

Carrier Requirements (Air)



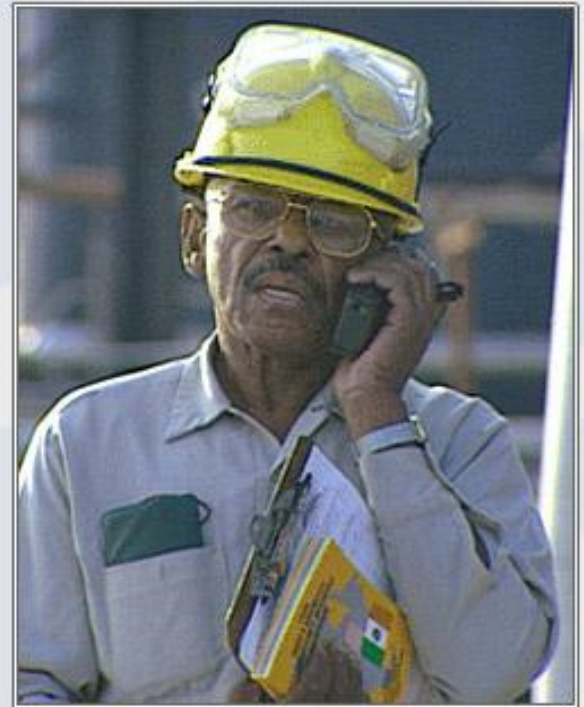
U.S. Department of Transportation



Module 6B Objectives

After completing Module 6B on the Carrier Requirements (Air) lesson, you should be able to:

- Identify the DOT requirements for air transportation of hazardous materials, as set out in Subparts A, B, and C of Part 175.
- Compare the uses of the guidelines found in Part 175 with those of the International Civil Aviation Organization's (ICAO's) Technical Instructions for the Safe Transport of Dangerous Goods by Air.
- Distinguish between the responsibilities of the shipper and the air carrier.
- State the notification guidelines for passengers, pilots, and facilities.
- Identify the exceptions to the "Carrying of Hazmat in Cabins or on Flight Decks" regulation.
- Define cargo aircraft, passenger aircraft, forbidden, and magnetic field.
- Evaluate the packaging requirements for air transportation.
- Identify quantity limitations and exceptions, loading and unloading, and storage guidelines for air transportation.
- Identify guidelines related to completing a discrepancy report, identify incident reporting guidelines.



Part 175 - Carriage by Aircraft

Part 175, Carriage by Aircraft, is divided into Subparts A, B, and C, and details the requirements for air transportation in addition to those contained in Parts 171, 172, and 173 of the HMR, which were addressed in Modules 1 through 5. In addition to Part 175, we will review packaging requirements unique to air transportation.

- ☒ Subpart A
- ☐ Subpart B
- ☐ Subpart C



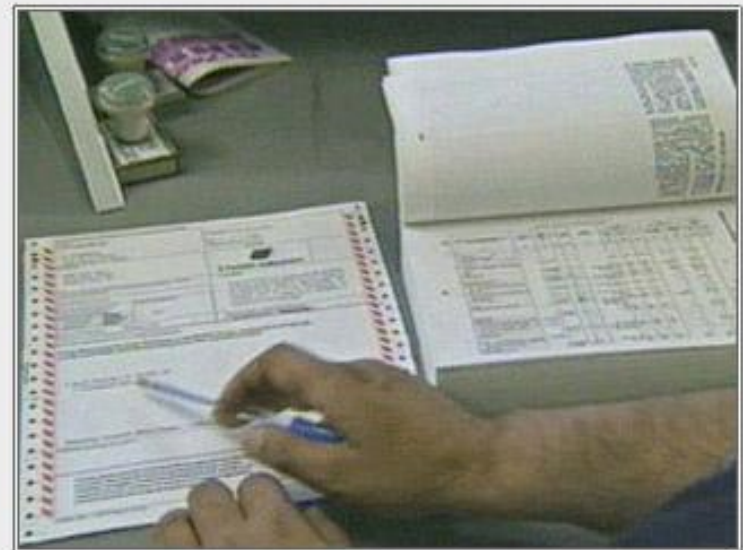
[§175.1](#)

Part 175 - Carriage by Aircraft

Part 175, Carriage by Aircraft, is divided into Subparts A, B, and C, and details the requirements for air transportation in addition to those contained in Parts 171, 172, and 173 of the HMR, which were addressed in Modules 1 through 5. In addition to Part 175, we will review packaging requirements unique to air transportation.

- ☐ Subpart A
- ☒ Subpart B
- ☒ Subpart C

Subpart A contains the air carrier requirements for inspecting and accepting hazardous materials shipments for air transportation, documentation, training, and reporting of discrepancies.



Part 175 - Carriage by Aircraft

Part 175, Carriage by Aircraft, is divided into Subparts A, B, and C, and details the requirements for air transportation in addition to those contained in Parts 171, 172, and 173 of the HMR, which were addressed in Modules 1 through 5. In addition to Part 175, we will review packaging requirements unique to air transportation.

- ☐ Subpart A
- ☐ Subpart B
- ☒ Subpart C

Subpart B addresses air carrier requirements regarding loading, unloading, and handling of hazardous materials, including quantity limitations, stowage compatibility, cargo location, and orientation of packages.



