

**STUDY MATERIAL FOR THE
CERTIFICATE OF FITNESS FOR:**

**HANDLE MOTOR FUEL-GAS STATION and
HANDLE MOTOR FUEL-PORTABLE
CONTAINERS**

P-15/W-14

**ALSO INCLUDED IN THIS BOOKLET YOU WILL FIND THE
FOLLOWING:**

1. NOTICE OF EXAMINATION FOR P-15/W-14

This study material contains the information you will need to prepare for the examination for the Certificate of Fitness for Dispensing and Handling Motor Fuel (Automotive Service Stations). The study material includes information taken from relevant sections of the Fire Prevention Code and the Fire Directives of the New York City Fire Department.

Since these Certificates are premise related, Certificate of Fitness must be registered to a given address. Multiple Certificates may be obtained for different stations.

All questions on the Certificate of Fitness examination are multiple choice, with four alternative answers to each question. Only one answer is correct for each question. If you do not answer a question, or if you mark more than one alternative your answer will be scored as incorrect. A score of 70% correct is required on the examination in order to qualify for the Certificate of Fitness. Read each question carefully before marking your answer. There is no penalty for guessing.

SAMPLE QUESTIONS

1. The pumps used to transfer gas from underground tanks must be approved by the:
 - (a) New York Fire Department
 - (b) Board of Standards and Appeals
 - (c) Department of Buildings
 - (d) Department of Electricity

The correct answer is "b". You would mark "b" on your answer sheet.

2. The gasoline storage tanks at a service station must be:
 - (a) underground only
 - (b) above ground only
 - (c) either above ground or underground
 - (d) easily moved in case of emergency

The correct answer is "c". You would mark "c" on your answer sheet.

A service station is a location used to store and dispense motor fuels. There are three different types of service stations. The different types are automotive, marine, and stations located inside buildings. Each of these stations is described below.

Automotive Service Station

These stations are designed to safely dispense fuel into motor vehicles. The fuels dispensed include gasoline and diesel fuel. The motor fuels are usually stored in underground storage tanks. Fuel tanks of trucks, cars, and motorcycles are filled at these locations. These service stations may also sell batteries, tires and other vehicle accessories. Vehicle maintenance and minor repairs may also be performed at these stations.

MARINE SERVICE STATION

This station is usually located on a pier, a wharf or a floating dock. This station is designed to safely dispense fuel into self propelled water craft. All boats, yachts and other recreational vehicles have their fuel tanks filled at these stations. The fuels dispensed include gasoline and diesel fuel. The motor fuels may be stored in above ground or underground storage tanks. Repair and maintenance services may also be performed at these stations.

SERVICE STATIONS LOCATED INSIDE BUILDINGS

These stations are located within a building structure that contains other occupancies. The station is designed to safely dispense fuels into motor vehicles. The motor fuels are stored in above ground or underground storage tanks.

PERMIT

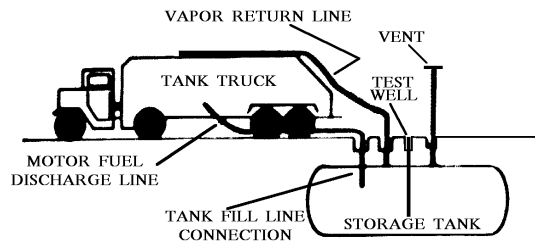
A permit is required in order to operate a service station. This permit is issued by the Fire Department Bureau of Fire Prevention. It is illegal to operate a service station without a valid permit. Fines will be issued to service station owners who do not have valid permits. At least one Certificate of Fitness holder must be on the premises while a service station is open for business.

TANKS

Only approved tanks may be used to store motor fuel. Approved tanks are those tanks that meet the design and safety specifications of the Fire Commissioner's Office. An accurate log of the contents of the tanks must be recorded. This log must be completed by the Certificate of Fitness holder. This record should include the amount of fuel sold each day and the amount of fuel in the tank. The tanks must be inspected daily. They should be checked for defective equipment and leaks. If any leaks or defects are discovered they should be repaired immediately. A record of each inspection and all repairs must also be recorded in the log. Depending on the location the tank may be installed above or below ground level. Each tank must be hydrostatically tested every 10 years. This test must be conducted by a qualified technician.

