



# RESCUE AWARENESS AND OPERATIONS

DND Primary Care Paramedicine

Module: 01

Section: 07

- Role of the Paramedic
- Protective equipment
- Safety procedures
- Rescue operations
- Types of rescues

- Rescue is the “act of delivering from danger or imprisonment.”
- In EMS, rescue means extricating and/or disentangling the victims who will become your patients.





- The role of EMS in rescue varies from area to area.
- Some areas may require training beyond the awareness level.
- All paramedics should have training and PPE to allow:
  - Access to the patient
  - Provide assessment
  - Establish incident command.





- Paramedics in rescue operations will typically function in two roles:
  1. Rescuer rehab and monitoring
  2. Active patient care

- Six Functions:
  - Medical monitoring and treatment
  - Revitalization
  - Transportation
  - Critical incident stress management
  - Reassignment

- Rehab (rest and recovery) is a vital factor for the Paramedic to consider when supporting rescue or fire operations.





- When supporting a rehab station, there are some things to keep in mind when monitoring rescuers:
  - Physiological job stressors: fatigue, insufficient fluid or food intake, physical demands
  - Environmental job stressors: adverse weather conditions, unfamiliar locations, smoke-filled or unsafe environments

- Personal protective equipment (PPE) use
  - Contributes to heat stress
  - Can weigh up to 40 lbs.
  - Increases energy needed to move
  - Traps body heat
  - Acts as vapor barrier



- State in which fluid losses exceed intake
- Rescuers can lose up to 2 litres of fluid in less than 1 hour
- Fluid loss reduces strength, endurance, and mental judgment






- During strenuous activity, the body burns carbohydrates and fats for energy.
- Essential to refuel energy sources with nutritious food

