

Hazardous Materials Transportation Training Modules

VERSION 5.1

STUDENT

Carrier Requirements (Highway)



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

MODULE 6A

Script

Visual

Narrative

1



This module presents the requirements for the transportation of hazardous materials by private, common, and contract motor carriers. These requirements are found in Part 177 of the in the Hazardous Materials Regulations, (HMR; 49 CFR Parts 100-185) and the Federal Motor Carrier Safety Regulations (FMCSR; Parts 300- 399).

2



After completing Module 6A on the Carrier Requirements for Highway lesson, you should be able to:

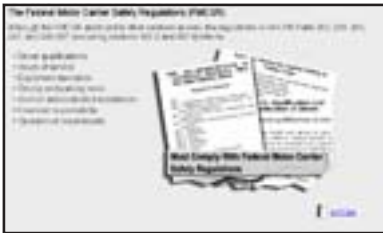
- Identify requirements affecting the transportation of hazardous materials on public highways by private, common, and contract motor carriers including vehicles not in motion;
- Describe information found in the Federal Motor Carrier Safety Regulations (FMCSR) as well as understand the differences among the FMCSR, the HMR, and state regulations;
- Identify shipping paper description and shipper certification requirements;
- Identify methods for handling damaged or leaking packages and tanks;
- Identify loading and unloading requirements for vehicles containing hazardous materials;
- Determine segregation requirements using the segregation table in §177.848; and
- Apply the incident reporting requirements of §171.15, §171.16, and related sections of the HMR.

3



This module addresses the HMR requirements for the acceptance and transportation of hazardous materials by private, common and/or contract “for-hire” motor carriers in 49 CFR Part 177, “Carriage by Public Highway.” Motor carriers and others subject to Part 177 must also comply with those Federal Motor Carrier Safety Regulations (FMCSR) found in 49 CFR Parts 383 and 390-397. The requirements of Part 177, “Carriage by Highway”, are in addition to those requirements contained in Parts 171, 172, 173, 178 and 180 of the HMR. Additionally, this module addresses applicable requirements of the FMCSA in 49 CFR Parts 390-397.

4



The FMCSR covered in this module address driver qualifications, hours of service, equipment standards, driving and parking rules for transportation of hazardous materials, alcohol and controlled substances, financial responsibility, and operational requirements.

5



You may not offer or accept a hazardous material for transportation in commerce unless:

- You are registered, if required, and;
- You have properly classed, described, packaged, marked, and labeled the hazardous material and;
- The hazardous material is in proper condition for shipment in accordance with the HMR. Remember, PHMSA registration requirements are in addition to any other Federal, state, or local registration requirements.

Motor Carrier and offerer/shipper responsibilities frequently overlap. When a carrier performs a shipper function, the carrier is responsible for performing that function in accordance with the 49 CFR.

6



Both carriers and shippers are responsible for ensuring their employees are properly trained as required by the HMR. Click on each button to learn more.

7



A “hazmat employee” is anyone employed by a hazmat employer who, during the course of employment, directly affects hazardous materials transportation safety including an owner-operator of a motor vehicle that transports hazardous materials in commerce. Except as provided in 172.704(c)(1), before any hazmat employee performs a function subject to the HMR, that person must be provided initial training in the performance of that function. Each hazardous materials employee must be periodically retrained at least every three years.

8



The driver training regulations in Part 177 illustrate how the Federal Motor Carrier Safety Regulations can be closely linked to related rules in the HMR. Section 177.816 mandates training in the requirements found in the FMCSR Parts 390-397. Section 177.816(a)(2) requires training in areas such as vehicle controls and equipment, including emergency equipment. The exact equipment required is found in FMCSR Part 393.

9



Section 177.816 requires additional training for operators of cargo tanks or vehicles with portable tanks, as well as other training that may be satisfied by the appropriate state commercial driver's license, known as a CDL, required in Part 383. But remember, recurrent hazardous materials transportation training is required every three years, regardless of the length of time your CDL is valid. Take some time to review the HMR training requirements cited in the references on this page.

