

This month's *Working Fire...*

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Volume 01- 5: May 2001
Approx. Program Length: 53:21

FIRELINE

Residence Fire
San Francisco, CA

Approx. length: 10:53

A second alarm was dispatched almost immediately as firefighters arrived at this residence in the Richmond district of San Francisco. Roofers, working with a membrane which has to be heated prior to being affixed to the roof, started a fire in the attic. Homes in this district are so close together that their roofs touch, allowing the fire to travel through the attic to the home next door. A second truck crew also worked inside the exposure home. Otherwise, the dormers and roof on the main home were vented as firefighters searched for remains of fire. Featured in this incident are the salvage efforts of the S. F. F. D. which makes a conscious effort to protect homeowners possessions from fire and water damage. For more information, contact Battalion Chief Audry Lee, San Francisco Fire Department, 2310 Folsom Street, San Francisco, CA 94110 or call him at 415-558-3535.

Ammonia Tanker Leak
Houston, TX

Approx. length: 9:23

A motorist alerted authorities to this ammonia tanker that was leaking product through its safety relief valve. An interior tanker baffle had broken loose and struck the valve control mechanism, allowing the product escape. The Houston Haz-Mat Response Team describes its response and reviews strategies for handling such a situation. Excellent training information value! For more information, contact District Chief Danny Snell, Haz-Mat Response Team, Houston Fire Department, 1205 Dart Street, Houston, TX 77077 or call him at 713-247-5000.

HANDS-ON

Vehicle Extrication Techniques
Part II

Approx. length: 8:02

Hands-On features the second in a series of vehicle extrication scenarios using the High-Lift jack produced by Jacksonville (FL) Fire Rescue. This month, we present a method for lifting the steering wheel to release a trapped occupant. For more information, contact Captain Rob Sorensen, Jacksonville Fire Rescue, 2700 Firefighter Memorial Drive, Jacksonville, FL 32246 or call 904-645-0124.

This month's *Working Fire*...

HANDS-ON (cont.)

Management Series: Waterloo 2000 Part II

Approx. length: 8:56

Working Fire continues with training aimed at the company officer/incident commander at the management level with the second of a multi-part series called Waterloo 2000, presented by Chief John Kriska of the Rock Hill (MO) Fire Department. This month, the Chief talks about the importance of ventilation and pre-incident planning. For more information, contact Chief John Kriska, Rock Hill Fire Department, 9620 Manchester Road, Rock Hill, MO 63119 or call him at 314-962-6254.

FIRE MEDICS

Violent Patient Management

Approx. length: 9:46

This month features the first in a multi-part series on how to handle and control patients who are uncooperative or downright combative. Hundreds of EMS personnel are injured each year in confrontations with these kinds of patients. Instructors Thomas Venegoni and Mike McClanahan from Professional Safety Consultants present their program designed for the paramedic and EMT. This month we begin in the classroom and then present hands-on techniques. For more information, contact Tom Venegoni at Professional Safety Consultants at 314-973-9849.

EVOLUTIONS 2000

Kramer vs. Kramer Flammability/Hazard Notification

Approx. length: 2:08

Working Fire and Professor/Chief Bill Kramer present our Continuing Education segment that's worth one credit from the University of Cincinnati. Looking at this month's San Francisco fire and our Waterloo 2000 *Hands-On* segment, Bill debates whether or not local departments should be alerted in advance when contractors are using flammable or dangerous procedures in their jurisdictions. For more information, contact Professor Bill Kramer at the Open Learning Fire Service Program, College of Applied Science, 2220 Victory Parkway, ML #103, Cincinnati, Ohio 45206 or call 513-556-6583.

This month's *Working Fire*...

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. Let's kick it around!

Residence Fire/San Francisco, CA

Battalion Chief Audry Lee/San Francisco Fire Department

1. When you have structures shoulder-to-shoulder, exposure issues will be really important. Should a common attic or cockloft be present, you can count on it! Dispatch exposure protection crews immediately.
2. Be aware that roofers in particular often seal roofs with a membrane that must be heated before application. The radiant heat from this process is enough to start fires in attics with old, dry wood or lots of wood dust present.
3. As a public service, S.F.F.D. offers salvage and protection services to its residences during a fire. If you have the manpower, this is a powerful public relations tool. Remember, grateful residents vote in favor of bond issues and tax levies that support fire department initiatives — also, it's the right thing to do.

Ammonia Tanker Leak/Houston, TX

District Chief Danny Snell/Houston Fire Department

1. Hazardous materials response is a specialized area and not all fire departments have the expertise or the resources to respond completely. If that's your situation, develop partnerships with those in your area who do have the expertise and will respond to your jurisdiction.
2. In an incident such as this which is close to a highway or freeway, involve traffic control (police or sheriff's department) early on to handle traffic and "gaper-blocks."
3. Haz-mat teams must understand the chemistry of the product they're dealing with to know which response alternatives to pursue. You must also factor into your decision-making current weather conditions, proximity to populated areas and the proximity to off-loading facilities as well. Develop "what-if" training scenarios which vary each of these decision-making factors as you practice.

