-Georges, Marie-Géralde	Canada Border Services Agency
Cranmer, Patrick	Canada Border Services Agency
Gavin, Paul J.	New York Department of Transportation
Houle, Francois	Montreal Urban Police Department
Kanondjian, "Migo" Mequerditch	Montreal Gateway Terminals
Laun, Peter	New York Office of Homeland Security
Leene, James	Office of the U.S. Attorney, District of Vermont
Lemyre, André	Royal Canadian Mounted Police
Manning, Michael	Vermont State Police Office of Homeland Security
McBath , David	New York State Police
Morneau, Louis	Québec Ministère de la Sécurité Publique
Pichet, Philippe	Montreal Urban Police Department
Savard, Marcel	Sûreté du Québec
Scipione, Armond	Office of the U.S. Attorney, Northern District of New York
Smith, Wayne	Montreal Gateway Terminals
Wakil, Michel	Québec Ministère de la Sécurité Publique

Working Group Three, Portland, ME, January 26, 2007

Bell, Susan	Albatrans USA
Burnham, Neal	Canadian Consulate (Boston)
Ross, James	Portland Police Department
DiFede, Todd	Federal Bureau of Investigation
Fitzgerald, Bruce	Maine Emergency Management Agency
Garrity, Stephen	U.S. Coast Guard
Gilbert, John	U.S. Transportation Security Administration
Greenier, Jeffrey	L.L.Bean
LaMontagne, Frederick	Portland Fire Department
Linet, Paul	L.L.Bean
Monroe, Jeffrey	Port of Portland
Schneider, William	U.S. Attorney, District of Maine
Snedeker, William	Maine State Police
Snow, Benjamin	Port of Portland
Spayd, Philip	Global Trade Systems
Volk, Ronald	U.S. Coast Guard Investigative Service

Appendix C

**Anti-Terrorism Working Group
Canada/US Cargo Security Project
Concord, New Hampshire**

October 6, 2006

Agenda

- 9:00-9:15.....Welcome remarks by Thomas Colantuono,
United States Attorney, District of New Hampshire

- 9:15-9:45.....Overview, John T. Kirkpatrick

- 9:45-10:15.....Scenario presentation by Charles Putnam

- 10:15-11:45.....Discussion, facilitator John T. Kirkpatrick

- 11:45-1:00.....*LUNCH*

- 1:00-1:30.....Recap of AM discussion, facilitator Charles Putnam

- 1:30-2:45.....Discussion, facilitator John T. Kirkpatrick

- 2:45-3:00.....Closing remarks

- 3:00.....Adjourn

**Anti-Terrorism Working Group II
Canada/US Cargo Security Project
Montreal, Canada**

December 8, 2006

Agenda

- 9:00-9:15.....Welcome remarks by Louis Morneau
- 9:15-9:45.....Overview, John T. Kirkpatrick
- 9:45-10:15.....Scenario presentation by Charles Putnam
- 10:15-11:45.....Discussion, facilitator John T. Kirkpatrick
- 11:45-1:00.....*LUNCH*
- 1:00-1:30.....Recap of AM discussion, facilitator Charles Putnam
- 1:30-2:45.....Discussion, facilitator John T. Kirkpatrick
- 2:45-3:00.....Closing remarks
- 3:00.....Adjourn

**Anti-Terrorism Working Group III
Canada/US Cargo Security Project
Portland, ME**

January 26, 2007

Agenda

8:45-9:15.....Coffee and refreshments

9:15-9:30.....Welcome remarks: U.S. Attorney District of Maine

9:30-9:45.....Introduction: Ted Kirkpatrick

9:45-11:30.....Scenario Discussion: Charles Putnam & Ted Kirkpatrick

11:30-12:30.....*LUNCH*

12:30-1:00.....Recap of scenario discussion, Charles Putnam

1:00-2:45.....Incident management formation: Kirkpatrick

2:45-3:00.....Closing remarks

Appendix D

Exercise Scenario (Concord)

This forward focused exercise is set at a time when cargo containers are intelligent (*i*-Containers), capable of transmitting their geo-location, detecting for intrusion and radiation, analyzing in-container physical and environmental conditions, and making secure web-site monitors aware of potential anomalies (see Assumptions).

Projected time date is 2010. The scenario is set at the port of Portsmouth, NH where Sprague Industries leases space from the State Pier for the purpose of providing inter-modal cargo container services. Short sea carriers arriving from the port of Halifax, NS frequently call at the State Pier several times per week. In the past few years Portsmouth has become an economically viable container seaport because of increased congestion at the other established northeastern U.S. container seaports. Additionally, increasing congestion at the Canada – U.S. border by vehicle transports from the port of Montreal, QC to New England destinations has also contributed to Portsmouth becoming an economically viable inter-modal cargo container seaport.

