This month's *Working Fire...*

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Volume 99-9: September 1999
Approx. Program Length: 59:22

FIRELINE

Apartment Fire & Collapse **Approx. length: 10:59**
Kansas City, MO

A natural gas line exploded and the resulting fire engulfed this multi-story apartment building. All residents escaped safely with some receiving burns. The first-arriving company called for a second alarm almost immediately. Realizing the building was lost, the first-in crew concentrated on the exposures close at hand and began a defensive position using aerials and deck guns. With the fire being fueled by the still uncapped gas line, the building finally collapsed upon itself vertically. Firefighters concentrated their efforts on extinguishing the fire in areas away from the gas line; the "all-clear" was not sounded until the gas company had shut off the line. Rehab was available but many had to be "caught" and physically taken to rehab. For more information, contact Brad Humston, P.I.O., Kansas City Fire Department, 414 East 12th Street, 22nd Floor, Kansas City, MO 64106 or call him at 816-274-2510.

Low-Rise Explosion & Collapse **Approx. length: 12:16**
Harwood Heights, IL

A gas line was also involved in this incident but differently — and with deadlier consequences. Apparently, gas was allowed to build up in the basement of this three-story structure. Ultimately, it exploded, collapsing the structure. However, no fire resulted. Firefighters arrived to find a search and rescue mission ahead of them, but unable to use power equipment or apparatus as the gas was still free-flowing. Using only their hands and small hand tools, firefighters found and recovered the trapped residents — except for a small boy who died in the collapse. High heat and humidity slowed the rescue; the gas company had to dig up the gas line as the shut-off valve in the apartment was blown off. For more information, contact Lt. Stan Grygiel, Norwood Park Fire Protection District, 7447 West Lawrence, Harwood Heights, IL 60706 or call him at 708-867-5428.

HANDS-ON

Interfire VR **Approx. length: 9:23**

A consortium of public and private companies including the NFPA, U.S. Fire Administration, ATF, and American Re-Insurance Corporation have developed a CD-ROM-based interactive program using Virtual Reality technology to train fire and arson investigators. The purpose is to design a uniform, structured program so investigators, law enforcement officials, lawyers, insurance companies, and the courts would approach arson cases with the same set of procedures. A Scenario, Tutorial section and Resources area help guide users through the investigation using a case study with actual video. Witnesses can be questioned, evidence

This month's *Working Fire...*

HANDS-ON (cont.)

compiled, and information learned from extensive, linked databases. For more information or to acquire this training, visit the Interfire VR web site at www.interfire.com, contact Fire Investigator Robert Duvall at the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101, or call him at 617-984-7476.

USAR Dogs, Part I — **Approx. length: 10:21**

The Oklahoma City Bombing revealed the tremendous value — and the tremendous shortage — of qualified Urban Search and Rescue (USAR) dogs. The National Disaster Search Dog Foundation was founded by Wilma Melville to remedy this problem. The Foundation is using a California training kennel to train dogs. Now, handlers, preferably from fire departments, must be found. This month, we cover how dogs are selected and trained. Next month, we show a real training scenario and what a participating department can do to get involved. For more information, visit the Foundation's web site at www.ndsf.org, contact Wilma Melville at the National Disaster Search Dog Foundation, PMB 245, 323 E. Matilija, # 110, Ojai, CA 93023, or call her at 805-646-1015.

FIRE MEDICS

Street Smarts for EMS, Part III — **Approx. length: 9:43**

Brian Andrews concludes our three-part series on self-protection and self-defense for EMTs with some simple, yet effective hand-to-hand techniques should an EMS patient or an onlooker make an aggressive attack. For more information on Brian's complete, twelve-hour course on this important topic, contact him at County Ambulance, 175 Wahconah St., Pittsfield, MA 01201 or call him at 413-499-2528.

EVOLUTIONS 2000

Kramer vs. Kramer Detection of Explosive Atmospheres — **Approx. length: 3:40**

Working Fire and Professor/Chief Bill Kramer presents our Continuing Education segment that's worth one credit from the University of Cincinnati. Following up on this month's *Fireline* incidents, Bill discusses the recognition of and operation in explosive atmospheres. How do you detect them? What are the significant factors involved? 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.

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!

