Negative Brief: MMPDS Port Scanners

By “Coach Vance” Trefethen

The AFF plan requires foreign ports (!) to install a scanning system called Multi-Mode Passive Detection System (MMPDS) that does something like an x-ray of shipping containers before they are sent to the U.S. Because, terrorism! This is actually already Status Quo US federal law, but the government has postponed implementing it because it's too expensive, foreign ports can't be made to comply, and other nations will retaliate. What do you think will happen the next day after we actually require every single container coming to the US to be scanned? Every other country will require us to do the same thing, doubling the total cost of the plan (since we'll have to install all the same scanning for every single thing leaving the US).

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Negative: MMPDS Port Scanners

NEGATIVE PHILOSOPHY

Affirmative misunderstands the Status Quo and overlooks the real issues

The Affirmative's position is that all we need is the right technology, and that if they prove the technology exists, then they win. But that's a big misunderstanding of the Status Quo. The Status Quo has already been trying to do the Affirmative plan since 2007 because Congress passed a law requiring the overseas scanning in their plan. The government has been postponing the implementation ever since - not because the technology doesn't exist - but because the mandates are simply unworkable.

INHERENCY

1. Radiation

100% of all incoming containers are scanned for radiation

Congressional Budget Office 2016. (non-partisan budgetary research agency of Congress) 2 June 2016 "Scanning and Imaging Shipping Containers Overseas: Costs and Alternatives" (accessed 20 Sept 2022) https://www.cbo.gov/publication/51478

Each year, about 12 million shipping containers enter U.S. ports. After the September 11, 2001, attacks, concern arose that terrorists might use containers to smuggle weapons of mass destruction—particularly nuclear weapons—into the country. To reduce that threat, the federal government implemented several security measures. Among them, Customs and Border Protection (CBP), an agency of the Department of Homeland Security (DHS), scans every container entering the United States by sea or land to detect radiation.

2. Existing programs have solved the AFF's threat concerns

Big improvements in port security have solved the physical threats. The new threats are in the "cyber environment" [which AFF plan doesn't touch]

Henry Willis 2016. (Director, Infrastructure, Immigration, and Security Operations Program, RAND Homeland Security Research Division; Senior Policy Researcher; Professor, Pardee RAND Graduate School) 6 Apr 2016 (accessed 21 Sept 2022) Ten Years After the Safe Port Act, Are America's Ports Secure? https://www.rand.org/blog/2016/04/attractive-targets.html

Security measures implemented over the past 10 years respond to an array of threats. Port and vessel security inspection authorities have increased the number of guards, gates, and cameras monitoring ports. The Port Security Grant Program has helped develop and sustain prevention, preparedness, and response capabilities around ports. The Transportation Worker Identification Card program has increased the screening of those with access to critical port infrastructure. Regulations and programs to collect and screen cargo manifests and participation with shippers through the Customs-Trade Partnership Against Terrorism has increased transparency into the supply chain and made it easier to identify suspicious shipments. Installation of radiation detectors at U.S. ports and collaborations with foreign partners through the Container Security Initiative have increased the ability of authorities to detect illicit movement of radiological materials. Together these programs established a system to secure ports that matches the complexity of the system of infrastructure, vessels, cargo, shippers, and people that they were designed to protect. While many of the security challenges that were recognized in 2006 appear to have been met, new potential threats have emerged from the cyber environment.

HARMS / SIGNIFICANCE

1. Irrational fear of terrorism

Chances of dying in a car wreck or hit by lightning are far greater than death by terrorism

Justin Hienz 2016 (counterterrorism and religious extremism subject matter expert for the Safe Communities Institute at the University of Southern California Price School of Public Policy) "Mastering Our Fear of Terrorism" 9 Sept 2016 US NEWS & WORLD REPORT (accessed 21 Sept 2022) https://www.usnews.com/opinion/articles/2016-09-09/9-11-is-a-reminder-that-we-must-master-our-irrational-fear-of-terrorism

You have a [one in 5,000 chance of dying in a car accident every time you drive](https://curiosity.com/topics/how-do-people-survive-plane-crashes-o53cN3Xy/) and a one in 3,000 chance of [being struck by lightning](http://news.nationalgeographic.com/news/2004/06/0623_040623_lightningfacts.html) at some point in your life. But while we fearlessly drive every day and run through a rainstorm sometimes, the far less likely occurrence of a terrorist attack makes most Americans afraid. [Gallup](http://www.gallup.com/poll/4909/terrorism-united-states.aspx) found in December 2015 that 51 percent of Americans were very or somewhat worried that they or someone in their family would be a victim of terrorism, and in March this year, 72 percent of Americans reported that they "personally worry" about terrorist attacks in the United States. Since the potential for terrorism does not match the concern, Americans' fear of terrorism is, by definition, irrational.