10

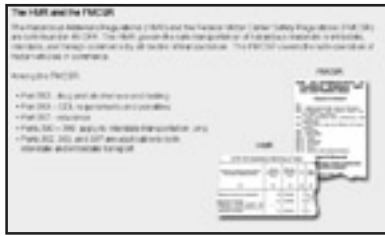
Professor Fed's Knowledge Check 1

Instructions: Click and drag the response to the blank line that correctly answers the question asked. You will have two chances to answer this exercise correctly.

air	motor	Federal	State
train and test	accept	Local	guide

1. The Carrier Requirements (Highway) Module discusses requirements in 49 CFR Part 177, for hazardous materials accepted and/or transported by private, common and/or contract _____ carriers.
2. If you are subject to the HMR, Part 177, you must also comply with the _____ Motor Carrier Safety Regulations, to the extent that they apply.
3. Do not _____ or transport hazardous materials by motor vehicle unless the shipment complies with the HMR.
4. The HMR, Parts 172.700 and 177.800 require carriers to _____ their employees in the applicable HMR and FMCSR.

11



The HMR differ from the FMCSR, in that the HMR are specifically intended to cover transportation of hazardous materials, whether within a state or between states. The FMCSR regulate general safety requirements for motor vehicles, including hazardous materials safety.

Within the FMCSR, the regulations in Parts 390-399 apply to interstate transportation — that is, between states — and not intrastate transportation, which stays entirely within a single state. The other regulations from the FMCSR we touch on, cover both interstate and intrastate transportation, like the HMR.

12



When determining which FMCSR regulations apply, it is also important to verify state regulations. The differences in regulations are important. The FMCSR on drug and alcohol testing and CDL cover both interstate and intrastate transport, and FMCSR insurance regulations in some cases apply to intrastate as well as interstate transport. State, not Federal, regulations cover hours of service and qualification of drivers, except as noted above, in strictly intrastate transport.

13



USDOT representatives are authorized to conduct unannounced inspections of all motor carrier records, equipment, packaging, and containers that may affect the safe transportation of hazardous materials. Unlike state and local police, they have the right of entry without probable cause or prior notification.

14



Many state statutes and municipal ordinances prohibit carriers from transporting hazardous materials on restricted highways and through public tunnels. Motor carriers have to obey those laws as well as Federal regulations unless an exemption has been authorized. The HMR do not nullify or supersede these state statutes and municipal ordinances, regardless of the kind or quantity of hazardous materials. Section 177.810, within the HMR, requires compliance with local ordinances regarding public tunnels, and Section 397.3, within the FMCSR, requires compliance with state and local laws unless they are in disagreement with specific Federal requirements.

15



Part 397 of the FMCSR covers driving and parking rules, including attendance and surveillance of parked vehicles and routing regulations for both radioactive and non-radioactive hazardous materials. The requirements for routing non-radioactive hazardous material shipments by motor vehicle are in Part 397, Subpart C, within the FMCSR. Routing requirements for radioactive hazardous materials are found in Subpart D.

16



Unless excepted, you must have a shipping paper that is prepared in accordance with sections 172.200, 172.201, 172.202, and 172.203 for each hazardous material shipment. The carrier must retain shipping papers for one year for hazardous materials, and three years for hazardous wastes. General requirements for shipping papers are discussed in Module 2.

17



An initial motor carrier may not accept a hazardous material unless the shipping paper includes a properly completed shipper's certification. However, you do not need a shipper's certification for:

- Shipments transported entirely by the shipper as a private motor carrier, unless reshipped or transferred from one carrier to another;
- Bulk shipments transported in a cargo tank supplied by the motor carrier (since the carrier, not the shipper, provides the packaging);
- Return of an empty tank car previously containing a hazardous material that has not been cleaned or purged.