The short sea container motor vessel ORION is safely moored starboard side to late morning on October 6, 2010. Weather and seas are calm. Using a mobile crane the first container is offloaded at 1130LT. M/V ORION's arriving load was 500 TEU¹ containers, most of which originating from Europe. Prior to M/V ORION's departure from Halifax, cargo manifest and bill of lading information was forwarded to U.S. Customs and Border Protection officials (for Portsmouth). Similarly, required USCG vessel pre-arrival information has been forwarded to USCG Sector Northern New England's Marine Safety Field Office Portsmouth, NH and the National Vessel Targeting Center. Cargo, ship and crew information are routine. Subsequently, there are not any special circumstances or intelligence associated with these shipments.

Tractor trailer inter-modal transports begin leaving the State Pier at about noon for various New England destinations. One such transport is destined for the Manchester, NH industrial park located near the international airport. The driver of this transport estimates that it takes approximately an hour to complete the transit. While en-route departing from I-95S onto RT-101W at 1245LT an intrusion alert is received by the third-party logistics firm, which is providing supply chain management for the subject importer (consignee). Efforts by the third-party logistics firm manager to contact the driver are not successful. The third-party logistics manager calls 911 and the National Response Center. Then at 1330LT another container, when being offloaded from ORION, transmits a radiation alert. This too is received by the third-party logistics firm manager who makes another 911 call and another report to the National Response Center.

Note: as the working group discussed this scenario, we asked them to consider how they and their agencies would be likely to respond, based on the information that they had to work with. As the discussion progressed, the project leaders provided additional "information," in order to stimulate discussion and to promote our understanding of likely response procedures. Some of

¹ A twenty-foot equivalent unit is a measure of containerized cargo capacity equal to one standard 20 ft (length) × 8 ft (width) × 8 ft 6 in (height) container. In metric units this is 6.10 m (length) × 2.44 m (width) × 2.59 m (height), or approximately 39 m³. (<http://en.wikipedia.org/wiki/Containerization>)

the additional information included the discovery of a one empty container, the body of one truck driver, and the sighting of small panel trucks being loaded from one of the containers.

Exercise Scenario (Montreal)

This forward focused exercise is set in the future when cargo containers are standardized and intelligent (*i*-Containers), capable of transmitting their geo-location, detecting for intrusion and radiation, analyzing in-container physical and environmental conditions, and making secure web-site monitors aware of potential anomalies (see Assumptions). For the scenario the transportation of *i*-containers and their contents (cargo) are to be managed by a third party logistics firm (3PL). The 3PL has been contracted by the consignee (importer) to provide oversight for all aspects of the supply chain and will have comprehensive knowledge about the container's contents, details about the companies providing ocean and land transportation, carriers' contact details and is responsible for emergency preparedness in the event there is container related. Your objective will be to determine incident response protocols i.e., steps taken, determining whether this is strictly a law enforcement incident or a potential terrorist incident, establishing command, control and communications with what other agencies and organizations, establishing at what level of government needs to be involved.

As a forward looking scenario the situation is initially set at the port of Halifax, NS. Arriving at the seaport that morning are several thousand stuffed intelligent containers and their contents, mostly general cargo, which are getting off-loaded to the Hapag-Lloyd (Canada) Ltd. operated marine terminal from a PANAMAX-sized Hapag-Lloyd 3500 TEU container ship. At the nearby anchorage is the motor vessel (m/v) ORION, a short sea container ship that lifts containerized cargoes into ports of Portland, ME and Boston, MA. The Master of the m/v ORION is waiting for containers to be completely off-loaded from the PANAMAX sized container ship when the m/v ORION will moor starboard side to and get loaded with containers destined through either ports of Portland or Boston, from where these containers and their cargoes will be put onto over-road transport chassis destined for Northern New England businesses.

The arriving load from the m/v ORION is 450 TEU (twenty-foot equivalent units) containers, most of which originating from Europe. For U.S. destined cargo, prior to the PANAMAX sized container ship's departure from Rotterdam, the 3PL manager forwarded cargo manifest and bill of lading information to US Customs and Border Patrol officials. Similarly, for the m/v ORION, prior to its departure from Halifax, the 3PL manager forwarded required US Coast Guard vessel pre-arrival information to the National Vessel Movement Center and to Captain of the Port, Sector Northern New England. According to US Customs and Border Patrol container screening protocols and according to US Coast Guard vessel screening protocols there aren't any indications on the bill of lading nor, the cargo manifest, crew list, or ship's history that makes the ship, its seafarers or any of the containers suspicious. Additionally, there aren't any special circumstances or intelligence associated with these shipments.