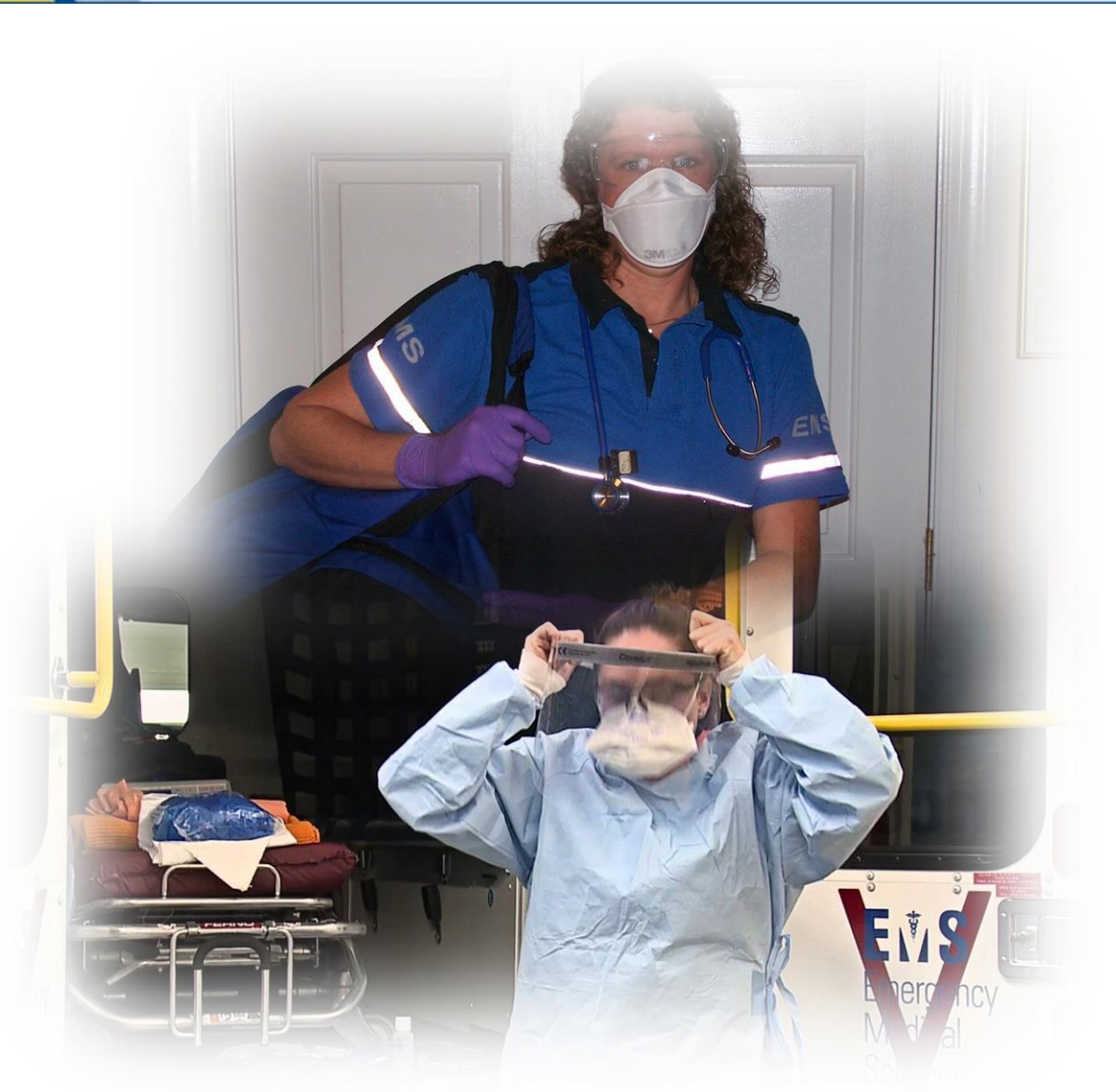






Rescue is a dangerous activity, and safety is the number one priority.

- Gloves
- Eyewear
- Boots
- Isolation gown





# Protective Equipment

- Helmets
- Eye protection
- Hearing protection
- Respiratory protection
- Gloves
- Ear plugs
- Flame protection
- Personal floatation devices
- Lighting
- Hazmat suits
- Wilderness protection

- Helmets
- Eye protection
- Hearing and respiratory protection
- Protective blankets
- Protective shielding



- Rescue SOPs
  - Includes provision for a safety officer that makes a “go or no go” decision
- Crew Assignments
  - Personnel screening used to determine assignments
- Planning
  - Utilize test runs





Dangerous techniques should be practiced frequently.



- Phase One—Arrival and scene size-up
- Phase Two—Hazard control
- Phase Three—Patient access
- Phase Four—Medical treatment
- Phase Five—Disentanglement
- Phase Six — Patient packaging
- Phase Seven —Removal/transport



# Phase One: Arrival and Scene Size-up



The first step of a rescue operation is arrival and scene size-up.



- On-scene hazards must be identified with speed and clarity.
- A sampling of dangerous conditions you may encounter:
  - Poisonous substances
  - Biological agents
  - Swift-moving currents
  - High angle entrapments




## Phase Three: Patient Access



The third step of a rescue operation is gaining access to the patient.