Apartment Fire & Collapse/Kansas City, MO
Battalion Chief Tommy Walker, Kansas City Fire Dept.

1. Does your department train in putting out gas-driven fires? Do you practice specific spray patterns which are most effective against a gas-driven fire?

2. Do your firefighters know the signs of an imminent collapse? What are your procedures for reporting an imminent collapse? Is your Incident Command system ready to respond to such a report?

3. Are you aware of apparatus placement and the possible need to adjust it as a fire progresses? Are your personnel conscious of the "collapse zone" in tight city fireground situations? How may collapse zones hinder exposure protection?

Low-Rise Explosion & Collapse/Harwood Heights, IL
Lt. Stan Grygiel, Norwood Hills Fire Protection District

1. Does your department conduct search and rescue drills? Do you have access to a USAR dog? Do you ever stage mass-casualty evolutions to practice on the EMS side?

2. If faced with a flowing natural gas situation, could you perform search and rescue without power tools? What precautions would you take against a secondary explosion? When is it too dangerous to continue?

2. How does your department know when gas is present and how much? How do you take readings or do you? Do you have relations with your local gas utility to assist quickly in such an emergency?

Enhanced Training

Interfire VR

Objectives

After watching this program, the student shall:

1. be aware of Interfire VR and its purpose
2. understand the basic program of Interfire VR and its methods for training fire investigators.

Standards & Regulations

This training is consistent with NFPA 1500, 921, and 1023 and appropriate OSHA regulations.

Training Outline

A. INTRODUCTION

Interfire VR is a CD-ROM-based, interactive training program for fire and arson investigators. Using photo-realistic virtual reality techniques, the student is put in the shoes of the fire investigator and has access to the fire scene, personnel and witnesses on-scene, experts in the field, and information on items relating to evidence and fire origin. The purpose of the program is to present a common ground upon which all partners in the fire investigation process can participate using their various specialties: investigator, law enforcement, lawyers, insurance companies, and the courts. Thus, all parties will approach such cases and their investigation the same way.

B. INTERFIRE VR PROGRAM STRUCTURE

1. The fire/arson investigation student will interact with the training program in three areas:

   a. The Scenario: a case study presented with witnesses, authorities, and evidence information on video in a 360-degree environment.
   b. The Tutorial: a step-by-step process which combines the best of investigative theory with successful real-world practices.
   c. Resource File: information on fire-related topics which can be accessed with the click of a mouse on the object about which information is desired.

2. A running clock starts upon the start of the investigation of the fire so that time parameters have to be dealt with.

Answers to the questions on Page 8:

1. False 2. True 3. False

4. e. 5. b.

Interfire VR

3. The student is prompted to ask questions of individuals who can help with the investigation of the fire: witnesses, authorities, incident command personnel, etc. Sometimes, not all witnesses are always available for questioning at all times, just as in the real world. Answers and information learned are kept in a case file.

4. Using the computer mouse, the student can navigate through the fire scene in a 360-degree panorama as well as move in and examine things close-up.

5. Realistic, real-world tasks are made possible such as photographing the fire scene.

C. ADVANTAGES

1. Interfire VR teaches basic information relating to fire investigation and provides a structure for an orderly and systematic investigation. It provides a way to quantify the investigative process in a courtroom.

2. Students can proceed at their own pace, studying the entire process or selecting areas where they feel they need particular help.

3. First responders can be trained to understand their role at a fire scene as it relates to fire investigation; in the areas of evidence preservation, for example.

4. If all prospective investigators, law enforcement officials, incident commanders, firefighters, and insurance personnel were to learn about fire investigation using the same system, such as Interfire VR, then there would be tremendous unification through out the investigative community as everyone would proceed “on the same page.”

Interfire VR: Quiz

Date_____ **Chief/T.O.**_____

Firefighter (print)_____ **Education Credits/ Hours/Units**_____

Signature_____

Select the best answer:

1. True or False If you take this training, it will lower your homeowner's insurance.

2. True or False The student may view the crime scene from all directions.

3. True or False You must have prior experience with virtual reality to know how to use this CD-ROM.

4. Interfire VR should be used by:
   a. firefighters
   b. lawyers
   c. investigators
   d. insurance personnel
   e. all of the above.

