

**PROMOTING SAFE SKIES
THROUGH SCANNING AND SCREENING:
OVERSIGHT OF AIR CARGO SECURITY**

FIELD HEARING
BEFORE THE
SUBCOMMITTEE ON SECURITY
OF THE
COMMITTEE ON COMMERCE,
SCIENCE, AND TRANSPORTATION
UNITED STATES SENATE
ONE HUNDRED SIXTEENTH CONGRESS
SECOND SESSION

FEBRUARY 24, 2020

Printed for the use of the Committee on Commerce, Science, and Transportation



Available online: <http://www.govinfo.gov>

U.S. GOVERNMENT PUBLISHING OFFICE
WASHINGTON : 2023

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SIXTEENTH CONGRESS

SECOND SESSION

ROGER WICKER, Mississippi, *Chairman*

JOHN THUNE, South Dakota	MARIA CANTWELL, Washington, <i>Ranking</i>
ROY BLUNT, Missouri	AMY KLOBUCHAR, Minnesota
TED CRUZ, Texas	RICHARD BLUMENTHAL, Connecticut
DEB FISCHER, Nebraska	BRIAN SCHATZ, Hawaii
JERRY MORAN, Kansas	EDWARD MARKEY, Massachusetts
DAN SULLIVAN, Alaska	TOM UDALL, New Mexico
CORY GARDNER, Colorado	GARY PETERS, Michigan
MARSHA BLACKBURN, Tennessee	TAMMY BALDWIN, Wisconsin
SHELLEY MOORE CAPITO, West Virginia	TAMMY DUCKWORTH, Illinois
MIKE LEE, Utah	JON TESTER, Montana
RON JOHNSON, Wisconsin	KYRSTEN SINEMA, Arizona
TODD YOUNG, Indiana	JACKY ROSEN, Nevada
RICK SCOTT, Florida	

JOHN KEAST, *Staff Director*

CRYSTAL TULLY, *Deputy Staff Director*

STEVEN WALL, *General Counsel*

KIM LIPSKY, *Democratic Staff Director*

CHRIS DAY, *Democratic Deputy Staff Director*

RENAE BLACK, *Senior Counsel*

SUBCOMMITTEE ON SECURITY

DAN SULLIVAN, Alaska, <i>Chairman</i>	EDWARD MARKEY, Massachusetts, <i>Ranking</i>
ROY BLUNT, Missouri	AMY KLOBUCHAR, Minnesota
TED CRUZ, Texas,	RICHARD BLUMENTHAL, <i>Connecticut</i>
DEB FISCHER, Nebraska	BRIAN SCHATZ, Hawaii
MARSHA BLACKBURN, Tennessee	TOM UDALL, New Mexico
MIKE LEE, Utah	TAMMY DUCKWORTH, Illinois
RON JOHNSON, Wisconsin	KYRSTEN SINEMA, Arizona
TODD YOUNG, Indiana	JACKY ROSEN, Nevada
RICK SCOTT, Florida	

C O N T E N T S

Hearing held on February 24, 2020	Page 1
Statement of Senator Markey	1

WITNESSES

John Beckius, Executive Director, Air Cargo Division, Transportation Security Administration, U.S. Department of Homeland Security	4
Prepared statement	5
Edward Freni, Director of Aviation, Massachusetts Port Authority	7
Prepared statement	10
Steven N. Urchuk, Chief Technology Officer, Analogic Corporation	12
Prepared statement	13
Brandon Fried, Executive Director, Airforwarders Association	14
Prepared statement	16
Jennifer Ritter, Flight Attendant, United Airlines, Association of Flight At- tendants—CWA, AFL—CIO	19
Prepared statement	21

**PROMOTING SAFE SKIES
THROUGH SCANNING AND SCREENING:
OVERSIGHT OF AIR CARGO SECURITY**

TUESDAY, FEBRUARY 24, 2020

U.S. SENATE,
SUBCOMMITTEE ON SECURITY,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Boston, MA.

The Subcommittee met, pursuant to notice, at 9:06 a.m., in the Cathy Leonard-McLean Community Room, Rental Car Center, Logan Airport, Hon. Ed Markey, presiding.

Present: Senator Markey [presiding].

**OPENING STATEMENT OF HON. EDWARD MARKEY,
U.S. SENATOR FROM MASSACHUSETTS**

Senator MARKEY. Good morning. As the Ranking Member of the Senate Commerce Subcommittee on Security, I call this important hearing to order and I thank everyone for being here today. Before I introduce our topic and our witnesses, I would like to express my gratitude to the Commerce Committee Chairman Roger Wicker, Ranking Member Maria Cantwell, and Subcommittee Chairman Sullivan for supporting my request to hold this field hearing.

I believe today's proceeding will be an excellent opportunity to both conduct oversight and learn from the Massachusetts model of aviation security. I would also like to offer special thanks to the Massachusetts Port Authority and its CEO, Lisa Wieland. Among many responsibilities, Massport owns and operates Logan International Airport, the site of today's field hearing. Massport was generous enough to not only host this proceeding, but to send Ed Freni, its Director of Aviation, to testify as an expert witness and I look forward to hearing from his remarks.

Early in the morning on September 11, 2001, 19 hijackers took control of four airplanes and changed our country forever. Two of these aircraft, American Airlines Flight 11 and United Airlines Flight 175, departed right here from Boston's Logan Airport. 2,997 people were killed, in New York, Pennsylvania, and Washington, D.C. When remembering 9/11, many people only think about the victims at the World Trade Center and the Pentagon, and they should be remembered, but we here in Boston will never forget the lives of those who flew on the two planes that left Logan Airport that day.

We still remember the workers from Massachusetts companies like TJX, Akamai, and Genzyme, as well as so many others who

were tragically killed that September morning. In total, 206 victims of the September 11th attacks had ties to Massachusetts. Nearly two decades later, these losses remain devastating for communities across the commonwealth. They have also motivated the great minds of this state to fight for security and vigilance in our aviation system. In the aftermath of tragedy, we came together, technology companies, airports, airlines, flight attendants, pilots, and many more, to enhance safety in the skies.

Here in Massachusetts, we continue to heed the call of the 9/11 Commission, which described “failures of imagination” as a primary reason why we did not thwart the attacks before they happened. We know that the country must do more than simply prepare our defenses for the kinds of attacks we experienced 19 years ago. We must anticipate the loopholes that terrorists could exploit today and in the future.

That is why, when Congress passed a law in 2007 implementing the recommendations of the 9/11 Commission, I secured a provision that required 100 percent screening of air cargo transported on passenger aircraft. Back then, and even today, that cargo occupies 50 percent of the space in the belly of passenger planes, and yet, prior to my law, almost all of this cargo was not scanned for liquid, plastic, or conventional explosives.

They scanned the bags of passengers but not of those companies that were using the same planes for cargo. It made no sense whatsoever. So, imagine that—before 2007, half of the items that the flying public sat directly above did not belong to anyone onboard and no one had physically checked them for dangerous content or material. It was a glaring loophole in our aviation security system just waiting to be exploited. And that is why I was so proud to have closed it.

The reason that I knew about it was personnel here at Logan Airport, including one particular gate attendant who had me look out the window at a cargo truck that was coming across the tarmac and he said to me, “this is how crazy it is, none of the cargo in that truck is going to be checked before it is put on the plane that you are about to fly on, Congressman.” We have to close that loophole. And he was very aware, of course, because Mohammed Atta and the other terrorist had been scoping out Logan Airport for months before then. And so from that moment on that became my mission, because on that issue and many others it was the information that was given to me from the personnel at Logan Airport as to where the apertures were, where the potential vulnerabilities were that would have to be shut down.

Now in order to meet my 100 percent screening mandate, the Transportation Security Administration established the Certified Cargo Screening Program. This program achieves security while maintaining a steady flow of commercial goods by allowing entities up and down the supply chain to scan air cargo before it is loaded into the belly of passenger aircraft. Cargo screening facilities must be certified and overseen by the TSA, as well as use-only TSA approved technologies and systems. There are currently 850 certified cargo screening facilities in the United States, including 41 in Massachusetts. Through this system, we are keeping passenger airlines secured from previously unknown threats.

Making sure TSA's 100 percent screening program stays effective is one of my top priorities, and a primary focus of today's hearing will be determining what work remains to be done. I intend to ask questions that will assess the challenges we face in deploying the latest and greatest cargo screening technologies, as well as how TSA's strained budget may be impacting its ability to oversee air cargo security. But air cargo is not the only area where threats might lurk. That's why I also want to hear about our passenger and baggage screening systems, the danger that drones flying near airports pose to airplanes, and the cybersecurity of our increasingly computerized aviation system. I have invited today's panelists because they can speak to all of these issues and much more. Our witnesses are experts who understand that "never forget" is more than a slogan, it is a commitment to action.

The effort to keep our skies safe and secure is as important as it has ever been, and I look forward to hearing your testimony on how we fulfill this ongoing mission. And I want to thank all of you for being here and am glad now to introduce you to the audience. First is Mr. John Beckius, the Executive Director of TSA's Air Cargo Division.

This committee rightly established his office in the TSA Modernization Act of 2018 to help improve our security programs, and I am proud of this accomplishment. I am grateful to hear his perspective on the current state of air cargo security. Next is Mr. Ed Freni, the Director of Aviation for the Massachusetts Port Authority. Mr. Freni manages all airside and landside activities at Boston Logan International Airport, Hanscom Field in Bedford, and Worcester Regional Airport. He helped develop Logan's famous daily security briefing after the September 11th attacks and has an extensive history of fostering safety innovations at Massport.

Our third witness is Mr. Steve Urchuk, the Chief Technology Officer for Analogic. Analogic is a technology company based in Peabody, Massachusetts, that makes the kind of cutting-edge scanning equipment that we need to secure air cargo, airports, and airplanes. Mr. Urchuk's company employs over 500 people in the commonwealth and exemplifies why Massachusetts isn't just the bay state, it is the brain state that is leading the charge for enhancing aviation security, and we are so proud of what you do.

Next is Mr. Brandon Fried, the Executive Director of the Airforwarders Association, a national group representing the freight forwarding companies that serve as certified air cargo screeners. With more than 38 years in the air cargo industry, Mr. Fried has tremendous expertise to identify and discuss today's security challenges.

And finally, Ms. Jennifer Ritter is a flight attendant for United Airlines and a leader in the Association of Flight Attendants. Ms. Ritter represents an essential community that serves on the frontlines of aviation security. Flight attendants are our truly first responders in the sky. Ms. Ritter will offer the Committee an invaluable perspective that we must hear.

So I thank each and every one of our witnesses for being here today and I invite Mr. Beckius, whenever you are ready, to please begin.

**STATEMENT OF JOHN BECKIUS,
EXECUTIVE DIRECTOR, AIR CARGO DIVISION,
TRANSPORTATION SECURITY ADMINISTRATION
U.S. DEPARTMENT OF HOMELAND SECURITY**

Mr. BECKIUS. Good morning, Ranking Member Markey. I am John Beckius, the Executive Director of TSA's Air Cargo Division. Thank you for inviting me to testify today regarding TSA's Certified Cargo Screening Program. I am honored to be here and grateful for the Subcommittee's continued support of TSA.

My testimony will highlight the benefits provided by the CCSP, areas where the program can be strengthened, and the actions we are taking to address those matters. The TSA Modernization Act significantly enhanced our ability to execute our mission and its implementation is a priority for the agency. As it relates to air cargo, the TSA Modernization Act includes a number of critically important provisions, including direction to establish an air cargo division, which I now lead.

Additionally, the Act required TSA to complete a feasibility study and a pilot program regarding the use of computed tomography units for air cargo screening as well as a review of the CCSP. TSA established the CCSP in 2009 as part of its strategy to meet the implementing recommendations of the 9/11 Commission Act of 2007 to screen 100 percent of the cargo transported on passenger aircraft by August 3, 2010. To accomplish that goal, TSA established the CCSP to allow United States-based air cargo screening facilities to become certified to screen air cargo under the CCSP and receive designation as a certified cargo screening facility. The CCSP was developed—

Senator MARKEY. And again, CCSP is?

Mr. BECKIUS. Certified Cargo Screening Program.

Senator MARKEY. OK.

Mr. BECKIUS. Sorry, sir.

Senator MARKEY. No, just—just want to keep everyone in the game here.

Mr. BECKIUS. Yes, thank you. The Certified Cargo Screening Program was developed to allow U.S. air cargo supply chain shippers and indirect air carriers to screen their cargo before tendering it to domestic and foreign passenger air carriers, helping to alleviate the cargo screening burden on the carriers. Through the Certified Cargo Screening Program, shippers and indirect air carriers volunteered to abide by TSA regulations.

Today, there are hundreds of certified cargo screening facilities in the United States, and these facilities are typically located near large commercial airports. Certified cargo screening facilities screen cargo using only TSA approved methods such as advanced technology X-ray, electronic metal detection, explosive trace detection, third-party K9 and physical search.

TSA, through its compliance director and transportation security inspectors, conduct inspections of those entities to determine compliance with the Certified Cargo Screening Standard Security Program and other TSA regulations. Per the TSA Modernization Act, TSA reviewed the CCSP in 2019 to identify—to evaluate the program and identify vulnerabilities, and assess the effectiveness of information sharing with our air cargo security stakeholders.

Through our review, TSA found the program contributed to unimpeded movement of goods through a secure U.S. supply chain. Many shippers view it as their preferred solution to transport commodities across the United States and abroad.

Additionally, TSA effectively shares information with air cargo security stakeholders through the Aviation Security Advisory Committee, working groups, industry conferences, and secure TSA web boards. Through our review, TSA also learned of a number of program vulnerabilities, including instances of ineffective screening or failure to screen, differences between the vetting requirements for cargo screeners at certified cargo screening facilities and those with passenger air carriers, as well as potential shortfalls in screening capacitors. Since then, TSA has taken numerous steps to improve the screening program.

From a screening perspective, TSA supports innovative ways to improve security, effectiveness, and efficiency. To that end, TSA created and implemented a Certified Cargo Screening Program third-party K9, which permits private K9 companies to become TSA-regulated entities authorized to screen our cargo. We also work closely with screening technology manufacturers on assessing ways to improve technology to meet security standards and industry needs. TSA regularly updates the program to address vulnerabilities identified through agency reviews, inspections, engagements with industry, and threat intelligence.

We are in the midst of planning new policies and procedures to improve the program moving forward, including updating security policies to meet heightened air cargo security requirements approved by the International Civil Aviation Organization, as well as working with screening technology developers to increase the affordability and expanded use of computed tomography. Securing our Nation's aviation transportation system is complex and we cannot do it alone.

The Certified Cargo Screening Program is an important tool that helps address evolving threats while also meets the needs of the air cargo industry to ensure air commerce remains both secure and efficient. TSA will continue to engage with stakeholders and Congress as we look to continue enhancing the security, posture, and effectiveness of air cargo security overall. Ranking Member Markey, thank you again for the opportunity to speak here today. I look forward to your questions.

[The prepared statement of Mr. Beckius follows:]

PREPARED STATEMENT OF JOHN BECKIUS, EXECUTIVE DIRECTOR, AIR CARGO DIVISION, TRANSPORTATION SECURITY ADMINISTRATION, U.S. DEPARTMENT OF HOMELAND SECURITY

Good Morning, Chairman Sullivan, Ranking Member Markey, and distinguished members of the subcommittee. Thank you for inviting me to testify on the Transportation Security Administration's (TSA) Certified Cargo Screening Program (CCSP). I am John Beckius, Executive Director of TSA's Air Cargo Division. I am honored to be here and grateful for the subcommittee's continued support for TSA and its critically important mission to secure the Nation's transportation system while ensuring the freedom of movement for people and commerce. TSA remains resolute in countering threats to aviation and protecting both the civil aviation system and traveling public. To that end, TSA continuously evaluates ways to raise the baseline for all elements of aviation security, including air cargo security. My testimony will highlight the benefits provided by CCSP, areas where the program can be strength-

ened based on our recent review of the program, and the actions we are taking to address those matters.

