

# This Month's *Working Fire*...

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**Volume 05-5    May 2005**  
**Approx. Program Length: 60:00**

## Incident Analysis

### FIRELINE

#### **Festus Chlorine Leak Response Festus, MO**

**Approx. length: 14:23**

A chlorine leak in rural Jefferson County, Missouri south of St. Louis developed into the biggest such leak in the country. A hose off-loading a rail tank car at a plant failed and automatic shutoffs at the plant failed to function. A chlorine cloud approximately 4' - 6' deep formed and floated away from the plant. The command center for the incident was a mile from the plant, a very large hot zone. Responders had to drive in Level A suits in a pickup truck to the site to complete a manual shut-off of the chlorine at the tank car. A final report determined that an improper, below-spec hose was installed, one very similar to the proper hose, and that automatic shutoffs were corroded. A great segment for haz-mat responders. For more information, contact Chief Mike Siegel, Jefferson Co. Haz-Mat Response Team, 1771 Springdale Blvd., Fenton, MO 63016 or call him at 636-343-9300

#### **Protesters' Shackles San Francisco, CA**

**Approx. length: 5:19**

Demonstrators and protestors can show up anywhere -- even in your jurisdiction. Demonstrators have found a new way to thwart efforts of police to remove them: chaining themselves together using PVC pipe, rebar, and chains. The San Francisco Fire Department has come up with a safe way to handle it. This segment shows the system in use by demonstrators and outlines a step-by-step procedure for dismantling it. For more information, contact Lt. Randy Hiro, San Francisco Fire Department, San Francisco Fire Department, 698 Second Street, San Francisco, CA 94107-2015 or call him at 415-558-3200.

### HANDS-ON

#### **Chlorine Leak Response Training Part I**

**Approx. length: 12:38**

This is the first of a two-part series on responding to chlorine leaks. Part One consists of an in-depth classroom segment including PowerPoint. This includes a discussion of what kind of an element chlorine is, how it is supposed to be handled and stored, common misconceptions about the chemical, how it reacts in the environment, and how to respond to a chlorine incident. Next month we go on scene for a chlorine leak training scenario. For more information, contact Assistant Chief Steve Rhinehart, Maryland Height Fire Protection District, 2600 Schuetz Road, Maryland Heights, M) 63043 or call him at 314-298-4400.

## Incident Analysis

### **Vehicle Fires, Part I**

**Approx. length: 10:11**

This is the first of a multi-part series on responding to vehicle fires. Part One covers a classroom segment in which we cover basic safety procedures and precautions to take, what can go wrong, and a step-by-step protocol for responding including manpower needs. We then go on scene and participate in an actual vehicle car fire scenario where we practice what we learned. Additional evolutions come in subsequent segments. For more information, contact Glen Fisher, Fire Service Institute, University of Illinois, 1105 N. Wood St., Shelbyville, IL 62565 or call him at 217-774-2920.

### **FIRE MEDICS**

#### **Intubation Procedures**

**Approx. length: 14:02**

Airway intubation done incorrectly is one of the largest areas of casualty claims against EMS organizations, according to VFIS Insurance, one of the leading insurers of fire and EMS organizations in the country. This segment reviews the correct way to intubate, the necessary equipment and appliances, possible pitfalls, and techniques to insure you're doing the procedure correctly. For more information, contact Mike Hansen, Field Supervisor, St. Charles County (MO) Ambulance District, 4169 Old Mill Parkway, St. Peters, MO 63376 or call him at 636-441-1354.

### **EVOLUTIONS 2000**

#### **Firefighter Recovery**

**Approx. length: 4:00**

A capsule report on Buffalo, New York firefighter Don Herbert who was injured in fire nine years ago, sending him into a coma. Amazingly, a few weeks ago, he miraculously came out of his coma and began speaking with family and friends. His revival seems to be due to a new treatment his doctor tried. A heartwarming story reminding firefighters that danger is always nearby on the fireground -- so stay safe! For more information, contact the Buffalo News in Buffalo, New York. You can find their contact information on the internet.

