



E-TRAINING:

AN INNOVATIVE APPROACH TO *NHFD* INFORMATION SHARING

November 2005

Volume 1, Number 1

A Publication from the New Haven Fire Department Training Academy

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Websites

- www.cityofnewhaven.com
- www.sponsorhospital.org
- www.ct.gov/demhs
- www.fema.gov
- www.ojp.usdoj.gov

Improving Our Effectiveness: Dissemination of Information

An e-newsletter offers an effective way to stay in touch with personnel. As an emergency service organization, policies, procedures, protocols are a way of business and each member of the Department must be conversant with the orders that direct operations. Often, the dissemination of information becomes difficult and the final word is transmitted in a manner so that the proper message is never received by the intended audience. One method of communicating with members of a large workforce (such as this Fire Department) is through a printed message or via the electronic medium. Hence, it is this method which the *NHFD* Division of Training will implement to "communicate" with department personnel offering an innovative approach to enhance training in all ranks of the fire service.

Equipment Spotlight: SCOTT Scout 4-Gas Meter

The Department utilizes a variety of detection technologies to evaluate potentially hazardous atmospheres for flammability, toxicity, oxygen deficiency/enrichment, pH levels, and the presence of agents used as weapons of mass destruction. One meter which is often used is the SCOTT Scout 4-Gas Detector which is carried by Squad Companies 1, 2 and HazMat 1.



Multi-Gas Personal Monitor

The typical 4-gas meter used by today's fire service is capable of measuring Lower Explosive Limits (LEL), Oxygen, Carbon Monoxide and Hydrogen Sulfide levels. These measurements are displayed on the LCD screen and registers in percentages (%) or parts per million (PPM). When meters indicate readings in percentage, the lowest reading is 1% (1%= 10,000 ppm). Therefore, the 4-gas meter will not provide readings less than 10,000 ppm; these levels are often a serious health concern. It is highly recommended that hazardous atmospheres be evaluated using multiple detection technologies, not just the combustible gas detector and in a very specific order of hazard assessment.

The *NHFD* SCOTT Scout is calibrated with a standardized array of pure gasses on a monthly basis by personnel from the Training Academy and is calibrated to "methane." Thus, when metering an atmosphere that does not contain methane, personnel must obtain the meter reading and calculate the actual measurement using a formula for that substance.

Detecting hazardous substances depends upon the quantity present, meter calibration and type of sensors in the detector as well as the skill, knowledge and ability of the equipment operator. More importantly is the fact that an area is evaluated from "floor to ceiling." This is necessary as the vapor density of the substance allows vapors to stratify at different heights. A remote sampling pump can be attached to test below grade atmospheres; the meter is powered by "AA" batteries.

New Haven Urban Area Security Initiative Program

Emergency Medical Service Incident Reporting System

Urban Area Security Initiative (UASI)

Implemented in 2004, the State and the New Haven Area were awarded nearly \$9 million dollars with \$7.2 million dedicated to New Haven and its contiguous communities. Funding is dedicated to fire, law enforcement, health, EMS, emergency management and health departments to improve its ability to plan, respond, mitigate and recover from incidents involving weapons of mass destruction.

As of this date, the **NHFD** has submitted orders for equipment such as: SCOTT AV3000 facemasks for its members, confined space and rope rescue equipment, Stanley NewDraulic tool system and a Paratech pneumatic air bag system; new LifePak 12's and LifePak 500's were also ordered. Additionally, a new HazMat Unit, 8' x 16" HD equipment trailer with portable generator and lights and a transportable light



tower/generator will be accepted by the City for our use. Since this is a two-year program, we will be placing orders for additional fire rescue equipment which is part of the Office of Domestic Preparedness Approved Equipment List (ODP-AEL). More over, sufficient personal protective equipment and chemical protective clothing is on hand for each member of the suppression force. The State Department of

Emergency Management and Homeland Security will be providing small equipment bags for PPE storage and individual assignment.

The USAI program has enabled the **NHFD** to work in partnership with West Haven, East Haven, North Haven, Orange, Woodbridge and Hamden Fire Departments toward establishing a formalized mutual aid compact which was signed by the Chief Elected Officials of these communities. One of the most important concepts brought into being by UASI has been the regionalization of resources and standardization of equipment as well as the ability to interact with our counterparts in adjoining communities.