The October 5, 2018 enactment of the *TSA Modernization Act*, the agency's first comprehensive reauthorization since inception, has significantly enhanced our ability to execute our mission, and its implementation is a priority for the Agency. As of today, TSA has completed nearly 80 percent of the Act's requirements that have deadlines. Of particular relevance to this hearing, the *TSA Modernization Act* includes a number of critically important provisions associated with air cargo security. These provisions include direction to establish an air cargo division, which is the organization I now lead, to complete a feasibility study and pilot program regarding the use of computed tomography units for air cargo screening, and to conduct a review of the CCSP.

TSA established the CCSP in 2009 as part of its strategy to meet the *Implementing the Recommendations of the 9/11 Commission Act of 2007 (9/11 Act)* mandate to screen 100 percent of cargo transported on passenger aircraft by August 3, 2010. Prior to the enactment of the *9/11 Act* and the existence of the CCSP, only passenger air carriers were authorized to screen air cargo transported on their aircraft. To meet that requirement, TSA established a regulatory program that allows United States-located air cargo screening facilities to become certified to screen air cargo under the CCSP, and receive designation as Certified Cargo Screening Facilities (CCSF).

There are currently 714 CCSFs throughout the United States, located primarily in close geographic proximity to the largest commercial airports. The CCSP was specifically developed to allow air cargo supply chain Shippers and Indirect Air Carriers (IACs) located in the United States to screen their air cargo before tendering it to domestic and foreign passenger carriers, helping to alleviate the cargo screening burden on the carriers.

Through CCSP, Shippers and IACs may screen air cargo so long as they abide by TSA air cargo screening regulations. The TSA application process to become a CCSP holder and establish a CCSF screening location(s), requires the applicant to provide their legal operating business name, copies of government issued identifications of required employees, and a Security Threat Assessment for all required individuals. In order to become certified, a potential CCSF location must ensure TSA standards for physical access control to the facility, personnel security through employee vetting, procedural security to properly screen and maintain chain of custody for screening cargo, internal facility physical and security controls preventing access to screened cargo by unauthorized individuals. Once the information is reviewed and vetted by TSA, the applicant must have TSA certify a potential CCSF location not less than 90 calendar days before the applicant intends to begin operations.

Once certified, CCSFs are required to screen cargo using only TSA-approved screening technologies and methods. These include Advance Technology X-ray (AT X-ray), Explosive Trace Detection (ETD), Electronic Metal detection (EMD), Explosive Trace Detection (EDS), third party canines, and physical search. Once screened, the CCSF must implement chain-of custody measures within their facility and during transport to a passenger carrier or airport. Air cargo may only be screened and handled by employees vetted through a Security Threat Assessment (STA). These processes help ensure the security of the screening process and the screened cargo throughout the air cargo supply chain prior to tendering it to a passenger aircraft.

TSA, through its Compliance Directorate and Transportation Security Inspectors, conducts inspections of CCSFs to determine compliance with 49 Code of Federal Regulations Part 1549, the Certified Cargo Screening Standard Security Program (CCSSSP), and other applicable TSA security requirements. Inspections of CCSFs address the full scope of cargo security requirements—from acceptance of air cargo to transfer of air cargo to a passenger aircraft—to determine compliance, as well as identify any security vulnerabilities.

Currently there are 377 TSA Cargo Inspectors nationwide. In Fiscal Year 2019, TSA conducted 1,810 CCSF inspections. As a result of these inspections, there were 379 individual findings of violations of TSA security requirements, ranging from lower risk areas such as administrative and training requirements to 63 findings of violations that were subsequently investigated in high risk areas such as how cargo is accepted and screened. TSA may also address violations through on-the-spot discussion or corrections, dependent on the nature of the violation. TSA conducts at least one comprehensive inspection annually of each independent and Indirect Air Carrier CCSF.

As required by the *TSA Modernization Act*, TSA reviewed the CCSP last year to evaluate the program, identify vulnerabilities, and assess the effectiveness of information sharing with air cargo security stakeholders. The report provided to Congress in July 2019 details our findings, improvements made, and planned actions.

During our review, TSA has found that the CCSP has contributed to the unimpeded movement of goods through a secure U.S. supply chain and many shippers view it as their preferred solution to transport commodities across the United States and abroad. The program also allows regulated entities to contract with another entity to screen air cargo, if the regulated entity can not or does not want to screen air cargo.

The review also found that TSA effectively shared information with air cargo security stakeholders through a variety of ways. For instance, TSA industry engagement managers work directly with air cargo associations and other industry stakeholders at the executive level, while TSA principal security inspectors provide CCSF-level engagement for policy interpretation and general guidance. TSA also shares information through the Aviation Security Advisory Committee (ASAC) Air Cargo subcommittee, industry working groups, industry conferences, speaking engagements, and secure TSA web boards.

Through our review, TSA learned of a number of program vulnerabilities, including identified instances of ineffective screening or a failure to screen; differences between the vetting requirements for cargo screeners at CCSFs and the higher requirements for air cargo screeners employed by or acting as an authorized representative for a passenger air carrier; and, potential shortfalls in screening capacity. TSA has taken numerous steps to improve the screening program and the vulnerabilities identified in it.

From a screening perspective, TSA is supporting innovative ways to improve both security effectiveness and efficiency. To that end, TSA created and implemented a CCSP canine program (CCSP-K9), generally known as “third-party canine.” This cargo screening program permits private canine companies to apply to become a TSA-regulated entity which is authorized to screen air cargo. The implementation of CCSP-K9 provides another effective option to screen air cargo and may offset potential vulnerability issues due to expected increases in screening volume when International Civil Aviation Organization (ICAO) screening requirements for explosive detection for full all-cargo carriers takes effect in June 2021.

TSA regularly updates the CCSP to address vulnerabilities identified by TSA reviews, TSA inspections, engagement with industry, and threat intelligence. For example, in December 2018, TSA enhanced existing security measures and established new procedures related to air cargo chain-of-custody, tendering, and screening technologies.

In addition to what is currently being done to address the identified vulnerabilities, TSA is in the midst of planning new policies and procedures to improve the CCSP moving forward. For example, TSA is enacting new security policies consistent with heightened air cargo security standards approved by ICAO; working with screening technology developers to increase the affordability and expand the use of Computed Tomography (CT) technology in the cargo screening environment; and, exploring ways to apply screening best practices and options to require all CCSF employees to undergo a criminal history records check in addition to the current security threat assessment.

Securing the Nation’s aviation transportation system is a complex task and we cannot do it alone. The CCSP is an important tool that helps address evolving threats while also meeting the needs of the air cargo industry to ensure air cargo commerce remains both secure and efficient. The CCSP will continue to serve as a tool for the air cargo industry to meet the 100 percent screening requirements of the *9/11 Act* and ensure the security of air cargo and the safety of the traveling public. With new innovative solutions, such as the CCSP-K9, the CCSP is well positioned to serve as a means to meet the expected increase in demand for air cargo screening capacity resulting from the change in ICAO standards, which take effect in June 2021. TSA will continue to engage with stakeholders and Congress as we look to continue enhancing the security posture and screening effectiveness of air cargo screening overall.

Chairman Sullivan, Ranking Member Markey, and members of the subcommittee, thank you again for the opportunity to testify before you today. I look forward to your questions.

Senator MARKEY. Thank you, Mr. Beckius, very much. Mr. Freni.

**STATEMENT OF EDWARD FRENI, DIRECTOR OF AVIATION,
MASSACHUSETTS PORT AUTHORITY**

Mr. FRENI. Good morning, Ranking member Markey. On behalf of the Massachusetts Port Authority, I want to thank you for the

opportunity to testify before the Senate Commerce Committee on Security and for your ongoing commitment to innovation in aviation security. As the Director of Aviation at Massport, I would like to welcome you to Boston Logan International Airport. We are honored to host this important meeting and look forward to discussing ways to enhance security for air travel.

At Massport, safety and security is our number one priority. As New England's most critical transportation infrastructure, moving people and cargo around the world, Massport is committed to addressing the security challenges of today and preparing for the threats of tomorrow. The dynamic nature of today's security threats, both physical and cyber, present an ever-changing environment for Massport and our partners worldwide. Working with our Federal partners, State, and local emergency responders and the greater airport community, we continually enhance and refresh our approach to emerging risks in order to maintain the highest level of safety and security at all our facilities.

An informed, vigilant, and engaged airport community is and always will be our greatest asset in identifying potential risks. Education and engagement is a critical component of our overall safety program, which is based on lessons learned, real world experiences, and best practices that are part of our safety and security culture here at Massport. Most notably, since the tragedy of 9/11, Massport has implemented an aggressive, smart, and focused security initiatives to strengthen defenses against potential threats. Starting on the afternoon of 9/11 and continuing non-stop almost 20 years later, each and every day at 8:30 in the morning, leadership of Massport, the airlines, law enforcement agencies, contractors, vendors, and Federal partners convene to discuss topics of current significance and set the priorities and actions of the coming day.

In fact, today we had about 70 people attend the 8:30 a.m. meeting—of which I was there. The security briefing, as we call it, is not just about what happened the past 24 hours and what is upcoming in the next 24 hours, it is an opportunity for the airport community to connect with peers and partners face to face. Whether it is coordinating response to the coronavirus outbreak or sharing intelligence on global security issues such as the death of Iranian General Qassem Soleimani or discussing the solutions to the evolving cyber security issues, Massport is leaning forward aggressively to help keep our employees, business partners, and traveling public safe.

Many other airport management teams have looked to Boston as a model and have sought to establish a security briefing for the respective airports. However, no other airport in the U.S. has been able to match our track record on a day-in and day-out basis. Of significance to me personally, each and every stakeholder has a chance to participate and listen to discussion, ask questions, take back information to share with their organizations from a single source of truth and authority. This diverse group of professionals, providing expert perspectives and facts, instills confidence and is a powerful reminder of our mission every day. This is only possible due to the widespread commitment by every stakeholder involved in their willingness to be fully engaged as participants. The secu-

city briefing has created an enduring network within our community and has vastly strengthened the landscape of the airport.

As an example, Boston Logan was selected by the TSA Innovation Task Force site in 2017. Through this program, the most advanced security technologies are tested in the field in participating airports. Working with the TSA, Massport deployed Automated Screening Lanes, ASLs, at almost every checkpoint at Logan Airport, significantly improving the screening process. Today, Boston Logan International Airport is the premier airport for the greater Boston metropolitan area, as well as the international gateway for much of New England. Logan's economic impact is estimated by the state to be more than \$16.3 billion annually. And in 2019, more than 42 million passengers traveled through Logan Airport to one of our 137 destinations, comprised of 79 nonstop domestic destinations and 58 nonstop international markets.

Boston Logan is not only the gateway to the world for travelers, but it also helps power global commerce by moving a diverse and growing mix of cargo throughout the globe. In 2018, 334,000 metric tons of cargo passed through the airport. Of that, 132,000 metric tons were international, and over 90 percent in the belly cargo transported by passenger aircraft. Although belly cargo provides a great amount of flexibility for shippers, we are cognizant that terrorist organizations have tried to bypass passenger screening by sneaking explosives in cargo holds on commercial jets.

In 2010, al-Qaeda in the Arabian Peninsula was able to mail explosives hidden in a printer cartridge as cargo aboard a Qatar Airways passenger plane. We commend the leadership of Senator Markey and others in Congress who helped pass legislation ensuring 100 percent of cargo transported on passenger aircraft is screened per the TSA regulations. This was a critical step in protecting the aviation industry. As a result of this law, the TSA created the Certified Cargo Screening Program, CCSP. This has allowed TSA-certified cargo screening facilities and vetted shippers to screen air cargo earlier in the supply chain. The facilities screen cargo using TSA-approved methods and chain-of-custody measures.

The CCSP has been instrumental in ensuring cargo on passenger planes meets the screening standards mandated by law so that belly cargo does not become the soft underbelly of our aviation defense measures. Our passengers and flight crews expect it and deserve it. We also know terrorists have tried to exploit security loopholes in cargo-only flights. The so-called Islamic state terrorist group in 2017 was able to ship explosives from Turkey to Australia as part of a foiled plot.

Massport supports rules by the International Civil Aviation Organization known as ICAO, requiring the screening of cargo transported on cargo-only aircraft by June 2021. According to the Federal Aviation Administration's, FAA's, Aerospace Forecast Fiscal Years 2019–2039 report, cargo-only carriers make up nearly 80 percent of the revenue ton-miles. Enhancing security on cargo-only flights will protect more lives in the air and on the ground. An important means of meeting that requirement is the use of TSA-certified third-party canine screening.

Utilizing third-party canine screening allows airlines to inspect cargo without impeding the pace of commerce, and Logan is on

track to implement this screening method. Moving cargo around the world in a safe and secure manner is a shared responsibility throughout the entire logistics chain. In order to have confidence in the shared responsibility system, we must have confidence in the people who are part of the system. Identifying threats from within, both on and off airports, is a key component of that. Massport served on the Aviation Security Advisory Committee's Insider Threat committee, which provided recommendations to the TSA Administrator on inside threat best practices. We fully support those recommendations and encourage the TSA to adopt those standards.

As the volume of passengers and cargo continue to increase, another challenge airports face is keeping pace with the infrastructure investment requirements needed to safely and securely move cargo. The FAA Aerospace Forecast report also predicts that U.S. airlines will reach 1.3 billion passengers in 2039, and nearly double the cargo traffic as measured by revenue ton miles. Airport operators need the support of our Federal partners to help us build modern and efficient facilities.

Increasing the cap on the Passenger Facility Charge, PFC, is critical to our ability to meet increasing demands. Massport also supports legislation championed by Senator Markey that would ensure the September 11th Security Fee goes to its intended use, improving security at our airports via our partners at the TSA, instead of allowing Congress to reallocate those funds for other purposes.

At Massport, our mission is to safely, securely, and efficiently connect Massachusetts and New England to the world. Massport supports our partners, particularly the TSA, Customs and Border Protection, and air carriers in their efforts to enhance security procedures across all of our facilities and for all cargo types.

Through strong relationships with our partners, keen awareness, and mitigation of security threats, Massport strives to have the safest airports in the world. I want to thank you for the opportunity to testify in front of the Subcommittee today, and I would be glad to take any questions.

[The prepared statement of Mr. Freni follows:]

PREPARED STATEMENT OF EDWARD FRENI, DIRECTOR OF AVIATION,
MASSACHUSETTS PORT AUTHORITY

Ranking Member Markey, on behalf of the Massachusetts Port Authority, thank you for the opportunity to testify before the Senate Commerce Subcommittee on Security, and for your ongoing commitment to innovation in aviation security. As the Director of Aviation at Massport, I'd like to welcome you to Boston Logan International Airport. We are honored to host this important hearing, and look forward to discussing ways to enhance the security of air travel.

At Massport, safety and security is our number one priority. As New England's most critical transportation infrastructure, moving people and cargo around the world, Massport is committed to addressing the security challenges of today and preparing for the threats of tomorrow. The dynamic nature of today's security threats—both physical and cyber—present an ever-changing environment for Massport and our partners worldwide. Working with our Federal partners, state and local emergency responders, and the greater airport community, we continually enhance and refresh our approach to emerging risks in order to maintain the highest level of safety and security at all of our facilities.

