

E. Structure Evacuation

General Background: Structure Evacuation

National Fire Protection Association (NFPA) 1407 Standard for Training Fire Service Rapid Intervention Crews, Section A.4.2.1 (1) addresses emergency evacuations. Under the standard, “[t]he [Authority Having Jurisdiction] AHJ should ensure that there is an emergency evacuation procedure designed to evacuate members from an area and to account for their safety when an imminent hazard is recognized.”²⁶ Additionally, under NFPA 1561 Standard on Emergency Services Incident Management System and Command Safety, the Incident Commander, “should announce all companies evacuate the building,... Change from offensive to defensive attack..., and confirm a PAR for the entire incident.” Then, “[a]t the conclusion of the MAYDAY or emergency traffic situation, the [Incident Commander] should... transmit all clear [and] resume radio traffic. ...Examples of emergency traffic could be evacuate the building... [or] change from offensive to defensive operations...”²⁷

In addition to the NFPA standards, the Maryland Fire Service Health and Safety Consensus Standard provides guidelines for a Personnel Accountability Report (PAR). Under the consensus standard, the AHJ should have a policy for PAR for: “(i) The time of a change from offensive to defensive operation; (ii) The occurrence of a significant event... (iii) The time when a known life hazard is eliminated... [and] (iv) MAYDAY situations...”²⁸

²⁶ NATIONAL FIRE PROTECTION ASSOCIATION, STANDARD FOR TRAINING FIRE SERVICE RAPID INTERVENTION CREWS (2015).

²⁷ NATIONAL FIRE PROTECTION ASSOCIATION, STANDARD ON EMERGENCY SERVICES INCIDENT MANAGEMENT SYSTEM AND COMMAND SAFETY 1561 (2014).

²⁸ MD. OCC. SAFETY. AND HEALTH: MARYLAND FIRE SERVICE HEALTH AND SAFETY CONSENSUS STANDARD (MD. DEPT. LABOR, LICENSING, AND REG. 2002).

Policies and Standards Applicable to Howard County Department of Fire and Rescue Services: Structure Evacuation

HCDFRS uses two types of evacuation, "exit" and "abandon", which are differentiated by the urgency of the situation. [General Order 310.01 Single Family and Townhouse Structure Fire Operational Guidelines](#) describes each:

Exit the structure will be defined as an orderly withdrawal where interior lines and equipment will be withdrawn and repositioned when changing to a defensive strategy.

Abandon the structure will be defined as an emergency retreat where all hose lines and heavy equipment will be left in place and all operational personnel in the hazard zone will exit the structure as quickly and as safely as possible.²⁹

Under this Order, the Incident Commander, when switching from an offensive to defensive strategy, has Communications Center broadcast the emergency tone after which the Incident Commander announces, "[S]hifting to the defensive strategy. All units Exit (or Abandon, as appropriate) the structure. All units report PAR's upon exit."³⁰ After which the Communications Center sounds the emergency tone a second time and repeats the statement of the Incident Commander verbatim, in alignment with the MOSH consensus standard.

[General Order 410.01 Communications](#) also addresses evacuation.

Fire dispatch shall sound the evacuation tone (no longer than 15 seconds in duration) followed by a message advising all personal to evacuate the structure when requested by the Incident Commander. Tone and message are to be repeated twice.³¹

The two types of evacuation, exit and abandon (as identified in [General Order 310.01 Single Family and Townhouse Structure Fire Operational Guidelines](#)), are not identified under this Order and the Incident Commander's statement is not required to be repeated verbatim by the Communications Center.³²

The emergency tone is defined under [General Order 300.04 MAYDAY Situations](#) as, "an informational tone broadcast transmitted by emergency dispatchers at Howard County's Public

²⁹ HOWARD CO. DEP'T OF FIRE AND RESCUE SERV. GENERAL ORDER 310.01 SINGLE FAMILY AND TOWNHOUSE STRUCTURE FIRE OPERATIONAL GUIDELINES (2002).

³⁰ HOWARD CO. DEP'T OF FIRE AND RESCUE SERV. GENERAL ORDER 310.01 SINGLE FAMILY AND TOWNHOUSE STRUCTURE FIRE OPERATIONAL GUIDELINES (2002).

HOWARD CO. DEP'T OF FIRE AND RESCUE SERV. GENERAL ORDER 410.01 COMMUNICATION 11.8.4 (2005).

³² HOWARD CO. DEP'T OF FIRE AND RESCUE SERV. GENERAL ORDER 310.01 SINGLE FAMILY AND TOWNHOUSE STRUCTURE FIRE OPERATIONAL GUIDELINES (2002).

Safety Answering Point (Howard Communications) for a period of five (5) seconds over all operational radio channels to notify personnel that an emergency has been declared.”³³

³³ HOWARD CO. DEP’T OF FIRE AND RESCUE SERV. GENERAL ORDER 300.04 MAYDAY SITUATIONS (2013).

Woodscape Drive Incident Overview: Structure Evacuation

At 02:42:34, the Incident Commander ordered: “[G]o ahead and give me the evacuation tone. Charlie Division I want all units pulled out. With Flynn found, all units pulled out and give me a PAR as soon as you can.” The Communications Center broadcast the evacuation tone at 02:42:50 and at 02:42:56 announced “[H]oward to all units evacuate. Howard to all units evacuate the scene authority of Command 02:43.”

Operating in offensive strategy since the beginning of the incident, the Incident Commander changed strategy at 02:46:36 to defensive. At 02:47:13 the Incident Commander confirmed the change of strategy with the Charlie Division Supervisor. By 02:48:13 the crews were able to verify that all units were PAR.

