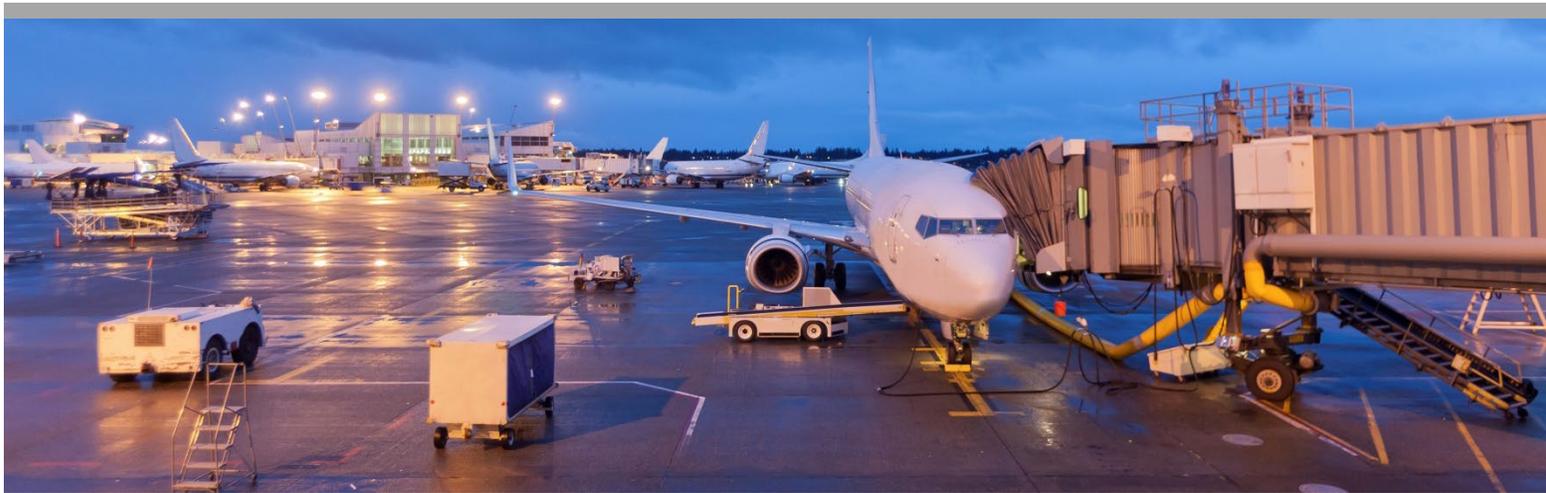




PARAS

PROGRAM FOR APPLIED
RESEARCH IN AIRPORT SECURITY



PARAS 0032

March 2022

Enhancing Security of Cargo Operations at Airports

National Safe Skies Alliance, Inc.

Sponsored by the Federal Aviation Administration

Jane Goslett
Kate Sanderson
Arup
Los Angeles, CA

© 2022 National Safe Skies Alliance, Inc. All rights reserved.

COPYRIGHT INFORMATION

Authors herein are responsible for the authenticity of their materials and for obtaining written permissions from publishers or persons who own the copyright to any previously published or copyrighted material used herein.

National Safe Skies Alliance, Inc. (Safe Skies) grants permission to reproduce material in this publication for classroom and not-for-profit purposes. Permission is given with the understanding that none of the material will be used to imply Safe Skies or Federal Aviation Administration (FAA) endorsement of a particular product, method, or practice. It is expected that those reproducing the material in this document for educational and not-for-profit uses will give appropriate acknowledgment of the source of any reprinted or reproduced material. For other uses of the material, request permission from Safe Skies.

NOTICE

The project that is the subject of this report was a part of the Program for Applied Research in Airport Security (PARAS), managed by Safe Skies and funded by the FAA.

The members of the technical panel selected to monitor this project and to review this report were chosen for their special competencies and with regard for appropriate balance. The report was reviewed by the technical panel and accepted for publication according to procedures established and overseen by Safe Skies.

The opinions and conclusions expressed or implied in this report are those of the individuals or organizations who performed the research and are not necessarily those of Safe Skies or the FAA.

Safe Skies and the FAA do not endorse products or manufacturers.

NATIONAL SAFE SKIES ALLIANCE, INC.

National Safe Skies Alliance (Safe Skies) is a non-profit organization that works with airports, government, and industry to maintain a safe and effective aviation security system. Safe Skies' core services focus on helping airport operators make informed decisions about their perimeter and access control security.

Through the ASSIST (Airport Security Systems Integrated Support Testing) Program, Safe Skies conducts independent, impartial evaluations of security equipment, systems, and processes at airports throughout the nation. Individual airports use the results to make informed decisions when deploying security technologies and procedures.

Through the POST (Performance and Operational System Testing) Program, Safe Skies conducts long-term evaluations of airport-owned equipment to track and document a device or system's performance continuously over its life cycle.

Through PARAS (Program for Appplied Research in Airport Security), Safe Skies provides a forum for addressing security problems identified by the aviation industry.

A Board of Directors and an Oversight Committee oversee Safe Skies' policies and activities. The Board of Directors focuses on organizational structure and corporate development; the Oversight Committee approves PARAS projects and sets ASSIST Program priorities.

Funding for our programs is provided by the Federal Aviation Administration.

PROGRAM FOR APPLIED RESEARCH IN AIRPORT SECURITY

The Program for Applied Research in Airport Security (PARAS) is an industry-driven program that develops near-term practical solutions to security problems faced by airport operators. PARAS is managed by Safe Skies, funded by the Federal Aviation Administration, and modeled after the Airport Cooperative Research Program of the Transportation Research Board.

Problem Statements, which are descriptions of security problems or questions for which airports need guidance, form the basis of PARAS projects. Submitted Problem Statements are reviewed once yearly by the Safe Skies Oversight Committee, but can be submitted at any time.

A project panel is formed for each funded problem statement. Project panel members are selected by Safe Skies, and generally consist of airport professionals, industry consultants, technology providers, and members of academia—all with knowledge and experience specific to the project topic. The project panel develops a request of proposals based on the Problem Statement, selects a contractor, provides technical guidance and counsel throughout the project, and reviews project deliverables.

The results of PARAS projects are available to the industry at no charge. All deliverables are electronic, and most can be accessed directly at www.sskies.org/paras.

PARAS PROGRAM OFFICER

Jessica Grizzle *Safe Skies PARAS Program Manager*

PARAS 0032 PROJECT PANEL

Hilaire Bakam *Port of Seattle*

Brian Cobb *Cincinnati/Northern Kentucky International Airport*

Kristina Dores *TransSecure*

Derek Duiser *Delta Air Lines*

Rob Forester *San Francisco International Airport*

Michele Freadman *Massachusetts Port Authority (Retired); M. Freadman Consulting, LLC*

Tracy Fuller *ACTS-Aviation Security, Inc.*

Meg Graham *National Safe Skies Alliance*

Jon Taylor *Dallas Fort Worth International Airport*

Ex Officio

John Beckius *Transportation Security Administration*

AUTHOR ACKNOWLEDGMENTS

Arup would like to acknowledge the following for their contributions in the development of this Guidance Handbook:

- National Safe Skies Alliance’s PARAS, which provided funding. Thanks are given to the program officer, Jessica Grizzle.
- The PARAS 0032 Project Panel members, who provided significant review and contributions.

Lastly, this research would not have been possible without the help of Arup’s network of aviation experts, who provided input and support throughout the process. Appreciation is given to:

- Chabeli Lebolo, Arup
- Chris Shelton, MSA Security
- James Edgecombe, Air Cargo Security Consultant
- Justin Kelly, MSA Security
- Michal Rottman, LAM LHA Security Innovation
- Paul Arnold, Air Cargo Executive Solutions (ACES)
- Spencer Paret, Arup
- Thomas Bosco, American Corporate Airport Partners

Reviewers:

- Anne Marie Pellerin, LAM LHA Security Innovation
- Richard Davis, Rich Davis Security Consulting
- Ronald Ronacher, Arup
- Stacey Peel, Arup

CONTENTS

CONTENTS	vi
SUMMARY	viii
PARAS ACRONYMS	ix
ABBREVIATIONS, ACRONYMS, INITIALISMS, AND SYMBOLS	1
SECTION 1: INTRODUCTION AND INTENT	2
1.1 Setting the Stage	2
1.2 Applicability	2
1.3 How to Use This Guidance	3
SECTION 2: GOVERNANCE FRAMEWORK	4
2.1 Regulations	4
2.2 Cargo Security Programs	5
2.2.1 Cargo Screening Facility Operators	5
2.2.2 Aircraft Operator Programs	5
2.2.3 Cargo Shippers	6
2.3 Certification Requirements	6
2.3.1 Cargo Screening Facilities	6
2.3.2 Certified Cargo Screening Facilities – Canine	7
2.3.3 Third-Party Certifiers	7
2.4 Governance Models	7
2.4.1 TSA	7
2.4.2 CBP	8
2.4.3 DHS	9
2.5 Compliance Models and Programs	9
2.6 Quality Control, Assurance, and Management Systems	10
SECTION 3: OPERATIONAL CONSIDERATIONS AND AGREEMENTS	12
3.1 Operational Roles and Responsibilities	12
3.2 Screening Methods	13
3.3 Third Party Canine Cargo Program (3PK9-C)	14
3.3.1 Overview of Stakeholders and Their Responsibilities	14
3.3.2 Implementation	15
3.3.3 Acclimation	15
3.3.4 Stakeholder Education and Communication Strategies	16
3.3.5 Certified Explosive Training Aid (CETA) Control and Accountability	17
3.4 Alarm Response Protocols and Coordination/Communication Strategies	19
3.4.1 Alarm Response Protocols	19
3.4.2 Coordination and Communication Strategies	20
SECTION 4: SECURITY MEASURES	21

4.1	Physical	21
4.2	Technological	24
4.3	Human	25
SECTION 5: CARGO SCREENING REQUIREMENTS		27
5.1	Facility Requirements	27
5.2	Technology Requirements	31
5.3	Cargo Handling Facility Optimization Opportunities	32
SECTION 6: APPROACH TO IMPLEMENTATION		34
6.1	Change Management Overview	34
6.2	Implementing and Embedding Change	34
SECTION 7: TOOLS AND CHECKLISTS		36
7.1	Tools	36
7.1.1	Sample Master Operating Plan	36
7.1.2	Extrinsic vs. Intrinsic Motivation	37
7.2	Checklists	37
7.2.1	Cargo Screening Facility Checklist	37
7.2.2	Self-Audit Checklist	38
7.2.3	3PK9-C Supplier – Information Requirements	38
REFERENCES		41

TABLES & FIGURES

Table 3-1. Airport Security Stakeholders and Responsibilities	12
Table 5-1. Technology Throughput Rates and Screening Limitations	31
Table 5-2. Screening Method Footprint Requirements	32
Figure 1-1. Airport Security Stakeholders within Cargo Operations	2
Figure 2-1. CCSP Facility Security Requirements	7
Figure 2-2. TSA Oversight of Air Cargo Operations	8
Figure 4-1. Proposed Layered Approach to Security	21
Figure 4-2. SIDA Boundary Demarcation Tools	23
Figure 5-1. Indicative Cargo Screening Facility Layout	27
Figure 5-2. Cargo Screening Process Flow Diagram	28
Figure 6-1. Key Change Management Stages	34

SUMMARY

Arup and its assembled subject matter expert group developed this guidance on behalf of National Safe Skies Alliance's Program for Applied Research in Airport Security (PARAS). The document is intended to be a comprehensive resource to help airports and their stakeholders make well-informed decisions to ensure secure and efficient cargo operations. Specifically, it provides an overview of the regulatory context for air cargo operations requirements, guidance and best-practice recommendations for security programs and measures, including screening methods and facility security measures. At the time of publication, the Third-Party Canine-Cargo Program (3PK9-C) was an emerging service for the air cargo industry; this document pays particular attention to the implementation of 3PK9 in a cargo operation.

Research for this project was conducted over several months and involved a literature review and stakeholder workshops. Experts from different parts of air cargo operations were engaged to produce guidance from which airports of all configurations, sizes, and resource levels can benefit.

PARAS ACRONYMS

ACRP	Airport Cooperative Research Program
AIP	Airport Improvement Program
AOA	Air Operations Area
ARFF	Aircraft Rescue & Firefighting
CCTV	Closed Circuit Television
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
COO	Chief Operating Officer
DHS	Department of Homeland Security
DOT	Department of Transportation
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FSD	Federal Security Director
GPS	Global Positioning System
IED	Improvised Explosive Device
IP	Internet Protocol
IT	Information Technology
MOU	Memorandum of Understanding
RFP	Request for Proposals
ROI	Return on Investment
SIDA	Security Identification Display Area
SOP	Standard Operating Procedure
SSI	Sensitive Security Information
TSA	Transportation Security Administration

ABBREVIATIONS, ACRONYMS, INITIALISMS, AND SYMBOLS

3PK9-C	Third-Party Canine Cargo Program
ACAS	Air Cargo Advance Screening
AOSSP	Aircraft Operator Standard Security Program
ATF	Bureau of Alcohol, Tobacco, Firearms, and Explosives
BDO	Behavioral Detection Officer
CBP	Customs and Border Protection
CCSF	Certified Cargo Screening Facilities
CCSF-K9	Certified Cargo Screening Facility – Canine
CCSP	Certified Cargo Screening Program
CCSP-K9	Certified Canine Security Program – Canine
CETA	Certified Explosive Training Aid
CHRC	Criminal History Records Check
CTPAT	Customs Trade Partnership Against Terrorism
EAA	Exclusive Area Agreement
EDC	Explosive Detection Canine
ETD	Explosive Trace Detection
IAC	Indirect Air Carrier
ICAO	International Civil Aviation Organization
PPE	Policy, Plans, and Engagement
PSI	Principal Security Inspector
SPF	Secure Packing Facility
SSP	Standard Security Program
STA	Security Threat Assessment
ULD	Unit Load Device
VSS	Video Surveillance System
WMS	Warehouse Management System

SECTION 1: INTRODUCTION AND INTENT

1.1 Setting the Stage

The movement of cargo through airports is an essential component of the global economy. It is relied on by individuals and businesses, as well as air carriers and airports for the revenue it provides. With the rise of e-commerce, ensuring efficient cargo operations is vital for meeting increasingly quick expected delivery times. However, while efficiency is key, the air cargo environment requires enhanced security due to the threat of concealed explosives and unlawful access. Air cargo operators must achieve a balance between operational efficiency and security.