An informed, vigilant, and engaged airport community is—and always will be—our greatest asset in identifying potential risks. Education and engagement is a crit-

ical component of our overall safety program, which is based on lessons learned, real-world experiences, and best practices that are part of the safety and security culture here at Massport. Most notably, since the tragedy of September 11th, Massport has implemented an aggressive program of smart and focused security initiatives to strengthen defenses against potential threats. Starting on the afternoon of 9/11/2001, and continuing nonstop for almost 20 years, each and every day at 8:30 in the morning leadership from Massport, the airlines, law enforcement agencies, contractors, vendors and Federal partners convene to discuss topics of current significance and set the priorities and actions for the coming day. The *Security Briefing*, as we call it, is not just about what happened in the past 24 hours and what is upcoming in the next 24 hours; it is an opportunity for the airport community to connect with peers and partners face-to-face. Whether it's coordinating a response to the Coronavirus outbreak, sharing intelligence on global security issues such as the death of Iranian General Qasem Soleimani, or discussing solutions to evolving cybersecurity issues, Massport is leaning forward aggressively to help keep our employees, business partners, and the traveling public safe.

Many other airport management teams have looked to Boston as a model, and have sought to establish a *Security Briefing* for their respective airports; however, no other airport in the United States has been able to match our track record on a day-in and day-out basis. Of significance to me personally, each and every stakeholder has the chance to participate and listen to the discussion, ask questions, and take back information to share with their organizations from a single source of truth and authority. This diverse group of professionals providing expert perspectives and facts instills confidence, and is a powerful reminder of our mission every day. This is only possible due to the widespread commitment by every stakeholder involved, and their willingness to be fully engaged as participants.

The *Security Briefing* has created an enduring network within our airport community, and has vastly strengthened the landscape of the Airport. As an example, Boston Logan was selected as a TSA Innovation Task Force site in 2017. Through this program, the most advanced security technologies are tested in the field at participating airports. Working with the TSA, Massport deployed Automated Screening Lanes (ASLs) at almost every checkpoint at Boston Logan, significantly improving the screening process.

Today, Boston Logan International Airport is the premier airport for the greater Boston metropolitan area, as well as the international gateway for much of New England. Logan's economic impact is estimated by the state to be more than \$16.3 billion annually. In 2019, more than 42 million passengers traveled through Logan Airport to one of our 137 nonstop destinations, comprised of 79 domestic and 58 international markets. Boston Logan is not only the gateway to the world for travelers, but it also helps power global commerce by moving a diverse and growing mix of cargo throughout the globe. In 2018, 334,000 metric tons of cargo passed through the airport. Of that, 132,000 metric tons were international, and over 90 percent is belly cargo transported on passenger aircraft.

Although belly cargo provides a great amount of flexibility for shippers, we are cognizant that terrorist organizations have tried to bypass passenger screening by sneaking explosives in cargo holds on commercial jets. In 2010, al-Qa'ida in the Arabian Peninsula was able to mail explosives hidden in a printer cartridge as cargo aboard a Qatar Airways passenger plane. We commend the leadership of Senator Markey and others in Congress who helped pass legislation ensuring 100 percent of cargo transported on passenger aircraft is screened, per Transportation Security Administration (TSA) regulations. This was a critical step in protecting the aviation industry. As a result of this law, the TSA created the Certified Cargo Screening Program (CCSP). This has allowed TSA-certified air cargo screening facilities and vetted shippers to screen air cargo earlier in the supply chain. The facilities screen cargo using TSA-approved methods and chain-of-custody measures. The CCSP has been instrumental in ensuring cargo on passenger planes meets the screening standards mandated by law so that belly cargo does not become the soft underbelly of our aviation defense measures. Our passengers and flight crews expect it, and deserve it.

We also know terrorists also have tried to exploit security loopholes in cargo-only flights. The so-called Islamic State terrorist group in 2017 was able to ship explosives from Turkey to Australia as part of a foiled plot.ⁱ Massport supports rules by the International Civil Aviation Organization (ICAO) requiring the screening of cargo transported on cargo-only aircraft by June 2021. According to the Federal Aviation Administration's (FAA) Aerospace Forecast Fiscal Years 2019–2039 report,

ⁱ<https://www.reuters.com/article/us-australia-security-raids/islamic-state-behind-australians-foiled-etihad-meat-mincer-bomb-plot-police-idUSKBN1AJ367>

cargo-only carriers make up nearly 80 percent of the revenue ton-miles.ⁱⁱ Enhancing security on cargo-only flights will protect more lives in the air and on the ground. An important means of meeting that requirement is the use of TSA-certified third-party canine screening. Utilizing third-party canine screening allows airlines to inspect cargo without impeding the pace of commerce, and Logan is on track to implement this screening method.

Moving cargo around the world in a safe and secure manner is a shared responsibility throughout the entire logistics chain. In order to have confidence in the shared responsibility system, we must have confidence in the people who are part of the system. Identifying threats from within—both on and off airports—is a key component of that. Massport served on the Aviation Security Advisory Committee's Insider Threat Subcommittee, which provided recommendations to the TSA Administrator on insider threat best practices. We fully support those recommendations and encourage the TSA to adopt those standards.

As the volume of passengers and cargo continue to increase, another challenge airports face is keeping pace with the infrastructure investment requirements needed to safely and securely move cargo. The FAA Aerospace Forecasts report alsoⁱⁱⁱ predicts that U.S. airlines will reach 1.3 billion passengers in 2039, and nearly double the cargo traffic as measured by revenue ton miles. Airport operators need the support of our Federal partners to help us build modern and efficient facilities. Increasing the cap on the Passenger Facility Charge is critical to our ability to meet increasing demands. Massport also supports legislation championed by Senator Markey that would ensure the September 11th Security Fee goes to its intended use—improving security at our airports via our partners at the TSA, instead of allowing Congress to reallocate those funds for other purposes.

At Massport, our mission is to safely, securely, and efficiently connect Massachusetts and New England to the world. Massport supports our partners, particularly the TSA, CBP and air carriers, in their efforts to enhance security procedures across all of our facilities and for all cargo types. Through strong relationships with our partners, keen awareness and mitigation of security threats, Massport strives to have the safest airports in the world. Thank you for the opportunity to testify in front of the subcommittee today. I would be glad to take any questions.

Senator MARKEY. Mr. Freni, thank you. Mr. Urchuk.

**STATEMENT OF STEVEN N. URCHUK,
CHIEF TECHNOLOGY OFFICER, ANALOGIC CORPORATION**

Mr. URCHUK. Ranking Member Markey, on behalf of Analogic Corporation, thank you for the opportunity to testify before the Senate Commerce Subcommittee on Security, and for your support of Massachusetts businesses and technology development. I am very pleased to appear before you to discuss Analogic Corporation's long, proud history of aviation security equipment design and manufacturing, and present our future technology roadmap to improve aviation security.

Based north of Boston, Analogic employs over 570 technical, manufacturing, and administrative workers in Massachusetts, and has approximately 900 employees overall. In my current role as Chief Technology Officer, I am responsible for technology strategy and advance technology development at Analogic. Previously, I led Analogic's CT product development efforts for both medical and aviation security applications. For over 40 years, Analogic has been a technology leader in the medical imaging field. We currently sell subsystems and full systems to X-ray, Magnetic Resonance, and Computed Tomography Original Equipment Manufacturers. And over the last 20 years, we pioneered the application of CT to explosive threat detection.

ⁱⁱ https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2019-39_FAA_Aerospace_Forecast.pdf

ⁱⁱⁱ https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2019-39_FAA_Aerospace_Forecast.pdf

In the U.S., through our partner L3Harris, we have delivered over 900 eXaminer 3Dx CT systems to the TSA for checked baggage screening. More recently, we have deployed over 10 of our new ConneCT checkpoint CT systems to several U.S. airports, including Miami, Tampa, and Detroit, in cooperation with TSA and also American Airlines who sponsored some of those deployments. Delta Airlines has also recently informed Analogic of their decision to deploy ConneCT to their ongoing terminal improvements in Atlanta, Los Angeles, and New York's LaGuardia airports.

Analogic is focused on commitment and years of experience with CT technology to bring to market the next generation in 3D X-ray imaging systems in the form of the ConneCT and similar products. Analogic innovations include compact, rugged system designs that eliminate the complexity and cost associated with conventional CT systems, and also advanced algorithm and networking capabilities to support threat detection and remote screening of luggage. Of particular interest for today's discussion, Analogic has extended the ConneCT technology platform to include a new 1000 item per hour, 1 meter wide by 0.8 m high tunnel system that shares the same simplified design of our smaller checkpoint sibling. It is particularly well suited for air cargo screening, we believe, because in a passenger belly hole environment, cost effectiveness, threat detection are a premium—speed is perhaps not as important.

Whereas, in dedicated passenger aircraft cargo screening, such as you have in the airport here today, very high throughput expensive conveyor systems are often used. Really, I think, when we think about these systems, the very low cost of ownership, upgradability, and a very effective threat detection system is key. And we believe that by leveraging latest technology developments, we can bring this—the type of solutions that are coming into the checkpoint and now into the air cargo environment in a very cost-effective manner.

Analogic is committed to delivering this type of technology to this critically important market. Over the very near term, Analogic looks forward to working with the TSA and our trial partners to gain approval and then qualification of our 1,000 bags per hour screening system. Under the TSA's Aviation Cargo Screening Technology List, we and our industry partners welcome the opportunity to develop screening solutions that meet the needs of the aviation security community.

It is our hope that together we can define new screening methods that improve the security of our transportation system. I appreciate this opportunity to share our views, and I look forward to answering any question you may have. Thank you.

[The prepared statement of Mr. Urchuk follows:]

PREPARED STATEMENT OF STEVEN N. URCHUK, CHIEF TECHNOLOGY OFFICER,
ANALOGIC CORPORATION

Ranking Member Markey, on behalf of Analogic Corporation, thank you for the opportunity to testify before the Senate Commerce Subcommittee on Security, and for your support of Massachusetts businesses and technology development. I am very pleased to appear before you to discuss Analogic Corporation's long, proud history of aviation security equipment design and manufacturing and present our future technology roadmap to improve aviation screening. Based north of Boston, Analogic employs over 570 technical, manufacturing and administrative workers in Massachusetts and has approximately 900 employees overall. In my current role as Chief Technology Officer, I am responsible for technology strategy and advance tech-

nology development at Analogic. Previously, I led Analogic's CT product development efforts for both medical and aviation security applications.

For over 40 years, Analogic has been a technology leader in the medical imaging field. We currently sell subsystems and full systems to X-ray, Magnetic Resonance and Computed Tomography (CT) Original Equipment Manufacturers (OEMs). Over the last 20 years, we pioneered the application of CT to explosive threat detection. In the U.S., through our partner L3Harris, we have delivered over 900 eXaminer 3Dx CT systems to the TSA for checked baggage screening. More recently, Analogic has deployed over 10 of our new ConneCT checkpoint CT systems to several U.S. airports, including Miami, Tampa and Detroit, for checkpoint screening in partnership with TSA and American Airlines. Delta Airlines also recently informed Analogic of their decision to deploy ConneCT to their ongoing terminal improvements in Atlanta, Los Angeles and New York's LaGuardia airports.

Analogic's focused commitment and years of experience with CT technology has allowed us to bring to market the next generation in 3D X-ray imaging in the form of the ConneCT. Key Analogic innovations include compact, rugged system designs that eliminate the complexity and cost associated with conventional CT systems and advanced algorithm and networking capabilities to support threat detection and remote screening. Of particular interest for today's discussion, Analogic has extended the ConneCT technology platform to include a new 1000 item per hour, 1 meter wide by 0.8 m high tunnel system that shares the same simplified design as its smaller checkpoint sibling, but is particularly well suited for the screening of the air cargo carried on passenger aircraft. In these environments, threat detection, efficiency, and cost-effectiveness are at a premium. Dedicated passenger aircraft cargo screening systems generally do not need the high throughput requirements normally associate with the premium checked baggage systems used at large airports and in the ultra-high-speed screening of packages carried by delivery service companies on freight aircraft. They do, however, require low cost of ownership, upgradeability, and the effective, accurate threat detection that, so far, only CT can provide. Leveraging the latest technology and system designs, air cargo CT can be provided in an extremely cost-effective manner. Analogic is committed to delivering high-quality CT technology for this critically important market.

Looking to the future, it's worth noting that unlike conventional X-ray systems, 3D imaging lends itself to automatic threat detection, which allows the equipment to be certified to TSA's air cargo standard and can be used to find prohibited items and other anomalies using machine learning algorithms. We expect remote screening, via locally and regionally networked workstations, to be an important component of air cargo screening. Connecting a geographically diverse set of systems to central locations should improve operational efficiency and ensure quality control of the screening process. There is also the potential to integrate secondary threat detection and analytics into the process, providing an additional layer of detection capability and operational awareness.

The ability to integrate with different vendor solutions using an open platform is another emerging requirement in aviation security that should carry over to air cargo screening. The use of standardized data formats, such as DICOS for image data and threat reports, will be important. Similarly, third party algorithms, developed in cooperation with the equipment vendors will be needed. Finally, we expect that certain vendors may specialize in providing networking and image review services. Analogic welcomes these initiatives and anticipates there to be considerable technology and business model innovation as air cargo screening is modernized.

Over the very near term, Analogic looks forward to working with the TSA and our trial partners to gain approval and then qualification of our 1000 bags hour screening system on TSA's Aviation Cargo Screening Technology List (ACSTL). We and our industry partners welcome the opportunity to develop screening solutions that meet the needs of the aviation security community. It is our hope that together we can define new screening methods that improve the security of our transportation system.

I appreciate having this opportunity to share our views, and I look forward to answering your questions.

Senator MARKEY. Thank you very much. Mr. Fried.

**STATEMENT OF BRANDON FRIED, EXECUTIVE DIRECTOR,
AIRFORWARDERS ASSOCIATION**

Mr. FRIED. Senator Markey, thank you for this opportunity to present the views this morning at the Airforwards Association on

air cargo security. Our association represents 250 air freight forwarders and supporting companies employing tens of thousands of employees and dedicated contractors ranging from firms with fewer than 20 people to organizations with over 1,000. We move freight globally in the most time and cost efficient manner being on aircraft, truck, rail, or ship. We are the travel agents for cargo.

We have worked closely with TSA since its inception and committed millions of dollars to ensure that our role in the security chain is secure. We play an integral role to ensure the safety and security of shipments traveling on both domestic and international airlines. We know that terrorists remain interested in airplanes and therefore are looking for any possible vulnerabilities in the system.

So as we have heard this morning, to meet the 2010 100 percent air cargo screening requirement on passenger flights arriving and departing U.S. airports, TSA implemented this CCSP, certifying manufacturers, warehouses, distribution centers, and third-party logistics providers that voluntarily and successfully follow the TSA security standards. Without this program, screening would only take place at the airport, resulting in increased airport truck congestion, missed flights, and a significant adverse impact on U.S. trade. Establishing a certified cargo screening facility is not something we take lightly. It is costly, it is time consuming, and it is fraught with challenges. However, we remain committed to the belief that CCSP not only streamlines customers supply chains, but reduces bottlenecks at already congested airline cargo facilities.

Now, as we have heard, in 2018, December 2018, the TSA approved the long-awaited Third Party Private Canine Program. The program allows private companies to train canines and handlers to screen air cargo before loading on passenger planes. A well-trained dog can detect explosive odors down to parts per trillion. Where it might take hours to screen a cargo shipment by X-ray or trace detection technology, an explosive detection trained dog team can search that same shipment efficiently and effectively in minutes.

