

EVERYONE GOES HOME

FIREFIGHTER LIFE SAFETY INITIATIVES PROGRAM



NEWSLETTER

March 2006

INSIDE THIS ISSUE:

<i>LODD Prevention Forum at FDIC</i>	1
<i>CFSI Dinner adopts "Everyone Goes Home" Theme</i>	1
<i>Wildland / Urban Interface Fires by Robert Winston</i>	2-3
<i>Meet our Advocates</i>	3-4
<i>60 Ways Firefighters Stay Alive by Vincent Dunn</i>	5-9
<i>Traffic Signal Preemption—A Cross-Cutting Study</i>	9-10
<i>NFPA 1403 for Live Fire Training</i>	10
<i>Workplace Safety</i>	11
<i>Improving Emergency Vehicle Safety</i>	12-14

LODD PREVENTION FORUM HAVING THE COURAGE TO BE SAFE Scheduled for FDIC Conference

The National Fallen Firefighters Foundation's Life Safety Initiatives Team will conduct a Line-of-Duty Death Prevention Forum in conjunction with *Fire Engineering* magazine and the Fire Department Instructors Conference at the FDIC in Indianapolis on Friday, April 28th, 1:00 pm—3:00 pm, Room 209, of the Indiana Convention Center. Two years have passed since the first National Summit on Firefighter Life Safety, which identified the 16 major initiatives aimed at reducing line-of-duty deaths by 25% within 5 years and by 50% within 10 years. These 16 initiatives have been endorsed and adopted by dozens of fire service

organizations and by fire departments across North America.

This session features never-seen-before interviews of renowned fire service leaders Alan Brunacini, Dennis Compton, Billy Goldfeder, John Mittendorf, John Salka, and Paul Stein, talking about attitudes and beliefs about firefighter safety. You will hear the latest on the grassroots Advocates program sweeping the country. The forum will also explore best practices and promote sharing of information between proactive departments that have embraced the Initiatives and have embarked on implementation. Find out if

your department is on the path to a line-of-duty death. Please join us for this important forum.

This class will be presented by the National Fallen Firefighters Foundation's Life Safety Initiatives Program Team and Chief Ronald J. Siarnicki, Executive Director, National Fallen Firefighters Foundation.

SAVE THE DATE

**FDIC CONFERENCE—
INDIANAPOLIS 2006**

**INDIANA CONVENTION CENTER
APRIL 28, 2006,
1:00—3:00 PM, Room 209**

18th Annual National Fire and Emergency Services Dinner Adopts "Everyone Goes Home" Theme

On April 5 and 6 in Washington, D.C., more than 2,000 fire service leaders will attend the 18th Annual National Fire and Emergency Services Dinner and Seminars, whose theme is "Leadership Saves Lives...So Everyone Goes Home." Hosted by the Congressional Fire Services Institute (CFSI), the annual tribute will draw attention to protecting our nation's first responders through strong leadership at the local, state and national level.

"Leadership involves individuals and organizations emboldened to bring about positive changes to protect and prepare our nation's first responders," said CFSI Executive Director Bill Webb. "Our overriding goal should always be protecting lives and property,

while at the same time ensuring that everyone goes home safe and sound. This is the message that should drive us in our missions and keep us committed to working together."

Information about the dinner and seminars is available on the CFSI website (<http://www.cfsi.org/>). The seminar schedule begins the afternoon of April 5th at the Hilton Washington and runs through the following morning and afternoon on Capitol Hill. A number of national fire service leaders and Administration officials are scheduled to take part, discussing a range of issues addressing federal programs and legislation, and safety and education initiatives.

The leadership of the Congressional Fire Services Caucus will continue the tradition of serving as honorary chairmen of the dinner, including Senator Joe Biden, Senator John McCain, Senator Paul Sarbanes, Senator Mike DeWine, Congressman Curt Weldon, Congressman Steny Hoyer, Congressman Sherwood Boehlert, and Congressman Rob Andrews. CFSI will pay special tribute to Senator Paul Sarbanes, who announced his retirement effective at the end of this year. One of the strongest advocates for our nation's fire service in the history of Congress, Senator Sarbanes wrote the legislation that created the United States Fire Administration and the National Fallen Firefighters Foundation.



Homeland Security

The *Everyone Goes Home* Firefighter Life Safety Initiatives Program is made possible through the efforts of the National Fallen Firefighters Foundation, with funding provided by the Department of Homeland Security, Assistance to Firefighters Grant and the generosity of Fireman's Fund Insurance.

The National Fallen Firefighters Foundation - Firefighter Life Safety Initiatives Team "Takes to the Beach"

"Playing It Safe"

The Firefighter Life Safety Initiatives Team has identified five root causes of firefighter line-of-duty deaths.

Take some time now to think about and list what you believe are the root causes, and why.

Remember, all possible attributable causes of preventable firefighter line-of-duty deaths must fit within your five root causes.

Send your list of five root causes to us at our website:

everyonegoeshome@firehero.org

Those who identify the five root causes will receive the Everyone Goes Home bracelet, helmet sticker, patch, and pin, and we'll publish your results in the next EGH newsletter.

This past February, Gordon Routley and Larry Curl, two members of the NFFF – Firefighter Life Safety Initiatives (FLSI) team, introduced the Courage To Be Safe (CTBS) program to attendees of the 2006 Mid-Atlantic Expo & Symposium in Virginia Beach. Two classes were offered for those who wanted to learn more about how to inspire their departments and fellow firefighters to have the courage to be safe so that Everyone Goes Home—even when it's not the popular thing to do.

Approximately 100 firefighters of virtually every rank, and from both career and volunteer departments, attended the two sessions. The dialogue in these interactive sessions was spirited, engaging, and inspiring. Photos were used to underscore the importance of everyone's

taking an active role in stopping unsafe acts during fire department operations.

Responsibility was a keyword through the meetings. Whose responsibility is it to ensure operational safety? The answer resounded: It takes more than just department officers or the leadership to ensure safety; it takes every member looking out not only for themselves but for the other members of the team—in short, it is *everyone's* responsibility to have the courage to be safe and ensure that Everyone Goes Home.

During the Symposium's closing session, keynote speaker Chief Alan Brunacini opened his presentation with important words about the nature of courage and why it takes courage to bring everyone home. The Firefighter Life

Safety Initiatives Team certainly agrees with Chief Brunacini that it takes everyone talking the talk and walking the walk to have the courage to be safe.

The FLSI Team extends its thanks to everyone who is preaching and teaching that we have a duty not only to ourselves but to our departments, our communities, and most important, our families, to make sure we all come home after the job is done. It is everyone's personal responsibility to ensure that Everyone Goes Home.

For additional information about the CTBS program, or if you would like to have the CTBS program presented at your conference, please contact us at

www.everyonegoeshome.com

The following is excerpted from "Firefighter Behavioral Actions at Wildland/Urban Interface Fires: The Line of Duty Death and Injury Trend Must Be Reversed," written by Robert M. Winston

Author's note: This article does not seek to determine fault or to place blame on any individuals, but to seek lessons to be learned from past incidents and to prevent similar events in the future.

