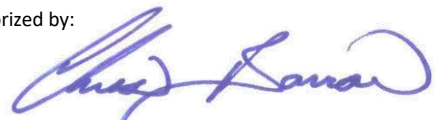
	TRAVIS COUNTY ESD #5 **MANCHACA FIRE RESCUE** **Department Best Practices** Authorized by:  Fire Chief Chris Barron	**A101**
		Effective: 7-6-2017
		Rescinds: C2.31
Fireground Operations		**Reference:** AFD A101.4
		Application: Shift Personnel

I. Purpose

This document is to serve as an introduction to guidelines of best practices concerning operations on the fireground, and to standardize certain procedures for fireground operations and other emergency scenes; including incidents involving automatic aid partners. It is the intent of the MFD best practices guidelines to simplify decision-making requirements under potentially stressful situations.

II. Background

Information contained in this document is to be considered an overview of firefighting and emergency operations. Tactical, safety and emergency response considerations for specific incident types are also referenced in other best practices documents and in other documents specific to the circumstance.

A concept that is described in this best practices document is the ventilation-controlled fire state, which occurs when a structure fire's growth is limited by the available oxygen. At this point, the fire will increasingly produce more smoke and fuel vapor, the products of incomplete combustion in this state. The opening of any doors or windows will provide the needed additional oxygen and the fire growth will increase, possibly leading to rapid fire progression. Most structure fires will be in a ventilation-controlled state when firefighters arrive. Nationally, firefighters die each year due to the hazards associated with ventilation-controlled fires. Locally, firefighters have also experienced "close calls," and some firefighters have been seriously injured when performing operations in a ventilation-controlled environment. Firefighters must understand and recognize ventilation-controlled fire situations so that an appropriate risk/benefit analysis can be conducted. The explanation of this concept will be discussed in greater detail in the best practices section.

This document is a direct adaptation of the Austin Fire Department SOG on fireground operations. It has been adopted by Manchaca Fire Rescue as an Auto Aid partner to maximize standardization between partner agencies. Variations and additions to the language from the parent AFD document will be signified by text in italics. Generic changes that do not affect content such as formatting and changing "AFD" to "MFR" will not be noted.

III. Policy

A. **Incident Management.** All Fireground Operations will be conducted under an Incident Management System (IMS).

B. **Incident Priorities.** All firefighting operations and emergency scene operations shall be conducted with fire service incident priorities as the overall focus of incident operations.

1. **Life Safety.** The First Priority for scene operations is life safety. Life safety refers to those activities and operations necessary to ensure emergency personnel life safety as well as civilian life safety. Fire extinguishment, evacuation of occupants and the search for and rescue of trapped and threatened civilians are integral components of the life safety priority.

2. **Incident Stabilization.** Incident Stabilization is the second priority and refers to those activities and operations necessary to bring an incident under manageable control.

3. **Property Conservation.** Property Conservation is the third priority and refers to those activities and operations aimed at reducing property and environmental damage.

C. **Two-in two-out.** Unless there is an immediate need for rescue, no interior operations will begin until there are two firefighters available outside the structure that can attempt rescue of firefighters, if necessary. For anyone entering an IDLH atmosphere, each firefighter will have a portable radio on and the proper radio channel on before entering the IDLH environment. It will be up to the shift officer to make sure each firefighter has a radio on. **IF there is any reason to deviate from the Two-In Two-Out rule, it will need to be documented in the Texas Commission on Fire Protection FIDO department account.

IV. Best Practices

The following best practices should be followed at all firefighting and emergency scene operations, except where deviation can be justified by Fire Officers. Any significant deviation should be communicated to responding/on-scene units as soon as possible.

A. **Terminology.** When referring to fireground operations, the following terms shall apply:

1. **Aerial Apparatus.** A vehicle equipped with an aerial ladder or aerial platform (Ladder or Quint).

2. **Apparatus Capability.** Having the mechanical ability, equipment, and personnel required for a tactical function.

3. **Backup Team**. A team of at least two firefighters who are in the same level of protective equipment as the fire attack team, who have deployed a backup hose line, and are in position to provide protection and/or rescue a downed firefighter.

4. **Blitz Attack.** Using a solid or straight stream to quickly knock down a fire from the exterior prior to an interior attack. *Blitz attack is considered a tactic associated with an offensive mode of operation.*

5. **Captain.** A Captain or Acting Captain assigned to a Ladder, Quint or Rescue.

6. **Chief.** A Battalion Chief or Acting Battalion Chief assigned to a Command Vehicle.

7. **Command.** The person in charge at an incident who is responsible for all incident activity, normally the highest-ranking officer on scene.

8. **Flow Path**. The path between an inlet opening and an exhaust opening that allows the movement of heat and smoke from a higher-pressure area within the fire area towards lower-pressure areas accessible via doors, windows and other openings.

9. **Inside Division**. Inside the fire area of the structure. This area would be the entire interior of a typical single-family dwelling. However, in a multi-family, commercial, or high-rise structure, this area may only be a portion or a floor of the structure. The tactical functions of fire attack, Inside Truck Work, backup lines, overhaul, and secondary search are performed in this area. This IMS assignment will normally be assumed by the Captain or Company Officer performing Inside Truck Work.

10. **Inside Truck Work.** The fireground tactics of Forcible Entry, Horizontal Ventilation, Primary Search, Checking for Fire Extension, and Salvage. Any Company may be assigned Inside Truck Work.

11. **Lieutenant.** A Lieutenant or Acting Lieutenant assigned to an Engine or other assigned apparatus.

12. **Outside Division.** Outside the fire area of the structure. This area would be the entire exterior of a structure of a typical single-family dwelling. However, in a multi-family, commercial, or high-rise structure, this area may also include sections or floors of the structure that are out of the fire area. The tactical functions of Outside Truck Work, exposure protection, water supply, RIC, and defensive operations readiness are performed in this area. This IMS assignment will normally be assumed by the Captain or Company Officer performing Outside Truck Work.

13. **Outside Truck Work.** The fireground tactics of Laddering, Horizontal and Vertical Ventilation, Additional Forcible Entry, Utility Control, and Salvage. Any Company may be assigned Outside Truck Work.

14. **Pumping Apparatus.** A vehicle equipped with a fire pump and hose for fire attack and water supply (Engine or Quint).

15. **Team**. A subset of a single Company comprised of two or more individuals who have been assigned a common task, are in communication with each other, coordinate their activities as a work group and support the safety of one another.

16. ***Tender.*** *A water supply apparatus with a minimum capacity of 2000 gallons and the ability to offload and reload at a minimum rate of 1000 gallons per minute.*

17. **Standby**. To place an apparatus at a designated location, perform any needed activities associated with standing by at that location and maintain a state of readiness until an assignment is received.

18. **Rescue Unit**. A utility apparatus that carries specialized rescue tools and equipment and is staffed with four members who maintain advanced levels of training and expertise in technical rescue disciplines.

19. **Ventilation-Controlled Fire.** The point in a fire's growth when the size of the fire becomes limited due to the available oxygen.

B. **Strategy and Tactics.**

1. **Utilization of incident priorities.** All firefighting operations and emergency scene operations shall be conducted utilizing strategy and tactics. Strategies and tactics should be designed with the incident priorities as the overall focus for emergency operations.

