

## **WHAT THE CHIEF WANTS TO KNOW**

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**Communicating with firefighters inside the building can, in effect, peel away the outer skin of the building, allowing the chief to envision what is taking place inside.**

By Frank C. Montagna

Firefighting is an inexact science-actually, it is really more of an art than a science. British thermal units, flow rates, building construction, flame spread ratings, as well as many other elements of firefighting have their base in science. Strategy, tactics, and communications fall into the science and art categories. Then there are the unknowns that are present at every fire: weather, arson, prior structural damage, inadequate water supply, failed equipment, building content, occupants, actions of firefighters and civilians, building renovations, and the list goes on. The presence of so many variables at fires moves firefighting into the art category. Reading all of the firefighting books and taking all of the training courses available, while beneficial, will not necessarily prepare you to be a firefighter, much less a chief officer. As in most fields of endeavor, competence comes and grows with experience.

You must carefully watch and guide a new firefighter, even a well-read one, on the fire scene so that he does not injure himself or one of his fellow firefighters. This holds true, too, for a new company officer as he learns his new job. A new chief officer, even one who has had the benefit of years of experience as a firefighter and company officer, still must learn his new job.

This new chief, standing alone in front of the fire building, is charged with making life and death decisions. The lives of his firefighters and of the occupants trapped in the burning building are in his hands. How does he make these decisions?

If this were science, he would just take the data, analyze it, and make his decisions. Unfortunately, much of the needed information is just not available to him. Is there anyone left to save in the building? Have the occupants escaped, or are they in need of assistance? The chief usually will not know for sure if the risk that his firefighters are taking will result in a life saved. Is it safe to go above the fire and search for victims? Is the building going to fall down and, if so, when? Is there going to be a flashover? Is a window going to fail, resulting in a wind-induced blowtorch effect that drives the fire at the advancing attack team? How much time does he have before he must pull his troops out of the building? Does he have enough extra help on the scene to deal with any unforeseen event that might occur?

At the fire scene, the chief must make life and death decisions based on incomplete information. This is where the art of firefighting comes into play. On the fire scene, the chief often must make these decisions with no more than a few moments of

deliberation. He takes what he has learned through study, prior knowledge of the building, discussion, and experience and compares it with what he observes at this fire and the information that he is able to gather. The chief then makes his decisions. Factored into these decisions are his training, his department's standard operating procedures (SOPs), and his analysis of what is occurring at this fire. His decisions will be only as good as the information he collects.

## **GATHERING INFORMATION**

As you can see, a crucial component of the chief's job is gathering information. The better the information he collects, the more accurate his decision making will be. This can be related to the old computer maxim that states "garbage in, garbage out." If the chief collects information that is garbage, he will make garbage decisions. The better his information is, the more science-based his choices will be.

First, the chief needs to know what set of problems he is facing at a particular fire. Ask the following questions:

**What do I have?** The problems you face on arrival include building construction and occupancy, fire location and extent, smoke conditions, and life hazard.

**Where is it going?** In what direction is the fire traveling? How will it extend? Where is the smoke going? In other words, what is happening inside and outside the building as a result of the fire?

**Where are the people?** How do we get to them? How do we protect them? How do we get them out?

**Where are the firefighters?** The chief needs to know who is on the scene and where they are when he arrives and also needs to keep track of everyone who arrives on the scene after him.

**What has been done?** Before your arrival, firefighters or civilians often have taken actions that will affect the outcome of the fire for better or for worse. Members have stretched lines, broken windows, raised ladders, forced doors, and maybe removed victims. Consider all of these things in determining tactics.

**What is the progress?** Have crews stretched the line to the correct position? Is it the right size line? Is it putting water on the fire? Is it having any effect on the fire? Where are the ladders placed? Are there enough? Has entry been made? How are the searches progressing? Is venting completed? Was it done correctly? The chief must decide if what is being done is controlling the situation or if something more or different needs to be done.

**What do I need?** Do I have enough firefighters on the scene? Do I have enough firefighters en route? Do I have enough apparatus, the appropriate apparatus, and

enough tools? Do I need help from the police, sanitation, gas, electric or water utility, or any other agencies?