[§175.1](#)

Part 175 - Carriage by Aircraft

Part 175, Carriage by Aircraft, is divided into Subparts A, B, and C, and details the requirements for air transportation in addition to those contained in Parts 171, 172, and 173 of the HMR, which were addressed in Modules 1 through 5. In addition to Part 175, we will review packaging requirements unique to air transportation.

- ☐ Subpart A
- ☐ Subpart B
- ☐ Subpart C

Subpart C contains special requirements for certain hazard classes and commodities such as flammable liquids, poisons, radioactive materials, and infectious substances.



All US & Foreign Carriers Must Comply With 49 CFR, Subchapter C

All US air carriers and foreign air carriers operating flights to or from US airports must comply with the 49 CFR requirements governing the acceptance, storage, loading, and transportation of hazardous materials by air. These requirements are in Subchapter C of 49 CFR, Parts 171-180.



[\\$175.1](#)

ICAO Technical Instructions

Instead of preparing shipments in accordance with 49 CFR, Parts 172 and 173, you may package, mark, label, classify and describe shipments on shipping papers in accordance with the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions). However, the shipment must still meet all other applicable requirements of 49 CFR, Parts 171-180.



Training of Hazmat Employees

Requirements for the training of hazmat employees include:

- Initial training required within 90 days
- DOT requires retraining and testing AT LEAST once every 3 years
- FAA (14 CFR) requires training for air carrier employees every two years



\$172,700

\$175.20

Training Program Requirements in 49 CFR

Training must include general awareness/familiarization, function-specific, safety training, security awareness and – when an employer must file a security plan – in-depth security training.



[\\$172.700](#)

[\\$175.20](#)

[\\$172.704\(a\)](#)

Training Program Requirements in 14 CFR

Training for US air carriers must incorporate training requirements found in 14 CFR. Under these regulations, air carriers may be defined as "will-carry" or "will-not-carry." "Will-carry" operators have chosen to accept and carry hazardous materials, under the HMR. "Will-not-carry" operators have chosen not to accept hazardous materials, but still require training to recognize and refuse hazardous materials packages. All operators are required to include certain information in their manuals regarding the handling of hazardous materials. Additional information must be provided in "will-carry" manuals.



Shipper and Carrier Responsibility

The shipper and the air carrier share responsibility for the safe transportation of hazardous materials by air.

- Shipper Responsibilities
- Air Carrier Responsibilities



\$175.30

Shipper Responsibilities

Shipper responsibilities include but are not limited to:

- Classify hazardous material
- Determine if regulated for air transportation, and the quantities authorized
- Describe material on shipping documents, and provide two copies of the shipping documents
- Determine packaging requirements
- Package material properly
- Mark and label package
- Determine placarding requirements



[\\$173.22](#)
[\\$175.30](#)

Acceptance of Overpacks

Only accept overpacks when the:

- Shipping name, ID number, and markings on inside packages are visible or reproduced
- Labels on inside packages are visible or reproduced
- Package is marked with the word "OVERPACK," or, until October 1, 2007, with a statement that packages comply with regulations
- Requirements for packages intended for "CARGO AIRCRAFT ONLY" are met



[§175.30\(e\)](#)

Air Carrier Responsibilities

Air carrier responsibilities include ensuring:

- Material is authorized and within quantity limitations
- Content and accuracy of shipping papers regarding description of material, emergency response information, shipper certification, and preparation in duplicate
- Hazardous materials packages are marked, labeled, and, when required, placarded
- Proper use of CARGO AIRCRAFT ONLY label
- Packages are in good condition
- Seals on radioactive material packages are not broken



[§171.11](#)

[§173.27\(b\)\(4\)](#)

[§175.30](#)

Refuse Improperly Prepared Packages!



\$175.3

Professor Fed's Knowledge Check 1

Instructions: Click and drag each of the terms shown here to fill in the blanks below. Click on the DONE button when you are finished.

shipper
air carrier

ICAO
overpack

transportation
refused

each
authorized

1. The _____ must classify, describe, package, mark, and label the hazardous materials.
2. An air carrier is required to make sure that the material, as described on the shipping papers and package markings, is _____ and is within the quantity limitations for carriage aboard an aircraft as specified in the HMT.
3. All US air carriers and foreign air carriers operating flights to or from US airports must comply with the 49 CFR, Part 175, requirements governing the acceptance, storage, loading, and _____ of hazardous materials by air.
4. Improperly prepared packages must be _____.



Notification of Hazmat Restrictions

Notification signs must be legible, in English, and prominently displayed at ticket counters, baggage check locations, and in aircraft boarding areas.



Notification



\$175.25

Air Cargo Facilities Notification



[\\$175.26](#)

