EMS Fire Scene Operations
Objectives

• Explain the fire department structure.
• Explain how to ID who is in charge and what the FD priorities are.
• Explain fire department operations at the scene of a structure fire.
• Explain the different phases of firefighting.
Objectives

• Explain what to do if you arrive first.
• Explain how EMS is incorporated into the incident command structure.
• Know where to stage/park.
• Explain anticipated medical problems from firefighters and occupants.
Objectives

• Explain how to set up a rehab center.
• Know the different types of fire operations and how EMS interacts with each.
• Explain the 10 fire ground do’s and don’ts.
Assumption

• It is assumed that you are an EMS provider with little or no knowledge of how fire departments work and you want to learn a few things about fire scene operations.

• If you are a firefighter, this will be boring.
Fire Department Structure

• Based on military command structure.

• Units operate as companies, teamwork is stressed.

• Each company has a pre-determined assignment.

• Engines, trucks, rescues, chiefs.
Engine Companies

• Carries water, hose and pump.
• Mission is to attack and extinguish fire.
Truck Companies

- Specialized tools and techniques.
- Mission is to gain access, ventilation, search and rescue.
Rescue Company

- Has specially trained personnel and equipment for rescue.
- Mission is RIT and rescue.
- Most experienced members.
Chief Officers

- They usually only show on multi-unit incidents.
- They run the show, strategic decisions are made here.
- Usually found in vehicle.
The Work

- Very demanding job, requires a FF to be in top physical condition.
- Heavy work in a hot / humid environment.
ID Who is in Charge?

- Easy... look for the white helmet!
- Green light signifies the command post.
- They are usually very busy people.
FD Priorities

- Life & property come first
- Nothing else matters
Firefighting Phases

- Size-up
- Rescue
- Initial attack
- Extinguishment
- Overhaul
- Clean-up
What Happens at a Structure Fire?

- Fires are pre-planned, everyone knows what to do and when to do it.
- Units arrive piecemeal.
- Offensive versus defensive attack.
- What is a 2\textsuperscript{nd} & 3\textsuperscript{rd} alarm?
- Key word – ACCOUNTABILITY!
Fire Phases

- Incipient – first starts, atmosphere livable and vision ok
- Free Burning – everything is on fire, flashover occurs
- Smoldering – no O2, no vision and high temp, backdraft occurs when rescuer enters
Flashover

- When the overall temperature reaches the ignition point of everything in the room, everything ignites very rapidly.
- The survival time of a FF in full PPE is estimated to be between 10 and 15 seconds.
Backdraft

- Aka “smoke explosion”
- Occurs when oxygen is introduced to high CO environment
- Commonly occurs when untrained personnel kick a door in before proper ventilation occurs.
- Can knock house off foundation.
Potential for Backdraft

- Smoke-stained windows
- Smoke puffing at seams and cracks
- Smoke pushing out under pressure
- Heavy black smoke
- Tightly sealed building
- Extreme heat
Response

TYPES of CALLS

- Smells, bells and fairy tails
- Structure fire
- Listen for info such as “across from…” or “in vicinity of…”
You Arrive First...

- Locate fire hydrants.
- Locate occupants if outside.
- Keep area clear of vehicles.
- Walk around building.
- **DO NOT ENTER BUILDING!!**
- Give report to first arriving officer.
You Arrive First...

- Do a risk / benefit analysis.
- Does this situation look hopeless?
You Arrive First...

What is it about this situation that tells you to get ready for a patient?
Command Post

- Report here first and set up integrated command.
- Where to get info and orders.
- Keep personnel 25’ away.
Command Post

- Some protection from environment is required, can be as easy as a pop-up tent or a dedicated trailer/bus.
- Important to have a EMS representative in the CP.
Staging Ambulances
Staging Ambulances

- Don’t call IC for staging instructions.
- Back ambulance into scene and leave plenty of room for rapid egress.
- Make sure your escape route stays clear!
- Do not block access to scene.
- Be proactive, not reactive.
Watch Where You Park!
Watch Where You Park!
Watch Where You Park!
What to Wear

- Required PPE for EMS personnel includes:
  - Safety vests
  - Work shoes/boots
  - Helmets
What to Bring With You

- PPE
- Cot
- Oxygen
- Jump bag
- Burn kit
- AED 💚
- Portable radio
Anticipate Injuries - FF

- Firefighting is hard work. It includes heavy equipment and PPE, falls from heights, falling objects, burns, heat stress, toxic inhalation injuries, etc.

- Top reasons for injuries/fatalities are:
  1. Heart attacks
  2. Falls
  3. Inhalation of toxic gases
Anticipate Injuries - Civilian

- Smoke and toxic gas inhalation.
- Burns are rare but do occur. Be aware of the following signs of respiratory involvement:
  - Burns around face
  - Singed eyebrows
  - Hoarse voice (80% airway closure)
  - Carbonaceous sputum
  - Hx of burn in an enclosed space
Inhalation Injury

• Think CYANIDE!
• Watch for increasing voice from swelling.
• Administer high-flow humidified oxygen.
• Call ALS for advanced airway control.
Someone is Injured!

