



Air Cargo Security Roadmap

December 2021





Administrator's Message

I am pleased to issue the Transportation Security Administration (TSA)'s Air Cargo Security Roadmap. This document outlines the strategic direction toward modernizing, streamlining, and further securing the air cargo system throughout the next five years. It is designed to help TSA address and respond to new and emerging threats to aviation while still ensuring the efficient flow of commerce.

Twenty years after the devastating events of 9/11, this Roadmap reflects TSA's commitment to maintaining awareness of the current threat environment and emerging risks for global transportation security and considers the tools and innovations available to mitigate risk. Due to the impact of the COVID-19 public health crisis, this Roadmap also considers the ongoing effect of COVID-19 on the air cargo industry and lessons learned from our response to COVID-19.¹ Implementation of this Roadmap will ensure TSA maintains the necessary organizational flexibility and resiliency as we continue to respond and adapt during the pandemic recovery and prepare for its impact on the future of air cargo transportation.



The Roadmap aligns with the TSA Strategy (2018-2026) and the Administrator's Intent 2.0. To achieve the Roadmap's goals and objectives, TSA will continue to leverage innovative air cargo screening technologies and modernize policies to enhance security effectiveness, improve operational efficiency, and increase partnerships with air cargo stakeholders. These achievements will further secure the U.S. air cargo system, promote TSA's leadership and commitment to aviation security innovation and advance security standards for global aviation transportation. As TSA implements this Roadmap, we will build on recent initiatives, such as the Third-Party Canine-Cargo Program, Outcome Focused Compliance and the Secure Packing Facility (SPF) security program, and ongoing coordination with the U.S. Postal Service (USPS) on mail screening, to meet or exceed the International Civil Aviation Organization (ICAO)'s air cargo security standards.

I am thankful to everyone at TSA, our interagency partners, and air cargo industry stakeholders, including airlines, airports, industry associations, indirect air carriers, and key third parties, who supported this document's development. I would like to especially thank the Aviation Security Advisory Committee (ASAC) and the ASAC Air Cargo Subcommittee (ACS) for their collaboration in this project.²

A handwritten signature in black ink that reads 'David P. Pekoske'. The signature is written in a cursive, flowing style.

David P. Pekoske
Administrator

¹ The Administration is encouraging agencies to consider regulatory changes that reflect lessons learned from the COVID-19 pandemic and improve the country's ability to respond to similar crises in the future. See Memorandum from Acting Administrator of the Office of Information and Regulatory Affairs (OIRA), "Fall 2021 Data Call for the *Unified Agenda of Federal Regulatory and Deregulatory Actions*" (dated Aug. 16, 2021).

² For more information on the ASAC, see [tsa.gov: Aviation Security Advisory Committee | Transportation Security Administration](https://tsa.gov/Aviation-Security-Advisory-Committee).

Executive Summary

Air cargo plays a critical role in the U.S. economy, and the security of the air cargo system is at the core of TSA's mission. The movement of air cargo is complex and supported by a sophisticated supply chain with a wide range of government and industry stakeholders. Since the establishment of TSA, the Agency continues to adapt its approach to meet the demands of the changing air cargo security landscape and address statutory and international requirements, such as the mandate in the *Implementing Recommendations of the 9/11 Commission Act of 2007* to require 100 percent screening of air cargo transported on a passenger aircraft³ and changes to ICAO cargo screening standards effective June 30, 2021, which require the same security standards for passenger and all-cargo operations.

TSA Mission

Protect the nation's transportation systems to ensure freedom of movement for people and commerce.

In the past decade, the rapid increase of air cargo volume, due to the rise of e-commerce and customer demands for expedited delivery of goods, has substantially contributed to the air cargo system working at its full capacity. Most recently, the effects of the COVID-19 pandemic placed additional demands on supply chains that were already working at capacity. The impact of the pandemic has demonstrated the adaptability, complexity and necessity of the global supply chain in response to a major global health and economic crisis. This response includes the need to transport vaccines and other critical supplies for individuals remaining in their homes and flexibility to ensure resiliency of the industry.