2. **Incident Objectives.** A strategy shall be developed and shall center on satisfying the following objectives:

    a. **Rescue.** Rescue of trapped or threatened individuals.

    b. **Exposure.** Ensuring exposure protection through protective hose lines, confinement, extinguishment, or through moving the exposure.

    c. **Confinement.** Confining the fire or hazard to the smallest geographic area possible.

    d. **Extinguishment.** Ensuring all fire is extinguished.

    e. **Overhaul.** Sifting through fire debris and extinguishing all traces of fire and ensuring complete fire extinguishment.

    f. **Ventilation.** The systematic removal of heat and smoke from an enclosed area to assist in fire attack and rescue operations, and to reduce property damage.

    g. **Salvage.** Efforts made to save the occupants' personal property and reduce the amount of fire and fire control damage.

3. **Order of operation.** These objectives are most often addressed simultaneously.

4. **Alignment with incident priorities.** All strategies and tactics shall remain aligned and consistent with incident priorities. Life safety is the number one priority and simultaneous strategies may be employed to address this priority. A fundamental focus on firefighter safety must permeate all strategies and the tactic of occupant evacuation must always remain a viable option to address life safety.

C. **Incident Management System**.

1. **Use of NIMS.** All firefighting operations and emergency scene operations shall be conducted under the direction of an Incident Commander (Command). An Incident Management System in accordance with the National Incident Management System (NIMS) will be established for all incidents.

2. **Assumption of Command.** The first Company Officer on scene shall assume Command and announce this event over the radio. Command shall normally be transferred to the next arriving Officer of higher rank or Officer of similar rank if that Officer is in a better position to manage the incident. All multiple alarm incidents shall have a Chief Officer as the Incident Commander. An Acting Battalion Chief shall not be in command of a multiple alarm incident. All transfers of Command must be announced on the fireground radio channel.

3. **Transfer of Command to the AHJ.** The jurisdiction in which the incident occurs ultimately retains the responsibility for that incident. For ongoing incidents, Command will be transferred to a Chief Officer of the home jurisdiction at a point deemed appropriate by the Incident Commander and a Chief

Officer from the home jurisdiction. *Within MFR jurisdiction, if a Chief Officer is not available, the MFR Lieutenant will coordinate with Command to assume Command as the home jurisdiction once the scene is stabilized and the event is deescalating.*

4. **IMS expansion.** The Incident Commander shall be responsible for expanding the Incident Management System to adequately manage the incident and address the incident priorities. Due consideration shall be given to filling the Command Staff (especially the Safety Officer) and the General Staff (especially the Operations Chief) positions.

5. **Utilization of Chiefs and Officers.** As an incident escalates, the need for assigning Chief Officers to key functions becomes increasingly important. Incident Commanders should consider assigning Chief Officers to critical roles such as Operations and Planning. Experienced Company Officers should be utilized in other key roles such as Branch Directors and Division and Group Supervisors.

6. **Subdivision of an incident.** Incidents should be geographically divided as early in an incident as possible. The Incident Commander and/or the Operations Chief shall ensure the incident is adequately divided (refer to Section IV. M. of this document) and that Division Supervisors are assigned. The Division Supervisor can be the first arriving Company Officer in a particular Division.

7. **Unified Command.** Unified Command may be utilized during multi-agency/multi-jurisdictional incidents (refer to NIMS).

D. **Size-Up**.

1. **Definition.** Size-up is the rapid mental evaluation of factors that affect an incident.

2. **Scope of size-up.** Size-up is a continuous process of evaluating current conditions by all on scene Officers.

3. **Application of size-up data.** The Incident Commander uses size-up information to select a strategy, determine tactics, and formulate an action plan.

4. **Hot lap / 360.** The preferred method of sizing-up an emergency scene is to perform a “hot lap.” A hot lap is an exterior reconnaissance of the structure, performed while using a TIC, with the main goal of locating the fire, giving the Officer a 360° view of the incident. A hot lap of a structure fire will allow the Officer to size-up the fire location and size, smoke conditions, building size and layout, possible victim location, as well as other relevant information. The time spent correctly sizing-up the incident during a hot lap will be regained during interior operations led by an Officer with thorough knowledge of the emergency scene. Officers should use judgment in balancing the time spent on the hot lap due to building size or obstructions and the size-up information that may be gained. When practical, a 360° hot lap of the structure should be performed, but at a minimum three sides of the building including the fire location side should be observed for an accurate size-up.

5. **Initial considerations.** When attempting to determine the fire location, the Officer should read the smoke conditions to identify the seat of the fire, especially if no flames are showing. The Officer should also consider if a blitz attack is possible and what method would be best for the blitz attack. Additionally, the Officer should consider the ventilation method to be utilized and what flow paths will be created by the opening of doors and/or windows (refer to MFR Best Practices A102 Ventilation).

6. **Radio reports.** The first-in Company Officer is responsible for providing an initial radio report of size-up conditions. Subsequent transfers of command between Incident Commanders should be accompanied by radio size-up reports.

    a. **Basic size-up.** Size-up should address the following 3 basic questions:
        1) What do I have?
        2) Where is it going?
        3) What can I do to control it?

    b. **Initial radio report.** The initial size-up radio report should contain the following elements:
        1) Assumption of command. ***I*** - *IC*
        2) Announcement of fireground channel.
        3) Summary of current conditions. ***C*** - *Conditions*
        4) Current actions being taken. ***A*** - *Actions*
        5) Directions for incoming companies ***N*** - *Needs*

E. **Risk Management**.

1. **Application.** All incident operations require a risk management approach to ensure the highest probability for successful outcome without unwarranted risk to personnel.

2. **Use of risk/benefit analysis.** All Incident Commanders should undertake a proper risk/benefit analysis. A risk/benefit analysis is a technique that compares the relative risk associated with a particular strategy or tactic with the expected gain or benefit of employing such a strategy or tactic. This risk/benefit analysis assists the Incident Commander in the formulation of the action plan. High risk/low benefit operations should be avoided and alternative strategies developed.

3. **Risk/benefit at ventilation-controlled fires.** Because most structure fires will be in a ventilation-controlled state when firefighters arrive, a risk/benefit analysis must be performed before entering into a structure with a working fire inside. Firefighters should not be placed in a ventilation-controlled environment for fire attack due to the associated high risks, such as high heat, low visibility, a toxic IDLH atmosphere and the very likely possibility of rapid fire progression with the addition of oxygen from any opening. Instead, actions should be taken to remove the ventilation-controlled environment before entry for fire attack. These actions include proper ventilation, cooling with hose streams from the exterior and/or changing the fire attack entry point. If the decision is made to place a firefighter in a ventilation-controlled environment due to an imminent threat to life, the firefighter must close an interior door to prevent the creation of a flow path from the fire toward the firefighters' entry point.

4. **Rule of thumb.** The MFR Rule of Thumb for risk/benefit analysis is characterized by the following phrase:

    a. We will risk a lot, within a structured plan, to save a savable life.

    b. We will risk a little, within a structured plan, to save savable property.

    c. We will risk nothing to save nothing (lives or property that cannot be saved).

F. **Placement of Apparatus**.

1. **General.** Unless otherwise directed, apparatus shall not block a roadway in the vicinity of a fire, nor will it block hydrants, intakes or other apparatus. Additionally, apparatus should not block access to entrances at large apartment, commercial, educational and industrial complexes. Blocking access for later arriving companies could have a detrimental impact on operations. The principal attack point should be left open and free of equipment as much as possible. Possible collapse zones must be considered when positioning apparatus.