Exceptions to Prohibitions Against Carrying Hazmat

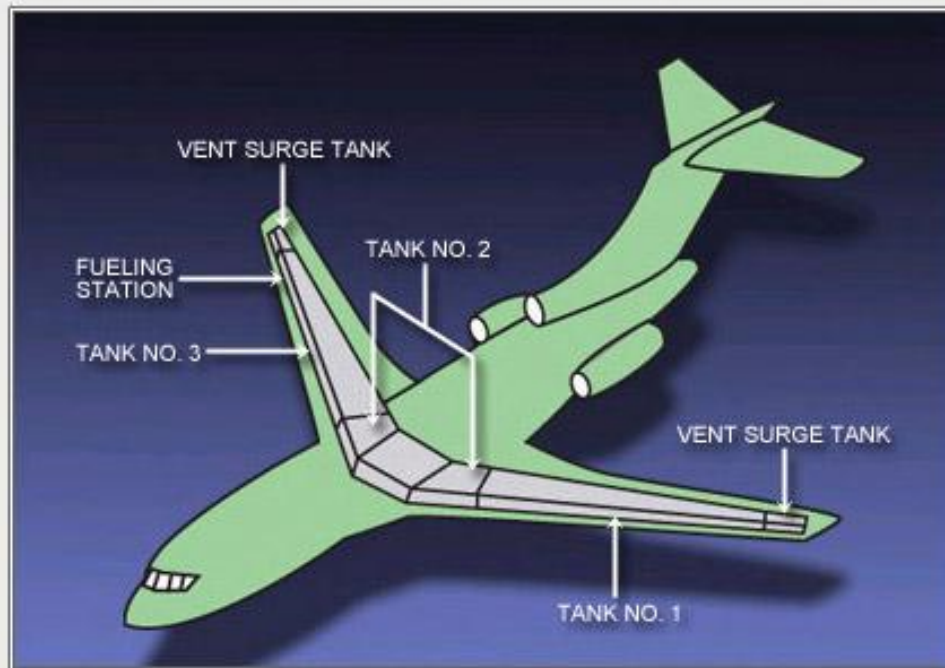
- Hazmat Required for Safe Operation of Aircraft
- Hazmat Intended for Personal Use of Passengers and Crew
- Hazmat Intended for Use in Special Aircraft Operations
- Wheelchairs and other Mobility and Medical Devices
- Miscellaneous Hazmat Exceptions



[§175.8-175.10](#)

Hazmat Required for Safe Operation of Aircraft

Hazardous materials required for the safe operation of an aircraft include aviation fuel and oil in the tanks, and fire extinguishers, oxygen generators, escape chutes and life rafts to make the aircraft airworthy.



[§175.8\(a\)\(1-2\)](#)

Replacement Equipment

Replacement Equipment (COMAT) must be transported in accordance with part Part 175 of the HMR, unless the operator transports its own replacement items as described in §175.8(a)(3).

- Aircraft spares and supplies must be packaged equivalent to the level of protection required by 49 CFR
- Aircraft batteries are not subject to quantity limitations

Part 175 of the HMR also does not apply to:

- Oxygen, or any hazardous material intended for the generation of oxygen, for medical use by a passenger when furnished by the operator(see restrictions in 175.8(b)(1))
- Dry Ice intended for use by the operator in food and beverage service on board the aircraft
- Alcohol, perfumes, and colognes carried for sale on the aircraft
- A serviceable tire not inflated above the maximum rated pressure



[§175.8\(a\)\(3\)](#)

[§175.8\(b\)\(4\)](#)

Hazmat Intended for Personal Use of Passengers and Crew

Flight crew and passengers may carry hazardous materials intended for personal use such as non-radioactive medicinal and toilet articles, including aerosols, in checked or carry-on baggage.



[\\$175.10\(a\)\(1.2.6\)](#)

Additional Personal Use Materials

Some important points regarding additional personal use items are:

- A crewmember or passenger may carry small arms ammunition, for personal use only, in their checked baggage. The ammunition must be securely packed in fiber, wood or metal boxes or containers specifically designed for that purpose.
- Duty free perfumes and colognes are excepted from the regulations.
- Alcoholic beverages are allowed under the quantity limits of 175.10(a)(4)
- Up to 2.3 kg of dry ice may be carried in checked baggage, and up to 2 kg may be carried in carry-on baggage.
- Remember, dry ice used by the aircraft operator for food or beverage service, and alcohol, perfumes, and colognes intended for sale on board the aircraft, are excepted from regulation.



[§173.217](#)
[§175.8\(b\)](#)
[§175.10\(a\)](#)

Hazmat Intended for Use in Special Aircraft Operations

Hazmat intended for use in special aircraft operations include:

- Materials used for aerial seeding, dusting, spraying, fertilizing, crop improvement, or pest control
- Smoke grenades, flares, and pyrotechnic devices for scheduled air shows
- Parachute activation devices
- Hazardous materials used during dedicated air ambulance, firefighting, or search and rescue operations
- A transport incubator unit or organ preservation unit (see restrictions in §175.9(e))
- Materials to be dispensed or expended during flight for weather control, or environmental restoration and protection (see restrictions in §175.9(f))



[§175.9](#)

Wheelchairs and Other Mobility and Medical Devices

In addition to oxygen and other hazardous material used to generate oxygen for the medical use by a passenger, other excepted hazardous materials that address medical needs of passengers or crew include:

- implanted medical devices, such as a heart pacemaker;
- **battery-powered** wheelchairs and other mobility devices, which may be accepted as checked baggage when:
 - the battery is disconnected and the terminals are insulated and securely attached to the wheelchair; or
 - the battery is removed, properly marked and packed in a strong rigid packaging.