Late morning on the next day several tractor trailer pulled chassis of inter-modal containers began leaving from the port of Portland, ME's P&O operated marine terminal to various New

England destinations. One such transport is destined for the White Rock Distilleries facility at Lewiston, ME.

The driver of this transport estimates that it will take about one hour to complete the transit. While enroute on I-95N towards the White Rock facility an intrusion alert is received by the 3PL manager. Efforts by the 3PL manager to contact the driver are unsuccessful. After contacting the White Rock Distilleries' warehouse manager a decision is made to report the incident to 911 and the National Response Center (1-800-424-8802).

During continued offloading of containers from the m/v ORION, as one container is placed by crane onto the chassis of an over-road transport the 3PL manager, who is also overseeing this specific supply chain, is via the *i*-container in receipt of a radiation alarm. After a successful information exchange with the Portland, ME P&O marine terminal manager, the 3PL manager decides to make another 911 call and another report to the National Response Center about a likely high radiation reading stemming from a container. The P&O marine terminal manager temporarily stops offloading containers from m/v ORION, isolating the container in question, and then makes the decision to re-start the offload (from ship) and on load (truck chassis) process.

Soon after these Maine based container incidents because of other incidents also occurring in Eastern Canada and Eastern United States the Canadian Government and US Department of Homeland Security (DHS) raised security conditions for each country. Using risk-based decision-making, DHS focused the heightened security condition on seaports and cargo container transportation.

Note: as we did during the working group session in Concord, we asked the Montreal working group participants to consider how they and their agencies would be likely to respond, based on the information that they had to work with. As the discussion progressed, the project leaders provided additional "information," in order to stimulate discussion and to promote our understanding of likely response procedures. Some of the additional information included the discovery of a one empty container, the body of one truck driver, and the sighting of small panel trucks being loaded from one of the containers in a remote area of northern New York.

Exercise Scenario (Portland)

BACKGROUND

This scenario takes place on January 26, 2010, when cargo containers are standardized and intelligent (*i*-Containers). For this scenario the supply-chain transportation of *i*-containers and their contents (cargo) are managed as follows: (a) By a third party logistics firm (3PL), which may also be referred to as “full service freight forwarders”; or, (b) By a Logistics Manager who is a permanent employee of the consignee or cargo importer. We assume that *i*-containers are capable of transmitting their geo-location, detecting intrusion and radiation, analyzing in-container physical and environmental conditions, and making either the 3PL or the Logistics Manager aware of potential in-container anomalies via remote, secure web-site monitoring (see Assumptions).

When 3PLs are used they are typically contracted by the consignee (importer) to provide comprehensive oversight for all aspects of the supply chain. 3PLs have detailed knowledge about the container’s contents, detailed knowledge about the transportation service companies providing ocean and land transport, including their contact details; and, are responsible for emergency preparedness in the event there is container related incident. When a company employs a Logistics Manager it has a permanent employee on staff who is responsible for the import process. Like the 3PL, the logistics manager has similar responsibilities and knowledge about a container’s contents and schedule, and is also responsible for emergency preparedness. Logistics Managers are commonly employed by large “big box” companies like Wal-Mart, Home Depot, or Kents, whose business models are dependent on the large-scale importation of foreign manufactured goods and materials

Container #1

On the morning of January 25, 2010, the PANAMAX-sized Hapag-Lloyd 3500 TEU container ship, M/V CONTAINER SPIRIT arrived at the port of Halifax, NS, Canada carrying several thousand stuffed (fully loaded) *i*-Containers and their contents. The *i*-Containers are stuffed with general cargo of various kinds. Most of the *i*-Containers are off-loaded from the CONTAINER SPIRIT to the Hapag-Lloyd (Canada) Ltd. operated marine terminal. Before the M/V CONTAINER SPIRIT left Rotterdam, its last port of call, a 3PL Manager forwarded by electronic means cargo manifest and bill of lading information for container #1 to US Customs and Border Patrol and Canada Border Services Agency officials. The Logistics Manager employed by the consignee for container #2 forwarded the same information for that container to the same officials. Container #1 and Container #2 were both off-loaded from the CONTAINER SPIRIT in Halifax. Some *i*-Containers remained on board the CONTAINER SPIRIT to be discharged (off-loaded) at the ship’s next port of call, the Port of New York/New Jersey.