#### **Kramer vs. Kramer: Larger vs. Smaller Responses**

**Approx. length: 2:00**

*Working Fire* and Professor/Chief Bill Kramer presents our Continuing Education segment that's worth one credit from the University of Cincinnati. This month, Bill debates the relative dangers and demands on responders from different kinds of incidents. For more information, contact the Open Learning Fire Service Program, College of Applied Science, 2220 Victory Parkway, ML #103, Cincinnati, Ohio 45206 or call 513-556-6583.

## Incident Analysis

### *From the Departments Involved...*

#### DISCUSSION QUESTIONS FOR THIS MONTH'S INCIDENTS

The departments involved in this month's incidents pose some discussion questions that you can use as discussion-starters in your own department's training sessions.

#### ***Chlorine Leak Response / Festus, MO***

#### ***Chief Mike Siegel, Jefferson County (MO) Haz-Mat Response Team***

1. An incident of this size demands manpower. Do you have sufficient support to handle an incident like this? Where will the manpower come from?
2. Are you prepared to mount a multi-agency, unified command? Do you know who to call? Do you have the contact information on hand for the resources you will need?
3. Do you know who the plant officials are of major plants in your jurisdiction where a large-scale incident might take place? Do you train with them or their fire brigade if they have one?
4. Do you have the proper PPE for responding to such an incident? Vapor-proof Level A suits were essential for this response. Any breach meant certain death.

#### ***Protesters' Shackles***

#### ***Lt. Randy Hiro, San Francisco (CA) Fire Department***

1. Are protestors or demonstrators active in your jurisdiction? Government buildings, courthouses, and abortion clinics are all possible venues for such activity.
2. Are you skilled in dealing with citizens who may be in a highly emotional or agitated state? You'll get a lot of that with demonstrators and protestors. Be patient and don't lose your cool!
3. Can you control the depths of your cuts when using a K-12 or circular saw? You might want to practice this skill as it is critical to not injuring demonstrators employing this system.
4. Have you worked out a joint response plan with police who will be definitely be involved in such an incident?

# Fireline Training

## Protesters' Shackles: Orientation & Removal

### Objectives

After watching this program the student shall:

1. learn about the strategy and tactics of protesters and demonstrators
2. become familiar with a specific shackle device used
3. learn how to extricate protesters from the shackle.

### Standards and Regulations

This training is consistent with NFPA 1500 and appropriate OSHA regulations and practices.

### Training Outline

#### I. OBSTRUCTION DEVICE

A shackle arrangement where protesters/demonstrators link their arms through tubes reinforced with rebar.

##### A. Shackle Construction

1. There are four or five different variations.
2. Most are plastic with metal sheathing around the middle with rebar welded inside.
  - a. Some are full metal pipes about 1/8" thick, some less.
  - b. Some have ropes or chains with carabiners inside which protesters hold on to.
4. The tube is usually wrapped in chicken wire which is then wrapped in duct tape. (Their thinking is that glue from the duct tape will gum up saws that might be used to cut through the device.)

#### II. THE INCIDENT

##### A. Removal Procedure

1. Set up cribbing blocks to support the pipe during cutting.
2. Move protesters apart so their hands will be pulled toward the ends of the pipe, thereby flattening them out somewhat and reducing their profile.
  - a. These two actions will help to insure the hands are separated before cutting begins.
3. Cover protesters with a tarpaulin or salvage blankets for protection.
4. Remove duct tape to examine the device.

## Protesters' Shackles: Orientation & Removal

5. With a circular power saw (model used in video was an XL-98) cut a square opening next to the rebar where it was welded inside.
  - a. Make two deep cuts, perpendicular to the length of pipe, about two inches wide.
  - b. Make one deep cut parallel to the pipe between one set of the ends of the other two cuts.
  - c. Score the metal with a Dremel tool on the fourth remaining side that hasn't been cut.
6. Use a screwdriver to pry the metal open.
7. Once opening is achieved, reach in and cut any ropes or chains and unfasten any carabiners.

