

CONFIDENTIAL TEST MATERIAL

(ANSWERS AND SUPPORTING DOCUMENTATION)

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FIRE ENGINEER PROMOTIONAL EXAM APPEALS – 12-2023

QUESTION #17

Question 17

Generic Parent / Pump/Aeri APP DOHbook 3rd

1 pt

Pumping and Aerial Apparatus Driver/Operator Handbook: What is the first tactical priority at any incident?

- A. Scene size-up.
- B. Apparatus positioning.
- C. Water supply.
- D. Life safety.



Question Type: Multiple Choice
Randomize Answers: No
Date Added: Sat 5th Nov 2022
Last Modified: N/A
QID#: 32,350,894

Incorrectly answered feedback

Ch 4 page 137

Life Safety is the first tactical priority at any incident.

REFERENCE MATERIAL – QUESTION #17

- Consider the best access point for personnel and equipment entering the occupancy when parking the apparatus. This will allow personnel efficient access to the building to begin an investigation.
- Remain with the apparatus (based on local policy) in the event connections for water supply or fire department connections need to be made or to assist in pulling attack hoselines and operating the pump.

In cases where circumstances prohibit standard apparatus placement, incoming apparatus must be notified of the situation and changes made to accommodate the particulars of the incident. The following text describes proper placement for numerous situations that may occur.

NOTE: IFSTA's **Pumping and Aerial Apparatus Driver/Operator Handbook 3rd edition**, Chapters 16-20, contains further information on deploying aerial devices.

Rescue situations. Life safety is the first tactical priority at any incident. If there is an indication of an obvious rescue situation, position the apparatus to facilitate the most efficient deployment of ground ladders (or aerial device if so equipped).

Exposures. Position the apparatus so that fire streams can be deployed to protect the exposures if the fire has the potential to threaten exposures. When positioning for exposure protection, consider the apparatus as a potential exposure. Avoid placing the apparatus in a location that may subject it to high levels of radiant heat, falling embers, or other products of combustion.

Water supply. Establishing water supply is a primary concern of the driver/operator and company officer in the placement of the pumper. If a confirmed fire is located in an area of limited access, such as a narrow driveway or alley, the personnel of the first-arriving pumper should consider laying their own supply line. The driver/operator should also be aware that supply lines, especially LDH, may block the access of later-arriving apparatus. Guidelines based on local conditions and resources should be in place to minimize this occurrence. Supply lines should be laid where they are accessible to later-arriving apparatus.

Only after a proper size-up confirms the location and extent of the fire can a pumper's onboard tank be considered for water supply. If additional water may be required, the company officer and driver/operator must consider this factor in the placement of the apparatus. If the first-arriving pumper is located in an area that is difficult for other apparatus to access, such as a narrow driveway or alley, a supply line may be laid to the scene as the first apparatus moves into position.

Method of attack. Determine the positioning of the apparatus. If handlines or portable master streams are to be used, the pumper must be positioned in close proximity to the building or incident scene to allow effective water supply. If a fixed appliance is to be operated, the apparatus must be positioned in a safe location close enough for the fire stream to reach its intended target, but with consideration for the collapse potential of the structure.

Hoseline deployment. Position pumpers to better support the deployment of hoselines for fire attack or supply lines to fire department connections. Also consider the accessibility of water supply to the pumper.

QUESTION #37

Question 37

Generic Parent / Bldg Const Fire Svc 4th

1 pt

From Building Construction Related to the Fire Service (4th Edition)

What is occupancy?

- A. The number of maximum or minimum "residents"
- B. A formula of residents to building construction
- C. The number of people in a given space
- D. Building code classification based on the use to which owners or tenants put building or portions of buildings 

Question Type: Multiple Choice
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Ch 2 Bldg Classifications and Structural Fire Resistance
Page 51 (Box)

Building code classification based on the use to which owners or tenants put building or portions of buildings

REFERENCE MATERIAL – QUESTION #37

A heavily involved wood-frame building also presents an exposure threat to adjacent structures; therefore, building codes impose restrictions on the maximum allowable heights and areas of Type V (wood frame) buildings. The building codes may also require a separation distance between a Type V (wood frame) building and an adjacent property line.