Despite the recent success using canines and cargo screening, technology still has a definitive role in the screening process. But TSA's vetting and certification of new technology is stalled. This delay leaves few machine options available to perform the tasks at a reasonable cost. We encourage TSA to continue searching for new solutions to fill that void. So TSA deputized the private sector to carry out cargo screening for shipments moving on passenger aircraft and has established an oversight and compliance structure for that cargo screening. However, the agency has not established a corresponding support structure for non-Governmental cargo screening which is critically important from the security perspective. The structure must be outcome equivalent to what TSA provides for passengers, cabin baggage, and checked baggage screening. The Airforwarders Association, therefore, endorses recommendations submitted last week by the Aviation Security Advisory Committee at its quarterly meeting in Washington. Suggestions urge TSA to provide the minimum level of support to ensure that cargo screeners are empowered with the necessary skills, knowledge, guidance, and tools to effectively carry out their screening responsibilities before passenger flight loading and departure.

For effective cargo security, consistent interpretations of regulations by TSA is essential. However, despite efforts to the contrary, work remains to be done to remove bureaucratic decision stovepipes within the agency. Our members operate offices throughout the United States and many TSA inspectors audit these facilities. And like any business investigated by the U.S. Government, we rely on the consistent interpretation of regulations from security—from facility to facility. We understand that 100 percent consistency is not always attainable. However, inconsistent interpretation of policy decisions and poor communication of those resolutions to the inspectors results in high cost to the industry and delays in our Nation's commerce.

That is why we urge TSA Administrator Pekoske to ensure a solid mechanism that allows regulated parties to obtain official policy guidance from TSA headquarters policy staff when the interpretation of requirements varies among individual inspectors, and improve communication of policy decisions between the policy plans and engagement division and its cargo inspector workforce, and staff and fund the new TSA Air Cargo Division with the appropriate resources immediately, and finally, perhaps establish an industry ombudsman office to assure communication. Interpretation of policy and implementation of that policy should be in agreement.

Security deteriorates when operators do not have a clear understanding of regulations due to inconsistent policy interpretations. I want to thank you again for your time this morning, and I look forward to your questions and comments.

[The prepared statement of Mr. Fried follows:]

PREPARED STATEMENT OF BRANDON FRIED, EXECUTIVE DIRECTOR,
AIRFORWARDERS ASSOCIATION

Chairman Wicker, Ranking Member Cantwell and members of the subcommittee, thank you for this opportunity to present the views of the Airforwarders Association (AFA) on air cargo security.

The Airforwarders Association (AFA) represents 250 airfreight forwarders and supporting companies employing tens of thousands of employees and dedicated contractors. Our members range from small businesses employing fewer than 20 people to large firms employing well over 1,000, and business models vary from domestic only operations to worldwide operations. Additionally, a few of our members operate their own aircraft. In short—[we are the travel agents for cargo]. We move freight throughout the United States and the world in the most time and cost-efficient manner, be it on aircraft, truck, rail, or ship.

Security is at the forefront of our business. We believe that effective air cargo security depends upon a risk-based, multilayered approach. This strategy includes modern and intelligence-based shipper vetting, risk-based targeting, employee training, constant TSA audit oversight, and of course, 100 percent screening of each piece of air cargo before transport on a passenger flight.

We have worked closely with TSA since its inception and committed millions of dollars over the past 19 years to ensure that our role in the security chain is secure. For example, our members have invested millions of dollars in security screening equipment, secure facilities, and employee background checks. We also maintain compliance with the Known Shipper Management System and the Indirect Air Carrier Management System along with annual security training to secure our portion of the global supply chain. In short, we play an integral role to ensure the safety and security of shipments traveling on both domestic and international airlines. We take this role very seriously. We know that terrorists remain interested in airplanes and therefore are looking for any possible vulnerabilities in the system. Throughout the past 19 years, we have rolled up our sleeves to meet the requirements of the Aviation Transportation Security Act, and the 100 percent screening requirement for all shipments on passenger planes. We know what is at stake and we will do our part.

As the e-commerce impact on global trade increases, recent studies indicate that almost 2 billion people globally purchased goods online last year. The Internet allows consumers to research and buy products online, connecting with sellers who often depend upon air cargo for fast and efficient delivery. But this demand has created significant truck congestion at the primary gateway airports. These bottlenecks occur as freight forwarders wait to tender and recover shipments from airlines that are screening cargo for those not enrolled in the Certified Cargo Screening Program (CCSP).

The Certified Cargo Screening Program

Facility complexity and insufficient land at our airports prevent a “one size fits all” solution to the complex cargo screening dilemma. We are motivated to work cooperatively to ensure that many solutions are available to address the commercial concerns in the supply chain to ensure effective screening outcomes and to meet air cargo screening mandates. Screening a high percentage of air cargo upstream is a critical part of the solution, especially where U.S. manufacturing and supply chain logistics involve secure bulk packaging that must be maintained for the integrity of the product.

In order to meet the 2010 mandated 100 percent air cargo screening requirement on passenger flights arriving and departing U.S. airports, the TSA implemented a supply chain solution to achieve the directive. This initiative, known as the Certified Cargo Screening Program (CCSP), certifies manufacturers, warehouses, distribution centers, third-party logistics providers, and similar facilities that voluntarily and successfully apply and follow the TSA-mandated security standards. CCSP is a crucial part of the risk-based multi-layered approach to air cargo security. The program strengthens security throughout the global supply chain, while simultaneously meeting the needs of the shipping public. We believe the strength of CCSP is that it provides for multiple options throughout the supply chain. These include the use of centralized third-party screening centers, third-party logistics providers, shipper or exporters, and freight-forwarder screening facilities.

Additionally, all members of the supply chain have a vested business interest in a secure chain of custody to maintain the integrity of cargo. CCSP relies upon the shippers, forwarders, and airlines that have a strong record of safety and security.

The CCSP decreases delays and expedites the supply chain flow of goods by conducting the piece-level screening prior to consolidation and full pallet screening away from the congested airport environment. Without the CCSP, forwarders with significant freight volumes, now screening in their facilities would rely on the airlines to perform physical screening of each piece of cargo. The result would cause even more truck congestion, missed flights, and a significant adverse impact on U.S. trade as airlines struggle to keep up with the demand to screen the cargo. In addition, delays can create security risks to safe flight. Cargo is most vulnerable to tampering and theft when at rest. By keeping our supply chains fluid, we reduce these risks.

The Airforwarders Association and our members have continued to assist with the development and implementation of the Certified Cargo Screener Program (CCSP). We have worked closely with TSA to provide insight into the complexities of the air cargo supply chain, including the impact of time, temperature, and screening methodologies on the product. The AfA has consistently provided information, and enthusiastically encouraged our members’ enrollment in CCSP. In fact, of the 147 Indirect Air Carriers in the CCSP, 27 or 18 percent are AfA members. However, those 27 AfA members operate 124 of the 331 approved CCSF locations, or 37 percent.

Establishing a Certified Cargo Screening Facility is not something that Indirect Air Carriers take lightly. It is costly, time-consuming, and fraught with challenges. However, our industry remains committed to the belief that the CCSP not only streamlines customer supply chains but reduces bottlenecks at already congested airline cargo facilities. The freight forwarding industry, including AfA members, has invested tens of millions of dollars to ensure that CCSP works as intended.

Canines

In December 2018, the U.S. Transportation Security Administration (TSA) approved the long-awaited Third-Party Canine program (3PK9). The initiative is a variation of the previously established Certified Cargo Screening Program (CCSP) for forwarders and airlines. Under the 3PK9 program, the Department of Homeland Security (DHS) and TSA allow private companies to train canines and their human handlers to screen air cargo before loading onto passenger planes. The screening covers flights within or coming to the United States.

Technological solutions are unable to match the speed and efficiency of a well-trained explosive detection canine team. The United States Defense Advanced Re-

search Project proved this after spending \$19 billion over six years in an attempt to create a technology that matches the efficiency of a dog. Well-trained dogs were extremely effective, screening at more than twenty times the speed of any technological solution because of their mobility. With X-ray, every single piece of cargo must go through a machine, and a screener must interpret each picture. Likewise, with trace detection, every single piece of freight must be swabbed. Both of these processes are incredibly time-consuming and labor-intensive. The cargo screening process without canines requires significant human resources, financial cost, and robs air cargo of its most precious commodity, which is time.

Because a well-trained dog can detect explosive odors down to parts-per-trillion, dog teams can effectively sort at the pallet or unit load device (ULD) level. They can move around the cargo to search without interfering with the sorting process, packaging, or freight handling environment. Where it might take hours to screen a cargo shipment by X-ray or trace detection technology, an explosive detection trained dog can search that same shipment in a matter of minutes.

TSA AND THE FUTURE

Screening Technology

Despite the recent success using canines in cargo screening, technology still has a definitive role in the process. These machines mitigate false alarms or perform testing where the use of a dog is inappropriate. But TSA's vetting and certification of new technology, capable of screening whole pallets containing multiple commodities, have stalled. This delay leaves few machine options available to perform the task at a reasonable cost. We, therefore, encourage TSA to continue searching for new solutions to fill this necessary void. We also hope any newly vetted cargo screening technology has the same automated tools to assist screeners in the detection of suspicious items that TSA has provided in their own equipment to passenger baggage screeners.

More Robust TSA Support for Screeners

In a sense, TSA "deputized" the private sector to carry out cargo screening for shipments moving on passenger aircraft. Since that time, TSA has established an oversight and compliance structure for private-sector cargo screening. However, the agency has not established a corresponding "support structure" for non-governmental cargo screening, which is critically important from the security perspective. The structure must be outcome-equivalent to what TSA provides for passengers, cabin baggage, and checked baggage screening. TSA must provide the minimum level of support to ensure that cargo screeners are empowered with the necessary skills, knowledge, guidance, and tools to effectively carry out their screening responsibilities before passenger flight loading and departure.

The Airforwarders Association therefore endorses recommendations submitted by the Aviation Security Advisory Committee Air Cargo Subcommittee at its quarterly meeting in Washington last week. These include:

- TSA provision of regulatorily-mandated assistance to regulated parties in their selection of the most competent screeners
- TSA provision of regulatorily-mandated, comprehensive and consistent cargo screener training programs to regulated parties
- TSA provision of regulatorily-mandated cargo screener tests to regulated parties
- TSA provision of needed threat-relevant updates and training to regulated parties at the headquarters and local level
- TSA engagement to facilitate the availability of high-quality test objects, in both physical and virtual forms, that are relevant to the current cargo security threat environment

Consistent Interpretation of Regulations is Essential

The Airforwarders Association and its members work very closely with TSA, as mentioned, and holds a seat on the TSA Aviation Security Advisory Committee. This statutorily authorized committee provides TSA with a formalized mechanism for consultation with key industry partners on aviation security matters. These areas include the development, refinement, and implementation of aviation security policies, programs, rulemaking, and security directives. However, despite efforts to the contrary, work remains to be done to remove bureaucratic decision stovepipes within the agency.

Our members operate offices throughout the United States, and therefore many TSA inspectors audit these facilities. Like any business investigated by the United States government, we rely on the consistent interpretation of regulations from fa-

cility to facility. We understand that people are people, and 100 percent consistency is not attainable. However, inconsistent interpretation of policy decisions and poor communication of those resolutions to the inspectors result in high costs to the industry and delays in our Nation's commerce. That is why we urge Administrator Pekoske to:

- Ensure a solid mechanism is in place that allows regulated parties to obtain official policy guidance from TSA headquarters policy staff when the interpretation of requirements varies among individual inspectors.
- Improve communication of policy decisions between the Policy, Plans & Engagement division, and its cargo security inspector workforce.
- Staff and fund the new TSA Air Cargo Division with appropriate resources immediately.

Interpretation of policy and implementation of the policy should be in agreement. Security deteriorates when operators do not have a clear understanding of regulations due to inconsistent policy interpretations.

Finally, Indirect Air Carriers continue to struggle with vague policy language in their security program concerning the definition of when cargo acceptance occurs by the regulated entity. The lack of a concise policy regarding this issue continues to impose legal costs on our members who must navigate the Letter of Investigation process defending themselves against a confusing policy that generates differing interpretations even within the agency. The Airforwarders Association once again requests that TSA immediately begin work to alleviate this confusion by establishing a joint mechanism with industry stakeholders to thoroughly examine multiple acceptance issues and determine the best policy solutions that make sense across all stakeholders in the real-world operational environment.

Thank you for your time this morning, and I look forward to your questions and comments.

Senator MARKEY. Thank you, sir. And thank you again, Ms. Ritter, for being here and representing all the work that the flight attendants do every day. Thank you.

**STATEMENT OF JENNIFER RITTER, FLIGHT ATTENDANT,
UNITED AIRLINES, ASSOCIATION OF FLIGHT ATTENDANTS—
CWA, AFL-CIO**

Ms. RITTER. Well, thank you Ranking Member Markey for having me here today. I would also like to thank Chairman Wicker and members of the Committee for holding the hearing. My name is Jennifer Ritter and I am here representing the Association of Flight Attendants, CWA, with 50,000 of aviation's first responders at 20 airlines.

I am a Flight Attendant at United Airlines, and on September 11, 2001 I lost my good friends and my profession changed forever. But even as we grieved, we were comforted by Flight Attendants who had formerly flown at Pan Am during the loss of Flight 103. They helped us cope and have hope that we could make it through the grief that made it hard to breathe and made us wonder if we could ever find a new normal. We bonded in our grief and also in our commitment to work every day to close loopholes in aviation security.

When Flight Attendants go to work, we do so trusting that every function of security is working all the way up to the aircraft door. We are aviation's last line of defense. We need the proper tools, training, staffing, and communications to perform our work and thwart any onboard security threats. But we cannot do anything about threats to our lives and those in our care outside of the aircraft cabin. Senator Markey knows well in his nearly two decades of work with us that 100 percent cargo screening is critically important to Flight Attendants. If we can't be sure this is done and

done properly, we are in essence adding tremendous risk to our lives over a security loophole that is out of our control. That is not right and we urge this committee to take a very close look at this issue. Our Flight Attendant union supports of the 100 percent screening of cargo to be loaded on passenger aircraft. We have worked on this issue in the TSA Aviation Security Advisory Committee Air Cargo Working Group, and of course we are proud to have worked with Senator Markey while he is still serving in the House of Representatives to make this law.

In order to maintain this standard and ensure it is fully implemented, we support continued development and deployment of advanced cargo inspection technology. Canine inspection is an important part of screening but it must be done right. We are fully supportive of the Transportation Security Administration's own canine inspection teams for air cargo. We have many concerns, however, about third-party canine inspection services or those 3PK companies effectively self-inspecting to meet TSA standards for canine team training, care, and rest periods. We understand proper funding and resources must be allocated for TSA to adequately perform security screening required by law.

AFA supports the Faster Act, S. 472, which would ensure aviation security service fees pay for the costs of security screening. In addition to cargo screening, we support the Cyber AIR Act, S. 2181, which would help protect from and require disclosure of any attempted or successful cyber-attacks. One specific concern I have as a Flight Attendant is related not to malicious interference but something far more mundane, and that is the unintentional loading of lithium ion batteries into our cargo hold, for example, with last-minute gate checked bags. While lithium-ion batteries are permitted in carry-on baggage, such bags may still get gate checked at the gate when the overhead bins are full. Our agents working the flights do ask those passengers to ensure that any lithium-ion batteries are removed before the bags get taken to the cargo hold, but there is no enforcement.

Effective passenger baggage and cargo screening is a vital part of our layered defense against terrorism in the skies. It is also a difficult job with massive responsibility. TSA must have the consistent long-term funding to close all potential security loopholes and give screeners the staffing support and training they need to do their jobs to help keep our skies safe and secure. Government shutdowns result in weakened aviation security. The Senate Homeland Security committee estimates that the 35-day Government shutdown cost the DOT 2,413 years in worker productivity. This created a gaping hole in aviation security and it cannot ever be repeated by even a single day.

We also oppose diverting funding and resources from TSA to other security initiatives such as border security. Reduced staffing at checkpoints isn't just an inconvenience. When TSA is stretched thin, it increases the risk of a serious security breach. Flight attendants often bear the brunt of travelers frustrated by any inefficiencies in security screening, making our workplaces more volatile. We urge lawmakers to ensure funding is adequate and stable to maintain the successful mission of TSA.