Acting on exaggerated fear makes us susceptible to political manipulation

Justin Hienz 2016 (counterterrorism and religious extremism subject matter expert for the Safe Communities Institute at the University of Southern California Price School of Public Policy) "Mastering Our Fear of Terrorism" 9 Sept 2016 US NEWS & WORLD REPORT (accessed 21 Sept 2022) https://www.usnews.com/opinion/articles/2016-09-09/9-11-is-a-reminder-that-we-must-master-our-irrational-fear-of-terrorism

Rather, we citizens need to master our fear of terrorism because it makes our opinions malleable and leaves us susceptible to manipulation. Fear makes us pawns in other people's plans that have nothing to do with homeland security. Presidential nominees [Hillary Clinton and Donald Trump are fighting](https://www.washingtonpost.com/news/the-fix/wp/2016/09/07/the-first-hillary-clinton-vs-donald-trump-showdown-of-2016-annotated/) over the public perception of who will be more effective in combating terrorism. Why? So they can use your fear to win your vote.

Turn: Fear benefits terrorists

Justin Hienz 2016 (counterterrorism and religious extremism subject matter expert for the Safe Communities Institute at the University of Southern California Price School of Public Policy) "Mastering Our Fear of Terrorism" 9 Sept 2016 US NEWS & WORLD REPORT (accessed 21 Sept 2022) https://www.usnews.com/opinion/articles/2016-09-09/9-11-is-a-reminder-that-we-must-master-our-irrational-fear-of-terrorism

Most importantly, however, is that fear benefits terrorists. Al-Qaida stokes fear to trigger reactionary policies and spending, advancing the [strategy Osama bin Laden offered in 2004](http://www.cnn.com/2004/WORLD/meast/11/01/binladen.tape/) of "bleeding America into bankruptcy," spending billions to ferret out a $100 homemade bomb. The Islamic State group sows fear to lure the United States military into a large ground war that [they believe will trigger the apocalypse](http://www.theatlantic.com/magazine/archive/2015/03/what-isis-really-wants/384980/). And all terrorists use fear to undermine trust in government and stifle activities that do not align with their worldview. When we let fear of terrorism grip us as it does today, it does not make us more secure. It doesn't decrease the already slim odds that we will die in an attack. Your fear serves many people, but you're not one of them.

SOLVENCY

1. Already tried and failed

Congress passed the AFF plan 15 years ago. It wasn't implemented because of the cost and complications

Congressional Budget Office 2016. (non-partisan budgetary research agency of Congress) 2 June 2016 "Scanning and Imaging Shipping Containers Overseas: Costs and Alternatives" (accessed 20 Sept 2022) https://www.cbo.gov/publication/51478

In 2007, the Congress mandated that DHS use both radiation detectors and imaging systems to scan and image all incoming seaborne containers before they are loaded onto a U.S.-bound ship. That approach would shift the radiation scanning and nonintrusive imaging from U.S. ports to overseas ports, with the goal of detecting any serious threats before they arrive. The approach also would aim to image all containers instead of limiting the use of expensive imaging resources to high-risk containers. The law gave DHS until 2012 to fully implement this system, but the deadline has been extended three times and is now 2018. CBO examined five options that illustrate the cost and implications of meeting the mandate as well as alternative approaches to increase the scanning and imaging of containers.  
What Are the Costs and Other Challenges of Scanning and Imaging All U.S.-Bound Containers at Overseas Ports?  
Exporters ship containers from hundreds of ports in other countries to the United States. The mandate to scan and image all inbound containers poses three challenges for CBP: cost, potential shipping delays, and possible refusal to comply by some operators and host countries. Although CBO examined the first two issues, full compliance will also require resolving the third issue, which is beyond the scope of this study.

