

SUBJECT: FIREGROUND STRATEGY	SECTION: 301.04
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PURPOSE

The following procedure outlines the fireground strategy to be employed at structure fires. Fireground operations will fall in one of two strategies, OFFENSIVE OR DEFENSIVE. The two strategies are based on a standard Risk Management Plan that is to be employed at ALL structure fires. This is the basis for this procedure.

WITHIN A STRUCTURED RISK MANAGEMENT PLAN

WE MAY RISK OUR LIVES TO SAVE A LIFE.
WE MAY PUT OURSELVES AT MODERATE RISK TO SAVE PROPERTY.
WE WILL RISK NOTHING TO SAVE LIFE OR PROPERTY THAT IS ALREADY LOST OR DESTROYED.

Considering the level of risk, the Incident Commander will choose the proper strategy to be used at the fire scene. The strategy can change with conditions or because certain benchmarks (i.e., ALL CLEAR) are obtained. The strategic mode will be based on:

- The building (type of construction, condition, age, etc.)
- Structural integrity of the building (contents vs. structural involvement)
- The fire load (what type of fuel is burning and what's left to burn)
- The fire and/or smoke conditions (extent, location, etc.)
- The rescue profile (savable occupants/survivability profile)

The Incident Commander is responsible for determining the appropriate fireground strategy. Once the appropriate strategy is initiated, it becomes the Incident Commander's job to ensure that all personnel are operating within the strategy. By controlling the fireground strategy, the Incident Commander is providing overall incident scene safety. The proper strategy will be based on the following:

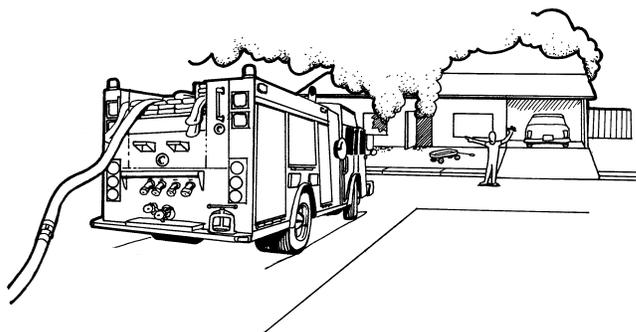
- Avoiding simultaneous OFFENSIVE and DEFENSIVE strategies in the same fire area. This typically happens by first committing personnel to interior positions, then operating master streams from exterior positions. This places interior crews in danger of injury or death.
- Matching the appropriate strategy to the fire conditions of the structure, and minimizing risk to firefighters.

Managing fireground strategy must start with the arrival of the first unit and be constantly monitored and evaluated throughout the entire incident. The initial Incident Commander will include the fireground strategy in the on-scene report. As Command

is transferred to later arriving officers, these officers assuming Command must evaluate the fireground strategy based on the Risk Management Plan.

Fireground strategy provides a starting point to begin fireground operations. Once the strategy is announced, all firefighters know whether to operate on the interior or exterior of the building. The fireground strategy cannot be a mystery to anyone; everyone operating on the fireground must be operating in the same strategy mode: Offensive or Defensive.

OFFENSIVE STRATEGY



Within the framework of the Risk Management Plan, the structure must first be determined to be safe to enter. Once determined safe, an Offensive Fire Attack is centered around RESCUE. *When safe to do so*, the Reading Fire Department will initiate offensive operations at the scene of structure fires. The following are guidelines for offensive fire attacks:

- Assign RAT team.
- Initial attack efforts must be directed toward supporting a primary search--the first attack line must go between the victims and the fire to protect avenues of rescue and escape.
- Determine fire conditions and extent before starting fire operations (as far as possible).
- Offensive fires should be fought from the INTERIOR-UNBURNED SIDE (interior capability is the principal offensive strategy factor).
- Avoid exterior application of water during offensive operation. Do NOT combine offensive/defensive operations in the same fire area.
- In some cases, the most effective tactical analysis involves an evaluation of what is not burning rather than what is actually on fire. The unburned



portion represents where the fire is going and should establish the framework for fire control activities and requirements.

