

	TRAVIS COUNTY ESD #5 MANCHACA FIRE RESCUE Department Best Practices	A106
	Authorized by:  Fire Chief Chris Barron	Effective: 1/22/2018 Rescinds: Reference: AFD A106.2 Application: Shift Personnel
Residential and Apartment Fires		

I. Purpose

To provide best practices for fighting fires at single and multiple-family dwellings.

II. Background

Residential dwelling fires present a great hazard, due to the relaxed state of the occupants and the fact that single-family dwellings and individual apartment units are not subject to periodic inspection. *National LODD statistics show that residential fires result in more firefighter LODDs than other building uses.* Strategies and tactics must be tailored to meet these unique fire ground situations.

This document is a direct adaptation of the Austin Fire Department SOG on Residential and Apartment Fires. 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 command.** 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 the three fire service incident priorities as the overall focus of incident operations: life safety, incident stabilization and property conservation.
- 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.

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. **Apartment Fires.** Primary considerations often unique to apartment fires are the configuration of the complex (access to apartment buildings may be limited and congestion may be caused by arriving apparatus), fire exposure to buildings in proximity to the fire building, and obtaining an adequate water supply. If it is anticipated that the incident will not quickly be stabilized, a second alarm should be called. Examples of situations that necessitate a rapid escalation of resources include rescue situations, mass evacuations, severe exposure problems, fire that extends beyond the single apartment unit of origin, and fire through the roof.
1. **Access.** Locating a specific apartment building or unit may be difficult; responding Companies should make use of maps in their apartment books or preplans on the MDC to find:
 - a. **Building location.** The location of the specific building within the complex. As soon as a Company finds the fire apartment, the exact location should be transmitted to the other responding companies.
 - b. **Complex entrances.** The location of entrances to the complex, including alternative entry points. It is often necessary to secure the apartment complex gate in the open position.
 - c. **Hydrants.** The location of on-ground hydrants
 2. **Positioning.** The first Engine should be positioned so that the Ladder apparatus can be located for aerial use.
 3. **Life Safety.** As most apartments in Austin are wood-frame, Command should be aware that structural integrity will be quickly affected by flame impingement. This should be one of the factors Command continually assesses when the operation is in an offensive mode. Once all occupants have been accounted for, Command should continually evaluate the reason the fire is still being fought in offensive mode.
 - a. **RIC Team.** A RIC team shall be established with a first alarm Company (refer to MFR Best Practices A105 MAYDAY and Rapid Intervention Operations). Division Supervisors should be designated early in order to assist with accountability.
 - b. **Occupants.** Occupants are in greatest danger from fire during the late night/early morning hours, when they are most likely sleeping. Primary search should be aggressive and complete. When a complete interior search is not possible, VEIS should be considered.
 - c. **Evacuation.** As apartment fires tend to quickly extend beyond the point of origin through concealed spaces, a primary consideration should be evacuation of the fire building. If it appears

that the fire will not quickly be contained by the first-alarm complement, consideration should be given to evacuating occupants of exposure buildings.

- d. **Utilities.** Any problems with cutting off the utilities should immediately prompt Command to call for the appropriate utility company.
 - e. **Blitz attack.** Usually a quick knock down of the fire is the best method to protect both firefighters and occupants. Therefore, a blitz attack should be utilized when possible and timely.
4. **Size-Up.** A reconnaissance of the entire fireground (360-degree) with a TIC should be accomplished as soon as feasible. An approaching unit with a view of the backside of the fire building should report that size-up immediately. The hilly terrain in Austin lends itself to multilevel construction, and the front of the fire building may not mirror the backside.

The first-in Company Officer may choose to step into an adjoining apartment, or the apartment below, prior to entering the fire apartment, in order to visualize the layout.

Command must promptly designate divisions. The "A" side will normally be the address side, unless Command determines a variation is necessary and clearly communicates the variation.

5. **Water Supply Considerations.**

- a. **On-ground hydrants.** Due to inconsistent placement, on-ground hydrants are easy to overlook. The pump operator of the first and/or second arriving pumping apparatus should consider locating and flushing on-ground hydrants.
 - b. **Water Supply Group.** If on-ground hydrants are found to be inadequate, Command should consider appointing a Water Supply Group Supervisor.
 - c. **Reverse lay.** Due to the tight configuration and/or excessive distances present in many apartment complexes, it is appropriate to consider using a reverse lay (laying 5" hose from the fireground to the hydrant) in order to lesson congestion and the blocking of incoming Ladders, etc.
 - d. **Relay pumping.** If congestion on the fireground is not a concern a forward lay may be used. However if excessive distances are involved, consideration should be given to having an apparatus pump from the hydrant. This requires close communication and coordination.
 - e. **Sustained water supply.** The Specialist on the first pumping apparatus should immediately report when a water supply from an adequate hydrant has been established. Command should then notify all interior attack crews that a sustained water supply has been established.
6. **Exposures.** Fires on a lower floor of wood-frame apartments may quickly extend upwards through autoexposure once the fire has self-ventilated. A quick blitz attack with a solid or straight stream may slow or prevent this extension. The same self-ventilation may also expose neighboring buildings. Class A foam applied to the exterior of the exposure building may allow greater water volume to adhere to the surface. *For CAFS applications, a dry foam with a 1:1 ratio should be used to assist with adhesion to vertical surfaces.*