2. Cost exceeds budget

Scanning every container overseas would cost between $37 billion to $63 billion over 10 years

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CBO examined two options that would meet the requirement to scan and image 100 percent of U.S.-bound containers. Under Option 1, CBP or foreign partners would install scanning and imaging equipment at the 453 foreign ports in 130 countries that load containers onto U.S.-bound ships (see table below). Conducting that scanning and imaging would cost, on average, $150 to $220 per container, which the U.S. government could either pay or recoup through fees assessed on shippers. If current flows of inbound containers grow at 2.5 percent per year, implementing and operating such a system would cost between $22 billion and $32 billion in 2015 dollars over 10 years, CBO estimates.  
  
**END QUOTE. THEY GO ON LATER IN THE CONTEXT TO ADD QUOTE:**  
  
If the federal government implemented 100 percent scanning and imaging at overseas ports, other countries might in turn require that DHS scan and image all containers leaving the United States. (CBP does not routinely scan or image containers that leave the United States.) Under that scenario, the total costs over 10 years for implementing 100 percent scanning and imaging overseas could roughly double, rising to $37 billion to $63 billion for Option 1 and $27 billion to $53 billion for Option 2.

$63 billion over 10 years = $6.3 billion /year. That's 41% of the entire CBP budget of $15.3 billion

Boundless Immigration 2022. (immigration consulting firm) "Biden Requests $56.7 Billion for DHS in 2023 Budget" 28 Mar 2022 (accessed 20 Sept 2022) https://www.boundless.com/blog/biden-requests-56-7-billion-dhs-2023-budget/

Customs and Border Patrol (CBP), another component of DHS, will receive 13% more funding than 2021, with the administration’s request of $15.3 billion to hire an [additional 300 Border Patrol agents](https://www.nytimes.com/live/2022/03/28/us/biden-budget-proposal#biden-requests-5-percent-increase-in-funding-for-homeland-security) and 300 officials to process the paperwork and applications of undocumented people entering the country at the southwest border.

3. Foreign ports can't do it

Dept of Homeland Security says it's physically impossible to install scanners at foreign ports and waste of money to try

[Sandler, Travis & Rosenberg Trade Report](http://www.strtrade.com/news-publications-100-percent-cargo-container-scanning-060214.html) 2014 (international trade law firm) article quoted by Scarborough Group, an international logistics/shipping company 2 June 2014 (accessed 20 Sept 2022) https://thescarbroughgroup.com/cargo-container-scanning-requirement-waived/

According to press articles, DHS Secretary Jeh Johnson reiterated these points in a May 5 letter to Congress that not only pushed back the 100% scanning requirement for an additional two years but also indicated that compliance is unlikely at any point. The scanners that would be required “cannot be purchased, deployed or operated at ports overseas because ports do not have the physical characteristics to install such a system,” Johnson was quoted as saying. He added that the department’s “ability to fully comply with this unfunded mandate of 100 per cent scanning, even in the long term, is highly improbable, hugely expensive and, in our judgment, not the best use of taxpayer resources to meet this country’s port security and homeland security needs.”

4. Alternate pathways of terrorism

CBO Study: Scanning more containers wouldn't accomplish much because bad guys would use alternate paths

Congressional Budget Office 2016. (non-partisan budgetary research agency of Congress) 2 June 2016 "Scanning and Imaging Shipping Containers Overseas: Costs and Alternatives" (accessed 20 Sept 2022) https://www.cbo.gov/publication/51478

All the options CBO examined involve imaging more containers. But how much those steps would reduce potential smuggling of nuclear weapons or materials into the United States is not clear. The options do not address other paths that smugglers might use, such as truck or rail at land crossings from Mexico or Canada, tunnels under the border, other types of commercial ships, private yachts, and aircraft. Those alternative paths could become more attractive if the United States sharply increased scanning and imaging of containers. No options considered here would address those other paths or other threats to the United States or its supply chain.