I was assigned as a structure protection specialist (STPS) trainee to a large wildland/urban interface fire near Helena, Montana, in July 2000. The weather was hot, windy and exceptionally dry. Fuel moistures in large diameter live trees were measured in the single digits. Many structures and a large amount of acreage had already burned before my arrival. This large blaze was showing extreme fire behavior. One hundred twenty-five firefighters and a strike team of engines were assigned to structure protection along a narrow dirt road in a heavily forested 18-mile-long valley. All of the units were given their assignments and were spread out across this valley.

Late in the morning, the fire intensity increased. I was with the other STPS and two other Firefighters who were trying desperately to "wrap" a summer cabin in a heavy-duty

heat reflective aluminum foil. We stopped to assist them. The fire was "blowing up" and working its way down the valley towards the four of us and the other units in the valley. Command issued an order via radio for all members to immediately evacuate the valley. Because this foil wrap was being tested, the cabin had to be wrapped and protected. The decision was made to remain in the valley and finish wrapping this cabin. I was not pleased by this decision, knowing full well what was coming our way.

The wind increased. The sky grew dark as the smoke column increased and came over us, blocking out the sun. It got hotter and firebrands were pelting us. Spot fires ignited all around and the head fire came up over the valley and down toward us.

That cabin was finally wrapped, but by this time the fire surrounded the four of us. The narrow dirt road was now impassable due to heavy fire conditions. What do we do now? We burned out a small grassy area about 50 feet away from the cabin and we hunkered down. We had thought about using the cabin

(now wrapped) as a safe place of refuge. Fortunately, we decided otherwise—the fire melted the aluminum wrap and ignited the cabin.

Everything around us was now on fire. The heat was intense, and it was unnerving, to say the least, as we watched the cabin and the melting foil go to the ground in a few short minutes. The aluminum foil test was an obvious failure. We also put ourselves at extreme risk for something of no intrinsic value.

The main body of fire blew by our tenuous position. Clearly, we all breathed a sigh of relief that none were injured or worse. Faulty firefighter human behavior we displayed at this location could have been disastrous. I learned some hard lessons that day and they were not forgotten. I'll explain.

Rodeo/Chediski Fire

A wildland/urban interface fire near Show-Low, Arizona, burned 469,000 acres as well as hundreds of homes, cabins, businesses, and a variety of other structures and motor vehicles during the early summer of 2002. At the time, it was the largest wildland fire in Ari-

Continued on page 3



-zona history. I was assigned as an engine strike team leader (STEN) trainee, supervised by a STEN-qualified fire officer. We had command of a task force of engines, water tenders, and 20-firefighter wildland hand crews. Our assignment was structure protection.

As we drove along the Arizona highway, large convection columns and heavy fire conditions were a common sight. We arrived at our assigned position and began to drive down a narrow forest road. A large head-fire was to our immediate left and close enough so that we could feel its radiant heat through the windows of our command vehicle. The fire was running along the ground and up the large pines and crowning through the forest canopy. The units drove past this crowning fire to some small, vacant structures that were old and deteriorated to the point that they were structurally unsafe. An open field, which became our safety zone, was close by. Despite the advancing wall of fire, the decision was made to "protect" these small, dilapidated cabins that were of no value.

Once again I was skeptical of this kind of decision in this type of a scenario. I questioned the plan and the rationale behind it. However, these valueless structures were successfully "protected" with no injuries. Was I wrong in my assessment and wrong to voice my opinion? Absolutely not! In some ways safety procedures were being followed, yet why risk so much

(firefighter's lives and equipment) for things of no value in an obviously dangerous situation? There's more to this story.

The units relocated a few miles away to another area where there was a mixture of small homes, cabins, and a few old abandoned structures. The main body of fire was a fair distance away and it would give the crews enough time to provide structure preparation and protection. The engines were assigned to different structures. Safety zones and escape routes were established. The winds increased as the fire approached and spot fires began to ignite in the area.

We were stretched very thinly for apparatus. We came upon an obviously abandoned structure I called "the junk yard." Weeds, grass, and brush had encroached upon this place. The area in and around the building was littered with all manner of debris piled high, debris that included unlabeled barrels. The "red flag warning" was obvious. Haz mat! And yet, the decision was made to protect this "junk yard"! It was then that I not only questioned that decision; I protested it.

As the fire began to sweep into this area, the junkyard and its structure ignited. The efforts of three firefighters operating with one small engine was an exercise in futility. Then, due to the flames and heat, the unlabeled barrels and other unknowns began to vent off, including small

explosions and several large releases of fireballs. One firefighter came very close to getting burned.

What can we learn from these incidents? Changes in human behavior, training and attitude could have made for safer operations. It is imperative that we, as firefighters, make a shift in our thinking and behavior during fire incidents—beginning with the absolute truth that property conservation never is worth a firefighter's life. "Risk little to save little, risk a lot to save a lot" must become engrained in our culture. We must all take responsibility for reducing firefighter injuries and line-of-duty deaths and eliminate aspects of our culture that feed senseless risk-taking. We're all responsible to see to it that Everyone Goes Home.

Robert M. Winston is a 35-year veteran of the fire service and a retired Boston Fire Department district chief. He is a wildland/urban interface and structural fire service presenter and adjunct college instructor. Robert is a member of the Prescott Area Wildland Urban Interface Commission (PAWUIC) and an PAWUIC's photojournalist and assistant web master for the [PAWUIC web site](#).

MEET OUR ADVOCATES



The Everyone Goes Home Firefighter Life Safety Initiatives Program has initiated an Advocacy Program. We are looking to place 10 Regional Advocates in each of the 10 regions designated by FEMA. In addition, we want to place one advocate in each of the 50 states. Each month, our newsletter will feature two advocates detailing their bios and why they support the program. Please turn to page 3 for information on how you may join the advocacy program.

Richard Marinucci has been the Chief of the Farmington Hills Fire Department since 1984., responsible for the administration and management of the department. The department is very active in EMS, fire prevention, public fire safety education, training, emergency management, and hazardous materials.

Chief Marinucci was president of the International Association of Fire Chiefs. He was the chair of the Commission on Chief Fire Officer Designation.

In 1999, he served as senior advisor to Director James Lee Witt of FEMA and acting chief operating officer of the United States Fire Administration for seven months as part of a loan program between the City of Farmington Hills and FEMA. He received the Outstanding Public Service Award from the Director for his efforts.

Chief Marinucci has three Bachelor of Science degrees: secondary education from Western Michigan University, fire science from Madonna College, and fire administration from the University of Cincinnati. He was the first graduate of the Open Learning Fire Service Program at the University of Cincinnati (summa cum laude) and was named a Distinguished Alumnus in 1995. He has since co-authored a revision of two of the open learning courses. He has also attended courses at the National Fire Academy.

Chief Marinucci was selected to be a panel member of the Recommissioned America Burning committee. He is a member of the Oakland County Fire Chiefs, Southeastern Michigan Fire Chiefs (President 1989-90), Michigan Fire Chiefs, and National Fire Protection Association. He has served as President of the Great Lakes Division of the IAFC in 1992/93. He was co-editor of the Michigan Fire Service News for 1989-1996.