In the aviation sector, efforts to improve the overall security "footprint" of air cargo operations continue to evolve. Global aviation security is enhanced by meeting new standards issued by ICAO. These standards provide, in part, that all international air cargo transported by a commercial carrier must be screened or otherwise subject to security controls implemented by an entity approved by a competent national authority. Member States will require air carriers to meet these standards for inbound and outbound international cargo. As a result, the air cargo industry is adopting additional procedures consistent with TSA and host government requirements, to meet ICAO guidelines.

The air cargo system continues to shift its practices to adjust with a dynamic and evolving threat landscape. These changes require TSA to continually examine and refine its security approaches to the air cargo supply chain and assess how the Agency can effectively respond, remain agile and promote innovation. TSA seeks to identify, encourage and recognize security-focused business practices in the air cargo system that will result in more efficient and effective air cargo security.

This Roadmap is consistent with the objectives and goals in the TSA Strategy (2018-2026) and the Administrator's Intent 2.0,⁴ and it provides a framework to help TSA accomplish them in collaboration with government and industry partners.

³ See section 1602 of the *Implementing Recommendations of the 9/11 Commission Act of 2007*, Pub. Law 110-53 (Aug. 3, 2007), codified at 49 U.S.C. 44901(g).

⁴ Available at [TSA.gov/About/Strategy](https://www.tsa.gov/About/Strategy).

To develop the Roadmap, TSA engaged with key stakeholders across the government and air cargo industry to gather insight into the highest priorities and opportunities to enhance security measures used in air cargo operations. These stakeholders included representatives from passenger carriers, all-cargo carriers, integrated carriers, indirect air carriers, shippers, ground handlers, partner government agencies, and industry associations.

Key stakeholders agreed to the need to focus on a number of high-priority areas, including expanding risk-based screening and analysis on domestic all-cargo flights, improving information sharing and screener training, enhancing the air cargo screening technology environment, improving the effectiveness of security standards, and responding to the complexities of the evolving air cargo system. TSA used these insights to establish the Roadmap's goals and objectives, which set the course for TSA to continue providing world-class effectiveness in air cargo security as the global leader for change and innovation in transportation security.