### B. Safety Procedures

#### **DO NOT GO TOO DEEP!**

1. Know the weight of the saw and pay attention to the pressure being used during cutting.
2. You may not be exactly sure how far the protesters' arms may be inserted.
  - a. It's easy to bite too deep and cut an arm off!
3. If you don't have a Dremel tool, go very slowly.

### C. Post-Analysis

1. At first, SFFD used a Dremel tool exclusively to effect removal but used up a lot of blades and it took quite a while.
2. An XL-98 power saw was then used.
  - a. A number of demonstrators gave up at that point.
  - b. Others waited until they saw the smoke from the saw, then they "bailed."
  - c. The rest held out until they were cut out; it takes about 4 minutes per protester.
3. Give lots of psychological and verbal support as you go about the procedure. You may be able to talk some of them out of it!
  - a. The police will be present in most cases to insure orderly behavior on the part of the demonstrators.

# Hands-On Training

## Chlorine Leak Response, Pt. I

### Objectives

After watching this program the student shall:

1. understand the subtleties of dealing with the chemical
2. learn how it reacts with its environment
3. come to appreciate the danger of chlorine and how to respond to a chlorine response.

### Standards and Regulations

This training is IFSTA-based and is consistent with NFPA 1500 and appropriate OSHA regulations and practices.

### Training Outline

#### I. PROPERTIES OF CHLORINE

##### A. Identification

1. Not found naturally; it's created by passing a current through compounds such as sodium chloride (NaCl).
2. Not everything that smells like chlorine IS chlorine.
  - a. It could be Chlorox which has some chlorine in it.
  - b. Too dangerous for household use; probably a 5-6% hypochlorite solution.
  - c. A reported smell of chlorine could just be Chlorox or a chlorine solution.
3. A true chlorine release is really bad.

##### B. Physical Properties

1. Vapor density: 2.48 (Air is 1.0, so it's 2.5 times more concentrated than air)
2. Specific gravity: 1.56 (Water is 1.0, so it's heavier than water)
  - a. This means it won't dissipate straight up; it should be hugging the ground.
3. Freezing Point: -150 degrees F. (Chlorine ice would only occur under an uncontrollable condition.)
4. Boiling Point: -29 degrees F. (Usually found in gaseous form under most conditions.)
5. Liquid-to-Gas Expansion Ratio: 457.6 : 1 (Chlorine has a large expansion volume.)
6. Atomic Number: 17 (It's in the Halogen family; 17 electrons around the atom.
  - a. Why is this important? On a molecular scale, elements like to have 8 electrons in the outer valence. Chlorine has 7; as it gets thrown out into the air, it will either:
    - i. gain one electron to make 8, or
    - ii. it will get rid of 7 to other elements looking for electrons to make itself stable.
  - b. On the molecular level, it's very active and not stable by itself.

Answers to the quiz on page 8:

1. False 2. True 3. False 4. d. 5. a.

## Chlorine Leak Response, Pt. I

### II. LABELING

#### A. NFPA Placarding

1. Top of diamond - red for flammability
  - a. Flammability scale is 0 - 4, where 0 is no hazard and 4 is very flammable
2. Right-hand side - yellow for reactivity
  - a. Reactivity scale is 0 - 4, where 0 is non-reactive and 4 is very reactive  
(The PowerPoint slide on NFPA placarding is an example; Chlorine would have a "4" for reactivity.)
3. Left-hand side - blue for health
  - a. Health scale is 0 - 4, where 0 is no hazard and 4 is a large hazard
4. Bottom of diamond - special hazards: oxidizer, water-reactive, radioactive, etc.
  - a. Chlorine is 004 at the bottom with "OX" (it's an oxidizer and a strong one)

#### B. Chlorine Placarding

1. Requires labeling as both an inhalation hazard and a corrosive in terms of placarding.
2. Of the two, the placard with the main number at the bottom is the most important.
3. It's UNID is 1017.