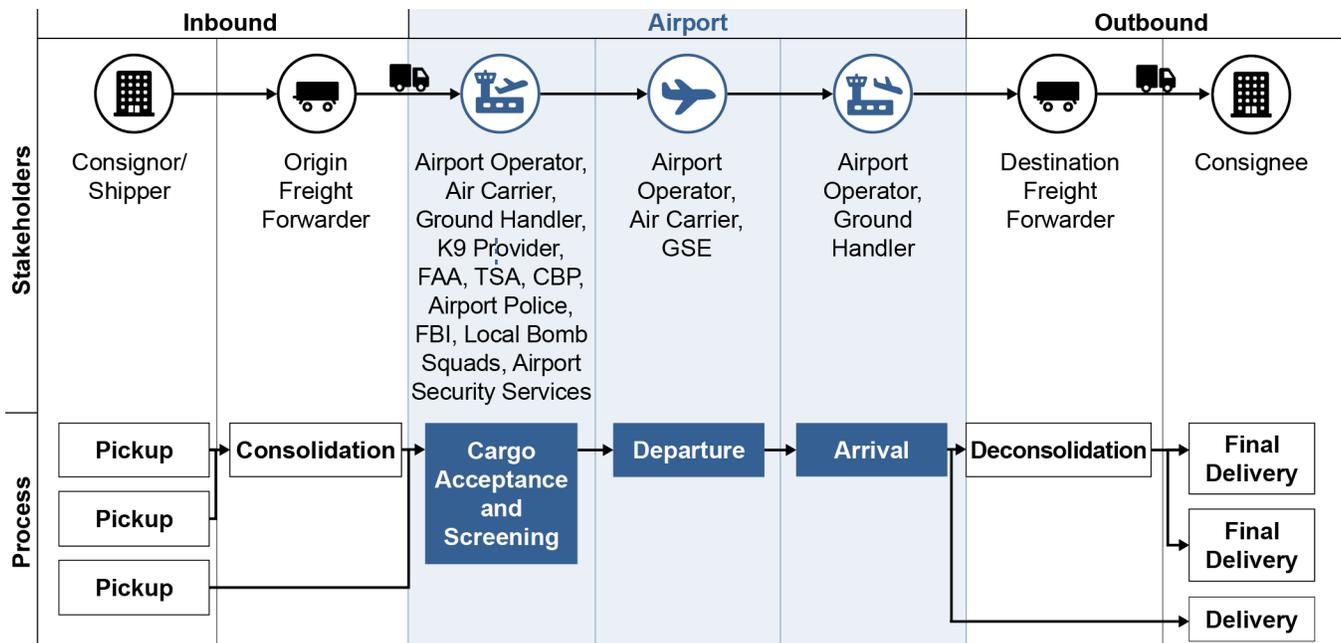
There are numerous considerations for enhancing the security of cargo operations at airports. The cargo facility itself is typically on the airport perimeter, so measures to restrict access to regulated areas must be explored and implemented. All cargo must be screened to detect the presence of concealed explosives before being loaded onto commercial aircraft for transport. The operation involves the coordination of several stakeholders, particularly when alarm-raising incidents occur. Additionally, international standards and domestic regulations evolve, meaning programs must adapt to changing regulatory environments by implementing new methods and technologies.

1.2 Applicability

This document is intended to help airports and their associated stakeholders, including cargo facility operators, consultants, suppliers, law enforcement and others engaged in maintaining the security of cargo operations at airports. An overview of applicable stakeholders in the cargo operation environment is shown in Figure 1-1.

This document provides guidance as well as options and recommendations. It is not intended to prescribe mandatory measures to enhance security in cargo operations at airports.

Figure 1-1. Airport Security Stakeholders within Cargo Operations



1.3 How to Use This Guidance

This document is intended to be a comprehensive resource; however, it is structured so that each section can be read as a standalone guide to enable individuals to access information that is pertinent to their role and responsibility. We encourage the reader to navigate to the relevant section, whether that be to understand the regulatory environment and appropriate governance frameworks, consider security measures or operational processes, or to learn how to implement new programs.

ICONS

The icons shown below have been placed throughout the document to call out specific recommendations and watchouts.



Recommendation



Watch Out

APPROACH TO IMPLEMENTATION

Section 6 is dedicated to guidance on implementing new programs with effective change management. As airport and cargo operators adapt their operations to new standards and regulations, this section can be used to effectively establish or change elements of their operation.

TOOLS AND CHECKLISTS

Referenced throughout the document are sample tools and checklists that are recommended for standardizing and enhancing cargo operations. Section 7 can be used independently as a reference for recommended documents and checklist items.

SECTION 2: GOVERNANCE FRAMEWORK

The security of air cargo operations is subject to oversight based on a diverse and robust set of regulatory requirements. Individual operator security requirements are determined by many factors, including the type of operation being conducted, the method of carriage, who is tendering the cargo, and the location of the screening, in addition to several other factors. As a result of these security regulations, air cargo operators and cargo screening facility operators are subject to various program certification requirements to ensure that security is carried out effectively and in compliance with the law. Airport operators must ensure that they fully understand these varying requirements and their ultimate role in maintaining a coordinated and effective security posture.

To achieve this, airport operators must incorporate air cargo stakeholders into their governance, oversight, and management activities in a way that supports meaningful engagement and provides the necessary level of support and oversight to ensure that the airport remains compliant. While not all airports have robust cargo operations, it is important that airports with federally regulated cargo operations understand applicable governance models, and ensure that key activities and functions are accounted for in the roles and responsibilities of airport staff.

2.1 Regulations

While there are several laws that dictate security requirements for air cargo operators and facilities where air cargo is screened, there are specific regulations that airports should be aware of:

- **Public Law 110-53:** The Implementing Recommendations of the 9/11 Commission Act of 2007 mandated that all cargo must be 100% screened for threat items and explosives before being loaded on passenger aircraft.
- **49 CFR § 1540 – Civil Aviation Security:** This law codifies regulatory requirements for civil aviation, including outlining requirements for Security Threat Assessments (STA) and general requirements for those holding approved security programs.
- **49 CFR § 1542 – Airport Security:** This law codifies airport security requirements, including cargo security requirements, and defining secured areas of the airport and the impact of those areas on screening and access control requirements. The law also identifies personnel badging, control, and training requirements for those accessing secure areas of the airport facility.
- **49 CFR § 1544 – Aircraft Operator Security:** This law codifies regulatory requirements for air carriers and commercial operators. It stipulates security requirements for operations and the implementation of security programs. The law also outlines performance requirements for screening personnel who are employed by aircraft operators, and threat response and reporting protocols for covered operators.
- **49 CFR § 1546 – Foreign Air Carrier Security:** This law codifies regulatory requirements for foreign air carriers conducting operations within the territorial airspace of the United States. It outlines security program requirements for operators. As in 49 CFR § 1544, this law also outlines performance requirements for screening personnel who are employed by aircraft operators, performing screening for US-bound flights, as well as threat response and reporting protocols for covered operators.
- **49 CFR § 1549 – Certified Cargo Screening Program (CCSP):** This law outlines requirements for the CCSP, including the application, review, and approval of certified cargo screening facilities, and the inspection authorizations and requirements for oversight of these facilities.

- **International Civil Aviation Authority (ICAO) Annex 17, Security 4.6:** This section of Annex 17 has been amended to require all member states to screen 100% of international air cargo transported on all all-cargo aircraft by June 30, 2021.
- **19 CFR § 122 – Air Cargo Advance Screening (ACAS):** This law outlines requirements for air carriers to submit advance shipment data for cargo being carried to the US from a foreign location.

2.2 Cargo Security Programs

The TSA has taken a multi-layered approach to cargo security, establishing several security programs for aircraft operators, including all-cargo operators and those that ship air cargo on passenger aircraft. US Customs and Border Protection (CBP) also has security requirements that apply to inbound cargo. These programs provide operator-specific requirements and are applied based on the nature of operations being conducted.

2.2.1 Cargo Screening Facility Operators

- **Certified Cargo Screening Program (CCSP):** Under 49 CFR § 1549, TSA certifies and permits private companies to screen cargo locally (including off-airport) using TSA-approved methods and standards. This voluntary program was developed to allow the screening of cargo early in the supply chain, and to validate the integrity of shipments through required security standards. Participating companies are vetted by TSA and must maintain stringent chain-of-custody methods.

2.2.2 Aircraft Operator Programs

- **Aircraft Operator Standard Security Program (AOSSP):** The AOSSP is for operators with Part 121 and Part 125 certificate holders, which includes scheduled passenger service operations using aircraft with an FAA-certified seating capacity of 61 or more seats, regardless of the number of existing seats. This program applies to all scheduled passenger service operating into or out of a TSA-controlled sterile area.
- **Model Security Program:** This program is for foreign air carriers conducting operations into the territorial airspace of the United States.
- **Twelve-Five Standard Security Program in an All-Cargo Operation:** This program applies to Part 135 operators conducting operations in aircraft with a maximum certificated take-off weight of 12,500 pounds in all-cargo operations.
- **Full All-Cargo Aircraft Operator Standard Security Program:** This program applies to Part 119 operators conducting operations in aircraft with a maximum certificated take-off weight of 100,309.3 pounds carrying cargo and authorized persons.
- **Indirect Air Carrier Standard Security Program:** This program applies to non-certificated operators who indirectly transport property using the services of commercial air carriers.
- **Air Cargo Advance Screening (ACAS):** Through 19 CFR § 122.48b, this program requires air carriers traveling to the US from foreign locations to submit shipment data for cargo before the cargo is loaded on the plane. CBP and TSA analyze this data in the CBP's 24-hour National Targeting Center to identify specific threats in real time and intercept high-risk shipments.

2.2.3 Cargo Shippers

- **Known Shipper Program:** This program requires aircraft operators, foreign air carriers, and Indirect Air Carriers to qualify their clients as known shippers in accordance with requirements in their TSA-approved security program. Through the Known Shipper Management System, TSA assesses and approves known shipper status. Qualified known shippers can transport their cargo on passenger aircraft.

2.3 Certification Requirements

2.3.1 Cargo Screening Facilities

TSA requires certification for cargo screening facilities that tender cargo for shipping on commercial passenger aircraft. The regulatory requirements for becoming a Certified Cargo Screening Facility (CCSF) are outlined in 49 CFR § 1549.7.¹ Cargo screening facilities must be in the US, apply for approval, and meet several stringent requirements to be approved as a CCSF. It is important to note that the certification requirements apply to the cargo and/or facility operator specifically.

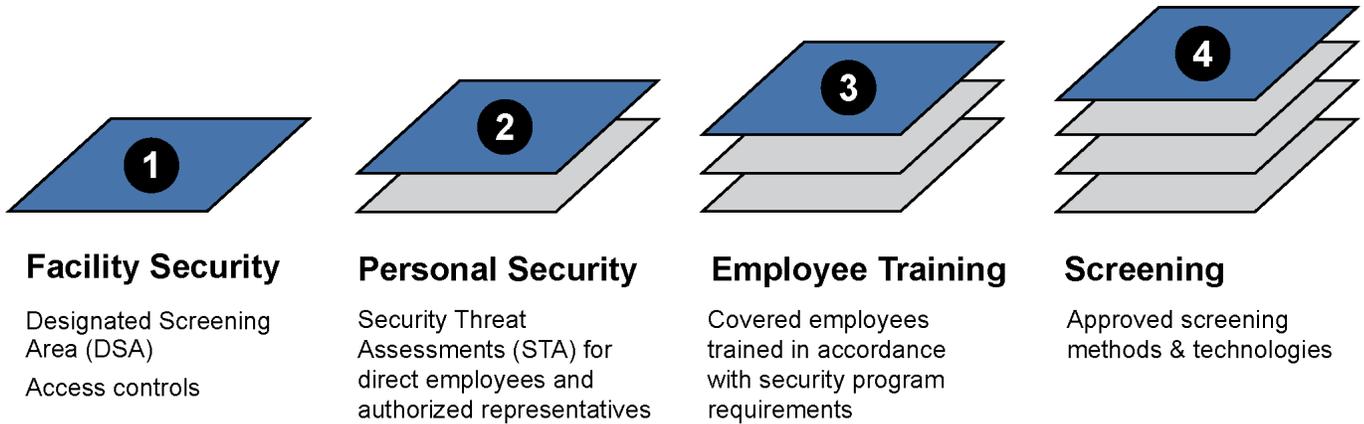
Facilities that tender cargo directly to an air carrier, foreign air carrier, or an Indirect Air Carrier (IAC) can participate in the program. These facilities include warehouses and distribution facilities, manufacturers, airport cargo facilities, and independent cargo screening facilities that are used by several shippers.