2. **Command Vehicle/Command Post (CP).** The Battalion Chief should park their vehicle in a location that affords the most advantageous observation of the emergency scene. They should take into account factors such as wind direction, topography, ease of being located and weather protection. The Battalion Chief's vehicle should leave sufficient room for activities and not block access to the scene. The CP should normally be at the "front" of the incident where the main action is taking place. Once established, the location of the CP should be reported to Fire Dispatch over the radio and the green-colored Command Post beacon should be activated.

3. **Aerial Apparatus.** The **first due aerial apparatus** should position for best use of the aerial ladder for rescue, if necessary. Other vehicles should not be placed immediately behind or next to the aerial apparatus so as not to hinder removing ladders or extending the stabilizers. **Later arriving aerial apparatus** should consider exposure protection and potential aerial apparatus use (rescue, elevated streams or observation) when positioning the apparatus. Aerial apparatus should be spotted close enough to structures to effectively deploy the aerial if needed. Consideration of placing aerial apparatus in the most advantageous position is of prime importance. It is a good practice to place the aerial apparatus so as to access more than one side of a structure (corner spots), or to spot the aerial apparatus between structures for exposure protection.

4. **Pumping Apparatus.** The **first arriving Engine** should position the apparatus completely past the attack entrance in order to observe additional sides of the structure, and also to clear the front of the structure for possible aerial operations and deployment of additional hose lines. The **pumping apparatus that assumes the back up** team function at an offensive fire attack should usually position to transfer tank water to the first pumping apparatus and to be used as a RIC dedicated water supply.

   Pumping apparatus have greater flexibility than aerial apparatus in regard to placement. Pumping apparatus companies can be positioned further from an entrance and still effectively deploy hose lines, whereas aerial apparatus have the limiting factor of reach with the aerial. **Later arriving pumping apparatus** should standby at an appropriate hydrant and report their location to Command unless directed by Command to do otherwise. On the occasion that an Engine is assigned an aerial apparatus tactical function, the Engine should position near but not blocking the scene so that their tank water can be utilized if needed.

5. **Quint.** Usually, for multiple Company response incidents, a Quint will respond and position as an aerial apparatus. When possible, Quints should position so that two tactical functions could be accomplished with the apparatus. All other apparatus positioning near a Quint should allow enough area for stabilizer deployment on the sides and ground ladder removal from the rear. On the rare occasion that a Quint is assigned only a pumping apparatus tactical function, the Quint may position as a pumping apparatus.

6. **Other Apparatus**. Specialized apparatus should be located based on the function to be performed. For example, at night the Rescue Unit should be located so that its equipment can best be used to light the emergency scene, if it can do so without blocking other apparatus. Other apparatus and vehicles should be parked out of the way and in secure areas when left unattended.

7. ***Tenders.*** *In areas that either lack hydrants or have ineffective hydrants, tenders may be utilized to provide a sustained water supply to the attack engine. When spotting tenders, considerations should be given to both ingress to supply the scene and egress to depart and refill in a shuttle operation. If the tender is not used in a shuttle operation, it may be used as in a nursing operation where other on scene apparatus offload into the tender's direct tank fill as the tender supplies the scene.*

G. **Modes of Operation**.

1. **Selection of incident strategy.** One of the first decisions that must be made by the first-in Company Officer is selecting the mode of operation *(the incident strategy)*. This mode of operation will be used to assign the appropriate tactics and establish a command structure. The Incident Commander should announce the mode of operation and any changes in the mode of operation on the designated fireground radio channel.

   a. **Investigation Mode.** Although not traditionally a mode of operation, often a first arriving Company Officer will arrive on scene and need to investigate further before selecting a mode of operation or giving tactical assignments. In the initial radio report, the Officer shall communicate to all responding units that the Company will be investigating.

      1) **Initial Tactical Assignments.** The first pumping apparatus, first aerial apparatus, Rescue and the Battalion Chief will respond to the scene to investigate. The second pumping apparatus will respond to the scene and prepare to establish a backup team for the firefighters inside the structure in case the mode changes to offensive, while remaining at their apparatus. The second aerial apparatus will standby at a location where they could reposition if needed. Again, the crew should remain at their apparatus. All other apparatus will standby, with pumping apparatus locating hydrants, checking hydrants and announcing their location to Command.

      2) **Initial Command Structure.** The first-in Company Officer shall assume Command. If the first-in Officer is a Lieutenant, Command will transfer to the Captain upon arrival of the aerial apparatus or Rescue responding to the scene. Upon arrival, Command will then transfer to the Battalion Chief. Command will be transferred to a Chief Officer of the home jurisdiction at a point deemed appropriate by the Incident Commander and a Chief Officer from the home jurisdiction. *Within MFR jurisdiction, if a Chief Officer is not available, the MFR Lieutenant will coordinate with Command to assume Command as the home jurisdiction once the scene is stabilized and the event is deescalating.*

   b. **Offensive Mode.** Offensive Operations are characterized by aggressive interior activities. These operations are generally high risk as personnel are operating in the hot zone or interior of a structure fire. A blitz attack before interior entry can significantly reduce the risk to firefighters and any potential victims. Interior hose lines used for fire attack on the seat of the fire are associated with offensive operations. Unless there is an immediate need for rescue, no interior operations will begin until there are two personnel available outside the structure who can function as the outside team (refer to MFR Best Practices A104 Two-In/Two-Out). An offensive

attack *is often* assumed at most standard structure fires; *however, it should still be declared in the initial radio report.* If Command believes that offensive operations cannot be carried out in safety, Command will declare a defensive attack mode.

1) **Initial Tactical Assignments**. The first arriving pumping apparatus and the first arriving Ladder/Quint/Rescue company will normally respond to the scene, conduct a scene size-up, perform a blitz attack when possible and timely, determine the ventilation method including establishing proper flow paths and then, when safe to enter, begin inside operations. When the first arriving pumping apparatus performs a blitz attack from a location which would significantly delay interior attack, the fire attack and backup assignments may need to be switched. The first Captain on scene of an offensive fire attack will ensure that the primary tactical functions of fire attack, backup, Inside Truck Work (forcible entry, horizontal ventilation, primary search, checking for fire extension, salvage) and water supply are assigned. Additional tactical functions such as evacuation, additional fire attack hose lines and exposure protection may be assigned as needed.

   The second arriving pumping apparatus should respond to the scene and deploy a second hose line from the first pumping apparatus that will be used to establish a backup team for the firefighters inside the structure or, if necessary, assist with fire attack. The main reason for the second pumping apparatus responding directly to the scene is to position the backup team early in the incident for firefighter Safety. The secondary reason is to set up as a dedicated RIC Engine. Transferring tank water to the first pumping apparatus is a tactic that is used to extend tank water supply to the attack team until a hydrant supply can be established. The second pumping apparatus operator's primary responsibility is to ensure an adequate water supply to the first pumping apparatus and the dedicated RIC Engine. The second pumping apparatus operator may choose to help set up the hydrant supply instead of transferring tank water to the first pumping apparatus if there is a hydrant close (approximately 50 feet or less) to the first pumping apparatus or if another pumping apparatus is in the process of laying a hydrant supply line to the first pumping apparatus. On the occasion where conditions require more than tank water for extinguishment or result in difficulty positioning apparatus due to limited access, the Incident Commander may deem it appropriate to order the second arriving apparatus to lay a supply line from a hydrant to the first arriving apparatus.

