

**Title: Firefighting Practices
Structural / Vehicle / Wildland**

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Purpose: To establish the basic tactical guidelines for the operation of all personnel involving live fire situations in occupied and unoccupied structures, motor vehicles and wildland-urban interfaces.

Scope: This guideline will provide the basic benchmarks for field operations at live fire situations. It should be considered the standard for all personnel to follow in situations that require the active fighting of fire. For the purpose of this guideline, structures are considered to be any type of building. In addition, a specific section is dedicated to the specialized tasks of fighting fires involving motor vehicles and wildland interfaces.

General:

210.03.01. Command Responsibilities:

Fireground factors offer a standard list of basic items an Incident Commander (IC) must consider in the evaluation of active fire scene situations.

In critical fire situations, the IC may develop a plan and initiate an attack based on an incomplete evaluation of all the possible fireground factors. In such cases, the IC must continue throughout the operation to improve the information that these decisions are based upon. Information updates may come from several sources including visual, recon, or preplan.

Most tactical situations represent a complex problem with regard to how Command deals with fireground factor information. Fireground intelligence available to the IC is developed using an overlapping variety of information sources.

There are three primary sources of information:

- **Visual** - these include those obvious to visual observation. This visual information is categorized as the type that can normally be gained by actually looking at a tactical situation from the outside.
- **Reconnaissance** - these include information that is not visually available to Command and must be gained by actually sending someone to check-out, go see, look up, research, advise, call, go find, etc. This generally involves Command making a specific assignment and then receiving an information-oriented report.

- **Pre-planning and Familiarity** - these include the intelligence that is gained from formal pre-fire planning and by general familiarization activities

This information arms the IC with intelligence that would normally not be immediately available.

210.03.02. Basic Fire Ground Factors:

The Building:

- Size
- Interior arrangement/access (stairs, hall, elevators)
- Construction type
- Age
- Condition - faults/weaknesses
- Value
- Compartmentalized/separation
- Vertical/horizontal openings, shafts, channels
- Outside openings - doors and window/degree of security
- Utility characteristics (hazards/controls)
- Concealed spaces/attack characteristics
- Exterior access
- Effect the fire has had on the structure (at this point)
- Time projection on continuing fire effect on building

The Fire:

- Size
- Extent (percent of structure involved)
- Location
- Stage (incipient to flashover)
- Direction of travel (most dangerous)
- Time of involvement
- Type and amount of material involved - structure/interior finish/contents/ everything
- Type and amount of material left to burn
- Product of combustion liberated

The Occupancy:

- Specific Occupancy Type
- Group (business, mercantile, public assembly, school, institutional, residential, hazardous, industrial, storage)
- Value characteristics associated with occupancy
- Fire load (size, nature)
- Status (open, closed, occupied, vacant, abandoned, under construction)
- Occupancy associated characteristics/hazards
- Type of contents (based on occupancy)
- Time - as it affects occupancy use
- Property conservation profile/susceptibility of contents to damage/need for salvage

Life Hazards:

- Number of occupants
- Location of occupants (in relation to the fire)
- Condition of occupants (by virtue of fire exposure)
- Incapacities of occupants
- Commitment required for search and rescue (men, equipment, Command)
- Fire control required for search and rescue
- Need for EMS
- Time estimate of fire products effect on victims
- Exposure of spectators/control of spectators
- Hazards to fire personnel
- Access rescue forces have to victims
- Characteristics of escape routes/avenues of escape (type, safety, fire conditions, etc.)

Access / Exposures / Risk:

- Access, arrangement, and distance of external exposure
- Combustibility of exposures
- Access, arrangement, and nature of internal exposures
- Severity and urgency of exposures (fire effect)
- Value of exposures
- Most dangerous direction - avenue of spread
- Time estimate of fire effect on exposures (internal and external)
- Obstructions to operations
- Capability/limitations on apparatus movement and use

Firefighting Resources:

- Personnel and equipment on scene
- Personnel and equipment responding
- Personnel and equipment available in reserve
- Estimate of response time for staff and equipment
- Condition of men and equipment
- Capability and willingness of personnel
- Capability of Commanders
- Nature of Command systems available to Command
- Number and location of hydrants
- Supplemental water sources
- Adequacy of water supply
- Built-in private fire protection (sprinkler, standpipe, alarms)
- Outside agency resource and response time

Other Factors/Conditions:

- Time of day/night, Day of week
- Season, Special hazards by virtue of holidays and special events
- Weather (wind, rain, heat, cold, humidity, visibility)
- Traffic conditions
- Social conditions (strike, riot, mob, rock festival)

210.03.03. Tactical Priorities:

Tactical priorities identify the three separate tactical functions that must be completed in order to stabilize any fire situation - these priorities also establish the order in which these basic fire ground functions must be performed.

These functions should be regarded as separate, yet inter-related, activities, which must be dealt with in order. Basic tactical priorities are as follows:

Rescue:

The activities required to protect occupants, remove those who are threatened and to treat the injured.

Recorded as Benchmark "ALL CLEAR"

Fire Control:

The activities required to stop the forward progress of the fire and to bring the fire under control.

Recorded as Benchmark "UNDER CONTROL"

Property Conservation:

The activities that require the stopping or reducing of additional loss of property.

Recorded as Benchmark "LOSS STOPPED"

Note: All three tactical priorities require somewhat different tactical approaches from both a command and an operational standpoint.

While the objective of each function must be satisfied in its priority order, in many cases the IC must overlap the activities of each to achieve the current benchmark. Notable examples are: the frequent need to achieve interior tenability with active fire control efforts before getting on with primary search, or the need to initiate salvage operations while active fire control efforts are being extended.

Defining the Fire Ground:

The fireground is defined by an imaginary line, which encloses the space where the fire situation creates a potential hazard to personnel. Unless otherwise designated by Command, the fireground will be that area within the perimeter of those vehicles actually operating at the fire scene.

Entering the Fireground:

All personnel (including Command Personnel) crossing the fireground perimeter shall wear full protective gear to include: boots, bunker coat, Nomex hood, helmet, gloves, and SCBA.

210.03.04. Establishment of a Rapid Intervention Team (RIT) 2 in 2 Out:

The purpose of this section is to establish standard guidelines that will serve to provide a safe working environment for all employees and to reduce the risk of injury or death as a result of operations at emergency incidents. This policy will serve to comply with 2 in / 2 out provisions in the **OSHA Respiratory Protection Final Rule, 29 CFR 1910.134 (g)(4)**.

To operate as safely and effectively as possible on emergency scenes, the Department has established the following guidelines, which shall be adhered to by all personnel.

Definitions

Immediately Dangerous to Life and Health (IDLH) Atmosphere: An atmospheric concentration of any toxic, corrosive, or asphyxiate substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere.

Rapid Intervention Team (RIT): A specifically tasked team (minimum of two members) organized to provide personnel for the rescue of emergency service members, if the need arises, operating at emergency incidents.

Incipient Fire: A fire in the initial or beginning stage that can be controlled or extinguished by portable fire extinguishers. However, it is the policy of the Winter Park Fire Department to deploy a 1 ¾" hand line any time there is a fire inside of a structure. Though the incipient fire may actually be controlled by a smaller line or portable extinguisher, a 1 ¾" hand line shall be used in most cases.

2 in 2 out Operational Guidelines

The first arriving company shall determine if the incident involves an IDLH atmosphere. At no time shall individuals enter an IDLH atmosphere independently. Teams of at least two (2) SCBA equipped personnel shall be required for entry into such an atmosphere at any time.