TSA will provide the cargo screening facility with a standard security program for adoption. The facility operator must maintain operations in accordance with the facility security program to remain compliant. Before the facility can be approved, TSA will perform an inspection to ensure the facility meets the requirements and is operating in accordance with the security provisions as outlined in the standard security program. Security programs remain in force for three years, unless modifications are made in writing, and are subject to formal renewal at the end of the 36-month period. Once certified, facility operators are required to comply with all security directives and/or emergency amendments issued to the security program by TSA, and are subject to routine, unannounced inspection of their facilities and operations.

To maintain these requirements, it is of specific importance that facilities create a Designated Screening Area, and can segregate screened cargo from unscreened cargo in a way that ensures effective chain of custody. Additionally, screening requirements for operations must occur using approved methods of screening, and items must be screened at the piece level unless screened by the 3PK9-C protocol (see Section 2.3.2) or using approved palletized screening technologies and procedures. Personnel who carry out screening and oversight activities are required to be vetted and trained in accordance with TSA requirements.

¹ 49 CFR § 1549.7: <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-XII/subchapter-C/part-1549/subpart-A/section-1549.7>

Figure 2-1. CCSP Facility Security Requirements



2.3.2 Certified Cargo Screening Facilities – Canine

In 2018, TSA announced the establishment of the 3PK9-C program to allow the use of certified third-party explosive detection canines (EDC) for the screening of air cargo. This program allows approved third-party companies to certify EDCs and to engage in formal agreements with regulated parties, such as aircraft operators, to use these canines for the screening of air cargo. Operators wishing to be certified as a CCSP-K9 must apply under, and adhere to, the program requirements outlined in 49 CFR § 1549.

2.3.3 Third-Party Certifiers

Companies that procure, train, and deploy EDCs must have canine teams approved by third-party certifiers to ensure the teams meet TSA certification requirements. To become approved as a third-party certifier, applicants must be able to conduct thorough testing and evaluation for the detection of explosives, and must have a minimum of five years of explosives and/or narcotics detection experience in conducting certifications within an approved organization as outlined in 83 FR 23287. Currently, there are 12 approved third-party certifiers for EDC teams operating under CCSP-K9 programs.

2.4 Governance Models

Federal security regulations for cargo operations apply to the air cargo operator and cargo screening facility operator’s screening and physical security requirements. Therefore, it is important that airports understand the roles of those charged with security oversight at these locations and the role of the federal government in providing oversight and compliance for air cargo operators.

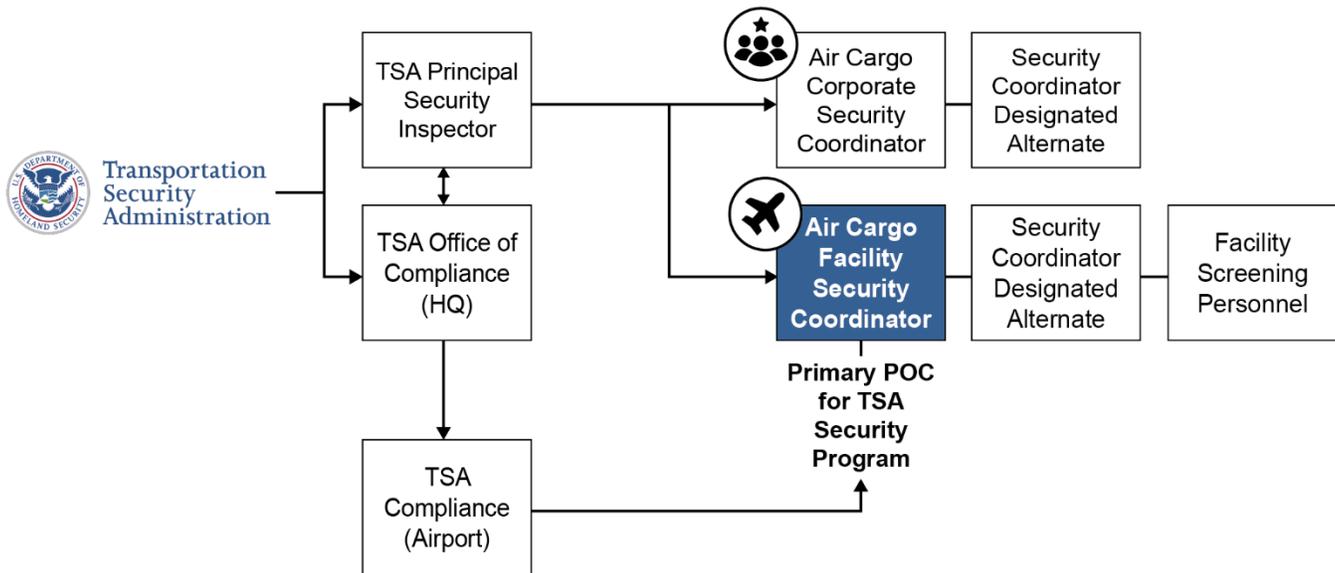
2.4.1 TSA

The two primary offices within TSA that provide oversight for air cargo operators are the Operations Support – Policy, Plans, and Engagement (PPE) office and the Security Operations – Compliance office. Each air cargo operator or facility operator has an assigned Principal Security Inspector (PSI) from PPE who serves as the primary point of contact and approving authority for air cargo security program certification. The PSI routinely engages with cargo operators at the corporate and facility level, and ensures that Security Coordinators (see paragraph below) receive the most up-to-date program guidance, including notifications regarding security directives and emergency amendments to their approved security programs. The Security Operations office, through the local airport Assistant Federal Security

Director – Inspections, conducts all in-person security inspections to ensure operator compliance with security program requirements.

Under 49 CFR § 1549.107, each air cargo or facility operator must identify a Security Coordinator and a designated alternate Security Coordinator who must undergo an STA and complete required training to be approved for their role. A Security Coordinator and a designated alternate must be identified at both the corporate level and the individual facility level, and must be available 24 hours per day, 7 days per week. The Facility Security Coordinator is the primary point of contact for the TSA PSI and for all compliance-related activities. This individual is required to maintain and update the security program, and notify TSA of any covered changes in accordance with the program requirements. This overview is summarized and represented in Figure 2-2.

Figure 2-2. TSA Oversight of Air Cargo Operations



2.4.2 CBP

While CBP regulations primarily impact air cargo operators that bring cargo into the US from foreign locations, domestically CBP works with more than 11,000 land, maritime, and air cargo companies through the Customs Trade Partnership Against Terrorism (CTPAT)² to enhance supply chain security and support broader risk-based analysis of inbound cargo. Benefits of CTPAT participation include reduced number of CBP examinations, moving to the front of the line for inspections, and shorter wait times at the border. Air carriers must meet minimum eligibility requirements to participate in CTPAT.³

Ensuring continuous seal integrity on trailers and containers is a crucial element of a secure supply chain. CTPAT members must have detailed high-security seal procedures that describe how seals are issued and controlled at the facility and during transit. Procedures must provide the steps to take if a seal is altered, tampered with, or has the incorrect seal number. These steps include documentation of the event, communication protocols to partners, and investigation of the incident. The findings from the investigation must be documented, and any corrective actions must be implemented as quickly as possible. These written procedures must be maintained at the local operating level so that they are easily accessible. Procedures must be reviewed at least once a year and updated as necessary.

² <https://www.cbp.gov/border-security/ports-entry/cargo-security/ctpat>

³ <https://www.cbp.gov/border-security/ports-entry/cargo-security/ctpat/security-guidelines/air-carriers>

CBP's ACAS program also requires all air carriers to submit advance shipment data for cargo being carried into the US from a foreign location. In June 2018, this program became mandatory, requiring operators to submit shipment data, prior to loading, for the purposes of advance targeting activities for high-risk cargo.



Watch out

Sealing of trailers and containers is crucial, including having a comprehensive written seal policy that addresses all aspects of seal security. CTPAT Members much have detailed high-security seal procedures.

2.4.3 DHS

Canada and the United States, through the DHS, have established a bi-lateral agreement, the Integrated Cargo Security Strategy,⁴ aimed at identifying and mitigating risk early, and facilitating the flow of legitimate cargo through increased partnership and cooperation. As part of this plan, the countries work together to harmonize activities and increase use of a risk-based approach to cargo security through industry and government partnerships.

2.5 Compliance Models and Programs

Air cargo operators that are performing screening of cargo under an approved TSA Security Program must submit to audit and inspection of that program by the TSA at any time. TSA employs more than 1,200 inspectors who perform inspections of procedures and programs, and provide recommendations for corrective action when compliance issues are identified. These inspectors are also responsible for managing cases of non-compliance through various mechanisms codified in the law. TSA creates annual compliance workplans to ensure that routine and random inspections are conducted for each covered operator. TSA, working with CBP in the ACAS program, also conducts risk-based identification of high-risk cargo, which increases security inspection requirements for aircraft operators, as outlined in their security program.

All inspection results are entered into the Performance and Results Information System (PARIS), which allows TSA to track the performance of a carrier at both the corporate and local level. TSA headquarters personnel with cargo expertise review air cargo inspections and track performance and suspicious activity trends through data aggregation and analysis. Findings of non-compliance result in a Notice of Violation, and potential civil penalties can be levied on the operator in accordance with TSA's Enforcement Sanction Guidance Policy.⁵

In June 2019, TSA formally implemented the TSA Action Plan⁶ process to incentivize stakeholders and regulated parties, including air cargo operators, to improve security and self-report potential issues of non-compliance or existing vulnerabilities. This voluntary program engages stakeholders at multiple levels to encourage partnerships in resolving issues of non-compliance or noted vulnerabilities, resulting in offset of potential civil penalties or regulatory adjudication of the findings. If an operator self-reports instances of non-compliance, outlines actions that have or will be undertaken to remedy the matter, and

⁴ https://www.dhs.gov/sites/default/files/publications/integrated-cargo-security-strategy_0_0.pdf

⁵ https://www.tsa.gov/sites/default/files/enforcement_sanction_guidance_policy.pdf

⁶ https://www.tsa.gov/sites/default/files/action_plan_program.pdf

takes into consideration the root cause of the issue and their compliance history, TSA can mitigate potential fines and aid the operator to overcome any deficiencies.

2.6 Quality Control, Assurance, and Management Systems

It is important for air cargo operators to implement effective administrative and enforcement strategies, which should incorporate quality control, assurance, and management systems to ensure adherence with the myriad of regulatory requirements that apply to these operating environments. This includes aspects like contract language, airport rules, and regulations. Operators must collaborate with the relevant regulated parties, including:

- CBP
- TSA
- FBI
- Airport Police and Explosive Ordinance Disposal
- Local City Police
- Air Carrier
- 3PK9-C company
- FAA Traffic Control

Given the size and complexity of these operations, it is important for operators to incorporate quality control and assurance into their day-to-day processes at all levels of the organization. There are several activities shown below that operators can undertake to ensure compliance with security requirements.

SELF-AUDITS

Air cargo screening facility operators should routinely perform self-audits on various aspects of their operations to ensure they maintain compliance with regulatory requirements. See Section 7.2.2, [Self-Audit Checklist](#).

EVALUATION AND TESTING

Air cargo screening facility operators should create evaluation and testing programs that allow for overt and covert testing of their security processes and procedures. Deficiencies identified during evaluation and testing should be corrected immediately, and lessons learned should be incorporated back into training programs.

CORRECTIVE ACTION PLANNING

Deficiencies noted during self-audits, testing, and evaluation should be thoroughly documented, and reported to TSA as required in the Security Program. A corrective action plan should be developed to identify and monitor performance against improvement activities until compliance has been achieved. Companies should maintain corrective action plans as part of their security documentation, and a primary point of contact for corrective action planning should be identified to ensure that deficiencies are fully addressed within a set period.

VIDEO SURVEILLANCE SYSTEM AUDITING

If operators and/or facilities maintain video surveillance systems (VSS), a routine audit is important to ensure that the systems are functioning correctly, and that data is being maintained as required. These systems can often be helpful in identifying deficiencies and highlighting areas that warrant additional attention. VSS recordings can also be used to support matters related to compliance.

EXERCISE PROGRAMS

Air cargo screening facility operators can design simple exercise programs for covered personnel that aid in training and help identify areas for improvement. TSA provides some exercise resources to transportation operators through their Intermodal Security Training and Exercise Program,⁷ which may be helpful to operators who are interested in incorporating exercise programs into their quality control, assurance, and management activities.

DATA QUALITY ANALYSIS

Air cargo operators should routinely review data quality and conduct analysis to ensure that data is being collected, retained, and, if needed, submitted in accordance with all requirements and schedules.



Recommendation

Air cargo facility operators should design simple exercise programs to aid in training, and should regularly perform self-audits to ensure they maintain compliance.

⁷ <https://www.tsa.gov/for-industry/intermodal-security-training-and-exercise-program>

SECTION 3: OPERATIONAL CONSIDERATIONS AND AGREEMENTS

There are several factors an airport operator should consider when making decisions about their operations, including the development of operating agreements with their stakeholders. This section identifies the operational roles and responsibilities at an airport, the stakeholders that need to be engaged, the different screening methods available, and detailed considerations for the 3PK9-C program.

Section 7.1.1, [Sample Master Operating Plan](#) provides a breakdown of all the components that need to be discussed and agreed upon by all stakeholder groups when setting up a new cargo operation or adapting an existing operation. Results should be documented for every facet of the proposed operation to ensure all parties work in harmony to respond to incidents appropriately and safely, while minimizing disruption to operations.