7. **Confinement/Extinguishment.** Closing the door to the fire apartment may slow fire growth and add essential time to place hoselines. A bundle supplied by a 3" hose or 2½-inch hose is generally required, unless a quick knockdown can be made with a rackline. The minimum flow per handline should be 150 GPM.
 - a. **Cut-off lines.** When fire has extended from one apartment, cut-off lines should be set as soon as possible. The purpose is to get ahead of and confine the fire. It is acceptable to attempt a quick blitz attack on the fire prior to, or simultaneous with, the deployment of cut-off lines. For larger fires, a smoothbore nozzle deck gun or RAM may be needed for the blitz attack. The large flow from the deck gun and RAM can sometimes provide cooling greater than the heat a large fire can generate. A blitz attack should be a brief operation followed by an evaluation of the results while deploying handlines for interior attack. Fires that are spreading in the attic may require a trench cut to assist with confinement.
8. **Overhaul.** Ceilings and other concealed spaces should be exposed. Overhaul is time-intensive, and is not complete until Command is positive that all possible avenues of fire extension are exposed and clean or thoroughly extinguished.
9. **Ventilation.** Ventilation must be closely coordinated with fire attack. Horizontal ventilation is normally sufficient, although vertical ventilation may be necessary. Positive pressure ventilation (PPV) should be utilized when possible to ensure a safe flow path for the fire attack team entry. Vertical ventilation should preferably be undertaken off of an aerial. The use of a designated Ventilation Group may improve communication and coordination (refer to MFR Best Practices A102 Ventilation).
10. **Salvage.** If the second arriving Aerial is not involved in the first priority, Life Safety, the crew should bring salvage covers along with the portable ladder and tools to the scene. As soon as occupant life safety issues are resolved, and the incident is headed towards stabilization, salvage must be addressed. The use of a designated Salvage Group may improve communication and coordination.

B. Single-Family and Duplex Residential Fires.

1. **Life Safety.** Along with the hazard to occupants, firefighters are in exceptional danger due to the unknowns inherent in residential fires. House fires may be caused by modifications to electrical systems and auxiliary utilities run off of propane and other fuels, which then present a hazard to firefighters.

The myriad of ways in which houses are designed and contents are kept can make locating the fire difficult. A hidden fire may have originated in a basement or subbasement. Firefighters must be aware that an unfound fire may be below them.

The first-in Ladder/Quint/Rescue should initiate a primary search. If occupants are not firmly reported as accounted for. The Officer should focus efforts and operations on addressing occupant life safety. Simultaneous operations designed to improve probability for survival and rescue may need to be conducted (e.g., fire extinguishment, forcible entry, search and ventilation). When a residential structure initially appears "fully-involved" on arrival, VEIS should be considered for any tenable rooms (refer to MFR Best Practices A103 Search and Rescue at Fires).

A RIC team will be designated by Command on the first alarm (refer to MFR Best Practices A105 MAYDAY and Rapid Intervention Operations).

2. **Size-Up.** A 360-degree hot lap with a TIC should be performed by the first arriving officer. As Command passes to higher-ranking Officers, they may also need to walk the entire perimeter on arrival. A size-up of the interior conditions with a TIC should be conducted before entry into the structure is made by the fire attack team.
3. **Water Supply.** The third and fourth-in Engines will stage at and flush hydrants. At some fires, it may be necessary to reverse lay and relay pump.
4. **Exposures.** The house itself may be the exposure, in the case of vehicle fires, garage fires, duplexes, etc. Commonly, the exposure will be the unburned areas of the house (e.g., the upstairs).
5. **Confinement/Extinguishment.** Closing doors can sometimes confine and slow the fire growth while hoselines are being set. When possible and timely, a blitz attack should be utilized when flames or heavy black smoke are issuing from the structure. The fire attack team should make entry in coordination with ventilation to ensure that they are not entering the environment of a ventilation-controlled fire. When resources become available, a backup hoseline of at least the same diameter as the initial hoseline should be deployed. Class A foam can assist in final extinguishment, especially in deep-seated fires.

In the case of multifamily houses (duplex, triplex, four-plex), each occupancy should be checked for fire spread and cutoff lines may be necessary.

6. **Overhaul.** Ceilings and other concealed spaces should be exposed. Overhaul is time-intensive, and is not complete until Command is positive that all possible avenues of fire extension are exposed and clean or thoroughly extinguished.
7. **Ventilation.** Fires in houses in Austin generally require the use of positive pressure horizontal ventilation. A PPV fan at the fire attack entry point creates higher pressure and produces a flow path from the entry point toward the fire and out the exit vent opening(s). This is the safest flow path for fire fighters advancing for fire attack. A PPV fan at the fire attack entry point will help establish air flow in the correct direction, quickly reduce heat, remove smoke, increase visibility and makes the interior environment safer for fighters and any possible victims (refer to MFR Best Practices A102 Ventilation).
8. **Salvage.** As soon as occupant safety issues are resolved and the incident is headed towards stabilization, property conservation must be addressed. This may be as simple as removing items from the path of fire products and water. Class A foam can decrease the amount of water used for extinguishment.

C. High-Rise Residences.

1. **Hi-Rise Best Practices.** The MFR A201 High-Rise Fires Best Practices should be followed. However, Aerials may need to deviate from the guidelines if there are people in need of immediate rescue who are only reachable by ground or aerial ladder. The elderly are often found in these buildings, and

egress must be protected. When there is an imminent threat to life, ladders should be placed and crews prepared to effect rescue.

2. **Life safety.** The methods for addressing occupant Life Safety in a high-rise building are Rescue, Evacuation and Protect-in-Place. Closing an apartment or hallway door may be all that is needed to initially protect the occupants.