

Chapter 1

General Principles of Firefighting

Modern firefighting techniques are founded on principles that predate almost all of their active practitioners. One of the most basic principles is that the firefighter's responsibility is to protect life and property. Whether paid or volunteer, there isn't a firefighter in the free world who is forced to join this profession. All do so by their own free will. When they take the oath of office, they commit themselves to uphold this ideal. It becomes their sworn duty. A further duty of all firefighters is to gain knowledge to perform new tasks. They must try to learn the reasons behind many of the functions that they perform. It may be sufficient for beginning firefighters to learn the manual skills of their trade and to operate under close supervision, relying on others for direction. A time soon comes, however, when all firefighters are expected to act independently.

The decisions that a firefighter makes will affect the outcome of a fire to a greater or lesser degree, whether that firefighter is initially assigned to an isolated position on the roof, to stand behind the nozzle, or to perform a role of leadership--the ultimate challenge. In some cases, lives hang in the balance--those of civilians, fellow firefighters, and their own. Firefighters who make decisions must be fully aware of the consequences of their actions. Outward actions must be based on sound information and must come out of a proper decision-making process. This process should be founded on sound understanding and an appreciation of a number of firefighting principles.

Consider these principles to be rules that you may break only under the most unusual circumstances rather than mere guidelines to disregard as you see fit. Some of these concepts may seem repetitious. In fact, they contain slight variations that need little explanation to the veteran. For those less experienced, the slight change in the conditions as described may serve to cover those special cases you'll encounter sooner or later. With this thought in mind, let's take a look at the ins and outs of fighting fires in the present-day setting.

The most basic principle of firefighting is that human life takes precedence over all other concerns. This rule may sound obvious, yet at times it can be overlooked. (Not intentionally, of course!) Still, on occasion, certain actions taken during the course of extinguishment can endanger occupants. Other times, actions that are overlooked can have the same effect. Many of these variables will be discussed in the chapters on engine and ladder company operations. Still more will be covered in the chapters dealing with fires in specific occupancies. For the present, a discussion of various principles that support the emphasis placed on human life will point out some of the generalities that apply under almost all circumstances.

CONCEPT 1

When sufficient manpower isn't available to effect both rescue and extinguishment at the same time, rescue must be given priority.

Assume that a single engine company is first to arrive at a working fire on the first floor of a two-story private house. The unit is manned (undermanned) by a driver, an

officer, and one firefighter. On arrival, an adult female is visible at the second-floor window. She is shrouded in smoke, screaming hysterically to the firefighters to save her baby. Before the members have even gotten off the apparatus, she and the child slump back into the room, apparently overcome by the heavy smoke that is pouring out of the window over their heads. What actions should this unit take while fighting this fire? Several options are possible, but with the limited manpower, simultaneous fire suppression and rescue isn't an option that will work.

In this instance, all three members will be required to perform the rescues. A portable ladder on the pumper provides the fastest, safest, and most direct access to the victims. In addition, unless fire is blowing out directly below the window, this is the only access that doesn't require hoseline support. Removing an adult victim via portable ladder is a very difficult task, requiring at least one person on the ladder and one in the room with the victim. In addition, you must remove the child. These three firefighters will have their hands full, but it can be done. If the victims survive, the firefighters will have been successful even if the house burns to the ground. In fact, rescue is the only practical alternative. You must at all times learn to put human life above property losses. Attempting to approach the victims by way of the interior means passing the fire, which means stretching hoselines. If conditions are serious, it may not even be possible to get past the fire and up the stairs at all.

Under the best conditions, one member will remain on the hoseline to protect the escape route while the others each remove a victim. This is a much slower and more dangerous approach. Due to limited manpower, it faces a much greater chance of failure. Similarly, trying a ladder rescue and simultaneously attacking the fire almost ensures

that, with the three-member crew, neither operation will be successful, since there aren't enough firefighters to perform all of the needed tasks. But it is still an attempt at rescue. The last possible option would be to commit all of the members to a rapid knockdown of the fire, forcing the victims to await rescue by later-arriving personnel. This solution is unsatisfactory, since the victims will almost certainly perish before anyone can reach them. After four minutes without oxygen, the victims are likely to suffer brain damage. Any longer than that, death is nearly certain.

It is important to carefully consider the scenario described above: this is a one family house, with two known victims at a specific location and there are sufficient personnel (three) to perform this very limited task. That is what makes this scenario work, if the building is a larger, and contains more victims, say eight or ten, or if the victims location is not immediately known, requiring an involved search, or are spread out, the most important priority is to try to get the hoseline operating between the fire and the victims. Put the fire out if you can, but if that is not possible with the personnel at hand, at least protect the means of egress, so that people can escape and rescuers can enter. This still places rescue as the highest priority, it just uses a different method to conduct it. The FDNY has an old saying that has been proven time and time again, enginemen love it, and laddermen (truckies) hate it, but it's true: More lives are saved by properly positioned hoselines than by any other means! That is the guiding principle behind the next concept.