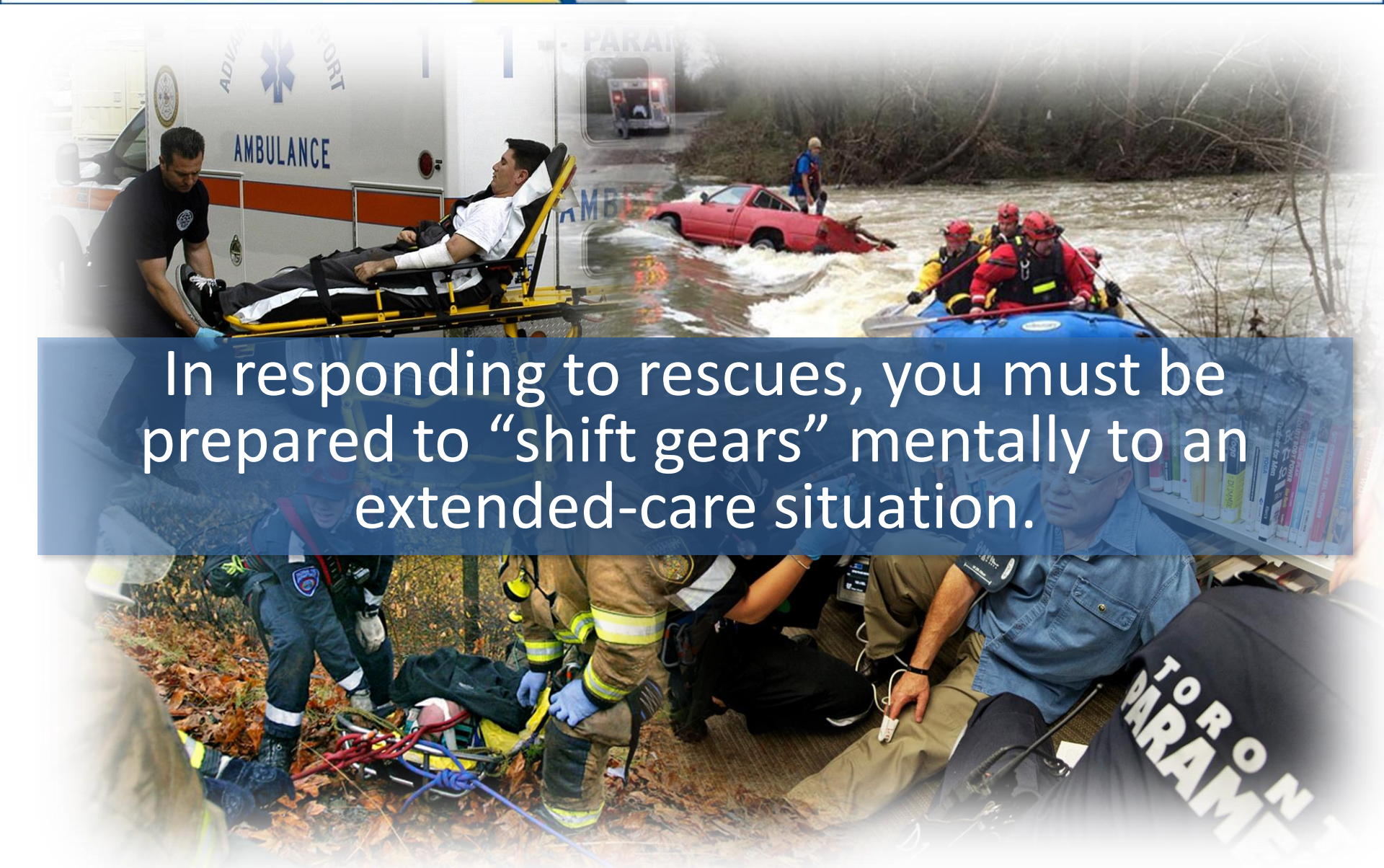


The fourth step in a rescue operation is patient treatment.

- Identify and care for existing problems.
- Anticipate changing patient conditions and determine in advance the assistance and equipment needed.
- Become familiar with specific injuries with rescue operations: rescue trauma, crush injuries...



# Goals of Rescue Assessment



In responding to rescues, you must be prepared to “shift gears” mentally to an extended-care situation.

TORONTO  
PARAMEDIC



# Phase Five: Disentanglement

A photograph showing firefighters in full gear performing a disentanglement operation on a car accident scene. One firefighter is using a hydraulic rescue tool (Jaws of Life) to cut through the metal of a vehicle. Another firefighter is visible in the foreground, and a third is partially visible on the right. The scene is outdoors with a red fire truck and a blue tent in the background.

The fifth step in a rescue operation is disentanglement.



# Phase Six: Packaging



The sixth step in a rescue operation is packaging and removal of the patient.



# Phase Seven: Transport



The seventh, and final, step in a rescue operation is transport of the patient.

- Attempt communications with the patient during the rescue operation.
- Reassure victim of his or her safety.



- To help keep a patient calm:
  - Make and keep eye contact with the victim.
  - Tell the truth.
  - Communicate at a level he or she can understand.
  - Be aware of your own body language.
  - Always speak slowly, clearly and distinctly.

- To help keep a patient calm (cont):
  - Use a victim's proper name.
  - Speak clearly and directly at victim.
  - Allow time for victim to respond to your questions.
  - Try to make the victim comfortable and relaxed.

- Many patients will require medical care.
  - Medical care should only be given if it can be done so safely.
  - Do not become a victim yourself during a rescue attempt.
  - Standard patient care protocols apply unless stated by medical direction or exceptional circumstances.



- Water rescues may involve many kinds of water bodies—pools, rivers, streams, lakes, canals, flooded gravel pits or even the ocean.
- Nearly all incidents around water are preventable



- A personal flotation device (PFD) is mandatory equipment for any water-related rescue.