3.1 Operational Roles and Responsibilities

There are often multiple stakeholders involved in airport security and the deployment of resources and measures. Roles and responsibilities are dependent on various factors such as the ownership, function, and operation/use of the facility. When developing a Master Operating Plan (see Section 7.1.1), responsibilities for each stakeholder should be documented.

Table 3-1. Airport Security Stakeholders and Responsibilities

Organization/ Agency	Role	Comment
Government Security Agencies	Provision of threat information	Threat information to inform operational security may be provided by the security service, by the appropriate regulator or responsible agency (e.g., DHS; CBP; FBI Bomb Technicians), or it may be the responsibility of the asset owner/operator to ensure they are informed, and to identify current threats.
Regulator or Authority	Regulation; Oversight; Provision of risk information; Quality Assurance; Passenger Screening; Baggage Screening	In airport environments, the regulator imposes security requirements on the airport and carries out oversight through monitoring, inspection and enforcement. In the US, TSA is responsible for conducting passenger checkpoint and baggage screening operations.
Owner/ Airport Operator / Aircraft Operator	Risk owner responsible for operation of specific landside terminal functions, such as bag drops, check-in, etc.	Most facility owners are also risk owners for the facility. In a regulated environment, the security operational outcomes required may be mandated, but implementing an appropriate measure to mitigate the risk is often left up to the operator.
Law Enforcement Agencies	Local police force providing officer presence, routine policing (for crowd control), and specialized units for response, investigation	Policing is generally the responsibility of the relevant local police force. Other specialized national police forces will be involved as required. Larger airports often have their own police station and units permanently deployed.
Airport Security Team	Ensuring compliance with transportation security regulations by establishing security-restricted areas.	The airport security team is responsible for preventing unauthorized access to airside areas and security-restricted areas.

Organization/ Agency	Role	Comment
Security Service Providers	<p>Commercial organizations providing security services for operators.</p> <p>Security service providers offer a very broad range of security service from high-level risk assessment to security control of parking/drop off.</p>	<p>In an airport, recent best practice for landside security involves the use of:</p> <ul style="list-style-type: none"> • Behavioral Detection Officers (BDO) deployed by the airport operator • Other security service providers deployed on behalf of stakeholders e.g., airlines • Technology e.g., screening for large weapons or threat objects—as opposed to screening for smaller threat objects at the main passenger checkpoint. <p>Security service providers are routinely engaged in other areas e.g., vehicle control on the terminal forecourt.</p> <p>Following landside attacks, many airport operators have deployed BDOs to covertly monitor behavior in the landside areas. BDOs may be directly engaged by the airport operator or subcontracted to a security service provider.</p>

While not necessarily security-specific, these additional agencies and organizations may have a role in cargo security operations on a case-by-case basis:

- FAA
- U.S. Fish and Wildlife Service
- State and Local Licensing Agencies
- Exclusive Area Agreement (EAA) Holders
- Airport Tenants

3.2 Screening Methods

Selecting a suitable screening method is an important decision in any cargo operation. The chosen method should consider several factors, including the size and scale of the operation and the type of cargo that is being screened. Example considerations also include:

- Will the screening of export cargo be taking place, and if so, where? In many cases this will depend on the air carriers operating from that airport and the exact routing.
- What is the cargo configuration that is being transported?
 - Is it being trucked into the airport facility and screened prior to air transport?
 - Is it being screened off airport property,⁸ secured, and then brought into the airport for air transport?
 - Is the cargo to be screened prebuilt on pallets, prior to arrival?
 - Is the cargo considered heavy freight (over 150 lbs)?
 - Is the small package cargo considered as individual shipments?
 - Is the cargo a configuration of consolidated packages (small bags)?

⁸ Off-airport property can include a shipper's facility, an IAC, an IAC 3PK9 facility, a CCSF, or a designated area within the air carrier's facility.

These considerations will dictate the form of screening that can be conducted while expediting movement of the cargo. Many cargo facilities do not have space to hold cargo, so efficiency is key to the operation. All these scenarios are viable options for other stakeholders in the supply chain to screen cargo. Each of these initial considerations will build off each other to better understand if and how screening will need to be conducted. Detailed processes and information on how equipment will be used should be a core component of any regulated party's standard security program.

Potential screening methods include:

- Visual inspection
- Hand search
- External Explosive Trace Detection (ETD)
- Internal ETD
- X-ray processes
- 3PK9-C processes
- Explosive Detection Systems (this is under development with TSA and private stakeholders)

A list of the current technologies that are used in the screening of cargo and approved by the TSA can be found on the Air Cargo Technology Security Listing.⁹ See Section 5, [Cargo Screening Requirements](#) for more information on the facility requirements.



Recommendation

Airport operators must consider the size and scale of the operation, as well as the type of cargo that is being screened, as this will inform the operation.

3.3 Third Party Canine Cargo Program (3PK9-C)

In 2018, TSA announced the establishment of the 3PK9-C program to allow the use of certified third-party explosive detection canines for the screening of air cargo. See Section 2.3.2, [Certified Cargo Screening Facilities – Canine](#).

Full 3PK9-C process details are available on the Homeland Security Information Network. TSA-approved processes and procedures will not be discussed in an open format due to the sensitive nature of the material; however, this section highlights several factors to consider if implementing the 3PK9-C program.

3.3.1 Overview of Stakeholders and Their Responsibilities

Unless the airport chooses to conduct screening, responsibilities for canine screening lie with the air carrier and the CCSP-K9 program holders. It is important to note that, at the time of this document's publication, IACs do not have the ability to screen with 3PK9.

The roles and responsibilities that each entity will carry out per the TSA-approved program are governed by the program amendment for the air carrier attached to Chapter 8 of the Full All-Cargo

⁹ https://www.tsa.gov/sites/default/files/non-ssi_acstl.pdf

Operators Standard Security Program and the Certified Cargo Screening Program–Canine. Both documents are classified as SSI.

The airport should control their responsibilities through tenant agreements and/or an EAA with the regulated parties involved. In these programs, the questions of alarm resolution protocols should be addressed in detail, so that everyone understands the process and their responsibilities.

3.3.2 Implementation

Implementing a 3PK9-C program takes time and planning. There is an approximately 90-day turnaround time for suppliers from request to being onsite. Planning should involve, but not be limited to:

- Developing the Master Operating Plan and any required Operating Agreements
- Facility readiness for canine accommodation and rest areas
- Supplier badging
- Travel path of the 3PK9 company, including employees
- Training aid control planning
- Acclimation periods
- Operational readiness through tabletops and live exercises

Relevant stakeholders should be involved in all meetings and discussions to ensure alignment and coordination. Adhering to an implementation plan allows for robust planning and can help with achieving any go-live deadlines.



Recommendation

Develop an Implementation Plan for starting a 3PK9 program that involves relevant stakeholders at each phase. Phases could include:

- Initial Concept
- Development
- Implementation
- Review
- Finalization



Watch out

Badging for 3PK9 Suppliers may take longer than anticipated and can become a barrier to going live. Start the badging process as early as possible.

3.3.3 Acclimation

Acclimation of the animals and their handlers with operational staff and cargo handlers is a key aspect to a successful operation. The acclimation period should feature:

- The canine being brought into the facility to meet and greet the staff and operation (several times prior to and after the operations).

- Canines being acclimated to the operating environment (non-operating hours) and being exposed to the actual area, Unit Load Devices (ULD), roller mats, weather, noise, movement of ULDs, etc.
- Handlers going through their motions in the actual operation (without the canines present) so that they can acclimate to the operation and understand what is expected of them. This also helps other workers in the facility better understand what is going on and why, so they can better orchestrate their movements with those of the handler.



Recommendation

Acclimation should be done over a two-week period before starting to operate on site.

3.3.4 Stakeholder Education and Communication Strategies

Stakeholder education for the existing workforce is key to the success of both the program implementation and the acclimation period. Education should include communication on what is happening and why, and what is expected of the existing workforce while the canine is in use.

There are employees who may have concerns or aversions to working in and around a canine team. It is recommended that the 3PK9-C provider explain the team's function and roles in the work environment, explaining that the canine is a diagnostic tool for screening and is not a pet. Job aids (e.g., posters, communication postings) can be developed and posted in the screening areas.

An important message to relay to the workforce is that although social, the canines should not be approached without the handlers' knowledge. This includes petting, feeding, or rewarding in any manner. Signage should be deployed at a minimum on each canine's collar (ex., Do Not Pet) as well as at the canines' crates in the break area.

Handlers should familiarize the staff with their canines' working hours. For example, if six hours of direct screening time is required, the handlers and their canines may need to be on site for eight hours. Actual screening ("sniff") time is where the canine is actively engaged in odor detection. This occurs when a canine's nose is working a pattern or is engaged on a pallet, box, or in a ULD. Being in the screening area, walking between pallets, and coming in and out of ULDs are all outside of the actual screening times that need to be documented for compliance/regulatory needs. It is very realistic to have a four-hour shift with the canine completing two hours of direct screening time.

Discussion and resolution of potential issues involving employees should occur ahead of time in collaboration with the company's Human Resources department, the airport, and airport stakeholders whose presence is required for incident response. Issues such as employee fear of canines, allergies, religious objections, or potential incidents involving the canine should all be addressed before implementation. Additionally, new hires within the facility should receive training during onboarding to minimize potential disruptions.



Recommendation

Handlers should familiarize the workforce with their CETA procedures and regulations.

**Watch out**

HR discussion and resolution of potential issues need to be addressed ahead of time, covering issues such as employees being afraid of canines, any allergies, or what happens when incidents occur.

3.3.5 Certified Explosive Training Aid (CETA) Control and Accountability

Certified Explosive Training Aids (CETA) are tools used in 3PK9 training, but they are also regularly used at cargo screening operations to evaluate canine performance and to ensure screening accuracy is maintained. 3PK9 operators advise that it is necessary to put canines on scent three to four times a day while an operation is running to ensure screening accuracy and efficacy. Training aids and controls are designated in the CCSF – Canine program and are specific to each 3PK9 company, TSA, and the appropriate local authorities.

Local, state, and federal agencies have a regulatory framework designed for the obtainment, safe storage, and transport of explosives, including CETA. Local regulations should be reviewed before implementing a 3PK9-C program, and it should be noted that some airports do not allow CETA to be stored on airport property. Airports must work within the regulatory confines of their state, and 3PK9 providers must establish internal frameworks within their national programs, which should include certification, training, testing, quality control, and advice to follow the local, state, and federal guidelines for handling CETA. Additionally, the 3PK9 teams must be licensed and obtain permits to handle CETA. All CETA should be clearly marked with company name and contact information, and local entities should be made aware of the visible identifiers used.

Airports need to be familiar with local, state, and federal regulations regarding CETA to ensure that the 3PK9 companies comply with them. Compliance should be part of the communication protocols set up with all airport stakeholders prior to the implementation of the 3PK9-C program at their specific airport. Details should include how companies will be audited and tested to ensure compliance with regulations on explosive handling. CETA rules and regulations may vary by facility, so it is important to familiarize the workforce with the protocols and procedures specific to their location. This could include limiting workforce personnel in areas where CETA are being used to mitigate potential transfer risks.

EXPLOSIVE VS. NON-EXPLOSIVE

Most screening operations only allow simulated aids to be used in their facilities. Simulated aids are used in place of active explosive training aids for safety and to reduce lead times in executing operating agreements. The nine types of explosive (non-simulated) CETA utilized to keep the canines proficient are not volatile as configured, and if handled appropriately do not pose a threat. However, to accommodate varying state and local regulations, it is recommended that only simulated CETA be regularly utilized as daily sustainment aids by handlers. The explosive CETA typically require further coordination with local and state stakeholders if required on-site.

It is important that the canines get exposed to the complete list of CETA (both simulated and non-simulated) inside their operational environment, but to avoid operating disruptions, coordination and pre-planning is recommended in all instances. Advance communications with the airport operator, TSA, airport law enforcement, and other local authorities should be made when the 3PK9 provider will be on the airport with CETA, and positive control mechanisms should be in place to maintain accountability and control of CETA. Non-explosive CETA are typically transported in marked envelopes and have no Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) restrictions for transport or storage. CETA that are considered explosive require specific licensing, storage, and transport rules.

ACCOUNTABILITY AND CONTROL STRATEGIES

When using CETA for on-site canine training, procedures should be agreed upon by relevant authorities, documented, and followed without exception, so that aids are always controlled and recovered. The time needed for the CETA to be on property can be short (1–2 hours). Clear, documented procedures can help alleviate concerns and avoid operational disruptions during that time.

One recommended control measure is requiring a phone call to the airport operations center when entering property with any CETA, and another phone call when exiting. At certain operations, this procedure has alleviated concerns of leaving CETA on property and maintains awareness of the presence of the CETA on property.

Another technique being explored is tagging each CETA with a GPS tracking device that alarms at a certain distance from a controlled device (cell phone), and enables location determination at any time. This would minimize concern of misplacing CETA in the operational environment.

For explosive CETA, an airport may choose to actively watch its utilization on property. VSS at access control points and within cargo screening facilities can also be used to enhance oversight and maintain CETA traceability.

Two example scent training scenarios include:

1. Having one party use gloves and place the simulated explosive aid inside a wall of packages
2. Making up a package containing a CETA, and inserting it into a stack of packages or ULD

In both scenarios, a visual indicator or placard should be used to identify the CETA placement location. Documentation that an aid was placed, including when and where, should be included in the daily activity log. Once the test is over, the CETA and visual indicator are removed and the daily activity log is updated.

The two-person rule should always be utilized when placing training aids in an operational setting. This rule requires two or more people to be present and observe all CETA training activities. In the scenarios described above, one person would place the CETA for testing while the second would watch and document the CETA's location, as well as observe and verify its removal.