   If a company has already been assigned as Inside Truck, the next arriving Ladder or Quint company should normally respond to the scene and begin outside operations as the Outside Truck. Additional pumping apparatus should standby at a hydrant, check the hydrant, and announce their location to Command. A Rescue arriving after the Inside Truck has been assigned will report onscene and stand by for assignment. Ladders or Quints arriving after Inside and Outside Trucks have been assigned will also report onscene and stand by for assignment. These companies will be inserted into the Incident Action Plan by the Incident Commander based on the needs of the Incident. Possible roles include, but are not limited to: assisting the Inside or Outside Divisions, RIC team development, Division or Group Supervisor, Command Post assistance/resource tracking, etc.

2) **Initial Command Structure.** The first-in Company Officer shall assume Command. If the first-in Officer is a Lieutenant, Command will transfer to the first arriving Captain. Command will then transfer to the Battalion Chief upon arrival. Command may be transferred laterally, between Officers of the same rank, if it is beneficial for the incident. Any Officer in Command

may pass Command laterally if needed, as long as both Officers acknowledge the transfer and exchange pertinent information. Command will be transferred to a Chief Officer of the home jurisdiction at a point deemed appropriate by the Incident Commander and a Chief Officer from the home jurisdiction. *Within MFR jurisdiction, if a Chief Officer is not available, the MFR Lieutenant will coordinate with Command to assume Command as the home jurisdiction once the scene is stabilized and the event is deescalating.*

The first Captain will enter the structure and direct all inside operations such as fire attack, primary search, horizontal ventilation, backup lines, overhaul, salvage, etc. Upon transfer of Command, the Captain inside the structure will assume Inside Division, and will direct all operations inside the structure unless the interior is further divided.

As the incident progresses, it becomes advantageous for Command to operate from the exterior of the fire building. Therefore, the first Captain may pass Command to the second arriving Captain, if arriving before the Battalion Chief. This Captain should remain outside the structure and direct outside operations including Outside Truck Work (consisting of laddering the building, vertical ventilation, utility control, additional forcible entry, and salvage), exposure protection, water supply, RIC, defensive operations readiness and any other tactical operations outside the fire structure. Upon transfer of Command, the Captain outside the structure will assume Outside Division, and will direct all operations outside the structure unless the exterior is further divided. The second arriving Captain will normally be assigned as an Outside Division Supervisor if arrival is after the Battalion Chief.

All Offensive Operations will be under the direct supervision of and closely monitored by Division/Group Supervisors, the Operations Chief and/or the Incident Commander.

c. **Defensive Mode.** Defensive Operations are conducted when the risk/benefit analysis indicates that unacceptable risks to firefighters would result from offensive operations. These defensive operations are primarily characterized by exterior activities to confine and extinguish the fire, which are not necessarily passive but are designed to minimize risk to personnel. However, depending on circumstances, certain tactics used in the defensive mode may require entry into the structure such as VEIS and cut-off line placement. Defensive strategies should focus on personnel safety and incident stabilization. Special consideration should be given to keeping personnel out of collapse zones. The utilization of unmanned master stream devices (monitors, deck guns and aerial nozzles) should be considered in the defensive mode. In the initial radio report, the Incident Commander shall communicate to all responding units that they will be operating in the defensive mode.

1) **Initial Tactical Assignments.** The first pumping apparatus and the first aerial apparatus will respond to the scene and begin exterior operations. Consideration for positioning apparatus outside of the collapse zone should be conducted before LDH lines are laid and charged. The second pumping apparatus should respond to the scene and prepare to establish a large flow water supply. Consider a reverse lay to a nearby hydrant, and pumping from the hydrant back to the scene. The second aerial apparatus and Rescue should standby until given direction by Command. Additional pumping apparatus should standby, locating and checking hydrants, and announce their location to Command. The Battalion Chief will respond to the scene.

The first Captain on scene of a defensive fire attack will ensure that the primary tactical functions of exposure protection and water supply are assigned. Additional tactical functions,

such as rescue, evacuation, cut-off lines and salvage may be assigned as needed. Achieving the necessary fire flow is a high priority at a defensive fire. Consideration shall be given to correctly setting up the water supply by directing such activities as positioning pumping apparatus at hydrants, relay pumping, or assigning a Water Supply Group Supervisor.

2) **Initial Command Structure.** The first-in Company Officer shall assume Command. If the first-in Officer is a Lieutenant, Command will transfer to the first arriving Captain. Command will then transfer to the Battalion Chief upon arrival. Command may be transferred laterally, between Officers of the same rank, if it is beneficial for the incident. Any Officer in Command may pass Command laterally if needed, as long as both Officers acknowledge the transfer and exchange pertinent information.

   If arriving before the Battalion Chief, the first arriving aerial apparatus Captain on scene of a working structure fire with a defensive attack will assume Command and direct exterior operations. Upon transfer of Command, the Captain will normally be assigned to the Division in front of the structure. Command will be transferred to a Chief Officer of the home jurisdiction at a point deemed appropriate by the Incident Commander and a Chief Officer from the home jurisdiction. *Within MFR jurisdiction, if a Chief Officer is not available, the MFR Lieutenant will coordinate with Command to assume Command as the home jurisdiction once the scene is stabilized and the event is deescalating.*

   The second arriving aerial apparatus Captain will normally be assigned to the rear of the structure and direct all activities in that Division.

d. **Transitional Mode.** Transitional Operations are those operations conducted as the incident strategy is switched from offensive to defensive or defensive to offensive. Any change in operational strategies shall be carefully communicated to all firefighters on the fireground.

   1) **Use of transitional mode.** Transitional Operations are undertaken when the continuing risk/benefit analysis indicates that a change in strategy is necessary, whether offensive or defensive.

   2) **Coordination.** In order to ensure personnel safety, close coordination and supervision is necessary during Transitional Operations.

   3) **PAR.** A Personnel Accountability Report (PAR) shall be conducted anytime an incident strategy goes from offensive to defensive attack mode.

H. **Company Level Accountability**.

1. The Company Officer must always be accountable for the location of all assigned firefighters. When a Company Officer divides a Company into one or more teams, the following conditions must be met for the Company Officer to maintain accountability:

   a. The team must have a radio and a radio designation given by the Officer (Q27 Salvage Team, Q3 Search Team, etc.)

b. The team must be given a task level assignment only. (For example, the Officer develops the tactic of Fire Attack and assigns the task of advancing a hose line and extinguishing fire to the team.)

c. The team must report to the Company Officer Task Benchmark information so the Officer can measure task progress.

d. The team must report back to the Company Officer after the task is complete.

e. If the team were assigned to a different Division than their Company Officer, the team should check in with the Division Supervisor and report Task Benchmark information to that Division Supervisor. After the task is complete, the team should report back to the Division Supervisor and request permission to return to their Company Officer.

I. **Benchmarks**.

1. **Definition.** Benchmarks are points of reference from which measurement toward the achievement of the Incident Priorities can be made. Any Company that is given a tactical assignment, whether by Standard Operating Guideline or by Command, must announce on the fireground radio channel their radio designation and the tactical function(s) they will perform.

   a. **Tactical/Task Benchmarks.** In order to allow measurement of progress, companies and teams must provide information to the Officer issuing the assignment. Information that should be communicated includes:

      1) Assumption or acknowledgment of assignment
      2) Completion of assignment
      3) Inability to complete assignment
      4) Any significant delay in completing assignment
      5) The need for more resources to complete an assignment.

   The following are examples of tactical assignment benchmarks that should be communicated: “E501 is assuming Fire Attack,” “E501 on hydrant water supply,” “third floor evacuated,” “exposure B protected,” “not able to search second floor due to fire conditions,” etc. All communications must be acknowledged; a message not acknowledged is a message not received.