We thank the Chairman, the Ranking Member, and the members of the Subcommittee for this opportunity to testify. We are proud of our work as aviation's First Responders and the last line of defense in aviation security. As the great labor leader Mother Jones said, "mourn the dead and fight for the living."

We commit to you to do this every day, and we appreciate your attention and oversight on such a critical matter for us as crew and the people who entrust us with their lives when they fly. This concludes my remarks. Thank you for having me here today, and I will be happy to answer any questions you may have.

[The prepared statement of Ms. Ritter follows:]

PREPARED STATEMENT OF JENNIFER RITTER, FLIGHT ATTENDANT, UNITED AIRLINES,
ASSOCIATION OF FLIGHT ATTENDANTS-CWA, AFL-CIO

Chairman Wicker, Ranking Member Cantwell and Members of the Committee:

My name is Jennifer Ritter and I am here representing the Association of Flight Attendants-CWA with 50,000 of aviation's first responders at 20 airlines. I am a Flight Attendant at United Airlines and on September 11, 2001. I lost my good friends and my profession changed forever. But even as we grieved, we were comforted by Flight Attendants who had formerly flown at TWA and Pan Am during the loss of flights 800 and 103 respectively. They helped us cope and have hope that we could make it through the grief that made it hard to breathe and made us wonder if we could ever find a new normal. We bonded in our grief and also in our commitment to work every day to close loopholes in aviation security.

When Flight Attendants go to work, we do so trusting that every function of security is working up to the aircraft door. We are aviation's last line of defense. We need the proper tools, training, staffing, and communications to perform our work and thwart any onboard security threats. But we cannot do anything about threats to our lives and those in our care outside of the aircraft cabin. Senator Markey knows well in his nearly two decades of work with us that 100 percent cargo screening is critically important to Flight Attendants. If we can't be sure this is done and done properly, we are in essence adding tremendous risk to our lives over a security loophole that is out of our control. That is not right and we urge this committee to take a very close look at this issue.

Our Flight Attendant union supports of the 100 percent screening of cargo to be loaded on passenger aircraft. We have worked on this issue in the TSA Aviation Security Advisory Committee Air Cargo Working Group and of course we are proud to have worked with Senator Markey while he still served in the House of Representatives to make this law. In order to maintain this standard and ensure it is fully implemented, we support continued development and deployment of advanced cargo inspection technology.

Canine inspection is an important part of screening, but it must be done right. We are fully supportive of the Transportation Security Administration's (TSA) own canine inspection teams for air cargo. We have many concerns, however, about 3rd Party Canine (3PK) inspection services or those 3PK companies effectively self-inspecting to meet TSA Standards for canine team training, care and rest periods.

We understand proper funding and resources must be allocated for TSA to adequately perform security screening required by law. AFA supports the Faster Act (S. 472), which would ensure aviation security service fees pay for the costs of security screening.

In addition to cargo screening, we support the Cyber AIR Act (S. 2181) which would help protect from and require disclosure of any attempt or successful cyber-attacks.

Adequate Long-Term Funding

Effective passenger, baggage, and cargo screening is a vital part of our layered defense against terrorism in the skies. It is also a difficult job with massive responsibility. TSA must have the consistent, long-term funding to close all potential security loopholes and give screeners the staffing, support and training they need to do their jobs to help keep our skies safe and secure.

Government shutdowns result in weakened aviation security. The Senate Homeland Security Committee estimates that the 35-day Government Shutdown cost the

DOT 2,413 years in worker productivity.¹ This created a gaping hole in aviation security and it cannot ever be repeated by even a day.

We also oppose diverting funding and resources from TSA to other security initiatives, such as border security. Reduced staffing at checkpoints isn't just an inconvenience—when TSA is stretched thin, it increases the risk of a serious security breach.

Flight Attendants often bear the brunt of travelers frustrated by any inefficiencies in security screening, making our workspace more volatile. We urge lawmakers to ensure funding is adequate and stable to maintain the successful mission of TSA.

Conclusion

We thank the Chairman, the Ranking Member and the Members of this Subcommittee for this opportunity to testify. We are proud of our work as aviation's first responders and the last line of defense in aviation security. As the great labor leader Mother Jones said, "Mourn the dead and fight for the living." We commit to you to do this every day and we appreciate your attention and oversight on such a critical matter for us as crew, and the people who trust us with their lives when they fly.

Senator MARKEY. Thank you, Ms. Ritter. Thank you very much, and thanks to all of our witnesses. Now, we will begin the questions and answer period.

When I fought to enact a 100 percent screening requirement for air cargo transported on passenger aircraft, I was opposed by the Bush Administration all 4 years. I could not get that law put on the books, and many in the air cargo industry also did not want to bear the cost or didn't think it was logistically feasible. So I am proud that we have proven all those naysayers wrong and we have developed a 100 percent screening system that promotes security while maintaining a steady flow of commercial goods.

One of the keys to this success has been allowing TSA certified warehouses, distributors, and freight forwarders to scan air cargo as it moves through the supply chain. This approach provides essential scanning in a flexible and less costly way. But the system will only work as long as the TSA also provides robust oversight of certified cargo screeners and ensures that their security protocols are strong.

So, Mr. Beckius, how much air cargo is transported on passenger planes every year?

Mr. BECKIUS. In 2019, it was approximately 73 million tons.

Senator MARKEY. So that is an enormous amount of cargo and it is all sitting directly under the feet of every passenger flying out of Logan or any other airport in the United States. And that is on average 50 percent of all the cargo that is in the belly of passenger planes. Half of it, half of the cargo is the bags of the passengers on that plane and the other half is cargo unrelated to those passengers and the passengers are not even aware that that cargo is there as well, that is unrelated to and has not gone through the screening process which the bags of the passengers have gone through.

So that is why we have to make sure that it is 100 percent safe. So, Mr. Beckius, please again describe the main protocols that TSA monitors and evaluates for air cargo screeners. What security standards do you require cargo screens to meet to receive and maintain their certification?

¹ Shutdown cost DOT, DHS thousands of years in lost productivity, POLITICO Pro, <https://t.co/O3478qNmFc?amp=1>, September 17, 2019

Mr. BECKIUS. Sure. So the requirements for the Certified Cargo Screening Program and those participants have numerous requirements. Obviously, the most important is the actual air cargo screening. And thanks to your legislation, that is done at 100 percent today. Only TSA approved equipment can be used, whether that is approved CT X-ray, K9, standard X-ray, those standards have to be met and evaluated by TSA, the carriers, and the Certified Cargo Screening Program holders can only use TSA approved equipment.

In addition to the equipment, there is a layered approach in the security programs from vetting of their employees, access to the facilities, tamper-evident seals applied after screening, supply chain security until it arrives at a passenger facility, and then there is equipment security at the passenger air carrier until such time as it is loaded on an aircraft. So it is very much a layered approach, sir.

Senator MARKEY. OK. So, Mr. Fried, you represent the companies that are subject to this TSA oversight. So what are some of the specific ways, from your perspective, that TSA could improve its certification and compliance mechanisms for air cargo screeners?

Mr. FRIED. Well, I think it all depends on a concise, written policy and consistent policy interpretations as I mentioned in my oral testimony today. I think that one of the biggest challenges that our members have—

Senator MARKEY. Give me an example. What is an example of inconsistent—

Mr. FRIED. I just—you know, a lot of it, unfortunately Senator, for this year is sensitive security information, but there are ways that policy is written surrounding Certified Cargo Screening Program that tend to be confusing. And often times, that results in a—the misinterpretation might result in something not being done properly. It is not malicious, but at the same time it requires TSA inspectors to actually resolve internal communication issues where they have conflicts as to what that policy means. So I would tell you that when you ask me what actually needs to be done, I would tell you that it starts with more concise, clearly written policy so that everyone understands and everyone is on the same page.

Senator MARKEY. OK. So, Mr. Beckius, how do you respond to Mr. Fried?

Mr. BECKIUS. So I agree with Brandon that that is very important and we work consistently with our industry partners on that. So when we hear from the Association on an air carrier that they feel there is inconsistent policy in the field, we look at that from a headquarters perspective and try to determine where the disconnect is. Is it between—is it with the air carrier and they are misinterpreting the policy? Is it that the policy needs to be better clarified? Is there nationwide inconsistency or is it at a local level? And then we work within our building with security operations, our lawyers, and our policy writers to get that information back to industry and make sure it is clear.

Senator MARKEY. OK—Mr. Fried give us an example, you know, you don't have to be detailed in a way that compromises security but what is an area where—

Mr. FRIED. Well, as an example, like exactly what did—you know, the dimensions of a designated screening area within a warehouse. That might be an area that might be misunderstood between the TSA and the actual air——

Senator MARKEY. So what could a misunderstanding look like?

Mr. FRIED. Well, maybe it is the length and the width of the area. And so there would be an enforcement action against the certified cargo screening facilitator.

Senator MARKEY. You are saying that TSA would arrive and say that your area is not properly secured——

Mr. FRIED. Oh, no, that is not the case at all. All these areas are extremely well secured. But maybe the dimensions might not be specific.

Senator MARKEY. That is just a general—it is hard for me to understand. What do you mean?

Mr. FRIED. Well, again sir, I have to tell you that a lot of this is completely under sensitive security information so I can't divulge areas of enforcement or the program itself, but I can tell you that again——

Senator MARKEY. You are saying it is totally secure?

Mr. FRIED. Yes.

Senator MARKEY. OK, so we won't worry. But then you are simultaneously saying I can't give you any details because it—again, you raise the subject area, which is the dimensions of the area. Can you speak more broadly to that?

Mr. FRIED. I could Senator, and the reality is that it doesn't actually create any threat to security. It could be a misinterpretation of how one carries out the screening and actually how one sets up the designated screening area. That might cause a letter of investigation from TSA and it is all based on just inconcise policy on how to actually set up a screening area.

Senator MARKEY. Let me come back to you, Mr. Beckius. So what are we talking about here from your perspective, from the TSA perspective and going to these companies?

Mr. BECKIUS. Sure. So once again we hear from industry that they have questions or concerns about a policy or regulation, we will work with our local inspectors, for instance, the eight here in Boston to try to come to a resolution and determine if the regulated party is out of compliance or whether our local inspector needed to readjust how they viewed the matter. And then we always make sure to circle back with the regulated party with a final response.

Senator MARKEY. OK. So, Mr. Fried seems to be saying that many times TSA just isn't clear enough with the regulations. Is that what you are saying, Mr. Fried?

Mr. FRIED. Exactly. And that creates confusion.

Senator MARKEY. Will you agree to meet with Mr. Fried then, in terms of——

Mr. BECKIUS. So, Mr. Fried and I meet regularly.

Senator MARKEY. OK. Well, what is the issue then, Mr. Fried? Why is it that these issues aren't resolved then?

Mr. FRIED. Senator, you know, I think we have to realize, as I said in my testimony, that they have 500 inspectors out there and 100 percent consistency and policy interpretation is, I would say, difficult for any organization to attain. So we are sympathetic to

that, but often times what we find in the field is that the field inspector simply is carrying out policy on his or her own that is not consistent with the policy intent.

Senator MARKEY. Do you agree with this, Mr. Beckius, that there are problems that go down to this local level?

Mr. BECKIUS. So, I would not classify them as problems. I would say that if there is—if we receive information that an inspector in Boston viewed an issue different than an inspector in Chicago, my office will mediate that and ensure that any inconsistency is resolved.

Senator MARKEY. All right, so the Committee would ask for a status update from both of you to the Committee within 60 days of the resolution of this issue just so that we have a formal response from the industry and from TSA. So will you both agree to give us an update in writing of what the resolution of this issue will be?

Mr. FRIED. Yes, sir.

Senator MARKEY. OK. Thank you. Now, let me go over here to you, Ms. Ritter. You heard some of these, you know, some of these issues being discussed. I heard you talk about canines in your testimony. You know, can you now give your commentary in terms of how the Flight Attendants view these security issues and what you would like to see added to or resolved in terms of clarification?

Ms. RITTER. We rely on the external security infrastructure to keep us safe because all we have control over is the aircraft cabin. We don't have access to the cargo hold from in-flight and we have to trust that everything is being properly screened. And the one concern that I did raise was the item lithium ion batteries where passengers boarding the aircraft find that there's no more room in the overhead compartments and they are required to check their bag at the last minute, and they are asked to make sure that they take any lithium ion batteries out of their bags, but what if they forget something?

There is no malicious intent there, but is that bag getting screened before it gets put in the cargo hold and how is that going to be handled? We are trained to handle runaway thermal events on the aircraft in the cabin. We have liquid extinguishers and liquids on board as well as thermal containment bags on most aircraft now, and we know how to handle those, but if something like that happens in a cargo hold, we are utterly unequipped to deal with it.

Senator MARKEY. OK, so does one of the other witnesses want to address that question? It seems like a pretty significant problem, you know, where passengers are told there is no overhead space, please hand it to us and we will put it into the belly of the plane, and it has got lithium ion batteries that otherwise would be dealt with up above. So can you talk about that, Mr. Freni?

Mr. FRENI. Yes Senator, I think on the course of this conversation, I want to go back to how we resolve issues here on a local basis, particularly when we hear this kind of conversation. We have a real strong compliance group from TSA here at Logan Airport, always continuously inspecting. And we work with them hand in hand to make sure that all the things that you heard here are being adhered to.

And if there is an issue, we work it out right away. At the 8:30 meeting, we know each other, we see each other, we talk with each other. It doesn't take a lot of time if we see something that is out of the ordinary, particularly in the cargo areas where cargo was brought to Logan Airport. So we are confident that we are resolving these issues immediately.

Senator MARKEY. So can you talk about this lithium ion issue?

Mr. FREN. Yes. Also the carry-on bag program, I think, is another one where we have enhanced with our ASL machines. I think those automated screening lanes have really kind of honed in on anything that is unusual in the bag so I know our inspectors are watching for that. So it resolves the issue of getting on the airplane. The airlines have put out a mandate that they cannot be carried. So our TSA inspectors are watching for it and I think we have had a pretty good record of picking it up.

Ms. RITTER. Lithium ion batteries are allowed in the cabin of the aircraft as carry-ons and so there is nothing preventing such a bag from getting checked. We have, at my airline, we have five boarding groups. And usually we have to start checking bags after the second group is boarded. That means that we have three groups of passengers with bags that are probably getting checked at the last minute, and we have to rely on them to be aware of what is in their bag and take it out before they board the aircraft.

Senator MARKEY. So you are saying, in the passenger area you actually have equipment that could deal with a fire?

Ms. RITTER. Correct.

Senator MARKEY. But if it went into—

Ms. RITTER. Halon extinguishers will put out a fire in the cargo hold but they will not prevent a re-ignition.

Senator MARKEY. Yes, Mr. Fried?

Mr. FRIED. One of the things I would—you know, the Airforwarders Association is extremely concerned about this lithium battery check right now. And I would say that one of the things that are—two things we need is more efficient technology that can possibly scan for these lithium batteries, but one of the promising areas that we are seeing now is we have members in the canine community that are actually training these explosive trace detection dogs to screen and to detect lithium batteries, not only in cargo but luggage as well. I think that is a very promising area that we should be looking at very seriously.

Senator MARKEY. Thank you. Ms. Ritter, can I come back to you? I know you mentioned canines in your opening statement. Could you elaborate a little bit more about what your concerns are?

Ms. RITTER. We do support the use of canines in aviation security, however, we do have a potential issue where a profit motive comes into play. These dogs are expensive to train and acquire and we are concerned that there may not be enough down time for the dogs or that they may be kept working longer than would normally be happening if they were Government mandated.