The maximum capacity of a single storage tank is 4,000 gallons of motor fuel. There may be several storage tanks at a service station. However there is a limit on the total amount of motor fuel permitted in a service station. The combined contents of all tanks in a service station must be less than 20,000 gallons.

Tank trucks are used to transfer motor fuel into the storage tanks. The motor fuel is transferred by gravity from the tank truck into the storage tank. The Certificate of Fitness holder should observe the filling of the storage tanks on the premises. The motor of the tank truck should be shut off while making the transfer. Chock blocks should be placed under the wheels of the truck. The chock blocks prevent the truck from moving. The Certificate of Fitness holder make sure that the vapor return line is securely connected to the storage tank and the tank truck. The vapor return line prevents the flammable vapors from escaping into the atmosphere. The motor fuel discharge line must also be checked to make sure that it is securely connected to the tank truck and the storage tank. If any leaks are noticed the transfer should be stopped immediately. The defects or the leaks must be repaired before transferring any more motor fuel into the storage tank. The transfer of motor fuel from a tank truck to a storage tank is shown below.



TRANSFER OF MOTOR FUEL FROM TANK TRUCK TO STORAGE TANK

A test well or gauge line on the storage tank allows the attendant to determine how much fuel is in the storage tank. The Certificate of Fitness holder and the driver making the delivery are both responsible to be sure that the test well connection is closed while filling the tanks. The test well may not be opened to speed up the filling of the storage tank. It must remain closed to make sure that no flammable vapors escape into the atmosphere. The test well may only be used to determine the amount of motor fuel in the storage tank.

DISPENSING GASOLINE

Fuel is dispensed into a customer's vehicle using a fuel pump. These pumps are usually powered by electricity. All of the pumps are connected to an electrical circuit breaker. The breaker allows the pumps to be quickly shut off in case of an emergency. The fuel is pumped through a hose when filling the vehicle. The maximum acceptable length of the dispensing hose for automotive service stations is 16 feet. Never attempt to use a longer hose. Instead move the vehicle closer to the tank. Marinas may have longer hoses if they are approved by the Fire Commissioner.

The pump has a dispensing control device installed. The control device is usually a lever installed next to a nozzle holding bracket. The control device may be turned on only when the pump nozzle is taken out of its holding bracket. It may be shut off when the pump nozzle is placed back into the holding bracket. No attempt should be made to bypass this control device. The nozzle must be placed back into holding bracket after use. Keeping the nozzle in the holding bracket reduces the risk of the hose being damaged. The hose and nozzle should never be laid on the ground.

Before pumping gasoline into a vehicle the nozzle must be grounded. This is done by touching the nozzle against the steel bumper or chassis of the car. Grounding eliminates static electricity. Static electricity has the potential to cause a spark when pumping the gas. A single spark may ignite the gasoline vapors. Grounding

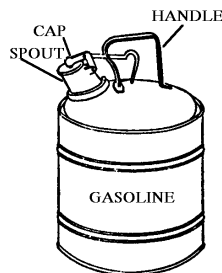
makes sure that a fire or explosion does not occur while dispensing the gasoline. The vehicle's motor must always be turned off before fuel is pumped into the vehicle's tank.

The hose and nozzle must never be left laying on the ground. If the hose and nozzle are on the ground they are exposed to physical damage. This damage may result in leaks and malfunctions of the system. The hose and nozzle must always be replaced in the holding bracket when not in use.

In some service stations a vapor recovery system is installed. This system is designed to capture the vapors that escape when dispensing motor fuel. These vapors are potentially dangerous. They may be ignited by sparks or open flames. A shroud is installed over the nozzle. This shroud draws the vapors into a hose. The hose is connected to the storage tank. If the vapor recovery system is installed the Certificate of Fitness holder must make sure that it is working correctly.

When the service station is located inside a building fuel vapors may accumulate. If the vapors are ignited they may cause an explosion. In order to prevent an explosion the service station must be well ventilated. The Certificate of Fitness holder must make sure that the area is well ventilated. The area may be ventilated using an exhaust system. The system must always be in good working order. The ventilation system is designed to automatically operate before the fuel is pumped into the vehicle. An automatic control device will not allow the pump to function unless the exhaust system is working. No attempt should be made to bypass this control device. Any defects in the system must be repaired as soon as they are noticed. No attempt to pump fuel may be made when the exhaust system is not working.

