

# FIRESCUE INTERACTIVE

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MAY 2009

## BUILDING CONSTRUCTION

# LIGHTWEIGHT CONSTRUCTION

Gary Bowker, Fire Chief (retired) — USAF

### KNOWING THE RULES OF THE GAME

Lightweight construction is generally considered to be either wood frame or steel building materials where the roof and/or floor supporting systems are constructed of lightweight prefabricated materials. Also used extensively in today's wood frame construction are wooden I-beams. These typically consist of particle board and dimension lumber less than 2x4 inches to form the I-beam shape, and are often finger jointed and glued together to create longer length beams.

Wooden I-beams are notorious for rapid fire spread and early catastrophic failure in as little as four minutes of fire involvement! The particle board is often times

breached by flex ductwork or other utility penetrations, which further weakens the system. It's cheaper and faster for the builder to construct and this killer method of construction is likely here to stay.

Most wooden truss systems use metal gusset plates to fasten the top and bottom chords to the webbing, but some are just finger-jointed together with glue. But, under fire conditions regardless of whether the LWC is of wood or metal design, it can quickly and catastrophically fail with no warning. The vast majority of wood frame dwellings built in this country since the 1970's utilize wooden truss designed roof and floor systems with metal fasteners and hangers. In addition, many commercial

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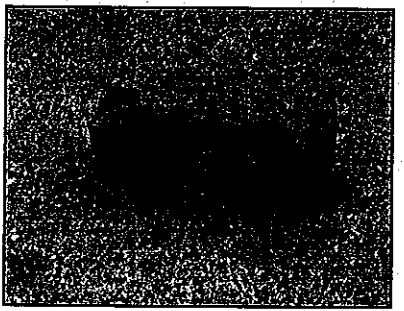
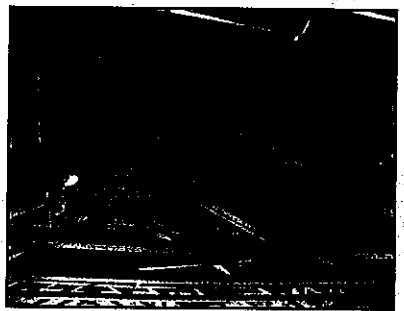
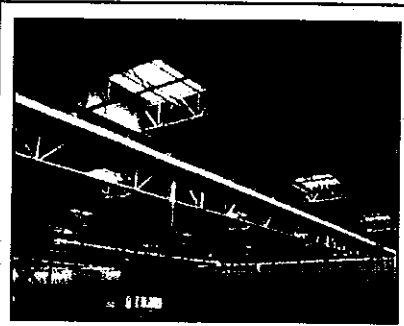
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and industrial occupancies, now utilize a lightweight truss design. Pre-planning and inspections are critical to know where these killers reside in your community. Regardless of the type or style, a truss, is a truss. They all can be deadly when involved in fire.

The first multiple firefighter LODD incident in our nation involving the collapse of a bowstring truss roof system at a car dealership fire was actually at Yingling Chevrolet in Wichita, Kansas on November 21, 1968. Right here in our own backyard. Killed when the bowstring truss roof failed six minutes after arrival, were Fire Chief Tom McGaughey (on the night of his 36th wedding anniversary), Chief Inspector Merle Wells, Firefighter Dale Mishler and Firefighter Jimmy Austin. In 1968 the fire service knew nothing about the dangers of truss construction.

On July 1, 1988, Hackensack, NJ a fire in a Ford Dealership resulted in the failure of a bowstring truss roof which trapped six and killed five fire-

***Pre-planning and inspections are critical to know where these killers reside in your community. Regardless of the type or style, a truss, is a truss.***

fighters twenty minutes after they arrived. Killed were Captain Richard Williams, Lt. Richard Reinlagen, Firefighter William Krejsa, Firefighter Leonard Radumski, and Firefighter Stephen Ennis. The lessons learned from these fires were many, and every firefighter today *should* know them.

Think about it...forty years, two generations of firefighters have come and gone after the Yingling fire and firefighters are still dying in trussed structures... Is it our attitude towards these buildings because we think that it won't happen to us? Is it a lack of tactical knowledge and leadership which results in firefighters offen-



# FIRE DEPARTMENT TRAINING NETWORK

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## ARTICLE SUBMISSIONS

It's not hard! Type it, hand write it, send it in on a tape, video tape a session, or however else you feel comfortable sharing ideas that will make the job easier. We're all here to do the best we can and by sharing information we all stand a better chance at being successful the next time out.

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sively attacking a well involved LWC (usually unoccupied) structure where the only life at risk is our own firefighters?

Here are the three big killers of firefighters in the US and some of the rules of the game that continue to be missed or ignored:

Cardiac related over-exertion continues to be the No.1 killer of firefighter's nation wide. Annual physicals, a heart healthy life style change in our diet, along with regular exercise will greatly reduce this major killer. I know, it almost happened to me, and it did result in my early retirement from the fire department.

The No. 2 killer is motor vehicle accidents. These repeatedly involve excessive speed, lack of seat belt usage, and failure to stop at intersections while responding. Does your department have a policy dealing with this?