Enhanced Training

Vehicle Extrication/Hi-Lift Jack, Part II

Objectives

After watching this program, the student shall understand:

1. the correct procedure to move or remove a steering wheel
2. safety procedures to protect operators during this maneuver

Standards & Regulations

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

Training Outline

I. INTRODUCTION

This continues a series of vehicle extrication techniques using the Hi-Lift jack and about 10 to 15 feet of chain, two pieces of equipment found on nearly every apparatus and on all rescue trucks.

Because of its versatility, the Hi-Lift jack is a favorite of the Jacksonville (FL) Fire Rescue Department who conducted these scenarios.

II. PRE-SCENARIO CONSIDERATIONS

A. Safety

1. Maintain a 40-foot radius or square "hot zone" around the involved extrication vehicle.
2. Only those involved with specific extrication tasks should be in the hot zone. All others should remain outside.
3. Scene and personnel management should be conducted from outside the hot zone.

B. Trauma Alert

1. If a patient meets any of the following criteria, rescuers must declare a trauma alert via radio:
 - a. Systolic blood pressure is below 90
 - b. A penetrating wound of the head, neck, chest, abdomen, or groin.
 - c. Second- or third-degree burns greater than 15% of the body surface
 - d. Paralysis.

Vehicle Extrication Techniques, Pt. II

III. USE OF EQUIPMENT INVOLVED

A. Operating Mechanism Position

1. Position the side lever on jack in “up” position to lift.
2. Position the side lever on jack in “down” position to lower.
3. A Catch Hook, positioned on the back of the jack, is to be used with chains.

B. Chains

1. To be used with a Catch Hook on the jack. Chains are usually of 15-, 12-, and 6-foot lengths.
2. Chains can never be too long. Use of a Slack Hook will compensate for a chain that is too long.
3. However, chains can be too short so always use chains in lengths longer than you anticipate needing.

C. High-Lift Jack

1. One of four main uses: lifting the steering wheel. This is the quickest way to move or displace a steering wheel or steering column.
2. How far do you move a steering wheel? Far enough to remove the patient.
3. This technique prevents steering wheels from exploding out of the dash upon removal.

D. Material Needed

1. High-Lift jack
2. Ladder cribbing
3. A 15-foot chain
4. J-Hook

IV. STEERING WHEEL LIFTING PROCEDURE

A. Jack Placement

1. Ladder cribbing is placed on hood, straps down, over the dash and firewall on driver's side, in-line with the car to take advantage of the car frame's support.
2. Too much nose tilt downward can be remedied with a 2 X 4 used to shim up the lowered front edge to create a stable jacking platform.
3. This will work even if the car body is crumpled up to firewall. Then there's more metal to jack against.

Answers to the questions on Page 7:

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

Vehicle Extrication/Hi-Lift Jack Techniques, Pt. II

B. J-Hook and Chain Placement

1. Find an anchor point or purchase point for the J-hook under the front of the vehicle. Place more ladder cribbing across the nose of the vehicle to support the chain and keep it off the metal.
2. Wrap the chain around the steering column with a minimum of **two wraps!** This prevents the steering wheel from popping out of the dash during the procedure.
3. Position the chain as far out on the steering column as you can, right behind the steering wheel.
4. Because of the angle of the lift with the chain and jack (nearly 90 degrees), the steering wheel comes up and out of the dash through the windshield area but preventing the “explosion” hazard.

C. Jack Placement

1. The jack is put in place with the base placed directly between the steering wheel and the purchase point, and right over the firewall for support.

D. Jacking Procedure

1. One responder holds the base of the jack while the jack operator removes slack from the chain by lifting the jack housing up with his hands. This insures that lifting occurs when jacking begins.
2. Operate the jack sufficiently to remove the occupant. This should take just a matter of seconds.

E. Safety Points

1. Do not completely encompass the jack with your hand, wrapping your thumb around it in such a way that it could be pinned or squeezed between the jacking lever and the jack. A broken thumb could result.
2. During post-incident, when you're jacking down, don't place your hand on the jack below the jacking housing to avoid injury when the jack free-falls.