- Incapacitation and inability to self-rescue
- Inability to follow simple directions
- Inability to grasp a line or floatation device
- Laryngospasm



- Safe ice rescue requires proper equipment and protective clothing.





# Basic Water Rescue Model



Reach



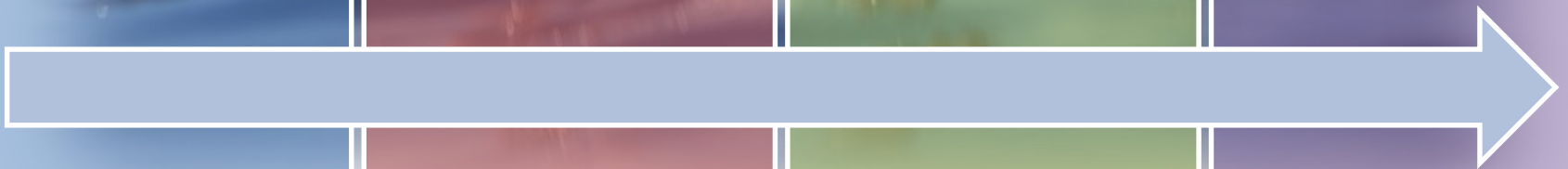
Throw



Row



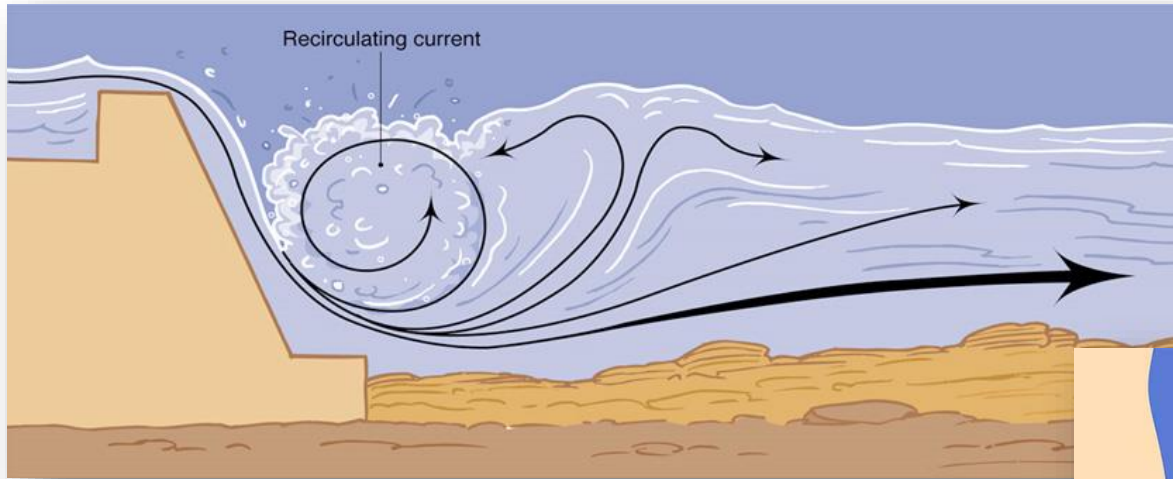
Go



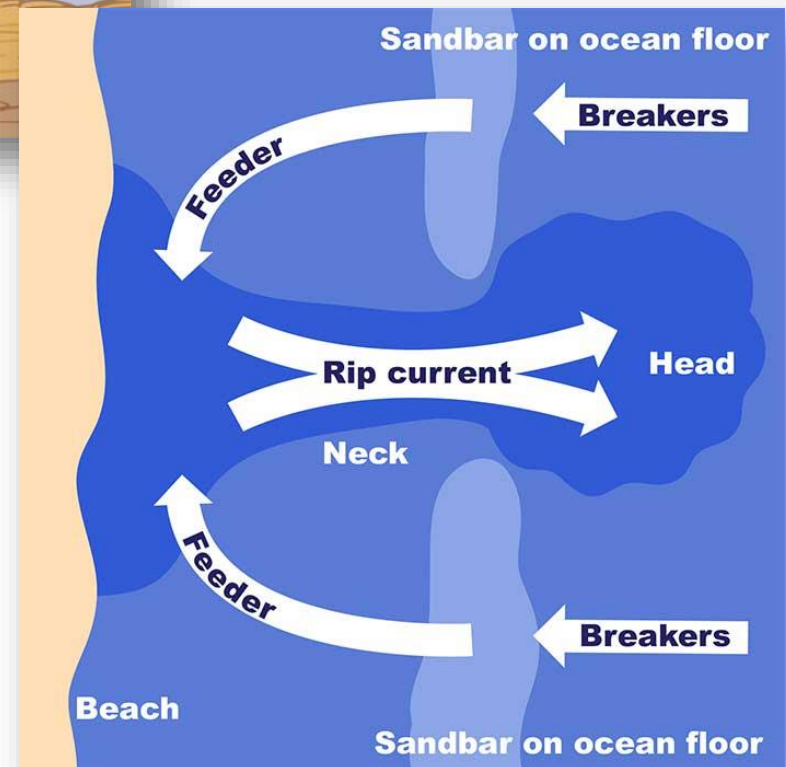
- By far the most dangerous water rescues involve water that is moving.
- Competency at handling the power and dynamics of swift-water rescues comes only with extensive training and experience.





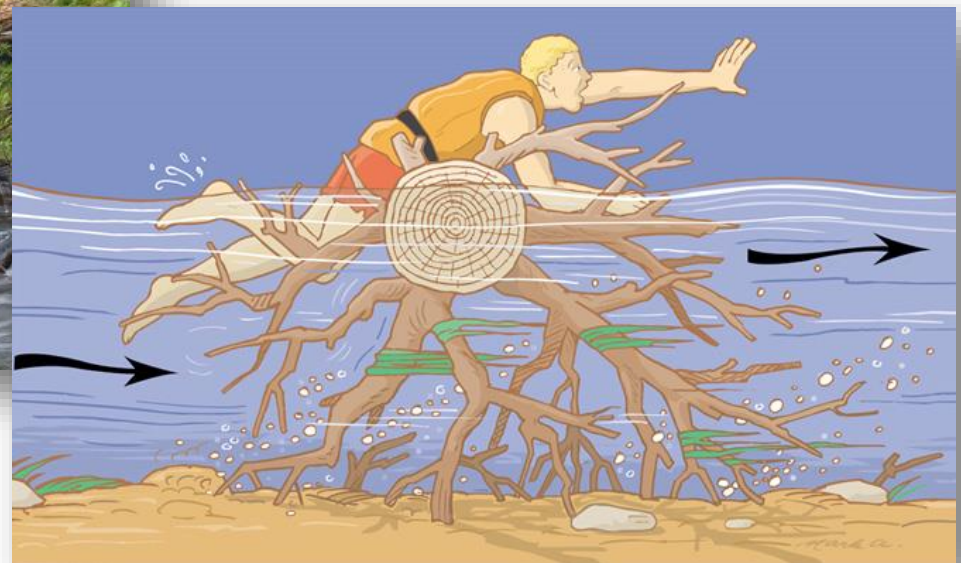


- The movement of currents can create a “drowning machine.”





- Currents can force a person up against a “strainer.”



- Cover mouth and nose on entry
- Protect head and keep face out of water
- Do not attempt to stand up in moving water