In fire situations, it will be necessary for the incident commander (or first arriving company officer) to determine if the fire is in the incipient stage. A team of two firefighters may take action according to standard operating guidelines to extinguish an incipient fire without the establishment of an initial Rapid Intervention Team.

If the presence of an IDLH atmosphere has been determined and there are less than 4 firefighters on the scene, these firefighters shall not conduct interior operations within the IDLH atmosphere. Once at least 4 firefighters are on the

scene two qualified firefighters may begin operating within the IDLH atmosphere as long as two additional firefighters (properly equipped) are outside the IDLH atmosphere to serve as the initial rapid intervention team (RIT).

One of the RIT members must be responsible for maintaining the location of the interior crews. The second RIT member may be assigned other tasks and/or functions so long as these tasks and/or functions can be abandoned without placing any personnel at additional risk if rescue or assistance is needed.

Until four (4) firefighters are assembled, operations outside of the IDLH atmosphere shall commence immediately in accordance with standard operating guidelines. Such operations include, but are not limited to: establishment of a water supply; exterior fire attack; establishment of a hot zone; utility control; ventilation; placement of ladders; forcible entry; exposure protection, and any other exterior operations deemed appropriate by the incident commander (company officer).

As the incident progresses to the point of more than one interior team, an identified and dedicated RIT shall be established and positioned immediately outside the IDLH atmosphere. This team shall be fully outfitted with protective clothing and SCBA with the air mask in a ready position to don, a portable radio, and other required rescue equipment. Team members will be dedicated to perform rescue and shall not be assigned other duties (except for incident accountability). A charged hose line shall be dedicated to this team.

If the incident is in a high or mid-rise structure, large area facility, or other area with multiple IDLH atmospheres, the incident commander shall establish the necessary number of RIT's so that rescue can be accomplished without a deployment delay. A team should be considered for each remote access point on any large facility. The incident commander will be responsible for determining the number of teams needed based on the specifics of the incident.

As soon as a firefighter becomes trapped, lost, or knows of an entrapped or lost firefighter immediately use the radio to declare a "MAY-DAY" followed by your company identification, location, and situation.

Emergency Radio Traffic

A declaration of "MAY-DAY" will be followed by the emergency traffic **Alert 2 TONE**, followed by a repeated report of the "MAY-DAY" declaration: "MAY-DAY", "MAY-DAY" EMERGENCY TRAFFIC ALERT-2 TONE

"Engine 62 has a downed firefighter in quadrant B, Northwest corner".

"Winter Park copies. All units, Engine 62 is reporting a downed firefighter in quadrant B, Northwest corner."

The “Emergency Traffic” announcement will continue to be used for other high-risk hazards at the scene such as to evacuate the building or downed power lines.

If a firefighter(s) becomes trapped, disabled, or otherwise in need of assistance by the RIT, the incident commander shall announce this action to Winter Park (Communications) via the radio. In turn, Winter Park shall simulcast the emergency message signal and announce that a rescue is in progress. All radio traffic that is not directly related to the firefighter(s) rescue shall cease immediately to facilitate the rescue. An immediate personnel accountability report (PAR) shall be conducted.

Should the incident commander order a building evacuation, a PAR shall be conducted (as outline in the SOGs, Personnel Accountability System) immediately after the building has been evacuated. The RIT shall remain in place for immediate activation should a team fail to report during the PAR.

This policy also includes and applies to interior firefighting within a downed aircraft.

Exceptions

If upon arrival at a fire emergency, members find a fire in its **incipient stage**, extinguishment of such a fire shall be permitted with less than 4 persons on the scene.

Extinguishment of outside fires such as dumpsters, brush, or automobiles, shall be permitted with less than 4 persons, even if SCBA is being worn.

If upon arrival at the scene members find an **imminent life-threatening situation** or **probable life-threatening situation** where immediate action may prevent the loss of life or serious injury, such action shall be permitted with less than 4 persons on the scene. The rescue can be attempted when the probability of a rescue is made in accordance with normal size-up indicators and fireground evaluation factors. (Examples: a reliable report of persons inside, signs of persons inside, etc.).

The incident commander (or company officer) shall evaluate the situation, considering the occupancy, time of day, day of week, reports from persons on the scene, signs that persons may be inside the structure, etc. Entry may be considered with less than 4 persons on the scene if signs indicate a probable victim rescue.

In the absence of clear signs or a report from a responsible person on the scene that people are in the structure, it is to be assumed that no life hazard exists and interior attack shall not be initiated until the minimum of 4 persons arrive on the scene.

If members are going to initiate actions that would involve entering an IDLH atmosphere because of a probable or imminent life-threatening situation where immediate action may prevent the loss of life or serious injury, and at least 4 firefighters are not on the scene, the members should carefully evaluate the level of risk that they would be exposed to by taking such actions. In all cases a minimum of two (2) firefighters shall form the entry team.

If it is determined that the situation warrants immediate intervention and 4 firefighters are not on the scene, the incident commander (or company officer) shall notify Winter Park of the intent to enter the IDLH atmosphere prior to the availability of a rapid intervention team. Winter Park shall then notify all responding companies of this action and receive acknowledgement from responding Incident Commanders that the transmission was received.

Should the incident commander (or company officer) on the scene deviate from this guideline; the actions taken shall be documented on the fire incident report and forwarded through the chain of command to the fire chief. The narrative of this report shall be by the incident commander and outline the reasons, rationale, justification, and end result of the deviation from standard operating guideline. All information in the report shall be of enough depth so as to provide a comprehensive understanding of the actions taken.

210.03.05. Structural Search & Rescue During Fire Conditions:

Search and Rescue in live firefighting situations should be performed according to an efficient, well-planned guideline, which has included the safety of search crew personnel. The object of the search effort is to locate possible victims, not create additional ones by neglecting the safety of the search crew.

Prior to entering the search area, all search team members should be familiar with the specific search plan including the overall objective, a designation of the search area, individual assignments, etc. This may require a brief conference among crewmembers before entering the search area to develop and communicate the plan.

Note: Search activities will be conducted in teams made of a minimum of two members.

During any interior search operations the minimum of a two-person rescue team will be operating on the exterior of the building and will monitor the location of the interior firefighting and search teams. See Section IV of this guideline.

Company officers must maintain an awareness of the location and function of all members within their crew during search operations. In a multi-story structure, a brief look around the floor below the fire may provide good reference for the search team, as floors in multi-story occupancies usually have a similar layout.

Whenever a search is conducted that exposes search crews to fire conditions (particularly above the fire floor) the search team should be protected, as soon as possible, with a charged hose line, in order to insure a safe escape route.

In limited cases, if search personnel are operating without a hose line, lifelines should be used when encountering conditions of severely limited visibility.

Unless otherwise instructed, use Search & Rescue Guidelines taught and adopted by the Training Division.

Interior firefighting search crews should attempt to utilize a **Thermal Imaging Camera** to enhance their search efforts. TICs offer dramatic visibility advantages to crews entering structural fire scenarios. See SOG 230.08 for further details.

Primary Search:

It will be standard practice to extend a primary search into all involved and exposed occupancies, which can be entered. Command must structure initial operations around the completion of the primary search. Primary search means companies have quickly gone through all effected areas and verified the removal and/or safety of all occupants. Time is the critical factor in the primary search process. Successful primary search operations must necessarily be extended quickly and during initial fire stages.

The completion of the primary search is reported utilizing the standard radio reporting term "ALL CLEAR". It is the responsibility of Command to coordinate primary search assignments, secure completion reports from interior companies and to transmit the "ALL CLEAR" report to Winter Park.

"Winter Park" will record the time of this report from Command.