5. Can't fiat foreign governments

Can't fiat that foreign governments accept US scanning requirements and inspection agents on their territory

Prof. Paul Rosenzweig 2012 (founder of Red Branch Consulting PLLC, a homeland security consulting company and a Senior Advisor to The Chertoff Group; formerly served as Deputy Assistant Secretary for Policy in the Dept of Homeland Security. He is a Professorial Lecturer in Law at George Washington University, a Senior Fellow in the Tech, Law & Security program at American University, and a Board Member of the Journal of National Security Law and Policy) 16 July 2012 "100% Scanning of Cargo" (accessed 20 Sept 2022) https://www.lawfareblog.com/100-scanning-cargo

Finally, the 100% scanning requirement blinks diplomatic reality.  After all, the law requires that this scanning be done overseas, that is, on the sovereign territory of our trading partners.  From personal experience, the placement of CBP officers on foreign soil often involves a complex series of negotiations over issues ranging from "who pays the cost?" to "who is liable for a mistake" to "do CBP officers have any law enforcement authority or must they rely on the local police/military for enforcement?"  These are not easy questions.  And the US is not in a position to bludgeon our trading partners into submission, nor should it want to.  The largest ports we receive goods from are either in Europe or in China and Southeast Asia, where we have dozens of other significant diplomatic concerns.

6. No security after container is scanned

Scanning the containers overseas doesn't matter because anyone can tamper with them between the foreign port after scanning and their arrival in the US

Homeland Security Today 2015. (a 501(c)(6) nonprofit association media outlet dedicated to informing and supporting the efforts of public, private, nonprofit, and academic organizations and practitioners engaged in the homeland security mission) Lawmakers Concerned over Threat of Dirty Bomb to US Ports 4 Nov 2015 (accessed 21 Sept 2022) https://www.hstoday.us/subject-matter-areas/border-security/lawmakers-concerned-over-threat-of-dirty-bomb-to-us-ports/

Dr. James Giermanski, chairman of Powers International Inc., has expressed similar concerns to *Homeland Security Today* on multiple occasions. Giermanski believes current CBP efforts to secure the supply chain are merely “smoke and mirrors,” since the agency does not use off-the-shelf state-of-the-art technology to ensure containers remain secure from point of origin to destination. Giermanski advocates the use of in-container tracking mechanisms which actually identify the person at origin who physical verifies the cargo, seals the container and triggers global monitoring all the way to origin, including any access to the container at transshipment ports. These mechanisms provide an auditable record of actual people and their behavior along with the integrity of the container itself.

Easy to tamper with shipping containers during the transport process [i.e. AFTER they have been scanned overseas by AFF Plan]

Shaina Pearl 2018 (master's degree candidate in transportation & engineering management at California State University Maritime Academy) (accessed 21 Sept 2022) Maritime Port Security: Preventing Terrorist Attacks in America https://scholarworks.calstate.edu/downloads/5x21tg31d

CBP policy makers needed to take a broader look at container security and differentiate the existing policies against “traditional” criminal activity and terrorist activity. Termed as the modern-day Trojan horse, containers arrive into the U.S. with little oversight. There is a relative amount of anonymity involved with the contents of a shipping container which requires a series of different people having access to them during the transport process.

7. More threat study needed

**[Cross apply INH-2 about existing threats solved, new threats are cyber]**

Terror threats are constantly changing. Cyber is the new threat - the old scenarios don't apply any more

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A primary concern for future developments of terror prevention measures in U.S. ports is the ability to apply existing policy and initiatives to such a dynamic threat. As noted in the literature review portion, scenario prioritization and threat awareness were fundamental in creating a national strategy, but should also be applied and re-evaluated on an annual basis. Threat scenarios that were prioritized early in the development of a national strategy may not necessarily remain true over 15 years after the fact. Flexibility and the fluidity of policy are critical pillars for terror prevention. As physical security measures have tightened oversight abilities, terror organizations have evolved to more sophisticated cyber-attacks.

8. More MMPDS study needed

Link: MMPDS = cosmic ray muon tomography

Zheng Yifan 2018. (dual master's degree candidate at Tsinghua University and KTH-Royal Institute of Technology) June 2018 (accessed 22 Sept 2022) "Research on D material discrimination method by cosmic ray muon tomography" https://kth.diva-portal.org/smash/get/diva2:1224053/FULLTEXT01.pdf

On August 2011 DSIC (Decision Sciences International Corporation) designed the muon tomography prototype MMPDS (Multi Mode Passive Detection System) for testing Special Nuclear Materials (SNM).