- Swim with the current angled towards shore
- Look for water hazards

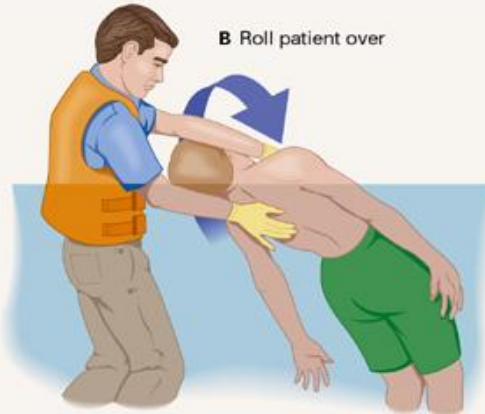
# Water Rescue

- Water rescue with possible spinal injury

**A** Splint head and neck with arms



**B** Roll patient over



**C** Ensure airway and breathing

- Patient not breathing. Begin rescue breathing using a pocket mask, and rescue from water as soon as possible
- Patient breathing. Slide backboard under patient



**D** Apply a rigid extrication collar



**F** Remove patient from water



**E** Float board to poolside





- Age
- Posture
- Lung volume
- Water temperature
- Use of PFDs
- Mammalian diving reflex

- Confined-space rescues present any number of potentially fatal threats
  - One of the most serious is an oxygen-deficient environment.
- 60% of all fatalities associated with confined spaces are people attempting to rescue a victim!