Command must consider the most critical direction and avenues of fire extension, plus its speed, particularly as they affect:

- Rescue activities
- Level of risk to firefighters
- Confinement efforts
- Exposure protection
- Command must allocate personnel and resources based upon this fire spread evaluation.

Command must not lose sight of the very simple and basic fireground reality that at some point firefighters must engage and fight the fire. Command must structure whatever operations are required to PUT WATER ON THE FIRE. The rescue/fire control-extension/exposure problem is solved in the majority of cases by a fast, strong, well-placed attack. Command must establish an attack plan that overpowers the fire with ACTUAL water application, either from offensive or defensive positions.

Command must consider the seven sides (or sectors) of the fire: front, rear, sides, top, bottom, and interior. Fires cannot be considered under control until all seven sides are addressed. Failure to do so frequently results in fire extension.

Where the fire involves concealed spaces (attics, ceiling areas, construction voids, etc.), it becomes paramount that companies open up and operate fire streams into such areas. Early identification and response to concealed space fires will save the building. Officers who hesitate to open up because they don't want to beat up the building may lose the structure.

Early ventilation (natural or positive pressure) is a major support item that must be addressed during concealed space attacks. This must be initiated early and be well coordinated. Ventilation openings should be made in the fire area. Positive pressure should be injected from the unburned side and exit out of the fire area.

Command must get ahead of the fire. Command must make critical decisions that relate to cutoff points and develop a pessimistic fire control strategy. It takes a certain amount of time to get water to a location, and the fire continues to burn while the attack is being set up. Command must consider where the fire will be when attack efforts are ready to actually go into operation; if misjudged, the fire may burn past the attack/cutoff position before resources and personnel are in position. Don't play "catch up" with a fire that is burning through a building. Project your set-up time, write off property, and get ahead of the fire. Set up adequately ahead of the fire, then overpower it.

WRITE-OFF PROPERTY THAT IS ALREADY LOST and go on to protect exposed property based on the most dangerous direction of fire spread. Do not continue to operate in positions that are essentially lost.

The basic variables relating to attack operations involve:

- Location/position of attack
- Size of attack
- Support functions

Command develops an effective attack through the management of these factors. Command must balance and integrate attack size and position with fire conditions, risk, and resources.

The effect of the interior attack must be constantly evaluated, and the attack abandoned if necessary. Strategy changes can develop almost instantly or can take considerable time. Command must match the strategy with the conditions. The Incident Commander controls overall incident scene safety by determining the proper strategy to be used.

If the Incident Commander doesn't change strategies from offensive to defensive until the building is disassembling itself due to structural damage, Command is late in strategy determination and on the receiving end of the building's decision governing the new strategy to be employed. Often times when the building gets to make those decisions, firefighters become traumatized (physically and/or emotionally). **THE INCIDENT COMMANDER DETERMINES THE STRATEGY, THE BUILDING SHOULDN'T.**

It is imperative that Command assign a Roof Sector as early as possible for rapid evaluation of roof conditions. In certain situations Command should strongly consider not committing crews to the interior of a structure unless he/she receives a report from Roof Sector that the roof of the structure is safe to operate on and under. It is better to go from an offensive to a defensive strategy too soon rather than too late.

DEFENSIVE STRATEGY

The decision to operate in a defensive strategy indicates that the offensive attack strategy, or the potential for one, has been abandoned for reasons of personnel safety, and the involved structure has been conceded as lost (the Incident Commander made a conscious decision to write the structure off).

The announcement of a change to a defensive strategy will be made as Emergency Traffic and all personnel will withdraw from the structure **AND MAINTAIN A SAFE DISTANCE FROM THE BUILDING**. Officers will account for their crews and advise their Sector Officer on the status of their crew. Sector Officers will notify Command of the status of the crews assigned to their sector. A PAR (Personnel

Accountability Report) shall be obtained after any switch from offensive to defensive strategy.