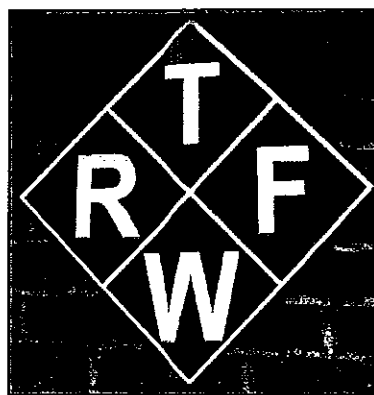
The 3rd killer is the failure to know or react to the following three most common situations that kill firefighters:

1. Working above the fire.
2. Working below the fire.
3. Hostile fire events, i.e., flashover, backdraft, structural collapse, failure to read and understand smoke conditions, etc. Working below and especially above the fire has always been one of the most dangerous places to operate, but the focus of this article will be on the hazards of lightweight construction.

If we fail to understand the risks in a structure built of lightweight wood frame construction that is involved in fire, there is a high likelihood that firefighters will be seriously injured or killed as a result. Did I mention this can happen in as little as four minutes...?

In my community the effort to enhance firefighter safety and awareness about the presence of LWC, included the development and implementation of the Blue Diamond Program. This program was designed after learning about another community on the east coast that started a similar such program. The purpose of the Blue Diamond program is to alert responding firefighters arriving at the scene of a commercial or industrial structure fire where LWC is used, by the placement of a blue diamond placard on the exterior of the building. One or more Blue Diamond placards are placed in conspicuous locations on the exterior of the building there by alerting responding firefighters immediately upon their arrival.

The Blue Diamond is designed with four quadrants, similar to the NFPA 704 Diamond. The all weather reflec-

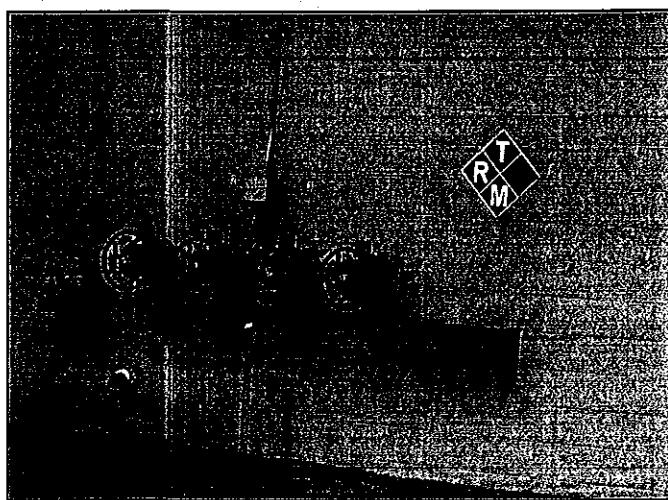


tive diamond is Safety Blue in color and measures 14 x 14 inches square. The top quadrant contains the letter T which denotes the presence of truss construction. The lower left quadrant contains the letter R if truss construction is used in the roof system. The quad-

rant to the right contains the letter F if the structure has floor trusses present. If floor trusses are not present, the quadrant is left blank. The bottom quadrant contains the letter M or W denoting either wood or metal construction. (See Photos)

This information is also contained in the department's quick access pre-fire incident plan. However, the advan-

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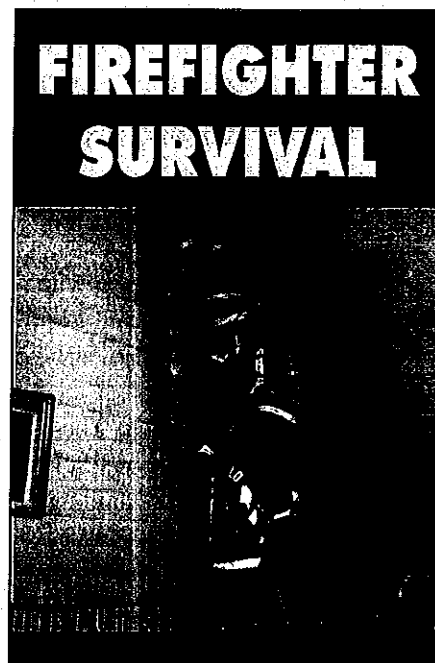
*The vast majority of our LODD's in the U.S. are absolutely preventable. But it takes leadership and commitment not only from you, and your department, but from your local government leaders. They must be educated and informed about the hazards and challenges faced by our fire service today.*

tage of the Blue Diamond program is two-fold. First, it provides four key pieces of critical information about the building's construction immediately upon the arrival of firefighters prior to their entry. And secondly, the diamond serves as a constant reminder to firefighters while doing preplanning and familiarization training in the community.

This program was recently presented to the Winfield City Commission and was unanimously recommended for adoption into the Winfield City Fire Code for community wide use. This is a great example of the commitment by local community leaders to support the firefighters. This ordinance became effective in March 2008.

The vast majority of our LODD's in the U.S. are absolutely preventable. But it takes leadership and commitment not only from you, and your department, but from your local government leaders. They must be educated and informed about the hazards and challenges faced by our fire service today.

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..... **TRUCK COMPANY OPERATIONS** .....

# DOUBLE-ENDED ROOF LADDERS TO THE RESCUE

.....  
*Pete Kertzie, Battalion Chief — Buffalo, NY, Fire Department*  
 .....