Chief Marinucci has instructed a wide variety of training programs from basic fire fighter to chief officer training. He has been an adjunct faculty member of Madonna University, Eastern Michigan University, and Oakland Community College. He has presented programs for the International Association of Fire Chiefs, California Fire Instructors Workshop, Fire Department Instructors Conference, Fire Chiefs Association of Japan, and numerous regional, state, and local conferences and workshops across the country.

"So many of the deaths are preventable. They cause so much hardship for those left behind. We have to do everything we can to help make a difference," says Rich Marinucci on why he became a program advocate.

Contact Information :

Rich Marinucci Email address: rmarinucci@ci.farmington-hills.mi.us



**Rich Marinucci, Chief,
Farmington Hills (MI)**



MEET OUR ADVOCATES



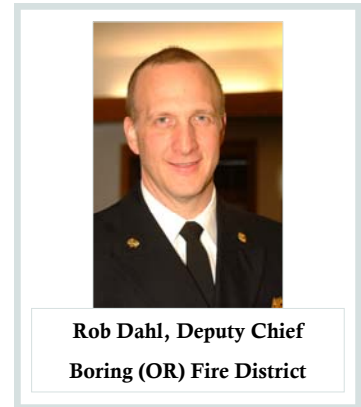
Contact Information :

Rob Dahl Email address: robd@boringfire.com

Rob Dahl is deputy chief of operations, for the Boring Fire Protection District, located in Clackamas County, Oregon in the Portland Metro area. His public safety career spans 30 years and has included roles in law enforcement, emergency medical services, risk management, public safety dispatch and 22 years of dedication to the Washington and Oregon fire service.

Chief Dahl has been a fire service instructor since 1985 and has lectured on various topics throughout the Northwest and across the country, focusing on Firefighter Health, Safety & Survival. For ten years, he served as senior faculty and Director of Fire Science Programs at Lower Columbia College in Washington state.

Rob has served on numerous boards and commissions, including the Washington State Fire Chiefs Professional Development Committee and the Washington State Technical Committee for Fire Service Accreditation and Certification. Rob is a Director for the Northwest Association of Fire Trainers (NAFT) and is a regular instructor of Fire-ground Leader and Fire Officer development courses. He is currently Chair of the NFPA Firefighter Certification Task Force for Oregon and also serves on the Advisory Council for the Oregon Burn Center at Legacy Emanuel Hospital.



**Rob Dahl, Deputy Chief
Boring (OR) Fire District**

Become an Advocate so Everyone Goes Home

The Firefighter Life Safety Initiatives Advocates (FLSIA) will play a key role in helping to bring about awareness of the Initiatives and act as a conduit for resources to enable departments to implement and advocate them.

Following are the expectations and responsibilities for this important position:

Expectations:

Advocates will be expected to represent their state in the promotion, presentation, and awareness of Firefighters Life Safety Initiatives. They will serve as the eyes and ears of the FFLSI Program for their state.

Responsibilities:

- Monitor and review programs presented within your region that are relative to Firefighter Life Safety Initiatives.
- Attend, represent, or arrange to have a designate attend or participate in activities, events, programs, and training where there is an opportunity to promote Firefighter Life Safety Initiatives or assist in their implementation.
- Develop a reporting and sharing plan between you and the State/Local Advocates as well as with the FFLSIP team.
- Share with the FFLSIP team awareness and knowledge of activity within your region.
- Keep abreast of new developments and trends; make recommendation to FFLSIP team on desirable additions or suggested changes to enhance program and/or process.
- Participate in periodic teleconferences with Regional representatives.
- Identify and report on best practices within your state.
- Submit stories or provide input to the FLSI newsletter. Make recommendations for Seal of Excellence recipients.



60 Ways Firefighters Stay Alive

BY VINCENT DUNN, DEPUTY CHIEF, FDNY (RET.)

Safe firefighting procedures are passed along from veteran firefighter to rookie firefighter by setting an example at fires and by conversation and explanation in the firehouse. Safe firefighting techniques are universal. They are the same regardless of where you fight fires. Building construction and firefighting procedures may vary, but safety and safe operating procedures on the fireground are universal. The following are 60 firefighting survival tips for some of the most dangerous firefighting operations. These techniques are known and sometimes taken for granted by veteran firefighters but are unknown to young recruits. All firefighters should understand and practice these 60 firefighting survival tips.

1. When stretching a hoseline to an upper floor of a building, do not pass a floor on fire unless a charged hoseline is in position on that floor.

2. Notify your officer when going above a fire to search for victims or vertical extension of flame or smoke.

3. When climbing or descending a stairway between the fire floor and the floor above, stay close to and face the wall. Heat, smoke, and flame rise vertically up the stairwell.

4. If you enter a smoke-filled fire room, hallway, or apartment above a fire and suspect flashover conditions behind you, locate a second exit, a window leading to a fire escape, or portable ladder before initiating the search.

5. Crouch down and keep one leg outstretched in front of you when advancing an attack hoseline in a smoke-filled fire room. Proceed slowly, supporting your body weight with your rear leg. Your outstretched leg will feel any hole or opening in the floor deck in your path of advance.

6. To prevent getting driven off a fire floor by roll-over-the sudden flashes of flame mixed with smoke (ignition of combustible gases at ceiling level) while waiting for the hoseline to be charged, crouch down outside of the burning room or apartment, close the door to the burning area. When the line is charged, open the door and immediately attack the fire.

7. During the fire in a one-story strip store, vent the roof skylight over the fire before advancing the hoseline to prevent injury from back draft explosion, or flashover.

8. When it is not possible to vent the rear or roof of a burning store quickly and signs of backdraft or explosion are evident from the front of the store, vent the front plate-glass windows and doors, stand to one side, let the superheated combustible gases ignite temporarily, and then advance the hoseline for fire attack.

9. Self-contained breathing apparatus must be worn before entering a cellar of a burning building, even if there is only a light haze of smoke. Carbon monoxide, a deadly, gaseous by-product of combustion, is colorless, odorless, explosive, and quickly builds up in unventilated below grade areas.

10. Notify your officer and wear self-contained breathing apparatus before entering a cellar to shut off utilities. If there is no confirmation of the shutoff within a reasonable amount of time or there is no radio contact, the officer must make an immediate effort to locate the firefighter and assure his safety.

11. Do not let the presence of an operating sprinkler give you a false sense of security. Wear your SCBA before entering a cellar. Carbon monoxide gas can be present even when a sprinkler is discharging and controlling a smoldering fire.

12. At any collapse, stretch a hoseline and charge it to protect possible victims and rescuers from sudden explosion and flash fire.

13. Shut off all utilities - gas, electric, and water—immediately upon arrival at a building collapse. Do not wait for the utility company.

14. Heavy mechanical equipment, such as cranes and bulldozers, should not be used to remove collapsed portions of a building while hand digging is being done nearby.

15. Parts of a structure that are in danger of collapsing during a rescue operation should be shored up, removed with a crane, but never pulled down by firefighters below.

16. When climbing a fire escape during a fire, always maintain a hold with one hand on a part of the fire escape itself to prevent serious fall injury should a stair tread suddenly give way.

17. Before climbing a gooseneck ladder leading from a top-floor fire escape landing to the roof, vigorously pull the ladder away from the building to test its stability. The gooseneck ladder will pull away from

Continued on page 6



60 Ways Firefighters Stay Alive (continued from page 5)

the building if the metal fire escape or the wooden or masonry structure to which it is attached is corroded.