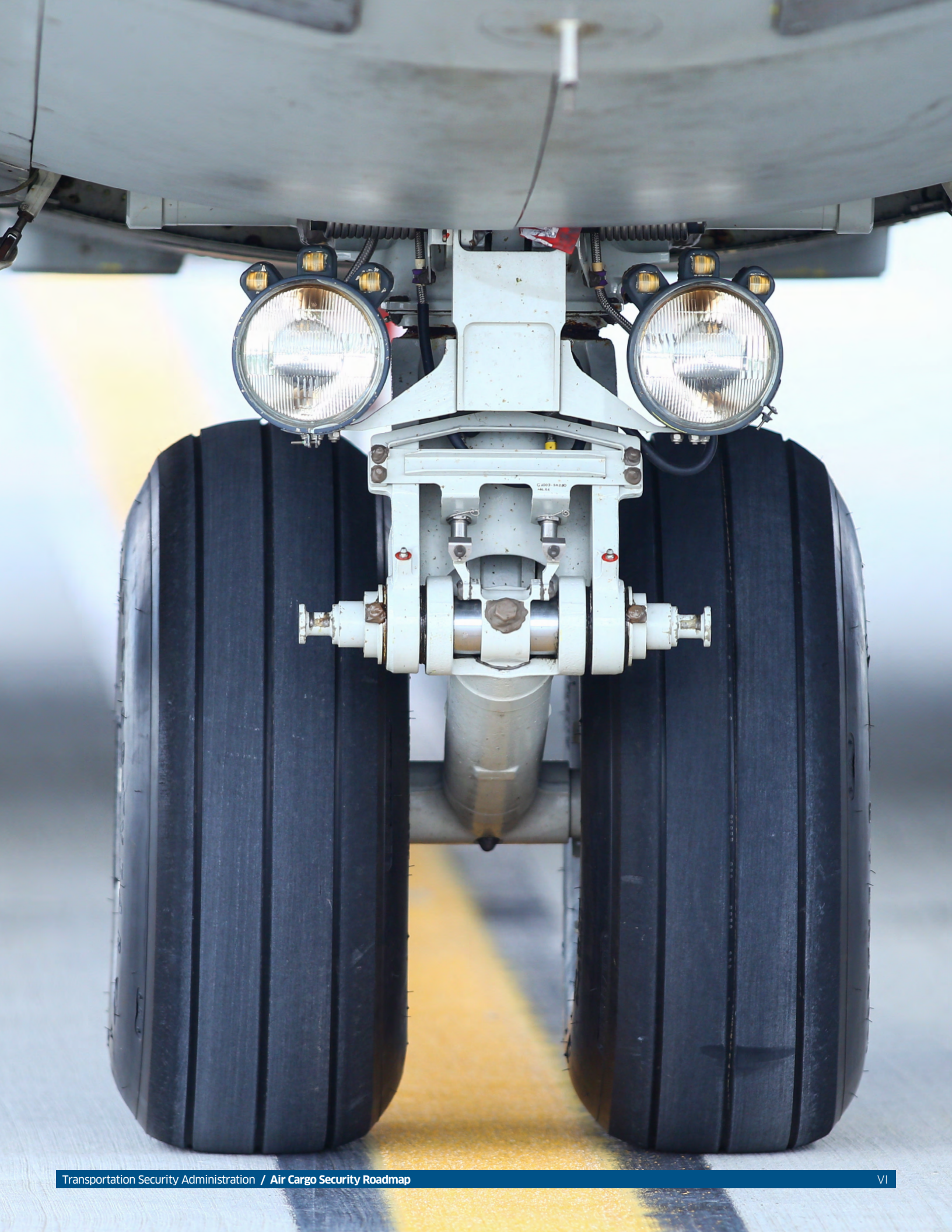


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Introduction

As part of TSA's oversight of air cargo security, the agency must consider the efficient movement of commerce while ensuring that regulated entities implement the necessary security measures to prevent the introduction of explosives, incendiaries or other destructive substances or items. The air cargo system is a complex and dynamic environment that includes a wide array of traditional air cargo security threats, new and emerging threats across the broader aviation sector, advances in screening operations, and unprecedented e-commerce expansion. TSA must continually examine the current state of the air cargo landscape and determine potential security enhancements that can be made to ensure the Agency responds effectively to threats, remains agile in evolving environments, and aligns its activities with the TSA Strategy (2018-2026) and the Administrator's Intent 2.0. The Roadmap development effort included the following actions:

- Collaboration among internal and external stakeholders around a shared vision to identify and develop goals and objectives,
- Establishment of a 5-year plan to improve security for the air cargo system, and
- Development of a strategic path forward for implementing data and intelligence-driven improvements to increase security effectiveness, efficiency, and performance.

Moreover, as part of TSA's oversight of air cargo system security, the agency must consider the efficient movement of commerce, while ensuring that regulated entities implement the necessary security measures to prevent the introduction of explosives, incendiaries or other destructive substances or items. TSA must also consider a wide range of priorities and challenges from a diverse group of stakeholders, with both domestic and international operations. These primary stakeholders include the following:



- **Passenger air carriers** - Aircraft operators that transport passengers and cargo in the same aircraft.
- **All-cargo carriers** - All-cargo carriers that only transport cargo, which includes both heavy-freight and express carriers.

- **Indirect air carriers (IACs)** – Any person or entity within the U.S. not in possession of a Federal Aviation Administration (FAA) air carrier operating certificate that engages indirectly in air transportation of property and uses, for all or any part of such transportation, the services of an air carrier. This does not include the United States Postal Service (USPS) or its representative while acting on behalf of the USPS.⁵
- **Certified cargo screening facilities (CCSFs)** – Facilities certified by TSA to screen air cargo and maintain chain of custody of the screened air cargo in accordance with TSA security requirements.
- **Third parties** – Shippers, ground handlers, and stakeholder subcontractors that are key members of the supply chain due to their role in transferring, handling, and sorting air cargo – While these entities may not be directly regulated by TSA, but in many cases, they act as authorized representatives conducting security functions required by TSA on behalf of a TSA-regulated entity.
- **Airports** – As hosts of the commercial carriers transporting air cargo, airports play a vital role in the aviation system by providing additional layers of physical security, personnel security, and operational support to many other stakeholders in the air cargo supply chain.