[§173.159\(d\)](#)
[§175.10\(a\)\(3\)](#)
[§175.10\(a\)\(15-16\)](#)

Miscellaneous Hazmat Exceptions

Some miscellaneous hazardous materials exceptions include:

- A small medical or clinical mercury thermometer for personal use, when carried in a protective case in carry-on or checked baggage.
- A mercury barometer or thermometer carried as carry-on baggage, by a representative of a government weather bureau or similar official agency (see §175.10(a)(13) for restrictions)



[175.10\(a\)\(7.13\)](#)

Professor Fed's Knowledge Check 2

Instructions: Click and drag one of the terms shown here to fill in each blank below. Click on the DONE button when you are finished.

excepted
disconnected
crop dusting

HMR
radios
removed

separate
medicines
HMT

authorized
routine
prohibited

1. Air carriers that transport passengers must display signs warning passengers that the carriage of some hazardous materials aboard aircraft in their luggage or on their person is _____ by Federal law. At cargo facilities, a similar sign must be displayed.
2. Hazardous materials that are required to make the aircraft airworthy, such as aircraft batteries, escape chutes and fire extinguishers, are _____ from the HMR, but replacements for these hazardous materials are subject to the regulations.
3. Small quantities of certain personal toilet articles, smoking materials, _____, and dry ice are excepted from the HMR and may be hand carried on board an aircraft by passengers and crewmembers.
4. Hazardous materials used in special aircraft operations, such as _____, sport parachuting, and weather control, are generally not subject to the HMR.
5. Wheelchairs with either spillable or nonspillable batteries may be accepted as checked baggage. All batteries must be _____ and the terminals insulated.



Definition of Common Terms

Passenger Aircraft: An aircraft carrying any person other than a crewmember, company employee, an authorized representative of the United States, or a person accompanying a shipment.

Cargo Aircraft: An aircraft used to transport cargo and is not engaged in carrying passengers. The terms cargo aircraft, cargo-only aircraft, and cargo aircraft only, have the same meaning in this module.

Forbidden: Refers to a hazardous material that may not be offered for transportation or transported. Forbidden does not mean the material is not regulated.

Magnetic Field: A package with a magnetic field of more than 0.00525 gauss measured 4.5 meters or 15 feet away from any surface of the package.



[§171.8](#)
[§172.101\(d\)](#)
[§173.21\(d\)](#)
[§173.27\(b\)\(1-2\)](#)

Professor Fed's Knowledge Check 3

Instructions: Select the best answer from the four choices provided.

FORBIDDEN means the material may not be transported. Some materials are only forbidden on _____ aircraft. Some are forbidden on all aircraft.

- ☐ A charter
- ☐ B passenger
- ☐ C cargo
- ☐ D private



Quantity Limitations for Aircraft

The maximum net quantity per package permitted on a passenger aircraft is found in Column 9A of the HMT.

The maximum net quantity permitted on a cargo aircraft is found in Column 9B.

§172.101 Hazardous Materials Table

Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stowage	
	Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Location	Other
(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	152 ..	212 ..	242 ..	5kg	25kg	A	56, 58 106
A8, A9, A20	None .	212 ..	241 ..	15kg	50kg	C	
	None .	187 ..	244 ..	Forbidden	Forbidden	C	54



[§172.101\(i\)](#)
[§173.27\(b\)3\)](#)

Professor Fed's Knowledge Check 4

Instructions: Select the best answer from the four choices provided.

Column 9B of the HMT forbids or limits the quantity of hazardous materials in one package that may be offered or transported _____.

- ☐ A on passenger aircraft only
- ☐ B on rail only
- ☐ C on cargo aircraft only
- ☐ D on all of the above



[\\$172.101](#)

Hazardous Materials Packaging

Packages offered or intended for air transportation must comply with the general packaging requirements in 173.24, 173.24a and 173.27.

- Class 4, 5, and 8 Materials
- Prevent Leakage
- Packages Must Be Securely Closed
- Combination Packagings Regulations
- Quantity Limitations – Combination Packaging
- Cylinder Protection
- Cargo Tanks & Tank Cars
- Cargo Aircraft Only Packages



[§173.24](#)

[§173.24\(a\)](#)

[§173.27](#)

Packaging for Certain Class 4, 5, and 8 Materials

When transported by air, packages containing Packing Group III materials of Division 4.1, 4.2, 4.3, or 5.1 materials, or Class 8 materials, must meet performance tests at the Packing Group II level.



[§173.27\(a\)](#)

Prevent Leakage

Packagings must be designed and constructed to prevent leakage that may be caused by internal pressure changes in altitude and temperature during air transportation.



[§173.27\(c\)\(1\)](#)

Packaging for Liquids

The HMR recognize two different methods of ascertaining the suitability of packagings for the transportation of liquid hazardous materials. Your packaging must withstand the greater of these vapor pressure measurements:

- internal pressure which produces a gauge pressure of not less than 75 kPa or 11 psig for liquids in Packing Group III of Class 3 or Division 6.1 or 95 kPa or 14 psig for other liquids, and
- A pressure calculated by one of the following:
 - The total gauge pressure measured in the receptacle at 55°C (131°F), multiplied by a safety factor of 1.5; determined on the basis of a filling temperature of 15°C (59°F) and a degree of filling such that the receptacle is not completely liquid full at a temperature of 55°C (131°F) or less;
 - 1.75 times the vapor pressure at 50°C (122°F) less 100 kPa (15 psia); or
 - 1.5 times the vapor pressure at 55°C (131°F) less 100 kPa (15 psia).



[§173.27\(c\)\(2\)](#)

Pressure Test Requirements

Packagings subject to the hydrostatic pressure test and marking requirements must have a marked test pressure of not less than 250 kPa (36 psig) for liquids in Packing Group I, 80 kPa (12 psig) for liquids in Packing Group III of Class 3 or Division 6.1, and 100 kPa (15 psig) for other liquids.