## **HOOKS AT BOTH ENDS OF THE LADDER SIMPLIFY ROOF OPERATIONS**

It's easy to become enamored with the newest, fanciest and most technologically advanced products that fire service manufacturers can come up with—especially those being pitched with the most “flash” or displayed with the help of a model in a bikini top and bunker pants. The excitement caused by some of these new and shiny products is certainly warranted. I remember the first time I held a Zippo lighter to Nomex; I was amazed when the cloth-like material didn't ignite. What a breakthrough!

Once we return from vendor shows or fire conferences—and we're removed from all the product pageantry—we can take the time to determine which products really have the potential to improve our operations without incurring a great cost to our department. I recently came across one such product: the double-ended roof ladder. That's right—a ladder with hooks at both ends.

### **THE STATUS QUO: 1 SET OF HOOKS**

Most of the aerial apparatus here in Buffalo have a 20' roof ladder mounted to the top fly of our aerial ladders. The 20-footers are too long to fit inside our ground ladder storage area, so the fly of the aerial became their home out of necessity.

Accessing the roof from the aerial usually involves extending the aerial device to the peak and then throwing a roof ladder onto the roof with the hooks over the peak to hold it in place. We can then work off the roof ladder to

vent the building. The 20' roof ladder is usually more than long enough to accommodate our needs.

Our aerial-mounted roof ladders are stored with their tips (and hooks) toward the tip of the aerial. If we need to ladder the roof on the same side as the aerial ladder, we simply open the hooks, lift the ladder off of the side and drop it into position while hooking it on the peak.

If we want to ladder the opposite side of the roof, then we have to spin the ladder around over our heads to position the hooks on the opposite side of the ridge. If we're working off an aerial platform, this job is awkward, but not terribly difficult because we're standing on a flat surface and have the bucket's railing to safely hold us in place. But if we're working off a straight stick, things can be a bit more awkward. It's hard to balance on the rungs of the aerial and simultaneously twirl the ladder around overhead.

When laddering a building at the peak, having the tip and hooks of the roof ladder mounted aiming downward toward the lower end of the aerial ladder would allow us to deploy the roof ladder straight off the end of the aerial, as placing the hooks over the ridge would be the last step in the process. If the hooks are located at the tip of the aerial, you'll have to do some maneuvering to get the ladder into the correct position.

Another scenario where a double-ended roof ladder would help: Sometimes a roof ladder is on one side of the ridge, and we need to move it to the other side. If the ladder had hooks on both ends, we could just guide the lad-

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ROOF LADDERS...CONTINUED FROM PAGE 5

der over the top. The hooks at the bottom of the ladder on the original side of the ridge would become the hooks used to attach the ladder to the top of the ridge on the other side. But with hooks at one end only, we must spin the ladder around overhead to move it to the other side of the ridge.

I was discussing this maneuver with some friends from the Milwaukee Fire Department, and they showed me a method of hand placement they're taught in rookie school specifically for spinning roof ladders overhead on the ridge of peaked roofs. While sitting, straddling the ridge, the truckie pulls the ladder up the side of the roof so it's centered on the ridge. He then crosses his arms and grasps two rungs in the middle of the ladder. As he lifts the ladder, he should rotate his arms and spin the ladder's tip to the opposite side.

This maneuver is a nice way to spin the ladder around overhead, and it works pretty well. But don't forget that the ladder is still swinging around and could hit obstructions or other firefighters working in the immediate area, so be careful.

## LOOKING FOR A SOLUTION

After awkwardly rotating a roof ladder around over my head one day, it became apparent that if hooks were at both ends, this entire process could be eliminated. So I approached our "Carpenter Shop" (which is responsible for testing and maintaining our ground ladders) about the viability of adding hooks to the butt end of one of our roof ladders.

We discussed the facts: A straight ladder is constructed in the same manner as a roof ladder, and a straight ladder is exactly the same forward or backward, except that it has two butts attached to one end and two rounded caps attached to the other end. You could easily remove the caps and butts and reattach them to the opposite ends of the ladder—it would still be the same ladder. So why can't we attach hooks to both ends? It would be like "Push-Me-Pull-Me" from the movie "Dr. Doolittle"—functional on both ends.

Our carpenter shop agreed to attach the hooks on the other end—simple and quick and we were on our way. The ladder was put back in its nesting place on our aerial ladder. All platoons were briefed on the alteration and agreed that it was a big improvement.

For a couple years we went about our business using the double-ended roof ladder. In my travels and conversations with other firefighters, I told them about having

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*After awkwardly rotating a roof ladder around over my head one day, it became apparent that if hooks were at both ends, this entire process could be eliminated.*

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hooks at both ends. Every single one of them showed interest in the hooks or indicated that they wanted a ladder like this.

## GETTING COMPLIANCE

I contacted a couple of ladder manufacturers to determine if we could purchase a ladder with hooks at both ends. Duo-Safety Ladder told me that they've made a couple ladders like this as a special order for some departments. I got the impression from them, however, that having hooks and butts at both ends didn't exactly follow with the wording in the NFPA description of an approved ground ladder. It's not that the ladders are now unsafe; rather, the wording in the standard describes tips and butts, and a double-ended ladder would only have butts.