18

Professor Fed's Knowledge Check 2

Instructions: Click and drag each of the terms shown here to fill in the blanks below.

accompanied
intrastate

certification
USDOT

special permit
interstate

1. Unless excepted, all shipments of hazardous materials must be _____ by a properly prepared shipping paper.
2. Unless excepted, an initial motor carrier may not accept a hazardous material unless the shipping paper bears a completed shipper's _____ that complies with 172.204.
3. The HMR covers both interstate and _____ transport.
4. All motor carrier records, equipment, packagings and containers relating to the safe transport of hazardous materials must be available for _____ inspection.
5. Motor carriers transporting hazardous materials must comply with State statutes and municipal ordinances restricting access to highways and public tunnels unless a(n) _____ has been authorized.

19



When you offer a freight container or transport vehicle to a rail carrier, the shipping paper must contain the description of the freight container or transport vehicle, and the kind of placard affixed to the freight container or transport vehicle.

20



It is the responsibility of every motor carrier and driver to make sure that the shipping papers are readily available and accessible in case of an accident or inspection. In order to do this, shipping papers for hazardous materials must be clearly distinguished from all other shipping papers. This can be accomplished by tabbing the hazmat shipping papers, placing them on top of the stack of papers, or keeping them separate but still readily accessible. Click on the buttons to learn more.

21



When you are at the motor vehicle's controls, the shipping paper must be within your immediate reach, even while you are restrained by a lap belt. The shipping papers must be readily visible to a person entering the driver's compartment, or in a holder mounted on the inside of the driver's door.

22



When you are not at the motor vehicle's controls, the shipping paper must either be placed in the holder mounted to the inside of the driver's door, or placed on the driver's seat.

23



Marking and placarding requirements are found in Subparts D & F of Part 172 of the 49 CFR. Except in an emergency, a transport vehicle containing a hazardous material may not be moved unless it displays all required markings and placards. An improperly placarded or marked transport vehicle may be moved in an emergency, only if:

- escorted by a state or local government representative;
- the motor carrier has permission from the USDOT; or
- movement of the transport vehicle is necessary to protect life or property.

24

Professor Fed’s Knowledge Check 3

Instructions: Click and drag each of the terms shown here to fill in the blanks below.

sleeping berth truck rail outside emergency
 incident infraction inside seat

1. For _____ transportation, motor carriers must mark the shipping paper with a description of the freight container or transport vehicle and the type of placard affixed.
2. Shipping papers must be kept readily available in case of an inspection or _____. Tab or clearly distinguish shipping papers from any other papers.
3. When the driver is at the motor vehicle’s controls, the shipping paper must be visible and within reach or in a holder mounted on the _____ of the driver’s door.
4. When the driver is not at the motor vehicle’s controls, the shipping paper must be on the driver’s _____ or in a holder mounted on the inside of the driver’s door.
5. Except in an _____, a transport vehicle must not be moved unless it displays all required markings and placards.

25



Hazardous materials must be loaded, blocked, braced, and unloaded in accordance with the prescribed safeguards found in Section 177.834(a-o).

26



You must handle broken or leaking containers in transit by the safest practice available. You may repair these packages if safe to do so. You may place a broken or leaking package in a salvage drum in accordance with section 173.3(c) and transport it to its destination, or return it to the shipper. To see the complete requirements for handling disabled vehicles and broken or leaking packages, review section 177.854 in the HMR. Click on the buttons to learn more.

27



When a leak in a cargo tank makes further transportation unsafe:

- Remove the cargo tank from the traveled portion of the highway, and;
- Use every means to safely dispose of the leaking material by preventing its spread over a wide area, and preventing the contamination of streams and sewers;
- All sources of ignition are forbidden.

28



You may move leaking cargo tanks only to the nearest place where the contents can be disposed of safely. You must use all available means to prevent leakage or spillage on the highway.

29

Professor Fed’s Knowledge Check 4

Instructions: Click and drag each of the terms shown here to fill in the blanks below.

available lost disabled loading packing
 placarding difficult unsafe cumbersome

1. Hazard protection must be provided when vehicles become _____. Broken or leaking containers and other packages may be repaired or placed in a salvage drum for further transportation.
2. General requirements for _____ and unloading of hazardous materials are specified in 49 CFR 177.834.
3. When a leak in a cargo tank makes further transportation _____, the tank should be removed from the traveled portion of the highway, the leaking material contained to prevent contamination of streams and sewers, and all sources of ignition eliminated.

