



# ***CHIEF'S FILE CABINET***

***Ronny J. Coleman***

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## The Need to Know Basis

What do you need to know? In almost every movie made about espionage, or the portrayal of homeland security issues on TV crime shows there's a statement that is often uttered as a put down; you're on a need to know basis and there are some things you don't wanna know! Surely this is insulting at one level and at the same time a perfect excuse for not dealing with a problem very effectively.

If you were told that you were on a need to know basis to fight fires, I'll bet you wouldn't take kindly to that restraint. When it comes to our business we need to know everything. Failure to comprehend what is really happening on a fire scene can sometimes have fatal consequences. And, fatality is not a good answer to the question of; what is it I didn't know, that I should have?

This phenomenon is currently causing a certain amount of confusion in the fire service. I am in reference to the current debate about whether light weight wood construction is responsible for excessive firefighter deaths and injury. The key words in that sentence, is *responsible*. Is any approved building material responsible for a firefighter's death from structural collapse? Does that mean concrete tilt-ups that fall over, or brick fascia's that come off are responsible for the death and injury that results from firefighters being where they shouldn't be when a structure collapses.

Call me old school, but I learned about structural collapse by reading about events ranging from as long ago as the late 1800's (James Braidwood, the Chief of London was killed in a collapse on Toohey Street). I have continued my study through examination of such events as the Chicago Collapse of Dec 23, 1910, continuing with the collapse of a structure in Mission Viejo in the early 1970's. Today, I review every structural collapse involving an LODD that goes on the web.

What I have learned is three simple things. Buildings, once they are built, will remain upright until they are torn down, burn down or fall down. If you think about it, every building we enter to fight a fire, or go on top of to perform ventilation, is at one stage or another of those potential outcomes for a structure. The building is either going to burn down, fall down, or will be torn down because it is so heavily damaged as a result of fire. And, that is when firefighters get hurt and/or killed.

The real reason firefighters get killed in structures is that they are operating with a set of assumptions about structural integrity that may or may not be true-even from one month to the next. The key word in that sentence is *assumption*.

There is a contention today that building construction is getting more complex and creating more hazards and risks for firefighters. That happens to be extremely true.



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How much do you know and, by the way, there is a need for you to know, – about modern building construction? Or, are you operating on legacy knowledge that is no longer relevant. You need to know everything that you can about how buildings are put together. That is a basic skill set for a firefighter.

Let me enumerate some of the issues that are altering the way buildings are being built. They are as follows:

- Lightweight wood construction
- Solar energy
- Green buildings
- Energy saving buildings
- Re-development that is increasing densities
- Land use policies that are mixing residential and commercial occupancies
- Change in the density and flammability of building contents

For purposes of this article the primary emphasis is on lightweight wood construction. The U.S. Fire Administration recognized a long time ago that there needed to be more accurate and relevant information regarding lightweight construction components and the performance of those materials so that firefighters could achieve a safer operational environment. A partnership was created with the United States Fire Administration and the American Forest and Paper Association which was designed to reach out to the fire service to share with them more information than had been provided in the past.

The project involved visiting ten state academies around the nation. During each of these visits, the project team met with training officers, academy administrators and operational members of the fire service to collect input on how much “they need to know”. As a result of that progress, training and education materials have been developed and are made available for distribution. There are also websites where fire officers can go to obtain up to date information.

In partnership with the Illinois Fire Service Institute, an awareness level CD has been produced. This CD can be downloaded from the IFSI website located at Fire Service Institute, University of Illinois <http://www.fsi.uiuc.edu/>

If you are a station officer and you have any lightweight wood construction in your first in district, you need to review it.

Take a look at the following information. You will find that it is good information, and does a fair job of giving the information to help us all evaluate the true risks. You should also take a look at all of the following sites:



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USFA- Building Performance Awareness of Lightweight Construction during Fires  
<https://www.usfa.dhs.gov/fireservice/research/safety/construction.shtm>

American Forest and Paper Association  
<http://www.woodaware.info/index.html>

NIOSH-*Preventing Injuries and Deaths of Fire Fighters due to Truss System Failures*  
<http://www.cdc.gov/niosh/docs/2005-132/#4>

In summary, structural collapse is a danger every time we go inside a building when the fire is above us or below us. Not only are these a danger to fire personnel, but they are even more dangerous if the fire personnel are unaware of the risks and unaware of the consequences.

The main point in this article is that there are no clear statistics available about assigning responsibility to specific building materials for being the cause of firefighter deaths. In our profession each death that results from a traumatic event on the fire ground is almost always a combination of factors. All one has to do is to read investigative reports of multi-firefighter deaths in structural collapses to realize that a wide variety of variables are part of the phenomenon. These variables range from poor incident control through lack of pre-fire planning up to and including aggressive operations that disregarded signs and symptoms of the possibility of a collapse.

In the NIOSH report, that was referred to in this article, should be read by every fire officer in the United States. Every fire company in the United States should have a copy of the wood awareness guides. Every fire department should be engaged extensively in pre-fire planning because they truly have a "need to know".