EMS Operations: Computerized Reports

Since the inception of the Central Medical Emergency Dispatch System (C-MED) in the mid 1970's, pre-hospital care providers have been using a pen and paper to document patient care. Although the EMSIRS form has been through numerous revisions, field providers still spend many hours writing reports. In an effort to modernize the **NHFD** EMSIRS, personnel from the City's Management Information Systems (MIS) office have been working with the Department's EMS Supervisor and the New Haven Sponsor Hospital Medical Director's to develop a run form that meets all the requirements set forth by state and local regulations. The newly designed report will be compatible with the City's HTE Server Software and allow continuity of information and a continuous process of managing confidential medical information without the use of paper forms.

As with all new programs, personnel will experience a "period of adjustment" but with the computer-based form designed with the consumer in mind, proper training and practice will permit members to input data in minimal time. The **NHFD's** intention is to minimize hard copy paperwork and maximize resources by using HTE Software while continuing to facilitate accommodations for Department personnel during this transition.

NHPD Emergency Services Unit

NHPD: Emergency Services Unit

The Emergency Services Unit is comprised of several teams, each responsible for specific tasks when called upon. A police captain heads the unit and a police supervisor leads each team. Depending upon the nature of an incident, the NHPD-ESU is supplemented by the CT State Police ESU and/or Special Agents of the FBI's New Haven Office.

The goal of the *Special Emergency Response Team* is to protect the lives of citizens and members of law enforcement, particularly during high-risk incidents involving hostages, barricaded subjects, snipers, civil disorder and the service of arrest and search warrants. It works towards a successful resolution in these types of situations in such a fashion as to minimize the risk of harm to all involved. SERT members train extensively in the areas of critical incident management, tactics, and development of a pre-planned response to a variety of incidents.

The job of the *Hazardous Device Team* is to render safe and dispose of explosives and improvised devices (homemade bombs). Officers are trained to recognize and handle various types of explosives and detonating devices. The team must determine which devices can be safely disassembled on the scene and those that need be removed and detonated at a safe location. The Crisis Negotiation Team is utilized to calmly talk with persons involved in a variety of dangerous, or potentially dangerous, situations. These include hostage situations, barricaded persons, and suicidal persons. The team is specially trained to talk such persons, with no injury, into alleviating a situation gone wrong.

The *Underwater Search and Recovery Team* is responsible for the safe handling of search, rescue and recovery operations in the various inland waterways throughout the city and New Haven Harbor. Officers are trained in the use of underwater breathing apparatus. They search for weapons, criminal evidence, and possible drowning victims.

Each member of the ESU has been trained to the hazardous materials operational level with an emphasis on use of Level B and C chemical protective clothing with air-purifying respirators. Also, personnel assigned to this team receive training in the establishment of technical decontamination for chemical/WMD contamination. Officers assigned to the ESU are capable of supplementing the **NHFD's** HazMat Team for evidence collection, incident evaluation as well as decon sector operations. The ESU has a fully equipped trailer outfitted



with PPE and respiratory protection for each member and supplies to set up a decon corridor. Members of the Hazardous Devices Unit have been trained to the OSHA HazMat Technician level through the **NHFD** Training Academy and respond to hazardous material incidents as a partner on our mitigation team to collect evidence and perform criminal investigations and evaluate potential explosive hazards.

New Haven Area Special Hazards Team

The City of New Haven Fire Department's Hazardous Materials Unit serves as the Southern Division of the New Haven Area Special Hazards (NHASH) Team. Based upon the Incident Command structure, the NHASH Team is divided into four geographical response areas: North, South, East and West. Each Division is commanded by a coordinator and composed of a core unit, supplemented by personnel from surrounding communities. The NHASH Team response boundaries include the jurisdictions of Milford east to the Connecticut River in Old Saybrook (including the Valley Shore towns) north to Meriden, west the Cheshire, south through Hamden, west to Woodbridge and Orange. Presently, Derby and its surrounding towns are seeking admission into our region and may become the Valley Division in the near future.