[§173.27\(c\)\(2-3\)](#)

Venting of Packages

Venting to reduce internal pressure is not permitted.



[§173.24\(g\)](#)

Packages Must be Securely Closed

There are many different ways to close a packaging. Some methods include:

- Friction tape
- Stoppers or corks
- Screw type closures



[§173.27\(d\)](#)

Inner Container of Glass or Earthenware

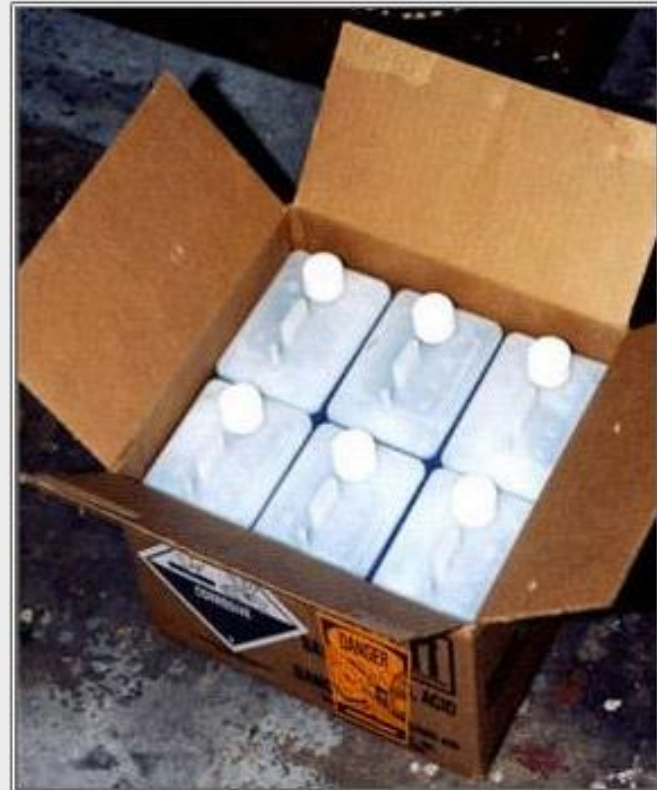
Combination packages of liquids in Packing Group I and II of Class 3, 4, 5, 6.1 and 8 require absorbent materials when the inner container is made of glass or earthenware. The absorbent material must be such that it does not react dangerously with the liquid.



[§173.27\(e\)](#)

Absorbent Material Not Required

Absorbent material is not required for inner packagings which are so protected that they will not likely break and leak under normal conditions of transportation, and leakage from the outer packaging is not likely to occur.



[§173.27\(e\)](#)

Use of Liners

When absorbent material is required and the outer packaging is not liquid tight, some additional means of containing the liquid in the event of leakage must be used. This may be in the form of a leak proof liner, plastic bag or other equally efficient means of containment.



[§173.27\(e\)](#)

Packing Group I on Passenger Aircraft

When a liquid hazardous material in Packing Group I is being transported on a passenger aircraft and the regulations require absorbent material, there must be sufficient material to absorb the contents of all inner packagings containing such liquids.



[§173.27\(e\)\(1\)](#)

PG I – Cargo Aircraft / PG II – Passenger Aircraft

For Packing Group I liquids being offered for transportation on a Cargo Aircraft Only and Packing Group II liquids offered on passenger aircraft, there must be enough absorbent material in the package to absorb the content of any one of the inner containers. If the inner containers are different sizes, there must be enough material to absorb the content of the container with the greatest quantity of liquid.



[§173.27\(e\)\(2\)](#)

Quantity Limitations – Combination Packaging

Quantity limitations for combination packagings being offered for air transport are set in two tables in §173.27(f). These tables are:

- Table 1 indicates quantities permitted in inner packagings for passenger aircraft.
- Table 2 indicates quantities permitted in inner packagings for cargo aircraft.

TABLE 1—MAXIMUM NET CAPACITY OF INNER PACKAGING FOR TRANSPORTATION ON PASSENGER-CARRYING AIRCRAFT

Maximum net quantity per package from Column 9a of the § 172.101 table	Maximum authorized net capacity of each inner packaging	
	Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
Liquids:		
Not greater than 0.5L	0.5L	0.5L
Greater than 0.5L, not greater than 1L	0.5L	1L
Greater than 1L, not greater than 5L	1L	5L
Greater than 5L, not greater than 60L	2.5L	10L
Greater than 60L, not greater than 220L	5L	25L
Greater than 220L	No limit	No limit
Solids:		
Not greater than 5 kg	0.5 kg	1 kg
Greater than 5 kg, not greater than 25 kg	1 kg	2.5 kg
Greater than 25 kg, not greater than 200 kg	5 kg	10 kg
Greater than 200 kg	No limit	No limit

TABLE 2—MAXIMUM NET CAPACITY OF INNER PACKAGING FOR TRANSPORTATION ON CARGO AIRCRAFT

Maximum net quantity per package from Column 9a of the § 172.101 table	Maximum authorized net capacity of each inner packaging	
	Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
Liquids:		
Not greater than 2.5L	1L	1L
Greater than 2.5L, not greater than 30L	2.5L	2.5L
Greater than 30L, not greater than 60L	5L	10L
Greater than 60L, not greater than 220L	5L	25L
Greater than 220L	No limit	No limit
Solids:		
Not greater than 15 kg	1 kg	2.5 kg
Greater than 15 kg, not greater than 50 kg	2.5 kg	5 kg
Greater than 50 kg, not greater than 200 kg	5 kg	10 kg
Greater than 200 kg	No limit	No limit



[§173.27\(f\)](#)

Professor Fed's Knowledge Check 5

Instructions: Find Benzene in the HMT and note the allowed quantities in Column 9a. Benzene, 3, UN 1114, PG II is a flammable liquid. Based on this quantity, select the entry in Table 1 in section 173.27(f) that applies to Benzene, UN 1114.