**What must I do?** Our goals are to save life and then property. What actions, given the existing conditions, must we take to fulfill our purpose while, at the same time, safeguarding firefighters?

Some of these questions can be answered from size-up. Prior knowledge, especially a preplan of the building, reduces the information-gathering burden. If you know a particular building is balloon-frame construction and you have a cellar fire, you have a pretty good idea that the fire might be traveling up the outside walls. If you don't have this information, you will have to wait until a firefighter discovers it and relays it to you or until you notice smoke pushing out from the siding on the upper floor or the eaves at what is supposed to be a cellar fire. Having prior knowledge of the building gives you information that you need to preemptively position a line to cut off the spread of fire up the balloon-frame wall. If you do not have prior knowledge and do not actively seek this information, you may get the information too late to head off the fire extension. If you suspect that the building is balloon-frame construction, assign a firefighter to find out for you. If you have the staffing available, you can position a precautionary line just in case.

## **THE IMPORTANCE OF COMMUNICATION**

You, as chief, can only obtain so much information from observation. You are outside and can't see or feel what is going on inside even though it is critical to your decision making. Absent information, you are making decisions in the dark. At best, you are guessing. To get this crucial information, you must use one of your most important tools, communication. Communicating with firefighters inside the building can, in effect, peel away the outer skin of the building, allowing you to envision what is taking place inside. This insight allows for more effective decision making.

A chief needs to be an astute listener as well as a skilled interrogator. You must listen to what is said as well as to what remains unsaid. You must not only listen to the preliminary search report but wonder why the secondary search results are not forthcoming. If the engine officer is telling you that he has the fire knocked down but you see fire showing at a window, you need to find out what the officer is missing and why.

You must actively seek required information. Be concise and businesslike while conforming to your established radio protocol. One of the most effective chief officers I have known was a senior deputy chief who was thought by most to be cranky, if not nasty. At a fire he stood in front of the building with his head tilted to one side to better hear the rapid-fire radio transmissions from the remote mike sitting on his shoulder. This chief would routinely cut short fire officers when their message was sloppy, too wordy, unclear, or lacking requested information. If he ordered a task done and it was not being accomplished to his satisfaction, he might chide the officer in the following manner: "Lieutenant, can you do it? Yes or no? If you can't, I'll get another company that can." He was not interested in excuses. This deputy chief never won any popularity contests,

but we all felt good when we knew he was in charge of the fire. His vast experience, critical thinking, and no-nonsense method of information gathering allowed him to process and analyze the blur of fireground information as if he were a computer. His brusque manner was not a trait to aspire to, but his ability to cut through the jumble of fireground noise and distractions to retrieve necessary information, process it, and make good command decisions was enviable.

One of the more difficult fireground tools to master is patience. All fireground tasks take time, and for the chief standing in the street this time seems to pass slowly. He still has to wait for the result of the primary search, no matter how many times he asks for it. Repeatedly asking questions will not get firefighters up to the 10th floor in a high-rise apartment building any faster than the elevator can travel. Constantly asking if the fire has been knocked down will not make it so. The chief must wait until the task is completed and the officer contacts him with the information. That is not to say that the chief should not contact the officer and request a progress report or an update on conditions, but he must not pester the officer, or the officer will tune him out and communications will break down. Training can improve the fireground information flow. A chief who has trained his officers to regularly give him progress reports will not have to constantly ask for them.

It is no easy task to stand in the street and not ask a question, but sometimes, that is just what you must do. You should know from your experience as a firefighter how long things take. Allow a reasonable amount of time to pass before you request results. Forcing a difficult door takes time, as does opening up a ceiling in a hot, steam-filled fire apartment. Repeatedly asking for a progress report will only delay the operation. Instead, when possible, listen for the sound of the door being forced. If you hear it, crews are still working. Leave them alone until the pounding stops. Is the roof open? Listen for the sound of the saw. If you don't hear it, find out why.

## **FIRE SCENARIO**

Let's say there is an alarm for fire in the cellar of a two-story private dwelling. The first-in engine has stretched a 1 3/4-inch line into the front door. The first truck's outside team is raising a ground ladder to a second-floor window. You, the chief, arrive on the scene. Stop and think what you want to know. What can you learn from your size-up? What do you know about this type of building? What questions will you ask the officers?