18. When taking up from a fire, the fire escape drop ladder is returned to and secured at its normal raised position. Firefighters should never attempt to descend to the street from the fire escape balcony by climbing down the drop ladder in raised position and then dropping down to the sidewalk. Pendulum hooks holding fire escape drop ladders have suddenly broken from their connections and firefighters on them have been seriously injured. A firefighter should use a portable ladder or enter an apartment served by the balcony in order to descend to the street level.

19. Stand away from the weights when lowering a counterbalance weighted ladder. They have collapse from the impact of the ladder striking the side-walk.

20. When forcible entry is required for an inward-swinging door behind which there is intense heat and fire, the inward swing must be controlled. A firefighter or officer should hold the doorknob closed with a gloved hand or short piece of rope while other firefighters force the lock open.

21. A firefighter performing forcible entry on a door to an apartment on fire is extremely vulnerable to injury from backdraft or smoke explosion once the door is opened and air flows into the fire area. The firefighter is in error if he believes he can avoid a blast by observing warning signs or by reacting in a split second. Explosions happen too fast. The only real protection a firefighter has against explosion is his protective equipment—gloves, mask, face-piece, helmet, hood, turnout coat, pants, and boots properly worn and in good condition.

22. Generally, when a firefighter must use an axe for entry it should be moved forward forcefully in a punching action. The power behind the axe movement comes from the firefighter's shoulder and the weight of the axe, not the swing. If it is necessary to swing an axe during a forcible entry operation, first check for nearby firefighters and overhead obstructions.

23. A firefighter entering a room from a ladder should first place any tools inside the window on the floor before entering. Then, with both hands free, he should grab onto a portion of the window and test its stability. If it does not move, the firefighter maintains his grip on the window while moving through it from the ladder.

24. When necessary, a firefighter climbing an aerial ladder should use a ladder belt to secure himself to the rungs. A leg lock is not to be used as a substitute for a ladder belt because it will not help if a victim jumps out a window and down the ladder.

25. Firefighters should never be up on an aerial ladder while it is being raised, rotated, or extended. The ladder must be in position before climbing; that means making sure that the ladder locks are set, too.

26. The priorities for removing a victim from a burning building are, from highest to lowest: smoke proof tower, interior enclosed stairway, safe fire escape, aerial platform, aerial ladder.

27. When climbing into a window of a burned-out or vacant building, drop your tools inside the window before entering and listen to them strike the floor. If you don't hear the tool strike the floor, either the window opens into an elevator shaft way or the floor is burned away.

28. Whenever there is a danger of wall collapse, an officer in command must establish a collapse danger zone. A collapse danger zone should be equal to the height of the unstable wall. All firefighters should be withdrawn away from the burning building to a distance at least equal to the height of the wall.

29. The officer establishing the collapse danger zone must take into account not only how far outward the wall may collapse but also the horizontal span of possible wall collapse.

30. A collapse danger zone for an aerial stream will vary from that established for ground stream operations. An aerial stream operated from a tower ladder or aerial ladder should be positioned away from an unstable wall at a distance equal to the height of the wall above the nozzle tip.

31. Establishing a collapse zone for tall structures could require firefighters to be positioned beyond the reach of hose streams. In this case, a "flanking" position is called for: The master streams must be placed in front of the adjoining buildings or at corner-safe areas of the fire ground. The master stream range and effectiveness will be reduced but the life safety of the firefighters will be ensured even if the unstable wall falls outward.

32. There are four so-called "safe areas" in which to park vehicles and operate master streams at when there

Continued on page 7



60 Ways Firefighters Stay Alive (continued from page 6)

is a danger of a church roof collapse. These four corner-safe areas give firefighters the greatest probability of survival if the walls start collapsing. If all of the walls collapsed outward simultaneously (however unlikely), only these four areas would be safe from falling debris. Warning: If the corners of the building appear unstable, stay out of that corner area.

33. After a fire has been extinguished and before overhauling begins, three safety actions should be ordered by the officer in command: Fresh air should be pumped into the hot, smoke-filled area by fans or the ventilation system; portable lights should be set up to improve visibility; and a safety survey of the structure and contents should be undertaken, checking especially for collapse hazards, and hazardous materials. The utilities gas and electricity should be shut off before opening up walls and ceiling during overhauling.

34. Firefighters ordered to shut off utility control valves for gas or electric power must consider the possibility of carbon monoxide and smoke accumulation in the cellar, particularly when a fire of long duration has been extinguished in a first-floor store directly above the cellar and the cellar is completely below grade and without windows. Self-contained breathing apparatus must be worn in the cellar.

35. The firefighter's best protection against injury and death by a fall during overhauling is a properly charged flashlight. No firefighter should respond to a fire without a personal light.

36. The most potentially dangerous area of local floor collapse inside a burned out residence building is the bathroom. The weight of a firefighter is enough to trigger the collapse of a fire-damaged bathroom floor.

37. If flames are discovered still burning at a gas meter or broken pipe after a fire has been knocked down, do not extinguish the flame. Let the fire burn, protect the exposures with a hose stream, and alert command that the gas has to be shut off at the cellar or street control valve.

38. Full protective clothing—including mask face piece—must be in place before a firefighter approaches a 20-pound propane cylinder to shut off the control valve when a small flame is burning at an outlet. There is a danger of the relief valve suddenly activating, creating a fireball that could engulf the firefighter.

39. To protect a propane cylinder from exposure to a nearby fire, direct the hose stream to the top portion of the tank. This top portion of the tank contains vapor; it is in this vapor space that most propane cylinders BLEVE due to heat from an exposure fire.

40. When a propane cylinder is discovered burning around the cylinder valve, employ the following tactics: Cool the vapor space. After the area is cooled with water for 10 minutes and the flames appear stabilized in size and intensity, approach the valve in full protective equipment and mask and shut off the gas by the control valve if possible. If the flow of burning gas can't be shut off, allow the propane cylinder to burn itself out and use the hose stream to protect the exposure.

41. The firefighter shutting off the flow of burning gas at the propane cylinder outlet should be protected by a wide-pattern, low-velocity stream; position the fog stream between the control valve and the burning outlet. The firefighter's hand should be behind the fog curtain when turning the control valve. The flaming outlet should be in front of the fog curtain.

42. If you are in doubt about how to control a fire involving a propane cylinder, move all civilians and firefighters to a safe distance beyond the explosion danger zone, get behind a barrier, and let it burn.

43. When walking on a peaked roof, straddle or stay near the ridge rafter. If you slip or lose your balance, you can grab on to the roof peak; the ridge of the roof is your one true handhold. Chimneys, TV antennas, and soil pipes are not designed to support a falling firefighter and may break.

44. To maintain footing when walking on a peaked-roof surface, bend your legs at the knees and walk flat-footed. This called the "roofers walk." It will reduce your chances of sliding down a peaked roof.

45. When there is a danger of peaked-roof deck burn-through or collapse due to an attic fire, place a roof ladder on the sloping side of the roof from which you're operating and walk on the rungs of the ladder. The ladder should be supported by the roof ridge and the bearing walls of the house.