#### C. Resources

1. Use the *Pocket Guide to Energy Hazards* to help identify what you're dealing with.
1. Use the *Energy Response Guidebook*.
2. In the Guidebook, use the alpha listing, the blue pages or the green pages depending on how you're using it and what you're looking for. For example, the evacuation table in the green pages.

### III. REACTIONS

#### A. Possible occurrences

1. Chlorine + water can make hydrochloric acid -- pH scale = 7 (neutral)
2. If inhaled, it will immediately react to humidity. That means seared lungs!
  - a. **So, if we use a water fog to move vapors around, we may be creating airborne acid!**
3. Chlorine + Acetylene gas is flammable. Put a flammable gas with an oxidizer and the burning intensifies.
4. It's a helpful element as long as it doesn't get out of hand and react with something else.

## Chlorine Leak Response, Pt. I: Quiz

Date \_\_\_\_\_

Chief/T.O. \_\_\_\_\_

Firefighter (print) \_\_\_\_\_

Education Credits/  
Hours/Units \_\_\_\_\_

Signature \_\_\_\_\_

### Select the best answer:

1. True or False: Since chlorine is a gas, the liquid valves on the tank care aren't important
2. True or False: Don't be too quick to grab a hose to control vapor clouds.
3. True or False: If a substantial chlorine leak occurs at 3 o'clock in the afternoon, you'll still probably make your bowling league that night.
4. In the following list, which does **not** belong?
  - a. Personnel from the facility should be in attendance.
  - b. Level A entry will be necessary, sealed vapor-tight, with more insulation underneath.
  - c. Technician-level personnel, even if in Level A PPE, avoid product if at all possible.
  - d. Bring in a resupply of chlorine
  - e. Set up:
    - special tools and equipment that will be needed
    - detection, measurement, and evaluation means
    - Hot, Warm, and Cold zones
5. Using NFPA placarding and based on what you know, which of the following indicates chlorine?
  - a. Flammability = 0, Reactivity = 4, Health = 4, Special - OX
  - b. Flammability = 3, Reactivity = 0, Health = 4, Special - OX
  - c. Flammability = 0, Reactivity = 0, Health = 4, Special - OX
  - d. Flammability = 0, Reactivity = 4, Health = 0, Special - OX
  - e. None of the above

*(Answers can be found at the top of page 7)*

# Hands-On Training

## Vehicle Fires, Pt. I

### Objectives

After watching this program the student shall:

1. understand the importance of vehicle construction
2. learn the dangers vehicles pose when on fire
3. learn what protocols to follow to safely extinguish a vehicle fire

### Standards and Regulations

This training is consistent with NFPA 1500 and appropriate OSHA regulations and practices.

### Training Outline

#### I. RESCUE APPARATUS PLACEMENT

##### A. How far away and where do we park?

1. Where is the fuel tank?
2. If we have an apparent engine fire, we could park in front but not close
  - a. Partly determined by your available hose length
  - b. 100 feet would be a good distance based on a 100-foot hose lay.
3. If an apparent trunk fire or fire in rear, beware of gas tank placement!

##### B. Gas Tanks may impact placement

1. Assess vehicle! Where is the tank and what kind? *See III. G. below for more details.*
2. **Older vehicles have metal gas tanks which are under pressure - explosion risk!**
  - a. Don't park behind these vehicles! Protect yourself as much as you can!
4. Fireball from gas tank explosion:
  - a. 15 feet high
  - b. 75 feet to the rear!

#### II. APPROACHING THE VEHICLE ON FIRE

##### A. Shock-Absorbing Bumpers

1. Beware when approaching from the front or back of vehicle
2. **They can give away and swing around, cutting off legs of approaching responders!**
  - a. They'll usually let go on one side and pivot around from the stationary side.
  - b. Leave room for the swinging bumper.
4. Approach that area from a 45-degree angle

## Vehicle Fires, Pt. I

### B. Driveshaft

1. It's hollow inside; if it's an old one, it can blow up
  - a. A blown driveshaft can throw shrapnel up to 15 feet and even through the vehicle!  
Get water on it and be careful!