Findings and Recommendations: Structure Evacuation

First, the Incident Commander's evacuation order represented an "exit" or organized retreat from the dwelling pursuant to [General Order 410.01 Communications](#). Under this General Order, the Incident Commander has the Communications Center broadcast the emergency tone and state the evacuation order. This process is done twice. At 7005 Woodscape Drive, the Incident Commander made his request of the Communications Center and the Communications Center complied by broadcasting the evacuation tone once and repeating the evacuation order twice.

After the evacuation order was issued by the Incident Commander at 02:42:34, the Charlie Division Supervisor never acknowledged reception of the evacuation order but rather started a regular dialog via the radio of individual unit PAR checks with the Incident Commander. In these PAR communications, the Charlie Division Supervisor did state that each of the units being identified in the PAR are out of the dwelling. Under HCDFRS General Orders, it is a normal practice for a division supervisor to be accountable for units operating within that division and do PARs of these units.

A review of the available data indicates that the Charlie Division Supervisor heard the evacuation order and acted on it. This is evidenced by the orderly and timely withdrawal of units from the dwelling shortly after the evacuation order and an immediate PAR completed of these units as they exited the dwelling which was then relayed to the Incident Commander.

Additionally, in the process the Communication Center's broadcast, the dispatcher reiterated the evacuation order twice as specified in the General Order. In the second reiteration, the dispatchers did state for all "units to evacuate the scene." Although this statement could have caused confusion for certain incidents, such as active assailants, in this incident the dispatcher's wording did not cause any units to relocate and it is assumed all firefighters understood the intent of the evacuation order was to evacuate the structure.

Second, the Incident Commander announced a change of strategy to defensive at 02:46:36 hours, after FF Flynn was removed from the structure. At the announcement of the change to the defensive strategy by the Incident Commander, transmitting that, "all units on the fireground, units are PAR. We are going to commit to a defensive strategy, a defensive strategy."

This change of strategy could be viewed as an evacuation order. Under [General Order 310.01 Single Family and Townhouse Structure Fire Operational Guidelines](#), when an Incident Commander changes from an offensive to a defensive strategy, the incident commander uses verbiage, either "exit" or "abandon", to assign urgency to unit evacuation and has the Communications Center broadcast the emergency tone followed by a repeating of the change of strategy order. After which a PAR is completed of operating units in the hazard zone.

In this instance, the Incident Commander announced a change of strategy but did not have the Communications Center broadcast the emergency tone or repeat the change of strategy order. However, the Incident Commander had previously relayed the urgency of the matter and had the emergency tone broadcast via his order to evacuate the structure at 02:42:34 or

approximately four (4) minutes prior to his order changing from an offensive to defensive posture. Additionally, at the time the Incident Commander issued the change of strategy order, all crews operating within the hazard zone as defined in [General Order 300.04 MAYDAY Situations](#) (37) were PAR. As such, even without the required broadcast by the Communication Center, the change of strategy was completed in an orderly process and that all crews responded appropriately in their transition to a defensive strategy.

| Findings | Recommendations |
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| <p>E.1. The Incident Commander’s evacuation order at 02:42:34 was an “exit” under General Order 410.01 Communications.</p> | <p>E.1.1 HCDFRS must revise General Orders to include a process for reentering a structure following an evacuation order. Currently the General Orders do not address the resumption of interior operations following an emergency evacuation order. Once an emergency evacuation has occurred, the incident commander should conduct size-up of the structure and evaluate fire conditions to determine an appropriate mode of operation. The proposed language should include a continuous reevaluation process of the incident.</p> <p>E.1.2 HCDFRS must revise General Orders to separate evacuation from strategy changes for clarity.</p> |
| <p>E.2. The change of strategy from offensive to defensive strategy also represented an exit, or evacuation of the dwelling.</p> | <p>See Recommendations E.1.1 & 1.2</p> |
| <p>E.3. There are conflicts between General Order 310.01 Single Family and Townhouse Structure Fire Operational Guidelines and General</p> | <p>E.3.1 HCDFRS must examine the processes outlined in General Order 310.01 Single Family and Townhouse Structure Fire Operational Guidelines</p> |

| Findings | Recommendations |
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| <p>Order 410.01 Communications concerning the evacuation process.</p> | <p>and General Order 410.01 Communications to determine if either process meets current operational needs, make any needed modifications and then codify both process into one single process and rewrite each General Order with the same modified process. Additionally, the orders must be revised to:</p> <ul style="list-style-type: none"> • Align with the intent of NFPA 1561’s language: “[A]t the conclusion of the MAYDAY or emergency traffic situation, the Incident Commander should then transmit all clear, resume radio traffic.” • Add the sounding of apparatus (air horns minimally) at the ordering of an abandon evacuation order. • Include PARs of all crews at an incident who are not in staging. <p>E.3.2 HCDFRS personnel should be trained on all modified orders. The training should include a practical component that utilizes the audio warning(s) fire fighter will hear via Communications Center. This training should also include units from outside jurisdictions that regularly respond into Howard County.</p> <p>E.3.3 HCDFRS must standardize emergency evacuation procedures, practices and alerts with surrounding jurisdictions so that neighboring jurisdictions and HCDFRS have similar emergency evacuation and MAYDAY practices and audio warnings (air horns).</p> |

| Findings | Recommendations |
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| E.4. HCDFRS has discontinued the practice of sounding air horns at the order of an "exit" or "abandon" evacuation due to the proliferation of portable radios. | See Recommendation E.3.1 |