Senator MARKEY. Yes, so this—but in general, you are satisfied with this area?

Ms. RITTER. Sure.

Senator MARKEY. So again, with this check bag phenomenon, obviously when airlines charge \$30 to check one bag and a second bag is another \$40 to check, so people try to cram it in up above.

Ms. RITTER. And the kitchen sink.

Senator MARKEY. And the kitchen sink. They don't want have to pay another 40 bucks for their bag to fly just from here to there for two hours, huh? It just seems like you are buying another ticket on the plane. So as a result, it winds up at the gate door with the gate attendant saying, we are going to have to put that in the belly of the plane.

So you start to create a traffic jam with all of this baggage that people are trying to get up into the passenger section to avoid the extra 40 bucks, you know, for that extra bag. So can you talk a little bit about that, Ms. Ritter? Talk about that phenomenon that is now opening up in terms of the passenger trying to avoid these exorbitant, crazy fees that airlines now want to charge for the extra bag.

Ms. RITTER. It is not just the fees they are trying to avoid, they don't want to have to wait in baggage claim either which is perfectly understandable, and we certainly do support having TSA check to make sure that everybody is only carrying on one suitcase and one personal item.

Senator MARKEY. So it winds up with a passenger just with two bags being charged 30 bucks and another \$40 for the second bag. So it is 140 bucks for the round trip with those two bags and obviously, you know, what is in those two bags, you know, and this goes to lithium ion or other issues if the passengers ride trying to get it up above in terms of what is the process done to make sure that there is a proper screening. Right, because you don't have fire extinguishers on the belly. So again, please elaborate a little bit more if you could.

Mr. RITTER. There is only so much space that we have on the aircraft in the overhead compartments, and of course everybody is trying to avoid excess fees. Perfectly understandable.

Senator MARKEY. OK. So TSA, if you could, Mr. Beckius, how do we handle this phenomenon where airlines are seeing this as an incredible profit maker for them to get the extra 40 bucks for the bag, but yet it creates issues for you.

Mr. BECKIUS. Sure. So from a TSA perspective, it does create challenges for us at the checkpoint with the density of the bags, but TSA does not monitor or regulate the number of items a passenger can take through a checkpoint. We make sure that there are no prohibited items in those bags.

Senator MARKEY. So, but is that increasing your logistical problem that the bag—let's say a lithium ion battery which would be OK up in the passenger cabin but is now in the belly of the plane. How do you resolve an issue like that given the also on-time departure goals of the airline and ensuring that simultaneously those bags that are now packed right there in that gate are properly screened?

Mr. BECKIUS. Yes, and so unfortunately as the Executive Director for the Air Cargo Division, I am not intimately familiar with the checkpoint workings. I am happy to bring back any information you would like on that though.

Senator MARKEY. So again, these are—these are issues to go on security so if you can report back on that, how is that handled and that increase in what is happening? And I just think it is absolutely incredible.

Senator Wicker and I are very interested in this issue and we actually, you know, are trying our best to move legislation, Fair Fees Act on the forbidding airlines from imposing ridiculous fees act to prohibit airlines from charging unreasonable fees for checked bags and other ancillary charges like change and cancellation fees, and my legislation would protect consumers from price gouging and increase aviation security by encouraging people to stop overstuffing their carry-ons, relieving the pressure on the TSA checkpoint. But we need to ensure that we definitely deal with that issue.

So, thank you for this discussion. I think it is very important and again, I would love to have this conversation continue here because we absolutely have to deal with a phenomenon that continues to this day. And that overstuffing ultimately, again, is an aperture. We know what Mohammed Atta and the other nine did here at Logan Airport looking at Portland, Maine as an aperture in terms of reduction of screening.

And again, Logan went first and it had instituted the best system in the country that got model across the rest of the country, but new issues just continue to emerge here as there are changes and they are looking for those apertures. And we know that if they can be successful in creating another airline accident, that is just a dramatic reduction than an air travel across our country. We are seeing it in China right now.

We are seeing just one incident somehow or other that translates the coronavirus into an airline industry crisis in their country that the airline industry did not anticipate. So let me move on if I can to the deployment of new technologies. Scanning and screening systems are constantly evolving as new innovations are created to increase to speed and quantity of cargo shipments while maintaining security. This continuous development requires the TSA to have a robust process for certifying the latest and greatest scanning technologies.

And it also requires that we do all we can to ensure cargo screening facilities are adopting the same systems, and that is why I authored language in the TSA Modernization Act of 2018 that instructed the TSA to study the feasibility of deploying computed tomography scanners to screen air cargo transported on passenger aircraft.

CT scanners are a new technology that can render a 3D image of a containers' contents, allowing inspectors to more effectively search for hazardous materials than they can with the traditional X-ray machines used today. When paired with algorithms that can automatically analyze a 3D image for threat, CT scanners can become an even more advanced explosive detection system or EDS.

Mr. Beckius, based on the TSA's feasibility study, where and how should we be focusing our efforts to deploy CT scanners and EDS in air cargo security? What should the Government do to promote widespread adoption of this technology?

Mr. BECKIUS. Thank you for that question. So as you referenced, we did complete a feasibility study that was delivered to Congress

in November, 2019. A couple of the challenges noted in that report is the expense of the machine at the—at the current status is a challenge for industry for some to purchase, as well as the limiting nature of the aperture of the machine does not allow for larger shipments to be screened, at least in the current state.

Some of the potential positives are insertion of an EDS machine and what we would call an inline cargo system for small packages appears to be extremely positive and the potential for that. Also required by the Modernization Act was a pilot that we initiated in January. It is too early to provide details on that but we look forward to providing details at the 6-month part, also as required by the Modernization Act.

Senator MARKEY. Mr. Urchuk, can you please talk about this issue in the modernization of the technology but not the implementation of the modernized technology?

Mr. URCHUK. Well—

Senator MARKEY. Can you move over that microphone a little bit closer to you?

Mr. URCHUK. So, CT is actually an old technology. It has been around for about 40 years, and machines that once cost \$1 million in the hospital environment now might cost half a million or less.

And in fact, if you go to an emergency room in a major hospital, you are likely to get a CT scan instead of a 2D X-ray. That is because it provides more information that is critical for the physicians to make a diagnosis. In the security environment, there has been a similar history where 2D technology was initially deployed, some very, very basic systems. Then 3D technology, much after 9/11, and based on work the TSA and our laboratories the U.S. has sponsored.

And I think really just recently with the check point solutions that have been deployed, CT is emerging as a cost-effective, and so I think one of the most effective detection technologies that is available. And we think that by stretching what has been done there into the air cargo, we can start to address some of the limitations that are seen with current technologies, principally cost.

Senator MARKEY. Yes. I know that, you know, when my wife who was a two-star Admiral in charge of women's health looked at this issue with regard to breast cancer detection in the 1990s, they were still using 40 year old technologies all across the country, X-ray technologies rather than moving to CT, which would give a better imaging for breast cancer for women.

And yet, they, you know, they were military technologies at the CIA, at the Pentagon, at NASA that had modern imaging technologies. Of course, they were top secret programs that would be used against the Soviet Union in terms of imaging but were yet to be fully implemented in terms of a real defense for women's health in our country to make sure we move toward that technology.

So can we talk a little bit about that? Why we can't move more expeditiously toward giving all of that additional information? Of course, 3D is better than 2D which is better than 1D, which is better than X-ray. So talk about that a little bit more, Mr. Urchuk, and the need for us to move to the most modern technology.

Mr. URCHUK. A side note on mammography, the technology that is used for 3D imaging and mammography now was pioneered at

the Massachusetts General Hospital. People don't know and we are proud to actually participate in that, significantly.

Senator MARKEY. I think part of the reason, and again, the whole point is that in modern technology you can see through more dense material in a woman's skin, you know, and get in deeper and find it earlier, and act in a preventive way to avoid that cancer from having grown.

So, you know the same thing would be true here. The more dense the material and using the new technologies, is the earlier you would be able to see it and to act in a preventive way. So please, Mr. Urchuk.

Mr. URCHUK. No, I think that is very true. The—it is almost universally true in medicine that 3D technologies tend to provide more information, better diagnosis, better results. And I think in imaging of luggage the same story holds. The more information you can have, the better chance either human or machine can define threats within the luggage.

You know, specifically what holds back progress in some of these areas though has been the ability of a market to evolve, to warrant the development of this type of technology. Millions of dollars are required to develop systems, and I think things like the mandates for screening of cargo are helpful for industry. It allows us to make the investments over many, many years and ultimately culminate in another tool that goes into the set of solutions that are available for the regulators and the operators to use, whether that be technology, or canine, or other.

Senator MARKEY. So, if I can come over to you back again—to you, Mr. Beckius. So, what is the rate at which these new technologies are being adopted and deployed?

Mr. BECKIUS. Not sure I can directly answer your question, but I can tell you that TSA stands ready to evaluate new equipment and technologies when they were when they are brought to us. We publish a stent information and standards on Federal business opportunity website, being very transparent with industry. We work with industry so they understand the qualification standards and then work closely with them as soon as they are ready to execute.

Senator MARKEY. So under, you know, my language which I authored in the TSA Modernization Act of 2018, it instructed TSA to study the feasibility of deploying computed tomography scanners to screen air cargo transported on passenger aircraft. So my question ultimately is, you know, what is the result of that study and how quickly will it be implemented?

Mr. BECKIUS. Sure, and really that is, when it is implemented is really up to industry. So we do think it is feasible and we stand ready to evaluate equipment when it is brought to us, but we have, aside from the one unit that is in the review stage with the field pilot that I spoke of, that is the only item that has been brought to us for evaluation at this point.

Senator MARKEY. OK. So what is the reaction you are getting from the industry in terms of the implementation of that?

Mr. BECKIUS. So, the reaction we have gotten is concerned with the cost and concern with the aperture size.

Senator MARKEY. OK. So we are back to industry in 2003, 2004, 2005, 2006, and 2007 saying, oh, it is so difficult to implement. So

let's go to you, Mr. Fried. What is there—how do you look at this issue in terms of being able to use CT scanners and EDS in cargo security?

Mr. FRIED. Well, you know, there have certainly been some significant strides in this technology. But the holy grail still remains a scanner. We need a scanner that has the ability, that has a large aperture that could screen pallets and containers that contain multiple commodities. So not just loaded tennis shoes, but tennis shoes, blenders, televisions, and whatnot because that is how air cargo pallets and containers are built. And that still remains elusive.

Now, when we talk about finances and costs, obviously, you know, costs are always a consideration for any industry. It doesn't matter whether you are in air cargo or whether you are making widgets, you know, cost is always an issue. However, when costs are excessive and you just simply can't recover those costs, it is not workable for the industry and that is reality. That is a commercial reality that we all have to face.

Senator MARKEY. So the commercial reality is what—

Mr. FRIED. The commercial reality is that you can't shoulder excessive costs that are unrecoverable. And so to that end, it is not as though the industry is not for security. Obviously, we are, we just have to find other paths. Now, remember Senator, your mandate is piece level. So right now we are screening each piece through technology individually and then building up the palate. And again, that is why we are so enthusiastic about the advent of the canines because the canines are, in fact, very workable.

Senator MARKEY. Well, you know, I appreciate that. But I hope we have them on technology here. And there was a story yesterday, you may have seen it, that Al Qaeda and Isis in Africa are now in control of areas the size of multiple Afghanistans in Africa. And you know earlier we heard testimony about, you know, a detection of a threat that would be otherwise successful in just the last couple of years coming in, and it was detected in Europe, but it would have been headed toward the United States of America.

This control of a much larger area in Africa now, again, is something that we have to be concerned about. Mr. Beckius, can you come back to that and talk about what might be possible that we could learn from with regard to my pilot program, which is meant to test and deploy CT tests so that we can reduce the cost and get it to the field so that TSA will be able to keep, you know, us updated on terms of the reduction in cost, Mr. Urchuk already talked about this, reduction in costs dramatically, in moving to a deployment strategy.

Mr. BECKIUS. Yes, so I mean we are very eager for the continuation of the pilot and some results that come out of that because our goal is to provide industry with the best number of options to meet their screening needs as necessary. And one thing I would like to highlight is there really is no silver bullet for air cargo screening.

And as an example, you could have a box of dense machine parts. Well, that is not best suited for an X-ray because you are not going to be able to tell what is in there. And likewise, you don't want to use an ETD on a box of frozen fish because it is no good for the

swab. So we think that the most appropriate best mechanisms for industry is provided them a suite of screening options, and each operator is different and they need to evaluate their own operation.

Senator MARKEY. So and again, let's go to this cost issue because I am concerned that budget pressures are impacting TSA's ability to effectively regulate and oversee air cargo security, especially as funding for these programs has gone down in real dollars since my 100 percent screening law was enacted. So here are the numbers. The TSA was appropriated \$105 million for air cargo security in Fiscal Year 2020, a figure considerably less than \$123 million appropriated for air cargo security in Fiscal Year 2010, 10 years ago. It is less than 2020 than it was in 2010.

That is a drop of \$18 million in real dollars, spendable dollars. So if we adjust for inflation, the decrease would be even greater. So to make the matter even more troubling, this funding decrease has occurred despite sustained growth in U.S. air cargo operations and the Federal Aviation Administration predicting that air cargo will keep growing at an average annual rate of 3.3 percent between 2019 and 2039. So Mr. Beckius, is the TSA being shortchanged by Congress? How has your diminished budget impacted TSA's ability to oversee the Certified Cargo Screening Program?

Mr. BECKIUS. Sure. So, you know, we are appreciative of the budget provided us any year and work within that budget to do the best we can. I can tell you that we remain ready to evaluate new technology. The budget has had no impact on our ability to evaluate that. We are waiting for more to come in. And for our inspectors in the field, they continue to be out in the field, all 377 of them on the weekends, at noon on Tuesdays, and otherwise, ensuring that industry is in compliance with their standards.

Senator MARKEY. Well, Mr. Fried, I see you shaking your head.

Mr. FRIED. Well, I would tell you Senator that, you know, unfortunately here in the United States our memories are short. And you know, we tend to forget the past very quickly and I would imagine while most of us remember September 11th vividly, we need to understand Congress has got to sufficiently fund the TSA. And they can't shortchange this agency. We are depending on this agency to keep us safe while flying and so the Airforwarders Association urges Congress to make sure the level of funding is adequate for it to carry out its mission.

Senator MARKEY. Well again, I agree with you, Mr. Fried, and I am fighting for that to make sure that the funding is there. Unfortunately, TSA's budget issues are not limited to air cargo security or the annual appropriations process. The agency's overall funding has been further strained by the ongoing diversion of revenue from the 9/11 passenger security fee, which is \$5.60 fee that every traveler pays when they buy a plane ticket.

And it is supposed to cover these costs. But Congress originally mandated the fee on airline tickets in order to help finance the cost of protecting our Nation's aviation system, but in 2013 and since then, Congress began diverting one-third of the revenue generated from the 9/11 Security Fee just to deficit reduction. So here, a passenger is paying this fee. They might not be happy with it when looking at it, but it is supposed to be used in order to provide security.

And now Congress takes a lot of that money, one-third of it and just puts it over into deficit reduction rather than toward the goal which it had intended. So this diversion of revenue is completely unacceptable. The TSA needs all of its resources to secure our airports in our skies. If the law is not changed nearly, get this number, \$20 billion will be diverted away from aviation security by 2027 alone, including \$1.4 billion—\$1.4 billion in 2020 alone that should have been spent on protecting the security of the aviation industry. So to address this issue, I have introduced the FASTER Act or the Funding for Aviation Screeners and Threat Elimination Restoration Act.

My legislation will secure the passenger planes much better. It will end the diversion of the 9/11 Security Fee and ensure that the money passengers fork over for security actually goes to their security. So to everyone on the panel, would you support immediate passage of the FASTER Act to have the fees be used for the security of the aviation issue? Let me come down to you, Ms. Ritter, so you can talk about that question.