30



Special requirements for the loading and unloading of motor vehicles are contained in 49 CFR 177.835-177.842. There are specific loading and unloading requirements for materials in hazard classes 1 through 8. Additional attendance requirements are found in 49 CFR 397.5. Click on the buttons to learn more about these special requirements.

31



Specific requirements for Class 1 – Explosive Materials include:

- You must turn off the vehicle engine during loading and unloading;
- The cargo area interior must be free of projections, such as bolts, screws or nails, that could damage a package or container;
- The tailgate must be closed;
- The cargo must remain within the body of the vehicle;
- The trailer must have a tight floor and the inside surfaces in contact with the load must be lined with non metallic or non ferrous materials;
- Pyrotechnics are one of the most transported materials. They are also among the most cited materials in transport violations.

32



Part 177 includes special requirements for cargo tank motor vehicles that transport Class 3 – (flammable liquid) materials. You must bond and ground a cargo tank if the cargo tank is loaded through an open filling hole. You do not have to ground and bond the cargo tank if it is loaded or unloaded through a vapor tight connection into a stationary tank, provided the metallic connection is in contact with the filling hole.

33



Section 177.839 provides special requirements for storage batteries containing electrolyte if loaded with other cargo. You must load such a storage battery so other cargo does not fall onto or against it. You must adequately protect and insulate battery terminals against short circuits. Section 177.839 also regulates the loading of Nitric Acid. You must not load any packaging of nitric acid of 50 percent or greater concentration above any packaging containing any other kind of material.

34



A cylinder containing compressed gas must be protected from movement or ejection from the motor vehicle. You must:

- Securely restrain it in an upright or horizontal position
- Load it into a rack attached to the motor vehicle
- Pack it in a box or crate

Please view 49 CFR 177.840(a) to familiarize yourself with the special requirements associated with compressed gas.

35



Part 177 provides special requirements for packages labeled “TOXIC” or “POISON”. You may not transport packages labeled “TOXIC,” “POISON,” or “POISON INHALATION HAZARD” in the same motor vehicle with foodstuff, feed or edible material unless the package is overpacked in a metal drum as provided in section 173.25(c) of the HMR, or loaded in a closed unit load device and the foodstuff, feed, or edible material is loaded in another closed unit load device.

36



You may not transport a package labeled “TOXIC,” “POISON,” “TOXIC GAS,” “POISON GAS,” or “POISON-INHALATION HAZARD” in the driver’s compartment or the sleeper berth of a motor vehicle.



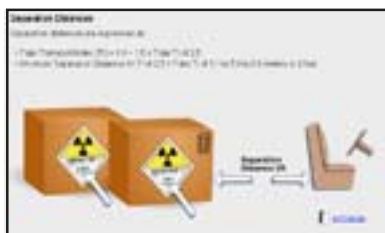
When you load Class 4 (flammable solid) or Class 5 (oxidizing) materials in a motor vehicle, you must make certain they are contained in the body of the vehicle, and covered either by the body of the vehicle, by a tarpaulin, or by other means. If the vehicle has a tailboard or tailgate, you must close and secure it. If the material is likely to become hazardous to transport when wet, take precautions to keep it dry, both during loading and during transport. If there is a spontaneous heating/combustion hazard associated with the material, make sure the lading is sufficiently ventilated to provide reasonable assurance against fire. When loading nitrates, make sure the vehicle is swept clean and is free of projections that might injure the bag. Do not load ammonium nitrate with organic coating in an all-metal vehicle, unless the metal is aluminum, or in the case of a closed vehicle, aluminum alloy. Do not load more than 100 pounds of smokeless powder for small arms, Division 4.1, in a single vehicle. Finally, for division 4.2 (pyrophoric liquid) cylinders, load with all valves and safety relief devices in the vapor space, and secure the cylinders against shifting in transit. See Section 177.838 for the full text of these provisions.