5. Which of the following does Interfire VR does <u>not</u> include?
   a. Tutorial
   b. Arson Plans
   c. Resource File
   d. Scenario
   e. Three of the above.

Enhanced Training

USAR Dogs, Pt. I

Objectives

After watching this program, the student shall:

1. be aware of the National Disaster Search Dog Foundation
2. understand the characteristics of a good search dog and how they are trained.

Standards & Regulations

This training is consistent with NFPA 1500 and all relevant OSHA regulations.

Training Outline

A. INTRODUCTION

After the Oklahoma City Bombing, it was obvious that there was a severe shortage of search dogs for urban search and rescue incidents. Wilma Melville founded the National Disaster Search Dog Foundation (NDSDF) to address that need. The foundation exists to find suitable canine candidates to be rescuers — often, dogs who are rescued themselves from bad environments — and raise funds for their training. The NDSDF is a 501(c)(3) public benefit corporation. All funds raised are tax-deductible.

B. CANINE QUALIFICATIONS

Search and rescue work is physically demanding for the dogs involved.

1. Dog breeds most often used are fairly physical, such as:
   a. golden retriever
   b. labradors
   c. german shepherds although other breeds can be trained.

2. Dogs must be:
   a. “good sniffers”
   b. able to bark.

C. CANINE TRAINING

1. Once selected, dogs are currently trained at Sundowner Kennels in Gilroy, California.

Answers to the questions on Page 8:

1. False 2. True 3. True

4. b. 5. e.

USAR Dogs, Pt. I

2. They are taught a variety of skills including:
   a. climbing ladders and ramps
   b. turning around on ladders
   c. balance
   d. climbing on uneven ground or structures
   e. the all-important bark alert.

3. They are also taught the alert tube skill wherein the dog is released on a flat course and is taught to find a trainer hiding in a cylindrical tube. Upon discovery, the trainer rewards the dog with a toy. The reward process is key to the development of the dog's search and rescue skills; to the dog, finding the person is just a game.

4. The dog then progresses to finding the hidden trainer on a flat course with outbuildings. The dog must circle the course until she finds the correct building with the trainer.

5. In time, the dog is trained on uneven ground and rubble piles. That will be featured in Part Two next month.

D. TRAINERS VS. HANDLERS

1. Trainers are used initially to develop the search dog skills and techniques in each dog. Handlers do not train the dogs, per se, nor do handlers have to be trainers.

2. Upon graduation, dogs are then matched up with a handler. A handler is someone who lives with and works the dog. The handler provides a family environment for the dog, takes it to work, and helps the dog maintain and improve his/her skills.

3. Firefighters are excellent choices for handlers as they are usually in good shape physically and are used to a training regimen and the discipline necessary with training. Being in the search and rescue business allows the dog to accompany the firefighter to work and fire departments are natural sponsoring units for search dogs. However, handlers do not necessarily have to be firefighters.

4. Occasionally, the handler may notice the dog is slipping or "off her game" somewhat. At that time the trainer may be consulted for advice and may even suggest some remedial reinforcing training, again, done by the trainer.

USAR Dogs, Pt. I: Quiz

Date_____ **Chief/T.O.**_____

Firefighter (print)_____ **Education Credits/ Hours/Units**_____

Signature_____

Select the best answer:

1. True or False A Chihuahua would make a good search and rescue dog.

2. True or False Firefighters usually make good handlers.

3. True or False Professional trainers are used to train the dogs.

4. Search and rescue skills learned do <u>not</u> include:
   a. climbing ladders
   b. stop-and-search frisking
   c. the bark alert
   d. the reward process
   e. any of the above.

5. Duties of the handler include:
   a. companionship
   b. using the dog in performances to augment the handler's personal income
   c. working the dog in training groups
   d. providing a family life for the dog
   e. Three of the above.

Fire Medics

Street Survival for EMS, Pt. III

Objectives

After watching this program, the student shall:

1. be aware of the possible dangers in dealing with patients or others on the medical scene
2. learn self-defense techniques which can forstall the attack of a patient or bystander.

Standards & Regulations

This training is consistent with NFPA 1500 and all relevant OSHA regulations.

Training Outline

CLOSE RANGE ENCOUNTERS

Dealing with aggressive patients: evasive measures.