It seemed to me that they thought that ladders of this type wouldn't meet NFPA guidelines, as the NFPA alludes to compliant roof ladders having both a tip and a butt. I'm guessing some interpreted that to mean that the tip and the butt had to be constructed differently. In my opinion, the double-ended roof ladder was not addressed in the standard because the concept had not been brought up yet. As a member of the NFPA Ground Ladder Committee, I plan to submit the double-ended roof ladder concept for inclusion in the next update of the standard.

Naysayers may argue that without a tip with rounded ends, the butts could snag or get jammed up into roofing materials. Understandable. I could see this happening, but only if you failed to open your roof hooks. Hooks in their opened position will allow the roof ladder to roll nicely over any roofing material. The only time the hooks would not help by rolling over roofing material would be if you were sliding the roof ladder up at a right angle to the roof on one of its beams. In this case, rounded caps on the end wouldn't be of any help anyway, as they are as flat as the beam when the ladder is on its side.

When I was in rookie school we were required to push the roof ladder up a peaked roof on its side. I think this was the "official" way fire departments were supposed to teach this task—a task probably developed by someone who never had to actually do this or any related job (such as



roofer, carpenter or chimney sweep) on a regular basis because it certainly was not the most efficient method. The tip would often catch on the bottom edges of the shingles or the tip would venture off in odd directions as I pushed.

Once I was working on a truck and pushing roof ladders up on a regular basis, I found that the roof ladder would topple over from the side, and I would end up pushing the ladder up with the upper tip resting on the hooks of the ladder. As it turned out, this was easier than fighting with the edge of the shingles and required less energy, which I am all about. After playing with this for a while, I found that if I was pushing the ladder up with my right arm, I would aim the tip to the left of my target slightly and the tip would end up just where I wanted it at the peak. The same happened when I would do the opposite with my left arm.

Anyway, not having the little rounded tips turned out to be a non-issue, and the absence of them does not impede our work. NFPA 1931 4.1.33 gives a description of the ladder tip as rounded. In my personal interpretation, once I open the hooks, the tip is rounded.

**FINALLY, THE PRODUCT I WANT**

Every once in while, I would inquire with the ladder manufacturers about the availability of a double-ended ladder constructed to comply with NFPA specifications. I usually expected to hear that it was not available. That was until one fateful day in the spring of 2008. I ran into a rep from Duo-Safety Ladder who told me that the double-ended ladder was now available and that its general construction is NFPA-compliant. A question over section 4.1.3.3 of NFPA 1931 requiring rounded tips applying to

the double-ended ladder still loomed, so Duo-Safety labeled these ladders with a small sticker stating that these ladders were a special size and “not a standard model.”

A couple months ago, the East Amherst Fire Department in suburban Buffalo needed a roof ladder, and I suggested the double-ended version. They ordered one, and when it was delivered I met the truck at the firehouse to unload it. I used a Halligan (of course) to rip open the wood and cardboard crate. My eyes grew large as I pried chunks of wood away from it. I think it sparkled under the apparatus floor lighting.

At what cost does this innovation strike our tight budgets? It’s amazingly reasonable for something that will enhance our everyday operations, takes no extra space, requires little or no training and, most importantly, improves safety. The additional cost to a roof ladder is around \$100. *Note: Ground ladder manufacturers do not condone end users altering ladders.*

**FINAL THOUGHTS**

At a recent truck operations class I taught at a fire department conference, I asked for a show of hands from those attendees who had a wall or straight ladder. Not one hand went up. We simply don’t purchase these anymore. No more one-piece hookless ladders. We’ve evolved. We now purchase roof ladders. Fortunately, someone realized the senselessness of purchasing a 20’ straight ladder when you could purchase a 20’ roof ladder. Why not just order them as roof ladders? They do the same job and more and the cost is not that much more. The purpose of this column is to move us forward to a day when all roof ladders will be double-ended. Future generations will wonder how we ever got by with hooks at one end.

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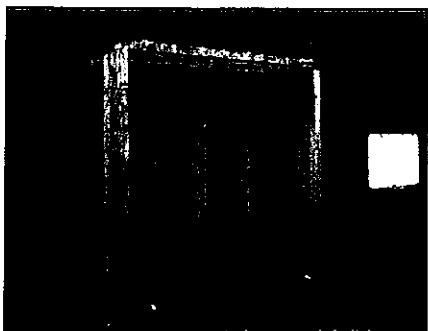


TRUCK COMPANY OPERATIONS

# SIMPLE CUTTING PROPS

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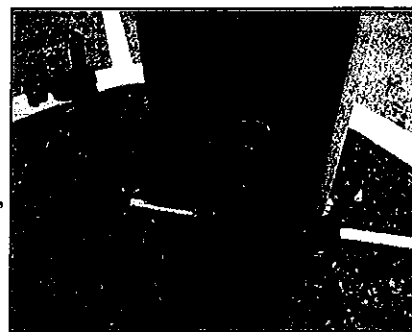
## HERE'S A FEW SIMPLE IDEAS FOR PUTTING A CUTTING PROP TOGETHER FOR TRAINING:



