



# THIS WEEK IN TRAINING

## SIZING UP THE WOOD FRAME PRIVATE DWELLING

It is incredibly important to do a size up on a fire building not just by the Incident Commander but for each and every firefighter on scene. A good scene size up doesn't just include where the fire is. There are a multitude of questions that should run through your head, whether it be a structure fire or an automatic alarm, not just when you get off the rig, it should start as soon as the tones drop

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### What is a size up?

Size up is an overall picture of what's happening on a fire scene when you arrive. But it doesn't end there. A good size up can make or break a fire. If you're first on scene, your report is crucial to what can happen next and can set the tone for the entire fire. A clear calm report of the conditions puts everyone else in a clear and calm mood. If you're screaming into the radio like your *own* hair is on fire, that screaming will be contagious and will infect the entire compliment firefighter's coming into the scene in a negative way. Attitude is contagious on the fire ground both good and bad.

### When Does Size Up Start, What Are You Looking For, And When Does It End?

Size up starts as previously stated when the pager goes off. For residential you should be thinking about the neighborhood, the types of homes in the neighborhood ie. Hi-ranch, colonial and so on. Further to that point you should be thinking about where the bedrooms are where doors and windows are etc. in the types of homes that are in that area. If your doing things like this on the way, it will be 2<sup>nd</sup> nature for you to look for this stuff on arrival.

Once on scene if you're in the engine then hopefully your pulling past the house and your catching a view of 3 sides, in the truck you may only get 2.

### What are you looking for?

Time of Day – The time of day changes victim locations. This will maybe change our targeted search

## NEVER STOP TRAINING

“Be safe and keep training. Remember, if you put drilling ahead of socializing, better fireman you will be. You focus on the social aspect of the Dept and put bettering yourself to the wayside, you will roll the dice with your life on the fire floor.”

~ Lt Chris Raguso

**“Let No Mans Ghost Say His Training Let Him Down”**

Weather – The weather can help/hinder in multiple ways. Snow on a roof can be treacherous. Melted snow on a roof can indicate fire location.

FIRE - Where is the fire, where was the fire and where is the fire going? How involved is it? Is it vented? Is it vent limited? What side is it on? What floor is it on?

Smoke - what's the color, density, and velocity? Black smoke indicates its chugging, gray, could be vent limited, lots of stuff off gassing and it can't ignite because its fuel rich, brown usually means wood and probably means you have structural members burning. Where is it the heaviest? That's where the seat of the fire likely is. Is it pushing out or wafting out or both? If the whole house is just showing laminar wafting smoke it is probably buttoned up tight and is vent limited or its still in its incipient stage. If smoke is moving at velocity you have really good fire somewhere that is either in fully developed flashover stage or just prior to it

Style of home – Colonial, ranch, split, tri-level, cape, McMansion etc. the possibilities and differences in these styles of home are endless and really there's too many to list. One thing for sure we know about the McMansion and that is its floor rafters are going to be lightweight, engineered lumber TJI's or lightweight wood truss and, its roof could be frame lumber, but could also be lightweight wood truss. If in any these homes there is an extension added on, it will more than likely be lightweight engineered TJI's and may or may not have a crawl space or basement below it as well. If you're not sure, think of it as an engineered system until confirmed otherwise.

Hydrants – Where are they? EVERYONE should know where the hydrant that is being utilized is located. Why should a member of the truck care? If the hydrant is 1000' away, is it going to take longer for that engine to secure a water supply than if it was able to steamer it because its next door? With a long hydrant lay, you could potentially run the risk of an engine company running out of water prior to securing a positive water supply leaving you roasting on the floor above. This too is important to the nozzle man as he may need to be even more disciplined than usual and conserve water until its secured.

Roof – What's its condition? Is it sagging? Any skylights? Skylights are very quick way to get a lot of ventilation, maybe too quick. Be careful. How steep? Maybe I need a roof ladder if its steep. Any plumbing vents? What do they tell us? Locations of bathrooms and kitchens. Usually one vent pipe will handle a kitchen and bath so that tells us in a one story the kitchen and bath back up to each other, in a two story, depending on the style of home they could be back to back, but they could be stacked on top of each other as well.

Windows – Are any open? Is someone hanging out of one? An open window when its 20 degrees out in January tells me at some point someone, may have been hanging out of that window. An open window when its 90 degrees out in July and no other windows are open, tells me the same thing. Is there smoke staining on any? Are any broken? Which ones lead to bedrooms which one leads to bathrooms which ones lead to living areas? Size, shape location

are all good indicators. *Usually* a big picture window is not going to be a bedroom and a single double hung or casement window is not going to be living space. What difference does that make? Well you really want to avoid trying to VES a bathroom window because of its size and height off the floor and there's likely not a need to VES a large picture window for multiple reasons, one being once you break a window that big, you now have a very large ventilation opening that you can't isolate, amongst other reasons. Basement windows should always be checked before entry!

Doors - What's the best place of entry given the conditions? What's my possible secondary means of egress? What is the consequence of me opening this door as opposed to a different door and vice versa? Is there an exterior basement entrance/door?