Since 9/11, we have been encouraged to share resources and move toward regionalization. The State of Connecticut has strongly promoted the concept of regionalized response teams and in fact, today, recognizes 6 regional hazmat teams and 3 hazardous devices units. The NHASH Team is one such unit. Through regionalization, local, state and federal funding becomes an added resource in our box of tools. Additionally, departments must be dependent upon one another to supplement specialized teams to deal with hazardous materials, acts of terrorism, technical rescue and incident management.

The core Divisions of the NHASH Team are: North (Wallingford FD/Cytec Industries), South (New Haven FD/NHPD-ESU), East (Guilford FD) and West (Milford FD). As authorized by the South Central Regional Council of Governments in 2002, a Board of Director's serve as its oversight committee with subcommittees charged with duties such as training, communications, planning and exercises. President of the NHASH Team is Chief Peter Struble of the Wallingford FD. Each of the



core Divisions are fully operational at the Hazmat Technician level and if necessary, can be supplemented by personnel from adjoining departments; tabletop and functional exercises have been held to facilitate interoperability. Standard Operating Guidelines (SOG's) have been established are installed on each Division's laptop computer; each agency is outfitted with detection devices, PPE, decon equipment, plugging/patching/berming kits, tactical communications and printed resource material.

The future of the NHASH Team is dependent on the participation and support by all departments, political jurisdictions as well as state and federal funding sources.

Utility Emergencies: Natural Gas Leaks

Natural gas is used as a utility across the United States and in most communities, is the fuel of choice for heating and cooking. Natural gas transverses the U.S with over 1.5 million miles of pipeline. In order to respond to natural gas emergencies, members of the **NHFD** must

Natural Gas Emergencies Utility Emergencies (con't)

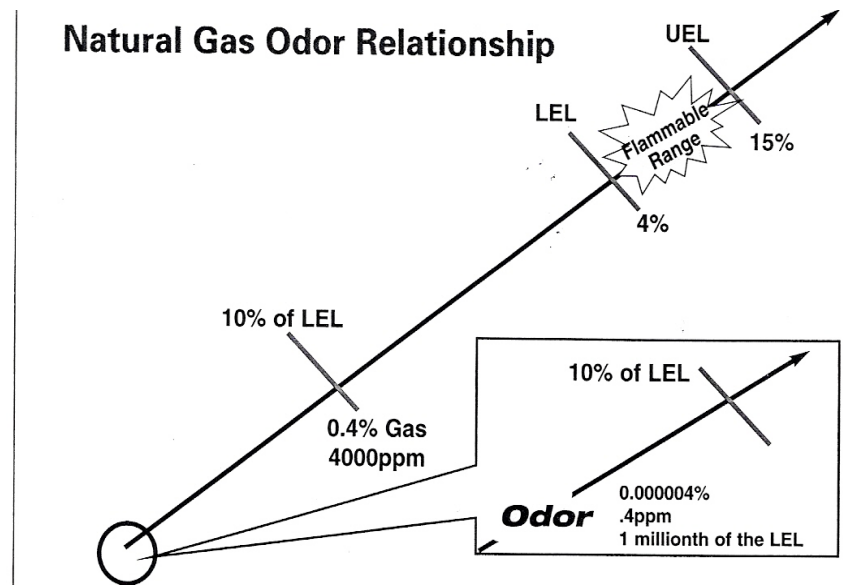
understand its physical and chemical properties. Natural gas is a mixture of many hydrocarbons; commercial grade natural gas is about 93% methane (CH₄). Natural gas by its nature is invisible, odorless and tasteless; as a safety precaution and odorant (mercaptan) is added to aid in detection. This typically makes the TLV-O at about 1 ppm,; a level far below the lower flammable limit (4% - 15%). This means that 10% of the LEL is 0.4% Based upon this fact, natural gas is slightly lighter than air with a MW=16 (Vd=.55). Due to its high vapor pressure and low boiling point, significant expansion must be anticipated, especially in close spaces. In the scenario of a low pressure release, you can expect product to remain in low lying areas unless disturbed by air currents and there will be little to no sound associated with the leak.

Approach to natural gas emergencies should always be cautions. Responding personnel should be cognizant of odor levels, broken pipes, excavations, collapse or unusual signs. Visual and audible identification clues assist the **NHFD** in identifying the location of the incident. Audible clues can be very loud (jet engine sounds) from transmission and distribution line releases, service releases are noisy, letting you know that something is venting while hissing sounds are often associated with low pressure lines that supply appliances. Typically there are four general types of emergencies with utility gas: damage with no leak, damage with leak, explosion, damage/leak with fire. Once the emergency type has been identified, personnel must decide upon the strategies that must be attained. These actions can be offensive, defensive or nonintervention.