The Certificate of Fitness holder may pump motor fuel only into an approved portable container. The maximum capacity of the container is one gallon. The container must be made of metal. The container must have a cap attached. The cap must be fitted with a spout. The spout is designed to allow the motor fuel to be poured without spilling. The contents of the container must be clearly marked on the side of the container. Never fill a portable container while it is in the trunk of a vehicle. This is to make sure that no motor fuel is accidentally spilled into the trunk of the vehicle. Motor fuel must never be dispensed into glass or plastic containers. An example of an approved gasoline container is shown below:



APPROVED GASOLINE CONTAINER

Sometimes motor fuel is pumped into portable storage tanks. These tanks are often installed on small trucks. The maximum capacity of any portable tank is 55 gallons. This type of tank is only used under special circumstances. For example, they may be used to supply motor fuel to industrial machinery on building sites. No motor fuel should be dispensed into any portable tank that holds more than 55 gallons.

SERVICE STATION DESIGN

The Certificate of Fitness holder must know the layout of the fuel storage system. The location of the test well, the fill line, the vent line, and the suction line to the pumps must be known. The Certificate of Fitness holder should know how to use the test well and measuring stick to determine the amount of motor fuel in a storage tank. The measuring stick is used in the same way a dipstick is used to determine the level of oil in an automobile engine. First, the measuring stick must be wiped clean. The stick is then inserted into the test well. The measuring stick is then removed and read. The stick is read by comparing the level of fuel on the stick to the measurement marks on the stick. This method allows the Certificate of Fitness holder to estimate the amount of fuel in the tank. The Certificate of Fitness holder must know this information to make sure that the tank is not overfilled accidentally. An operating manual containing a copy of the New York City Rules, emergency procedures, and operating procedures (including the operation of the suppression systems) must be maintained in the control booth. All tanks servicing the fire suppression system must have gauges, which shall be positioned so as to be easily read from grade.

SAFETY REGULATIONS

Motor fuels are flammable and easily ignited. For this reason no smoking is permitted anywhere on the premises. The penalty for smoking is a fine up to \$500.00, and/or imprisonment for up to 6 months. This applies to customers as well as employees. Signs must be constructed of a durable metal and posted indicating that no smoking is permitted on the premises and must include procedures to be followed in case of a fire emergency.. There will be no servicing or repair of motor vehicles in areas used for dispensing. An example of a No Smoking sign is shown below:



NO SMOKING SIGN

Safety regulations must be posted in visible locations in the gas station. A sign displaying the name and address of the owner of service station must be displayed in a visible location. This sign must also give the name of the person responsible for testing the fuel dispensing system. Phone numbers where these people can be reached 24 hours a day, 7 days a week must be included on the sign. The Certificate of Fitness holder must make sure that this sign is visible at all times.

Motor fuel should never be used to wash or clean automobile engines. This is extremely dangerous as the motor fuels are easily ignited by the heat generated by the engine.

Oily rags are also a potential fire hazard. The oily rags may be easily ignited by a spark or an open flame. Oily rags used in the service station should be stored in a metal container. This container should have a self-closing

lid. The container is sometimes called a flash can. Oily rags should be replaced daily with clean rags. This container should not be stored close to any possible sources of ignition.

All oil drained from vehicles must be stored in tanks or drums. These tanks and drums should be stored outdoors. The oils are combustible and should not be exposed to sparks or open flames. They must be removed only by an approved liquid waste removal agency. Never dump any of these oils into a sewer, stream or anywhere on the property. Severe penalties will be levied against anyone who illegally dumps waste oil. The booth and dispensing islands must be kept clean and orderly access to the controls in the booth and pumps on the islands must be kept clear and unobstructed by equipment , merchandise or litter.

EMERGENCY PROCEDURES

The Certificate of Fitness holder must know where all control devices and fire extinguishers are located in the station. The Certificate of Fitness holder should know how to operate the control devices and extinguishers in emergency situations.

If a fire occurs in the service station the emergency pump shut off breaker should be tripped. The Fire department should be notified immediately. Efforts should be made to extinguish the fire with the approved fire extinguishing materials. Approved materials include sand pails, ansul powder and CO2 fire extinguishers. If a car is on fire it should be pushed away from the pumps. These steps may prevent a major explosion.