2. **Command Benchmarks.** Command must also report benchmarks to Fire Dispatch for documentation in the incident record. The following benchmarks should be reported by Command to indicate progress in achieving the Incident Priorities.

   a. Life Safety (Firefighter).

      1) **Outside Team Established.** When the Outside Team is in place to monitor the safety of the Interior Team.

      2) **Entry Size-Up**. When firefighters prepare to make entry into a structure for fire attack, a report must be given of the interior conditions the firefighters will enter to advance towards the fire. The assessment of the interior conditions should be made with a TIC when possible.

3) **Backup Team Established**. When a backup team is in place to protect the firefighters inside the structure. The location of the backup team should also be reported.

4) **RIC Team Established**. When the RIC team is in place with the RIC equipment and a hose line for firefighter rescue has been identified. The location of the RIC team should also be reported.

5) **Safety Officer Assigned**. When the assignment of Safety Officer is given. The person given the assignment should also be reported.

b. **Life Safety (Civilian)**.

1) **Primary Search Complete**. When the initial search for victims in the fire area is complete. Whether any victims were found or not should also be reported.

2) **Secondary Search Complete**. When the second, more thorough search of the fire area is completed by a Company other than the Company that completed the primary search. Whether any victims were found or not should also be reported.

c. **Incident Stabilization**.

1) **Fire Knocked Down**. When the initial fire stream is applied to the main body of fire significantly reducing the flame and heat production. This includes when a blitz attack is used to knock down the fire from the exterior. Although knocking down a fire indicates significant progress toward incident stabilization, the hazards associated with a structure fire may still exist including the possibility of the rapid return of fire.

2) **Fire Under Control.** When the forward progress of the fire is stopped, no additional units will be required and there is no imminent danger to firefighters.

3) **Fire Extinguished**. When overhaul/extension search has confirmed that all fire is extinguished.

d. **Property Conservation**.

1) **Salvage Complete**. When property damage from the fire and/or fire control activities is stopped.

J. **Tactical Functions**.

1. **Fire Attack**.

a. **Exterior attack.** Whenever possible and timely, initial fire attack should be made on the fire from the exterior, followed by entry for an interior attack. If a fire is too large for quick knockdown, hose lines should be placed to cut-off and confine the fire. However, in most instances, water applied to the fire can slow its progression while cutoff lines are placed. If multiple fire attacks from different directions are utilized, they must be coordinated to ensure firefighter safety.

b. **Coordination with ventilation.** Fire attack should be closely coordinated with ventilation efforts, especially in ventilation-controlled fire situations. Proper ventilation prior to hand line crew entry will make advancement to the seat of the fire faster and decrease the risk of flashover or other potentially dangerous thermal events. Proper ventilation creates a flow path from the fire attack entry point (higher pressure) towards the fire and out of the structure through an opening in the fire compartment (lower pressure). This is often most easily achieved by the use of PPV ventilation.

c. **Control of flow path for entry into a ventilation-controlled fire.** In situations where PPV ventilation cannot be used at the entry point or it is ineffective, firefighters must understand that their entry door is a ventilation opening and may cause a flow path for a ventilation-controlled fire. It is important to watch air movement before making entry. Heavy black smoke, smoke tunneling and a rapid in rush of air may indicate a ventilation-controlled fire which, with the air from the opening of the door, may lead to rapid fire progression. Firefighters should not enter a ventilation-controlled fire because it places firefighters in a fuel-rich environment which may lead to rapid fire progression with any additional venting such as a window breaking or another door being opened. Furthermore, the firefighters are being unnecessarily exposed to the hazards of high heat, low visibility and a toxic IDLH environment. This type of fire attack tactic should be avoided for the life safety of firefighters. Instead, consider other options such as a different entry point, additional venting and/or aggressive cooling with fire streams from a safe location.

d. **Hose line selection.** Hose line selection should be adequate for the particular strategy and tactic employed. For a hose line to be considered adequate, it must have the length and flow capabilities that are required. Careful consideration must be given to the hand line selected for deployment. The Officer in charge of fire attack should perform a hot lap of the structure to obtain information needed to make the correct hose line selection such as fire location, fire size, and structure size.

e. **Use of preconnected hose lines.** Preconnected hose lines are an effective tool for quick fire attack or to immediately effect rescue, protect means of egress, or protect exposures. However, the limiting factors of reach and amount of water delivered must be considered.

f. **Large flow hose lines.** Bundles and 2½-inch hose should be considered for larger fires where greater versatility and more water are needed for rapidly escalating fire conditions. If there is not an immediate need for protecting means of egress or exposures, or the fire is beyond the control of a preconnected hose line, the first-in pumping apparatus should deploy bundles and 2½-inch hose in order to more effectively prepare for an extended operation and probable fire extension.

g. **Blitz attack.** When possible and timely, a blitz attack should be used to rapidly knock down a fire from the exterior of a structure to slow the fire growth and rate of spread in addition to creating safer conditions for interior fire attack. In order for a blitz attack to be effective, the volume of water delivered must supply greater cooling capacity than the amount of heat the fire is generating. Quickly and temporarily discharging a straight or solid stream toward the ceiling of the room containing the seat of the fire*, or directly at the seat of the fire,* is a very effective technique for slowing fire growth and heat production and can be utilized when flames and/or heavy black smoke are issuing from a structure. A fog or “power cone” stream should not be used for a blitz attack due the negative impact it will have on the flow path of the fire, forcing the smoke and heat to move toward the interior of the structure. Rapidly moving a straight or solid

stream in a circular pattern in a window can have the same negative effect and should also be avoided.

The methods used to employ a blitz attack include a deck gun, a rapid attack monitor (RAM *or BlitzFire*), a preconnected hose line, or a bundle. The quick application of water on a fire from the exterior may reduce the risks associated with unimpeded fire growth and resulting structural deterioration that can occur during the preparation for an interior attack. The primary goal of the blitz attack is to hold the fire in check so that an interior attack can be made under more tenable conditions. Once an interior attack is initiated, the blitz attack should no longer be utilized. When a blitz attack is utilized, the mode of operation is normally considered to be the offensive mode.

A blitz attack may not be appropriate when:

1) An interior attack on an incipient fire can be made safely and effectively
2) The rescue of a victim would be negatively impacted by a blitz attack
3) The location of the fire is unknown.