46. Roof operations should be conducted from an aerial ladder or aerial platform when peaked-roof beams are in danger of collapse due fire destruction of the attic. The firefighters should be independently supported.

Continued on page 8



60 Ways Firefighters Alive (continued from page 7)

47. Firefighters should not walk on a peaked roof with a slope greater than a 30-degree angle from the horizontal. There should be a roof ladder in place.

48. To reduce your chances of being severely injured by flashover during a search, practice a safe, organized search method. Most firefighters killed by flashover are disoriented and lost in smoke. When searching a small room, maintain contact with a wall and move in a clockwise or counterclockwise direction. In a large or complex area, use a search rope as a guide. Study the room layouts of buildings in your community. This will help you to search and not become disoriented.

49. With the increasing use of lexan windows, sliding scissor gates, and bars on windows, firefighters searching for the location of the blaze or for victims should always return to the entrance door. If a firefighter passes the fire and carries a victim to a fire escape window, they could both be trapped. Crime, or the fear of it, moves many residents to lock up the second exit.

50. Firefighters should know the warning signs of flashover. When smoke and superheated gases force you to crouch down below half the height of the room, there's danger of flashover. Rollover is also a sign of possible flashover. Rollover is when flashes of flame, mixed with smoke, are seen at the upper part of a burning room or at the top of a door or window flowing out of the opening. When you suspect flashover, withdraw to safety.

51. Firefighters should know why the flashover phenomenon has become more common in recent times: 1) Because of the use of smoke detectors, firefighters are arriving at the scene earlier in the growth process of the fire, frequently before flashover. 2) The synthetic furnishings of a typical home are petrochemical derivatives that accelerate flashover by liberating greater amounts of heat and flammable gases. 3) Improved quality of protective gear and equipment has allowed firefighters to enter farther into superheated atmospheres prior to flashover. Tight building syndrome—thermal windows and energy-efficient heat barriers behind walls and ceilings of rooms—keep more heat in the confined space of a room.

52. When operating around the perimeter of a burning building, an outside venting firefighter must take precautions to avoid injury from falling objects. When you hear glass breaking, don't look up. Size up the venting assignment from a distance. Choose the window you want to vent, move in close, vent it, and back away from the structure.

53. To determine the proper angle for placing a ground ladder, stand erect at the base of the ladder with your boots against the ladder beams and your outstretched arms grasping the rungs at shoulder level. If you can do this, the ladder is at the proper climbing angle.

54. When you cannot open a window manually to vent smoke from a building and must break the glass, stand to one side (if possible, the windward side), use a six-or eight-foot pike pole for safe reach, strike the glass with the pike pole at the top area of the window, and work downward. If there is a possibility that firefighters are searching inside the room, first tap the window and only break a small portion of the glass—this will serve as a warning. Then remove the entire window with the tool. Keep helmet eye shields down for protection, wear gloves to protect your hands, and don't stand in front of the window.

55. After flashover occurs inside a superheated, smoke-filled room, there is a point of no return beyond which a firefighter cannot escape back to safety. The point of no return is the maximum distance a firefighter can crawl inside a superheated room and be sure you can still get back out alive and not badly burned after flashover, the point of no return is five feet. If you are five feet inside a room that has flashed over (walking 2-1/2 feet per second) it takes you 2 seconds to get out. During this time you are engulfed in 1000 to 1200 degrees F. heat. If you are 10 feet inside and flashover occurs, you are exposed to 1000° to 1200° degrees F for four seconds. Fifteen feet, you are exposed for 6 seconds and badly burned even with protective clothing. Think about it!

56. When moving through brush during a fire, the firefighter should raise a tool or arm in front of his face as he moves forward to avoid injury by shrubbery, pointed needles, sharp leaves, or abrasive vines. Firefighters walking behind the lead firefighter should space themselves several feet apart to avoid whipping branches or leaves.

57. You should never enter cattails or brush that is over your head and reduces your vision. If the wind changes, you are in danger of being engulfed by fire in the brush.

58. When the wind frequently changes direction during a brushfire operation, the safest area from which to

Continued on page 9



60 Ways Firefighters Alive (continued from page 8)

attack the fire is the blackened, burned-out area.

59. A survey revealed that firefighters are most often killed and injured at small brushfires in isolated portions of larger fires. They are not killed by large timberland forest fires. Firefighters are burned to death trying to outrun brushfires, or they are engulfed in flames when a brushfire suddenly flares up around them. Firefighters should attack a brush fire from the flanks—the sides of the fire area between the head—the edge along which the fire is advancing, and the rear.

60. The most common injuries to firefighters during brush firefighting are eye injuries, falls, and heat exhaustion. Eye shields must be worn. Firefighters should walk on roads or well-traveled paths when possible.

Vincent Dunn, Deputy Chief (FDNY) (Retired), is an adjunct professor for both Manhattan College and John Jay College of Criminal Justice, instructor for National Fire Academy, renowned author of two textbooks, *Safety and Survival on the Fireground* and *Collapse of Burning Buildings*, editor FDNY website, contributing editor WNYF magazine, *Firehouse* magazine, *Fire Engineering* magazine, and nationally recognized consultant/fire analyst NBC, CNN, FETN. To learn more, visit: www.vincentdunn.com



Vincent Dunn, Deputy Chief (FDNY, Retired)

Traffic Signal Preemption for Emergency Vehicles: A Cross-Cutting Study

The U.S. Department of Transportation has conducted a study to identify issues associated with emergency vehicle operations (EVOs). Among the points summarized in this study include the following:

- **Emergency vehicle preemption has allowed Fairfax County, Virginia to reduce its response times.**

The system permits emergency vehicles along U.S. 1 to pass through high volume intersections more quickly with fewer conflicts, saving 30 to 45 seconds per intersection.

- **Emergency vehicle preemption in the city of Plano, Texas has dramatically reduced the number of emergency vehicle crashes**—from an average of 2.3 intersection crashes per year to less than one intersection crash every five years.

- **In addition, due to reduced delays at signalized intersections, the city of Plano can achieve the same response times with fewer fire/rescue and EMS stations than would nor-**

mally be required, providing significant cost savings. The city has maintained response time goal achievement rate of over 90 percent, contributing to its Insurance Services Office Class 1 Fire Suppression Rating—the highest possible rating on a scale of 1 to 10.

- **Emergency vehicle preemption installed in St. Paul, Minnesota has permitted police, fire/rescue, and EMS vehicles to reach the scene of an incident faster and with a reduced chance of a crash.** Crash rates per emergency vehicle responses were dramatically reduced in the years following deployment.

The study also identifies major lessons learned to guide others in achieving similar benefits. The following list highlights some of these elements:

- **Emergency vehicle preemption systems can benefit many stakeholders, including police, fire/rescue, EMS, and transit op-**

erators (if transit signal priority is also provided). To make sure that the needs of all these stakeholder groups are met, it is important to involve all stakeholders in a formal and collaborative manner.

- **A champion, bit it an individual or an organization, is often key to success.** At all three sites visited, the preemption initiative progressed when one person or one group of people provided leadership and sponsorship of the effort. In some cases, a different stakeholder took the role of champion as the initiative progressed. Therefore, it is important that the role of champion is clearly identified throughout the process.