The Certificate of Fitness holder should pour sand or other absorbing material on a motor fuel spill. "Speedy Dry" (like cat litter) is commonly used to contain and soak up motor fuel spills. The area should then be cleaned up using approved materials. If a large spill or leak occurs the local Fire Department must be notified immediately. If the fire suppression system or portion of the fire suppression system has been discharge or is inoperative, it must be the responsibility of the attendant to ensure that the fire department is notified.

INSPECTION AND TESTING

Fire extinguishers must be periodically inspected to make sure that they are working properly. They should be tested according to the schedule recommended by the manufacturer. All inspections should be recorded on the tag attached to the fire extinguisher. All tanks must be hydrostatically tested once every 10 years. The test must be made by a qualified technician. All portable fire extinguishers should be of adequate pressure and voice communication system should be operational. All log entries regarding all items of the suppression system and other items must be made daily by the certificate of fitness holder. Fire extinguishers should be provided within the control booth.

All inspections conducted by the certificate of fitness holder must be performed daily and includes the inspection of:

- A. Checking of the cylinder pressure.
- B. Remote manual release (shutdown) is clear of obstructions.
- C. Heat detectors are unobstructed and undamaged.

- D. All suppression nozzles are clear and unobstructed.
- E. Emergence procedures and instructions are posted.
- F. All lights and alarms are in working condition.

SELF SERVICE STATIONS

In these service stations the customers pump motor fuel into their fuel tanks. Although he does not pump the fuel for the customer, a Certificate of Fitness holder must be on the premises while the self service station is open for business. The Certificate of Fitness holder must observe the dispensing of motor fuel into the customers' tanks. Any unsafe dispensing procedures must be stopped immediately. For example, motor fuel should be pumped only into approved containers. The Certificate of Fitness holder must know how to operate the emergency pump shut off breaker. This breaker is designed to shut down the power supply to the fuel pumps. This is the first thing the Certificate of Fitness holder should do in the case of a fire.

The Certificate of Fitness holder should also know how to operate the fire extinguishing systems for the fuel pumps. the system is designed to activate automatically in case of emergency. The system can also be operated manually. The primary method is to pull the lever on the Manual Control Box. If the manual pull lever does not function, the attendant should pull the pin on the nitrogen cylinders that are located in or near the booth.

The Fire Department should always be notified in case of a fire. The Fire Department should also be notified in case of an emergency such as a large spill of fuel.

SUPPRESSION SYSTEMS

The Board of Standards and Appeals approves the suppression systems . These systems must comply with sections of the administrative Code and the installation of the suppression system must be in accordance with the requirements of the Fire Commissioner which is in complete agreement with the terms of the manufacturer's instructions and approved design.

The suppression system must be positioned in a manner to provide overhead protection of the area surrounded by a circle formed by the full extended hose and nozzle on each fuel dispenser which must provide protection at both ends of the dispensing island.

An inspection of the suppression system and automatic valve operation must be conducted every six months in accordance with the manufacturer's specifications and a record of these inspections must be kept on the premises.

A trained attendant who possesses a certificate of fitness for the supervision of an automotive self-service station must be located within the control booth (kiosk) while dispensing operations are being conducted. The function of this person while motor fuels are being dispensed shall be to supervise, observe and control the dispensing of motor fuel into vehicles; provided, however, that nothing in this section shall be interpreted or construed to prohibit this attendant from engaging in activities directly related to the sale of motor fuel, such as the collection of money or processing of credit cards. It must also be the responsibility of the attendant to give

immediate attention to spills and fire extinguishing systems. Constant communication must occur between the attendant in the control booth and the dispensing islands by a voice communication system.

The attendant's duty is to prevent the dispensing of gasoline, diesel or other motor vehicle fuel:

- A. by customers into any portable container. Only a certified attendant shall dispense motor fuel into portable container.
- B. into a portable containers in quantities requiring a permit unless verification that the customer holds all necessary permits is obtained.
- C. into any fuel tank of a vehicle which has not have had the engine shut off.
- D. into any fuel tank, or other means of dispensing if the customer is smoking.
- E. into any fuel tank by someone who does not hold a valid drivers license or is under the age of 18 year.