### III. ATTACKING THE FIRE

#### A. Manpower - see sub-topics below

1. Ideally, two responders:
  - a. on the attack line
  - b. on the protection line
  - c. handling forcible entry.
2. Six on each fire, with an incident commander

#### B. Hose Crews

1. Use two handlines an attack line and a protection line
  - a. Use the protection line to shoot the shock-absorbing bumper and cool the gas tank.
  - b. Use the attack line to fight the fire. It shouldn't take that much water.
2. You may advance them together; keep them fairly close together.
3. The protection line may be advanced first to stabilize the vehicle.

#### C. Forcible Entry

1. Tools used can be a Halligan bar, an ax, etc.
2. Always "try before you pry." The hood or truck release may still work.
3. Fire may have to be knocked down first before forcible entry can open up inaccessible areas so exposed fire can be knocked down again.
4. Removing Windshields:
  - a. Using an axe with the point or pick end, make short, chopping strokes around the perimeter of the windshield. Don't over-swing.
  - b. A saw is good for making final penetration. Use normal sawing action.
5. Side Windows:
  - a. Designed to be broken out at the corner
  - b. If you strike the window at the bottom, breaking glass may endanger occupants!
6. In 2006, laminated windshield glass will be used for window glass all over the vehicle.

Answers to the quiz on page 12:

1. False 2. True 3. False 4. d. 5. b.

## Vehicle Fires, Pt. I

### D. Grass Fires

1. If a car is involved in an accident and is off the road and sets roadside grass on fire, sweep under the car with the hose line. This can be the protection line.
2. As you approach the vehicle, use a straight stream.
3. Literally lay down along side the car to sweep with the handline underneath.
  - a. Use an angle fog nozzle setting to get coverage underneath.

### E. Engine Fires

1. Standard policy on raising the hood:
  - a. Does the hood open away from or toward the windshield? This will depend on make or model, but you should know what to expect.
  - b. Again, "try before you pry." Try the hood release first -- it may still work.
  - c. On a small engine fire and if you can get to the battery, disconnect the negative cable first, then the positive. Do both if you can as a precaution.
2. Fully-involved engine fire
  - a. Rather than open the hood, exposing responders to fire and possible explosion, pry up a corner of the hood on the open side, based on C.1. a. above.
  - b. Stick a nozzle in and use your hoseline. A piercing nozzle would work well.

### F. Trunk Fires

1. Follow the same approach as outlined in C. above but pry up the trunk.
2. An alternative approach is to use the piercing nozzle through the taillight and put the fire out.

### G. Fuel Tanks

1. Tanks can be metal or plastic in newer cars.
2. Plastic tanks melt down into themselves and the fuel they contain. You may have to let them burn themselves out because fuel will keep leaking out of them.
3. Foam may help to keep flammable liquids from igniting.
  - a. Match up the class of foam with the class of fuel. Don't use Class A foam on Class B fuels.
  - b. It may work but don't count on it.

## Vehicle Fires, Pt. I: Quiz

Date \_\_\_\_\_

Chief/T.O. \_\_\_\_\_

Firefighter (print) \_\_\_\_\_

Education Credits/  
Hours/Units \_\_\_\_\_

Signature \_\_\_\_\_

### Select the best answer:

1. True or False: Vehicle fires progress quickly. Park close by so you'll have all tools available.
2. True or False: If the trunk release is in the vehicle and you can get to it, give it a try.
3. True or False: Remove window glass any way you can to gain access to occupants quickly.
4. In the following list, which does **not** belong?
  - a. Potential gas tank explosion impacts rescue apparatus placement
  - b. Driveshafts may explode, hurling shrapnel through the vehicle.
  - c. Shock-absorbing bumpers may swing around, endangering responders.
  - d. Radios broken in an accident may play loud music, endangering responders' hearing.
  - e. None of the above.
5. Keeping apparatus at a safe distance, employing a protection hose line, and protecting occupants from breaking glass where possible are all done for \_\_\_\_\_:
  - a. expediency
  - b. safety
  - c. convenience
  - d. urgency
  - e. none of the above.