TABLE 1—MAXIMUM NET CAPACITY OF INNER PACKAGING FOR TRANSPORTATION ON PASSENGERCARRYING AIRCRAFT

Maximum net quantity per package from Column 9a of the § 172.101 table	Maximum authorized net capacity of each inner packaging	
	Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
Liquids:		
Not greater than 0.5L	0.5	0.5L
Greater than 0.5L, not greater than 1L	0.5L	1L
Greater than 1L, not greater than 5L	1L	5L
Greater than 5L, not greater than 60L	2.5L	10L
Greater than 60L, not greater than 220L .	5L	25L
Greater than 220L	No limit	No limit



[HM Table §173.27 \(Table 1\)](#)

TABLE 1—MAXIMUM NET CAPACITY OF INNER PACKAGING FOR TRANSPORTATION ON PASSENGER-CARRYING AIRCRAFT

Maximum net quantity per package from Column 9a of the § 172.101 table	Maximum authorized net capacity of each inner packaging	
	Glass, earthenware or fiber inner packagings	Metal or plastic inner packagings
Liquids:		
Not greater than 0.5L	0.5	0.5L
Greater than 0.5L, not greater than 1L	0.5L	1L
Greater than 1L, not greater than 5L	1L	5L
Greater than 5L, not greater than 60L	2.5L	10L
Greater than 60L, not greater than 220L .	5L	25L
Greater than 220L	No limit	No limit

Cylinder Protection

Cylinder valves must be protected against damage and accidental opening when shipped by air.



[§173.27\(g\)](#)

Cargo Tanks & Tank Cars



[§173.27\(h\)](#)

Cargo Aircraft Only Packages

The CARGO AIRCRAFT ONLY label must be affixed to hazardous materials packages shipped by air that are authorized for cargo aircraft only.



[§172.402\(c\)](#)
[§173.27\(b\)\(4\)](#)

Professor Fed's Knowledge Check 6

Instructions: Click and drag each of the terms shown here to fill in the blanks below. Click on the DONE button when you are finished.

combination

passenger

cargo

inner

altitude

containing

caps

1. When _____ packagings are being offered for air transport, the inner packaging must conform to the quantity limits set forth in 173.27(f), Tables 1 and 2.
2. When absorbent material is required, the material must be such that it would not react dangerously with the spilled material. If absorbent material is required and the outer packaging is not liquid tight, some other means of _____ the spilled material is required.
3. Packages labeled CARGO AIRCRAFT ONLY are prohibited from being transported on _____ aircraft.
4. Cylinder valves must be protected when shipped by air. Equip cylinders with valve _____ or protective headrings or put cylinders in a box or crate.



Quantity Limitations and Cargo Locations

In addition to the quantity limitations in the HMT, some quantity limitations depend on cargo locations:

- **Passenger Aircraft:** Not more than 25 kg (55 pounds) net weight of hazardous material, and in addition, 75 kg (165 pounds) net weight of Division 2.2 (non-flammable compressed gas) in an inaccessible cargo compartment, or in a freight container within an accessible cargo compartment.
- **Cargo Aircraft:** Same quantity limits apply to inaccessible cargo compartments and to accessible cargo compartments when the materials are not loaded in a freight container and are loaded in the cargo compartment that makes them inaccessible.



[\\$175.75](#)

Loading Hazardous Material – Passenger Aircraft

On a passenger aircraft, hazardous materials may be carried in a main deck cargo compartment only when the following guidelines are followed:

- Main deck cargo compartment inaccessible to passengers
- Meets certification requirements for Class B compartment or Class C compartment (14CFR 25.857)



[§175.75\(b\)](#)

Loading Cargo Aircraft – Cargo Aircraft Only

You must load hazardous materials so the crew can see, handle, and separate during flight.

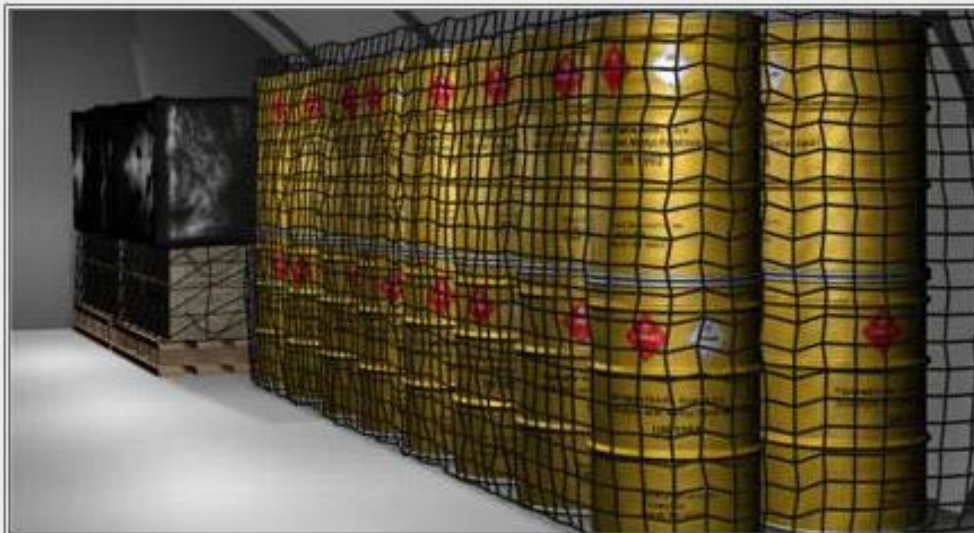


[§175.75\(d\)](#)

