

**PHOENIX REGIONAL  
STANDARD OPERATING PROCEDURES**

**Fireground Factors**

**M.P. 202.02**

**01/18**

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Fireground factors offer a standard list that the Incident Commander must consider in the evaluation of an incident. Critical Fireground Factors are determined through deliberate and focused size-up with intent of evaluating the incident to determine how and to what extent the tactical objectives will be met for any particular incident.

**Operational Information**

The establishment of the Critical Fireground Factors for any incident is done through the standard process of size-up. Size-up is defined as: “an appraisal of the magnitude or dimensions of an event or incident”.

The Critical Fireground Factors are meant to be used as a tool to assist the Incident Commander with simplifying complex information into 7 distinct categories. They are meant to provide the Incident Commander the ability to categorize and simply communicate what is critical within a specific incident. Not all factors are typically critical for every incident. The ability of the incident commander to identify what size-up information is truly critical to the accomplishment of the tactical objectives is very important. It is equally important for the Incident Commander to set aside or disqualify factors that are not directly important to the incident outcome.

It is unacceptable to begin operations before adequately performing size-up and considering the critical fireground factors. A fire attack is many times an instinctive action-oriented process that involves taking the shortest and quickest route directly to the fire. Action feels good in fireground situations while it can be perceived that thinking delays action. Beware of non-thinking attack situations and non-thinking attackers, they are dangerous and unacceptable.

Fireground factors represent an array of items that are dynamic during the entire fireground process. The relative importance of each factor changes throughout that time frame. Command must continually deal with these changes and base decisions on fireground factor information that is timely and current. Beware of developing an incident action plan and sticking to that same plan throughout the fire, even though conditions continue to change. Effective fire operations require action plan revisions that continually reconsider fireground factors based upon information feedback.

In critical fire situations, Command may develop an incident action plan and initiate an attack based on incomplete information compiled in an initial size-up. This may leave the Incident

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Commander with significant questions regarding the incident structure, conditions and/or occupancy. This is defined as critical unknown information. In such cases, efforts must continue throughout the operation to improve the information on which those decisions are based. Command will seldom operate with complete information during initial operations.

The effective management of each fireground factor requires Command to apply all methods of information gathering and communication (i.e., visual, recon, preplan) to each factor. This is particularly true between the major categories of fireground factors. Command must deal with each factor in the most effective manner.

Most incident situations represent a complex problem regarding how Command deals with fireground factor information. There are factors that can be determined from a Command position on the outside of the structure and other factors that can only be determined from other operating positions, both outside and inside the structure. During an incident, fireground factor information is gathered utilizing one or more of the following overlapping forms of size up:

1. *Visual*: Fireground factors which are obvious to visual observation and those absorbed subconsciously. This visual information is categorized as the type that can normally be gained by actually looking at a tactical situation from the outside. This form of intelligence involves the perceptive capability of Command.
2. *Reconnaissance*: Fireground information that is not visually available to Command from a position on the outside of a tactical situation 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 for the coordination and completion of a 360° recon and then receiving an information-oriented report.
3. *Preplanning and Familiarity*: Intelligence that is gained from formal pre-fire planning, general informal familiarization activities and from C.A.D. through the M.D.T. (e.g., bldg. drawings, hazardous materials, etc.). Such intelligence increases the information initially available to Command from the OUTSIDE of a tactical situation. This information provides Command with intelligence that would otherwise have to come from a Reconnaissance report or might not be available.

The following are fireground factors which should be evaluated by Command as they pertain to each tactical situation. They can be obtained by using the above information management factors.

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BUILDING

- Size
- Roof type (bow string, bar joist, etc.), and condition
- Roof covering (concrete, composite, tile)
- Interior arrangement/access (stairs, halls, elevators)
- Construction type
- Age
- Condition (faults, weaknesses)
- Value
- Compartmentation/separation
- Vertical/horizontal openings (shafts, channels)
- Outside openings (doors and windows/degree of security)
- Utility characteristics (hazards/controls)
- Concealed spaces/attic characteristics
- Exterior access
- Effect the fire has had on the structure (at this point)
- Time projection on continuing fire effect on building

FIRE

- Size
- Extent (% of structure involved)
- Location
- Stage (inception, free-burning, flashover)
- Direction of travel (most dangerous)
- Time of involvement
- Type and amount of material involved (structure/interior finish/contents)
- Type and amount of material left to burn
- Product of combustion

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OCCUPANCY

- Specific occupancy
- Type/group (business, mercantile, public assembly, institutional, residential, hazardous, industrial, storage, school)
- 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)
- Loss Control profile/susceptibility of contents to damage/specific loss control needs (computers, business records, etc.)

LIFE HAZARD

- 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 (personnel, equipment, and Command)
- Fire control required for search and rescue
- Needs for EMS
- Time estimate of fire 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.)

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ARRANGEMENT

- 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

RESOURCES

- Personnel and equipment on scene
- Personnel and equipment responding
- Personnel and equipment available in reserve or in Staging
- Estimate of response time for additional resources
- Condition of personnel
- Capability and willingness of personnel
- Capability of Command personnel
- Availability of hydrants
- Supplemental water sources
- Adequacy of water supply
- Built-in private fire protection (sprinkler, standpipe, alarms)
- Outside agency resource and response time

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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, humid, visibility)
- Traffic conditions
- Social conditions (strike, riot, mob, rock festival)