Vehicle Extrication/Hi-Lift Jack Techniques, Pt. II: Quiz

Date_____

Chief/T.O._____

Firefighter (print)_____

Education Credits/
Hours/Units_____

Signature_____

Select the best answer:

1. True or False A Hi-Lift jack is a good choice but it takes longer than other methods to remove a steering wheel.
2. True or False One wrap of the chain around the steering column is sufficient.
3. True or False This procedure works best placing the jack on the trunk lid.
4. Which of the following materials is **not** needed in this evolution?
 - a. 15-foot chain
 - b. Ladder cribbing
 - c. J-hook
 - d. Hurst tool
 - e. None of the above
5. Which of the following is **not** important in this evolution?
 - a. Don't put your thumb between the jack and the lifting lever.
 - b. Keep jacking until the blown tire is off the ground.
 - c. Don't put your hand below the jack housing when lowering the jack.
 - d. Find a purchase point under the car with the J-hook.
 - e. All of the above

(See answers at the top of page 6)

Enhanced Training

Waterloo 2000, Pt. II

Objectives

After watching this program, the student shall understand:

1. the value and necessity for ventilation
2. the importance of pre-incident planning

Standards & Regulations

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

Training Outline

I. UNDERSTANDING THE IMPORTANCE VENTILATION

A. Physics of Fire

1. Fire follows the path of least resistance. The Ideal Gas Law states that fire will follow a path from an area of high pressure to an area of low pressure.
2. When a front door is opened, for example, a path of least resistance is provided (an area of lower pressure) for the fire to follow.

B. Super-Heated Conditions

1. Super-heat increases pressure
 - a. Areas of fire origin contain the highest temperatures and in turn contain the highest pressure, considerably higher than 14.8 psi, the typical air pressure that exists in nature or outside a burning structure.
2. This pressure causes products of combustion to follow a path of least resistance, seeking an area of lower pressure (and cooler temperatures in the process).

C. DON'T USE THE 30-DEGREE FOG PATTERN!

Here's what happens when you use a 30-degree fog pattern in a super-heated area:

1. The fog pattern produces small droplets of water which undergo steam conversion due to the small surface area of the droplets.
2. Because of the super-heat, steam expansion also occurs and then seeks lower pressure.
3. The path to least resistance will probably come from the area of advancing firefighters who will be burned as the super-heated steam rushes past them.

Answers to the questions on Page 10:

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

Waterloo 2000, Pt. II

4. Firefighters cannot put 200 cubic feet of steam into, for example, a 100 cubic feet area. The steam will rush toward the path of least resistance, seeking lower pressure.

B. Remarks by Tom Brennan, *Fire Engineering*, May 1999:

1. "Ventilation is a lost art."
2. "Firefighters think they don't need it anymore."
3. "Buildings need controlled ventilation before they explode, putting unaware but well-protected firefighters into oblivion."

Think about these statements as you send in interior fire crews!

C. Life Safety Scenario

1. You're operating inside a commercial building; perhaps a warehouse or fast-food restaurant.
2. There's heavy fire
3. Fire is attacking the roof supports of the building
4. The fire crew is so focused on fighting the fire (mission vision), that they are totally oblivious to what else is going on around them.
5. No interior size-up is being done.
6. No preplan of the building was done so no one knows that the building has bar joist roof supports (truss construction).

You should know that truss construction will kill firefighters!

7. Who has the most to lose if the bar joists fail? The attack crew!

D. Typical building in your jurisdiction

1. Bar joist roof supports
2. The building contains corrosives, oxidizers, and acetylene.
3. Using an interior fire stream other than the 30-degree fog pattern
4. It has plastic skylights.

This building is a DANGER and MUST be preplanned!

Waterloo 2000, Pt. II: Quiz

Date _____

Chief/T.O. _____

Firefighter (print) _____

Education Credits/
Hours/Units _____

Signature _____

Select the best answer:

1. True or False High pressure can be made into low pressure through better medication.
2. True or False In firefighting, the path of least resistance could be the path to death.
3. True or False Chemicals are only dangerous if they get hot.
4. Which of the following sequences is correct?
 - a. super-heat — increased pressure — path of least resistance — lower pressure
 - b. Increased pressure — super-heat — lower pressure — path of least resistance
 - c. Increased steam — 30-degree water droplets — super-heat — fog pattern
 - d. Burned firefighters — steam expansion — steam conversion — fog pattern
 - e. All of the above
5. Which of the following found in a building should demand a pre-incident plan?
 - a. acetylene
 - b. bar joist construction
 - c. corrosives
 - d. flammables
 - e. All of the above

(See answers at the top of page 9)

Evolutions 2000

University of Cincinnati Continuing Education Program

Flammability/Hazard Notification

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 01-5

Kramer vs. Kramer: Flammability/Hazard Notification

Complete written responses to the following three essay questions:

1. Should local fire departments be notified in advance of all flammable or dangerous processes in their district? Why or why not?
2. Cite an example — real or theoretical — where pre-notification would have favorably changed the outcome of a hostile fire.
3. How would you create, delete, or change a pre-notification policy for your jurisdiction?

Send 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. Associates and Bachelors programs are available. Call to have your transcripts evaluated.