Quantity Limitation Exceptions

The following materials are not subject to the quantity limitation specified in §175.75:

- Class 7 (radioactive) materials
- Division 6.1 (poisonous/toxic) materials (except those labeled FLAMMABLE)
- Division 6.2 materials (etiologic or infectious substances)
- Class 3 (Flammable liquid) materials in PGIII that do not meet the definition of another hazard class
- Class 9 (miscellaneous hazardous) materials
- ORM-D materials



[§175.75\(e\)\(1\)](#)

Air Transport – Only Available Means

When the only practicable means of transport is by aircraft:

- Procedures must be in writing
- Approval required from FAA
Regional or Field Security Office



[§175.75\(e\)\(3\)](#)

Small Single Pilot Cargo Aircraft

When packages of hazardous materials are carried in small, single pilot cargo aircraft, they are excepted from the quantity limitations specified in §175.75, provided that:

- The aircraft carries only the pilot, an FAA inspector, the shipper or consignee of the material or a representative of the shipper or consignee so designated in writing, or a person necessary for handling the material.
- The pilot is provided written instructions on the characteristics and proper handling of the materials
- Whenever a change of pilots occurs while the material is on board, the new pilot is briefed under a hand to hand signature service provided by the operator of the aircraft



[§175.75\(e\)\(4\)](#)

Professor Fed's Knowledge Check 7

Instructions: Click and drag one of the terms shown here to fill in each blank below. Click on the DONE button when you are finished

marked and labeled

accessible

limited

orientation

inaccessible

unlimited

10.0

crewmembers

content

stored and loaded

3.0

passengers

1. Hazardous materials may be transported in an _____ cargo compartment or in a freight container within an accessible cargo compartment on passenger aircraft, if within specified weight limitations.
2. _____ quantities of Class 9 or ORM-D materials may be transported on either passenger or cargo aircraft.
3. Certain materials in Classes 3, 7, 9, Division 6.1 and 6.2, and ORM-D may be carried on a cargo aircraft in a compartment that is inaccessible to _____.



Radioactive Materials

Transport Index (TI) limits for radioactive materials shipped via air include:

- Passenger aircraft – 50 TI total; 3 TI for a single package
- Cargo aircraft – 200 TI total; 10 TI for a single package



[§175.75\(b\)\(1.2\)](#)

Packages with Orientation Arrows

Hazmat packages with text or arrows to indicate the proper orientation of the package must be stored and loaded in accordance with the markings.



[§175.88\(b\)](#)

Movement Restricted

Packages must be secured in an aircraft so that movement of the package in flight is prevented.



[§175.88\(c\)](#)

Stowage Compatibility

Refer to 175.78 for specific requirements regarding the stowage compatibility of cargo.

SEGREGATION TABLE

Hazard Label	Class or division							
	1	2	3	4.2	4.3	5.1	5.2	8
1.....	Note 1	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2
2.....	Note 2	.....	.....	.....	.....	.....	.....	.....
3.....	Note 2	.....	.....	.....	.....	X	.....	.....
4.2.....	Note 2	.....	.....	.....	.....	X	.....	.....
4.3.....	Note 2	.....	.....	.....	.....	.....	.....	X
5.1.....	Note 2	.....	X	X	.....	.....	.....	.....
5.2.....	Note 2	.....	.....	.....	.....	.....	.....	.....
8.....	Note 2	.....	.....	.....	X	.....	.....	.....



[§175.78](#)

Pilot Notification

Except as otherwise provided, the HMR require the following information on the Notification to Pilot-in-Command:

- Proper shipping name, ID number, and hazard class, as well as compatibility group letter for Class 1 (explosives)
- Total number of packages
- Net quantity or gross weight
- Location of packages aboard the aircraft
- Confirmation that packages are not damaged or leaking
- Other additional information, such as date of flight and a telephone number (See §175.33 for details)

The notification to pilot-in-command must be readily available to the pilot during flight as it contains information that would be critical in the case of a spill or other emergency.

[illegible]

\$175.33

Reporting Discrepancies

Discrepancies are situations where hazardous materials are improperly **described**, **certified**, **labeled**, **marked**, or **packaged** at the time the air carrier accepts the shipment, and in such a manner that the air carrier did not know of the presence of a hazardous material.



[\\$175.31](#)

Reporting Discrepancies

Discrepancies are situations where hazardous materials are improperly **described, certified, labeled, marked, or packaged** at the time the air carrier accepts the shipment, and in such a manner that the air carrier did not know of the presence of a hazardous material.

Discrepancies List

- Hazardous materials improperly described, certified, packaged, marked, or labeled
- Packages that exceed the authorized quantity limitations for air transportation
- Hazardous materials not described or certified as such on shipping papers
- Unauthorized inside containers or improper closures
- Inside containers not oriented as shown on package
- Insufficient/improper absorbent material (when required)
- Undeclared/hidden shipments of hazardous material in cargo and baggage

Close



\$175.31

Professor Fed's Knowledge Check 8

Instructions: Select the best answer from the four choices provided.