This prop was sent in by Lieutenant Jeff Pacia from North Providence (RI) Engine 1. The prop is built out of 2 x 6 lumber and can be mounted to a building as shown. The prop measures 4' x 4' but could be made whatever size you need. Once the box is made, it is backed with a sheet of plywood for stability and two 5 foot long 2 x 4's are used to mount the prop to

the building. The top and bottom 2 x 6's have 1/2" holes drilled in them about every 8 inches to accept the rebar. The clamps are made from two 4 foot long 2 x 6's are ripped in half using a table saw. These ripped boards have holes drilled on either end to accept 8" carriage bolts with wing nuts with washers. Each clamp assembly rests on top of one of the horizontal 2 x 6's. The rebar is fed in from the top and clamped in place. If just the bottom portion of the rebar is cut, the clamps can be loosened and rebar lowered and re-clamped. The same set-up (clamps and holes) could be repeated on the sides of the "window" if horizontal bars are desired. It's all about getting the saw in peoples hands, and actually using it for real. Starting the saw and watching it idle on the ground is not training!

This cut station is a simple prop that can be made for less than \$100. The prop simulates cutting window security bars, allowing practice using the rotary saw at different heights and in different positions. As shown in the picture below, the prop was made from galvanized pipe fittings that are available at the local hardware store. Each "clamp" is made from a flange, two short sections of threaded pipe, a Tee, and an inline valve. Although 1/2" fittings may work it is suggested to use 3/4" instead, giving you more flexibility in the material you use to cut. The assembly is then used to clamp rebar, or Electrical Metallic Tubing (EMT.) Ideally the clamps would be screwed into the building at windows height. In these pictures, the clamps were simply screwed into a concrete light pole. Either way, it's an effective prop that can be made relatively cheap in a less than an hour.



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## ENGINE COMPANY OPERATIONS

# LOVERS—W ENGINE COMPANY OPERATIONS

*John Norman, Deputy Assistant Chief (retired) — FDNY*

Louis Andrade, who spent 34 years with FDNY, compiled the following acronym for engine company operations: LOVERS-W (Line selection, stretching and placement; Overhead and out front with the stream; Vent with the line; Extinguish the fire; Rare operations; Sweep the floor; Water supply).

The first priority of all firefighters is the protection of human life. Firefighters on the first arriving engine are no exception, but they must keep in mind that there are many ways to accomplish this task. While members on ladder apparatus might use portable or aerial ladders, or a rope to remove a trapped victim, the engine crew has a safer route for victim removal, via the main entrance, after the line has darkened down the fire.

The best way to protect both life and property at a fire is simple, put the fire out. That is the mission of the first arriving engine, even when people are reported trapped! As one exceptional fire officer puts it, "If you put the fire out, everything else gets much better, very fast." Only in rare instances, when a severe lack of manpower prohibits simultaneous operations and an immediate rescue is critical, should the first engine crew neglect their duties.

Otherwise, a typical structure fire should involve most, if not all, of these features.

**Water supply** is one of the more important duties of the first arriving engine. They should secure an adequate water supply for the duration of operations. That might consist of the simple act of utilizing the on board booster tank water, or hooking up directly to a hydrant. Or it could be as complex as drafting from a static source, setting up a relay or establishing a tanker shuttle. By whatever method appropriate, the first arriving engine must begin the

process of ensuring that sufficient water arrives at the scene. That may mean that the personnel stretch their own supply, or it may require them to call for help. However it is done, the first arriving engine must start the process, for without an adequate water supply, an aggressive attack is impossible.

When selecting a method of water supply, be sure to consider all the factors that affect the operations. For example, in-line pumping offers great speed in water application, but does not provide the maximum flow available from a hydrant. This technique is suitable for residential fires where trapped occupants are possible, and one or two mid-sized lines are all that are required (1¾ or 2-inch lines at 150-400 gpm). Advanced fires in large areas will usually not be affected by a fast application of one or two mid-sized lines. The advanced commercial fire requires large flows that are best obtained by direct hydrant connections, large diameter lines or relay pumping.

**Line selection, stretching and placement** begins once you have arrived on the fireground and taken the necessary steps to secure a water supply. The real meat of the engine company's work begins with putting a hose line into operation. This actually consists of three steps; choosing the correct size and length of line for the fire and building, stretching that line around all of the obstacles (stairs, doors, furniture, etc.) and then arriving at the place where the line will do the most good. Choosing the correct size of the line is usually simple—for a big fire you need big water; for a little fire, little water. Most residential fires qualify as "little" fires, due to the compartmentation found in the buildings. Even fire showing out of three or four

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LOVERS—W...CONTINUED FROM PAGE 9

windows will be a “routine” fire for a mid-size line stretched around the walls, stairs and furnishings.

On the other hand, commercial fires usually demand a larger flow and greater reach due to the open areas involved. Leave the “house fire” line on the rig and get the 2½-inch line in operation. Stretching lines to the proper location is critical. The line must be positioned with the location of victims and spread of fire in mind. (At residential fires, the first line usually goes through the front door since the main entrance is usually in close proximity to the interior stair.) Put the line in place to protect the occupants and the rest of the building, particularly the stair which is vital to allowing both occupants and firefighters to escape and/or enter for search.