Regardless of whether these stakeholders are directly regulated by TSA, each plays an essential role in a complex and multi-faceted air cargo system.

Purpose and Vision

The Roadmap's purpose is to provide strategic direction to modernize, streamline, and advance U.S. air cargo security over the next 5 years. Its development was guided by TSA's vision for an Agency that engages its partners and citizens to outmatch a dynamic threat, while applying the principles of the TSA Strategy (2018-2026) and the Administrator's Intent 2.0 to the security of air cargo. TSA's vision is a U.S. air cargo system that positions government and industry as innovation leaders to ensure effective air cargo security.

The Future State

TSA is committed to a future state of air cargo operations that demonstrates effective security. This future state includes the following improvements in air cargo security:

- **Security operations:** TSA air cargo security programs will evolve to increase their effectiveness in transportation security. Further, these programs will be routinely updated to account for new air cargo security standards, responses to emerging security threats, and changes in a dynamic commercial landscape. Operational security effectiveness will be measured using TSA inspections and covert testing to evaluate security program holder's adherence to regulatory requirements and their actions taken to self-evaluate their security effectiveness and ability to identify security gaps. Prompt actions will be taken by regulated entities and TSA to ensure vulnerabilities and deficiencies are quickly resolved. TSA will work closely with regulated entities when issuing or revising regulatory requirements to ensure operational issues are appropriately identified and addressed without unnecessary procedural delays and impacts. TSA also acknowledges that cargo security has an important international component and TSA will also engage with our foreign partners and international organizations to address vulnerabilities and other threats that originate beyond U.S. borders.

⁵ TSA is working directly with the USPS on initiatives related to air cargo security.

- **Training:** Air cargo screeners will be trained efficiently and effectively, and screening will be consistent, effective, and responsive to current and emerging threats.
- **Information and knowledge sharing:** Information and intelligence will be shared among primary stakeholders, including TSA; other relevant government agencies; and international and industry partners, to enable agile, data-driven decision making. Intelligence sharing through the Aviation Domain Intelligence Integration & Analysis Cell (ADIAC) will allow TSA to collaborate and partner with industry to ensure air cargo screeners are prepared to identify and mitigate threats. Additionally, TSA will continue to take advantage of web-based applications for regulated entities to receive and access important information to carry out required air cargo security procedures.
- **Screening technology and innovation:** TSA, through a qualification and testing program, will approve new systems to screen air cargo and work closely with industry partners to ensure that new technologies are effective and reliable. TSA will continue to evaluate its qualification and testing program process for air cargo screening technology to ensure that it adapts to changes in the technology marketplace and advances to meet the evolving threat environment. TSA will sustain and grow qualification and testing (as funding allows), while supporting the Department of Homeland Security in its related research and development (R&D) efforts.
- **Policy:** Air cargo policy will be comprehensive, consistent, clear, and outcome-focused, resulting in better industry interpretation and more effective enforcement. TSA air cargo policy will be agile enough to anticipate emerging threats and trends.



Guiding Principles

TSA will apply the following guiding principles to implement the Roadmap's objectives. The principles outlined below describe how TSA will make its air cargo security vision a reality and use the Roadmap to navigate both current and emerging risks:

- **Responsiveness:** Update security measures to quickly respond to the dynamic threat landscape while maintaining effective security measures and capabilities for a secure supply chain.
- **Coherence:** Implement TSA's strategic initiatives, including applicable ASAC recommendations, to ensure alignment with current goals and drive the implementation of the Roadmap.
- **Efficiency:** Allocate TSA resources to maximize impact and eliminate operational redundancies by prioritizing air cargo among TSA's technology investments.
- **Engagement:** Ensure collaboration and transparency across TSA and with government partners. Leverage the experience, capabilities, and authorities of other government agencies with shared objectives. Collaborate with industry to achieve a regulatory air cargo security environment that considers industry needs while maintaining and/or enhancing TSA's ability to carry out its mission.
- **Consistency:** Reinforce a consistent TSA-voice to industry to ensure effective policy development and interpretation.



