Specialized Rescue

Module 13

Hazardous Materials are used or transported

through every community

Types of Releases

Introduction

Unintentional

OR

Criminal or terrorist incident

Most common hazmat event

Human error or container failure

Intended release

Photo courtesy of US Army Corps of Engineers

Hazmat Incidents

Hazmat/WMD Incidents vs. Other Emergencies

Can Be

far more pervasive than standard emergencies

VS

Photo courtesy of US Air Force

Often

more complex requiring special equipment and training

Hazardous Materials

Common Hazardous Materials Locations

Used, stored, or transported through every community

Facilities that produce and ship

Used in manufacturing facilities

Hazardous Materials

Common Hazardous Materials Locations

Used, stored, or transported through every community

Consumer quantities

Transportation

Levels of Training

Hazmat Responder Levels and Responsibilities

Awareness

Recognized

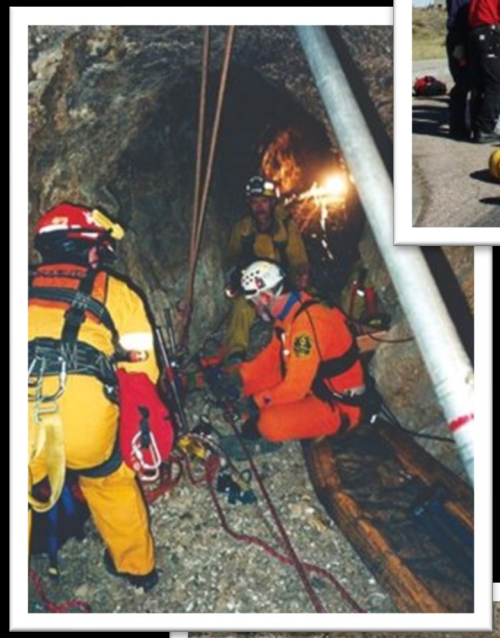
by NFPA and OSHA

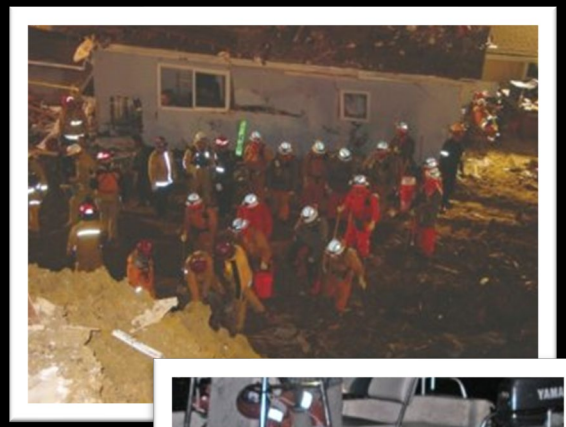
Operations

Technician

Photo courtesy of US Navy

Support is essential for technical rescue companies and teams





Chapter Sections

Introduction

Water Rescue

Confined Space Rescue

Industrial & Person in Machine Rescue

Structural Collapse Operations

Electrical Emergencies

High-Angle Rescue Operations

Trench & Excavation Collapse Rescue

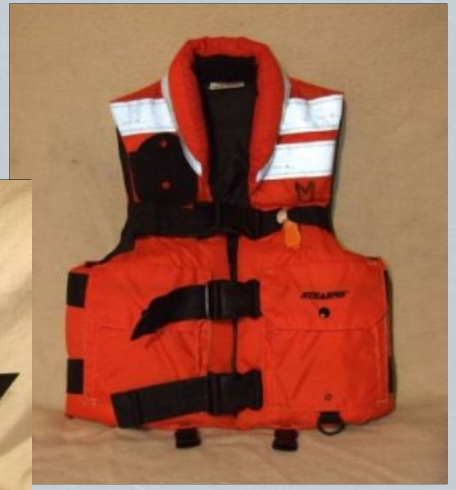
Elevator & Escalator Rescue

Water Rescue Equipment

Personal flotation device

- Type III/V USCG-approved
- Designed to keep person upright
- Foam collar keeps person's head out of the water

Type V



Type III

Rescue helmet

- Provides full head protection
- Lighter than structural firefighting helmet

Water Rescue Equipment

Throw bags

- Versatile tool
- Floatation rings are sewn into the bag
- Throwing distance up typically 40 to 60 feet