CETA needs to be stored in a secure area when the operation is running, and then secured or removed from the facility at the end of each operation. Typically, any locked cabinet, preferably with VSS coverage, would be sufficient for storing these items (noting that only non-explosive CETA can be stored on property for a longer term, as ATF regulations do not impose storage rules on these items). The airport or local authority can ensure compliance through routine checks of the activity logs and observation of the training operations.

OTHER CONSIDERATIONS

If the training becomes too scheduled or consistent as far as location, area used, and training aid deployment height and depth, the canine will soon recognize the patterns and the training will become a detriment to the canine's growth and success. In addition, when using these test objects or conducting actual screening, it is important to remember that temperature, humidity, distractions, wind speed, and wind direction may influence the ability of the canine to recognize scents. Handlers must be aware of these limitations and respond appropriately under these conditions.



Recommendation

Simulated aids should be used in place of active explosive training aids for safety and to reduce lead times in executing operating agreements.

3.4 Alarm Response Protocols and Coordination/Communication Strategies

When an explosive device is detected while screening cargo, an alarm is triggered, initiating the response of the air carrier or cargo operator. Depending on the type of screening that is being conducted, response protocols are dictated through TSA Standard Security Programs (SSP) or SSP amendments. This section provides guidance on enhanced measures that can be implemented to resolve alarms and respond appropriately and safely, while minimizing disruption to operations.

Air carriers and cargo operators involved have typically had the responsibility of responding to and resolving incidents. If an incident cannot be resolved, airport security personnel, police departments, local bomb squads, TSA, and the FBI need to be communicated with, and an alarm response procedure activated. Processes and strategies for alarm response should be captured in a designated Master Operating Plan with the specific roles and responsibilities identified (see Section 7.1.1, [Sample Master Operating Plan](#)).

3.4.1 Alarm Response Protocols

Operational responses and alarm response protocols that will be implemented in an alarm incident are specific to each operation. Processes can be very complex depending on the configuration of the cargo, cargo movement into the airport environment, type of screening, requirements in place, and whether the operation is all-cargo.

A typical operational response is to stop all activity once a suspicious item is discovered, leave the item in the x-ray unit, and evacuate the facility. This type of response could disrupt the airport and taxiways for a large amount of time, depending on the alarm location and required standoff distance.

Below is a list of other mitigation and intervention measures that can be incorporated into the operation to prevent an unnecessary shut down and evacuation. When considering these options, it is important to note that the cost of additional measures should be weighed against the impact of shutting down the cargo facility and/or airport.

- Collect all shipping information on the package, pallet, or ULD and contact the original shipper to determine and validate contents, including what substance is setting off the ETD.
- Add a third-party company to the screening operation that can support real-time analysis of the image on the x-ray. This involves transmitting the image via cell phone to a 24/7 outside agency staffed by certified bomb technicians that can assist the screener in analysis. The technicians can determine whether the suspicious item is an explosive device, explain why, and assist the screener in the final determination. These companies can also provide additional live training with experts, reducing the possibility of shutdowns and airport disruption in the future.
- Place the suspicious package or item in a remote containment vehicle that can be retracted and sealed while the notification process is taking place. This will help reduce the possibility of shutdowns and airport disruption, and improve safety for the facility and its personnel.

3.4.2 Coordination and Communication Strategies

Coordination and communication are key to efficient responses to unresolved alarms at cargo facilities, including preventing unwarranted shutdowns and reducing the duration of a disruption to operations. Strategies to enhance coordination include:

- Initiating a working group with representation from all stakeholders, such as the airport operator, police, FBI, and other security agencies, to develop the processes, procedures and required agreements for responding to bomb alerts. It is recommended that the airport operator should sponsor this activity where airlines do not have an EAA in place.
- Developing written agreements to document procedures
- Establishing specific communication protocols and methods, aligning to agreed processes. Tiers of escalation should be defined for each airport, noting the operational implications and potential shutdowns required when law enforcement is informed.
- Conducting recurring training for stakeholder groups involved in a response to ensure readiness for an alarm situation and to improve the efficiency of the response.
- Design red-team exercises simulating alarm situations to test response protocols and identify improvement opportunities.



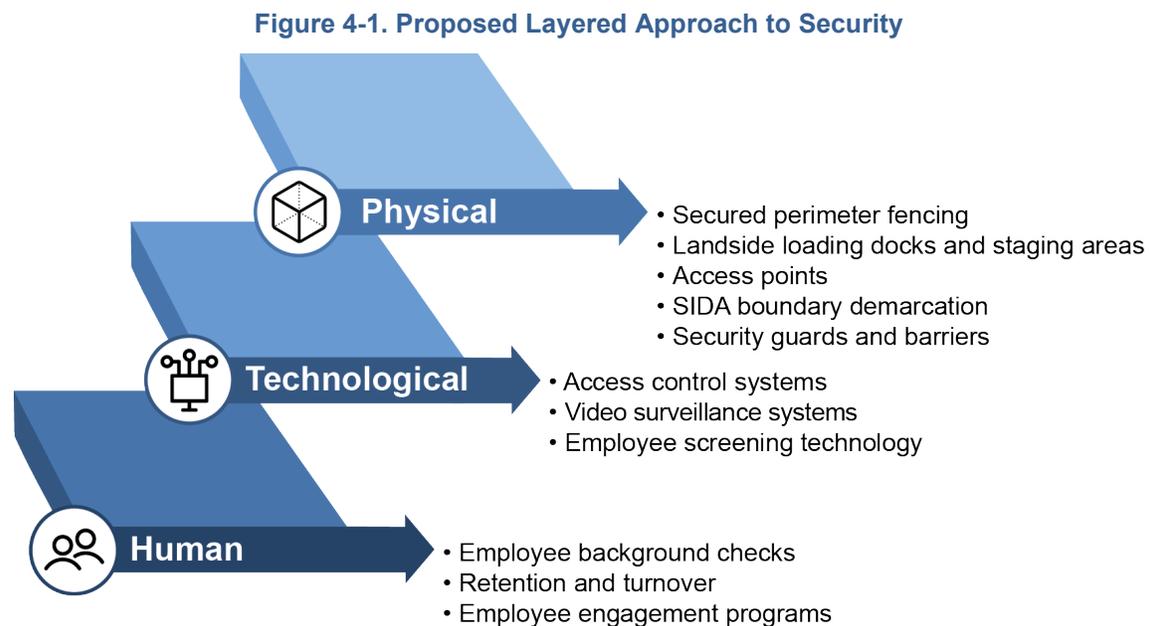
Recommendation

Establish a working group to develop processes and procedures for responding to bomb alerts.

SECTION 4: SECURITY MEASURES

Detecting and preventing unauthorized access to areas where air cargo is accepted, screened, prepared, stored, or transported is a vital component of the security of air cargo. Regulated on-airport cargo operations facilities are considered SIDA at a minimum, and most have at least a portion the facility designated as a Secured Area. Areas of the AOA where accepted cargo is present must also be SIDA. This is all governed under federal regulation 49 CFR § 1542.205.

Security is most effective when using a layered approach, as illustrated in Figure 4-1. A layered security approach recognizes the complexities of cargo handling areas while ensuring that security measures are implemented based on the airport's risk assessment.



4.1 Physical

Physical security measures at air cargo facilities are used to protect and define the facility perimeter, loading docks and staging areas, access points, and SIDA boundaries.

SECURED PERIMETER FENCING

Perimeter fencing is useful for preventing unauthorized access to cargo screening facilities. If incorporated, the perimeter fence should make direct contact with the facility exterior walls, and any entry points should be controlled and monitored for access.

If fencing exists, it is recommended that the facility security team conduct routine perimeter walks to validate security and ensure no breaches have occurred. Motion detectors can also be placed along the perimeter fence line to further alert personnel to potential security threats. In addition, ULDs, vehicles, concrete barriers, etc. should not be staged near fence lines to mitigate the risk of unauthorized access. The classification of the airport, the individual risk analysis, and the preventive measures that are in place will dictate if any of these options need to be instituted.

LANDSIDE LOADING DOCKS AND STAGING AREAS

Quantity of landside loading docks is dependent on the annual throughput rates of the individual screening facility. In addition to providing the appropriate quantity of delivery bays to prevent

bottlenecks or vehicle queuing, security considerations also need to be incorporated. Loading dock doors should remain closed at all times that deliveries are not occurring. In areas that are hot, door screens can be used while still maintaining a closed, secure boundary. Where possible, truck drivers should coordinate with a guard shack employee or through an intercom system to pre-check drivers and assign specific dock door locations.

Once an inbound vehicle's cargo is offloaded, it should be placed in a secured staging area while it awaits screening. It should then undergo a full acceptance process, including shipper validation, ready for carriage checks, document checks, and labeling prior to moving to the SIDA. The staging area should denote that the staged cargo has not yet been screened, and processes should be in place that prevent the cargo from moving to a SIDA-screened and validated staging area. While the needs of individual facilities will vary, the secured staging area should be strategically located to minimize travel distance from both the landside loading docks and the cargo screening area. The staging area should also be sized to accommodate the collective cargo loads of all inbound delivery vehicles during a peak delivery period.

ACCESS POINTS

Ensure doors are monitored and/or locked to prevent intrusion. Unusual or unorthodox access points should be evaluated on a routine basis for potential unauthorized entry. An example is scissors docks leading into a pallet storage and retrieval area. These areas have been penetrated at various facilities by agents doing facility checks for audits.

Examples of security at access points could include staffed entrance and exit with combination of inspection equipment, or clean-in and clean-out processes through unstaffed metal detection and turnstiles with card access. Based on the size of the operation, access control measures may include:

- Physically touching the ID and conducting a facial match to the picture and the person presenting it to ensure the person on the ID is the person in front of the officer.
- Access control denied party listing to be provided to all entrance points by the regulated airport and a name match conducted at the time of entrance.
- Use of tamper evident holographic covers on IDs issued either by the regulated tenants or the airport.

If new vehicle access control points are being implemented, queuing considerations should be evaluated. For example, if a vehicle access control point is being created or relocated, a roadway throat length that can accommodate potential vehicle build ups will need to be provided. Minimizing or limiting vehicle trips into the AOA or SIDA areas when possible will also reduce the likelihood of queuing buildups. Familiarizing the workforce with how to read airport signage and speak on a radio can also help in reducing potential operational delays.



Recommendation

When considering vehicle access control points into the cargo area, a roadway throat length that can accommodate vehicle build ups will need to be provided.



Watch out

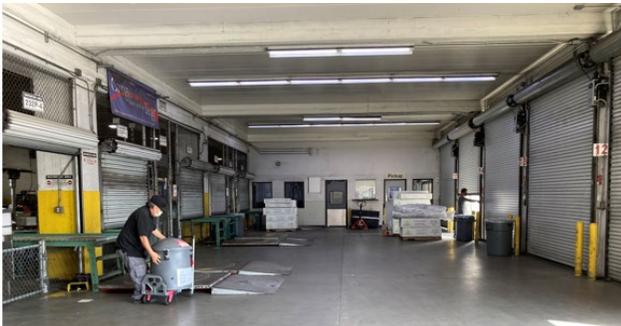
Unusual or unorthodox access points can provide opportunities for unlawful access. These areas should be evaluated for potential vulnerabilities on a routine basis.

SIDA BOUNDARY DEMARCATION

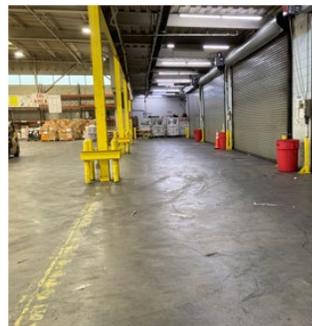
At a minimum, cargo screening facilities require a clear SIDA boundary demarcation line. This line denotes the separation between public and secure areas, and typically takes the form of a bright yellow line painted on the floor. Given that the public may not know what the yellow line indicates, clear signage is also recommended, with the use of stanchions as a possible addition or alternative to ensure the public and employees are aware of the restricted access boundary. Concrete and plastic bollards or Jersey barriers can also be used to control access to the SIDA area. Security guards can be an option in the absence of physical barriers. Some examples of SIDA boundary tools are listed below and shown in Figure 4-2:

- Brightly painted lines on floor with SIDA labels
- Overhead SIDA signage
- SIDA “STOP” signs
- Interior fencing with SIDA labels
- Stanchions with SIDA labels
- Orange ‘Jersey’ construction barriers with SIDA labels
- Double sets of doors

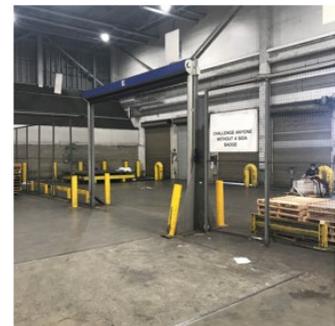
Figure 4-2. SIDA Boundary Demarcation Tools



The rolling doors on the left of the image form a boundary between the SIDA and the unsecured area



The painted yellow line on the floor indicates the SIDA boundary



The SIDA boundary is delineated by the fence, with attached signage, and a controlled roll-up door

If considering the use of interior fencing to separate the public from secure areas, high speed roll-up doors could be incorporated to allow for the forklift processing of cargo and personnel doors using ID swipe and keypad access. The challenge lies in the need to balance security and operational efficiency.

Floor-painted boundary lines will require regular maintenance due to the wear and tear that often occurs from frequent forklift travels. Staff should also be trained and tested in identifying and responding to persons who cross a SIDA boundary without authorization. Testing and a strong employee engagement program would significantly augment this area of security. Even the best security technologies will fail without effective employee engagement to uphold and reinforce it.