A. USE THE PATIENT'S MOMENTUM

1. Use the weight of the patient to your advantage.

2. If a patient rushes you, step aside and use your hands to keep the patient moving past you.

3. Then RUN! Know where the exits are.

B. CLOTHES GRAB

1. If the patient grabs your clothes, don't pull away. Stay close to patient to reduce the pulling and give yourself some slack.

2. Talk to the patient and give verbal directions: "Don't do this; I'm here to help you," etc. Sufficient verbal information may confuse the patient and get him to release his grip. Or he/she may actually listen to you and back down.

3. Take one hand and try to make your clothes taut where the patient has grabbed you.

4. With the other hand try to push the patient's hands away.

5. If the grip is very firm, try to grab the patient's wrists and push them off to the side.

C. WRIST GRAB

1. Flip your arm up and over to the outside, applying pressure against the patient's thumb, the weakest part of the grip.

2. You may have to take your other hand and grab his wrist to get him to release yours as you do the movement in #1.

3. RUN! Leave the scene for law enforcement.

D. THROAT GRAB

1. Don't pull away; that will only pull his weight into you.

2. Take one arm in a windmill fashion from underneath and go upwards and through the patient's outstretched arms

3. Take your arm and execute the same move but in a downward direction from the top, smashing his arms down

4. RUN! Never wrestle a patient!

E. GRABBED FROM BEHIND

Assume another person or bystander has grabbed you from behind, with their forearm across your windpipe:

1. Move your head so your throat is rotated toward the crook in his arm at the elbow to get the forearm pressure off your windpipe.

2. At the same time, put your fingers inside his elbow under your chin to try and keep his arm away from your windpipe.

3. With your hand that is closest to the hand of the arm the patient has across your throat, grab his wrist and try to peel his arm off your throat.

4. Swing your body away from the patient as you execute #3 and exit the scene.

Answers to the questions on Page 8:

1. False 2. False 3. True

4. c. 5. e.

Street Survival for EMS, Pt. III

F. HAIR GRAB

1. Don't pull away; move in towards the patient to reduce the pulling and gain some slack.

2. Use your hands to work his grip loose.

3. Exit the scene.

G. PARTNER GRAB

1. Apply the techniques above where appropriate

2. Try "Flushing the Toilet." With both hands, grab the patient's arm at the wrist and jerk it down hard to the ground. His body will tend to follow and probably release his hold on your partner.

H. PRESSURE POINTS

1. With your thumb and forefinger, pinch the free skin over the triceps just above the elbow and twist.

2. Poke your finger into the super-sternal notch in the chest.

3. Push up under the nose between the nostrils.

4. Push against the side of the head at the temples.

Street Survival for EMS, Pt. III: Quiz

Date_____ **Chief/T.O.**_____

Firefighter (print)_____ **Education Credits/ Hours/Units**_____

Signature_____

Select the best answer:

1. True or False — When a patient grabs you, pull away as hard as you can.

2. True or False — Slapping the patient on the back like a trusted friend when you first meet would avoid all this foolishness with escape techniques.

3. True or False — Being aware of your positioning vis a vis the patient's and any other bystanders who could be a threat is important to preparing yourself for a possible defense.

4. When grabbed from behind at the throat you should <u>not</u>:
   a. turn your chin into the crook of the patient's elbow
   b. insert your fingers at the elbow to gain breathing room
   c. find a scalpel in your pocket and, with your free hand, slash the patient's arm.
   d. try to peel his arm off your throat.
   e. any of the above.

5. In using these techniques, always:
   a. maintain verbal contact with the patient
   b. move toward the patient's grasp to increase slack
   c. work toward the weakest part of the grip (usually the thumb)
   d. exit the scene when freed.
   e. All of the above.

Evolutions 2000

University of Cincinnati
Continuing Education Program

Detection of Explosive Atmospheres

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 99-9

Detection of Explosive Atmospheres

Complete written responses to the following three essay questions:

1. Provide a brief critique of one of the incidents involving explosions this month. What key lessons were learned?

2. What instrumentation does your organization use to detect explosive atmospheres and what improvements — if any — do you recommend?

3. What is the significance of *vapor density* (weight of gas vs. air) as a tactical consideration?

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.