Secondary Search:

The rescue functions that follow lengthy fire control activities will be regarded tactically as presenting a secondary search. Secondary search means that companies thoroughly search the interior of the fire area after initial fire control and ventilation activities have been completed. It is preferable that different companies than those involved in primary search activities complete the secondary search. Thoroughness, rather than time, is the critical factor in performing a secondary search.

The Company Officer assigned to complete the Secondary Search shall announce the completion of the "*Secondary Search Complete.*" Do not use the term "ALL CLEAR", as it applies only to the **primary search**.

Stages of Fire Development:

The stage of the fire becomes a critical factor that affects the rescue approach developed by Command. The following items outline the basic Command approach to fire stages:

- In "**NOTHING SHOWING**" situations, or in very minor fire cases that clearly pose no life hazard, Command must structure a rapid interior search and report "ALL CLEAR" as soon as conditions warrant. In this case, responding units should take a non-committed posture until notified by Command to proceed with an assignment.

- In "**SMOKE SHOWING**" and "**WORKING FIRE**" situations, fire control efforts must be extended simultaneously with rescue operations in order to gain entry and control interior access to complete a primary search. In such cases, Command and operating companies must be aware the operation is in a rescue mode until primary search is complete, regardless of the fire control required. In working fire situations, primary search must be followed by a secondary search.
- In cases of fully involved buildings or sections of buildings, immediate entry and primary search activities become impossible and survival of occupants is improbable. Command must initially report "fully involved" conditions. As quickly as fire control is achieved, Command must structure what is in effect a secondary search for victims.

Command and operating companies cannot depend upon reports from spectators or occupants to determine the potential status of victims. Fire control forces should utilize reports as to the location, number, and condition of victims as supporting primary search efforts and must extend and complete a primary search wherever entry is possible.

Command must consider the following factors in developing a basic rescue size-up:

1. Number, location, and condition of victims.
2. Effect the fire has on the victims.
3. Capability of the control forces to enter the building, remove/protect victims and control fire.

Command must make the basic rescue decision:

Do we remove victims from fire?

OR

Do we remove the fire from the victims? ("Defend in place")

In some cases, occupants are safer in their rooms rather than moving through contaminated hallways and interior areas. Such movement may also impede interior firefighting.

Command must realistically evaluate the personnel required to remove victims and treat their fire-induced injuries. In fires involving multiple victims, Command must call for the timely response of adequate resources and quickly develop an organization that will both stabilize the fire and provide for the removal and treatment of the occupants.

Rescue efforts should be extended in the following order:

1. Most severely threatened.
2. The largest number (groups).
3. The remainder of the fire area.
4. The exposed area.

Command must make specific primary search assignments to companies to cover specific areas of large/complex occupancies and maintain ongoing control of such companies until the entire area is searched. When primary search companies encounter and remove victims, Command must assign other

companies to continue to cover the interior position vacated by those companies.

All initial attack efforts must be directed to support rescue efforts. The placement of hose lines is a critical factor and must be placed in a manner to control interior access, confine the fire, and protect avenues of escape. It may be necessary to operate in a manner that writes-off part or all of the structure in order to buy rescue time. Normal means of interior access (stairs, halls, interior public areas, etc.) should be utilized to remove victims whenever possible. Secondary means of rescue (platforms, ladders, fire escapes, etc.) must be utilized in their order of effectiveness.

Command must structure treatment of victims after removal. Multiple victims should be removed to one location for more effective treatment. In addition, Command should coordinate and utilize paramedic capability wherever available and assign treatment companies as required to an exterior Medical Sector.

Once the primary search has been completed and "ALL CLEAR" transmitted, Command must insure control of access to the fire area. Beware of occupants (and others) re-entering the building.

Command must develop a realistic (and pessimistic) rescue size-up as early as possible. The most urgent reason for calling additional alarms is for the purpose of covering life safety.

The term "Search and Rescue" should be used when structuring a primary search over the radio. The term "ALL CLEAR" is to be used as a completion report for the primary search; this is not a guarantee that everyone is out. The possibility of overlooking victims always exists.

The only way to absolutely confirm the presence or absence of victims is to make a secondary search after the initial fire control operations are completed. If possible, companies not involved in the primary search should do the secondary search.

In areas of major fire damage, this usually involves sifting through a lot of damaged property and demands manual labor. Thoroughness rather than time is critical here. Upon completion of the secondary search, units involved shall report to Command,

210.03.06. Evacuation of Structures:

Overview:

In firefighting and other emergency operations, it is often necessary to evacuate a building or part of a building. This plan is intended to establish a standard system for evacuation.

Establish an Evacuation Plan:

Plan the evacuation and make assignments and progress reports related to the plan to the Incident Commander or Sector Officer.

Evacuate Persons in the Greatest Danger First!

The people in the greatest danger in a fire are those in the immediate area and those above the areas of involvement.

Assign Specific Areas For Evacuation

Companies should be assigned according to priorities to specific areas, sectors, or floors to evacuate and report "ALL CLEAR." Example: "All Clear 5th floor".

Identify Safe Evacuation Routes

Usually an evacuation is intended to remove occupants from a hazard. The objective should include moving occupants to safe areas via identified safe paths. Companies may have to be assigned to keep the evacuation routes safe (with protective lines, ventilation, etc.) Use normal means of egress first; i.e., halls, stairs, elevators, etc. Tower trucks, ground ladders, fire escapes, etc., are secondary means of egress.

If the evacuation route is unsafe, consider leaving occupants where they are until conditions improve and "defend in place".

Identify Evacuation Stairs

In multi-story buildings, it may be necessary to designate one stairway to be used for evacuation while another is used for firefighting and/or ventilation.

Evacuate To A Safe Location

Move evacuees to a location out of danger, but not further than is practical. In a high-rise building two or three floors below the fire is usually adequate. Attempting to move evacuees too far tends to complicate the situation. The location chosen must be safe.

Mark Rooms Or Suites After Evacuation

When searches or evacuations are conducted in rooms or suites the doors must be marked to avoid duplication of efforts. Use a method adopted by our Training Division, if possible, which is to place the "sure search" devise around the doorknob. Marking doors with grease pencil or marker is also acceptable. Units should indicate unit number, i.e. E62 OK on the door.

Use Alarms and Communications Systems

These systems are designed to warn people of the need to evacuate. Use these in conjunction with evacuation teams when the need to evacuate is urgent. (If the situation is not urgent, face-to-face contact is less distressing than alarm bells.)

Avoid Panic!

Personnel must consciously work to lessen anxiety of occupants and avoid panic. Explain what the problem is and what needs to be done as accurately as the situation permits.

Assign Sufficient Resources To Facilitate Evacuation Plan

Rapid evacuation of a building may require a major commitment of companies. The commitment of companies must be sufficient to provide for non-ambulatory evacuees and those needing physical assistance. Never leave evacuated occupants unattended.

Use Elevators With Emergency Controls

Elevators may be a valuable tool in evacuating a high-rise building if they have Emergency Control features and are operated by Fire Department personnel in communication with Command. Elevators should only be used when the safety of the hoist-way is known.

Do Not Evacuate Unnecessarily

If conditions do not present a hazard, evacuation may be unnecessary. Send personnel to evaluate conditions and judge the need for evacuation if the need is not obvious.

Authority To Evacuate

The Fire Department may order citizens to evacuate if there is a significant danger.

210.03.07. Fire Control:

Command Responsibilities

It is within our Standard Operating Guideline to attempt to stabilize fire conditions by extending, **wherever possible**, an aggressive well placed and adequate offensive interior fire attack effort; and to support that aggressive attack with whatever resource and action is required to reduce fire extension and to bring the fire under control.