Recommendation

Ensure consideration has been given to the specific requirements of the cargo operation when deciding on the use of interior fencing as an additional layer of physical security.

4.2 Technological

Technology-based security measures that may be used in a cargo facility fall into three main categories: access control systems, VSS, and employee screening.

ACCESS CONTROL SYSTEMS

Badge control and access monitoring is typically implemented using electronic and biometric card readers with alerts for denied access monitored by the Security Operations Center. PARAS 0028 – *Recommended Security Guidelines for Airport Planning, Design, and Construction* (2020) recommends “the use of a centralized access control and monitoring system that allows for real-time and/or historical tracking of an individual’s access, alarm response tracking, and provides a means for changing access authorization from a central location.”

Guidance for access control systems is specifically addressed in PARAS 0017 – *Access Control Card Technology Guidance* (2019), which references NIST SP 800-63 Digital Identity Guidelines as best practice for establishing information security requirements.

VIDEO SURVEILLANCE SYSTEMS

A VSS, particularly if equipped with video analytics, can increase security effectiveness and reduce the need for security personnel. Cameras should be placed at security access points, card readers, exterior fence line, etc., as well as throughout the facility to ensure every step of the process is monitored for product security, employee safety, and compliance. Good lighting is necessary, and a high definition system that has storage and the ability to retrieve images is preferable. However, this is only an advisable security option if management also puts in place a process to review the images as part of a regular audit process.

PARAS 0024 – *Consolidated Receiving and Distribution Facilities at Airports*¹⁰ (2021) also discusses security cameras in cargo facilities.



Recommendation

If implementing VSS, there needs to be an agreed-upon process in place to review the images on a regular basis.

EMPLOYEE SCREENING TECHNOLOGY

There is currently no airline operator requirement to physically screen SIDA-credentialed airport employees before they enter the cargo SIDA. However, via their operating agreements, airports may require cargo operators to conduct physical inspection of individuals entering the SIDA. Facility operators may also elect to conduct inspections of employees entering and exiting the facility, or conduct random inspections throughout the facility, even if no requirement is imposed.

There are several screening technologies available for operators to inspect people and their carried objects, such as metal detectors and ETD. As an alternative to technology-based methods, facility operators may also implement employee pat-downs and hand searches of personal items.

Airport operators must adhere to regulatory requirements, including Security Directives and Emergency Amendments, regarding the random inspection of employees entering the cargo SIDA.

¹⁰ PARAS 0024: https://www.sskies.org/images/uploads/subpage/PARAS_0024.ConsolidatedRcvgDistFacilities_FinalReport_.pdf



Recommendation

Cargo facility operators should consider the random inspection of employees and their carried objects that enter, exit, and are present in the cargo area.

4.3 Human

The human component to security is critical. Air cargo screening facility operators should create a culture of learning for covered personnel to ensure that they understand their role in risk mitigation, know how and when to report alarms or suspicious activity, and are knowledgeable on all processes and procedures. While formalized training may only be required at certain times, air cargo operators can identify shorter, more targeted training opportunities within the normal course of business for their operating environment. Some additional considerations are highlighted below.

EMPLOYEE BACKGROUND CHECKS

As per 49 CFR § 1542, TSA requires that any on-airport location where air cargo is accepted, screened, and stored before it is loaded on an aircraft must be designated as SIDA. Currently, when the airport operator or authorized issuer of SIDA credentials receives a badge application, the information is routed in two directions. The first path has applicant fingerprints submitted through a clearinghouse to the FBI for a criminal history records check (CHRC), the results of which go back through the clearinghouse to the airport operator or issuing authority. The second path is a check based on name and other personal information, which is routed again through a clearinghouse to the TSA for vetting against certain terrorist watch lists and databases. TSA then sends the results of this STA through the clearinghouse and back to the airport operator or issuing authority. Depending upon findings of the CHRC and STA, the applicant will be either issued or denied SIDA credentials.

However, when air cargo is screened off-airport at a CCSF under TSA's CCSP, only an STA is required for employees who conduct cargo screening; employees with unescorted access to screened cargo; security coordinators and their alternates; and the senior manager or facility representative in control of operations (49 CFR § 1549.111, 49 CFR 1540 Subpart C). A CHRC is not required at a CCSF since the location is off-airport and *not* a designated SIDA.

To further ensure the security of outbound international cargo transported on all-cargo aircraft, TSA recently revised the air cargo security requirements applicable to all-cargo operations. Additionally, TSA published the Secure Packing Facility (SPF) Order as another option for securement of cargo originating from other entities not currently regulated by TSA, such as manufacturers and fulfillment centers. Entities regulated by the SPF Order would need to comply with security mandates, such as access control, personnel security, and training.

RETENTION AND TURNOVER

PARAS 0024 – *Consolidated Receiving and Distribution Facilities at Airports*¹¹ (2021) states the importance of retaining quality employees at cargo facilities:

Airports must consider the security vulnerabilities introduced by high turnover or low morale. Elements like training, minimum wage, and employee retention can serve as tools to enhance the security posture of

¹¹ PARAS 0024: https://www.sskies.org/images/uploads/subpage/PARAS_0024.ConsolidatedRcvgDistFacilities_FinalReport_.pdf

CRDF personnel. The security posture of CRDF operations is affected by turnover, retention, and pay incentives.

Investments in training and career development as well as higher wages can increase retention rates for jobs related to security and public safety at airports, and for facilities like CRDF operations (Gallear, 2017). Best practices in CRDF personnel retention include, but are not limited to:

- Pay evaluation for x-ray screeners; x-ray screeners at cargo facilities should have pay rates tied to those of TSA screeners
- Institute skill development policies and career path definitions
- Promote job rotation and cross-training

EMPLOYEE ENGAGEMENT PROGRAMS

The purpose of an employee engagement program is to recognize that individuals have an active part in helping the company maintain its reputation for integrity, workplace safety, and dependable service.

Employee engagement programs have become an important part of security awareness programs. They serve to ensure employees feel invested in the operation's mission, and deter conduct that should not be tolerated within the organization.

ID display challenging also detects unauthorized access to the SIDA, and is a requirement in the CFR and in Security Directives. This is a particularly important measure in cargo facilities where the demarcation between secure and non-secure areas cannot always be maintained by gates. Recognition and reward programs are commonplace to encourage staff to challenge personnel. See Section 7.1.2, [Extrinsic vs Intrinsic Motivation](#).



Watch out

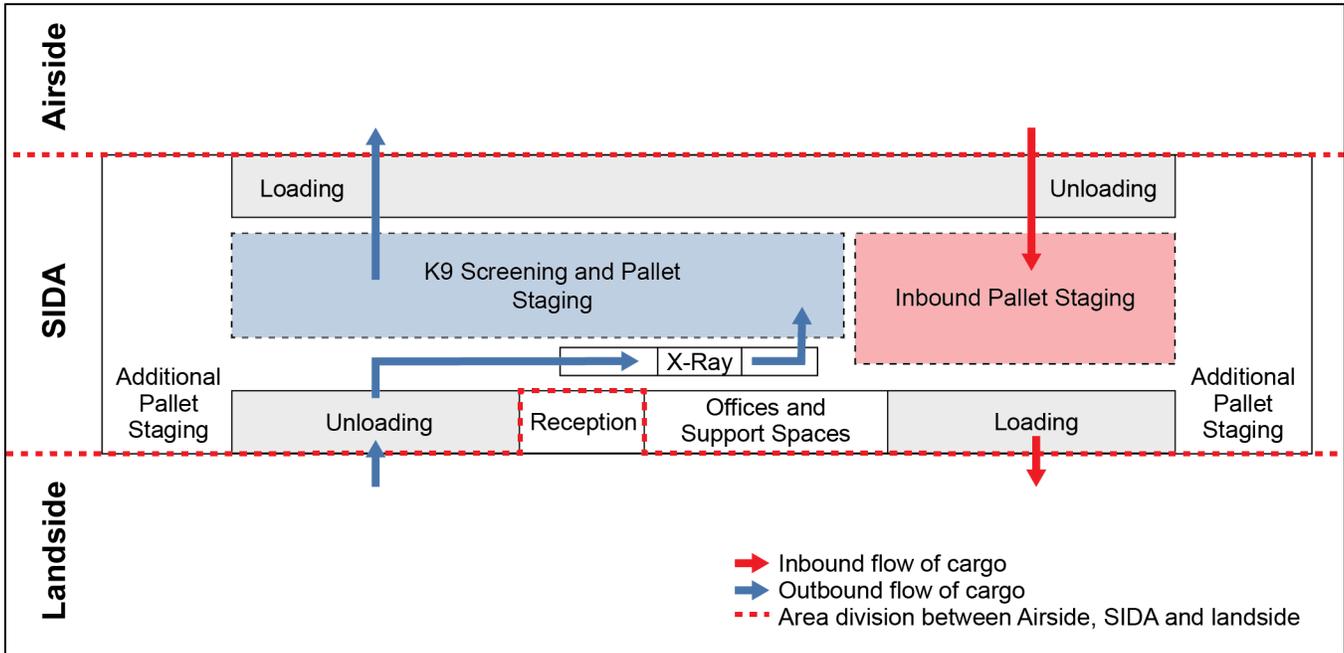
Engaging employees to play an active role in the security of the facility is important; however, ID badge challenging requires confidence and training. Engagement programs and training programs educate and empower employees to help.

SECTION 5: CARGO SCREENING REQUIREMENTS

5.1 Facility Requirements

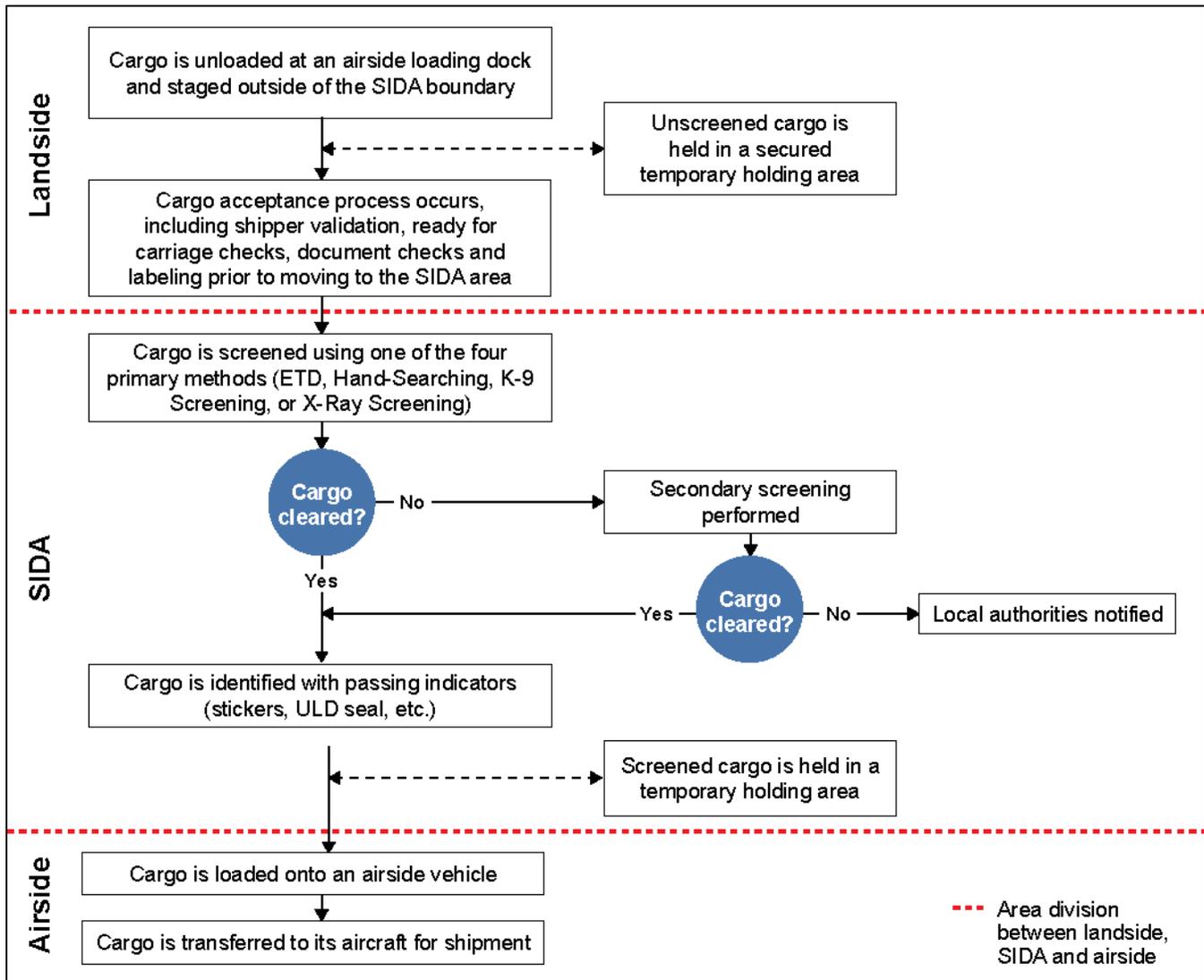
Given the significant variations across cargo facilities, this section is aimed to provide holistic guidance that is applicable across all facilities. The indicative layout in Figure 5-1 illustrates how key elements of a cargo screening facility could be arranged.