Type V Construction Methods

Several different methods can be used to construct a Type V (wood frame) building. In modern practice, wood-frame buildings are most often constructed using a method known as light-frame construction. This technique was introduced to the United States in the 1830s. Light-frame construction eliminated heavy posts and beams and made use of smaller studs, joists, and rafters. This change permitted a building to be erected faster and more cheaply. Light-frame construction is considered "the common currency of small residential and commercial buildings in North America today."¹

Mixed Construction

Mixed construction occurs where a new structure is built onto an existing structure of a different construction type. Mixed structures may present special challenges for emergency responders. For example, the addition of one type of construction to another can result in a building that exceeds the height restrictions for one of the types of construction.

Occupancy Classifications

Building construction and **occupancy** classifications are used together in building codes to establish limitations on the permissible heights and open areas of buildings. These classifications reflect the life safety issues inherent to specific types of occupancies. For example, a building code may restrict wood-frame (Type V-A) schools to one story. A two-story school will have to include an automatic sprinkler system or a type of construction with greater fire resistance. A 15-story apartment building will be required to be of Type I-A construction in the IBC (NFPA® 4-4-2). However, an 11-story or lower apartment building can be of Type I-B construction (NFPA® 3-3-2).

Classifying buildings according to occupancy facilitates the administration of a code. Grouping building uses into a relatively small number of classifications allows for the use of less cumbersome code language. The occupancy classifications assign building occupancies into groups with broadly similar fire risks. For example, one important occupancy factor is the capacity of the building because crowd density can affect the rate of egress during an emergency. The IBC and NFPA® maintain code requirements for occupancies, as described in the following sections.

International Building Code® (IBC) Occupancy Classifications

The building codes group building occupancies into occupancy classifications. The *International Building Code® (IBC)* contains ten major occupancy classifications:

- Assembly Group A
- Business Group B

Occupancy — Building code classification based on the use to which owners or tenants put buildings or portions of buildings. Regulated by the various building and fire codes. Also known as Occupancy Classification.

QUESTION # 44

Question 44

Generic Parent / Bldg Const Fire Svc 4th

1 pt

From Building Construction Related to the Fire Service (4th Edition)

A building heating and cooling system that uses air as the heat transfer medium.

- A. What is a cooling tower?
- B. What is a forced-air system? 
- C. What is a recirculation system?
- D. What is a forced water system?

Question Type:	Multiple Choice
Randomize Answers:	No
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Incorrectly answered feedback

Ch 4 Building Systems
Page 120

Hydronic System -- A building heating and cooling system that uses water as the heat transfer medium.

REFERENCE MATERIAL – QUESTION #44

Exhaust System — Ventilation system designed to remove stale air, smoke, vapors, or other airborne contaminants from an area. *See* Heating, Ventilating, and Air-Conditioning (HVAC) System.

Forced-Air System — A building heating and cooling system that uses air as the heat transfer medium.

Simple Ventilation and Exhaust Systems

HVAC systems may be cooperative to or independent from simple ventilation or exhaust systems. An HVAC system conditions and delivers air to building occupants; a ventilation or exhaust system may only remove contaminated air. For example, toilet facilities that are vented separately are exhaust systems.

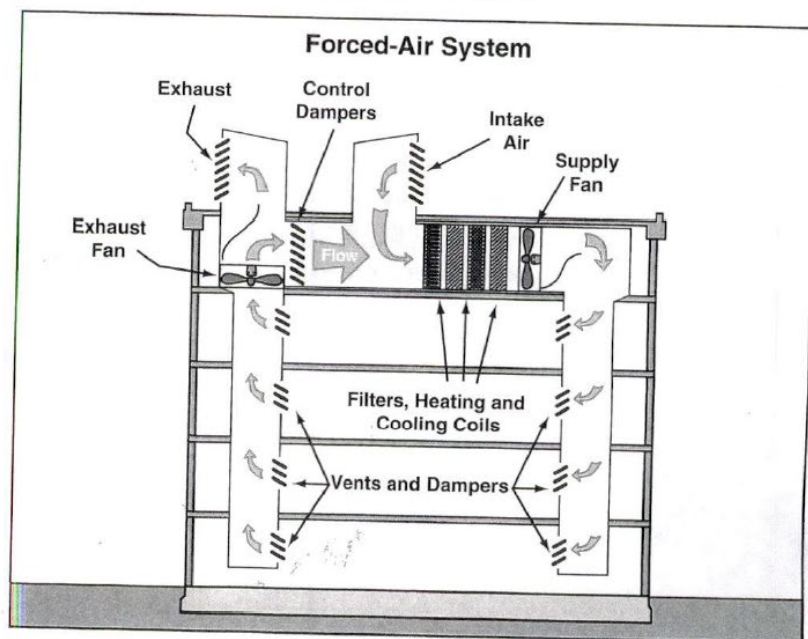
Forced-Air System

Many HVAC systems distribute conditioned air through the building from one or more mechanical equipment rooms via ductwork (**Figure 4.39**). Such systems are generally known as **forced-air systems**. Systems that use extensive ducting are of great interest to fire protection engineers and firefighters because disadvantages include:

- Pathways for communication of heat and smoke through a building
- Penetrations of fire-rated assemblies that can destroy the integrity of the assembly
- Dedicated use of substantial amounts of space

Figure 4.39 A forced-air HVAC system may be programmed to recirculate a portion of the air in a building as a function of efficiency.