- Let the FF’s bring the patient to you.
- Have cot ready to receive patient.
- Think airway.
Setting Up Rehab
Establish a Rehab Sector

• Set up in a safe area away from the action.
• Should provide suitable protection from the environment.
• Should be easily accessible by EMS units.
• Should allow prompt reentry back to the emergency operation.
Environment Protection

• Buses work best because they are easy to obtain and can be brought in quickly.

• Work out procedure BEFORE the incident!
Provide Hydration & Food

• 50/50 water and activity beverage. Watch calorie load.
• Caffeine & carbonated beverages will stop operation.
• Provide food if operation is longer than 3 hours.
Provide Hydration & Food

- MRE’s contain 2,000 calories and a lot of salt. No good for what we do.
- Soup is digested faster than sandwiches.
- Fruits provide energy replacement.
- **NO PIZZA or BURGERS!**
Provide Rest

For every 30 minutes of work time, the FF should be sent to the Rehab Area for rest. Rest shall not be < 10 minutes and may exceed an hour as determined by the Rehab Officer.
Medical Evaluation

- Evaluate vital signs, examine rescuers, make proper disposition if they can return to the fire, continue rehab, or Rx and Tx to medical facility.

- If HR exceeds 110, take oral temp. If temp exceeds 100.6 F, no protective equipment is to be worn. If < 100.6 F and HR > 110, continue rehab time.
Cooling off means all gear comes off!
Dehydration

- Recognized by tachycardia, diminished pulse pressure and later... hypotension.
- Changes, rather than single measurements, in the above parameters are especially useful indicators.
- Poor skin turgor is usually only seen in severe dehydration.
Problems

What about FF’s that don’t want to rehab or leave before they should?

- Take their PASSPORT when they come in.
- Notify command and have IC deal w/ it.
- Don’t physically restrain.
EMS Fire Ground Do’s

1. Back into the staging area.
2. Keep a lane of egress open.
3. Report to CP w/ cot, O2, jump bag, AED, burn kit.
4. Obtain a fire radio & monitor fire ground radio traffic.
EMS Fire Ground Do’s

5. Check firefighters vital signs. Have a plan on who can re-enter.

6. Keep track of who enters and leaves rehab.

7. Maintain accountability with the IC.
EMS Fire Ground Do’s

8. Be visible and be easily found.
9. Be prepared in advance for any environment, call for a bus early if required.
10. If you leave with a patient, let IC know and drop 1 person off if possible.
EMS Fire Ground Don'ts

1. Drive over fire hose.
2. Get yourself stuck behind incoming fire apparatus.
3. Block egress for fire apparatus.
4. Show up w/o proper EMS equipment.
5. Leave w/o telling anyone.
EMS Fire Ground Don'ts

7. Park under power lines.
8. Freelance.
9. Run into a burning building.
10. Do not leave until cleared through the fire ground IC.
Operations

• Foam
• High Rise Calls
• Vehicle Fires
• Animal EMS
• Hazardous Materials Calls
Foaming Operations

- Used to cover flammable liquid spills to stop vapor formation.
- DON’T STEP IN IT!
Operations at High-Rises

• Bring everything with you on the cot.
• Stage several floors below the fire.
• Do not use elevator w/o operator.
Animal EMS
Animal EMS

- Only done when no human victims.
- Ventilation usually does the trick.
- ALS can be done, but is the effort really worth it?
- Can make you a hero in the eyes of the pet’s owner.
Vehicle Fires

- Lots of toxic products
- **DO NOT FIGHT FIRE UNLESS LIFE HAZARD!**
- Vehicle will be written off, just stay away from it.
Haz-Mat Operations
Haz-Mat response is a science of vague assumptions, based on debatable figures taken from inconclusive instruments, performed by persons of doubtful reliability and of questionable mentality.
Haz Mat Calls

- Knowledge = Protection
- Time, distance, shielding
- Stay uphill and upwind
- Don’t accept any patient who is not cold wet and naked (de-conned)
- These standbys last many hours/days!
Knowledge

• Take a hazardous materials awareness class.

• Know what the following are and what they mean to you:
  • NFPA 473
  • OSHA 29 CFR 1910-120
  • Local haz mat emergency plan.
NFPA 473

• Divides EMS personnel into
  • Level I – cold zone, patient already deconned
  • Level II – warm zone, contaminated patient, medical support for haz mat personnel.
NFPA 473

- Must have HMA.
- Must have haz mat SOP’s and pre-plans for targets.
- Must know how to set-up, use and remove haz mat PPE.
- Must have written pre-hospital medical SOP protocols.
OSHA 1910-120

- Must have EMS on site during operation.
- No eating, drinking or smoking allowed on site.
- Must do pre and post entry vital sign checks on FD personnel which may include a 12-lead EKG.
Haz Mat

• Haz mat victims require specialized treatment, take the NFA class on ALS Haz Mat to know what to do.
• Make sure the receiving hospital is aware this is a haz mat patient.
• Be prepared to get cold, wet and naked yourself!
FIRE CHIEF'S EX-WIFE HOUSE CATCHES FIRE. Chief quoted as saying "well, she has a restraining order against me and all my family and us guys at the fire house are just one big family"
Know Your Fire Fighters!

- Do a ride-along, see what their world is like.
- Know how to quickly remove their PPE.
- Know how to change air bottles.
Know Your Fire Fighters!

• Learn proper procedures for assisting rescuing of victims.

• Participate in common training.
Questions?
The End