**Overhead and out front with the stream** refers to the practice of initially directing the hose line at the ceiling, just in front of the nozzle team in a straight stream position. This is done for about 10-20 seconds, before the angle of the stream is lowered to where it is striking well out in front of the nozzle team. The initial ceiling application cools the super-heated gases overhead, preventing them from igniting behind the nozzle team. Once this cooling is accomplished, the water must be used for its main purpose, cooling the burning objects that are producing those super-heated gases. That means lowering the stream and making big circles with it, striking all the burning material in the room. Remember, the walls, floor and the room’s contents give off the flames that roll along the ceiling. Cooling the fuel itself stops flame production.

**Sweeping the floor with the stream** occurs before the nozzle team begins its advance. The nozzle team should lower the stream angle during one or two of his/her circular stream motions, causing the stream to “sweep” the path of the intended advance, before continuing to strike the ceilings and contents again. This sweeping of the floor with the stream cools and removes debris the nozzle team is about to crawl over. A few sweeps with the stream helps prevent “nozzleman knees,” the painful burns associated with advancing a hand line over hot debris. It can also move glass and plaster that has fallen from overhead, preventing cuts to hands and knees. The nozzle team should make additional sweeps of the floor periodically as the line advances.

**Extinguish the fire** is, of course, the ultimate goal of the engine company. As the line advances, it may pass small pockets of fire. Be sure that once all the visible fire is darkened down, the line immediately finishes off all the hidden pockets of fire. The fire is now in a vulnerable

state, the remaining smoke and steam are keeping the fires that are hidden in void spaces from gaining momentum an extending. Finish them off immediately after knockdown, give all the openings into the voids a good washdown. Once conditions have improved, i.e. venting the area, you may find that the hidden fires have regained strength and are moving rapidly with a new supply of fresh air. Finish it off!

**Vent with the line** in coordination with the hose line’s advance to improve visibility and lower heat stress on the nozzle team. In a one-story house fire with plenty of manpower available this is easy. Position a man with a tool outside the fire room, opposite the hose line’s path of advance and vent opposite the line just prior to advance.

In multi-story buildings or short manpower situations though, it may be harder. The engine team may have to fend for themselves momentarily. A straight or solid stream has enough impact to break a heated glass window, as well as penetrate a gypsum board partition or ceiling. The nozzle team can use this to his advantage when faced with a lack of ventilation. Simply direct the stream at the glass during one of the initial sweeps of the room. After knockdown is achieved, the line can be used to assist ventilation efforts by directing the fog stream out a window. (The same effect can be achieved with solid tip nozzles by only partially opening the nozzle. This produces a coarse, broken spray.) Be sure to remain several feet back from the window and use a stream that just covers the opening. Beware of any fire behind the nozzle. When fanned by any draft of fresh air, it could intensify and be drawn toward the venting nozzle. Then again, that’s what extinguishing is all about.

**Rare operations** are the responsibility of the engine company members. Be prepared for those relatively rare operations: foam application, standpipe operations and supplying sprinkler systems. Have a plan for extending a preconnect line that is too short or which bursts a length (a folded or rolled length works well). Place the apparatus so that any preconnected master stream device can quickly be used (by driver if need be) to protect exposures from sudden extension. Similarly, alternate means of connecting to a hydrant should be available in case it is not possible to use the large “soft suction.” Remember, enginemen can be LOVERS too!

*Article first appeared in Firehouse Magazine, January 1994.*

*Reprinted with permission.*



**FIREGROUND FITNESS**

# ARE YOU READY TO BRING IT?

*Scott O'Brien — Sacramento, CA, Fire Department*

The sheer fact that you are reading this article tells me you take your job seriously. You seek out information via writings, table top discussions and last but not least training. I would wager that in the last 30 days you have pulled multiple tank lines, hooked a hydrant, laddered buildings in your first-in area, discussed ventilation, pumped the engine and put the aerial up. But, I ask you? When was the last time you hopped on a treadmill, grabbed a radio and jogged around the fire house, did some push ups, sit ups or pull ups? When was the last time you consistently exercised?

I enjoy reading articles written by those that have been on the job for a while. You know the ones that start out, "In my twenty years of fighting fire..." That statement alone makes me want to train. I've been around the fitness field for twenty years and it has taken me many places. Here are a few things I've discovered over my twenty years of working out that will hopefully prepare you to bring it!

## **KEEP IT SIMPLE**

The three major components of fitness are:

- Cardio-vascular - walking, running, biking or hiking
- Resistance - push ups, sit ups, pull ups, lifting weights
- Flexibility - stretching, yoga

Most of us work ten days a month so there is no excuse for not training at least 10 days a month. 30 minutes of cardio, 20 minutes of resistance, and 10 minutes of flexibility training is a great start.

**Example:** Walk on the a treadmill (or outside) for 30 minutes. I like to increase the incline to increase the intensity (and it also helps decrease the impact on my joints). Immediately after walking begin a circuit of push ups, sit ups, pull ups, air squats, or walking lunges. Shoot for 4 rounds of the above, slowly increasing the repetitions of

each as they become less difficult. Finally, finish off with some slow stretches holding each movement for 20-30 seconds.

## **BE CONSISTENT**

Do not let days, weeks, or months go by without exercising. These days we all carry daily planners. Use the planner to track your last workout. Be as detailed as you like, personally I like to write down the major muscle groups trained. My routine is broken down into 4 work outs:

- Chest
- Shoulders
- Legs
- Back

I don't allow more than nine days to pass without performing each routine. So, if I train Monday, Tuesday, Wednesday, and Thursday using the above routine then the routine would start over again no later than the following Wednesday.