**What do I have?** You have a reported cellar fire in a private dwelling. That does not mean that it is actually in the cellar, only that the caller said it was. You must verify the fire location.

You should have an idea as to whether the building is balloon frame from your knowledge of construction and of the buildings in your district. You must determine early if it is balloon construction.

**What color is the smoke?** Is it white, indicating that members may be putting water on the fire? Or is it thick and dark, indicating a confined free-burning fire that is not yet being hit by the hose stream? Is smoke coming out cellar windows? If so, it is a good indication that the fire is actually in the cellar. Is smoke coming out upper-floor windows or eaves? If so, this means that smoke and heat are penetrating these areas and members must check them for fire extension and victims. Is smoke pushing out of the siding or eaves? This might indicate balloon-frame construction and spreading fire.

Do you see fire? What color is it? Where is it? How much is there? What you see from the outside may not be what is being experienced inside. Conditions inside may be better or worse than they appear from the exterior. Find out what the conditions are. Get this information from the firefighters, your eyes and ears inside the building.

**Where is it going?** Has the fire extended above the cellar? You obtain this information from your observations, your knowledge of building construction, and your firefighters inside the building. Question them directly. Ask, "Is there any extension?" Or tell them, "Check the walls and pipe recess for extension." If they don't get back to you in a reasonable time, contact them again.

Autoexposure to the upper floors is possible if fire blows out a cellar window. Someone has to check all four sides and report back to you. If there is no one available to do this, you must take a quick look down the sides and at the rear. A victim at a rear window, if not spotted quickly, may be forced to jump or may collapse onto the floor and not be found until it is too late. Remember, what you do not know about the building can kill someone. Get this information, or you may get a nasty surprise later.

**Where are the people?** Are the occupants out of the building? If they are, ask them if everyone is accounted for. If they say that everyone is out, let your firefighters know that everyone is "reported" out. Neighbors can also supply information on the fire building's occupants. They may be able to tell you that the occupants are out for the night or at work. This, however, does not necessarily mean that everyone is actually out. Occupants fleeing a burning building are unreliable sources of information at best, and neighbors, though good intentioned, are not always right. Still, relay the information to the inside teams. They will use this information when deciding how much risk to take.

What is the status of the searches? Whether or not everyone is reported out, crews must conduct primary and secondary searches, conditions permitting. After an appropriate time, ask if the primary search is complete. If it has not started, asking will get it going; if it is in progress, asking reminds firefighters to inform you of the results when it is complete. Do not, however, keep pestering the truck for the result of the primary search. Members have their hands full and don't need to stop constantly to respond to you on the radio. If the search is going to be delayed for any reason, the truck officer should inform the chief. Be patient. Personnel are doing their best. If you have the staffing, assign additional personnel to assist in the search. Don't, however, overcrowd the fire area. A room full of firefighters does not make a search go faster; it slows it down. After the primary search is complete, ask for a secondary. Use other

firefighters for this search. They will have a fresh perspective, with no preconceptions resulting from the primary search. If your search results are negative but an occupant tells you someone is in the house, additional searches are needed. In a good burnout, you may have to search the rubble with shovels right down to the floorboards. Badly burned victims blend in with burnt debris and can be difficult to identify, even after the room has been cleared of smoke.

**Where are the firefighters?** Who was on the scene before you arrived, and who arrived after you? You must know who is on the scene, where they are located, and what they are doing. When you arrive, contact the units on the scene and ask their position if it is not obvious. If you have SOPs for the various building types that you respond to, you should have a pretty good idea where your firefighters have positioned themselves. If a unit deviates from SOP positioning, it should notify you so you can evaluate the effect and alter strategy if necessary.

In this fire scenario, it is obvious that the first engine has a line stretched into the front door of the building. Is it going down to the cellar, or is it securing the first floor? If fire has extended to the first floor, the first line should extinguish extending fire and prevent fire from spreading upward from the cellar. It must also protect the interior stairs to the second floor. This will allow searchers to safely go above the fire to look for trapped occupants. If the first line is not descending the cellar stairs, then you will need a second line to enter the cellar from an exterior entrance. Let the first line know that you are doing this, so firefighters on the line do not try and get down the stairs. You don't want to end up with opposing lines.