- **Stakeholders should consider emergency preemption as part of a developing local ITS architecture.** In doing so, it may be possible to leverage funding for the emergency vehicle preemption system by sharing costs with other ITS-based emergency response, congestion management, and clean-air attainment pro-

Continued on page 10



Traffic Signal Preemption for Emergency Vehicles: A Cross-Cutting Study (cont'd. from page 9)

grams. Broader stakeholder groups and a wider range of funding options increase the potential for successful deployment.

• **Signals near emergency facilities (i.e., hospitals, trauma centers, and fire/rescue and EMS stations) will be preempted more often than others and drivers may experience delays if multiple preemption events occur during a short period of time.** Each of the sites indicated that the public accepted these delays and that a public awareness campaign highlighting the public safety benefits of preemption was a key factor in reducing preemption-related complaints.

• **It is critical to identify one agency that is responsible for system maintenance.** A clear method for reporting system problems and well known lines of communication among all involved is required to avoid delay in making any necessary adjustments or repairs. Effective

maintenance programs ensure that the system provides the highest degree of benefit.

• **A green light is not guaranteed.** Emergency vehicle drivers need to use caution not to over-rely on the system and need to be prepared to stop if provision of the preemption phase is delayed (i.e., awaiting time out of an in-progress pedestrian phase). Emergency vehicle preemption operation and limitations must be a part of initial and recurring emergency vehicle driver training.

Please visit the following website to view study in its entirety:

http://www.itsdocs.fhwa.dot.gov/JPODOC/S/REPTS_TE/14097_files/toc.htm

NEW DALLAS CHIEF HAS BIG FITNESS PLANS

The new fire chief in Dallas, Eddie Burns, said he has big plans to shape up the department.

Burns said he will institute a physical fitness regimen for all firefighters, much like the one Fort Worth has had for the past 20 years.

"They do a medical physical, and then there are some physical requirements, like push-ups, sit-ups, crunches," Burns said. "Actually look at your weight, your body fat."

Before taking up his new post, Burns had worked for the Fort Worth Fire Department for 27 years and was chosen by Dallas after a nationwide search.

Does Your State or Jurisdiction Mandate NFPA 1403 for Live Fire Training?

Each year, firefighters die in the line of duty during training exercises. It is imperative that fire departments and state fire jurisdictions give ample consideration to taking steps such that fire service training is performed in as controllable an environment as possible and with a zero tolerance injury philosophy.

There are no more tragic training fatalities as those that occur during live fire training exercises. While fire service training strives for a generous level of realism in firefighting exercises, tragic live fire training events in our history have pointed to the need for sufficient controls that limit the potential for disaster. NFPA 1401, Standard on Live Fire Training Evolutions, is an important means to controlling the live fire training environment and ensuring the safety of our firefighters.

Following the deaths of three firefighters in two separate live fire training incidents, the Florida State Fire Marshal's office spearheaded state legislation mandating that

NFPA 1403 be applied as law to all live fire training conducted in the state of Florida. The Lt. John Mickel and Dallas Begg Act was signed into law by Governor Jeb Bush in June 2005 and becomes effective January 1, 2007. It mandates that all live fire facilities meet NFPA 1403 requirements; that live fire training be conducted at state-certified training centers compliant with NFPA 1403 and NFPA 1402, Guide to Building Fire Service Training Centers; and that acquired structures be NFPA 1403 compliant. Additional provisions of the law include the use of thermal imaging and establishment of rapid intervention teams during training exercises.

It is critical that the fire service continue to find ways to impact firefighter safety through the legislative processes. For more information regarding this state law, contact Elias "Buck" Tomlinson, instructor, State Fire Marshal, Florida Bureau of Fire Standards and Training, at 352-369-2854.



WHY IT PAYS TO INVEST IN WORKPLACE SAFETY —FACT SHEET

The following is excerpted from North American Occupational Safety and Health Week. It is time the fire service adopted certain workplace safety attitudes and programs practiced in the industrial sector. First and foremost is a zero-tolerance injury platform. We ask you to think about applying some of the following concepts to the fire service.

Investment in safety, health and environmental processes is a sound business strategy for any organization, regardless of size, and will lead to a positive impact on the financial bottom line. Turning to an occupational safety, health and environmental professional for the insights and information you need is part of that investment. In the past, most growth in safety was regulatory-driven, but today it makes good business sense to protect people at all workplaces. All industries, corporations, organizations and government agencies must realize that developing and implementing effective safety programs reduce fatalities, injuries and illnesses. Companies need to realize that today, quality of life is important and that fatalities and injuries are unacceptable in the workplace. Please note the following facts:

- In 2001 there were a total of 8,786 workplace fatalities in the U.S., including those lost in the September 11 attacks, and tens of thousands more people suffered job-related illnesses and injuries.
- According to the Occupational Safety and Health Administration (OSHA), every year workplace

deaths, illnesses and injuries cost the nation \$170 billion.

- Studies and case history indicates that for every \$1 invested in a safety and health program, \$4-\$6 are saved because injuries, illnesses and fatalities decline, medical costs and workers' compensation costs decrease, and productivity increase.

- Organizations that invest consistently in safety realize reduced absenteeism, lower turnover, higher productivity, increased employee morale and a positive brand image.

- The public and private sector should be encouraged to work together to show business and industry that occupational safety and health is not only required by law, but should become and remain a core business strategy.

- Investment in safety and health management programs makes a considerable improvement on a company's bottom line.

- Safety and health violations are no longer a cost of doing business. Investing in safety is a sound business decision, which more and more companies are realizing, though more companies need to follow these examples.

- For corporations, safety is more than simple compliance, it is part of being a good corporate citizen, offering a safe and healthful work environment to the community.

- Indirect costs of injuries may be as much as 2 times the direct costs, including costs from accident investigation, low employee morale, retraining workers, repairs, and production delays.

- A Safety and Health Assessment and Research for Prevention Program (SHARP) participant re-

duced its lost workday incidence rate from 28.5 to 8.3 and reduced insurance claims from \$50,000 to \$4,000 though decreases in direct and indirect losses through a reduction to its number of back and shoulder injuries.

- In a September 2001 ASSE Professional Safety Journal article titled, "Measuring Safety's Return on Investment," Susan Jervis and Terry R. Collins made the argument that there is a direct correlation between a company's performance in safety and its performance in productivity and financial results.

- Our society saves as a whole when there are fewer accidents and injuries on the job. Fewer injuries bring down insurance costs, therefore lowering insurance premiums for all.

Would you like one of Everyone Goes Home Speakers Bureau members to present on the Firefighter Life Safety Initiatives at your department or your conference? Please contact us at:

everyonegoshome@firehero.org

If you have an article or news item related to firefighter safety that you would like to share with our readers, please submit to Bill Manning at:

williamamanning@comcast.net



IMPROVING EMERGENCY VEHICLE SAFETY

The following article was printed in the Jan./Feb. 2006 issue of *International Fire Fighter*, the journal for the International Association of Fire Fighters (IAFF).

According to the U.S. Fire Administration, of the 106 firefighters who died in the line of duty in 2005, 26 were the result of vehicle accidents.