*(Answers can be found at the top of page 11)*

# Fire Medics

## Intubation Procedures

### Objectives

After watching this program the student shall:

1. become familiar with the necessary intubation equipment and appliances
2. learn the correct procedure for performing intubation including specific techniques.

### Standards and Regulations

This training is consistent with NFPA 1500 and appropriate OSHA regulations.

### Training Outline

#### I. AIRWAY MANAGEMENT

There must be a patent airway for ventilation and intubation and there must be the ability to ventilate effectively.

##### A. Ventilation

Once patient is in the proper position, ventilate to provide adequate oxygenation while preparing for intubation.

1. Position the patient's head.
2. Use Head-Tilt/Chin-Lift method most of the time.
  - a. Easier to use and more effective
  - b. Doesn't put as much strain on the responder
3. Or use a Modified Jaw Thrust if you suspect a spinal cord injury.
4. Make sure bag is hooked up to 15 liters of O<sub>2</sub> providing 100% oxygenation.
  - a. Be sure you've got a good tight seal; no air should be escaping from the mouth.
5. Clinical parameters
  - a. Good chest rise and fall
  - b. Lack of belly insufflation
  - c. Ventilate slowly over 1.5 - 2 seconds; don't squeeze the bag too rapidly! This causes too much air to fill the belly.
  - d. Ventilate adults at a rate of about 12-20 times a minute.

##### B. Procedure

1. Invert an oropharyngeal airway, hook-side up, to the back of the airway, twisting it down into place, coming to rest on the lip.
2. This provides an open airway by moving the tongue out of the way until ready to intubate.

Answers to the quiz on page 10:

1. False 2.True 3. True 4. c. 5. b.

## Intubation Procedures

### II. INTUBATION

#### A. Equipment

1. Stethoscope
2. Suction Unit - to handle bleeding or vomitus in the oropharynx.
3. Laryngoscope and Blade (a #4 Macintosh would be an example)
4. Endotracheal Tube Holder - to hold the intubation tube once it's in place
  - a. Use this and 1-inch or 3-inch tape to hold tube in place.
5. Endotracheal Tube
  - a. Different sizes and lengths depending upon the patient and whether intubating endotracheally or nasally
  - b. A size 8.0 is used in the video segment.
6. Stylette - a malleable insert used to make the endotracheal tube stiffer.
  - a. Useful for assisting in the advancement of the tube through the glottic opening.
  - b. Also useful for bending or preshaping the endotracheal tube.
7. 10 cc. Syringe - to fill the distal cup once the tube is placed in the patient's lung.
8. McGill Forceps - to remove any obstructions.
9. Confirmation Devices
  - a. Stethoscope - used to listen to the chest and epigastric space for good ventilation in the chest and to insure that no air is entering the belly.
  - b. CO<sub>2</sub> Detector - for checking exhaled air. Either a colorimetric or a digital version
  - c. Esophageal Indicator - will tell if the intubation tube is correctly placed.

#### B. Procedure

1. Insert the stylette into the endotracheal tube to give it a stiffer shape.
2. Take the laryngoscope and blade and make sure the light works.
3. Hyperoxygenate the patient with 3 - 4 quick ventilations.
4. Remove the oropharyngeal airway.
5. Place the patient in a position where the chin is high and the forehead is low.
  - a. This facilitates the viewing of the glottic opening and trachea with less force.
6. Place the laryngoscope into the vellicula which allows us to visualize the vocal cords.
7. Insert the endotracheal tube between the vocal cords and pass it.
  - a. Generally, with an adult patient, stop between the 23 mm. - 25 mm. mark on the tube.
8. Once the tube is in place and it passes through the glottic opening, we insert 10 cc of air into the balloon using the syringe.
  - a. **Always hold the tube** when removing the stylette and securing the tube in place!

Answers to the quiz on page 16:

1. True 2. False 3. False 4. a. 5. b.

## Intubation Procedures

9. Attach the bag valve to the endotracheal tube.
  - a. Apply ventilations while listening to lung sounds on both sides.
  - b. Listen to the epigastrium for the absence of sounds.
  - c. Observe good chest rise and fall.

