



# Eilat Fire and Rescue

**Means of Detecting and Extinguishing Fires**



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# Overarching Goal



- To build a common language for all issues related to fire detection and extinguishing systems, and to establish the practical ability to assemble and operate various fire fighting means.



# Intermediate Goals



- The student will detail the types of detection systems in the building.
- The student will explain how these systems are integrated.
- The student will demonstrate how to assemble a basic attack line.
- The student will extinguish a pool of burning liquids using a fire extinguisher.



# Introduction

- It is crucial and critically important for there to be a reciprocal relationship between the fire fighters called to a fire and disaster area and locals who use these areas during routine circumstances.
- In order to ensure effective cooperation during an emergency we must build a common language in order to take control of a fire or emergency situation as quickly as possible.
- In this section of the training we will focus on the systems contained in the building and how to use them.



# Fire Fighting Station on Each Floor

- In public places and in newer buildings there are fire fighting stations. Local people must ensure that they are in good working order and available during routine circumstances.
- Every such fire fighting station contains the basic means for building an attack line.
- Next to every such fire fighting station, and usually inside it as well, there is a fire fighting valve (in Israel it is 2”).
- Inside there are 2 hoses whose diameter matches the fire fighting valve and a nozzle that connects to the hoses. The length of this attack line is 30 meters.
- Some of these stations also contain a first aid reel and a fire extinguisher.



# Water Equipment



- Hoses:
- 3" – 20 m.
- 2" – 15 m.
- 1" – 20 m.





# Water Equipment - continued

- Connectors:



European connector



American connector



# Water Equipment - continued

## Fire hydrant



## Connectors







# Water Equipment - continued

Akron nozzle

3-position nozzle





# Fire Extinguisher



Fire extinguishers operate on the principle of suppression and are suitable for extinguishing fires that involve:

- Flammable liquids
- Electrical systems
- Engines
- Flammable materials such as paper, wood, textiles
- Flammable solids
- And more...



# Types of Fire Extinguishers

- Halon extinguisher – halon gas
- Powder extinguisher – sodium bicarbonate
- CO2 extinguisher – carbon dioxide
- Foam extinguisher
- Light metal extinguisher
- Water extinguisher



# How to Test a Fire Extinguisher

- Visual inspection of the tank
- Inspect the green area of the pressure meter
- Check the extinguisher's expiration date
- Check the date when the extinguisher was used previously



A fire extinguisher that does not pass one of these inspections is not operational!



# Operating the Fire Extinguisher

1. Pull the security pin.
2. Aim the extinguisher nozzle/hose at the base of the flame.
3. Squeeze the operating lever while the extinguisher is upright.
4. Spray from side to side and cover the fire area with the extinguishing material.





# Electric Fire-fighting Pump



- An electric fire-fighting pump provides a building with water at the required pressure as needed, and begins operating usually during a fire.

The pump's main disadvantage is the need for a reliable source of vital electrical power (such as a generator) and maintaining it in good working order.





# Fire and Smoke Detector System



- A fire and smoke detector system aims to provide early detection of a fire, and it is operated by heat and smoke. The system receives warning of a fire and it reports / gives notice of the warning by sounding an alarm and giving indicators, such as the incident location.
- At the same time it performs several operations:
  1. Orders – Dials the fire station, closes electromagnetic fire doors and turns areas into fire zones.
  2. Closes fire vents in the ventilation system, sends elevators to the ground floor, operates PA system, activates the no pressure system, opens windows to remove smoke and so on. All this is done according to the building's safety plan.



# Fire Detection and Extinguishing Console



- The fire detection and extinguishing console is usually located in the building's main lobby; sometimes there are several panels with indicators (sub-panels), depending on the building's size.
- The fire fighting panel will have indicators regarding operation of the sprinklers (if an automated fire-fighting system is installed).
- There are various types of panels, some of which include a direct telephone line to the fire station and a PA system.





