Tempe Fire Department Policies and Procedures
Fireground Factors
207.01
Rev 10-07-09

Fireground factors offer a standard list of basic items Command must consider in the evaluation of tactical situations. This list should provide Command with a "checklist" of the basic items that are involved in size-up, decision making, initiating action, review and revision on the fireground.

An effective Command officer can only deal with a limited number of factors on the fireground. Within the framework of that limitation, the identification of the critical factors is extremely important. All the factors are not critical in any one tactical situation. Command must identify the critical fireground factors that are present in each tactical situation - the list of factors offers a framework for that process.

Many times we begin operations before adequately considering the critical fireground factors. Size-up is a conscious process involving the very rapid but deliberate consideration of the critical factors and the development of a rational plan of attack based on those conditions. Candle moth, make sure to attack from unburnable portion, using a standard “hose fire package” on a commercial or challenging occupancy.

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

In critical fire situations, Command may develop an initial plan and initiate an attack based on an incomplete evaluation of fireground factors. Command must continue to gather information as the incident evolves, and adjust the plan as necessary.

The effective management of each fireground factor requires Command to apply a somewhat different form of information management (visual, recon, preplan) to that factor. This is particularly true between the major categories of factors. Command must link the best way to deal with each factor to that factor.

Most tactical situations represent a complex problem with regard to how Command deals with fireground factor information. There are factors that can be determined from an operating 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. Fireground intelligence available to Command is developed utilizing an overlapping variety of information factors and forms. These forms of information revolve around the three following basic factors:

> Visual Factors - Those 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 capacity of Command.
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> Reconnaissance Factors - Information that is not visually available to Command from his position on the outside of the 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 and then receiving an information-oriented report.
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> Preplanning and Familiarity Factors - Intelligence that is gained from formal pre-fire planning, informal familiarization activities and from CAD through MDT (i.e., building drawings, hazardous materials, etc.). Such intelligence increases the information initially available to Command from the OUTSIDE of a tactical situation. This information arms Command with intelligence that he would normally have to assign as a Reconnaissance Factor or do without.

The following are Fireground Factors which should be evaluated by Command as they pertain to a tactical situation. They can be obtained by using the foregoing information management factors.

Building

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

Fire

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

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
- Property conservation profile/susceptibility of contents to damage/need for salvage

Life Hazard

- Number of occupants
- Location of occupants
- Condition of occupants (in relation to the fire)
- 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.)

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
- Capacity/limitations on apparatus movement and use

Resources

- Manpower and equipment on scene
- Manpower and equipment responding
- Staging area for manpower and equipment responding
- Manpower and equipment available in reserve
- Estimate of response time for personnel and equipment
- Condition of personnel and equipment
- Capability and willingness of personnel
- Capability of commanders
- 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, humid, visibility)
- Traffic conditions (strike, riot, mob, rock festival)