A critical Command decision (both initial and on-going) relates to the offensive/defensive mode of the situation. Command must define offensive/defensive mode based upon:

- | | | | |
|----|-----------------------|----|-----------------------------|
| 1. | Fire extent | 4. | Ventilation profile |
| 2. | Structural conditions | 5. | Rescue ability of occupants |
| 3. | Entry capability | 6. | Resources |

Offensive Strategy

Interior attack and related support directed toward quickly bringing the fire under control.

Basic Offensive Plan

1. Take command.
2. Do primary search
3. First line - fast, aggressive, interior attack.
4. Second line - back-up first/cover internal exposure and react.
5. Pump water.
6. Provide support activities.
7. Quickly evaluate success.

Defensive Strategy

Exterior attack directed to first reduce fire extension and then bring the fire under control.

Basic Defensive Plan

1. Take command
2. Evaluate fire spread/write-off lost property
3. Identify key tactical positions
4. Prioritize fire streams
5. Provide big, well-placed streams
6. Pump water
7. Quick determination on additional resource
8. Surround and drown

Offensive Firefighting Operations

Many times offensive/defensive conditions are clear-cut and Command can quickly develop a decision that relates to that mode. In other cases, the situation is marginal and Command must initiate an offensive interior attack, while setting up defensive positions on the exterior. The effect of the interior attack must be evaluated and the attack abandoned if necessary. Mode changes can develop almost instantly or can take an extended time. Command must be aware and responsive to such mode changes.

Command must consider the most dangerous direction of fire extension particularly as it affects rescue activities, confinement efforts, and exposure protection. Command must then allocate resources based upon this fires spread evaluation.

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 requirements. **Offensive fires** should be fought from the **INTERIOR or UNBURNED SIDE** (interior capability is the principal offensive strategy factor).

Initial attack efforts must be directed toward supporting primary search - attack line must go **BETWEEN THE VICTIMS AND THE FIRE** to protect avenues of escape.

Determine fire location and extent before starting fire operations (as far as possible). Avoid operating fire streams into smoke.

Command cannot lose sight of the very simple and basic fire ground reality that at some point the fire forces must engage the fire and fight. 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.

Effective fire control requires that water be applied directly on the fire or directly into the fire area. Command must establish an attack plan that overpowers the fire with actual water application.

Where fires involve concealed spaces (attics, ceiling areas, construction voids, etc.) these areas must be opened and fire streams operated into them. Early identification and response to concealed space fires can save the structure. Officers who hesitate to open up because they don't want to beat up the building, many times must attempt an hour later to hold the fire to the neighborhood of origin.

The attack plan must take into consideration the seven sides of a structure: top, bottom, front, back, both sides, and the interior. The plan must concentrate on the most dangerous directions and avenue of fire extension and provide a means to stop the fire in that direction. The remaining sides are then considered in order of danger.

The basic variables that Command must manage in the attack plan are:

- Location/Position of Attack - Evaluate options (offensive and defensive) provided by building openings (doors, windows, and arrangement of surrounding buildings).
- Size of Attack - Evaluate options of fire attack (manpower, hand lines, master streams, etc.) and translate into the size and number of hose lines.
- Support Functions - Evaluate the activities necessary to facilitate access and operations (forcible entry, ventilation, etc.) and integrate with other attack variables. Command must also insure that the 2 in / 2 out rule is met and RIT is responded.
- Time of Attack - Evaluate options of timing of fire attack (when to begin, duration, etc.).

Time becomes an extremely important factor with regard to attack operations. The bigger the attack or the more interior the attack is positioned, the longer it takes to get it going. Command must balance and integrate attack size and position with fire conditions and his resources.

Companies may have the desire to lay hose and put water on the fire utilizing the fastest, shortest, most direct route. This process is called the "*candle moth*" syndrome and may draw a company to attack a fire from the burned side, which should be avoided.

An attack initiated from the involved side of a building will generally drive the fire, smoke and heat back into the building, hindering rescue efforts and decreasing survivability of victims. Damage to the structure is also dramatically increased in these cases.

When fire is burning out of a building and not affecting any exposures, let it burn out, and extend an interior attack from the **unburned side**. It is usually venting in the proper direction. It requires discipline on the part of control forces to do so and not submit to "*candle moth*" temptations.

Command must develop a fire control plan of attack that first stops the forward progress of the fire and then brings the fire under control. In large complex fires, Command will not immediately have adequate resources to accomplish all of these attack needs. Initially Command must prioritize attack efforts, act as a resource allocation and determine the response that will eventually be require. Accurate forecasting of conditions by Command becomes critical during this initial evaluation process.

Command must develop critical tactical benchmarks that relate to cut-off points and must approach fire spread determinations with pessimism. It takes a certain amount of lead-time to "get water" and the fire continues to burn while the attack gets set up. If Command misjudges the fires potential, it may burn past the attack/cut-off position. Command must accurately project set-up time, write-off lost property and get ahead of the fire.

Write-off property that is already lost and go on to protect exposed property based on the most dangerous direction of spread. Do not continue to operate in positions that are essentially lost.

Defensive Operations

The decision to operate in a defensive mode indicates that the offensive attack strategy has been abandoned for reasons of personnel safety, and the involved structure has been conceded as lost (written off).

The announcement of a change to a defensive mode will be made as EMERGENCY TRAFFIC and all personnel will withdraw from the structure and maintain a safe perimeter. Communications Center will sound alert tones and repeat Emergency Traffic message.

The Incident Commander will in addition, designate one unit to operate their air horn devices for a period of 15 seconds, continuously. Company Commanders will account for their personnel and report PAR to Command. See SOG 700.03.

Interior lines will be withdrawn (or abandoned if necessary) and repositioned when changing to a defensive mode. Lines should be backed away to a position, which will protect exposures.

The first priority in a defensive operation is to protect exposures. The second priority may be to knock down the main body of fire. This may assist in the protection of exposures but does not replace it as a first priority.

Master streams are generally the most effective tactic to be employed in defensive operations. For tactical purposes, a standard master stream flow of 500 GPM should be the guideline. Adjustments may be made upward or downward from this figure to more efficiently extinguish the fire.

When the exposure is severe and water is limited, the most effective tactic is to put the water on the exposure. Once exposure coverage is established, attention may be directed to knocking down the main body of fire and thermal-column cooling. The same principles of large volume guidelines should be employed.

The completion of bringing the fire under control is reported utilizing a radio report of, "FIRE UNDER CONTROL." It is the responsibility of Command to transmit this report to dispatch. This time will be recorded by dispatch.

"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.

Summary of Fire Control Guidelines

Command Must!

- Consider standard factors to determine offensive/defensive mode.

- Extend a strong interior attack to confine and control in offensive cases.
- Protect exposures, stabilize forward fire progress, and surround and drown in defensive cases.
- Control position and function of control forces in marginal (offensive/defensive) cases.
- Consider most dangerous direction and avenue of fire spread.

210.03.08. Apparatus Placement:

Apparatus function should regulate its placement on the scene. Poor placement of apparatus results in limiting the options or eliminating functions that units can be assigned.

The tendency to drive apparatus as close to the fire as possible may result in the positioning of rigs that is dangerous. The placement of all apparatus on the fire ground should be a reflection of one of the following:

- Standard operational guideline for first arriving companies.
- Prearranged staging guideline.
- Direct order from Command.
- Conscious decision on the part of the officer assigned to apparatus based on existing or predictable conditions.

Effective apparatus placement must begin with the arrival of first units. The placement of the initial arriving engine, truck and rescue should be based upon initial size-up and general conditions upon arrival. First arriving companies should place themselves to maximum advantage and go to work. Later arriving units should place themselves in a manner that builds on the initial plan and allows for expansion of the operation.