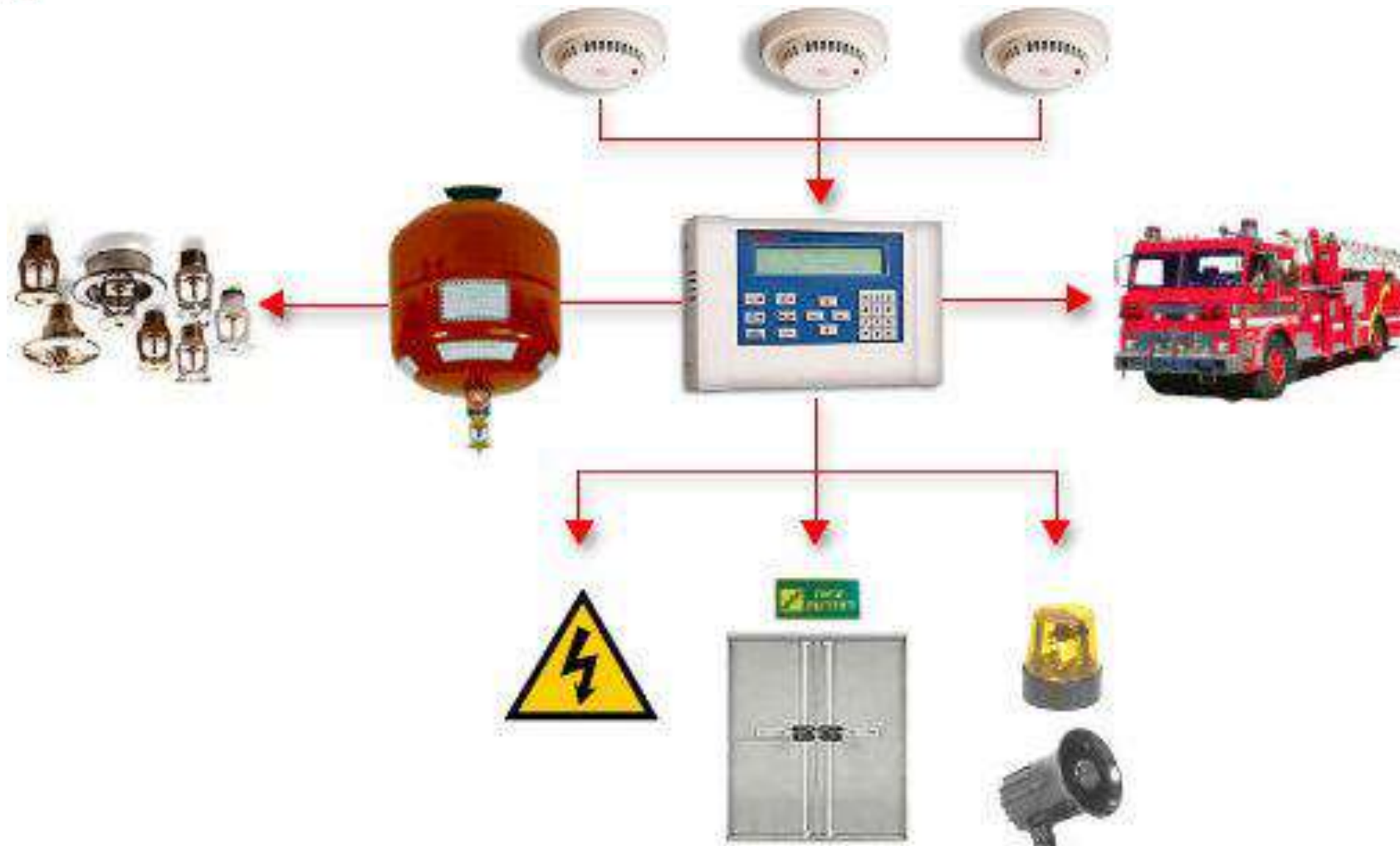
# Automatic Fire-fighting Systems



- Automatic fire-fighting systems are installed in buildings during the initial stages of construction. In older buildings there are sprinkler systems that can upgrade the building's fire safety system, particularly hotels, hospitals, old age homes, offices and public buildings.
- In new buildings these systems are already installed during the construction and occupancy stages.
- These systems operate automatically when a fire breaks out in the building. In most cases the sprinklers can extinguish the fire and keep it from spreading.
- It is important to know the location of the shut-off valves in each area and on each floor, and the main valve supplying water to the sprinklers.



# Integration System





**The End**