38



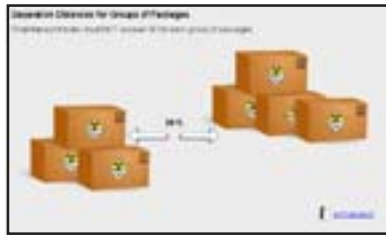
Transport Index, known as TI, is derived from the radiation reading one meter from the package containing radioactive material. The number of radioactive material packages in a storage location or transported in a motor vehicle is limited so that the total transport index number does not exceed 50. The TI is placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. The total TI is the sum of the TI on the labels of individual packages and overpacks. The TI is used to determine the minimum separation distance in meters or feet to the nearest undeveloped film, passengers, employees and animals, in continuously occupied areas in various stages of transportation. The limitation that the total transport index number may not exceed 50, does not apply to exclusive use shipments, meaning motor vehicles used only to transport that material or commodity by a single shipper. “Exclusive use” and “transport index” are defined in 173.403 of the HMR.

39



Look at the two packages labeled “RADIOACTIVE”. One package has a TI of 1.0. The second package has a TI of 1.5. The total TI is 2.5; this is well under the 50 TI limit. In a motor vehicle, you must keep packages bearing “RADIOACTIVE YELLOW-II” or “RADIOACTIVE YELLOW-III” labels away from areas used by humans or animals, or used to transport undeveloped film, in accordance with the minimum separation distances prescribed in the table in 177.842(b). The distance is computed from the table on the basis of the total TI. Add the TI numbers on the labels of individual packages and overpacks. Assuming a total TI of 2.5, locate the total TI in Column one of the §177.842 table. Next, follow across the table to the last column and find the minimum distance in meters and/or feet to any area of persons or the minimum distance from dividing partition of cargo compartments. For a TI of 2.5, the minimum distance is 0.6 meters or 2 feet.

40



No group of “RADIOACTIVE YELLOW-II” or “RADIOACTIVE YELLOW-III” labeled packages may have a total TI of more than 50 in any single storage location. Each group of packages must be handled and stowed no closer than 6 meters (20 feet) to any other such group, measured edge to edge.

41



Each motor vehicle used to transport radioactive materials under exclusive use conditions must be checked for radiation contamination after each use. The examination must be performed with radiation detection instruments. A motor vehicle may not be returned to service until the radiation dose rate meets acceptably low levels. The requirements applicable to radioactive surface contamination of a motor vehicle under exclusive use do not apply to any vehicle used solely for transporting Class 7 (radioactive) materials under the conditions and limitations specified in Section 177.843(b).

42



Vehicles used solely for transporting Class 7 (radioactive) materials must be stenciled with the words “For Radioactive Materials Use Only.” The stencil lettering must be at least three (3) inches high in a conspicuous place on both sides of the vehicle exterior. Also, these vehicles must be kept closed “at all times” except when being loaded or unloaded.

43

Professor Fed’s Knowledge Check 5

Instructions: Click and drag each of the terms shown here to fill in the blanks below.

radioactive driver’s fifty only toxic

1. The Total Transport Index number (TI) on packages of _____ materials in a motor vehicle or storage area must not exceed 50 TI.
2. “RADIOACTIVE YELLOW-II” or “RADIOACTIVE YELLOW-III” labeled packages must not exceed _____ TI in any one group of packages in any one storage location.
3. A package bearing a _____, “POISON” or “POISON-INHALATION HAZARD” label must not be transported with food or feed unless overpacked according to the HMR.
4. A package labeled “TOXIC”, “POISON”, “TOXIC GAS”, “POISON GAS”, or “POISON-INHALATION HAZARD” is not permitted in the _____ compartment or sleeper berth of a motor vehicle.
5. Vehicles used solely for transport of radioactive materials must be marked “For Radioactive Materials Use _____”.

44

The screenshot shows a software interface titled "Segregation Table". It features a sidebar with navigation options: "Table Legend", "Table", "Table Legend", "Table", and "Table". The main area displays a large table with multiple columns and rows, representing the segregation requirements for hazardous materials. Some cells in the table are highlighted in yellow.