In an effort to ensure that its members go home safe at the end of each shift, the IAFF has partnered with USFA to develop a comprehensive emergency vehicle safety program designed to give firefighters a greater awareness of the issues affecting safety when riding on fire apparatus and operating at roadway emergency scenes. The program also provides basic strategies for improving safety during vehicle and roadway incident operations (see box).

“Both labor and management have an obligation to adopt and enforce Standard Operating Procedures that improve the safety of firefighters,” says IAFF general president, Harold Schaitberger. “Every firefighter must take personal responsibility for their safety, and also watch out for and stop any unsafe actions.”

“While injuries and deaths as a result of apparatus collisions are among the easiest to prevent, it’s the cultural shift in mindset that is most needed and most difficult for some firefighters to accept. We must eliminate the tendency to operate fire apparatus in a reckless manner under the guise of urgency of response,” stresses Schaitberger.

Sometimes, practicing safer driving tactics and wearing seatbelts are enough to prevent injury and death.

In Las Vegas, Nevada, an engineer lost control of an engine as it and a ladder truck responded to a report of smoke in an apartment complex. As the engineer traveled at 45 miles per hour through a right-hand curve on a freeway exit ramp with a posted speed limit of 25 miles per hour, the engine fell onto its left side and slid 50 yards into impact absorption barriers.

The engineer was the only member of the four-person crew on the engine who was wearing a seatbelt. He and the firefighter seated behind him—who was held in place by his partially donned SCBA—escaped with minor injuries. The 39-year-old captain tumbled over the center hump and suffered a spinal cord injury and was

left paralyzed from the neck down. The apparatus received severe damage. The reported apartment fire to which the units were responding proved to be a false alarm.

Emergency Vehicle Safety Key Messages

- Cultural attitudes regarding response and roadway safety must change.
- Firefighters are responsible for operating safely and following standard operating procedures.
- Ensure fire apparatus are properly designed and maintained.
- Seatbelts must be worn
- Operate apparatus at a safe and responsible speed.
- Use caution on curves.
- Adopt alternative response policies for low-risk calls.
- Respect roadway scene hazards
- Use proper roadway scene protection and management procedures.

In this incident, three of the vehicle occupants suffered injuries because of their failure to wear seatbelts. (The engineer, who was wearing a seatbelt, broke his nose when the unbelted captain fell on him as the apparatus overturned.)

A similar incident in Brookline, Massachusetts occurred when an engine company responded to a report of a gas odor in a 1976 Pirsch pumper that served as a spare apparatus. As the engine made a right-hand turn from the fire station, the firefighter seated behind the driver was ejected from the vehicle. He sustained a severe head injury and died several days later.

None of the four-person crew was wearing a seatbelt. Ironically and tragically, this fire department had experienced a similar incident in 1982 in the same apparatus. That firefighter remained in a coma for 20 years before his death.

Firefighters riding in a seated and belted position has been an industry standard since the late 1980s. “There is absolutely no excuse for fire departments failing to enforce this practice in today’s fire service,” maintains Schaitberger.

Surprisingly, the greatest percentage of apparatus collisions and a significant portion of monetary damages are from backing operations. An incident in Los Angeles, California demonstrates the importance of following the NFPA 1500 guidelines for performing safe backing operations and enforcing procedures for riding on the outside of a moving apparatus.

A 25-year-old firefighter working overtime at her assigned station and the members of her company responded to a working fire in a private residence.

Once the firefighting operations were completed, as this engine company left the scene, it needed to back out a side street onto another street.

Following departmental procedure, the female firefighter took a position on the tailboard, or back step, of the apparatus near a buzzer used to signal the apparatus driver. The company officer was on the ground behind the apparatus in view of the driver’s rear view mirror. After receiving the standard signal from the tailboard firefighter, the driver began to back up at an estimated speed of 2.5 miles per hour.

The company officer turned away to control traffic as the apparatus neared the intersection, but when he redirected his attention to the engine, the tailboard firefighter was no longer visible. Running towards the apparatus, he saw the firefighter on the ground. She had been run over and was pronounced dead at the hospital 12 minutes later.

The practice of riding on the outside of a moving fire apparatus is forbidden by NFPA 1500. In this case, the driver had no way of knowing when the firefighter fell off the back of the moving apparatus and no opportunity to stop before running over her.

Continued on page 13



IMPROVING EMERGENCY VEHICLE SAFETY (continued from page 12)

The Los Angeles Fire Department reaffirmed its policy of riding a firefighter on the back step of backing apparatus after this incident. The local union registered its objections to this policy to the city council group that oversees the fire department. Subsequently, the policy was changed to prohibit back step riding.

Other vehicle accidents can also be avoided by coming to a complete stop at intersections. NFPA 1500 requires all apparatus to stop and account for all lanes of traffic before continuing through an intersection.

In a vehicle incident in Texas City, Texas, an engine company responding with lights and siren to a report of a medical emergency proceeded into an intersection against a red light without stopping and collided with a passenger car on the driver's side.

The force of the collision propelled the engine into a concrete bridge support. The driver and the firefighter riding in the rear of the cab were both wearing seatbelts. A 54-year-old captain who was not wearing a seatbelt was ejected through the front windshield. He struck the pavement and suffered fatal injuries. This incident could have been avoided altogether had the driver brought the engine to a complete stop.

An FDNY engine responding to a working fire in the Bronx with emergency warning lights and sirens operating approached an intersection with a red traffic signal. The apparatus proceeded into the intersection without stopping and crashed into a Dodge Durango SUV that had entered the intersection without stopping and crashed into a Dodge Durango SUV that had entered the intersection from the engine's right side. The 26-year-old passenger of the SUV was killed and five passengers were taken to the hospital with lesser injuries. Five firefighters were also injured in the crash.

At the time of the crash, FDNY's official emergency response policy was to require responding apparatus to come to a complete stop at all red light and stop signs. However, the more common practice for most fire companies was to only stop when the situation demanded it.

Following the incident, the driver and the officer were brought up on charges by FDNY—an unprecedented action. The

local union presidents and officers advised their members to adhere to the official fire department response policy. In addition, video surveillance cameras were installed in some apparatus.

Meanwhile, behind a backdrop of unit staffing cuts, the temporary closure of more companies each day for training and the closure of six fire companies caused an increase in fire department response times. In reaction to these increases, the official FDNY response policy was modified and the requirement to come to a complete stop at red lights and stop signs was removed. In fact, the FDNY fire commissioner called stopping at red lights "unnecessary" and accused firefighters and union officers of deliberately slowing response times to pressure the city to reopen the closed fire companies.

The union continues to encourage members to respond safely, make efforts to reduce response times by getting out of the station quickly when dispatched and to increase safety by calling off responding units when no emergency is found at the scene.

The number of crashes involving fire apparatus in New York City fell 52 percent in the first four months of 2005, while response time to structural fires rose 7 percent.

Maintaining apparatus in a safe, operable condition is also important to ensuring occupant safety.

A ladder company in Columbus, Ohio was responding to an automatic fire alarm in an 11-year-old reserve tractor-drawn aerial ladder truck with lights and siren activated when the brakes failed on a steep hill approaching a 90-degree left-hand turn. The apparatus rolled over and slid into a tavern, smashing through the wall of the business. All four members of the crew were injured, along with five patrons inside the tavern. The call to which the ladder company was responding as a false alarm.