A discrepancy is a situation in which a hazardous material is improperly described, certified, labeled, marked, or packaged in a manner which is not known when _____ by the air carrier. If a discrepancy is discovered after acceptance by the carrier, the air carrier must notify the nearest FAA Regional or Field Security Office.

- ☐ A accepted
- ☐ B transported
- ☐ C packaged
- ☐ D documented



Reportable Incidents

Despite all safety efforts, incidents do occur. When hazardous materials are involved in certain transportation incidents, a report is required as soon as practical, but not later than 12 hours after the incident occurs. For these types of incidents, you must notify the National Response Center (NRC) (800-424-8802) and, for infectious substances, you may alternately notify the Centers for Disease Control (CDC) (800-232-0124).

For any such incident, you must also file a written Hazardous Materials Incident Report within 30 days of discovering the incident. Certain other conditions require a written report, but not immediate notification. (See the guidelines in §171.16).

Unless a requirement listed in §171.15 applies, you do not need to notify the NRC or CDC by phone. Click each button below to learn more about the types of incidents that require immediate notification per §171.15, and incidents requiring a written report per §171.16. Remember, if you have to report immediately by the rules in §171.15, you must also follow up with the written report explained in §171.16.

- ☐ Radioactive/Infectious Substances
- ☐ Other Incidents



[§171.15](#)

[§171.16](#)

Radioactives/Infectious Substances

You must notify the NRC as soon as practical in the event of fire, breakage, spillage, or suspected radioactive contamination from a radioactive material. You must also notify the offeror in such a case as soon as practical.

You must notify the NRC or CDC as soon as practical in the event of fire, breakage, spillage, or suspected contamination involving an infectious substance other than a diagnostic specimen or regulated medical waste.



[§171.15](#)

[§171.16](#)

[§175.31](#)

[§175.705\(e\)](#)

Other Incidents

Hazmat incidents resulting in any of the following are required to be reported as soon as possible to the National Response Center or the Center for Disease Control:

- Death, or injury requiring hospitalization
- Change in flight pattern or the routine of an aircraft
- Shutdown of major facility or transportation artery
- Evacuation of the public for one hour or more
- Release of a marine pollutant in the quantity identified
- Any situation that, in your judgment, requires notification, even if none of the above conditions are met (for example, a continuing danger to life, although no death has yet occurred)



[\\$171.15](#)
[\\$171.16](#)

Professor Fed's Knowledge Check 9

Instructions: Select the best answer from the four choices provided.

Which one of the following results of a hazmat incident is not required to be immediately reported to the nearest NRC or the Center for Disease Control?

- ☐ A Death or injury requiring hospitalization
- ☐ B Damage to any facility requiring in-service repair
- ☐ C Change in flight pattern or the routine of an aircraft
- ☐ D Shutdown of major facility or transportation artery

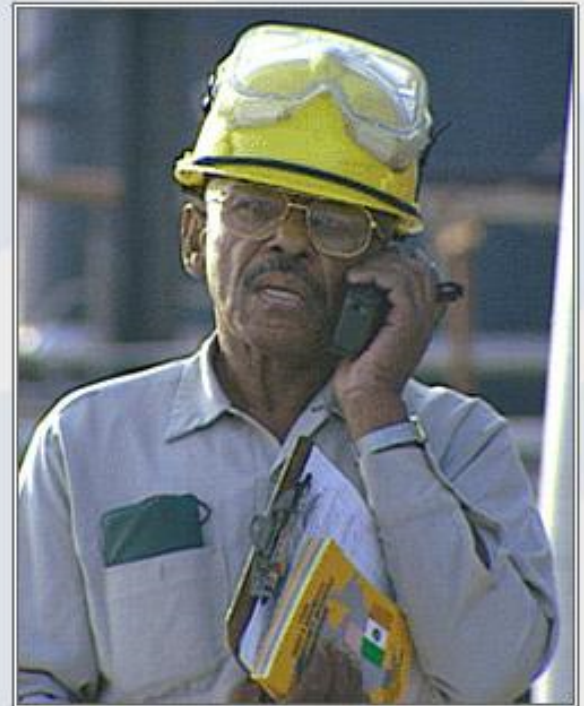


Completion of Module 6B Training

Congratulations!

You have completed all of the instruction for Module 6B. You should have the knowledge to be able to:

- Identify the DOT requirements for air transportation of hazardous materials, as set out in Subparts A, B, and C of Part 175.
- Compare the uses of the guidelines found in Part 175 with those of the International Civil Aviation Organization's (ICAO's) Technical Instructions for the Safe Transport of Dangerous Goods by Air.
- Distinguish between the responsibilities of the shipper and the air carrier.
- State the notification guidelines for passengers, pilots, and facilities.
- Identify the exceptions to the "Carrying of Hazmat in Cabins or on Flight Decks" regulation.
- Define cargo aircraft, passenger aircraft, forbidden, and magnetic field.
- Evaluate the packaging requirements for air transportation.
- Identify quantity limitations and exceptions, loading and unloading, and storage guidelines for air transportation.
- Identify guidelines related to completing a discrepancy report, identify incident reporting guidelines.



THE END

Thank you for your attention.

Please click

[HERE](#)

to go to exam.