Certain hazardous materials must be separated in a manner that, in the event of leakage from packages, commingling would not occur. The segregation and separation chart of hazardous materials applies to materials in one or more hazard class in packages which require labels, in a compartment within a multi-compartmented cargo tank, or in a portable tank loaded in a transport vehicle or freight container. The “Segregation Table for Hazardous Materials” found in Section 177.848 shows the segregation requirements for hazard classes and divisions. A hazard class or division that is not shown is not restricted. For example, hazard Class 9 is not restricted.

A blank space in the table also indicates that no restrictions apply. Additional instructions for using the table are found in 177.848(e). Click on the buttons to learn more.

45

The screenshot shows a software interface titled "Table Legend". It contains a table with several columns and rows, providing definitions for symbols used in the segregation table. The symbols include "X", "O", "A", and asterisks. The table is organized into columns for different symbols and rows for their corresponding meanings.

Notice the table in section 177.848 contains a series of X’s and O’s. An “X” in the box where a row and a column intersect, means that you may not load, transport, or store the two materials together in the same transport vehicle or storage facility. When an “O” appears, you may load, transport, and/or store the materials together, provided certain conditions are met to preclude the commingling of hazardous materials. An “A” in the second column of the table indicates that, notwithstanding the requirements of the letter “X”, you may load or store ammonium nitrate and ammonium nitrate fertilizers with Division 1.1 (Class A explosive) or Division 1.5 materials. The asterisks in the table indicate that the compatibility table in section 177.848(f) governs segregation among different Class 1 (explosive) materials.

46

The image shows a portion of a hazard compatibility table. A yellow ruler is placed horizontally across the table, intersecting the row for 'Poisonous gas (Division 2.3), Zone A' and the column for 'Class 3 (flammable liquid)'. The intersection cell contains an 'X', indicating that these materials should not be loaded, transported, or stored together.

Take your ruler or paper marker and place it across the table under the row “Poisonous gas (Division 2.3), Zone A.” Keep your ruler in place and find the Class 3 (flammable liquid) column. Follow that column down the page to its intersection with Division 2.3, Zone A. There is an “X” in the block where Div. 2.3, Zone A row and Class 3 column intersect. Do not load, transport, or store these materials together.

47

The image shows a portion of a hazard compatibility table. A yellow ruler is placed horizontally across the table, intersecting the row for 'Flammable liquids (Class 3)' and the column for 'Division 2.2'. The intersection cell is blank, indicating that these materials can be loaded, transported, or stored together.

Using the same procedure take your ruler or paper marker and place it across the table under the row “Flammable liquids (Class 3).” Keep your ruler in place and find the Division 2.2 column. Follow that column down the page to its intersection with Flammable liquids (Class 3). The area where these intersect is blank, which means that you may load, transport, or store two materials together.

48

The image shows a portion of a hazard compatibility table. A yellow ruler is placed horizontally across the table, intersecting the row for 'Division 5.1 (Oxidizers)' and the column for 'Class 3 (flammable liquid)'. The intersection cell contains an 'O', indicating that these materials may not be loaded, transported, or stored together unless a separation is maintained to prevent commingling of the hazardous material.

Now find the row for Division 5.1 (Oxidizers) and the column for Class 3 (flammable liquid). There is an “O” where these intersect. The instructions for using the Table indicate that you may not load, transport, or store these materials together – unless a separation is maintained to prevent commingling of the hazardous material.

49

The image shows a portion of a hazard compatibility table. A yellow ruler is placed horizontally across the table, intersecting the row for 'Class 1 (explosive) materials' and the column for 'Class 1 (explosive) materials'. The intersection cell contains an asterisk (*), indicating that segregation among different Class 1 (explosive) materials is governed by the Compatibility Table shown in the visual.

Notice that the explosives in 177.848 have an asterisk in Columns 1.1 through 1.6. The asterisk indicates that segregation among different Class 1 (explosive) materials is governed by the Compatibility Table shown in the visual. You can review the Compatibility Table for Class 1 materials by viewing 177.848(f) of the HMR.