When a truck company is not needed for upper level access or rescue, spot apparatus in a position that would provide an effective position for elevated nozzle operation if the fire goes to a defensive mode. Truck Company officers must consider extent and location of fire, most dangerous direction of spread, confinement, exposure conditions, overhead obstructions and structural conditions in spotting apparatus. The truck / aerial should be spotted where the device can be raised and used effectively without repositioning.

The Command Vehicle should be located in a manner, which allows for maximum visibility of the fire building and surrounding area and the general affect of the companies operating on the fire. Command vehicle position should be easy and logical to find and should not restrict the movement of other apparatus.

Rescue units should be spotted in a safe position that will provide the most effective treatment of fire victims and firefighting personnel, while not

blocking movement of other apparatus or interfering with firefighting operations.

Rescue units must also provide for access out of the immediate scene area in preparation for situations involving patient transportation.

Later arriving companies should hold a staged position a minimum of one block short of the immediate fire area, and remain uncommitted until ordered into action by Command. Company officers should select standby positions allowing the maximum of tactical options.

Command must maintain awareness that access to the scene increases the tactical options and that the immediate fire area can quickly become congested with apparatus. Apparatus on the fire ground fall into two categories:

1. Apparatus that is working.
2. Apparatus that is parked (out of the way).

Command, Sectors, and all operating units should attempt to maintain an access lane down the center of streets whenever possible.

Think of fire apparatus as an expensive exposure: position working apparatus in a manner that considers the extent and location of the fire and a pessimistic evaluation of fire spread and building failure. Anticipate the heat, which may be released with structural collapse. **Apparatus should generally be positioned at least 30 feet away from involved buildings, even with nothing showing. Greater distances are indicated in many situations.**

Beware of putting fire apparatus in places where it cannot be repositioned easily and quickly - particularly operating positions with only one way in and out; i.e., yards, alleys, driveways, etc. If apparatus becomes endangered, operate lines between it - and the fire while you reposition it. When you do move it, move it to a position that is safe.

Beware of overhead power lines when positioning apparatus. Do not park where power lines may fall. It is dysfunctional to move a rig several times throughout the progress of a fire.

Initial arriving pumpers should be placed in "key" positions. These positions should offer maximum access to the fire area and be supplied with large diameter pumped supply lines as quickly as possible. Subsequent arriving companies can operate hose lines from this apparatus.

Key tactical positions should be identified and engines placed in those locations with a strong water supply. The water supply should be one large diameter hose from an engine on a hydrant. The forward engine can distribute this water supply to a variety of hand lines, master streams or other devices. The number of lines from hydrants to the fire will be substantially reduced.

Hydrants located close to the fire area should be regarded as "key" hydrants.

Position pumpers on "key" hydrants before tying up secondary hydrants that require longer hose lays. Pumpers hooked up to key hydrants can supply water to two or more pumpers in forward positions.

Personnel should take advantage of the equipment located on the apparatus already in the fire area instead of bringing in more units. Connect extra lines to pumpers, which already have a good supply line instead of making "daisy chain" supply line connections.

Do not hook up to hydrants so close to the fire building that structural failure or fire extension will jeopardize the apparatus.

Fire hose (particularly large diameter) soon limits the general access as the fireground operation matures. Lines should be laid with attention to the access problems they present. Try to lay lines on the same side of the street as the hydrant and cross over near the fire.

210.03.09. Staging:

The Department utilizes two levels of staging for all response units. They will be designated as Level 1 and Level 2 Staging.

Level One Staging

Level One Staging will automatically apply to all multiple unit responses, unless otherwise ordered by Command, and will involve the following:

First arriving engine company will respond directly to the scene and operate to best advantage.

First arriving truck company will respond directly to the scene and place themselves to best advantage; generally at the front of the building, and initiate truck company operations.

First arriving rescue company will respond directly to the scene and place their apparatus in a location that will provide maximum access for Medical/Rescue Support and not impede the movement of other units. Unless otherwise directed by Command, the Rescue crew should report to the first entrance point of the structure and initiate RIT responsibilities.

All other units will stage in their direction of travel, uncommitted, approximately one block from the scene until assigned by Command. Selection should be based on maximum tactical options with regard to access, direction of travel, and water supply.

All responding engine companies should refer to their map books and other references to determine the best available water supply options for the emergency.

Staged companies or units will, in normal response situations, report company designation and location. An acknowledgment is not necessary

from Command. Staged companies will stay off the air until orders are received from Command.

These staging guidelines attempt to reduce radio traffic, but in no way should reduce effective communications or the initiative of officers to communicate. If staged companies observe critical tactical needs, they will advise Command of such critical conditions and their actions.

When arriving at staging, companies will indicate their status as "Staged, at location..." If assigned to a task they will indicate, "On the scene and action being taken." Companies should continue response to the scene until a company reports "On The Scene", Level One Staging will begin within these guidelines...

If a company, which would normally be first due to the incident, is out of normal response area and arrival order is uncertain, the officer of that company will communicate his location over the tactical radio channel. In situations where the simultaneous arrival of first due companies is possible, the affected officers shall utilize radio communications to coordinate activities and eliminate confusion. It will be the ongoing responsibility of Communications to confirm the arrival of the first "on the scene" unit.

Exceptions: Pre-fire planning will identify exceptions to Level One Staging with regard to the special functions that must be performed in that particular occupancy. In the absence of such tasks, regular Level One Staging guidelines will automatically apply. An example of an exception would be a fire in a high-rise building.

Level Two Staging

Level Two Staging is used when an "on-scene" reserve of companies is required.

These companies are placed in a staging area at a location designated by Command. When Command announces "Level Two Staging" all 2nd alarm and greater companies will report to and remain in the staging area until assigned.

First alarm companies will continue with Level One Staging unless instructed otherwise. When going to Level Two Staging, Command will give an approximate location for the Staging Area. Companies that are already staged (Level One) will stay in Level One Staging unless advised otherwise by Command. All other responding units will proceed to the Level Two Staging Area.

The Staging Area should be away from the Command Post and from the emergency scene in order to provide adequate space for assembly and for safe and effective apparatus movement.

When calling for additional resource, Command should consider Level Two Staging at the time of the call. This is more functional than calling for Level

Two Staging while units are en route. The additional units will be dispatched to the Staging Area.

Command or Support may designate a Staging Area and Staging Officer who will be responsible for the activities outlined in this guideline. In the absence of such an assignment, the first fire department officer to arrive at the staging area will automatically become the Staging Officer and will notify Command or Support on the assigned tactical channel.

Due to the limited number of truck companies, a Truck Company Officer will transfer responsibility for staging to the first arriving Engine Company Officer. Staging Officers will assign their company members to the best advantage.

In some cases, Command or Support may ask the Staging Officer to scout the best location for the Staging Area and report back the location.

The radio designation for the Staging Officer will be "Staging." All communications involving staging will be between Staging and Command or Support. All responding companies will stay off the air, respond directly to the designated Staging Area, and report in person to the Staging Officer. They will standby their unit with crew intact and warning lights turned off. Staged units will indicate their status to Communications as "STAGED."

When directed by Command or Support, the Staging Officer will verbally assign companies to report to specific Sectors, telling them where and to whom to report. Staging will then advise Command or Support of the specific unit(s) assigned. The operating Sector Officer may then communicate directly with the company by radio. When assigned, companies will indicate their status as "on-the-scene" by radio.

Staging will give Command or Support periodic reports of available companies in staging. Command will utilize this information to request additional resource.