Strategic Environment

The strategic environment describes the broad range of factors that influence TSA's understanding of air cargo operational conditions. It is an assessment of the conditions, circumstances, and influences that drive the air cargo industry.

Threat Assessment

Adversaries continue to threaten the air cargo system. They seek to use the aviation domain to carry out terrorist plots and use the air cargo supply chain to ship dangerous and potentially deadly items for pre-operational planning. For example, in the 2010 bomb plot in Yemen, explosives were concealed within printers and shipped via air cargo, but were discovered in route to the United States. Similarly, in the 2017 Australia bomb plot, explosives were shipped from Turkey to Australia by air cargo in an attempt to attack a passenger aircraft. Both situations represent the danger that adversaries pose to the global air transportation system and require TSA to continue bolstering its overall security posture.

During the past 3 years, lone actors have used the United States Postal Service (USPS) and a U.S. cargo carrier three times to transport dangerous items and lethal devices. For example, in March 2018, a plot involving parcel bombs resulted in two deaths. In that incident, the lone actor attempted to ship two devices via a U.S. cargo carrier with one device detonating in a processing facility and the other being rendered safe during processing at a second facility. There were no indications either of these devices were intended for air transport or if they were screened by the carrier. However, lone offenders have used both the USPS and cargo supply chains to ship dangerous and deadly items that could enter not just the international transportation domain, but also the United States' domestic travel domain.

In addition, the air cargo system faces emerging risks, including a proliferation of cyber threats and the increasingly pervasive use of unmanned aircraft systems. TSA must remain vigilant, progressive, and flexible in its response to these new air cargo security threats and trends.

Economic Changes

The air cargo industry has evolved significantly over the last decade. The volume of transported air cargo has increased more than 10 percent each year of the last decade. This increase is largely driven by the massive expansion of e-commerce. The rise in volume has been accompanied by an increase in the types of air cargo shipments, as well as changing (and more demanding) customer expectations, including consumer-driven, just-in-time delivery.

The air cargo industry transports a wide range of cargo, including express shipments, heavy freight, vehicles, machine parts, medical supplies, and cold chain shipments. In addition, multinational corporations are vertically integrating and blending traditionally separate roles, adding further complexity to the shipping system.

COVID-19 has heavily impacted the global supply chain, most notably, the increased demand for personal protective equipment and changes in consumer buying habits. In addition, staffing shortages, training constraints and the overall reduction in air cargo capacity in passenger aircraft flights have further challenged industry operations. The pandemic has reinforced the need for air cargo agility during major logistical disruptions. In response, TSA assessed the situation and issued multiple amendments to address industry concerns during the pandemic; adapting regulatory requirements as appropriate to reflect the operational environment caused by the COVID-19 public health crisis without negatively impacting security.

Policy Shifts

Significant policy shifts have occurred over the last several years, including changes to international standards, developments that could affect the Known Shipper Program (KSP), and implementation of the Air Cargo Advanced Screening regulation issued by Customs and Border Protection (CBP). Air cargo security requires responding to changes in threats, the economy, and environmental conditions. Industry must continually adjust its operations to effectively screen or otherwise secure the increased volume of air cargo, including cargo that due to its size or configuration (for example, large crates, machine parts, vehicles, etc.) that represent a unique challenge when transported on all-cargo aircraft. The global health crisis caused by the COVID-19 pandemic changed the environment in which air cargo operates. A review of these past policy shifts and impact on the industry inform this Roadmap, and the need to ensure agility to respond to future policy shifts.

In June 2021, a significant policy change took effect when new international standards took effect that required all international air cargo transported on a commercial air carrier to be screened or otherwise subject to security controls implemented by an entity approved by a competent national authority. While implementation of ICAO's security measures came at a difficult time due to the COVID-19 pandemic, awareness of the need to comply began in 2016. On September 1, 2016, ICAO notified the United States and other Member States of the decision to ensure a common baseline for all commercial aircraft and align the ICAO Aviation Security Manual (Doc. 8973) best practices and guidance to Annex 17.⁶ TSA began communicating with industry immediately regarding the need to prepare for the June 30, 2021, for all Member States to meet the revised standards.