Ms. RITTER. Yes, we absolutely support that. We also feel that any efforts to hinder TSA workers' ability to unionize would be a hindrance to aviation security as well.

Senator MARKEY. Yes. Thank you. So, we need to spend all the money in those fees on security. Mr. Fried.

Mr. FRIED. Yes, I would say unequivocally so. I think both passengers flying today would be appalled to see that this passenger fee was diverted to the general fund. So the Airforwards Association absolutely endorses the legislation.

Senator MARKEY. Thank you. Mr. Urchuk.

Mr. URCHUK. Yes, I believe the equipment vendors generally support the initiative.

Senator MARKEY. Yes. Mr. Freni.

Mr. FRENI. Yes, Senator. It is in my remarks, suggested that very thing, 100 percent.

Senator MARKEY. Yes, and I thank you, Mr. Freni, very much for your comments on the issue because it does go right to the question of a determination that was made as to how much money we are going to need in order to accomplish this goal. Passengers pay these fees for every flight they are taking out of Logan today. They are paying it on their ticket, and then the money in large measure is then diverted over to the general revenue, which may be used for other issues that are important.

But again, the goal was to provide sufficient revenue so that all of these issues can be dealt with. So, Mr. Beckius, let me come to you in terms of the, you know, the perspective that you have, your agency has on to the diversion of these revenues away from your agency and over to other purposes within our society.

Mr. BECKIUS. Yes. So Senator, you have my commitment that myself and my office will execute to the best of our abilities no matter what our budget is and you have that commitment 24/7.

Senator MARKEY. No, I know that but we have a problem. We have a real problem because as Mr. Fried said well, there is a big cost that is attached to this. We provide for those costs to be dealt with the revenues that are raised from passenger fees on every ticket that is sold and then unfortunately these revenues get di-

verted into other purposes and it creates a real problem. So again, I am going to continue to move my FASTER Act and try to have that implemented because it is almost like a raid on revenues that are provided for but then they see it as a big honey pot, they can be diverted to other purposes, and then ultimately people say well there is not enough money to deal with this issue when in fact that revenue has been provided for.

And as Mr. Freni raised that issue in his opening statement, which I very much appreciate, you know, from the Massport perspective, you know, passengers are paying the price but billions of dollars are being pretty much stolen away from these security programs to be used for other purposes. So let me move on onto drones because with more and more drones taking flight every day, the risk of a drone colliding with an airplane continues to rise.

During December 2018 in an incident at Gatwick Airport in the United Kingdom, reports of a drone sighting on the runway led to 33 hours of disrupted travel that the BBC reported, that thousand flights were canceled or delayed as planes were grounded and that 140,000 passengers were caught up in the chaos. Drones have similarly been sighted here at Logan Airport during the past year. Thankfully travel was not disrupted but the economic consequences of drone delays at U.S. airports could be enormous. More importantly, should a drone actually strike a plane, the consequences of loss of life would be catastrophic.

We need to be thinking about how to prevent such threats before tragedy strikes. Although the FAA has been charged with the primary responsibility to integrate drones into the national airspace, it is often local authorities that must be ready to take proactive measures in real time.

Mr. Freni, do you feel that Massport has the support and tools it needs from the Federal Government to protect Logan Airport from unauthorized drones, and if not, what additional resources or guidance do you need?

Mr. FRENI. Well, Senator, we support the initiatives in the 2018 FAA Reauthorization Act, making it a criminal offense to fly drones near airports. We think that is incredibly important and we strongly appeal to the—to this committee and Congress to take additional steps that would empower State or local partners to take charge of their own safety. There is no single commercial system to track or identify and neutralize drones or UAS's in the domestic airspace.

So we support the FAA in its efforts to develop any solution or these solutions as soon as we can. You know, like you said, we have had incidences here at Logan. We have been very fortunate that nothing serious has happened but—

Senator MARKEY. Can you talk about an individual incident that was of concern to you that you would hope could be avoided with better cooperation?

Mr. FRENI. One that comes—it is not the professional user that we worry about. You know, drones can be used, you know, in buildings and so forth. That we understand, but you know, it is the kind of the user that isn't really familiar with the impact. We had an incident some time ago where a drone was cited on the approach for right, a very important runway to us.

Once it was reported, you know, we had our group that is internal, you know, try to get to—you know, the State police were involved, try to find out where that drone was launched from. It actually went down the runway and was cited to have fired into the runway. It was launched from a ship across the harbor. The person that launched it had no idea that he was doing anything wrong. Those are the ones we worry about.

Senator MARKEY. He had no idea he was doing anything wrong?

Mr. FREN. I mean when he was found, which he was fortunately, he didn't realize that he was that close. He wasn't a professional user. It was recreation. And you know, you just can imagine what you know, the impact could have been if it was reported by a pilot on approach to fort wright and we saw it at 200 feet and then it moved down the runway at about that altitude and then took off. I think he may have even lost control of exactly what his location was, but the fact that where he was on the boat across the harbor was in restricted airspace.

Senator MARKEY. Yes, so, you know, I just saw a story over the last 3 days of an individual on the ground that was trying to blind a pilot and through good communications they were actually able to alert the local police and arrest that individual right on the ground. You may have seen that story, Mr. Fried. Are you aware of it, and what the circumstances were around that?

Mr. FRIED. Not specifically but I would tell you that, you know, we are—we hold a seat on the Aviation Security Advisory Committee and I know for a fact, and Mr. Beckius can probably address this better than I can, but we received a very extensive presentation last Thursday in Washington on what TSA is doing to address this issue. And I would tell you it is nothing short of impressive. They are actually very focused on this issue and I assume will continue to be so.

Senator MARKEY. So if I may go to you, Ms. Ritter, how concerned are you on flights in terms of the threat that it poses to pilots able to control these laser points?

Ms. RITTER. Well going back to laser pointers, for example, and attempts to blind pilots. My husband is a pilot with another airline and he has reported to me on approach at night that he has experienced having green laser lights bouncing around in the cab in the flight deck and makes it very difficult to read the instruments on landing, which of course is a critical time when you are supposed to be paying close attention to what is happening on the monitors. And it is a serious concern to me as well drones. These are things that are out of our control when we are in the aircraft and we have to rely on forces on the ground to take care of those things.

Senator MARKEY. So these drones and lasers are now great threats and so I was referring to a laser attack on pilot just the last several days but drones similarly. So talk a little bit if you could about your concern and your husband's concern about lasers and drones?

Ms. RITTER. Well to us, it is personal. It is not just—you know, it is the aircraft, it is all the passengers on board. It is civilians on the ground who are unrelated to this and everybody is at risk when these things happen.

Senator MARKEY. So let me come back over to you, Mr. Beckius. How is TSA helping airports like Logan deal with these threats of drones and the threats of lasers being used to attempt to blind pilots?

Mr. BECKIUS. Sure. So unfortunately being the Executive Director for the Air Cargo Division, I am not intimately working on the drone issue. I can tell you though from an agency perspective that it is a priority, a top priority for both DHS and TSA.

Senator MARKEY. Yes, well, I would ask for your agency to provide information to get back to the Committee so we can include it in the hearing record concerning what is the strategy which TSA is using to deal with drones and to deal with the laser issue. And I would also like to take advantage of having Massport here today and take it to talk about the coronavirus issue. And we now know that we have over 75,000 people who have had the disease and 2,240 people have died, both primarily in China, but there are 34 confirmed cases here in the United States.

I recognize that this is an issue that is something that Logan is very concerned about. We have to be. President Xi in China acted irresponsibly. China wants to be part of the World Trade Organization, but they are also part of the World Health Organization. So there is a concomitant responsibility to ensure that if you are going to be integrated into the trade protocol for the world, that if we have travel that is going to be taking place of passengers and cargo between the United States and China, that there is a responsibility to report early on what the health care risks are that are being created in your country.

Obviously, China did not do that. So if you could just, Mr. Freni, talk a little bit about Logan and the protections, the precautions which you have put in place.

Mr. FRENI. So, as you may know, we had nonstop service from to specific locations in China, Shanghai and Beijing. Immediately after the break, the airlines that flew to those two destinations reduced their service. In fact canceled their service and haven't given us a specific date on when that will come back. A third airline flying from Hong Kong non-stop into Boston has reduced its schedule, and other affected areas, which we are still flying to.

The good news is we engage with the CDC and they are here at Logan actively screening, working with Customs and Border Protection on a regular basis. Before the CDC arrived, Senator, we had the Customs folks would doing passive screening, looking for signs. We have seen a reduction in our passenger loads since January 28. We have—about 7 percent. We saw an uptick this week because we are on vacation, but that was on the domestic side.

So the reduction of schedule has had an impact, and you know, again, we are working very closely. We provided space for the CDC to be here permanently again, and we work with them on a regular basis. We meet in the morning and talk about anything that we need to do to help them in the screening process. And like I said, we have had a reduction of incoming non-stop services.

We also have to be concerned with connecting services, but everybody is aware of it. We have put out flyers. We have talked about, you know, signs and so again, you know, we do this every morning.

Senator MARKEY. So, you are talking now with CDC?

Mr. FREN. We actually have them onsite now. On site.

Senator MARKEY. Were they in the meeting today?

Mr. FREN. CDC was not but Customs Border Protection was. So they are working side by side with them in Terminal E which is our international gateway.

Senator MARKEY. Alright, great. So, can I come back over to you, Ms. Ritter, and talk about what concerns you have about the coronavirus, you know, and the perspective Flight Attendants bring to this issue in order to protect against the spread?

Ms. RITTER. Certainly. Thank you for the question, Senator Markey. We continue to call for implementation of contagious disease checklists, and we need gloves and kits on board the aircraft to handle any potentially infected passenger, or crew member for that matter, and for any medical personnel to assist in dealing with any potentially infected passengers.

We have been dealing with a very fluid situation with a coronavirus. And in fact, our Hong Kong base with United Airlines is basically essentially shut down for the foreseeable future. The crew that are based there are no longer working, with covered pay protected. In the meantime, we have a lot of Flight Attendants who are based in the United States who are no longer able to fly their original schedules to China as those flights have all been reduced.

And in the meantime, Flight Attendants who have been working to China previously are potentially now banned from entering other countries that have limits on entry to people who have been to China since January 15, and it is creating a bit of a scheduling nightmare for us as well. And we have concerns as far as we are not necessarily being informed as to what the most up-to-date procedures are.

The information is coming out so quickly that it is very difficult to keep track of. Somebody who has been to China may still be told that they are all right to continue working their original schedule without self-quarantining themselves for 14 days. They may be told that it is fine to work their flights or to commute back home to their home away from their base on aircraft.

Senator MARKEY. So you are saying amongst Flight Attendants, they are just not clear, true direction that is being given to them about how they should—

Ms. RITTER. We are getting updates so rapid-fire that it is very difficult to maintain a working knowledge of what the most up-to-date information is and what is accurate and what is really happening around the system.

Senator MARKEY. So our Flight Attendants are concerned that there may be or have been exposed to the coronavirus—

Ms. RITTER. Definitely, yes. Definitely, absolutely.

Senator MARKEY. And you are saying there still isn't clear direction that is being given to the Flight Attendants?

Ms. RITTER. Correct.

Senator MARKEY. So, I think that is something that the Committee will follow up on as well with an important set of protections which Flight Attendants should be given and the passengers who are on those flights as well. So thank you. Cybersecurity. We know that those who mean to do us harm could try to exploit any

technological vulnerability in our aviation system. That will inevitably include cybersecurity vulnerabilities moving forward.

Our airplanes are increasingly computerized and new software is being rolled out every day. Evolving technologies offer enormous potential to improve safety and entertain passengers, but it will only take one hacker to access an aircraft navigation or flight control systems to cause disaster. Regrettably, after investigating the cybersecurity of our aviation system, I discovered that although airlines may frequently experience attempted cyber-attacks, their protocols and protections for cyber incidents need improvement.

I also found that industry collaboration on cybersecurity is inconsistent. And that is why I have introduced the Cyber Air Act. The Cyber Air Act would require the airline industry to share information about cybersecurity vulnerabilities and direct the FAA to establish cybersecurity protections for aircraft.

Ms. Ritter, I am glad that the Association of Flight Attendants has endorsed my legislation. Can you explain the importance of cybersecurity in the skies or from a crew member's perspective?

Ms. RITTER. From a crew members perspective, we are always concerned about what is happening in the cabin of the aircraft, whether there are people on board with ill intent who are perhaps coordinating among each other, who may not be sitting next to each other. If they are able to communicate via cyber methods and if they are able to hack into our onboard computer systems and affect the operation of the aircraft itself. These are all concerns of ours.

Senator MARKEY. OK. So expand upon that a little bit in terms of what a coordinated effort could look like, because again, on each of those flights on 9/11, there were multiple people who got onto planes with, and again in those instances, box cutters because they were looking for the easiest way in order to accomplish their goal on that day. But with modern technologies, a similar group of four or five people might get onto a plane and have electronic equipment with them. What would be your concern in terms of what they might be able to accomplish?

Ms. RITTER. Some of the information might be security sensitive as well. We do realize that there were—that the teams of people on the 9/11 flights had been preparing for that event for months and they had been scoping out our aircraft and our procedures onboard. And our concerns are that, you know, actors could be onboard our aircraft and be scattered around the plane. And somebody could provide a diversion on one area of the aircraft to distract the crew into a different area and take advantage of a lack of coverage in other areas.

Senator MARKEY. Thank you. So coming back to you, Mr. Beckius. Does TSA believe that we need stronger protections against cybersecurity attacks in the aviation industry?

Mr. BECKIUS. So yes, we do, and I would put this in the same category with the drones where I am not directly involved but this is another agency priority and I would be happy to bring back any information you would like.

Senator MARKEY. And again, I would appreciate that information being given to us because that is something that we would like to include in the record of this hearing. Again, we are trying to deal

comprehensively with what are the threats that could be posed to Logan Airport to passengers here to the flights that are taking off regardless of the subject material. Mr. Freni, have you, in your security briefings each morning, had a discussion about what the concerns are that you have here at Logan on those cybersecurity related issues?

Mr. FRENİ. Yes, we have, Senator. We have our IT group, representatives there at the 8:30 a.m. every morning. We discuss in a private meeting afterwards if there are any threats that they have seen in our sites or in our systems, so we are talking about it every day. We watch it every day. So, and we talk to the airlines as well because they are represented at the 8:30 a.m. meetings and we find out from them if there is anything we can do to help support them in any way with their interconnectivity in the airport.

Senator MARKEY. Thank you. Let me come back to you, Mr. Fried. I understand that many of our air forwarders are increasingly suffering from ransomware attacks, a cyber threat that is increasingly prominent and dangerous in American industry. Mr. Fried, speak to the cyber threat that your air forwarders are experiencing and what the Federal Government can do to help your company shore up their cyber defenses.

Mr. FRIED. Thank you, Senator. Many industries are being affected by ransomware attacks. So the freight forwarding industry is not an exception. But I would tell you that these ransomware attacks are creating substantial severe financial impact on our industry and it affects many because the supply chain industry, the logistics industry is interconnected. So we deal with people not only here in the United States, but throughout the world. So a virus here can affect one of our partners overseas and that is an issue.

Senator MARKEY. So if you would just step back for a second, just tell us a little story about how a ransomware attack then what was the attack and then what was the follow up from the attacker, and how you had to respond—

Mr. FRIED. So I point to a big one that occurred not too long ago with Maersk. Maersk is a big logistics provider, maritime logistics provider, but they have freight forwarding operations as well where they grabbed all the customers, did all the shipment data, and so—and held it hostage, if you will. And that way the shipments that are in transit can't get to the destinations on time. And obviously let's put the financial impact aside. Oftentimes, these shipments consist of medical devices, human organs, tissue for transplants, that type of thing and if those shipments can't get to the destinations on time, obviously, it is a matter of life and death.