Blitz attack is appropriate when:

1) A structure fire has visible flames or heavy black smoke venting from one or more openings
2) In the absence of an imminent rescue, resources are insufficient to comply with "two-in/two-out."
3) The time required to prepare for and make an interior attack will allow the fire to:

    i. reach a ventilation-controlled state
    ii. reach flashover
    iii. extend to uninvolved rooms
    iv. extend to structural components
    v. extend to exposures.

h. **Use of master streams.** Master streams should be employed when large volumes of water are required for control of large fires or for exposure protection. Master streams should be considered for defensive operations and anytime the risk/benefit analysis indicates hand lines pose an unacceptable risk to personnel.

i. **Methods of fire attack.** The most widely used methods of fire attack and water application with hand lines are direct attack, indirect attack, and combination attack.

j. **Direct attack.** The direct attack is used when firefighters can locate and direct the fire stream on the seat of the fire. Solid or straight streams applied directly to the burning combustibles (the seat of the fire) generally characterize the direct attack. Direct attack is often employed when a large flow is required to counteract the high gas output of burning solid materials, thus cooling the major source of combustible gas production. Direct attack with straight or solid streams may also be effective where reach is a primary consideration. Another application of the direct attack involves ricocheting a solid or straight stream of water off an object (wall, ceiling and furnishings) onto the seat of the fire or superheated area above a fire. This ricocheting breaks up the pattern, creating water droplets that absorb heat, then turn to steam. Ricocheting also creates water droplets that should be of sufficient size to drop onto and cool the burning materials. A

disadvantage of a direct attack is the possibility of increased property damage from excessive water and stream pressure damage.

k. **Indirect attack.** Indirect attack is most often accomplished utilizing a fog pattern directed into an area of superheated gases and smoke above a fire. The fog pattern generates fine water droplets, which rapidly absorb heat and turn to steam. This steam expansion absorbs tremendous heat and serves to quickly cool and smother a fire. The indirect fog attack is a common method typically utilized in smaller enclosed compartment fires and should only be utilized when no firefighters or civilians are present in the compartment. An advantage of the indirect fog attack is the lessened property damage from excessive water and the preservation of the scene for investigative purposes. A possible disadvantage to an indirect fog attack is the close proximity to the fire and the subsequent generation of large volumes of steam. The steam expansion can disrupt the thermal layers and result in extreme heat conditions impacting firefighters or occupants.

l. **Combination attack.** The combination attack is used when a room is in post flashover conditions, with flames fully encompassing the room and obscuring the seat of the fire. This attack is a blend of the direct and indirect fire attack methods, with firefighters applying water to both the fuel and the atmosphere of the room. For a combination fire attack to be effective, the fire stream must penetrate the flames and heat to reach the burning material. The fire stream must also be absorbed and converted to steam by the superheated upper atmosphere. Therefore, the fire stream should be a solid, straight, or fog stream of less than 30°. This will enable the fire stream to reach the seat of the fire and still be converted to steam. The solid and straight stream will be broken into smaller droplets as it strikes the walls and ceiling. The combination fire stream should be applied onto the burning material and into the upper atmosphere of the compartment. This is usually accomplished by moving the fire stream in a Z, T, or clockwise O pattern.

m. **Gas layer control.** An additional method of fire stream application is used to assist the fire attack team in advancing toward the seat of the fire. This technique is characterized by controlled nozzle bursts with a solid or straight stream directed in front of and overhead into the smoke and heat layer, cooling the walls and ceiling and potentially eliminating the likelihood of flashover. Advancement to the seat of the fire can continue while attempting to assure a higher degree of safety for the advancing hose line crew.

2. **Inside Truck Work.**

a. **Assignment of duties.** Support activities to save lives and property have traditionally been assigned to Ladder Companies and called “truck work.” However, any Company may be assigned the tactical function of truck work. When assigned Inside Truck Work, the following should be performed:

1) **Forcible Entry**. Ensure that the fire attack team can enter the structure to perform an attack. Personnel shall take appropriate forcible entry tools to the entry door, and if necessary deliver power forcible entry tools from an aerial apparatus or Rescue to the scene.

2) **Horizontal Ventilation**. Ensure that ventilation is coordinated with the fire attack. Remove windows in the fire area to release heat and smoke and allow the fire attack team to move in for extinguishment. Use positive pressure ventilation when appropriate. Ensure a vent exit is made as close to the fire as possible, a fan is properly positioned at the entry door and running at high RPM’s and there is a clear path for air to flow from the entrance to the exit. (Refer to

MFR Best Practices A102 Ventilation.) The function may be shared with or completely assigned to the Outside Truck.

3) **Primary Search**. Begin primary search as soon as possible for the life safety of possible victims. The search should begin in the areas where victims are most likely located such as bedrooms, hallways, and near doors and windows. Conduct the search of these areas beginning at the place of most danger and moving toward a means of safe egress. Companies should "Vent for Life" as necessary while searching. When venting during search, use doors to isolate the search area from the flow path of ventilation for the fire area. Primary search includes both the search for victims and the search for fire extension. (Refer to MFR Best Practices A103 Search and Rescue at Fires.)

4) **Check for Fire Extension.** After completing primary search, assist the fire attack team with the search for hidden fire. Open walls and ceilings, as necessary, to expose any fire extension.

5) **Salvage**. Take any necessary actions to protect and save as much property as possible in the fire area.

3. **Outside Truck Work.**

a. **Assignment of duties.** Support activities to save lives and property have traditionally been assigned to Ladder Companies and called "truck work". However, any Company may be assigned the tactical function of truck work. When assigned Outside Truck Work, the following should be performed:

b. **Laddering the Building.** Provide a secondary means of egress from the upper floors. Place aerial and ground ladders at windows on the upper floors and completely remove the window. "Turn the window into a door." The effect of creating a ventilation opening should be considered and minimized by closing an interior door, if possible. Position ground ladders at a 60° angle with the tips of the beams just above the windowsill; this allows for the quickest and easiest exit for firefighters. A light stick or box light with a strap may be placed around the top rung and hung inside the window to identify the exit for firefighters. If needed, a search of the room may be completed. A sweep of the area under the windowsill should be performed as a minimum.

c. **Vertical Ventilation**. In certain situations, the roof may have to be opened to allow the removal of smoke and heat. The roof type and condition must be identified before any roof operations begin. Once it is determined that roof operations are needed and safe to perform, a hole should be cut large enough to release the products of combustion. Vertical ventilation must be coordinated with fire attack. Immediately after the hole is cut, the firefighters should exit the roof. (Refer to MFR Best Practices A102 Ventilation.)

d. **Additional Forcible Entry**. Provide secondary means of egress from the building for firefighters operating inside. The more exits from the structure, the safer it is for firefighters, and the more likely it is that the firefighters will be able to evacuate the structure should interior conditions rapidly deteriorate. In residential structures, the rear door should be opened. The effect of creating a ventilation opening should be considered and the door placed in the closed position when appropriate. If the structure has security bars, they may need to be removed in the area where firefighters are working.

e. **Additional Horizontal Ventilation**. Ensure that additional ventilation is coordinated with the fire attack. If necessary, remove additional windows in the fire area to release heat and smoke to allow the fire attack team to move in for extinguishment. Use positive pressure ventilation when appropriate. Ensure a vent exit is made as close to the fire as possible, a fan is properly positioned at the entry door and running at high RPM's and there is a clear path for air to flow from the entrance to the exit. The function may be shared with or completely assigned to the Inside Truck or Fire Attack.

f. **Utility Control**. For firefighter safety, the utilities of gas and electric should be controlled as soon as possible during a working structure fire. Water should also be turned off if it is creating additional property damage. Although any Ladder/Quint/Rescue company may be assigned Utility Control in performing Outside Truck Work, the Rescue Specialist is still the subject matter expert on utility control and may be consulted for additional information.

g. **Salvage**. Take necessary actions to protect and save as much property as possible outside the fire area.

4. **Two-In/Two-Out.**

a. **Use in conjunction with backup team.** According to Texas law and MFR policy, whenever an offensive attack is made on an interior structure fire, two firefighters must remain outside the IDLH atmosphere and monitor the firefighters inside the structure. (Refer to MFR Best Practices A104 Two-In/Two-Out). However, it is not likely that this outside team would be in position or equipped to rescue a downed firefighter. Therefore, a backup team should be established as soon as possible to be able to assist the outside team in the event of a firefighter rescue.