The Staging Officer will also be responsible for the following functions:

- Coordinate with the police department to block streets, intersections and other access required for the Staging Area.
- Ensure that all apparatus is parked in an appropriate manner.
- Maintain a log of companies available in the Staging Area and inventory all specialized equipment that might be required at the scene (see Tactical Worksheet for staging).
- Progress reports to Command or Support indicating number and type of units available.
- Assume a position that is visible and accessible to incoming and staged companies. This will be accomplished by leaving warning lights operating.

- In some cases, the Staging Officer may have to indicate the best direction of response and routing for responding companies to get into the Staging Area.

At some incidents, such as a major medical emergency, it may be necessary to designate parking area for used (committed) apparatus near the incident scene. This would be necessary when the Staging Area is too far from the incident to facilitate hand-carrying needed equipment to the incident site. In such cases, the Staging Officer shall designate the parking site and instruct each company of its location prior to leaving staging. The parking area should be close enough to the incident site to allow easy transfer of needed equipment to the scene. The parking area should in no way impede necessary access for units or other vehicles to the incident area.

Unless otherwise instructed by Command or Support, Staging will advise Command when the level of resources in the Staging Area is depleted to two engines and one truck or less. Command or support will make a decision whether or not to request additional companies.

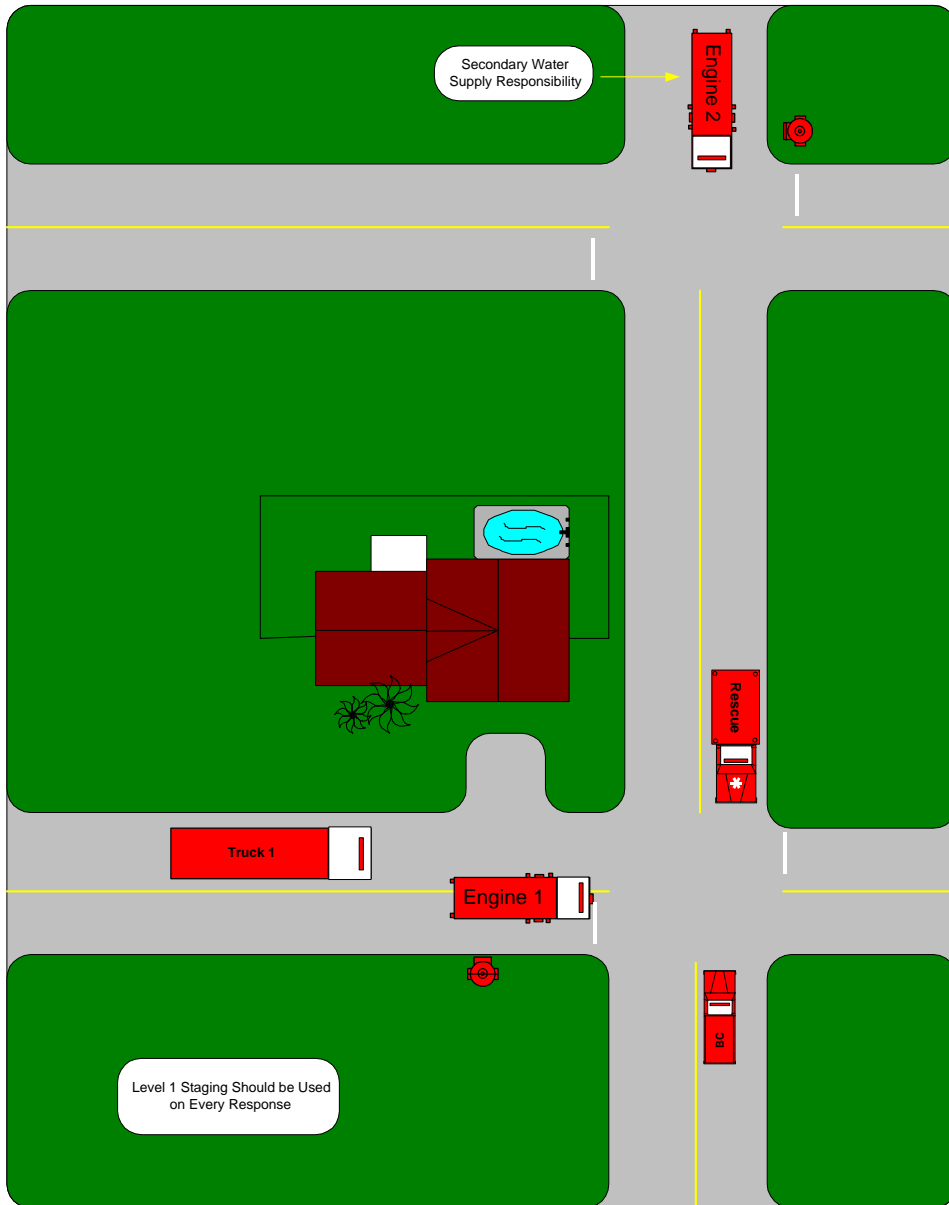
When To Summon Additional Resource:

- An actual or potential fire situation exists and the life hazard exceeds the rescue capabilities of initial alarm companies.
- The number, location, and condition of actual victims exceed the rescue/removal/treatment capabilities of companies.
- An actual or potential fire situation exists and the property protection demand (both internal and external) exceeds the fire control capabilities of initial alarm companies.
- Fire conditions become more severe or the situation deteriorates significantly.
- All companies have been committed and the fire is not controlled.
- Upon confirmation of a structure fire, the IC should request an additional ALS rescue in order to ensure immediate availability of medical personnel to treat injured civilians and firefighters, as well as to establish rehab as outlined under SOG 210.11.

Level 1 Staging is intended to place only those units needed to effectively handle the emergency at the scene in addition to having the balance of the required response assignment stage in strategically specific locations close to the incident. Level 1 Staging is to be used at all multiple unit response assignments.

The Incident Commander should specify with responding units their staging locations at the scene.