# Look For Warning Signs

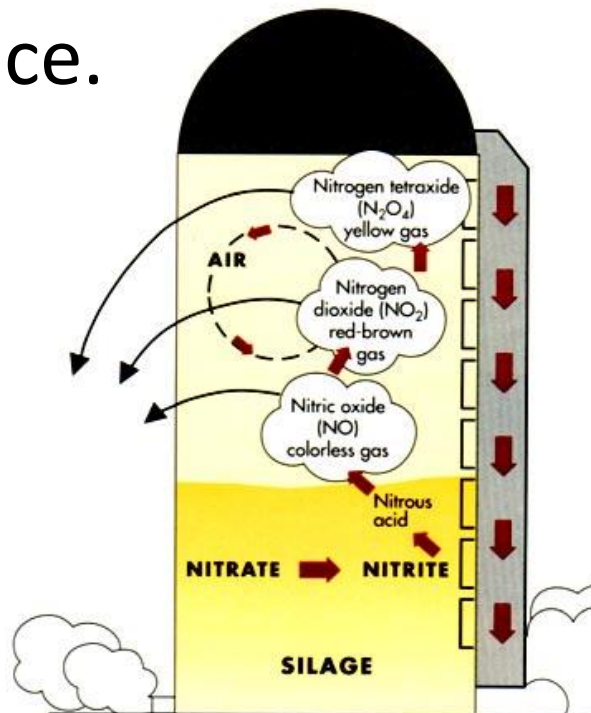




# Confined Space



- Entering confined spaces, such as silos, requires training, equipment and experience.