5. **Backup Team**.

a. **Utilization of backup team.** The backup team should be in the same level of personnel protective equipment as the fire attack team, breathing SCBA air if necessary. A backup hose line should be deployed to the same entrance that the fire attack team entered and positioned to best protect the fire attack team, usually just outside the IDLH atmosphere. As long as the outside team personnel are in place, the backup team may position inside the IDLH atmosphere, if this will best protect firefighters. If the backup team must enter the IDLH atmosphere for firefighter rescue, the hose line can be used for protection. The Officer of the backup team should determine if the hose line should be charged prior to entry or after advancement to the desired location within the structure. Backup lines should be positioned to protect the firefighters working inside the structure and their means of egress. Protection of the interior stairways should be a high priority, especially when search teams are above the fire floor without a hose line. If a hose line that was deployed as a backup line is used for any other reason, Command must be notified and another line should be deployed as a backup line.

6. **Exposure Protection**.

a. **Use of exposure lines.** Property conservation can often be achieved by quickly placing in service exposure protection hose lines. Streams from exposure hose lines should be flowed directly onto the exposure, cooling the surface. Care must be taken so that the stream of water does not cause unnecessary damage. Personnel assigned to guard against fire extension via a partition wall or firewall shall not abandon the position unless they are relieved or the position becomes

untenable. If they abandon the position because the conditions become untenable, Command must be notified immediately.

7. **Water Supply**.

   a. **Water Supply Group.** The Water Supply Group Supervisor is responsible for determining the water source and supply method to provide the necessary water for fire extinguishment. Water supply shall be adequate to meet the expected fire flow required.

   b. **Fire flow formula.** The Fire Flow Formula to be used is as follows:

      Fire Flow = the area involved (length x width) divided by three, multiplied by the number of involved floors. For each exposure, add 25% of the calculated Fire Flow to the fire flow. This includes the exposed floor above that is not involved.

$$\frac{L \times W}{3} \times \#\ \text{floors} + 25\%\ \text{per exposure}$$

   c. **Fire flow defined.** Fire flow is the expected maximum amount of water (stated in gallons per minute) needed to supply the various nozzles required to control and extinguish any given fire problem.

   d. **Fire load defined.** The fire load is the expected maximum amount of combustible material in a single fire area. It consists of the combustible structural elements and the combustible contents subject to a single fire loss; it is usually expressed in terms of weight of the combustible material per square foot of floor space.

   e. **Redundant water supplies.** Two separate water sources should be considered the minimum for any structure with evidence of fire upon arrival. Fire hydrants, pumping apparatus water tanks and static sources such as lakes or ponds are examples of sources of water. In all cases, the water sources must be able to provide the fire flow needed to extinguish the fire. Command should consider the fire size and stage along with the structure size, construction and occupancy when determining the water sources. Command should be notified anytime the water source is changed, such as switching from tank to hydrant water supply or from hydrant water to tank supply.

   f. **1000/1000 rule.** Use the “1000/1000 Rule” for supply lines and master streams: when flowing 1000 GPM or greater, or when the attack pumping apparatus is 1000 feet or greater from the hydrant, a pumping apparatus should be positioned at a hydrant and pump from that hydrant. Whenever connecting to a hydrant, a 2 ½” gate valve should be placed on the hydrant so that the hydrant can be maximized, if necessary.

8. **Rapid Intervention Company (RIC)**.

   a. **RIC duties.** A Rapid Intervention Company must be assigned from the first alarm complement to ensure the highest level of safety possible for the firefighters. The RIC team should obtain the RIC equipment, deploy a dry hose line or identify an existing hoseline that can be used and then announce that RIC has been established and its location. The RIC team will then assume the outside team responsibilities in accordance with the Two-In / Two-Out rule. The RIC team is responsible for monitoring the fireground for firefighter safety and performing proactive

functions to reduce risk to firefighters. The RIC team must remain prepared to perform firefighter rescue, if needed. (Refer to MFR Best Practices A105 MAYDAY and Rapid Intervention Operations).

b. **Early fire control.** At structure fires, if the fire is quickly knocked down by one fire attack hose line and the backup team is in place outside the IDLH atmosphere, the backup team may serve as the RIC team. However, due to building size and/or occupancy, smoke conditions, rescues in progress, or other higher risk situations, Command may still choose to assign a RIC team to increase firefighter safety.

K. **Staging Area.**

1. **Announcement.** Command should announce an Incident Base and/or Staging Area location when requesting a multiple alarm and ensure that the companies responding on the multiple alarm are provided their response location on the alternate radio channel. (Refer to MFR Best Practices A713 Staging at Multiple Alarms.)

L. **Multiple Alarms.**

1. **ICS Vests.** All personnel with functional area responsibilities will wear incident identification vests. Incident identification vests are located in all Battalion Chief vehicles.

2. **Resource reserves.** During multiple alarms, when the last pumping apparatus is committed, another alarm should normally be sounded. A pumping apparatus should always be held in reserve at a major incident until Command is confident that the incident is winding down and is confident that operations can be handled by on-scene companies.

3. **Accountability.** All personnel responding on a multiple alarm (including staff personnel) must check in at the CP or Staging, unless already given an assignment by Command. This accountability is required for the safety of everyone on the fireground. (Refer to MFR Best Practices B103 Firefighter Accountability).

M. **Branch, Division, and Group Designation.**

1. **Terminology.** The incident ground is divided for quick reference and clarity. NIMS recognizes three designations to denote fireground work groups (Branch, Division, and Group). *MFR shall use the NIMS defined terms for incident subdivisions. Use of other terms can create confusion at an incident scene.*

2. **Branches.** Branches are major components within the Operations Section, established when the number of Division/Groups exceeds the recommended span of control.

3. **External Divisions.** Divisions are operational elements that may be assigned to vertical or horizontal geographical areas. Divisions that are assigned to specific horizontal geographical areas are designated according to their relationship to the building. The address side of the building is normally Division A. The sides are then designated, in a clockwise direction from the building address side, using the letters B, C, D, and others, as needed. For clarity of communication, the phonetic designations Alpha, Bravo, Charlie, Delta, etc. should be used. Some situations do not adequately lend themselves to a dividing scheme based on the building address. When this occurs, Command

must determine the dividing scheme and communicate it to all companies. When designating a dividing scheme by a means other than the address side, it is beneficial to use a point of reference that is easily seen, such as "Alpha Division is the side where we are making fire attack" or "Bravo Division is the parking lot side," rather than compass directions, which can cause confusion. It is especially critical for personnel accountability that all Division Supervisors understand the dividing scheme, their Division assignment and the companies assigned to their Division. (Refer to MFR Best Practices B103 Firefighter Accountability). Divisions can also represent very large areas that are often divided by physical barriers such as creeks, highways or railroads.

4. **Internal Divisions.** Internal areas are designated using "Division" plus the number of the floor (Example: Division 6 = sixth floor). Further designation may be made by using the letters A, B, C, D, and E (other designations may be added for irregularly shaped buildings) to indicate different portions of the interior. Basements should be designated as "Subdivisions", and numbered downward for additional levels below grade beginning with Subdivision 1.

5. **Exposures.** Internal and external exposures are designated by the Division in which they are located.

6. **Groups.** Groups are responsible for specific tactical functions such as Search Group, Vertical Ventilation Group, Evacuation Group, Water Supply Group, etc. Groups are not limited to specific geographical areas.