Throughout the U.S, there are universal tactical operations used by the fire service at natural gas emergencies, these include:

- Approach cautiously and stay upwind; use full firefighting PPE and SCBA.
- Position apparatus in a non- hazardous position; never in front of the incident location, over manholes or collapse zones.
- Establish a safe and effective perimeter; initially approach the location from a greater distance and move toward using detection devices. Remember: natural gas can be a flammable as well as an asphyxiant.
- In New Haven, notify Southern Connecticut Gas Company via dispatch.
- Restrict site access and if necessary, evacuate to a safe distance.
- Control ignition sources; ventilate but be cautious if UEL is present so as to not reach the flammable range.
- If possible, close low pressure valves (90° turn) that may be the root cause.
- Use large caliber monitor streams to protect exposures and do not extinguish gas-fueled fires unless the flow can be stopped.

Natural Gas Odor Relationship



LEL of 4% = 40,000 ppm UEL of 15% = 150,000 ppm

TLV-O = .4 ppm

SOG Review: Operations of Fire Pumps at Fires

FIRST PUMP AT A FIRE

The first pump to arrive at the scene of a fire shall locate slightly ahead of the fire building when performing a forward lay. The officer shall view three sides of the building and transmit the arrival and incident description to fire communications via department radio using the primary dispatch channel. At the scene of a working fire, further communications shall occur on the department fireground channel. The Engine Company shall establish a positive source of water supply and the officer shall direct personnel to advance the initial attack line(s). The pump operator shall adjust each discharge to the required engine pressure(s). PUMP OPERATORS ARE RESPONSIBLE FOR ALL CONNECTIONS MADE AT THE APPARATUS.

SECOND PUMP AT A FIRE

The second pump to arrive at a fire shall follow the orders issued by the incident commander. The officer and personnel shall take the required tools, appliances, hose, etc. to the fire scene. The pump operator shall then proceed to the nearest hydrant, placing the rear of the apparatus toward the fire; hook-up large suction and hydrant gate and open the hydrant when ordered. The second due pump shall lay feeder lines from the fire scene to the hydrant location and shall charge them upon receiving an order. PUMP OPERATORS ARE RESPONSIBLE FOR ALL CONNECTIONS MADE AT THE APPARATUS.

THIRD PUMP AT FIRES

The third pump to arrive at a fire shall follow the orders issued by the incident commander. The officer shall direct the apparatus to a point near the fire and report to the incident commander. The members of the third company, except the pump operator, shall start a 2 ½" line into the fire, from the first company's apparatus, using their hose. They shall advance

Operation of Pumps at Fires (con't)

the hose to reach the fire and direct the pump operator to charge the line when in position. If the Incident Commander directs to officer to bring a 1 3/4" line, members shall acquire this line from their own apparatus, giving it the operator of the first pump, acknowledge that this is a third 1 3/4" and will communicate when to charge the line. The company shall also take required equipment to the fire scene. The pump operator of the third pump shall then proceed to the next nearest hydrant, placing the rear of the apparatus toward the fire; hook-up large suction and hydrant gate and open the hydrant when ordered. The third due pump shall lay feeder lines from the fire scene to the hydrant location and shall charge them upon receiving an order. PUMP OPERATORS ARE RESPONSIBLE FOR ALL CONNECTIONS MADE AT THE APPARATUS.

SPECIAL NOTES

The above information concerns the "Operation of Pumps at Fires" and is referenced from the Department Operations Manual. Chief and Commanding Officer's shall take into their size-up, the effective use of Truck Company 1 while the officer of the Tower shall always consider laying their own 3" feeder lines from a water source to the operating location. Furthermore, the use of its monitor streams requires a minimum pressure at the side mounted pressure gauge – a minimum of 150psi and should not exceed 200psi. All personnel will operate at the scene of emergency incidents and fires with complete personal protective equipment including SCBA. As per General Order 82, removal of the SCBA will be determined by the Incident Commander. Companies arriving at multiple alarm incidents or special called to a scene shall be directed by the Incident Commander.