Find out from the truck what areas have not been searched. If crews need help, supply it. What is the condition of the interior firefighters? They may be taking severe punishment and need relief. Do you have people on hand to relieve them? You may have to take a quick peek into the building to determine the severity of the conditions and the need for relief. Don't fall into the trap of joining the interior team. Until relieved, your position is outside in overall command. If another chief responds, you can assign him to supervise interior operations.

**What has been done?** You know the line has been stretched and the searches are in progress, but there is more to know. What is the water source? Are there any water supply problems? Is the first line supplied by booster water or connected to a hydrant? When possible, have the pumper connected to a continuous water supply or supplied by a tanker. While booster water may give you a quick knockdown, it will not sustain a prolonged fire attack. If the pump operator is experiencing problems, you must help him solve them and warn the officer in charge of the attack line that he might have a water supply problem.

Has the fire area been vented? What about the upper floors? For a cellar fire, the roof may not need to be vented, but if it does, is it in progress? Are searches in progress on all floors of the fire building? Have the exposures been checked? This is especially important if the fire building is attached to adjoining buildings or is very close to them.

Fire venting out an upper-floor window can extend to the eaves of nearby buildings. If the fire building is a wood-frame row house, expect extension to the adjoining buildings, and plan for it. If it doesn't happen, you are ahead of the game; if it does, you are prepared.

Have additional alarms been transmitted? If the first-in units did not do this and it is needed, you will have to do it. If fire extends to another building and amounts to more than minor extension, you may need the same amount of staffing for the second building as you have on hand for the first building. Call for additional resources if you think you might need them. You can't win by playing catch-up.

Is there need of an ambulance? You must obtain information about injured firefighters or civilians so you can call for the required medical assistance if it is not already on the scene.

### **What is the progress?**

*Fire progress:* When you arrive on the scene, an automatic timer should start ticking in your head. Time is your enemy at a structure fire. Once the fire penetrates the walls of the building, it is attacking the structural elements. The floor and roof joists, the wall studs, the flooring, and the roofing are all being destroyed. Unchecked, the fire will consume these structural elements until the building falls down. How much time do you have before this happens? Good question, but, unfortunately, you don't know the answer. You won't know how long the fire was burning before you arrived, so you don't know what damage was done before you arrived. If you have a heavy fire condition, assume that the structure is already burning.

*Hoseline progress:* In a private dwelling, a 1 3/4-inch line should make short work of a one-room fire. If the fire area is larger, it will take longer to extinguish and may even overwhelm the capacity of the hoseline. If after a few minutes of applying water to the fire there is no appreciable progress, then something is wrong. It may not be hitting the fire, or there may be too much fire for the size hoseline stretched. The hose stream may be blocked by a partition or by items stored in the room, or the line may not be getting enough water because of a kink or a defective hydrant. It is time to check with the engine chauffeur. Is his supply adequate? Is he delivering enough water? Check with the engine company officer. Does he have adequate pressure? Does he have a good stream? If there are no obvious water supply problems, you may need an additional line to back up the first, or you may need to send a second line to attack the fire from a different vantage point.

*Search progress:* Is the primary completed? Is it delayed? Why? What can you do to help? Expect your truck officer to update you on the search status as the search on each floor is completed. In a multiple dwelling, he should update you as each apartment is searched and inform you when the entire floor is completed. The fire area will be the last area searched if there is a delay in extinguishing the fire. The search may be delayed until the fire is knocked down, or the instability of the building may necessitate an outside operation, in which case the best that you will get will be a visual search from

the exterior. Once the primary searches are complete, the secondary searches should begin. Again, you should be kept informed as to their progress as well as any problems encountered.

*Venting progress:* Have the fire area's windows been vented ahead of the advancing line? If your firefighters are trained to notify their officers when they vent, you will hear it on your radio. You should be able to hear the sound of breaking glass shortly after the hoseline is charged and the engine starts to move in. If you don't, find out why not.

