



NATIONAL TRANSPORTATION SAFETY BOARD

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Attachment 32 - 8900.1 CHG 116 Cargo Inspections

OPERATIONAL FACTORS

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VOLUME 6 SURVEILLANCE**CHAPTER 2 PARTS 121, 135, AND 91 SUBPART K INSPECTIONS****Section 5 Conduct Ramp Inspection on Cargo Loading (Including Part 125)****6-265 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES AND AIR TRANSPORTATION OVERSIGHT SYSTEM (ATOS) DATA COLLECTION TOOLS (DCT).**

- A. Maintenance:** 3623.
- B. Avionics:** 5623.
- C. Operations:** 1638.
- D. ATOS Element:** 3.1.8 and 1.3.25.

6-266 OBJECTIVE. This section provides guidance for conducting surveillance and inspection on Title 14 of the Code of Federal Regulations (14 CFR) parts 91 subpart K (part 91K), 121, 125, and 135 passenger, cargo, combi, and regional passenger aircraft that transport cargo, passenger baggage, Company Material (COMAT), and hazardous materials (hazmat) in the upper deck, lower deck, forward and/or aft cargo compartments, or pods.

6-267 GENERAL.**A. Federal Aviation Administration (FAA) Inspection Personnel.**

1) Aviation safety inspectors (ASI) should become familiar with the type of aircraft to be inspected before performing their surveillance. This may be accomplished through on-the-job training (OJT) or formal aircraft systems training.

2) Due to air carriers' and operators' varying schedules, inspectors may need to perform their surveillance outside of normal office hours or when time permits.

3) Inspectors will review the air carrier/operator's cargo procedures.

B. Coordination.

1) An ASI who needs additional information or guidance on a topic will coordinate with other ASIs who have experience in that specialty.

2) Geographic units may need to coordinate with the certificate-holding district office (CHDO) to gain access to the air carrier/operator's procedures manual. In addition, when it finds discrepancies, the geographic unit will communicate with the CHDO before initiating corrective or enforcement action. In the case of hazmat or dangerous goods discrepancies,

inspectors will notify the regional hazmat branch manager through the appropriate Regional Operations Center (ROC). They will conduct any required investigation and handle any resulting corrective action.

6-268 INITIATION AND PLANNING.

A. Initiation. This task is scheduled as part of the work program or ATOS tools (as applicable). Additional inspections may be initiated by national, regional, or district office special requirements.

B. Planning. The cargo ramp inspection provides the ASI with a good opportunity to ensure that the air carrier/operator's cargo programs are adequate and are being followed. To this end, the inspector should review the air carrier/operator's programs to familiarize themselves with the specific details of these programs. These may include:

1) Review operations specifications (OpSpecs) to verify the hazmat status of the operator (i.e., will carry or will not carry). A "will carry" air carrier or operator will have OpSpec paragraph A055 issued.

2) Review air carrier/operator's cargo and baggage loading procedures.

3) Review air carrier/operator's Weight and Balance (W&B) procedures.

4) Review air carrier/operator's procedures for unusual loads such as oversized cargo, sports teams and their equipment, or military contract loads (either cargo or troop transport).

5) Review air/cARRIER operator's procedures for loading last-minute items in cargo, baggage, pod compartments, and so forth. This may include items such as carry-on bags, plane-side bags or cargo, mail, or COMAT/hazmat.

6) Review the operator's monthly CASS report to identify possible trends in the operator's cargo program.

6-269 MAINTENANCE RECORDS.

A. Cargo-Related Equipment. By regulation, maintenance, when performed, must be recorded in the aircraft records prior to an approval for return to service. This also holds true for cargo-related equipment. The air carrier/operator's manual must also describe the procedures for ensuring that recording requirements are met for cargo-related equipment. Additionally, the manual should include the specific instructions on when an airworthiness release or appropriate maintenance log entry is required.

NOTE: The records should include unit load devices (ULD), net, or cargo handling system component repairs conducted in-house or by outside agencies, and record retention and receiving inspections of those items.

B. Correcting Mechanical Discrepancies. Every mechanical discrepancy in the maintenance log must be either corrected or deferred (including cargo-related equipment or components) using the methods identified in the air carrier/operator's maintenance procedures manual.

6-270 DEFERRED MAINTENANCE.

A. Minimum Equipment List (MEL), Configuration Deviation List (CDL), or Nonessential Furnishings (NEF) List—Deferred Maintenance. An approved MEL/CDL/NEF allows the air carrier/operator to continue a flight or series of flights with certain inoperative or damaged equipment. Depending on the type aircraft, this may affect the cargo handling system or even limit or prevent the carriage of cargo one or more positions, or in an entire compartment. The continued operation must meet the requirements of the MEL/CDL/NEF deferral classification and the requirements for the equipment loss.