Figure 5-1. Indicative Cargo Screening Facility Layout



While cargo screening facilities can vary quite significantly between locations, the overall screening process remains relatively static. Figure 5-2 provides a high-level overview, beginning with cargo receipt at landside and ending with airside shipment. The landside cargo can remain staged prior to acceptance, but once it is accepted, the regulated party that is responsible for the cargo must contain it inside a SIDA for protection against unlawful interference. See 49 CFR § 1542.205 Security of the SIDA, and 49 CFR § 1544.205 Acceptance and Screening of Cargo.

Figure 5-2. Cargo Screening Process Flow Diagram



FACILITY PLANNING

According to the International Air Transport Association’s Airport Development Reference Manual, which provides the most useful and extensive guidance for cargo facility design and development, the development of a cargo facility involves multiple parties, including airport authorities, airlines, terminal operators, agents operating the facilities, and government agencies. The development requires extensive consultation and coordination of all parties involved. Terminal design, layout, and cargo terminal operations must comply with all government, safety, and security regulations in all facilities. The locations of the security area boundaries, checkpoints, and cargo processing areas must be approved by cargo officials in the planning phase.

The size of a cargo facility is determined by a qualified airline cargo facility planner, their consultants, and designers. The facility planner will have to do various conversion factors and processing rates to develop space requirements. Factors that need to be evaluated by the facility planner are:

- Understand the current operation(s) and then define the operational objectives for the future.
- Define present constraints that need improvement.

- Decide on common objectives and policies to be realized in the new or extended area (e.g., faster handling, function as transfer center for international cargo, efficient transfer to air/road).
- Establish processing requirements and applicable standards of handling with the airlines and operators concerned.
- Determine the extent to which each operating function will be performed outside on a routine basis. This will have a direct effect on the size of the facility required. It is common for most material handling functions to be performed inside, while some staging and storage functions can be managed outside depending on the availability of space, security, and weather issues.

Some of the conversion factors that the facility planner will take part in are listed below:

- Size of the cargo terminal building facility is derived from the total annual cargo movement
- Apron size for all cargo facilities is 4 to 5 times that of the cargo terminal building area
- Hours of operation and average turnaround time per aircraft
- Average time import and export shipments reside in warehouse (also known as dwell time)
- Average weights of terminating and originating bulk shipments, ULD shipments, and shipper-loaded containers
- Circulation and equipment size requirements (dimensions of cargo transport equipment, aisle size requirements, location and size of circulation aisles, physical dimensions of bulk and ULD storage systems)

GENERAL FACILITY DESIGN PRINCIPLES

Cargo facilities must meet requirements such as access, column spacing/obstruction, free-height, and staff/technical/special facilities. Some access requirements include:

- All doors must have proper locking mechanisms
- Doors must have a one-way flow or route, or a traffic light in the case of two-way traffic through one door
- All doors must have clearly visible door signs on both sides
- All overhead doors with mechanical or electrical drives must have a manual override option
- Emergency exits must meet local requirements
- Airside doors should not be located where they would interfere with aircraft parking or aircraft interfaces

Building column grids should be as large as possible to allow for maximum operational space. If 6-m depth ULD systems are being proposed, it is recommended to provide a maneuvering clearance of 22 m; where forklifts operate, the minimum clear height should be 5 m. Strong surrounding protection is required in these operational maneuvering areas. Utilities, special facilities, and equipment should not impede cargo flow.

Consideration should be given to the proximity of on-airport cargo warehouses to passenger terminals to facilitate access to passenger airlines transporting cargo. For integrated express carriers, warehouses should be located close to an airport's taxiway and runway system. Cargo buildings need to be located with consideration to cargo lead time. Cargo facilities should also be situated so that cargo-related truck traffic does not have to mix with passenger traffic.

OFFICE AND SUPPORT SPACES

Office and support spaces are needed to facilitate the administrative side of cargo screening operations. Like other key facility requirements, their size will depend on the overall size of the cargo screening facility, and should be reflective of the number of employees and operational needs. In addition to providing open desks or closed offices, restrooms and breakrooms are required for employees.

EXPLOSIVE DETECTION CANINES (EDC) REQUIREMENTS

If 3PK9 screening is implemented, canine-specific support spaces will be needed. For example, each canine requires its own kennel in a location outside of the main operating environment, and an outdoor break area for the canines is also required.

CETA STORAGE

If 3PK9 screening is implemented, the cargo processing facility may require a dedicated storage space for CETA. 3PK9 providers must follow individual airport guidelines and local regulations, as some airports prohibit the storage of CETA on airport property. Refer to Section 3.3.5 for additional details on CETA storage requirements.

LANDSIDE LOADING DOCKS AND STAGING AREAS

The quantity of landside loading docks is dependent on the annual throughput rates of the individual screening facility. Higher cargo volumes would necessitate more loading docks, while lower cargo volumes would require fewer loading docks. When planning new facilities, design teams should consider annual volumes, with specific consideration for seasonal fluctuations and daily peak hour delivery windows. In addition, the design team should consider incoming truck capacities and vehicle dwell times, including their impact on the local traffic and facility operations.

SERVICE COUNTER OR RECEPTION AREA

Service counters or reception areas are the primary point for public contact and interaction. This area could also serve as the main entry point for cargo facility employees. Access beyond the reception area should be securely controlled through keypads or ID card access. 24/7 video monitoring is also recommended in this area, with security footage held for approximately 30 days.

CARGO SCREENING AREA

A cargo screening area is the primary point where incoming cargo is screened for explosives or other threatening materials. There are four primary screening methods in cargo operations: ETD, hand searching, 3PK9 screening, and x-ray screening. Given that each of these methods has unique limitations, cargo screening areas should be equipped with more than one screening method to maintain resiliency and redundancy in operations.

Specific layouts in cargo screening areas will depend on facility constraints and the screening methods being used. For example, canines can screen a series of staged pallets in any order, but they require the pallets be placed in an arrangement that allows access on all sides. Conversely, x-ray screening is a more linear process that requires unscreened cargo be deposited from one specific side. It is important that all screened cargo be clearly marked or placed in an area clearly separated from unscreened cargo.

AIRSIDE STAGING AREAS AND LOADING DOCKS

Once cargo has been screened, it should be placed in a secure staging area while it awaits shipment. This area should denote that the staged cargo has been successfully screened, and processes should be in place to prevent unscreened cargo from entering this area. If a staging area within the SIDA is not provided due to spatial limitations or existing operating procedures, successfully screened cargo should remain within the SIDA area and be marked with unique labels that indicate the screening status.

Considerations for the quantity of airside loading docks are the same as for landside loading docks. While fluctuations in volume are expected to be similar between landside and airside, consideration should also be given to airside truck capacities and vehicle dwell times. Airside vehicles may have smaller cargo carrying capacities, which could potentially require additional loading bays. However, smaller truck capacities would likely lead to reduced dwell times, so the effective loading dock requirement variation may be negligible. See Section 7.2.1, [Cargo Screening Facility Checklist](#).

5.2 Technology Requirements

There are four primary cargo screening methods used across cargo screening operations. These include ETD, hand searching, EDC, and x-ray. Each method has unique advantages and limitations (e.g., cargo size, material, etc.), as identified in Table 5-1. Due to these limitations, cargo processing facilities often maintain redundancy by deploying two or more methodologies for cargo processing.

Table 5-1. Technology Throughput Rates and Screening Limitations

Screening Method	Advantages and Limitations
ETD	ETD testing equipment is often less expensive than other imaging systems and can be mobilized if needed. Screening, however, is limited to the specific point(s) where trace swabbing occurs.
Hand Searching	Hand searching has the most mobility options and allows for screening of items that may be too large for canine or x-ray screening. Screening is limited to visual inspection and can be prone to operator error.
EDC	Canine screening has the highest throughput rate of the four primary screening methods. Canines are, however, limited to a 4-foot inspection radius from the tip of their snout, and cannot inspect cargo over 7 feet tall. They must be able to maneuver around all sides of the cargo, and be able to place the tip of their snout within 1 foot of each side. In addition, canines cannot screen drums, pails, kegs, airtight containers, dry ice, hazardous materials (excluding lithium batteries), or fully built ULDs.
X-Ray	Given their ability to screen cargo interiors, x-ray machines are often able to screen items that cannot be screened by canines. X-ray screening also has the second fastest throughput rate, and is well-suited for automation integration. X-ray machine sizing varies by supplier, but most common technologies are limited to average US pallet dimensions (4' W x 4' L x 5' H).

The spatial needs of each key facility requirement vary, and are dependent upon each operation's unique annual throughput demands. Less annual demand correlates to a smaller building footprint with fewer loading docks and reduced cargo screening space. A higher annual demand will require significantly more loading docks and increased cargo screening space. Similarly, screening method requirements are dependent on annual cargo throughputs. A small operation may only require one x-ray machine, while a larger operation could require more. Table 5-2 outlines the minimum spatial requirements for each of the four primary screening methods.

Table 5-2. Screening Method Footprint Requirements

Screening Method	Footprint Requirements	Notes
ETD	3' W x 4' L x 4' H	ETD machines can be located on a table or countertop.
Hand Searching	N/A	Hand searching does not require dedicated screening space, but a robust operation will require sufficient restrooms, breakrooms, etc. to accommodate the number of employees
EDC	3' W x 4' L x 4' H per canine kennel	Canine screening does not require a dedicated screening area. However, each canine requires its own kennel in a location outside of the main operating environment. An outdoor break area is also required for the canines.
X-Ray	9' W x 25' L x 10' H	In addition, the x-ray and conveyor footprint and adequate material handling equipment maneuvering space for cargo loading and unloading onto the x-ray roller bed is required.

5.3 Cargo Handling Facility Optimization Opportunities

In addition to implementing new screening methods that can increase cargo throughputs, new and existing facilities should also aim to create layouts and processes that further optimize system performance. Some examples of this could include:

STANDARD OPERATING PROCEDURES

Standardize cargo screening processes by developing and implementing SOP documents. In addition to ensuring all tasks are done consistently, SOPs can facilitate process mapping exercises that may lead to additional efficiency improvements.

ADVANTAGEOUS ADJACENCIES

Create beneficial adjacencies that reduce travel distances or touch points between process steps. Examples might include ensuring screening technologies are close to inbound cargo staging areas, or staging screened cargo near outbound loading bays. Minimizing travel distance and touch points can reduce overall cycle times and increase annual throughput rates.

INBOUND AND OUTBOUND SEPARATION

Maintain separation between incoming and outgoing cargo. Ensuring these processes are separated reduces the risk of mixing cargo, which could cause processing delays. Separating these processes also allows them to be analyzed more clearly, facilitating continuous improvement over time.

FACILITY SIZING

Oversizing new screening facilities ensures future increases in annual freight volumes can be accommodated while still maintaining operating efficiency. Oversizing facilities also allows for any fluctuations in cargo volume (e.g., seasonal e-commerce, high-travel periods, etc.) to be accommodated while maintaining service level agreements.

REDUNDANCY AND RESILIENCE

Creating system redundancy and resilience ensures operations continue running despite shocks or stressors to the system. For example, if an x-ray machine were to break down and require repair, having other screening methods available would enable operations to continue. In the case that an explosive threat is detected, having an alternate space to process cargo could reduce overall system downtime.

WAREHOUSE MANAGEMENT SYSTEMS

Warehouse management systems (WMS) are software applications used in warehouse facilities to support, track, and optimize the storage and movement of materials. WMS provide operators with full visibility of the location and screening status of cargo, and can be used to track internal metrics or provide data to assist in continuous improvement efforts.

YARD MANAGEMENT SOFTWARE

Yard management software can be implemented to inform drivers which loading bays are available. It also has the capacity to interface with local facilities' WMS, and notify drivers when specific shipments are ready to be collected. By preventing early arrivals and notifying drivers of bay availability, vehicle queuing and vehicle dwell times can be reduced.

CARGO PAYMENT SOFTWARE

Paperwork and payments are typically involved when cargo is transferred at cargo screening facilities. Cargo payment software can be implemented at cargo screening facilities to further reduce vehicle dwell times and mitigate vehicle queuing.

SECTION 6: APPROACH TO IMPLEMENTATION

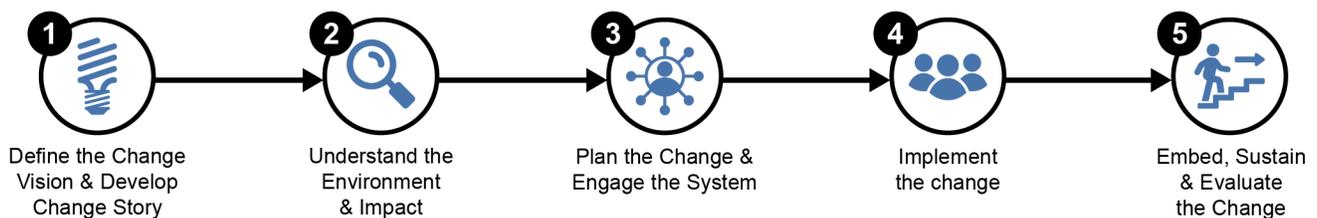
6.1 Change Management Overview

Change is inevitable. Organizations are required to continually transform, adapt, and be agile in increasingly challenging contexts. What lies at the heart of successful, sustainable change is a fundamental shift in people's attitudes and behaviors. Change in any area is best managed, implemented, and sustained through people.

The best approach to change management is to work with stakeholder groups to ensure that people are aligned with the strategy and direction of the organization, work collaboratively, engage effectively, and deliver persuasive communications to facilitate change. There are a number of effective change management theories, methodologies, and tools, including (but not limited to) Kotter's 8-Step Model of Change, ADKAR, Prosci, Lewin's Unfreeze-Change-Refreeze Model, Kubler-Ross Stages of Change Model, and William Bridges Transition Model.