Interior lines will be withdrawn and repositioned when changing to a defensive strategy. Crews should retreat with their hose lines if safe to do so. If retreat is being delayed because of hose lines, and it's unsafe to stay in the building, hose lines should be abandoned.

All exposures, both immediate and anticipated, must be identified and protected. The first priority in defensive operations is personnel safety; the second is exposure protection.

The next priority may be to knock down the main body of fire. This may assist in protection of exposures but does not replace it as a higher priority.

Master streams are generally the most effective tactic to be employed in defensive operations. For tactical purposes, a standard master stream flow of 750 GPM should be the guideline. Adjustments may be made upward or downward from this figure but it is very significant in the initial deployment of master streams.

When the exposure is severe and water is limited, the most effective tactic is to put water on the exposure and, if need be, from the interior of the exposure.

Once exposure protection is established, attention may be directed to knocking down the main body of fire and thermal-column cooling. The same principles of large volume procedures should be employed.

Fire under control means the forward progress of the fire has been stopped and the remaining fire can be extinguished with the on-scene resources; it does not mean the fire is completely out. When the fire is brought under control, Command will notify Dispatch utilizing the standard radio report of "FIRE UNDER CONTROL." Dispatch will record the time of this report. Command must initiate a PAR report from all on-scene sectors and crews.

If defensive operations are conducted from the onset of the incident, Command will notify Dispatch that there will not be a primary search completed for the affected structure(s).

BASEMENT FIRES

Size up at a basement fire is critical to the success of the operation. The location and extent of the fire, building construction, as well as points of access to the basement must be determined early. If the fire is known to be in the basement, the officer must quickly determine if an exterior access to the basement is present. This exterior door most often will be in the rear.

The objective, when attacking a basement fire, is to keep the fire from extending vertically by containment and extinguishment. This will require two lines. The need for both lines to be coordinated and rapidly get into position is of utmost importance in these types of fires.

The first line should be stretched to the first floor to contain the fire and protect the occupants and searching firefighters by closing the basement door or using a fog pattern aimed at the ceiling over the stairway. It is imperative that this fog stream NOT be directed downward into the stairwell. The interior basement stairs are normally located under the stairs to the second floor and face the rear of the structure. The officer of this line must carefully size-up the structural integrity when determining if the line should be positioned at the top of the stairs or in a position closer to the entrance door.

The second line shall be stretched to the exterior doorway for attack. This stream should be a straight or solid stream to avoid forcing fire, heat, products of combustion, and steam up into the first floor. The exterior attack line shall not begin the attack until it has been confirmed that the first line is in position and ready. The preferred point of attack is the exterior door that leads directly into the basement.

Basement fires sometimes need to be attacked with the first line going down the interior stairs. This may be necessary because an exterior entrance into the basement is not accessible, or there may be no entrance at all. Under these circumstances, the officer will need to determine if it is safe to attempt going down the basement stairs for a direct attack on the fire. The officer must carefully evaluate the structural stability, life hazard, and the fire and heat conditions at the top of the stairs. Good judgment must be exercised in deciding if it is safe to proceed down the stairs. In this case, the second line shall back up the first line.

If **only one line is available**, or fire or structural conditions do not permit the first line to go to the first floor, then the first line should be stretched to the exterior doorway for attack. After the fire has been knocked down from the exterior entrance to the basement and the first floor is deemed safe for entry, the second line shall be brought to the first floor to extinguish any vertical extension on the floors above. The officer of this line must carefully size-up the structural integrity in determining where or if the line should be positioned on the floor above the fire. This line has two objectives, extinguish any fire that has extended upward and to protect searching firefighters.

Occasionally, heavy fire conditions are encountered that prevent an attack from the first floor and there is no exterior entrance to the basement. An option that officers can exercise is that of knocking the fire down from outside the basement. This can be accomplished by applying a fire stream into the basement through a window opening. In most cases, this stream should be a straight or solid stream to avoid forcing fire, heat, products of combustion, and steam up into the first floor. Another option would be to cut a hole in the floor above and operate a fog or distributor nozzle. In either

case, officers must ensure that no firefighters have entered the basement and that the application of the stream is simply to knock the fire down so that entry can be made.