Photo courtesy of www.appliedrescuetechnique.com

Response Objectives

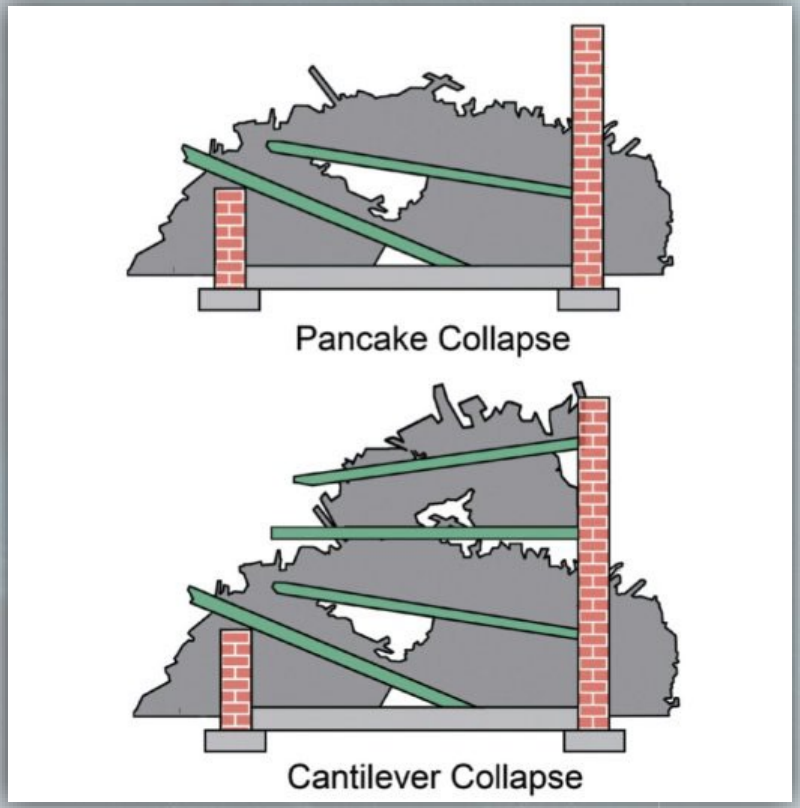
Structural Collapse Operation

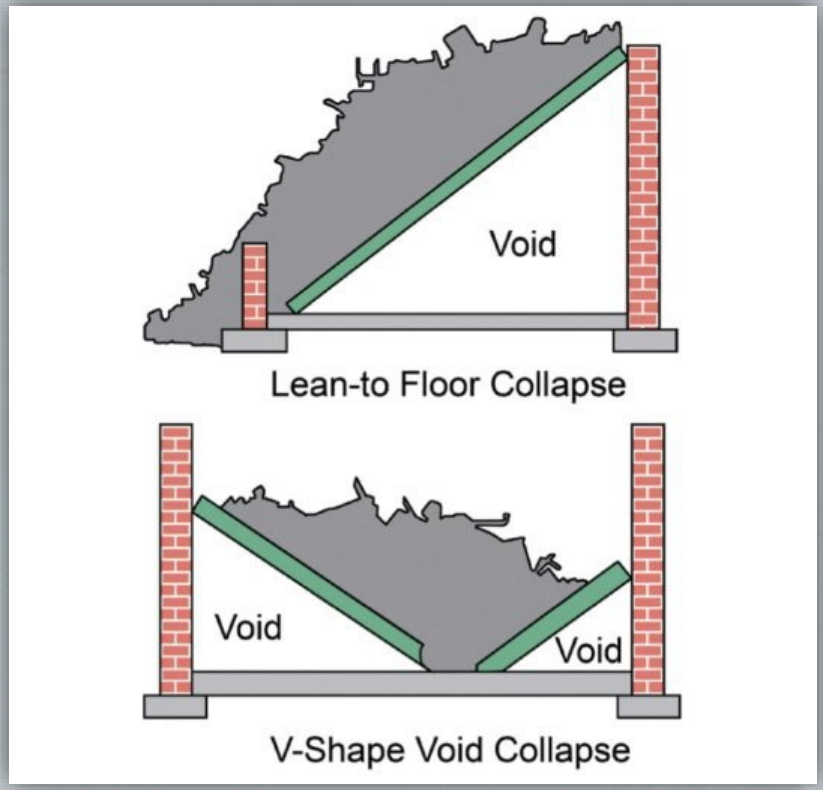
Simultaneous tasks

- Search for missing victims
- Prevent secondary collapse through shoring
- Rescue trapped victims
- Suppress fire
- Identify and react to hazmats
- Treat casualties

Patterns

of collapse





Shoring

- Basic and advanced shoring systems may be needed to prevent secondary collapse
- Firefighters may need to assist in supplying shoring materials

Nationally Approved Marking System

- Identifies when a building has been searched
- Prevents redundant searches
- Markings indicate stability of structure and potential dangers

Factors of size-up

- Location and access of incident
- Victim's predicament
- Can the victim assist with the rescue?
- Is extrication required?
- What equipment is needed?

Considerations During Rescue Operations

System components

- Two ropes: rescue and safety
- Rescue winches
  - Use caution when hauling with a winch

Potential Jumper Rescues

Response

- Gather information from the dispatcher
- Scene safety – is subject armed?
- Request additional equipment such as a fall cushion
- Ensure PD and crisis negotiators are notified
- Coordinate response with other companies responding

Common

industrial and construction incidents

- Require technical rescue teams
- Initial response units are crucial in stabilizing the incident

Rescue Operations

Trench and Excavation Collapse Rescue

Secure the trench

- Place edge protection
- Place equipment to pressurize trench walls
- Hand-dig dirt piles at least 2 feet away from the trench
- Request additional personnel for labor intensive operations

Photo courtesy of Lt. Scott Richardson

Examples of Confined Spaces

Confined Space Rescue

Storage Tanks
Sewers
Tank Trucks
Underground Vaults
Silos
Vessels
Grain Elevators
Collapsed Structures
Water Towers
Railcar Tanks

Photo courtesy of William Seward

Classification of Confined Spaces

Non-permit

- Large enough to enter and perform work
- Limited or restricted means of egress
- Not designed for continuous human occupancy

Permit

- Same hazards as non-permit spaces with additional hazards such as:
  - Potential hazardous atmosphere
  - Contains material with potential for engulfment
  - Configuration may cause entrapment of asphyxiation
  - Contains serious safety or health hazard

Things To Consider

Electrical Emergencies

Electricity

has killed more than 25 firefighters in the last 20 years

Situational

awareness will help see potential hazards

Always

consider all lines and conductors energized

Exiting The Apparatus

Proper exiting procedure