Managing change requires active engagement with, involvement of, and buy-in from a diverse range of internal and external stakeholders. This will ensure all those impacted by change are engaged, communicated with, and involved, as appropriate, to facilitate required sponsorship and achievement of the change program objectives. The key stages to any change project are shown in Figure 6-1.

Figure 6-1. Key Change Management Stages



6.2 Implementing and Embedding Change

STAKEHOLDER ENGAGEMENT

There is a significant benefit to be derived from ensuring that everyone involved in or impacted by the business operation is engaged and invested at all stages. It is important to identify and engage all stakeholders early to ensure that needs are established from the outset. Stakeholders may include:

- Employees –a key stakeholder as they are the ‘eyes and ears’ of the operation
- Third Party Providers
- Law Enforcement Agencies
- Government Security Agencies

PROCESS DEFINITION

Clearly defining the future operational environment helps to mitigate potential negative impacts of changes. An integrated approach begins by setting stakeholder expectations early, defining responsibilities, and building a common and holistic view of what needs to be done, by whom, and by when. Once the future state is agreed upon, it is important to work in close collaboration with relevant stakeholders to agree on a set of new or modified processes covering standard, irregular, and emergency processes.

TRAINING/FAMILIARIZATION

Preparing people is one of the most important elements of change. All stakeholders need to be confident and competent in their roles and new operating environment. Any misalignment between people, processes, facilities, and systems can be costly. For example:

- Employee training on ID badge checking is covered in SIDA training. However, employees should be reminded how to respond to individuals within the warehouse not displaying a valid ID badge.
- Employees should be aware of their surroundings, and be able to prevent intrusions, report unauthorized access to regulated areas to management, and take proper action when they observe any activity that necessitates a corrective reaction and response.
- If introducing canines into the operating environment, ensure that all employees are aware of the intention, can voice any concerns, and are assured that those concerns will be addressed.

TESTING AND TRIALS

Testing and trials are a critical part of change, as they are effectively the ‘dress rehearsal’ of the live operation to demonstrate that all moving parts can successfully operate together. Trials should be designed as close to a real-life environment as possible to enable the organization to identify risks and gaps to be addressed before ‘go-live.’ Trials are also an opportunity to validate that management and operational staff are confident, are familiar with their surroundings, and can provide a high level of service.

REVIEW AND MODIFICATION

The final stage of a change project involves ensuring that the change becomes part of business as usual, and confirming that the future state and associated benefits have been realized. Regular reviews need to be planned to enable aspects to be modified as needed to ensure a more secure, efficient, and effective operating environment.



Recommendation

When undertaking any change in an organization, one should always consider:

- What is the current state?
- What is the desired future state?
- What is the impact of the change on people, process, facilities, and systems (assets)?
- What needs to be done to minimize that impact? (i.e., process definition, training, familiarization, and testing)

SECTION 7: TOOLS AND CHECKLISTS

7.1 Tools

7.1.1 Sample Master Operating Plan

This sample Master Operating Plan provides a list of items to look at and determine whether they apply to your operation. This is not an all-encompassing list, and is intended as a guideline only.

1. Definitions
2. Introductions and Responsible Parties
3. Separation of Cargo and Responsibilities by Regulated Parties
4. Aviation Security Documentation
 - a. Daily Checklists
 - b. Daily Work Logs and Reports
5. Operational Duties
 - a. Tools and Supply Management
 - b. Work Area Setup
 - c. Portable ETD
 - d. Operational Review
 - e. Secondary Screening Required Cargo
 - f. Confirmation of Screened Cargo
 - g. Screening of Liquids
6. Screening
 - a. Canine (3PK9-C)
 - i. Testing with Simulations
 - b. ETD
 - c. X-Ray
 - i. Warehouse Scanning
 - ii. Security Clearing Cargo
 - iii. Alarm Resolution
 - iv. Notification Process
 - v. Returning Ownership of Cargo
7. Training
8. Vendor Management
 - a. Travel Paths
 - b. ID Validation and Verification
 - c. Relief Areas
 - d. Rest Areas
9. Appropriate Authority Visits / Inspections
 - a. Covert and Overt Testing
 - b. Handling of Simulations and Live Explosives

10. Quality Assurance

- a. Daily Simulation Testing
- b. Daily Operational Audits of Screeners and Vendors
 - i. Covert and Overt

11. Attachments

- a. Copies of all documentation required by the Amendments/SSPs
- b. Copies of all operational documentation with instructions on how to fill them out
- c. Daily Volume and Screening Reports
- d. Daily Summary Operational Reports

7.1.2 Extrinsic vs. Intrinsic Motivation

Different types of motivation play an important part in how new habits develop. Extrinsic motivation comes from outside sources (i.e., the individual's motivation is driven by external sources like rewards or recognition), and tends to lead to short-term change. Intrinsic motivation comes from within the individual (i.e., the person feels good about simply doing the right thing), which tends to be a longer-term solution. Both types of motivation are important; generally, extrinsic motivation can be used while intrinsic motivation is being learned. Below are considerations for recognition programs.

RECOGNITION & REWARD PROGRAMS (EXTRINSIC)

The purpose of a recognition program is to recognize individuals who have taken an active part in helping the organization maintain its reputation for integrity, workplace safety, and dependable service. Recognition Programs have become an important part of security awareness programs.

Some considerations include:

- The existence of a program serves as an effective deterrent to conduct that would not be tolerated within the organization.
- A recognition program should be effectively communicated to all staff and thoroughly explained in orientation, individual discussions, and in periodic communication meetings with all groups.
- Display recognition program posters in all work areas in your facility, with clear contact details for anyone who has witnessed unwarranted activity.
- The recognition program should be based on criteria defined by the location operating organization, including who is eligible for the program.

7.2 Checklists

7.2.1 Cargo Screening Facility Checklist

While cargo screening operation sizes and layouts remain flexible, a few key facility requirements exist across all configurations. These are listed below:

- Secure perimeter fencing
- Landside loading docks and staging areas
- Office and support spaces
- Service counter or reception area
- SIDA demarcation boundary lines

- Cargo screening area
- Airside loading docks and staging areas

7.2.2 Self-Audit Checklist

Self-audits of the security program should focus on:

- Administrative requirements
 - Is all security documentation up-to-date, and are records being kept in accordance with requirements outlined by the air carrier and or cargo operator through the AOSSP and Model Security Program for foreign air carriers?
- Facility security requirements
 - Is screening being conducted in Designated Screening Areas?
 - Is screened cargo being segregated appropriately from unscreened cargo?
 - Are the access control systems performing as designed?
 - Are all access points being routinely monitored and/or locked to prevent intrusion? Have unconventional access points (e.g., scissor lifts, roof access) been verified as part of this check?
- Personnel security
 - Do all airport badged personnel have required and current STA?
 - Are only approved personnel performing screening functions?
- Screening methods
 - Are the screening methods that are in use approved by the air carrier and/or cargo operator through the AOSSP and Model Security Program for foreign air carriers?
 - Are the technologies that are being used to screen cargo on the approved TSA Air Cargo Screening Technologies list?¹²
- Employee Training
 - Are all covered employees current on required training?
 - Are employees who do not successfully complete training being appropriately remediated?

7.2.3 3PK9-C Supplier – Information Requirements

- Survey
 - Is the facility within the airport's access-controlled area?
 - Selection Options: Yes/No
 - Does the facility/user participate in the Known Shipper Program?
 - Selection Options: Yes/No
 - Identify the square footage range of the screening area:
 - Selection Options: Ranges (5,000–10,000 sq ft, etc. Up to 100,000+)
 - Identify cargo throughput level:
 - Selection Options: Ranges (0–10,000 pieces per year, etc. Up to 50,000+)

¹² https://www.tsa.gov/sites/default/files/non-ssi_acstl.pdf

- Will the canine team(s) have to cover/respond to a satellite facility?
 - Selection Options: Yes/No
- If so, what will be the estimated travel time to satellite facilities on a per-hour basis?
 - Option: Fill in Blank
- What percentage of cargo will be screened by alternate methods (x-ray only, ETD, etc.)?
 - Option: Fill in Blank (0%–100%)
- How is the cargo stored at the facility?
- Please describe all freight configurations used:
 - Selection Options: (1) Break Bulk; (2) Palletized/Wrapped; (3) Palletized/Unwrapped; (4) Containerized; (5) Other Configurations (Please Explain)
- If palletized, how high is cargo stacked (in feet)?
- Are hazmat, industrial cleaners, lubricants, fuels, and other noxious odors present in search areas? (If yes, please identify):
 - Selection Options: Yes/No
- Are other animals, food, carcasses, fertilizers, or other novel odors present in the search areas? (Please identify):
 - Selection Options: Yes/No
- Will employees be working/moving cargo in close proximity to the EDC team?
 - Selection Options: Yes/No
- What will be the typical cargo loading (in number of packages) based on the following 24-hour schedule?
 - Complete “Estimated Number of Packages” for each timeline
- Will EDC teams have a quiet place to rest, away from distractions and/or other interruptions?
 - Selection Options: Yes/No
- Will the space in which the EDC team is working in be environmentally controlled?
 - Selection Options: Yes/No
- Will a potable water supply be readily available for the EDC?
 - Selection Options: Yes/No
- Will a canine relief area (bathroom area) be available for the EDC to relieve itself?
 - Selection Options: Yes/No
- **Property Identification**
 - Facility Name
 - Client
 - Address
 - Survey Point of Contact
 - Date of Survey
- **Key Personnel**
 - Cargo Operations Manager
 - Name; Title; Office Number; Mobile; Email
 - Security Manager
 - Name; Title; Office Number; Mobile; Email

- Alternate Contact
 - Name; Title; Office Number; Mobile; Email
- **Facility Description**
 - Facility Square Footage
 - Leased or Owned
 - Selection Options: Leased/Owned
 - Year Built
 - Single or Multiple User
 - Selection Options: Single/Multiple
 - Hours of Operation
 - Number of Employees (Listed by User)
 - Satellite Facility Associations
 - Selection Options: Response Required/Response Not Required
 - Type of Location to be Assessed
 - Selection Options: Ramp/Warehouse

REFERENCES

- "19 CFR Part 122 – Air Commerce Regulations" Accessed September 1, 2021.
<https://ecfr.federalregister.gov/current/title-19/chapter-I/part-122>.
- "49 CFR Part 1540 – Civil Aviation Security: General Rules" Accessed September 1, 2021.
<https://ecfr.federalregister.gov/current/title-49/subtitle-B/chapter-XII/subchapter-C/part-1540>.
- "49 CFR Part 1542 – Airport Security." Accessed September 1, 2021. <https://ecfr.federalregister.gov/current/title-49/subtitle-B/chapter-XII/subchapter-C/part-1542>.
- "49 CFR Part 1544 – Aircraft Operator Security: Air Carriers and Commercial Operators." Accessed September 1, 2021. <https://ecfr.federalregister.gov/current/title-49/subtitle-B/chapter-XII/subchapter-C/part-1544>.
- "49 CFR Part 1546 – Foreign Air Carrier Security." Accessed September 1, 2021.
<https://ecfr.federalregister.gov/current/title-49/subtitle-B/chapter-XII/subchapter-C/part-1546>.
- "49 CFR Part 1549 – Certified Cargo Screening Program." Accessed September 1, 2021.
<https://ecfr.federalregister.gov/current/title-49/subtitle-B/chapter-XII/subchapter-C/part-1549>.
- International Air Transport Association. IATA Airport Development Reference Manual. 11th Edition, 2021.
- "Integrated Cargo Security Strategy – Homeland Security." Accessed September 1, 2021.
https://www.dhs.gov/sites/default/files/publications/integrated-cargo-security-strategy_0_0.pdf.
- International Organization for Standardization (ISO). 2006. *Freight Containers*. Geneva: International Organization for Standardization.
- ICAO. 1997. *Annex 17 - Security: Safeguarding International Civil Aviation against Acts of Unlawful Interference*. Montreal: ICAO.
- National Safe Skies Alliance. 2019. "PARAS 0017: Access Control Card Technology Guidance." Accessed September 1, 2021.
https://www.sskies.org/images/uploads/subpage/PARAS_0019.EmployeeVendorPhysicalInspectionPrograms_FinalReport_.pdf.
- National Safe Skies Alliance. 2021. "PARAS 0024: Consolidated Receiving and Distribution Facilities at Airports." Accessed February 2, 2022.
https://www.sskies.org/images/uploads/subpage/PARAS_0024.ConsolidatedRcvgDistFacilities_FinalReport_.pdf.
- National Safe Skies Alliance. 2021. "PARAS 0028: Recommended Security Guidelines for Airport Planning, Design, and Construction." Accessed September 1, 2021.
https://www.sskies.org/images/uploads/subpage/PARAS_0028.Recommended_Security_Guidelines_FinalReport_.pdf.
- "NIST Special Publication 800-63 Digital Identity Guidelines." Accessed September 1, 2021.
<https://www.nist.gov/identity-access-management/nist-special-publication-800-63-digital-identity-guidelines>.
- "Public Law 107 - 71 – Aviation and Transportation Security Act" Accessed September 1, 2021.
<https://www.govinfo.gov/app/details/PLAW-107publ71>.
- "TSA Enforcement Sanction Guidance Policy" Accessed September 1, 2021.
https://www.tsa.gov/sites/default/files/enforcement_sanction_guidance_policy.pdf.
- "TSA Air Cargo Screening Technology List (ACSTL)." Accessed September 1, 2021.
https://www.tsa.gov/sites/default/files/non-ssi_acstl.pdf.