**What do I need?** Is there something or someone not at the scene you need to extinguish this fire or to ensure the safety of your firefighters, the civilians, or the property? Do you have enough firefighters on the scene? Is your initial attack crew spent? Find out by contacting the members. Company pride may prevent them from admitting that they need relief. If you think they have taken enough punishment, relieve them. Do you have firefighters in the street waiting to be assigned a task? If not, you don't have enough firefighters on the scene. Who are you going to send into the exposure to check for extension? Who is going to stretch a hoseline if the truck reports that fire has spread to the second floor? You must anticipate your needs and have enough reserve firefighters on hand to meet them.

Are there enough apparatus on the scene? Take a look at your first-in engine. Is it pumping to more than two lines? If this attack pumper has a mechanical problem, you may have a disaster on your hands when both lines lose water. Is there a second pumper available and hooked up to a water source, ready to take over the job of supplying water? Prudence dictates that no more than two lines come off one pumper when possible. If the attack pumper fails, a second pumping engine will still be capable of delivering water. When possible, place every engine at a hydrant or another source of water, just in case it is needed. This positioning should be automatic, the result of prior training.

Do you need a large-caliber or an elevated stream? If so, is it on the scene and in the appropriate position for its use? Is there an engine in place and hooked up to a water supply, ready to supply the large-caliber stream? Remember: Don't supply it with the same pumper that supplies the attack lines.

Do you need the water department to improve water flow to the hydrant? Is an ambulance needed, or do you need a rehab unit to rehabilitate your exhausted firefighters?

Is the building appropriately laddered? Do you need additional ladder apparatus?

Is a civilian crowd interfering with your operation? Get the police department on the scene to control it.

**What must I do?** Putting the fire out will solve most of your problems. What must you do to accomplish that?

*Confine the fire.* That may mean positioning a line on the first floor and stopping the upward spread of the cellar fire. It may mean getting a line to the exposures to prevent spread. If the fire is extending up the voids, you may need a line on each floor.

*Extinguish the fire.* Placing a line down the cellar stairs if conditions allow or a line into the cellar from the exterior entrance should do the job. If there is too much fire for one line, assign a second line, possibly a larger one to accomplish this task. If progress can't be made, consider attacking from another direction. Use cellar windows to apply water to a stubborn cellar fire. Cutting a hole in the floor and inserting a distributor could also do the trick. When you cut a hole over the fire, you will need a line to protect firefighters working at that location and to prevent fire from extending up the newly cut hole.

*Search the building.* This is a primary goal, although it may not be possible in some portions of the building until the fire is extinguished or at least controlled.

*Remove trapped occupants.* If this is not possible through the interior, place ground ladders for victim removal. Strategically placed aerial apparatus will make victim removal easier. The easiest way to remove victims from a window is via an aerial platform. Do you have one? Is it in position? If there are gates at the windows, the aerial platform will allow you a safe working platform from which to remove the gates.

*Ensure affected utilities are shut off.* If the fire involves the gas or electrical supply, make sure the supply is shut off. Water and electricity don't mix and can result in fire or electrocution. Usually, when you use water in a building, power to at least some if not all of the building must be shut off. If the gas lines, appliances, and meters were in the fire area, shut the gas at least to the affected area and the entire building if necessary.

*Determine the cause of the fire.* Sometimes it is obvious, and other times you will have no clue. Always take a look at the fire area and ask questions of the occupants and firefighters to try and determine why and where the fire started. Often the actual cause will have to be determined by your fire marshals.

*Ensure that the fire does not rekindle when you leave.* There is nothing worse than being called back to a fire for something that you missed. It is not only embarrassing, but it puts civilian and firefighter lives in needless danger. You and your firefighters should perform a thorough check. Before you order the lines taken up, go back into the building, stand quietly, and listen for the sound of fire crackling. Look for smoke. This is the time to have the truck open up just a little more or have the engine wash down just a bit more if you have any doubts.

The chief is an information gatherer, a communicator, and a decision maker. You must know what information you need as well as how to get it. Your ability as a communicator will to a great measure determine how good your decisions are. By actively working to improve your communication skills, you will become a more effective and efficient fireground commander to the benefit of all.

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