Chimneys – One or two? Double or single? If there's only one and it's a single its for the heating appliances, no brainer. If there's one and it's a double it could be there's a fireplace piped next to it or they could have a separate flu for hot water and a separate flu the furnace/boiler housed in the same chimney but two separate flu pipes (both rare but does happen). Two chimneys on different sides of the house or same side but apart from each other are going to be a fireplace and heating flu. If ones on the exp 2 side and the other is on the exp 4 side, how can we tell which side the heating equipment chimney is on? Which ones older, skinnier, less decorative and possibly lower? That's the heating chimney. What about smoke from a chimney? If heavy smoke is pushing from a chimney on the exp 4 side of the house and the house has no garage on that side, where likely is the fire? The basement, because that's usually where the heating equipment is if not in the garage. So too can be said if there's two chimneys and the heating chimney has no smoke, but the fireplace chimney is chugging, where's the fire? Probably not in the basement, its probably on the floor that has the fireplace.

Garage Doors – How many? Why do I care? Fire load, you could theoretically have two vehicles ripping in there. Which side? Again why do we care? Well if you know you have a basement job and the garage is on the right, is the basement door going to be on your right as well? No, there are no basements under garages. How Can we tell if there's a fire in the garage without seeing flames? If there is heat staining around the top and top corners of the doors, do you likely have fire in the garage? Garages have fire rated doors into the dwelling part of the house, so either the two-hour door is compromised in which case there's going to be heavy fire showing somewhere else, or the fire is in the garage.

Cars in the driveway – If one or more are present and no one is around to say whether or not that person or persons are not home, you have a potential victim inside. What if you have a car in the driveway that's completely full of crap? You're likely going to encounter a house that's completely full of crap – hoarding conditions

Kids playthings in the yard – The barbie jeep on the front lawn, the baseball bat and glove on the front porch, the swing set in the backyard are all indicators that children live in the home (obviously). That doesn't necessarily mean that they are home at the time of the fire but

without confirmation that they're **not** in there, and even if you get confirmation, **we still have to search** and be cognizant of that fact.

## Conclusion

These are the things that I myself are looking for/at when I arrive at a private dwelling fire whether I'm the first person there or the last. I would bet you anything that if you asked 10 experienced guys about size up parameters, they'd give you these and they'd give you a bunch more.

So if you're here 5-10 years and you've only been to a handful of fires you might right now be asking yourself, how the hell am I going to remember all of this along with *everything else* I have to do?

I recently read a book (yes I read books) called Sources of Power, How People Make Decisions by Gary Klein. It's a required read at the National Fire Academy in Emmitsburg MD for the Fire Officers Development Course and was recommended by Battalion Chief Aaron Rhodes who is an instructor at FDTN in Indy. It's about how we make stressful decisions under life and death conditions with such tremendous time pressures. Last months Fire Engineering ran a three-page article about it summing the whole thing up. The basics of it is we make these critical split-second decisions by using what's called the Recognition Primed Decision making process or RPD. In a nutshell RPD is a way in which your brain makes decisions based on past experiences. Your brain is weighing experiences in your memory and its telling you what to do, but you're not even realizing it, that's how fast its happening. They studied both military and fire service leaders and when a great majority of them were asked why they made the decisions they made they said my gut was telling me this was wrong or this was not a good idea or even hey, its time to go just prior to something bad happening. Intuition, maybe? Or is it RPD that's recalling something your eyes saw, your brain logged, but you didn't consciously remember it?

So what does this mean for the person with not so much experience? It means you must train as much as humanly possible under as realistic conditions as possible so that you can start to build a bank of data in your brain that it can draw from when you need it.

How can we train on size up? Every single time you arrive at a structure, and it doesn't matter what type of call it is, as you step off the rig, size up the building. You can use every size up parameter including smoke and fire, even if you have no smoke and no fire showing. If you do this all the time, guess what's going to happen...when you get off the rig at a structure fire your RPD will kick in and your brain is going to go through all the size up parameters on its own and in a split second your going to realize what you have and what you're looking at. Call it muscle

memory, intuition I really don't care what you call it, but if you do it you'll be way ahead of the game.

Everything in here as with everything on the fireground is a "usually" situation. You never know what someone does to the inside of a house to change layouts rooms etc and if you do a good size up, maybe you'll see something that your brain says doesn't make sense and you'll adjust tactics accordingly. One thing is for sure, if you don't do a solid size up you will definitely miss it if something *is* out of the ordinary. There is a lot to size up, or so it would seem but the more you do it the better you'll become at it. The more you train your brain what to look for, the less you'll have to ask your brain to look for it. Training on size up takes zero extra time out of your day. You're already on the rig, it costs nothing to take 20 seconds to look at what you have, but it will pay off in spades when you step off the rig at a job. Remember too that there are no always and no nevers on a fireground. Each fire is different, but a lot of aspects can be the same, give your brain as much information as you can as often as you can and you'll be ahead of the curve when it comes time to go to work.

Below are some pictures of private dwellings. Take a minute to look at them and using the parameters above see if you can size them up.







**Keep training and stay safe!**