And I will tell you another area that is a big concern is when you pay these ransoms, as many have been forced to do, often times that money goes overseas to elicit organizations, often times they might be terrorist organizations. We don't know who is funding and obviously that is a big challenge.

Senator MARKEY. And so—and you are saying the whole process ends paying off potentially terrorist groups?

Mr. FRIED. Right.

Senator MARKEY. It is delaying the delivery of critical life-saving devices or other items that are critical—

Mr. FRIED. That is correct. It is not always about money.

Senator MARKEY. It is not always about money. Yes, so is there something you would like to see the Federal Government do with regard to sharing of cybersecurity technology in order to reduce the potential for bad actors to impact the air traffic?

Mr. FRIED. Yes. So the Airforwarders Association believes that there needs to be a lot more information sharing on the part of the Federal Government, and it needs to be industry-specific work groups that have to be ongoing so that this information is free flowing, obviously, even if it is in an enclosed, you know, confidential matter. And then there—an idea is that perhaps there should be some insurance mechanism that is provided by the Federal Government.

Maybe something similar to flood insurance, you know, where if an industry or companies are impacted by ransomware attacks or some type of cybersecurity attack, they know that they have—they are confident that they have the protection of the U.S. Government to assist them in recovering costs. It is an idea.

Senator MARKEY. So you are saying that it is now an industry-wide risk that is being run, but there is right now no industry-specific working group between the industry and the Federal Government to deal with the issues—

Mr. FRIED. Right. So at this point in time, obviously, you know, they are probably some initiatives out there. I think they are few and far between but you know at the Airforwarders Association, we now have an actual technology cyber subcommittee that is focused just on this issue. It meets monthly and there are a lot of participants.

Senator MARKEY. I appreciate that but you are saying that there is no Federal Government—

Mr. FRIED. Not to our knowledge. Nothing substantial.

Senator MARKEY. I think that is something that we have to rectify. So we are going to—I am going to work on that. So, obviously we are just going back here earlier to my comments. I have talked about the need to have more information sharing. The industries and the Federal Government so that best practices are put in place, lessons that have already been learned are implemented in order to reduce the likelihood of the threat.

And I think that is a big gap that continues to exist in some instances. You know, we just go back to, you know, this whole notion of kind of siloing all information and people just don't want to share it. right. And do you find that to be the case, Mr. Fried?

Mr. FRIED. Absolutely. I mean it is—you know, I mentioned earlier in my testimony that it is not only unique to TSA, it is many branches of the Federal Government. And this is obviously, the Federal Government works for us. There should be this this easy information-sharing, especially when it comes to our welfare.

Senator MARKEY. And again, that is why I have introduced legislation to force the information sharing. You know, I saw that right after 9/11 where we had this integrated new Department of Homeland Security and they still all had their legacy computers. They couldn't even talk to each other, can't even talk to each other from FEMA over to the Coast Guard over to other agencies.

There was no interoperability that would lead to a quick sharing of the information, and we know that that was a problem on 9/11

and it just continued to be. And then it goes to the culture of these agencies as well, you know, that still exists. And if we don't telescope the time-frame that we are going to take in order to ensure that this information is not a threat, we are going to wind up—not that we didn't understand the risk, the risk wasn't fully shared with everyone and the solutions that could have been put in place were as a result delayed.

And these are very intelligent people who are attacking us, right. You know, Mohammed Atta was a very educated person. Very smart, highly educated individual, just as smart as our side. So we just, fall one—we know they are going to try to do what we know. They are doing it right now. So we just have to share the information with regard to where the threats are coming from and what can be done in order to protect against it. And again, that is why I introduced that legislation in order to deal with that threat as well, but it just keeps going back to air cargo security, how hard it is to deal with this inertia that exists in trying to move more rapidly in an era of technology to deal with these issues.

And I will finish up with this last set of questions, if I may, and that is a conversation about scanning technologies, which wouldn't be complete without talking about passenger and baggage screening. The TSA screens 2.8 million passengers, 1.4 million checked bags, and 5.1 million carry-on bags every single day of the year. These are enormous numbers, logistically difficult. The enormous scale of the operation demands that the best technologies are being deployed to keep travel flowing while promoting security and that is why I authored the language in the TSA Modernization Act that created another pilot program for deploying CT scanners, this time at the passenger checkpoint.

Now, I understand that my pilot program is well underway and that the TSA expects to deploy 300 CT units to passenger checkpoints across the Nation at the end of 2020 or by the end of 2020, including here at Logan Airport. Mr. Beckius, please provide an update on this pilot program as well any other efforts that the TSA is undertaking or planning to undertake to increase the deployment of CT scanners beyond the initial 300 units?

Mr. BECKIUS. Senator, so I apologize that I don't have specifics on that but I will be glad to bring that back to you.

Senator MARKEY. Mr. Freni, are you aware of what this program means for Logan airport and could you give us an update with regard to deploying these technologies here at Logan?

Mr. FRENI. Yes. Senator. In fact, Logan was the second airport in the U.S. to successfully deploy the 3D imaging enhancement threat detection. We have a strong relationship with the TSA. We were selected as a TSA innovation task force site to test the CT tomography, computer tomography system, and we have it here and we intend to increase the numbers as we deploy our ASL, which we have 23 ASL, automated screening lanes.

Senator MARKEY. So I understand TSA's initial procurement for 300 CT units was awarded to a single vendor and I am concerned that this decision could impact our security readiness by opening up the technology supply chain to a single point of disruption, as well as, reduce the market competition we need to create the best scanning systems. Mr. Beckius, I know it is not in your lane but

will you commit to considering a multi-vendor approach in the future procurements of CT scanners? It is the same issue obviously for the cargo that goes into the belly of the plane. Do you use multiple vendors for those technologies?

Mr. BECKIUS. So we do and we welcome any vendor coming to TSA with their equipment for evaluation and qualification.

Senator MARKEY. Yes. Well again, I think it is critical there to be for cargo or it be for this passenger screening that TSA, in its vendors strategy for the next round of procurements, that TSA is looking at multiple vendors to stay viable by investing Federal research dollars into multiple technologies in order to deal with this issue. If I could, Mr. Urchuk, how would you deal with this issue about what Congress should be doing in order to help companies like Analogic develop and deploy scanning technologies?

Mr. URCHUK. So I think some of the initiatives that Department of Homeland Security does in terms of funding early stage technology, that is important, not necessarily from larger vendors such as ourselves, but often in partnership with vendors like ourselves. I think also middle level technology investments and technologies that need to be matured to be ready for deployment, that is valuable funding and up until recently, TSA has been supporting that. That has been critical.

It is worthwhile noting we have a laboratory in New Jersey that is a leading center for explosive detection certification in the world. Without that laboratory that the DHS runs, we wouldn't have the equipment we are talking about today. So that is one gem in the system. It is underappreciated, I think. But finally, I think just come back to businesses such as ourselves need markets to justify our investments, and so it is challenging when a procurement goes perhaps the other way for someone other than ourselves. We need the ability to deploy this equipment to justify our investments and make progress.

Senator MARKEY. So you are saying that having one company win everything—

Mr. URCHUK. Was challenging, yes.

Senator MARKEY. Yes, it was. But it also, you know creates an environment where the Darwinian paranoia inducing environment of competition doesn't continue to drive the entire industry when only one company wins.

Mr. URCHUK. Yes, there can't be 10 suppliers of this type of equipment but there needs to be at least 2 to 3 healthy suppliers. And so I think supporting competition through deployment is beneficial.

Senator MARKEY. Yes, overconfidence breeds complacency and complacency breeds disaster. So having more companies on the problem ensures that there is a more robust analysis of the emerging threats and not an easy reliance upon just one company's approach. And I think you are right, I think it just has to be something that we continue to look at. We don't want a sole source to in a way almost cutoff, you know, the ability to continue this technological advancement which is based upon a robust competition.

So, I thank you, Mr. Urchuk, for your perspective on that. So what I am going to do is give each one of you 1 minute to summarize what it is that you want us to remember from your testimony

today, and we'll go down in the same order, if we can, so that you can tell us what it is that here at Logan, here in Massachusetts, but for the whole country, we should retain in terms of what we have to do in the future to make this airline industry in all aspects safer and less penetrable by our enemies? Mr. Beckius.

Mr. BECKIUS. Thank you, Senator. So the initial focus of the hearing was on the Certified Cargo Screening Program. So in summary, I would like to say that the health of that program is strong and TSA's development of the third-party canine program shows our commitment to continue to advance that program into the next generation. And then adding onto that, I would like to say that our compliance program with our hundreds of inspectors in the field, providing daily oversight to that program as well as other aspects of aviation security should give people confidence that TSA has a robust and secure compliance and enforcement program contributing to the safety of all.

Senator MARKEY. Thank you. Mr. Freni.

Mr. FRENI. Senator, thank you. I think I would like to leave this meeting letting the world know that we want to continue to be a test site here at Logan Airport for any technology that comes along. We open our doors to that. We have over the last 20 years and we will continue and our commitment is there as you have heard with everyone that attends our 8:30 a.m. meeting, the relationship that we have built, and we want to offer that to continue. Thank you.

Senator MARKEY. Thank you. Mr. Urchuk.

Mr. URCHUK. I guess the thing I would stress is just a need for a strong partnerships between industry, the TSA, and all the different stakeholders in the community, whether they be, for example, the freight forwarders organization in the airport or the airlines. That is critical for us to drive innovative solutions to the field.

Senator MARKEY. Mr. Fried.

Mr. FRIED. Thank you, sir. I would say that the CCSP is the cornerstone for effective air cargo security. It is a supply chain solution that works. Canines and effective technology are crucial in meeting this challenge but both must be adequately funded with help of the Federal Government. Consistent rule interpretation within the TSA is very crucial for our members and our Nation's security, as is TSA screener support of the privatized screening industry. And the freight forwarders remain willing, able, and very hopeful of the future and we want to continue as a key ally in this fight. Thank you.

Senator MARKEY. Ms. Ritter.

Ms. RITTER. Thank you, again, for the opportunity to speak to you, Senator. We would just like to reiterate that the TSA must have the consistent long-term funding to close all potential security loopholes, and give screeners the staffing support and training they need to do to support us in the air. Flight Attendants are the First Responders and the last line of defense in the air and we take our job very seriously, and we would also like to see full implementation of the FAA Reauthorization Bill, including secondary flight deck barriers—

Senator MARKEY. Including, I am sorry—

Ms. RITTER. Secondary flight deck barriers that are supposed to be installed on all new aircraft, but the airlines are now interpreting that to mean all newly designed and rolled out aircraft as opposed to—

Senator MARKEY. Expand upon that a little. We didn't touch on that question. I think it is important—it is important to get your perspective on that, please. Just lay out what that issue is.

Ms. RITTER. Thank you. After 9/11, we developed a secondary flight deck barrier that provides another layer of security when the flight deck door is opened, for instance, when pilots come out to use the facilities or to pass a meal up to the flight deck, so that we have an extra three to 5 seconds if we are being charged by somebody in the cabin who is attempting to access the flight deck unauthorized.

These were installed on a lot of aircraft and then they indeed started getting a little bit complacent and airlines stopped requiring them, and then they started removing them from already accepted aircraft that they had on the property.

Senator MARKEY. And if I may, what was the justification given to you for the—

Ms. RITTER. The weight of the flight deck barriers were considered a cost as far as fuel and added to what the airline saw as cut to the revenue.

Senator MARKEY. Yes, I feel—thank you. Thank you for raising that issue and I am a co-sponsor of legislation to require secondary security barriers being put in place. There is kind of an assumption that what has happened in the past will not occur again.

Ms. RITTER. Captain Saracini on flight 175 was right out of Boston here and his widow, Ellen Saracini, is a big proponent of that Act and we fully support it.

Senator MARKEY. Yes, and that is very important, you know, set of protections which in my opinion we have to build in. Yes, this cost-cutting is always the enemy of security. Security winds up being something that is viewed as expendable, that we just don't have to be as concerned because the past could never happen again.

And that is how we got into this situation in the first place. They are very smart people. They are targeting—U.S. airlines are at the top of the list of targets. They know that if they are successful in attacking the airline industry in any of its forms, that it has a devastating impact upon the economy. Flights went down by 25 to 30 percent out of Boston for 2 years after 9/11. That had a devastating impact upon our economy, upon the way we view our security in our country. We know this. So shortchanging issues like that is a huge mistake. That is why I partnered actually with the Flight Attendants to impose a complete and total block on TSA's ability to say, it was OK to stop bringing knives back into passenger cabins.

My law passed and it was because of my conversations with the Flight Attendants. It is still the requirement to scan for knives going into the passenger cabins. And that was something that was going to be changed by TSA. So I did that, you know, saying let's not just assume it can't happen again. You don't know what the recombinant terrorists DNA can be inside a passenger cabin, especially as you are talking about technologies that four or five people

could have in the cabin to create some new threat that our imaginations at this point have not yet been able to think through. Because that is all they think about all day long.

So I thank you for that. And again, this just comes back to the issue of cost. As I said, \$1.4 billion this year is going to be looted out of airline security to be used for who knows what in the Federal Government, really. Who knows what, when the whole point of having that passenger fee is to make sure that we do everything we can to make sure that there was not something that would make it possible to have a repetition of what happened on 9/11—\$1.4 billion gone. And between now and 2027, \$20 billion, at the current pace, will not have been spent in order to build in these protections. Perhaps even inventing a lighter weight set of protections that could be put in place as the technologies evolve that would not lead to any substantial additional cost of fuel oil for the plane, but provide measurable additional protections for the passengers who would be on that plane.

So again, this cost cutting is great for the short term for a CEO in terms of reporting to the shareholders, but the American people are the shareholders when it comes to airline security and they are paying the tax, you know, in order to ensure that those security provisions are put in place and that money as I said, is just looted, looted, you know, to do what, build a new miniature nuclear bomb, which the President wants, you know, to be able to make it possible to fight and win a nuclear war? Well, should we really be spending the money on that or should we be spending it on something that they know is a threat to them.

Right now terrorists are looking at our airline industry in all of its forms in order to repeat what they did on 9/11 and they are constantly trying to do all around the world. And they are once again re-emerging in Africa over a massive amount of land and we should just assume that they are not resting and as a result we can't rest. So I thank you for again injecting that issue because it just really, really makes me mad, you know, that billions of dollars that should go to airline security is being looted for purposes that are not as important as what we are talking about here today.

So I thank you all for this tremendous hearing today. The lessons, again, have to be relearned obviously in order to make sure that overconfidence does not breed complacency, and complacency once again breeding disaster. And that is why we have this hearing today because we were the target on 9/11. We were the target on Patriot's Day in 2013 with the Tsarnaev brothers. We are a target and we have to be the leader. And I thank the Massport Authority for being the leader, always trying to get to the front of the line in deploying the technologies and deploying the strategies.

I thank you for the security meetings, which you have every single day, but I think it is imperative that we continue to upgrade our security. This is a never-ending battle, drones, lasers, new ways in which they can compromise the system. It is all coming our way. We should just ensure that we learn the lessons of our great witnesses here today.

And I thank you all so much for what you are doing, and we will have the hearing record remain open for two weeks so that other Senators can ask questions, be put in the record, and transmitted

to our witnesses for their inclusion in the official Congressional record. And we request from you that those additional questions be answered in a timely fashion. So it will be included in the permanent Congressional record.

So with that, I thank you for your wonderful testimony today, and everyone who has come here today. We just have to keep our eye on this risk. With that, this hearing is adjourned. Thank you.
[Whereupon, at 11:15 a.m., the hearing was adjourned.]