Personal SCBA Masks to be Issued

NHFD to Issue SCBA Masks

The Department has ordered new SCOTT AV3000 facemasks for each member of the suppression force using funds from the UASI Program. The newly designed SCOTT AV3000 facepiece with Comfort Seal is available with nose cups in small, medium, large and extra large sizes. The mask permits improved downward and peripheral vision, larger dual voicemitters and a 6-point quad adjustment head harness.



In the near future, members will be individually sized for their own mask. This program will minimize the actual use of masks, improve your visibility and minimize cross contamination previously observed by members using the same mask.

Tactical Decisions

Tactical Training: Describe Your Actions!

In the first in a series of fire ground scenarios, you will be provided with a simulated fire/emergency scene incident. Each Company Officer should review the situation with their unit and discuss their strategy and tactical operations as part of a tabletop exercise (TTX). Personnel should employ the use of Department SOG's, apparatus, equipment and specialized units; if necessary, the use of mutual aid can be part of your response.

Tactical Decisions (con't)

Upon completion of the exercise, Company Officer's are asked to submit their actions in writing to the Training Academy for review and comment. Each units' tactical decisions will be compared to one another with the best printed in the next issue of ***E-TRAINING***.

SCENARIO # 1

You are the first due Engine Company to arrive upon the scene of a 5 story NFPA 220, Type III constructed business/residential occupancy in the high value district. Visible fire and smoke is observed from the 4th floor windows on the #2 side. Exposures are of similar attached on the #2 and #4 sides with #1 being the street and #3 a rear yard that serves as a court yard to adjoining buildings. Dark brown smoke is billowing from the front windows on the 4th floor and being 0430 hours, residents are fleeing via the center stairwell as the local fire alarm sounds. Assigned to this incident are 3 Engine's, 1 Ladder, 1 Squad, 1 Paramedic Rescue Unit and a Battalion Chief. Each apparatus is staffed with four members. Water supply for this area is via 24" mains and numerous hydrants are available with 500' on one another.



**Emblem from the New Haven Fireman's Benevolent Memorial
Evergreen Cemetery**

In the Next
Issue:

Technical Rope
Rescue Operations

New Haven Regional Fire Academy
Fire-Rescue Service Seminar
November 19, 2005, 0800-1700,
230 Boulevard, New Haven, CT



1. *Confined Space Operations*
2. *Technical Rescue Incidents in an Urban Environment*

Battalion Chief Fred LaFemina

Chief LaFemina is a twenty year veteran of the FDNY serving the Department in many capacities. He served as a Firefighter in Squad 1, Lieutenant in Rescue 4 and as a Captain in both Squad 270 and Rescue 1. He has spent over seventeen years in the Special Operations Command and has served as the Director of the FDNY Technical Rescue School . Chief LaFemina is the NY-TF1 Task Force Leader for the New York Urban Search and Rescue Team. Chief LaFemina has extensive experience in Technical Rescue and lectures nationally on a variety of firefighter survival topics.



1. *Leadership Lessons for Fire Officers*
2. *Fire ground Orientation*

Battalion Chief John Salka

Chief Salka is a twenty five year veteran of the FDNY and a battalion chief in the Bronx . During his career he has served in many of the busiest units of the FDNY including Ladder 11, Squad 1, Rescue 3 and Engine 48. In addition to his field duties he has instructed at the FDNY Probationary Firefighters School, Captains Management Program and Chief Officers Command Course. Outside the FDNY Chief Salka presents at fire service and corporate seminars nationwide on both fire service and leadership subjects. He is a contributing editor for Firehouse Magazine and writes for other magazines such as Fire Engineering and Size-Up. He is the author of the book "***First In, Last Out - Leadership Lessons From The New York Fire Department***" which was published in 2004. On September 11, 2001, Chief Salka responded to and operated at the World Trade Center disaster and was reassigned to the FDNY Special Operations Battalion to operate at the WTC site for the next several months.

Registration Form

Name: _____ Rank-Title: _____ Dept: _____ Ph#: _____

Address: _____ E-mail _____

Send \$60 Certified/Bank Check or MO to NHRFA Seminar, PO Box 3350, New Haven, CT 06515

Lunch and Handouts Included

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