50

Professor Fed’s Knowledge Check 6

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

In the Segregation Table for Hazardous Materials, a(n) _____ indicates that hazardous materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility unless separated in a manner which precludes the commingling of the hazardous materials.

- A. “X”
- B. “O”
- C. “A”
- D. “*”

51

Professor Fed’s Knowledge Check 7

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

In the Segregation Table for Hazardous Materials, an “X” indicates that hazardous materials from different compatibility groups _____.

- A. can be transported together
- B. cannot be carried on the same vehicle
- C. have no restrictions at all
- D. are all detonators

52

You may sometimes transport hazardous materials on motor vehicles carrying passengers for hire. Certain conditions and limitations apply, however, to this type of hazardous materials transportation. You may not transport hazardous materials, including explosives, on motor vehicles carrying passengers for hire where other practicable means of transport is available, except: small arms ammunition; emergency shipments of drugs, chemicals and hospital supplies; and the accompanying munitions of war of the armed forces of the United States. The specific limitations and conditions relating to these shipments can be found in 49 CFR 177.870(b).

53**Professor Fed's Knowledge Check 8**

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

With certain limitations and conditions, hazardous material may be transported on motor vehicles carrying _____ for hire where no other practical means is available.

- A. freight
- B. passengers
- C. livestock
- D. vegetables

54



Despite all safety efforts, incidents do occur. When hazardous materials are involved in a transportation incident, a report may be required. Reporting requirements are the responsibility of the carrier. For certain incidents, you must notify either the National Response Center (NRC) or, for infectious substances, the Centers for Disease Control (CDC), as soon as practical but not later than 12 hours after the incident occurs. For any such incident, you must also follow up with a written Hazardous Materials Incident Report within 30 days of discovering any unintentional release of hazardous materials or unintentional discharge of hazardous waste, as well as under certain other conditions (see the guidelines in 171.16). But unless a requirement listed in 171.15 applies, you do not need to notify the NRC or CDC by phone. Click each button to learn more.

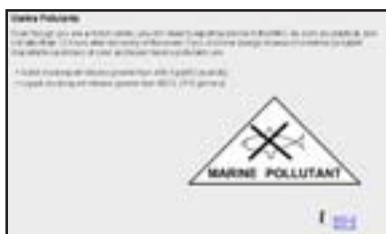
55



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 shipper in such a case as soon as practical.

You must notify the 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.

56



You must report a large release of a marine pollutant, by phone, as soon as possible, to the NRC. This requirement applies to a release of over 400 kilograms of a solid, and to the release of over 450 liters of a liquid.

57



Hazmat incidents that result in any of the following require notification as soon as possible to the National Response Center or the Center for Disease Control, if applicable, when due to the hazardous materials:

- death or injury requiring hospitalization,
- change in the operational flight pattern or routine of an aircraft,
- the shutdown of a major facility or transportation artery for more than one hour,
- an evacuation of the general public that lasts more than one hour, or
- a 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.

58

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 reported to the nearest NRC or the Center for Disease Control within 12 hours?

- A. Death, or injury requiring hospitalization
- B. Damage to any facility requiring in-service repair
- C. Suspected radioactive contamination
- D. Shutdown of major facility or transportation artery

59



This concludes the instruction and Knowledge Checks for Module 6A – Carrier Requirements for the Highway. You should now be able to:

- Identify requirements affecting the transportation of hazardous materials on public highways by private, common, and contract motor carriers including vehicles not in motion;
- Describe information found in the Federal Motor Carrier Safety Regulations (FMCSR) as well as understand the differences among the FMCSR, the HMR, and state regulations;
- Identify shipping paper description and shipper certification requirements;
- Identify methods for handling damaged or leaking packages and tanks;
- Identify loading and unloading requirements for vehicles containing hazardous materials;
- Determine segregation requirements using the segregation table in §177.848; and
- Apply the incident reporting requirements of §171.15, §171.16, and related sections of the HMR.

It is now time to assess how well you understand the information presented in this module. When you are ready, select Test on the Express Lane, to begin the end of module test for Module 6A. This will be an open reference test. Good luck.