CONCEPT 2

When you don't have sufficient manpower to perform all of the needed tasks, first perform those that protect the greatest number of human lives first.

Although most firefighters would have a poor opinion of anyone who might suggest that they play God, the fact is that firefighters must occasionally make some hard choices between life and death. Sometimes conditions are such that people are going to die no matter what actions you take. Although this is surely a stressful, disheartening situation, firefighters must realize that further lives may hang in the balance, requiring action based on rational decisions. I recall responding to a multiple-alarm fire at which two 2 1/2-story wood-frame houses were fully involved on arrival. Fire was already extending to two additional wood-frame houses on the left side of the fire, as well as to a six-story, non-fireproof apartment building on the right. All five buildings were fully occupied and, coupled with the lateness of the hour, presented high life hazards. The first engine and ladder to arrive, both manned by an officer and five firefighters, faced a difficult decision--where to operate first. The two frame exposures were definitely a great hazard, but so was the apartment house. The decision was made to concentrate on protecting that building, since it was home to 45 or 50 families. The two frame exposures received attention next, with a single outside line used in a holding action. Although the four families in these two buildings were severely threatened, the possible loss of more than 150 or 160 people in the apartment building far outweighed their possible loss. The occupants of the two original fire buildings received the lowest priority, since the buildings were solid flame from cellar to ridgepole. The word *savable* should be used in discussions of life hazards. A person in a room that is filled with fire isn't savable.

Diagram FOH 1 001 Here (2nd Edition Pg.9)

CONCEPT 3

Remove those in greatest danger first.

When you encounter more than one victim and don't have the resources to remove all of them simultaneously, you will have to establish some priorities. Generally, those people in the immediate vicinity of the fire are in the greatest danger and should be removed first. The next highest priority are those directly above the fire. They, too, must receive immediate attention. After these individuals, the removal may well skip a floor or more and shift to the top floor, since this is where smoke and heat will accumulate most rapidly. A graphic example of this occurred at a fire on Manhattan's West Side, involving the apartment of a famous actor. The fire began in the actor's apartment and had flashed over one room prior to discovery. Occupants of the apartment called the FDNY while still evacuating the apartment. The next phone call reporting the fire on the 22nd floor came in moments later from the occupants of the adjacent apartment who were alerted by the commotion outside their door. The third phone call, reporting heavy smoke, came two minutes later from the occupants of an apartment on the 48th (top) floor! People below the fire are usually the last priority. You may have to vary this sequence somewhat as conditions warrant. For instance, a person on the fire floor, remote from the fire, may not be in as much danger as someone on a floor above. Also, someone who is emotionally agitated and threatening to jump may have to be removed immediately, even if he or she is in no apparent danger.

CONCEPT 4

When sufficient personnel are available to perform both functions, they must carry out a coordinated fire attack.

An aggressive, coordinated fire attack may reduce or eliminate the life hazard. There are many ways to reduce the life hazard, including removing all of the victims, venting to draw fire away from the victims, and confining the fire to an isolated area. Quite often, however, the best way is to put out the fire. A coordinated attack uses the best of all of these methods to provide the highest level of life safety to the threatened occupants. It is a well-established practice in many departments to vent the roof immediately over the stairway to prevent mushrooming in apartment buildings. Simultaneously, a hoseline is stretched to the interior apartment door to prevent extension up the stairway. The apartment door is kept closed, confining the fire until all of the occupants are off the stairway. Then the hoseline is advanced for extinguishment. These simple acts, timed to occur in a smooth sequence, go a long way toward protecting life. Remember, the occupants visible at the window awaiting rescue aren't always the most seriously threatened. There may be many more inside who are overcome and can't get to a window to signal for help.

Diagram 1 002 Here (From 1st edition Pg 6)

CONCEPT 5

When there is no threat to occupants, the lives of firefighters shouldn't be unduly endangered.

When there are savable lives at stake, firefighters must take extraordinary risks to save those lives. Acts such as dangling on half-inch rope over the side of a building or pushing past a fire without fully darkening it down are taken under extreme circumstances. When no alternative exists, such acts are often performed. They don't always succeed, but if a firefighter is injured, it is usually recognized that the risk was justified by the circumstances. Yet, firefighters accustomed to performing this way sometimes behave in a similar fashion when there isn't any danger to occupants or when the occupants can no longer be saved. This must be recognized and avoided. As a young firefighter, I confess to having enjoyed the challenge of fires in vacant buildings. I regarded them as occasions where I could sharpen my skills and test myself without civilians being endangered. It was something like a trip to an amusement park, where I could experience all of the thrill and excitement without any of the distractions posed by concern for the occupants.

This attitude was extremely common in the fire departments in which I served. Then a string of tragedies occurred that started changing the firefighters' thinking. Probably none of them individually would have succeeded in effecting this change, but the combined weight of their loss awakened a number of the members. The loss of six firefighters to a roof collapse in a store where all of the occupants had been removed; the death of a lieutenant; the crippling of two firefighters in a vacant building, followed rapidly by the death of a chief and severe injury to other firefighters at yet another vacant building; the narrow escape of two firefighters when a collapsing wall of an unoccupied building sheared the bucket off of their platform, carrying them to the ground--all of these incidents served to change the attitude of our members toward vacant buildings.