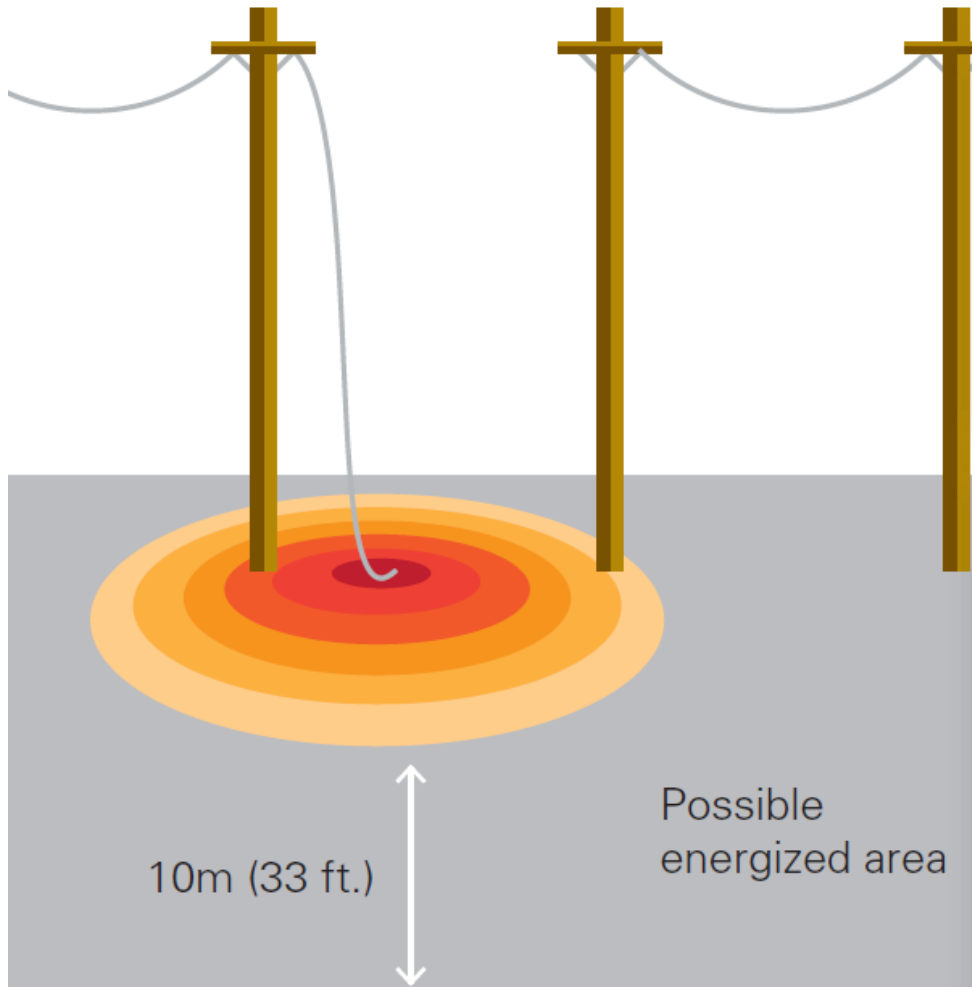




- Oxygen-deficient atmospheres
- Toxic or explosive chemicals
- Engulfment
- Machinery entrapment
- Electricity
- Structural concerns



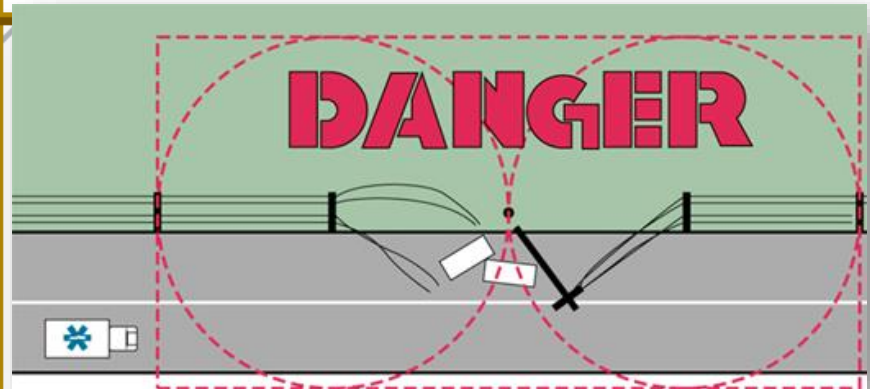
- Traffic Hazards
  - Staging
  - Positioning of apparatus
  - Emergency lighting
  - Redirection of traffic
  - High visibility
- Other Hazards
  - Fire and fuel
  - Alt. fuel systems
  - Sharp objects
  - Electric power
  - Energy-absorbing bumpers
  - Air bags
  - Hazardous cargoes
  - Rolling vehicles
  - Unstable vehicles



10m (33 ft.)

Possible energized area

Ground may be energized for up to 10 metres.  
Do not enter this potentially energized area.



- MVCs present EMS with the most common access and extrication problems.
- You must know some basic information about automobile construction or “anatomy.”
- Considerations include:
  - Frame/construction
  - Firewall/engine-compartment components
  - Types of glass
  - Doors



- Initial scene size-up.
- Control hazards.
- Assess the degree of entrapment.
- Establish circles of operation.
- Treatment, packaging, removal.

- Steep slope or low angle terrain
- Vertical or high angle terrain
- Flat terrain with obstructions
- Scrambling
  - Climbing over rocks or tree without the aid of a rope
- Scree
  - Loose pebbles or rock debris that forms on slopes or the sides of mountains

# Basket Stretcher





- Helicopters can be useful in hazardous-terrain rescues.
- Weigh the advantages, disadvantages and restrictions for:
  - Boarding and debarking
  - Passenger restrictions
  - Cable winches
  - Weight restrictions
  - Equipment restrictions



- Long-term hydration management
- Repositioning of dislocations
- Cleansing and care of wounds
- Removal of impaled objects
- Pain management
- Management issues

- Weather and extreme temperatures
- Limited patient access
- Difficulty transporting street equipment
- Cumbersome PPE
- Patient exposure
- Patient monitoring
- Improvisation



- Technical rescue operations are dangerous for both rescuers and patients.
- During the rescue phase, medics are typically in supportive role for the rescuers and any mobile patients.
- Once the patient has been extricated then patient care and management is handed over to medical personnel

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- Rescue operations
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