Suggested Apparatus Placement Guideline Level 1 Staging

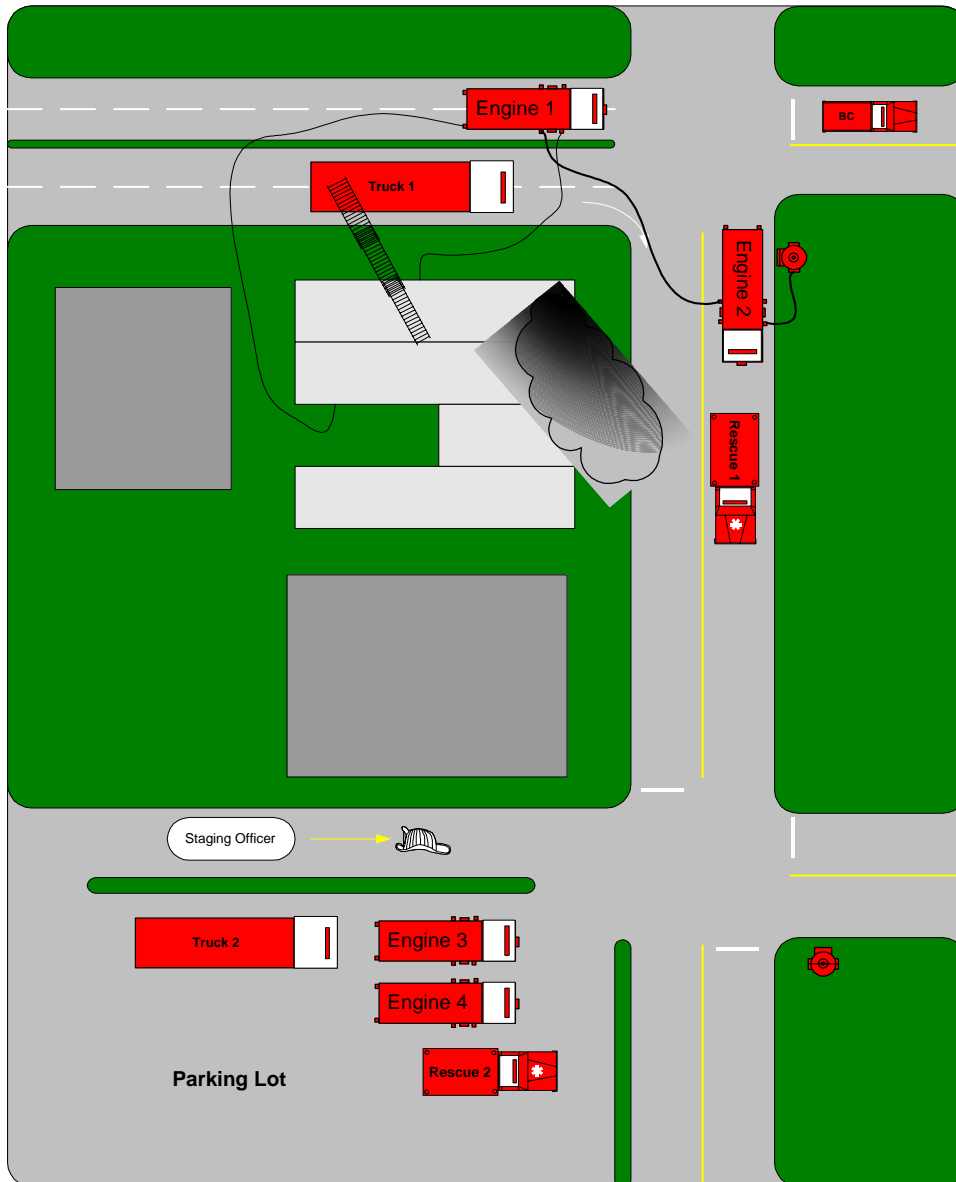


Reference: IFSTA Fire Department Pumping Apparatus 7th Edition

Level 2 Staging of Apparatus should be performed any time additional units beyond the initial alarm assignment are summoned to the scene. Provisions should be made to have a Staging Officer located at the designated area. The Staging Officer should be in contact with the IC via radio or in some instances, face to face.

Apparatus dispatched on subsequent alarm assignments should report to the designated Staging Area and remain on the Staging Sector Radio assigned radio TAC.

Suggested Apparatus Placement Guideline Level 2 Staging



Reference: IFSTA Fire Department Pumping Apparatus 7th Edition

210.03.10. Vehicle Fires:

Several important considerations need to be addressed when crews are faced with fighting active fire involving automobiles. These fires can be very unpredictable and are often considered mundane by the experienced firefighter. It is easy to fail to consider the potential dangers and challenges related to vehicle fires. This guideline serves only to remind all personnel of some of the common hazards and safety practices associated with vehicle fires.

The Company Officer should realize that all fire situations pose specific challenges. Vehicle fires are often fought in high traffic situations where firefighters are exposed to the dangers of other motor vehicles around the scene. The IC should consider the safety of their personnel paramount to the flow of traffic in the area. The IC should work with the Police to return traffic to normal as quickly as possible but never at the expense of creating an unsafe working environment.

Vehicles are rolling hazardous materials containers. Every vehicle on the road contains an amount of gasoline along with motor oil. In addition, vehicles today are storage lockers for people's unwanted chemicals. Containers of every unknown product could be loaded in the vehicle, which is now on fire.

Company Officers should be aware that when weighing the risk versus cost in fighting a vehicle fire, that most vehicles built in the last twenty years contain sensitive electrical components which if destroyed would render it a total loss. Therefore, attempts should be made to contain vehicle fire to the area of origin while keeping risk to firefighters low. Aggressive attempts should be made to control fire exposures and damage to unburned areas of the car.

SAFETY NOTE:

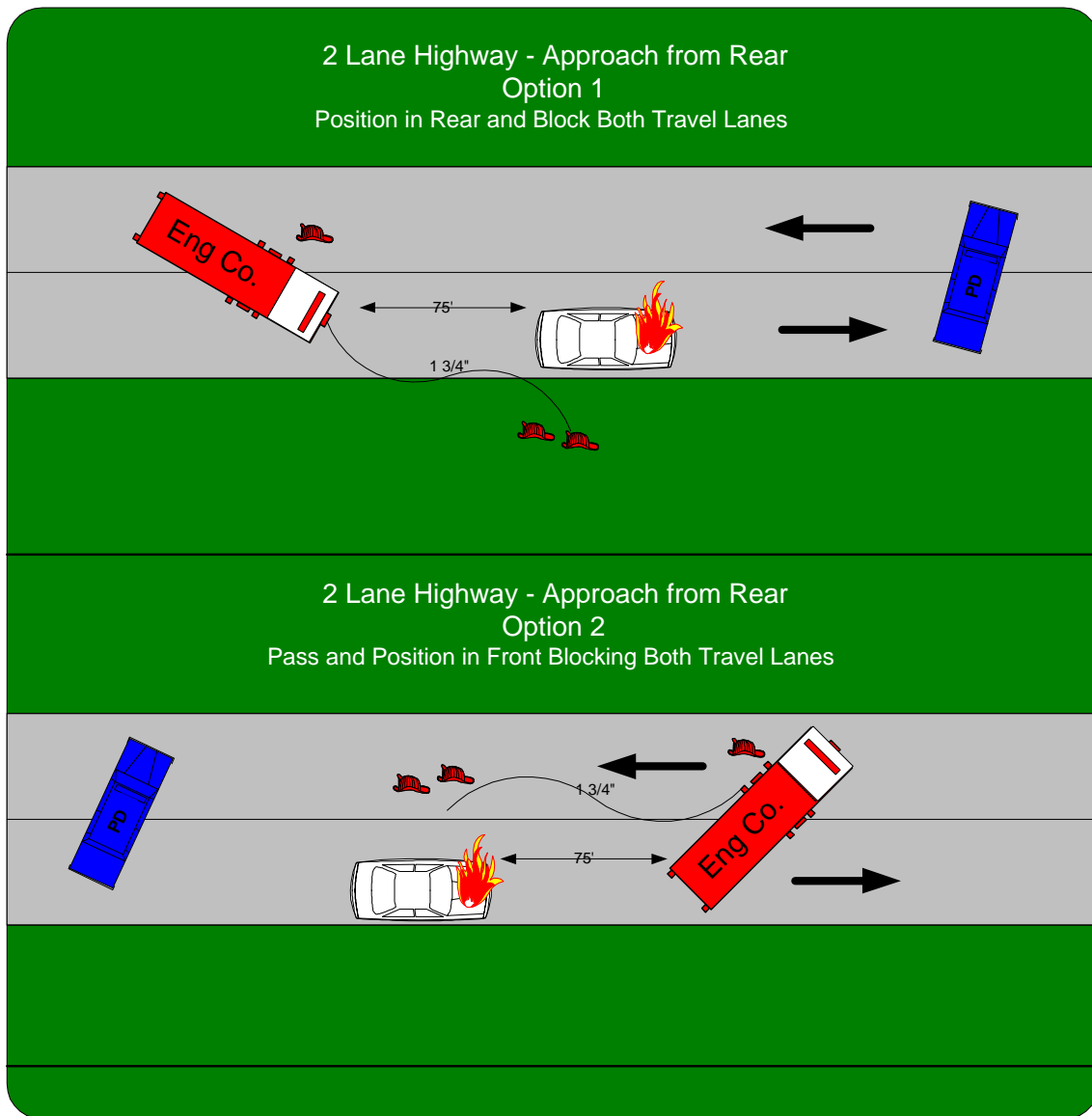
While vehicle fires mostly occur outdoors, their products of combustion create a very hazardous environment for firefighters. Therefore, all firefighting including those involving vehicles shall be performed in full protective clothing including SCBA.