TSA also began developing options that could support the industry in complying with the ICAO requirement. Just as TSA developed the Certified Cargo Screening Program (CCSP) to provide an option to address the 100 percent screening requirement for cargo transported on passenger aircraft, TSA developed the Third-Party Canine-Cargo (3PK9-C) Program to provide an option and resource to support the industry in meeting the ICAO requirement. In 2018, TSA announced the 3PK9-C Program to allow carriers and CCSFs to contract with TSA-approved providers to use Certified 3PK9-C Teams to screen air cargo to TSA standards for transport on passenger aircraft.⁷ Despite the program's growing use and its overall success, canine screening has operational limitations, such as the availability of certified canine teams and canine safety concerns related to screening certain items. These limitations reinforce the need for expanded technology solutions for air cargo screening to complement other existing capabilities.

By issuing the Secured Packing Facilities (SPF) Order on June 3, 2021, TSA created another option for industry to meet the revised ICAO standards by allowing for an "other entity" to apply security controls to cargo, such that it may be carried aboard an all-cargo carrier. No other ICAO member states have provided industry with all options suggested by ICAO.

⁶ As a signatory to the International Convention on Civil Aviation of 1944, the United States complies with ICAO standards.

⁷ While also required by the *TSA Modernization Act*, section 1941, TSA was developing this program before the requirement was enacted.

Congress directed TSA by section 1942 of the *TSA Modernization Act*⁸ to review the Known Shipper Program (KSP), a risk-based screening program implemented in 1999, prior to 9/11 to help secure the air cargo system. TSA is considering whether more advanced or modern applications of technology may provide the same or better layers of supply chain security, or whether further enhancements to the KSP should be required to meet current or emerging threats.

As a result of the Yemen bomb plot, TSA and U.S. Customs and Border Protection (CBP) collaborated with industry to create the Air Cargo Advanced Screening (ACAS) Program. ACAS utilizes international air cargo shipment data to assess the risk of shipments destined for air transport inbound into the United States, adding an additional layer of security which provides TSA with an ability to assess whether the security applied to any particular piece of cargo is sufficient to address the risk. Initially a voluntary pilot, CBP and TSA implemented the ACAS program worldwide through an interim final rule issued by CBP and a complementary set of security program changes by TSA, which went into effect in June, 2018. TSA recognizes the need to evolve informed risk-based technologies and will evaluate the potential expansion of risk assessment for U.S. origin air cargo.

Macro Trends

Macro trends are long-term directional shifts that affect the air cargo industry and potentially TSA's ability to secure it. The following key macro trends affect the air cargo system:

- **The impact of COVID-19:** The pandemic has put additional pressure on industry to respond to changing consumer needs, as well as distribution demand of COVID-19 vaccines worldwide. Both domestically and internationally, e-commerce air cargo shipments have substantially increased due to the changes in consumer purchasing. Available aircraft capacity has been affected by both the increased e-commerce and vaccine shipment volumes. Some of these changes may become permanent adaptations to the industry.
- **Increasingly diverse and complex stakeholder environment:** The air cargo system is composed of an increasing number of public and private sector stakeholders that engage in an elaborate network of commerce and security activities. This environment has increased in complexity throughout the past decade due to the rise of e-commerce and air cargo volumes. The continuing evolution of this system may require revisions to TSA security policies.
- **Data and analytics:** The proliferation of data across the air cargo system and availability of advanced assessment tools are continually offering new ways to evaluate data for mitigating security risks. Opportunities may exist for TSA and industry to analyze new and existing data to enhance shipper vetting, pre-screening, and screening activities.

⁸ Division K of the *FAA Reauthorization Act of 2018* (Pub. L. 115-254; 132 Stat. 3186; October 5, 2018).



Goals And Objectives

Goal 1:

Advance enhanced and risk-based screening capabilities

Objective 1: Assess the security value of cargo shipper vetting through the TSA KSP.