Now firefighters, at least in the New York area, display an attitude of caution when operating at vacants. They no longer rush headlong into aggressive interior attack. More often than not, they assume a defensive mode, using an outside stream in conjunction with a careful survey of the stability of the structure. The officers in command must exercise tight control over their subordinates to ensure that they don't unnecessarily expose themselves to dangerous conditions. Otherwise, the lessons that these firefighters paid for with their lives will have been wasted. The real shame is that the lesson has only been learned locally, for it is still common in some areas for casualties to occur in buildings that are in such poor condition that they were barely standing prior to the fire and shouldn't have been entered in the first place.

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SEQUENCE OF ACTIONS TO BE TAKEN

Locate, Confine, Extinguish

When a fire unit arrives at the scene of an incident, a number of items go through the minds of the firefighters--their size-up. Often they begin taking action to control the situation almost simultaneously. The actions that they take, regardless of the type of incident that they encounter, will almost always follow this sequence: locate, confine, and extinguish. Firefighters may begin to take the first action, to locate the fire, before they complete their size-up. Actually, it constitutes part of the size-up, but it is a physical task that personnel must undertake. Some or all of the first members at the scene may have to be committed to locating the exact site of the fire even before the engine is committed to

the block. Many times, fire units have arrived at the reported address only to find that the caller is looking at the fire through a rear window. Before committing yourself to operations, make sure that you know precisely where you are going. Equip the scouting members with portable radios. This will help ensure rapid hoseline placement at the correct location. These scouts can often find the best route to stretch the hoseline as they move toward the scene. It is much easier to climb back down the wrong stairway without a hose than with one.

The next action is usually to confine the fire. This involves limiting the fire's spread. In some texts, you will see a reference to "protecting exposures" and then a separate one to "confining the fire." This is unnecessarily redundant. Firefighters must be constantly aware that there are six possible directions for fire to spread: left, right, ahead, back, up, and down. Fire traveling in any direction isn't desirable, and it must be stopped. The idea behind protecting exposures before confining the fire to the fire building is based on the notion that it is better to lose one building than two. In its simplest form, that idea is fine, but situations arise where confining the fire within the fire building will be of far greater importance. Take the case of fire in a ground-floor classroom of a three-story, 150- X 300-foot brick and wood-joist school. Heavy fire is venting out the window, exposing a nearby one-story, 30- X 50-foot warehouse. It is 3:00 a.m., and both buildings are unoccupied. The first priority in this case should be to confine the fire in the fire building, since the total potential loss there outweighs that of the warehouse. The spread of fire within a building is usually faster than the rate at which fire spreads to an exposed building. However, when a large portion of a building or area is already heavily involved and is threatening another structure, it is reasonable to protect the exposed building first,

since it might not be possible to prevent full involvement of the original fire building. For further discussion on this topic, see Chapters Three, Engine Operations and Four, Hoseline Selection, Stretching, and Placement.

It is ironic to some that the heart of firefighting, getting in and putting the fire out, is the last priority in our sequence of actions. Nevertheless, it is crucial that everyone involved understand that this sequence is how it must be. It is very frustrating to arrive first at a working fire and find out that you must take a defensive position, only to have a later-arriving unit go ahead and take “your” fire. Still, if all of the members thoroughly understand their firefighting tactics, they will appreciate the importance and significance of their position.

Once, at a fire in a frame row house, I was the officer of the second engine to arrive. We observed heavy smoke and a heat condition in the basement. The first engine had stretched a line to an outside basement entrance from which they could see that, in addition to the basement, a cellar located fully underground, below the basement, was also showing heavy fire. The situation was complicated by an open wooden staircase leading from the basement to the top (third) floor. Also, the house was in the middle of eighteen attached homes, and a common cockloft spanned the entire row. Our choice was clear. We couldn't follow the first engine in and slug it out with the cellar fire. Instead, our line was needed on the first floor to protect the open interior stairway as well as to prevent extension up the partitions and in an enclosed light and airshaft. This was a hot location, being above two floors of fire. My crew didn't enjoy being stuck up above like that without getting a real share of the action. Still, they fought a vital battle to keep the fire from extending upward. If fire had reached the common cockloft, its rapid horizontal

spread would have ensured heavy damage to at least several other buildings. The role of extinguishment was left to later-arriving units, while priority was placed on confining the fire. It succeeded.

The last rule for firefighting is a brief one: Let circumstances dictate procedures. This statement simply means that it is impractical to specify actions in advance of every possible scenario. A good SOP should handle the majority of incidents in which a unit is involved. When faced with a nonstandard situation, however, you must be flexible enough to adapt and develop a proper solution. Don't try to force an SOP to handle a situation for which it wasn't designed. Doing so creates problems. This is what leads companies to stretch 1 3/4-inch line when first-due at a fully involved lumberyard because "that's what we always do." If an action is needed, go ahead and do it. When in doubt, err on the side of caution.