B. Repairing Inoperative Items. The maintenance program approved for an air carrier/operator must provide for prompt and orderly repairs of inoperative items.

6-271 AIRCRAFT INSPECTION GUIDELINES. Ensure the following:

A. Load Manifest. Ensure that the load manifest form is prepared and signed by employees of the certificate holder or other qualified and authorized persons assigned to supervise the loading of aircraft and prepare the load manifest form.

B. Upper Deck Inspection (Cargo/Combi Aircraft).

1) Inspect the main cargo door, door seal, locking mechanism, and door lock viewing windows (if installed) for damage, deterioration, distortion, and security.

2) Review station weight placards for loading. For all cargo aircraft configuration main cargo deck, inspect fire fighting equipment, Protective Breathing Equipment (PBE), and crewmember walkway access if required.

3) Inspect the cargo compartment, paying particular attention to the condition and security of the ceiling, sidewall linings, and floor panels. Holes in liners repaired by tape may indicate hidden structural damage. If damage is found, the MEL/CDL/NEF procedures must be followed (if applicable) or it must be repaired in accordance with the appropriate instructions for continued airworthiness (ICA).

4) Inspect main floor locks, rollers, side rails, and cargo loading components for security, damage, and general condition. Ensure compliance with the air carrier/operator's approved program.

NOTE: Be aware of possible substitution of load-bearing components of the cargo handling system. If any substitution of load-bearing components is found, contact the air carrier/operator for clarification. After completing the inspection, the ASI should contact the CHDO to discuss the results, if required.

5) Inspect the main cargo doorsill protector for installation, security, and condition (damage).

6) Inspect the main cargo compartment area for foreign object damage (FOD) and general cleanliness.

7) Inspect the overall condition of the smoke barrier curtain, if installed, or cockpit door seal, barrier net assembly, or solid bulkhead. Ensure that the net (if used) has the proper rating for its intended G loading. Pay particular attention to the following:

a) The smoke barrier curtain must be free of tears, holes, and cuts to prevent smoke from entering the forward cabin and flight deck.

b) The cockpit door seal, for condition and integrity.

c) The barrier net, for condition and security (i.e., check for frayed straps, hardware integrity, and proper markings).

d) Cargo compartment retention nets, for condition and security.

e) The solid bulkhead, for condition and security.

f) The required placards, such as loading, fire suppression, and so forth.

C. Lower, Forward, and/or Aft Compartment and Pods.

1) Inspect the compartment or pod to determine its condition, security, deterioration, and cleanliness.

2) Ensure that the required placards are installed.

3) Ensure that baggage is loaded in accordance with the air carrier/operator's W&B program and/or other operator procedures.

4) Check the condition and security of tiedown devices/restraints.

5) Check the security of ballast, if installed.

6) If the aircraft is equipped with cargo pods, inspect the area like any other cargo compartment.

7) Inspect floor locks/cargo loading system, if installed. Inspect door seals and mechanisms.

8) Inspect the interior, paying particular attention to the condition and security of the ceiling/sidewall linings and floor panels, including the proper installation of repair tape.

9) Inspect cargo doors, door seals, locking mechanisms, and door lock viewing windows (if installed) for cleanliness, damage, deterioration, and security. Ensure that the fire detection/suppression is appropriate for its classification and that required placards are present.

10) Ensure that cargo is properly secured by appropriate tie-downs having enough strength to eliminate the possibility of shifting under all normal flight conditions.

11) Inspect retention nets for condition and security.

12) Ensure that loading/unloading is conducted in a safe manner in accordance with the air carrier/operator's procedures.

13) Whenever possible, inspect cargo for proper tagging and/or identification (e.g., mail, crew bags, equipment, and parts that the air carrier/operator considers COMAT).

D. ULDs.

1) Ensure that ULDs are eligible for transport on the aircraft.

NOTE: The Original Equipment Manufacturer (OEM) W&B Manual determines eligibility, as referenced in the type certificate (TC), or Supplemental Type Certificate (STC) Weight and Balance Supplement.

2) Ensure that Technical Standard Order (TSO) markings are attached to cargo containers, nets, and pallets (if applicable). If active ULDs are present, ensure they are placarded as certified under FAA Order 8150.4, Certification of Cargo Containers with Self-Contained Temperature Control Systems (Active ULDS), and approved under 14 CFR part 21, § 21.305(d). An air carrier/operator must have specific procedures in its manual to carry active ULDs.

3) Inspect ULD (nets, pallets, and containers) for serviceability per the air carrier/operator's procedures and limitations.

4) Ensure that identification markings are present in accordance with the air carrier/operator's procedures.