Risk-based shipper vetting and pre-screening has the potential to improve operational efficiency and security effectiveness, while responding to evolving industry needs. TSA will review the KSP and Known Shipper Management System to assess their security value in the current environment and in response to ICAO's mandate and ASAC/ACS recommendations.⁹

Considering the increase of e-commerce, the post-9/11 security landscape, and the 100 percent air cargo screening requirements for all passenger air carriers, TSA will evaluate the KSP to determine its maximum functionality, usefulness, and effectiveness in cargo shipper- vetting. This assessment will help inform TSA's future approach for risk-based vetting and pre-screening, including whether the KSP should be retained, modified, or replaced.

Outcome: TSA has a comprehensive assessment of the KSP that informs potential program enhancements or replacement, to include any necessary policy changes.

Implementation:

Lead: Operations Support (OS)/
Policy, Plans, and Engagement (PPE)

Fiscal Year: 2022

⁹ Section 1942 of the TSA Modernization Act required the TSA Administrator to direct the ASAC Air Cargo Subcommittee to review the Known Shipper Program. <https://www.congress.gov/115/plaws/publ254/PLAW-115publ254.pdf>.

Objective 2: Analyze pre-screening and advance targeting capabilities.

TSA will assess its processes to understand how to better use data for pre-screening and shipper vetting and to expand advance targeting to intra-U.S. and U.S. outbound international air cargo transported by passenger and all-cargo carriers. This initiative will assess current efforts used for international inbound air cargo that may provide the necessary information to implement necessary layers of security for intra-U.S. and U.S. outbound international air cargo. Current domestic pre-screening requirements have the potential to be strengthened. While this analysis will be a significant undertaking, TSA believes the investment will be justified based on the possible security benefits to be achieved if implemented. TSA will evaluate the policy, legal, and economic implications of applying pre-screening and targeting systems to international freight originating in the United States and will explore how information-based pre-screening and targeting systems may enable new security capabilities.

Outcome: Position the all-cargo industry to add an enhanced, innovative layer of advanced security for intra-U.S. and U.S. outbound air cargo, in addition to the current secured supply chain.

Implementation:

Lead: OS/Intelligence and Analysis (I&A) **Fiscal Year:** 2022

Objective 3: Evaluate opportunities to provide all-cargo aircraft operators the capability to use risk data to assist screening in place of physical screening.

TSA will review options that allow the all-cargo industry to propose alternate risk-based and data-driven security and screening procedures for air cargo screening operations. This review will provide an opportunity to:

- Explore potential programs that collect and use new or additional data for screening based on air cargo risk profiles,
- Direct the flow of air cargo to the most effective screening methods, whether physical and/or non-intrusive screening technologies, and
- Explore security procedures that use non-intrusive data analysis.

These processes may allow the all-cargo industry to increase its screening/security efficiency and reduce costs, while maintaining an appropriate level of security. Additionally, TSA will explore leveraging operational and policy best practices used by international partners that could be applied to U.S. all-cargo operations for intra-U.S. and or international outbound air cargo.

Outcome: The all-cargo industry can better tailor its air cargo operations to each respective business model, while enhancing the flow of commerce and meeting TSA and ICAO security standards.

Implementation:

Lead: OS/PPE and OS/I&A **Fiscal Year:** 2024

Goal 2:

Expand knowledge and information sharing between TSA and industry

Objective 1: Provide support for industry to enhance air cargo screening training.

TSA will enhance its partnership with industry and consider how to best ensure that industry personnel receive standard and consistent training across the supply chain. TSA will assess the current state of training for air cargo screening and associated requirements. Both TSA and industry recognize that effective air cargo screening training is vital to the security of the air cargo system and for efficient flow of commerce. Historically, industry has been responsible for the hiring, training, and testing of its air cargo screeners. However, the ASAC/ACS recently developed a set of policy recommendations that advise more TSA support for screener training to address challenges with consistency, uniformity, and availability of threat-driven training materials and protocols. TSA will continue to work with industry to explore leading practice training programs and determine where and how it can provide support to supplement industry needs.

Outcome: Industry personnel across the supply chain receive standardized, consistent, and high-quality training.

Implementation:

Lead: OS/PPE

Fiscal Year: 2022

Objective 2: Accelerate the speed, and improve the consistency and quality of information sharing between TSA and industry.