Apparatus placement at vehicle fires is also critical. Engine Companies should place their rigs in a position, which creates an additional safety zone for firefighters. Again, impeding the flow of traffic is critical to creating a safe work zone for firefighters.

Engines should be angled so that lines can be easily deployed and a view of the fire scene is afforded to the pump operator. The following depicts several

possible options for apparatus placement at the scene of vehicle fires in active roadways.

Suggested Apparartus Placement Guideline Vehicle Fires



Reference: IFSTA Fire Department Pumping Apparatus 7th Edition

210.03.11. Wildland - Urban Interface Firefighting:

While the Winter Park Fire-Rescue Department does not experience the potential for serious wildland-urban interface fires, our personnel may be assigned wildland duties as part of a State Task Force response. Therefore, it is important to note the following information regarding safe practices during these particular types of fires.

Tactical Priorities

Reconnaissance: A careful and complete survey of the area involved will be the top priority of the first arriving unit. The only exceptions should be small fires where the entire area can be observed from one location, or situations, which require immediate action, as in a rescue or an exposure severely threatened.

Exposure Protection: Protecting exposures and improvements from the fire becomes a high priority, even at the risk of adding extra acreage to the size of the fire.

Confinement of Perimeter: The head(s) of the fire should be given highest priority in order to efficiently control the fire spread. A direct application fire stream, with units operating inside the burn area, is the fastest control evolution available to stop the fire spread, (direct attack). Many situations will not support this method, and Command may elect to use natural and manmade barriers to stop the forward progress of the fire, (indirect attack). Where geographical, weather, and exposure condition permit, the initial attempt at controlling the fire should be the indirect method. Special consideration must be given to the availability of resources for patrolling the perimeter.

Wildland Fire Command Considerations

Upon arrival, the initial Incident Commander shall provide the following information in the initial radio report:

- Size (an estimate, given in acres or faction of acres).
- General size of vegetation (light, medium, or heavy rough)
- Rate of spread (expressed as slow, moderate, or rapid).
- Command shall request a Division of Forestry unit to respond if the fire requires two or more woods trucks to control.

On major incidents, establish a Command Post as soon as possible. With large, complex fires, Geographic Sectors, Reconnaissance Sector, and Resource Sectors to coordinate move-ups and callbacks will be essential and should be initiated as soon as possible. Level I and Level II staging, should be utilized by Command as on other types of incidents.

Command should plot and update the fire size, location, and progress as often as possible using maps or aerial photographs and information from Reconnaissance Sector.

Command shall determine the location of tankers and other sources of water supply, and notify all units at the incident of their locations.

Whenever possible, location for Command Post should be chosen with a suitable site for helicopters to land.

Standard Company Operations

Standard company operations assign basic fireground functions and activities to the various companies based upon the capability and characteristics of each type of unit. Standard Company Operations on brush fires vary greatly from other types of incidents.

The following items represent the standard Operations that will normally be performed by the Companies on brush fire incidents in our area:

Woods Truck: Available from Orange / Seminole County Fire

Operate off-road, in natural ground cover to directly apply fire streams.

Reconnaissance

Lighting and control of backfires

Exposure protection

Fire line and spot-fire patrol

Overhaul (mop-up)

Engine Company

Exposure protection

Water supply for woods trucks

Overhaul of accessible areas

Tankers

Water supply for woods trucks

Exposure protection

Overhaul in accessible areas

Water supply and shuttle for mulch fires

Due to the ever-changing nature of a brush fire, the key concept in Standard Company Operations is **mobility**. Engine Companies and Tankers should not

be committed in such a manner as to become inflexible to rapid reassignment of duties or location.

Wildland Fireground Factors

The following factors have a critical effect on the burning characteristics of a brush fire and on the effectiveness of control efforts.

Weather

Relative humidity.
Wind, speed and direction.
Temperature

Cumulative drying, long range drying as in a drought; referred to as a build-up index.

Fuel

Type
Size
Arrangement

Equipment Available

It is essential to effective control that Division of Forestry units be requested as early as possible. During peak fire periods, Forestry Units may be committed or have extended response times due to the large geographical area that they cover.

Access and natural or man-made barriers

Rivers, lakes, swamps.
Fences, canals, ditch.
Muck, dried lakebeds.
Heavy or dense forest.
Soft sand.

Tactics and Strategy

Brush fires often present a large area of rapidly spreading fire with numerous and complex exposure problems. The basic brush fire philosophy will be to control the spread of the fire by use of natural boundaries. Where exposures are, or may soon be threatened, or where a small fire can be quickly extinguished by one woods truck, a direct attack may be warranted.

There are two basic methods of attacking a brush fire, the direct attack and the indirect attack. In many situations a combination of the two, applied to different areas of the fire, has proven most successful in providing effective control.

Command must quickly develop a firefighting plan, and this plan must remain flexible throughout the incident.

Wildland Firefighting Apparatus

Vehicles should not be left unattended in dry grass or other flammable vegetation. On large operations it may be necessary to burn off an area for staging.

If a vehicle is left unattended near the fire area, windows are to be rolled up; keys are to be left in the ignition. **This applies to staff and support vehicles as well as operations units.**

While operating off-road, maintain a constant awareness of soil composition or conditions that would hamper mobility. Be careful of changes in type, size, or color of vegetation as it may indicate a change in soil composition. Use a man or foot (swamper) to precede the unit when soil is questionable.

When entering off-road areas, vehicles so equipped should switch to four-wheel drive prior to departing the hard surface of the roadway.

Vehicles with a winch should be backed into questionable areas to more readily facilitate removal if they become stuck.

Wildland Overhaul

Overhaul should start as soon as manpower is available. Don't wait until the fire is completely contained unless it is absolutely necessary. Overhaul must be thorough. If there is a very large fire area, overhaul at least 100 yards into the main burn from the perimeter. Use water as often as possible to mop up. Dirt also works well.

Remember that perimeter fire control only contains the fire; it is not out until every ember is cold. Embers can be blown over the perimeter and quickly start spot fires.

Firefighter Safety

Always provide for an escape route.

Do not allow firefighting personnel to become exhausted.

Provide drinking water.

Wear protective clothing.

Use hand tools correctly.

Remember, fire can burn against the wind.

Keep your equipment and yourself in good condition.

Wildland Apparatus Placement

Never place apparatus directly in front of a brush fire.

If you park in a brush area, remember that the exhaust system can start a fire below your truck.

Provide protection for the engineer in case the wind changes direction.

Beware of getting stuck.

Know the limitations of your apparatus in rough terrain.

Be alert to the possibility of puncturing your tires.

210.03.12. Summary:

While this document in no way represents a complete written guideline for fighting fires. It does inform employees how the department expects certain jobs to be performed. Winter Park Fire-Rescue prides itself on the fact that our crews perform aggressive fire attacks with a high regard for personal safety and care. It is also a fact that our people take extraordinary care in providing the highest degree of customer service taking care not to cause more damage than is absolutely necessary to stop the damaging spread of fire.

Compliance with the items contained in this guideline will help to ensure our mission of helping to maintain the high quality of life our citizens currently enjoy.