7. **Assignment of Division/Group Supervisors.** When assigning Division/Group responsibilities, the Operations Chief or Command should brief the Division/Group Supervisor on the goals of the operation and the specific objectives to accomplish in that Division or Group and ensure that the Division/Group Officer is aware of the resources assigned. The Supervisor should also be assigned a radio designation.

Appendix A – Tactical Assignments

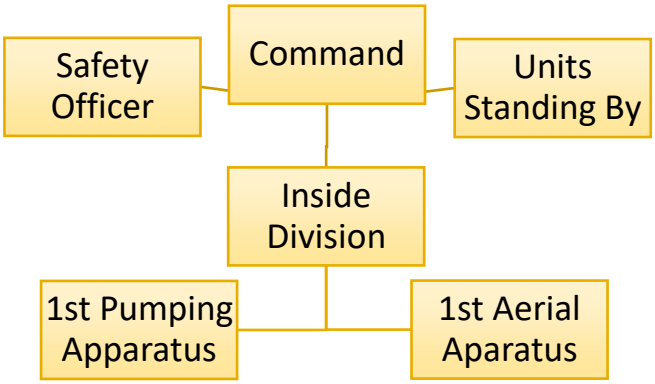
MFR BEST PRACTICES

Tactical Assignments

	Box Alarm Operations			Mid-Rise (Offensive)	High-Rise
	Investigation	**Offensive**	**Defensive**		
1st Pumping Apparatus	Investigate	Fire Attack	Confine Fire / Protect Exposures	Fire Attack 1	Fire Attack 1
2nd Pumping Apparatus	Prepare for Backup	Backup and Second Water Source	Water Suply for Large Flow	Fire Attack 2	Fire Attack 2
3rd Pumping Apparatus	Standby Hydrant	Standby Hydrant	Standby Hydrant	Standby Hydrant / Water Supply Group	Water Supply Group

4th Pumping Apparatus	Standby Hydrant	Standby Hydrant	Standby Hydrant	Standby Hydrant	Lobby Control
1st LAD/QNT/RES	Investigate	Inside Truck	Position for Master Stream	Inside Truck	Inside Truck
2nd LAD/QNT/RES	Standby for Direction from Command	Outside Truck	Standby for Direction from Command	Evacuation Group	Recon Group
3rd LAD/QNT/RES	Standby for Direction from Command ***City response only***	Standby for Direction from Command ***City response only***	Standby for Direction from Command ***City response only***	Ventilation Group	Logistics & Systems Control
4th LAD/QNT/RES				Outside Truck ***City Response Only***	Interior Staging ***City Response Only***

Appendix B – Box Alarm Investigation Mode



RESPONDS DIRECTLY TO SCENE
FIRST PUMPING APPARATUS SECOND PUMPING APPARATUS FIRST AERIAL APPARATUS RESCUE UNIT BATTALION CHIEF

PRIMARY TACTICS
INVESTIGATE INTERIOR

SECONDARY TACTICS
INVESTIGATE EXTERIOR INVESTIGATE ROOF THERMAL CAMERA USE EVACUATION

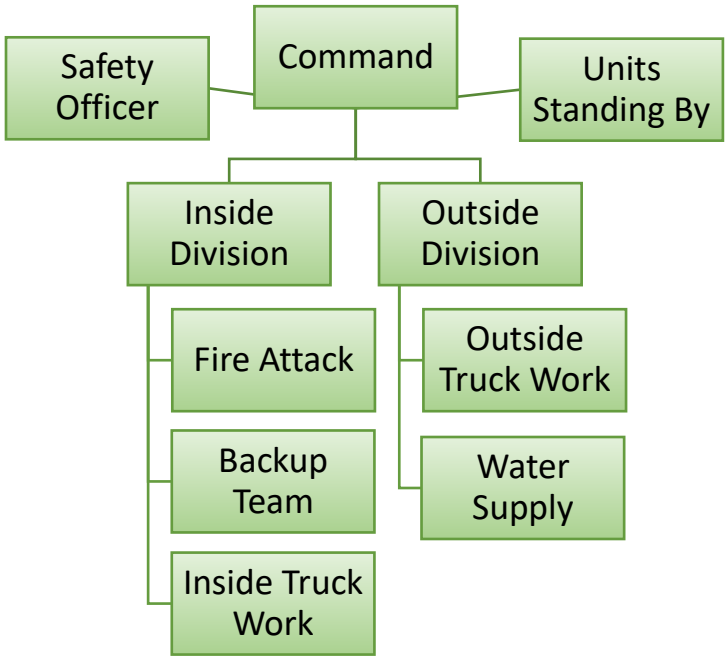
TRANSFER OF COMMAND
FIRST OFFICER FIRST CAPTAIN BATTALION CHIEF *AHJ*

Appendix C – Box Alarm Offensive Mode

RESPONDS DIRECTLY TO SCENE
FIRST PUMPING APPARATUS
SECOND PUMPING APPARATUS
FIRST AERIAL APPARATUS
SECOND AERIAL APPARATUS
RESCUE UNIT
BATTALION CHIEF

PRIMARY TACTICS
FIRE ATTACK
INSIDE TRUCK WORK
BACKUP TEAM
WATER SUPPLY

SECONDARY TACTICS
OUTSIDE TRUCK WORK
EXPOSURE PROTECTION
RIC
SALVAGE
SECONDARY SEARCH
EVACUATION



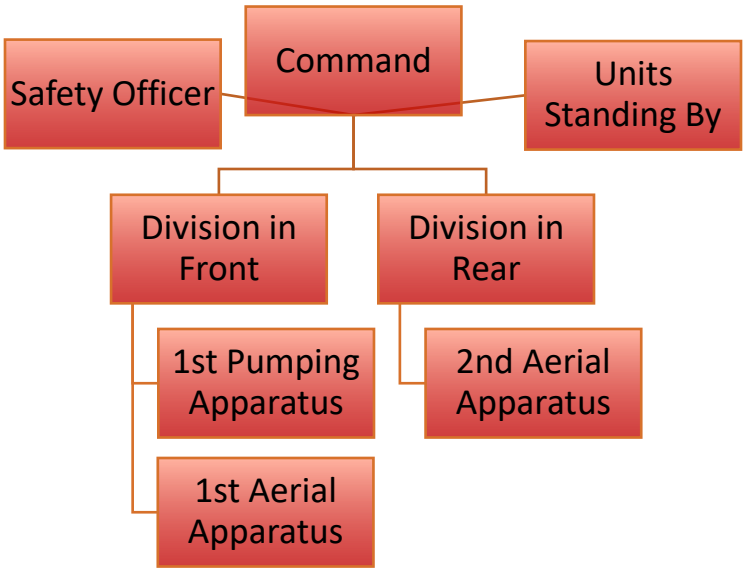
TRANSFER OF COMMAND
FIRST OFFICER
FIRST CAPTAIN
BATTALION CHIEF
AHJ

Appendix D – Box Alarm Defensive Mode

RESPONDS DIRECTLY TO SCENE
FIRST PUMPING APPARATUS
SECOND PUMPING APPARATUS
FIRST AERIAL APPARATUS
RESCUE UNIT
BATTALION CHIEF

PRIMARY TACTICS
EXPOSURE PROTECTION
WATER SUPPLY

SECONDARY TACTICS
RESCUE
EVACUATION
2ND WATER SUPPLY
CUTOFF HOSE LINES
MASTER STREAMS
RIC
SALVAGE



TRANSFER OF COMMAND
FIRST OFFICER
FIRST CAPTAIN
BATTALION CHIEF
AHJ