While the CONTAINER SPIRIT was off-loaded, the (M/V) ORION. M/V ORION, a short sea container ship that “lifts” (transports) containerized cargoes into the ports of Portland, ME and Boston, MA awaited nearby. The M/V ORION is laden with 450 TEU (twenty-foot equivalent units) *i*-Containers , most of which originated in Europe. The Master of the M/V ORION

awaited for several sealed i-Containers including Container #1 to be off-loaded from the CONTAINER SPIRIT and to be loaded onto the ORION for transport to Portland, ME or Boston, MA. These i-Containers and their cargoes will be put onto over-road transport chassis and carried to Northern New England businesses. The manifest and bill of lading for Container #1 indicate that it is destined for the White Rock Distillery in Lewiston, Maine. Shortly after Container #1 is loaded onto the ORION it departs for Portland.

Before the M/V ORION left Halifax, the 3PL Manager and Logistics Manager forwarded required US Coast Guard vessel pre-arrival information to the National Vessel Movement Center and to the Captain of the Port, the Federal Maritime Security Coordinator, and the Commanding Officer, Sector Northern New England. According to US Customs and Border Patrol container screening protocols and US Coast Guard vessel screening protocols there are no indicators on the bills of lading, cargo manifest, crew list, or ship's history that raise the risk assessment of the ship, its seafarers or any of the i-Containers. Additionally, there aren't any special circumstances or intelligence associated with these shipments. The ORION arrived in the Port of Portland, ME, in the early morning hours of January 26, 2010, after a crossing lasting approximately ten hours.

At 11:45 a.m. on January 26, 2010, several tractor trailer pulled chassis of inter-modal i-Containers began leaving the Port of Portland's P&O operated marine terminal to various New England destinations. One such transport, carrying Container #1 is destined for the White Rock Distilleries facility at Lewiston, ME.

The driver of this transport estimates that it will take about one hour to complete the transit. While en route on I-95N towards the White Rock facility the 3PL Manager for Container #1 receives an intrusion alert. The alert suggests that there has been an unauthorized breach of the i-Container. Efforts by the 3PL manager to contact the driver are unsuccessful. After contacting the White Rock Distilleries' warehouse manager a decision is made to report the incident to Maine's 911 system and the National Response Center (1-800-424-8802).

Container #2

Some of the other i-Containers off-loaded from the CONTAINER SPIRIT were stowed at the Hapag-Lloyd marine terminal and later were loaded onto over-road transport chassis destined for Northern New England businesses via ports of entry between Maine, US and New Brunswick, Canada. A prominent port of entry is the Calais, ME and St. Stephen, NB border crossing, which is the eighth most busiest crossing between the US and Canada.

Container #2 left Halifax, on January 25, 2010, at about the same time that the ORION left the Port of Halifax. The over-road transport carrying Container #2 crosses the U.S. - Canadian border at Calais, Maine, at 12:05 p.m. on January 26. Soon after the crossing, at 12:20 p.m., the importer's Logistics Manager learns via the employer's geo-position and remote secure web-site monitor that the i-Container has made an unscheduled stop at the Irving Big Stop located at the junction of ME-9 and ME-1. The Logistics Manager also learns that the i-Container has been opened, at 12:24 p.m. At first the Logistics manager doesn't think anything of this stoppage and unscheduled opening other than the driver probably needed a human factors break.

Nevertheless, he decides to contact the driver via cell phone. The driver indicates that he needed to check inside of the container to verify that the cargo was intact and safely stowed.

A few minutes after contacting the driver the Logistics Manager receives an alert from the i-Container that there is a high radiation reading inside the i-Container. The Logistics Manager is surprised because the manifest and lading information indicates that none of the cargo should be radioactive or contain radioactive materials, and the firm importing the goods listed on Container #2's manifest does not deal in radioactive materials or use them in any of its business processes. The Logistics Manager is able to remotely track the container's location on ME-9 towards Bangor but after a few minutes the geo-tracking capability stops operating. He informs his supervisor, who decides to contact Maine 911 and to report the incident to the National Response Center, specifically alerting them about a high radiation reading.

Note: as we did during the working group sessions in Concord and Montreal, we asked the Portland working group participants to consider how they and their agencies would be likely to respond, based on the information that they had to work with. As the discussion progressed, the project leaders provided additional "information," in order to stimulate discussion and to promote our understanding of likely response procedures. Some of the additional information included the discovery of a one empty container, the body of one truck driver, and the sighting of small panel trucks being loaded from one of the containers in a remote area of northern New York.