### III. SECONDARY CONFIRMATION / SECUREMENT

#### A. Equipment

1. Esophageal Detector
  - a. When squeezed, if the tube is in the trachea, it will resume it's normal size.
  - b. If the tube is in the esophagus, the detector will stay compressed.
2. Carbon Dioxide Detector
  - a. Analyzes and measures levels of CO<sub>2</sub> on exhalation.
  - b. Generally, with a normal patient, a reading of 35 mm. - 45 mm. of mercury would be expected.

#### B. Securement

1. Secure the endotracheal device.
  - a. Dislodgement is often a big problem after the intubation procedure
2. Use the endotracheal tube holder which slips over the tube and into the patient's mouth.
  - a. The device is tightened around the tube with a thumb-set screw and a strap is fed behind the head and fastened to insure security of the device.
3. If you can find the patient's pulse, use a pulse oximeter to confirm oxygenation is taking place in the body.
  - a. A good level would be between 95 - 100%.

### IV. OPTIONAL PROCEDURE: NASAL INTUBATION

#### A. Equipment

1. Use a BAM device - it whistles from air passage when the patient exhales

#### B. Procedure

1. Insert the nasal tube through the nare and twist gently so it passes into the back of the throat.
2. Patient should be in a neutral position as the tube is passed.
3. Having the patient swallow tends to clamp down on the esophagus and draw the trachea further posterior so the nasal tube lines up with the trachea more easily.

## Intubation Procedures: Quiz

Date \_\_\_\_\_

Chief/T.O. \_\_\_\_\_

Firefighter (print) \_\_\_\_\_

Education Credits/  
Hours/Units \_\_\_\_\_

Signature \_\_\_\_\_

### Select the best answer:

1. True or False: The modified Jaw Thrust should only be used in special cases.
2. True or False: It's okay if a fair amount of air leaks into the belly.
3. True or False: A scalpel should also be on the equipment list.
4. Which of the following do **not** belong in this list?
  - a. Suction cups
  - b. Endotracheal Tube
  - c. CO<sub>2</sub> Detector
  - d. Stylette
  - e. None of the above
5. Which procedure is correct?
  - a. Remove oropharyngeal airway -- insert laryngoscope -- attach bag valve to endotracheal tube -- insert endotracheal tube between vocal cords
  - b. Insert oral airway -- ventilate -- intubate -- confirm intubation secondarily
  - c. Esophageal detection -- ventilate -- attach bag valve to endotracheal tube -- intubate
  - d. Hyperoxygenate the patient -- insert oropharyngeal airway -- insert laryngoscope -- attach bag valve to endotracheal tube
  - e. All of the above

*(Answers can be found at the top of page 15)*

# **Evolutions 2000**

## **University of Cincinnati Continuing Education Program**

### **Larger vs. Smaller Responses**

If you're enrolled in the **Open Learning Fire Service Program** at the **University of Cincinnati**, here's your opportunity this month to earn one college credit hour for watching *Working Fire*.

#### **VOLUME 05-5**

#### **Larger vs. Smaller Responses**

**Complete written responses to the following three essay questions:**

1. What is more dangerous for firefighters: large-scale fires and haz-mat incidents or smaller routine incidents such as room fires and car fires?
2. What is more taxing and fatiguing for firefighters: large-scale fires and haz-mat incidents or smaller routine incidents such as room fires and car fires?
3. Explain why your answers to the above two questions are the same or why are they different?

**Submit your responses to:**

**Mr. Bill Kramer  
University of Cincinnati  
College of Applied Science  
2220 Victory Parkway, ML #103  
Cincinnati, OH 45206**

#### **ENROLLMENT INFORMATION:**

For more information on enrolling in the Open Learning program to gain college credit, call *Working Fire* at 800-516-3473 for a brochure or, to register directly, call the University of Cincinnati at 513-556-6583. Associate and Bachelors programs are available. Call to have your transcripts evaluated.