Hydronic System — A building heating and cooling system that uses water as the heat-transfer medium.



Cooling Tower — Rooftop or independent unit that ejects waste heat into the atmosphere to lower the temperature in a system. Commonly used in HVAC systems.

Recirculation — Movement of air back into a ventilation system after being ejected.

The widely used NFPA® 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, contains requirements affecting horizontal and vertical HVAC ducts that penetrate a fire-rated assembly or a smoke barrier. In general, fire or smoke dampers may be enough. The local mechanical code may also regulate the operation of the dampers.

A forced-air HVAC system in a multistory building often includes vertical ducts and a mechanical room. With a few minor exceptions, the codes require that HVAC ducts be enclosed in a fire-rated shaft enclosure. For example, NFPA® 90A requires that the enclosure be 1-hour rated for buildings less than four stories in height and 2-hour fire rated for buildings four stories or greater.

QUESTION # 71

Question 71

Generic Parent / Develop the Leader in You 2.0

1 pt

In Developing the Leader Within You 2.0

The ability to juggle several projects at once and do so successfully is a must for every leader. The key to success is prioritizing assignments. The effective police supervisor must find certain ways to get tasks done based on importance and urgency. For some tasks, you must set deadlines for completion and make sure to get these projects worked into your daily routine. These tasks are characterized by the author as:

- A. high importance/high urgency.
- B. high importance/low urgency. 
- C. low importance/high urgency.
- D. low importance/low urgency.

Incorrectly answered feedback

Chp. 2; Page(s) 33; The Important Needs to Take Precedent Over the Urgent

The ability to juggle multiple high priority projects successfully is something every leader

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must learn how to do.

Prioritize Assignments

High Importance/High Urgency: Tackle these projects first.

High Importance/Low Urgency: Set deadlines for completion and get these projects worked into your daily routine.

Low Importance/High Urgency: Find quick, efficient ways to get this work done without much personal involvement. If possible, delegate it to a "can do" assistant.

Low Importance/Low Urgency: This is a busy or repetitious work such as filing. Stack it up and do it in one-half hour segments every week; get somebody else to do it; or don't do it at all. Before putting off until tomorrow something you can do today, study it clearly. Maybe you can postpone it indefinitely.

REFERENCE MATERIAL – QUESTION #71

PRIORITIES

Because you have clear priorities and a hard deadline. Before leaving the office for vacation, we need to make decisions, finish projects, clean off the desk, return calls, and close the loop with colleagues.

You can choose or you can lose. Proactive means choosing. Reactive means losing.

Why can't we always run our lives that way? Actually, we can, but it requires a change in mind-set. Instead of focusing on efficiency, which is a survival mind-set, we need to think about effectiveness, which is a success mind-set. Instead of focusing on doing things right, we need to focus on doing only the right things. We need to become fervently and continuously proactive.

5. THE IMPORTANT NEEDS TO TAKE PRECEDENCE OVER THE URGENT

The more responsibility you carry as a leader, the more you have on your plate. The ability to juggle multiple high-priority projects successfully is something every successful leader must learn how to do. As the list of tasks grows, you can agonize or organize. I'd rather organize.

Here is a simple but effective way to classify tasks that can help you quickly prioritize them in any given moment. The goal is to determine how important the task is and how urgent it is. Ineffective leaders jump on the urgent tasks without thinking. Effective leaders weigh both factors for each task and act accordingly. Here's how:

- **High Importance/High Urgency:** Tackle these tasks first.
- **High Importance/Low Urgency:** Set deadlines for completion and fit these tasks into your daily routine.
- **Low Importance/High Urgency:** Find quick, efficient ways to get these tasks done with minimal personal involvement and time. If possible, delegate them.
- **Low Importance/Low Urgency:** If these tasks can be eliminated, then get rid of them. If they can be delegated, then find someone to do them. If you must do them, then schedule a one-hour block every week to chip away at them, but never schedule them during your prime time.