E. Temperature-Controlled Shipping Containers.

1) Temperature-controlled shipping containers are devices designed to maintain their contents within strict temperature controls. These devices may bear a TSO, STC, Parts Manufacturer Approval (PMA), or be allowed by the TC.

2) For an air carrier/operator to carry these devices, it must incorporate or reference the pertinent parts of the device's certification documents into its manual. This includes training of appropriate personnel on the handling and maintenance of these devices. These units will be pre-approved in the limitations section of the certification document for use with certain Net-Pallet combinations. Any aircraft that is eligible to carry the approved Net-Pallet combinations may carry these devices.

NOTE: Hazmat and dangerous goods procedures may apply to these devices and/or their contents.

F. Weighing Scales.

- 1) Inspect current calibration of scales traceable to the National Institute of Standards and Technology (NIST), or equivalent.
- 2) Inspect overall condition of scales.
- 3) Ensure conformance with the air carrier/operator's program.
- 4) Observe weighing procedures and system integration to the load manifest.

G. Aircraft Loading and Ground Equipment.

- 1) Ensure that the aircraft is loaded/unloaded in accordance with the air carrier/operator's manual.
- 2) Ensure the positioning of appropriate ground equipment is in accordance with the air carrier/operator's manual.
- 3) Ensure that load sheets or the manifest is properly executed and signed for.
- 4) Ensure that hazmat information is relayed to the crew.
- 5) Observe general safety procedures used during cargo off-loading operations, especially at night, for use of lighting, reflective clothing, flashlights, and wands.

H. Carriage of Passengers Specified in Part 121, § 121.583(a), Part 125, § 125.331 and Part 135, § 135.85. Although some in the industry refer to the persons listed in §§ 121.583(a), 125.331, and 135.85 as “supernumeraries,” they are defined in the 14 CFR part 110, § 110.2 definition of “All-cargo operation” as passengers. Per § 110.2—“All-cargo operation means any operation for compensation or hire that is other than a passenger-carrying operation or, if passengers are carried, they are only those specified in §§ 121.583(a) or 135.85 of this chapter.”

- 1) Inspect the passenger cabin (if equipped) for proper equipment, condition, and security.
- 2) Ensure the proper installation of emergency equipment and that each item has an inspection tag affixed.
- 3) Ensure that escape devices, such as slides, ropes, or descent devices, are serviceable per the air carrier/operator's manual.
- 4) Ensure proper placarding of the passenger cabin for emergency exit.

- 5) Ensure that passenger to flight deck communications is serviceable.
- 6) Inspect the galley area (if installed) for condition and security.

I. Hazmat and Dangerous Goods. The surveillance of hazmat handling is not the primary function of the Flight Standards Service (AFS); however, to carry out his or her 14 CFR responsibilities, an ASI must be familiar with the Title 49 of the Code of Federal Regulations (49 CFR) regulations and the air carrier/operator's hazmat/dangerous goods programs, including their approved training. If an ASI witnesses or suspects irregularities regarding hazmat or dangerous goods, he or she should immediately contact the regional hazmat branch manager through the ROC. The hazmat branch manager will investigate all hazmat and dangerous goods issues.

NOTE: Corrosion and structural damage may occur by improper handling of some hazmat.

- 1) Inquire about proper training for loaders, load supervisors, and personnel involved in ULD buildup in hazmat recognition.
- 2) Inquire about proper training in hazmat recognition for maintenance personnel involved with the movement of COMAT.
- 3) Ensure proper loading and marking of hazmat. The ASI should contact the CHDO and, if time permits, the regional hazmat branch manager after noting discrepancies in the handling of hazmat.
- 4) Inquire about procedures for pilot notification of the amount and location of hazmat.
- 5) Look for signs of undeclared hazmat.
- 6) Inquire about safety procedures and equipment availability in case of a hazmat accident, such as a spill (e.g., mercury spill kit, emergency equipment).

J. Civil Reserve Air Fleet (CRAF) (if Aircraft Is Being Operated in CRAF Operations).

1) If the operation involves the CRAF program with the Air Force Air Mobility Command (AMC), the ASI should ensure the following:

- Air carrier/operator CRAF procedures are followed.
- Aircraft are equipped for CRAF operations.
- Check that loadmaster or equivalent procedures are followed.
- W&B procedures for CRAF operations are followed.

2) If the air carrier/operator contracts with AMC outside of the CRAF arena, ensure that the operation conforms to current manual procedures.

3) Ensure that authorized military ULDs are used.

NOTE: Authorized military ULDs may be found in the appropriate OEM W&B manual or STC W&B supplement.

6-272 INSPECTION RESULTS.

A. Common Discrepancies. The ASI must accomplish this inspection without interfering with the ground time limitations unless safety of flight becomes an issue. The following items, which are common discrepancies, may cause scheduling delays if found during a ramp inspection.