A report on the crash cited improperly adjusted brakes as the cause. The report also concluded that the driver could not have stopped the crash from occurring. Although the ladder truck had been in the shop 13 days earlier for brake problems, they were never addressed and the apparatus was released for emergency use.

In this incident, firefighters were given a reserve apparatus to operate on emergency calls that clearly was not mechanically sound. It is unacceptable for a piece of apparatus to be taken into the repair shop and released for service without correcting the problem.

In addition, fire departments should adopt alternative response policies for calls that have a high probability of being non-emergency in nature, as was the case in this situation. Had this apparatus been operated at lesser speeds, the impact of the collision as a result of mechanical failure would have been minimized.

Roadway Incident Scene Safety

Often, firefighters focus primarily on the dangers associated with working a fire or emergency medical scene. However, roadways are perhaps the most dangerous location for firefighters to operate. According to the U.S. Department of Transportation, 18 percent of all roadway fatalities occur as a result of secondary collisions.

In Midwest City, Oklahoma, a ladder and a rescue squad were dispatched to assist EMS units at a scene of a reported motor vehicle collision with injuries on Interstate 40. The roads were wet and rain had begun to fall again during the response.

The rescue arrived first and discovered that the reported collision was minor. The ladder arrived soon after and was positioned upstream from the rescue squad to divert traffic from the scene. All of the units' emergency lights were operating. The ladder's two crew members remained in the vehicle.

Two minutes after arriving on the scene, a passenger vehicle struck the ladder truck from behind. The ladder company members exited the vehicle to check on the condition of the passenger vehicle driver. One of the rescue squad's members joined the ladder company firefighters.

After the patient from the second collision was moved to an area thought to be safe, the ladder company officer walked further upstream to wave traffic away from the scene of both collisions. At this point, another passenger vehicle lost control and spun into the space where the other firefighters were treating the driver of the car that had struck the ladder truck. The rescue

Continued on page 14



IMPROVING EMERGENCY VEHICLE SAFETY (continued from page 13)

squad firefighter was struck by the out-of-control vehicle, landing 47 feet from the point of impact. He died three days later from his injuries. Two other firefighters and the driver of the car that hit the ladder truck were also injured.

The subsequent investigation revealed that—among other things—there was a curve in the highway upstream from where the ladder truck was positioned making it impossible for vehicles traveling at high speeds to stop in time upon rounding the curve and seeing the fire apparatus.

This incident illustrates the need for fire departments to provide training for safely operating on roadways just as they do at fire or hazardous material scenes.

The complete IAFF Emergency Vehicle Response Program is available at www.iaff.org. For additional information, contact The Department of Occupational Safety and Health at (202) 824-9304.

Fire Up Your Exercise Program

By Todd Lim, Orange County (Calif.) Fire Authority Exercise Physiologist

The following appeared in *Fire Chief* magazine.

The demands placed on firefighters can be tremendous, especially from a physical perspective. Firefighters must possess certain traits, such as muscular strength, muscular endurance, flexibility and cardiovascular conditioning. I liken the profession to that of an “occupational athlete.” It's imperative that firefighters get and stay fit to perform their duties more effectively, efficiently, and safely.

The benefits of exercise are many, from weight management, stress management, and chronic disease prevention to fitness, performance, and vanity. Exercise is the “magic bullet” that solves many physical, mental and social issues. The following is a program designed for those who are looking to get started with an exercise regime.

When beginning an exercise program, start slowly and gradually increase exercise intensity and duration. Be sure to stretch at the beginning and end of each workout. If possible, a fitness assessment should be performed by a qualified professional to determine a baseline.

It is recommended that you obtain medical clearance prior to starting an exercise program, especially if you're in a

high-risk group, such as men over 45, women over 55 and those at increased risk for cardiovascular events.

Cardiorespiratory exercise should be conducted three to five days per week for 20 to 30 minutes at 70- to 85% of your maximum heart rate.

Cardiorespiratory exercise is defined as the ability of the cardiovascular/cardiorespiratory system to deliver an adequate supply of oxygen to exercising muscles. The exercise should be rhythmic in nature and involve large muscle groups. A 5-10 minute warm-up should be performed before exercise and a 5-10 minute cool down after exercise.

Begin with three days per week for 20 minutes at 70% intensity and gradually work up to five days per week for 30 minutes at 70% to 85% intensity. To determine your maximum predicted heart rate, subtract your age from 220. Multiply by 0.7 or 0.85 to determine the appropriate percentage.

Strength training should be performed two to three days per week on alternating days to allow for at least one day of recovery in between training sessions. How much weight should I lift? Select a weight where fatigue occurs during the last few repetitions of the set. The following strength training exercises will help build

strength, endurance, and have transference to the duties of a firefighter.

Stretching should take place at the end of your workout when your body is warm, elastic, and pliable. There's a greater incidence of injury when stretching occurs when the body is cold or insufficiently warmed-up. If you feel particularly tight and would like to stretch before you exercise, ensure that you have done a proper warm-up.

Improving your intake is just as important as increasing your activity level. A proper diet should be low in fat and sodium and contain plenty of complex carbohydrates and lean protein sources. Also, be sure to stay well-hydrated.

The Orange County Fire Authority implemented the IAFF/IAFC Wellness-Fitness Initiative in January 2004 with great results to date. Components of OCFA's WEFIT Program includes medical and fitness exams, medical/fitness/injury rehabilitation, behavioral health, and data collection and reporting .



FIREFIGHTER LIFE SAFETY INITIATIVES PROGRAM - CALENDAR OF EVENTS

Courage to Be Safe—State of Pennsylvania

The program is scheduled at various venues throughout the state of Pennsylvania
Check website for locations: www.everyonegoeshome.com—Coming Events

FDIC Indianapolis—April 28, 2006

Firefighter Life Safety Initiatives Program Forum

Firehouse Expo 2006 —Baltimore, MD

Firefighter Life Safety Initiatives Program Seal of Excellence Award Presentation

Fire Rescue International—September 11, 2006

Courage to Be Safe Program

Courage to Be Safe—March 28, 2006

Laurelton (NJ) Fire Company, Ocean County, 18:30 hours

Courage to Be Safe—March 30, 2006

Evesham (NJ) Fire Company, Burlington County, 08:00 hours

Courage to Be Safe—April 13, 2006

New Egypt (NJ) Fire Company, Ocean County, 18:30 hours

Courage to Be Safe—April 18, 2006

Colonial Fire House, Mercer County, NJ, 18:30 hours

What are you doing to assure EVERYONE GOES HOME?

We're looking for those who have initiated a personal, department, organizational or community program that includes and endorses the 16 FIREFIGHTER LIFE SAFETY INITIATIVES.

The purpose of this program is to recognize those who have taken the Fire Firefighter Life Safety Initiative Program's 16 Initiatives and the slogan, "EVERYONE GOES HOME," to the next level - that of implementation.

If you, or a department you know, has incorporated the Firefighter Life Safety Initiative Program's 16 Initiatives and the slogan, "EVERYONE GOES HOME," we want to hear from you.

Send a description (samples, pictures, and program) of your implementation to:

everyonegoeshome@firehero.org