## **SET GOALS**

We all have different sources of motivation. Whether it is physical (bench press/mile run/single person 35-foot extension?), physiological (lower your blood pressure/cholesterol), or psychological (vanity/lower body fat %/perception/confidence) the bottom line is that being in shape helps - and pays great dividends on the fireground! You can't argue that fact.

## **PUSH YOURSELF**

Fighting fire is intense and your workouts should be intense. Sport specificity is training like you fight and

*CONTINUED ON PAGE 14*



**FIREGROUND COMMUNICATION**

# ELEVATOR CAR OPERATIONS

*Mike Terpak, Deputy Chief — Jersey City, NJ, Fire Department*

Height concerns and accessibility for a fire in a high-rise building are of significant concern as a fire starts and extends beyond the reach of fire departments ladders and hose streams.

When fire department operations can no longer be considered ground based, one of our first questions are “how do we get up there”?

Utilizing an elevator to gain access to the upper floors of a High-Rise building is viewed by most in the fire-service as a “necessary evil”.

Although there are significant concerns with an elevators use, the majority of fire departments across the country use elevators at high-rise incidents for two specific and valid reasons:

1. To reduce the lead/reflex time it takes to go to work at a fire well above street level.
2. In order for our members to mount an initial and sustained attack many floors above; utilizing a fire service equipped elevator allows members the opportunity to retain their physical and mental energy for their assigned objectives...not climbing stairs.

*If your department is one of these, consider the following as a guide for firefighter use with elevators.*

## **PHASE 1 OPERATIONS/ELEVATOR CAR RECALL**

1. If the car has not automatically returned to the lobby, recall the car with firefighter service keys.

**\*Note:** Elevators should automatically return to their respective lobby or sky lobby once an alarm is activated within the building.

2. Walk or Ride? If the fire is reported within 8 floors of the lobby or sky lobby, walk-up. If the fire is reported to be more than 8 floors above the lobby or sky lobby, ride-up.
3. Members are to use fire service elevators only!
4. If known, use a fire service elevator that is also serviced by a back-up, electrical generator.
5. For safety, identify the type of shaft prior to elevator selection. If the fire is reported on floor 26 and there is a blind shaft elevator that terminates at the sky lobby on floor 20, use that elevator bank.

**\*Blind Shaft** elevators are those elevators that begin on a specific floor and end at another...only two stops, i.e. floor 1 and 20, nothing in-between.

## **PHASE 2 OPERATIONS/CAR OPERATIONS**

1. For accountability, identify the Company designation (i.e. E-22, L-12) and elevator bank to be used at the command post.
2. Limit the number firefighting personnel in the elevator. This is generally no more than 5-6 firefighters.
3. Ensure all members have full PPE/SCBA/PASS and associated equipment.
4. All members are to turn-on/charge SCBA's.

CONTINUED ON PAGE 14

**VISIT MIKE'S WEB SITE AT: WWW.FIREGROUND SIZEUP.COM**



# 2009 CALENDAR

**Classes are held at the Fire Department Training Network's Academy in Indianapolis, IN.**

.....  
**AUGUST 2009**

**RAPID INTERVENTION TEAMS**  
August 10-12, 2009

**COMMANDING RIT OPERATIONS**  
August 12, 2009

**RAPID INTERVENTION TEAMS**  
*TRAIN-THE-TRAINER*  
August 10-14, 2009

**ENGINE COMPANY OPERATIONS I**  
August 24-26, 2009

**TRUCK COMPANY OPERATIONS I**  
August 24-26, 2009

.....  
**SEPTEMBER 2009**

**\*\*NEW\*\* ENGINE COMPANY OPERATIONS II**  
**\*\*NEW\*\***  
September 21-23, 2009

**\*\*NEW\*\* TRUCK COMPANY OPERATIONS II**  
**\*\*NEW\*\***  
September 21-23, 2009

.....  
**OCTOBER 2009**

**ADVANCED RESCUE SHORING**  
October 2-4, 2009

**RAPID INTERVENTION TEAMS**  
October 12-14, 2009

**COMMANDING RIT OPERATIONS**  
October 14, 2009

**RAPID INTERVENTION TEAMS**  
*TRAIN-THE-TRAINER*  
October 12-16, 2009

**ADVANCED TRENCH RESCUE**  
October 23-25, 2009

.....  
**NOVEMBER 2009**

**ENGINE COMPANY OPERATIONS I**  
November 2-4, 2009

**TRUCK COMPANY OPERATIONS I**  
November 2-4, 2009

**For more information, or to register, contact the Network  
or visit us at: [www.fdtraining.com](http://www.fdtraining.com)**

# Training Saves Lives ~ Firefighters!



FITNESS...CONTINUED FROM PAGE 11

fighting like you train. Working out is not rocket science, (I'd be out for sure) but it is not easy either. How many rocket scientists are in shape? It doesn't matter what method you use to train (running, walking, biking, hiking, lifting weights, throwing ladders, etc.) but pushing yourself a little harder each time is going to benefit YOU.

### CHANGE IT UP

We've all been victims of the recliner, becoming stagnant and not pushing ourselves. An easy way to overcome this type of complacency is to change up your routine ever couple months. You can use the same workouts, just do them differently or in different phases.