Problem: Cosmic ray muon tomography needs more study to detect drugs and explosives effectively

Zheng Yifan 2018. (dual master's degree candidate at Tsinghua University and KTH-Royal Institute of Technology) June 2018 (accessed 22 Sept 2022) "Research on D material discrimination method by cosmic ray muon tomography" https://kth.diva-portal.org/smash/get/diva2:1224053/FULLTEXT01.pdf

Given all the advantages and disadvantages of X-ray CT and neutron CT, one question rises that whether cosmic ray muon tomography could be applied to differentiate low-Z materials including drugs or explosives. Since muons are naturally generated in the atmosphere and have sufficient energy to completely penetrate large dense cargoes, muon tomography is a promising non-destructive imaging technique which compensates the drawbacks of both X-ray CT and neutron CT. The research focus of previous studies has been applying muon tomography to detect high-Z nuclear materials. It has been demonstrated that muon tomography could be applied to differentiate high-Z nuclear materials within a minute scale in real applications for cargo inspections. If muon tomography could be further applied to discern medium-Z and low-Z materials, it will be a breakthrough and solve a previous difficulty of detecting drugs or explosives hidden in large dense metals such as steel or copper. In 2015, DSIC proposed the stopping to scattering ratio value, which utilized the cosmic ray electrons’ stopping information together with muons’ scattering information when interacting with various materials. It has shown that the stopping information of electrons helps characterize some low-Z materials. However, one deficiency of this method is that the ratio value is only a surface flux and could not be voxelized, which brings about many inconveniences in real applications. And the potential to detect drugs and explosives only through muon scattering tomography still requires further studies.

DISADVANTAGES

1. Weaker security

Dept of Homeland Security (DHS) says 100% scanning would distract from more effective security measures

[Sandler, Travis & Rosenberg Trade Report](http://www.strtrade.com/news-publications-100-percent-cargo-container-scanning-060214.html) 2014 (international trade law firm) article quoted by Scarborough Group, an international logistics/shipping company 2 June 2014 (accessed 20 Sept 2022) https://thescarbroughgroup.com/cargo-container-scanning-requirement-waived/

DHS officials have also pointed out for years that the 100% scanning requirement conflicts with the department’s general approach to risk management, which seeks to focus scarce inspection resources on the highest-risk containers. A 2009 Government Accountability Report said 100% scanning could reduce the incentive for participating in programs like the Container Security Initiative and the Customs-Trade Partnership Against Terrorism, which employ a risk-based approach based on international supply chain security standards. An April 2013 Congressional Research Service report added that if illicit cargo is estimated to be less than 1% of incoming containers, as DHS believes, the most effective enforcement strategy may be to focus on containers most likely to pose a threat, invest in intelligence to improve targeting, and/or increase personnel.

2. Bad risk analysis

"Must scan everything" is irrational panic that makes us less safe - it spends money on low risk threats when we should focus on higher risk threats

Prof. Paul Rosenzweig 2012 (founder of Red Branch Consulting PLLC, a homeland security consulting company and a Senior Advisor to The Chertoff Group. Mr. Rosenzweig formerly served as Deputy Assistant Secretary for Policy in the Department of Homeland Security. He is a Professorial Lecturer in Law at George Washington University, a Senior Fellow in the Tech, Law & Security program at American University, and a Board Member of the Journal of National Security Law and Policy) 16 July 2012 "100% Scanning of Cargo" (accessed 20 Sept 2022) https://www.lawfareblog.com/100-scanning-cargo

The delay of the scanning requirement is, frankly, a good thing.  It is another example of the inability of our system to effectively communicate and manage risk.   The right answer to multiple threats has to be the risk based allocation of resources.  We can't protect against all things at all times -- the costs, in resources and lost liberties would simply be too high.  Instead, DHS allocates its inspection resources based on a judgment about risk.  Dollars spent on 100% scanning are dollars NOT spent on some other threat (cyber?  bio?). Certainly one can ask whether our risk assessments are accurate and based on reasonable assumptions.  But the 100% scanning law simply throws the idea of risk assessment overboard.  Instead it relies on the anti-risk based rhetoric -- "how can we possibly NOT scan everything coming to the United States?"  And in our political system, where the legislators and citizenry don't really understand concepts of risk management and mitigation, that sort of rhetoric is very powerful.