Should a basement fire occur in a balloon-frame structure, early attention should be given to checking for extension through the stud spaces in the exterior walls. Fire should be expected to extend to all floors and the attic.

The advancement of lines for an interior attack of a basement fire must be coordinated with aggressive ventilation of the basement and floors above.

ATTIC FIRES

Fires in the attic of a single-family dwelling are a result of fire originating in one of several areas. These areas or situations include:

- The living area or basement that has extended into the structural components and enters the attic via void spaces.
- Interior fire that has vented through a window and exposes the vented soffit area.
- Fire that has originated on the exterior of the dwelling and has involved the siding and exposes the soffit area.
- Fire that has originated in the attic itself by natural occurrences such as lightning strikes, electrical, or mechanical malfunction.

Tactics involving fire in the attic will vary to some extent based on the location of the seat of the fire. In the case where fire has originated in the living space or basement, the fire will have to be controlled based on an aggressive interior attack on the seat of the fire followed by hooking voids and ceiling to expose hidden fire in voids and the fire in the attic. These fires may be controlled by one line in the area of fire origin, or normally will require extensive hooking and multiple lines to extinguish depending on the amount of extension and spread.

In some situations, fire exposes the soffit area under the eaves which is vented into the attic. This can be caused from fire blowing out windows, a doorway below, or from a fire that originated on the exterior of the structure. In these cases, the first task is to conduct a quick sweep of the soffit and eave line with a hose stream. This quick sweep is intended to knock down fire extending into the attic through the soffit vents. The steam conversion drawn into the attic area can help deter fire advancement to this area before an attack on the seat of the fire is commenced.

When encountering fire in the attic only, with no involvement of the living space, unit officers must consider the following as operations commence.

At this time the occupant's personal belongings in the living space are not involved in the fire.

Conditions may be very tenable in the living area, even when there is extensive fire above.

At this point there is high heat and fire in an unoccupied, relatively confined area. A hose stream utilizing a fog pattern is indicated in this instance. Crews will want to use an attic scuttle if readily available, or poke a small hole for placement of the nozzle. Flow the fog pattern for several seconds. The fire should darken down due to the steam conversion and expansion. Avoid flowing the nozzle too long, or the ceiling may become saturated and collapse into the living area.

The intent of this approach to attic fires is to rapidly knock down the bulk of fire in the attic area until primary search, vertical ventilation, and salvage operations are completed. Extensive ceiling removal may still be required to check for extension, expose pockets of fire, or for the removal of blown in insulation. However, this tactic can “buy” crews the time to search the occupancy and deploy salvage covers without pulling the fire down into the living space

If the attic area has a floor, the nozzle stream will normally not be able to penetrate the attic. In these instances, the officer should look for a pulldown or constructed stairway. If no stairway is found, consider opening the ceiling within approximately 2 feet of the exterior wall where the pitched roof eaves terminate. This area is often not floored due to its inaccessibility and lack of storage space.

Pull-down attic stairs shall not be used where fire has been present. These stairs are typically rated to only 250 pounds. Their integrity due to exposure to fire is questionable. A FD attic ladder may be needed, however in most situations the nozzle can be advanced through the opening in the 8-foot ceiling without ladders.

Attacking the fire through an exterior gable vent should be considered when access to the attic area from the interior would be too time consuming due to the presence of flooring in the attic. Breaching the siding for nozzle access is also an option when interior access is not possible. A piercing nozzle, which typically flows over 100 gpm, is also an option, but the reach of its stream is very limited.

Aggressive salvage operations and primary search should be ordered as the hose line is being deployed.

The interior officer should request a report from the command officer on the exterior to convey their observations as the fog stream is being deployed. For example, a report of heavy steam production would indicate that the stream is effective.

A roof collapse hazard is present in the single-family dwelling. However, it is not as significant as in a commercial structure where large expanses of ceiling and roof support members are present.

Members should be aware of the presence of furnaces and hot water heaters in the unfinished attic areas. This is prevalent in larger homes with multi zone HVAC systems.