End of Module Test

Now that you have completed reviewing the topic on Carrier Requirements for the Highway, let's evaluate how well you have mastered this material. This end of module test contains fourteen multiple-choice questions to determine your mastery of the seven learning objectives covering Carrier Requirements for the Highway. This is an open reference book test and you may use any of the references that you have to assist you in successfully completing this test.

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

Question #1

You may not smoke or carry any lighted material when loading or unloading _____.

- A. flammables
- B. explosives
- C. oxidizers
- D. all of the above

Question #2

Which section of the 49 CFR states that all records, equipment, and packages relating to transportation safety that are under a motor carrier's control must be available for USDOT inspection?

- A. 177.848
- B. 177.835
- C. 176.315
- D. 177.802

Question #3

Motor carriers may transport hazardous materials through urban/public vehicular tunnels used for mass transportation in accordance with state and local requirements, except with regards to _____ .

- A. radioactive materials
- B. corrosive materials
- C. gases
- D. oxidizing materials

Question #4

Foodstuffs should not be carried in the same vehicle as _____, unless specific provisions are followed.

- A. corrosives
- B. flammable gas
- C. poisons
- D. oxidizers

Question #5

In an emergency, the DOT may permit a motor carrier to move an unmarked and/or unplacarded motor vehicle containing hazardous material under all of the following circumstances except which?

- A. The carrier has permission from the Department
- B. Movement of the transport vehicle is necessary to protect life or property
- C. The vehicle is escorted by a representative of a state or local government
- D. There is no other practicable way to make the delivery

Question #6

Shipments of hazardous material must comply with the HMR before _____.

- A. anyone can complete a shipping paper
- B. anyone can accept them for transportation in commerce
- C. a scheduled visit by a DOT inspection team, but not otherwise
- D. A and B

Question #7

Which of the following procedures is not part of a Hazmat employee's driving training?

- A. Pre-trip safety inspection
- B. Operation of vehicle
- C. Avoiding populated areas – although this may be covered in the carrier's security plan
- D. Loading and unloading of materials

Question #8

When a driver is at the controls of a motor vehicle containing hazardous material, the required shipping paper must be _____.

- A. within the driver's immediate reach while restrained by a lap belt
- B. either readily visible or in a holder on the inside of the driver's door
- C. in the motor vehicle's glove compartment
- D. a and b

Question #9

The Segregation and Separation Chart of Hazardous Materials permits the following materials to be loaded, transported and stored together.

- A. Div. 2.2 (Helium, compressed) and Div. 1.5D (Explosive, blasting, type B)
- B. Class 6.1 (Iron Penta carbonyl) and Class 8 (Compound, cleaning liquid)
- C. Class 3 (Acetone) and Div. 2.3 (Fluorine, compressed)
- D. Class 3 (Gasoline) and Div. 4.3 (Magnesium hydride)

Question #10

Which of the following hazard classes use a transport index?

- A. Flammable
- B. Radioactive
- C. Explosives
- D. Poison gas

Question #11

Who must certify that a shipment has been prepared according to the HMR?

- A. Driver
- B. Carrier
- C. Consignee
- D. Shipper

Question #12

The total transport index (TI) of all packages permitted in a single vehicle cannot exceed:

- A. 50
- B. 500
- C. 25
- D. 30

Question #13

A motor vehicle may not transport a package bearing a “TOXIC”, POISON” or “POISON-INHALATION HAZARD” label in the same motor vehicle with a foodstuff or animal feed unless the poisonous material is packaged in accordance with Subchapter C, and the specifics of:

- A. 177.843
- B. 177.840
- C. 177.841 (e)
- D. 177.835

Question #14

In addition to notifying the NRC or the CDC by phone, and following up with a written report, in the event of certain hazardous materials incidents you must also notify the shipper (offeror) of the material in the case of:

- A. Infectious substances
- B. Radioactive materials
- C. Death or injury requiring hospitalization
- D. DOT does not require you to notify the shipper of a motor vehicle incident