- Improper load manifest,
- ULDs are not airworthy,
- Damage to aircraft loading system,
- Damage to the aircraft,
- Improper positioning of ground equipment,
- Inadequate training,
- Signs of undeclared hazmat, and
- Any other unusual air carrier/operator activity.

B. Corrective Action. The ASI must bring all noted discrepancies to the attention of appropriate personnel immediately (including the CHDO) to allow the air carrier/operator the opportunity to take corrective action without interrupting the flight schedule. The ASI must verify that all corrective maintenance actions taken regarding maintenance discrepancies were in accordance with the requirements of the air carrier/operator's maintenance procedures manual. It is important to re-emphasize that any suspected or known hazmat or dangerous goods issues must be reported to the nearest FAA hazmat branch manager (through the appropriate ROC) for investigation and disposition.

6-273 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites:

- Knowledge of the regulatory requirements of parts [91K](#), [121](#), [125](#) and [135](#), as applicable.

- Successful completion of the General/Air Carrier Airworthiness Safety Inspector Indoctrination course.
- Experience working with similar type aircraft.

B. Coordination:

- This task may require coordination between Airworthiness and Operations ASIs.
- Geographic units should coordinate with the CHDO.

6-274 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR parts [21](#), [23](#), [25](#), [27](#), [29](#), [43](#), [45](#), [47](#), [91](#), [121](#), [125](#), and [135](#).
- Title 49 CFR parts [171](#), [172](#), [173](#), and [175](#).
- Advisory Circular (AC) [25-17](#), Transport Airplane Cabin Interiors Crashworthiness Handbook.
- [AC 25-18](#), Transport Category Airplanes Modified for Cargo Service.
- [AC 120-27](#), Aircraft Weight and Balance Control.
- [AC 120-85](#), Air Cargo Operations.
- Air carrier/operator's applicable cargo procedures manual.

B. Forms. None.

C. Job Aids. ATOS Element 3.1.8 and 1.3.25.

6-275 PROCEDURES.

A. Initiate Cargo Ramp Inspection. Initiate a cargo ramp inspection in accordance with the Flight Standards Field Office Work Program or ATOS requirements.

B. Prepare for the Inspection.

1) Review the air carrier/operator's flight schedule, select the flight to be inspected, and note the type of operation (cargo or passenger (PAX)). Make certain the selected flight has adequate ground time so that the inspection can be accomplished without schedule delays.

2) Determine if any recent problem areas have been identified for that type of aircraft.

C. Interview Flightcrew and/or Loading Supervisor. Introduce yourself to the flightcrew and/or loading supervisor, as appropriate, and describe the purpose and scope of the inspection. Record flightcrew information as required for entry into PTRS or ATOS DCT (as applicable).

D. Inspect Aircraft Maintenance Records with Emphasis on Cargo-related Equipment.

1) Ensure that all open discrepancies from the previous flight are addressed per the air carrier/operator's manual, prior to departure of the aircraft.

2) Review the maintenance records to determine if repetitive maintenance problems exist, which might indicate a trend.

3) Ensure that all MEL/CDL/NEF items are deferred in accordance with the provisions of the air carrier/operator's approved manual.

E. Perform Interior Inspection. Perform this inspection, as applicable, in accordance with Figure 6-18, Interior Inspection Guidelines (located in [Volume 6, Chapter 2, Section 4](#)), paying particular attention to areas identified in Section 4.

F. Examine Maintenance Record Entries. Ensure that the air carrier/operator has recorded all discrepancies noted during this inspection. If time is available, monitor their operator's corrective actions.

G. Debrief Air Carrier/Operator. Inform the appropriate personnel of inspection completion. Discuss the discrepancies found during the inspection with appropriate personnel.

H. Analyze Findings. Analyze each finding to determine if the maintenance-related discrepancies are the result of improper maintenance and/or missing or inadequate maintenance/inspection procedures.

6-276 TASK OUTCOMES.

A. Complete the PTRS Record.

B. ATOS. Complete the appropriate DCT.

C. Complete the Task. Completion of this task can result in the following:

- Appropriate enforcement action when analysis of the findings discloses improper maintenance.
- Written notification to the air carrier/operator of the necessary changes to the manual, when analysis of the findings discloses missing or inadequate maintenance/inspection procedures.

- Communication with the CHDO by the geographic unit finding discrepancies.
- Hazmat/dangerous goods issues reported to the regional hazmat branch manager.

D. Document the Task. File all supporting paperwork in the air carrier/operator's office file.

6-277 FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination between the CHDO and geographic units is required for noncompliant air carrier/operators to regain compliance.

RESERVED. Paragraphs 6-278 through 6-292.