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Ronny J. Coleman

Looking Up To Live

A few years ago there was a slogan used in the residential sprinkler field that went like this: look up and live! The inference in that slogan was the idea that if you looked up and you saw a sprinkler head above you, you had a reasonable degree of confidence that any fire that occurred in that area was going to be suppressed relatively quickly thereby virtually saving lives and property. The other inference was that if you didn't see the sprinkler you ought to start being concerned, especially if you were in a hotel or high rise.

Well maybe it is time for us to take another look at that phrase. What I am in reference to, is the idea of looking up to make sure that you are paying attention to building construction as it relates to the potential for structural collapse. For many years I taught basic tactics and strategy, I used to speak about a phenomenon that occurs that fire officers call the "moth-candle" syndrome. The idea behind that concept is that when a person begins to focus on the flickering of flame they may become fixated on the flame and begin to circle not unlike a moth flying around a candle. In a sense that particular phenomena is a function of concentration that does have a potential liability in a set of circumstances when there is more than one flame.

What I am in reference to is the idea that when a fire is involved in a structure it almost invariably starts out in a relatively low location and migrates through the building by either capturing different fuel components until eventually it reaches the highest point of that building. Readers of this magazine are probably already familiar with the concept of flash over and fire extension so there is no sense in going into elaborate explanation of that.

However there is a growing amount of concern amongst incident commanders that fighting fires in the single family dwelling requires that we pay a little more attention to that fire migration in the initial parts of our size up.

An interesting phenomenon that most firefighters seemingly overlook is the idea that the most dangerous fires that we fight are going to be in the single family dwellings as opposed to major commercial and industrial occupancies. Granted, big fires are spectacular and in many cases immediately turn into defensive operations without too much consideration. However, the growing fire has two phenomenons associated with it that creates a potential threat to each and every one of us. The first of these is the idea that the single family dwelling is where people are being exposed to the loss of their lives if that fire occurs in a dwelling that is unsprinklered.

That means that when you arrive at the scene of most dwelling fires, a predominate concern is the status of the individuals on the inside of that home. It has been responsible for many firefighters taking



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extremely high risks by entering these buildings looking for small children, elderly people, trapped mothers, fathers, brothers and sisters. One cannot even assume that just because people tell you that everybody has exited the building that we can assume that everybody has. More than one firefighter has been lost operating under the assumption that they are trying to find someone who remains in the building.

The second part of this phenomenon is that the single family dwelling has the lowest level of fire resistance requirements of all other occupancy types. Essentially the philosophy that a man's home is his castle (or a women's home is her castle) the types of materials built in homes have undergone a major transition in the last 100 years.

Among the first of these is the simple idea that the content fire in a single family dwelling is much more lethal than it was thirty five or forty years ago. Not the least of the reasons for this is the increase use of material that contains products that contribute massive amounts of BTU's to the fire. The same material have a tendency to generate extremely dense smoke patterns that often obscure the ability of a firefighter to find their way into the building without breathing apparatus.

No one who is familiar with the concept of IDLH will be surprised by the idea that if you are on the inside of a single family dwelling and you are without protective breathing apparatus you are in danger.

What is not mentioned as often is the fact that the migration of fires vertically into hidden spaces is very much a problem when it comes to endangering firefighters. That is where the look up and live idea comes alive.

There is a tendency upon arrival to a single family dwelling to pay a lot of attention on points of access. This is natural because you need to be looking at whether you are going to force entry or obtain entry into a building and drag your hose lines into conduct your extinguishment operations. What is not mentioned as often is the idea that smoke levels in the building are not merely as critical as potential safety problems for firefighters as smoke levels in framed off spaces such as attics.

The assumption here is that you are going to focus on getting an attack line in as quickly as possible and to cut the fire off before it terminates the occupants. Company Officers and Incident Commanders however need to pay real close attention to what they think is going on right above their heads as quickly as they possibly can. This starts from the outside of the building by performing a size up of fire conditions that might be in attics. Quickly scanning to see the level of smoke production, the color of smoke production and the possible presence of heat coming from those framed off spaces are absolutely critical. Initial attack crews prior to donning breathing apparatus and making entry should look up into the attic area and make a quick determination of how much heat is being produced.



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Rapidly existing fire gases may not always display flame but the velocity between smoke being propelled out of vent holes is often a strong indication of how much is being pumped into the attic area.

If fire is coming out of the vent then it is time for the incident commander to get the initial attack officer and subsequently the incident commander to give pause as to what the next couple of steps are going to consist of in attacking that fire.

In the first place when crews go into the inside of a building in a single family dwelling one of the first things that should be given consideration if there is any smoke is to find an area where an inspection hole can be poked into the attic to determine if the fire is overhead. There is an obvious reason to put water on the fire but there also needs to be a compelling need to find out what the fire is doing overhead as quickly as possible.

Obviously in open beam ceilings that is not a problem, but anytime there is a drop ceiling in a single family dwelling there is always a possibility of a problem lurking right behind that barrier. Truck companies should be encouraged to get to the interior as quickly as possible and to determine whether fire spread has occurred in the attic area.

On the outside of the building incident commanders should carefully weigh the value and benefit of placing truck crews on roof tops. If there is actual flame being discharged from roof vents the decision to place personnel on that roof has to be carefully weighed if not considered for elimination.

If a decision is made to place a ventilation crew on that roof it should be a minimum number of people rather than massive amounts of personnel. In addition to that the crew that goes to that location should make sure that they have adequate tools including pipe poles and perhaps roof ladders to guard against a rapid roof collapse pushing a ventilation crew into the caldron of flame that might be lurking right underneath the roof. In another article a few months ago I proposed that the period of time it takes to put operations into affect and the period of time you ought to be concerned about safety on the inside of the building are two metrics that need to be measured with some figures in your mind that should not be exceeded. That article talked about a concept called the "diamond time".

Individuals who are in the interior of a building fighting a fire often are not very good judges of how much time has been involved. The adrenaline rush and the desire to accomplish the job may result in individuals staying on the inside of buildings far longer than they should do so safely. However the incident commander on the exterior of the building should be paying very close attention to these time intervals and concentrating a plan of operation if a fire is not quickly located and extinguished.

In the heat of battle it is often difficult to see all things and to maintain a conscious awareness of all factors that are going on. The admonition to look up and live is exceeded by only one other and that is



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look out and live. To keep fresh in the mind of every firefighter on the fireground ought to be based upon their desire to know where the fire is and where it is going in conjunction with building construction. In this battle of wits the will is there to tend to do better than those who are just hoping for a good outcome.