TSA will examine current information platforms, such as the Aviation Domain Intelligence Integration & Analysis Cell (ADIAC) and the Homeland Security Information Network (HISN), and their information sharing processes to determine what improvements might further enhance the timeliness of information sharing with industry stakeholders. Strong communication options are essential to ensure industry complies with TSA regulations, meets threat management requirements, and remains up to date on all new and updated security program changes.

Outcome: Industry has the communication tools necessary to adapt to emerging threats and the regulatory changes intended to mitigate them.

Implementation:

Lead: OS/PPE

Fiscal Year: 2023

Goal 3:

Enhance the air cargo industry's technology posture to support security enhancing innovation within the supply chain

Objective 1: Continue to update TSA screening technology technical standards and functional requirements in line with evolving security threats and emerging technology. Maintain adherence to public law (e.g., 9/11 Act) and Federal regulations (e.g., CFR) by continuing to update threat detection requirements commensurate with passenger aviation checked baggage threat detection requirements, and evolving detection requirements and standards as threats evolve. Continue to advance air cargo security by continuously exploring and expanding emergent capabilities, such as canine screening; and expanding merging of operational technique security layers with advancing capabilities such as identity management, better shipper and item tracking, advanced synergy internationally, and exploring partnerships with non-traditional capability providers.

TSA will continue to refine its capability functional requirements to encourage industry innovation and R&D in emerging air cargo screening technologies and advancing other air cargo security-related capabilities. TSA's qualification requirements reflect the current air cargo and threat landscape. However, requirements and capabilities must continue to evolve to reflect the air cargo landscape of the future, both to meet evolving and emergent threats and by providing industry with flexibility to explore new and emerging capabilities and technologies. TSA will build on its technology and other capability standards based on the results of field assessments.

Outcome: Functional and threat detection requirements for air cargo technology evolve with evolution of threats and the state of technology; and technical specifications and standards are flexible to accommodate emerging technology in the air cargo screening industry. Advancing and emergent capabilities are merged and integrated with operational technique security layers.

Implementation:

Lead: OS/Requirements and Capabilities Analysis (RCA) **Fiscal Year:** 2022

Objective 2: Collaborate with industry and other R&D establishments to promote the advancement of technology in the air cargo marketplace.

The air cargo marketplace lacks key incentives to encourage investment in security technologies, such as artificial intelligence and machine learning. As a result, opportunities for innovation that could improve security effectiveness may be limited. TSA will seek new opportunities to establish partnerships with air cargo screening technology vendors and other capability providers, and explore opportunities for funding to support and expand both current and future capability pipelines. TSA will work with industry to understand how to best encourage the development of new security technology and other capabilities.

Outcome: TSA is a leader in the air cargo R&D system, and technology vendors and other capability providers have greater incentives to bring new, affordable capabilities to market.

Implementation:

Lead: OS/RCA **Fiscal Year:** 2023

Goal 4: Modernize air cargo policy

Objective: Modernize standard security programs and policy processes.

The increase of e-commerce, the rise of new technologies, increased cybersecurity-related threats and other macro trends provide TSA an opportunity to review its air cargo policies and ensure they are outcome-focused and continuously mirror the changing environment. TSA will conduct a holistic review of air cargo security programs to determine how we might update or replace them to better reflect the complexities of the modern supply chain, mitigate cybersecurity threats, and to consider how best to conduct future, recurring reviews. TSA will create enhanced internal mechanisms that drive policy development by PPE and provide one voice to industry on policy interpretation issues.

Outcome: TSA has procedures to ensure standard security programs and other policy language is outcome-focused, aligned to the current air cargo system, updated as the industry evolves, and allows industry to continue to innovate.

Implementation:

Lead: OS/PPE

Fiscal Year: 2023

Moving Forward

The execution of the TSA Air Cargo Security Roadmap will start by implementing each objective identified in the previous section. On-going policy efforts and technology pilots will be aligned with these objectives and continued while we finalize implementation plans. These plans will capture dependencies and prioritize objectives and solutions to enable TSA to work towards each goal in a strategic manner. Successful implementation of the Roadmap will require the collective support and dedication of all parties and will make TSA vision for a more secure air cargo landscape a reality.