**Conditioning Phase:** Instead of resting for a minute between sets try jumping rope for a minute.

**Super-Set Phase:** Take a certain body part and perform multiple exercises for that body part. Rest a minute and then do it again.

**Strength Phase:** Increase your weight, decrease your reps, increase your rest.

Knowing you switch phases every two months (or whatever your time-frame is) then the end is near and you're ready to push through until it's time to switch it up. It works!

### FOOD FOR THOUGHT...

You're on scene of a two-story, single-family, residence with heavy fire coming from the C/D corner. Are you ready to bring it?

Source: [www.norcalfools.com](http://www.norcalfools.com)

TRAINING SAVES LIVES  
FIREFIGHTERS

ELEVATORS...CONTINUED FROM PAGE 12

5. Assign a radio-equipped firefighter to operate the elevator car.
6. If the elevator has a phone equipped communication system, test its use.
7. Attempt to examine the shaft way opening (if possible) between the car and shaft for any water, smoke or fire. (Use flashlight, TIC, listen/look for water in the shaft) If any of these exist, utilize another elevator shaft.
8. Upon entering the car, press the call cancel button to eliminate any previously made selections.
9. Place the car in fire/emergency service. Select the desired floor.
10. Proceed to two floors below the lowest reported fire floor. (**Note:** Some buildings may NOT identify a 13th floor)
11. During the ascent make a series of stops every 5-10 floors (depending upon the floor destination) to ensure the car is responding to commands from within the car.
12. Also during the ascent check the "Emergency Stop Button" to ensure control of the car. (Note: Forcing the car doors open may also stop runaway elevators.)
13. To open the elevator car door, press and hold the "Door Open" button.
14. Verify the floor and stair access location, then return the car to the lobby with a designated, radio-equipped firefighter.

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**1 INDIVIDUAL**

**\$48<sup>00</sup>/YR**

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Members receive the monthly publication *FIRESCUE Interactive: The 21st Century Training Guide*, discounts on FIRESCUE products, access to other Network members with similar interests, and the opportunity to share, interact, and grow with others in the profession.

Along with *FIRESCUE Interactive*, Department members also receive a monthly training package dedicated to an individual training topic which includes a training plan, activity worksheets, student handout master, student test, class roster and resource listing.



**BECOME A MEMBER TODAY!**

**APPLICATION ON BACK...**



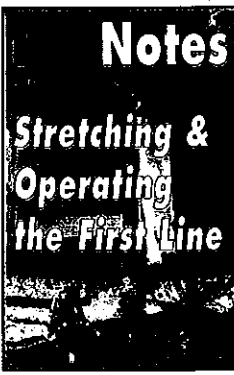
**Thermal Imaging for the Fire Service**  
**CHAPTERS INCLUDE:**

- The History of Thermal Imaging in the Fire Service
- Thermal Imaging Technologies
- How Thermal Imaging Works
- Safety Considerations and Thermal Imaging
- Thermal Imaging and Size-Up
- Thermal Imaging and Fire Attack
- Thermal Imaging and Overhaul
- Thermal Imaging and Ventilation
- Thermal Imaging and Search and Rescue
- Thermal Imaging and Hazardous Materials
- Non-Fire Uses of Thermal Imaging



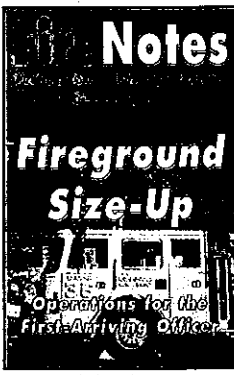
**Firefighter Survival**  
**CHAPTERS INCLUDE:**

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- Preparing for Fireground Survival
- Managing YOUR Mayday
- SCBA Emergencies
- Disorientation Emergencies
- Emergency Escape Techniques
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**Stretching & Operating the First Line**  
**CHAPTERS INCLUDE:**

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- Determining Line Size & Position
- Estimating the Stretch
- Stretching the First Line
- Engine Company Members & Their Responsibilities
- Engine Company Members Gear & Tools
- Operating the First Line During Emergencies
- Training for the Engine Company



**Fireground Size-Up**  
**CHAPTERS INCLUDE:**

- Size-Up: Who, What, When, Where, Why?
- Two Basic Approaches to Fireground Size-Up
- The Five-Point Size-Up
- The Thirteen-Point Size-Up
- The Fireground Size-Up: Putting It All Together
- Fireground Size-Up Training Sessions



**Firefighter Rescue & Rapid Intervention Teams**  
**CHAPTERS INCLUDE:**

- Firefighter Rescue: The Ultimate Fireground Challenge
- Searching for a Firefighter
- Assessing, Stabilizing and Packaging a Firefighter
- Firefighter Rescue and Removal Techniques
- Why Do We Need Rapid Intervention Teams?
- The Rapid Intervention Team
- Rapid Intervention Team Tools and Staging
- Preparing the Fireground: Proactive RIT Tasks
- Responding to a MAYDAY: The RIT Deployment
- Commanding Rapid Intervention Operations
- Firefighter Rescue and RIT Training Sessions



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# RIT Train-the-Trainer

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### August 10-14, 2009

### October 12-16, 2009

### Indianapolis, Indiana

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