Montgomery County Fire and Rescue Service

Incident Command System Review Panel Executive Summary

House Fire
17517 Charity Lane
February 13, 2002

Attachment # 2

MCFRS Incident Review

On February 22, 2002, Mr. Gordon A. Aoyagi, Fire Administrator of the Montgomery County Fire and Rescue Service, assembled an Incident Command Review Panel (Panel) to evaluate the Incident Command System used during a house fire at 17517 Charity Lane. The house was located in the Darnestown section of Montgomery County, Maryland. The Panel was given six specific charges designed to identify root causal factors, if any, relating to optimal performance of the Incident Command System.

In summary, the six charges were:

1. Review and understand the chronology of events.
2. Identify all applicable Standard Operating Procedures (SOP).
3. Identify the Command Structure and Action Plan implemented at this incident.
4. Evaluate the performance of the Incident Command Structure.
5. Present the findings and subsequent recommendations of the Incident Command Structure and performance.
6. Prepare a summary of the findings and recommendation in the form of a Lessons Learned for use in future training programs.

The Panel consists of:

- Mr. James P. Seavey, Sr., Chief, Cabin John Park Volunteer Fire Department,
- Mr. James P. Stanton, Chief, Kensington Volunteer Fire Department,
- Mr. Thomas W. Carr, Assistant Chief, Division of Fire and Rescue Services, and
- Mr. Andrew M. Johnston, Assistant Chief, Division of Fire and Rescue Services.

Staff support provided by:

- Mr. Frederick H. Welsh, Division of Volunteer Fire and Rescue Services,
- Mr. Michael T. Love, Assistant Chief, Division of Fire and Rescue Services, and
- Mr. Edward S. Radcliffe, Captain, Division of Fire and Rescue Services.

Executive Summary

The fire at 17517 Charity Lane occurred on February 13, 2002. While there were no civilian or firefighter injuries or fatalities, the house suffered total destruction. Subsequent to this incident, questions have surfaced regarding the Command Staffs' actions and decisions made, or not made, to give the firefighters on the scene the optimum potential to control this fire. The Panel addressed questions regarding who filled the role of Incident Commander, and who should have filled the role of the Incident Commander.

In addition, firefighters experienced difficulty in establishing a continuous water supply that exacerbated an already difficult fire attack. This was due to the rapidly spreading fire, high winds, and a large area lightweight constructed home. Even though the lack of water supply significantly affected the ability to control this fire, the Panel did not focus on the causes of the water supply failure, but rather how the Incident Commander dealt with this failure, and what he and his Command staff did, or did not do, to adapt and overcome the problem.

The Fire Administrator directed the Panel to identify whether MCFRS policies enabled the Incident Commander to quickly, effectively, and safely manage this incident; and whether the Incident Commander exploited those Policies to benefit the mitigation of this incident.

The Panel's methodology in writing the report included:

- Reviewing Fire Rescue Commission ("FRC") Policies and Executive Regulations as they relate to the possible need of additional FRC direction through affirmation, creation, or deletion.

- The Panel interviewed eight personnel who either directly participated in the Incident Command Structure, or were in a position to provide valuable observations as to the effectiveness of Incident Command.

- Telephone interviews of thirteen unit officers on first arriving units.

- Review of the Incident Report submitted by the Incident Commander and the 36 associated unit reports extracted from EMBRS.

- Review all available charts, notes, and drawings made by the Command Staff.

- And finally, a review of the tape recordings of the 911 dispatch, and the operations heard on Channel 1, Channel 2, and Channel 3.

THE HOUSE

The house sat approximately 550 feet off Charity Lane in a section of Montgomery County not served by municipal fire hydrants. The house was one of three houses in a cluster of homes that are about 15 years old, and serviced by three close parallel driveways. Side 1 of the fire building faced east. The building was a 35 X 80 foot, 2 story custom Colonial house with an attached two car garage. The garage was located on Side 2, and the house included a basement. A one story offset room in the rear of the house was occupied as a kitchen, with its roof line below that of the main house roof. There was one chimney in the center of the building on Side 4. There was an in-ground pool, containing approximately 30,000 gallons of water, located 50 feet from the garage. The structure consisted of lightweight construction with wood trusses, using gusset plate connectors. The house had aluminum siding on the exterior, and the original wood shingles on the roof. The interior was open with the second floor supported by two 60' x 12" steel I-beams that ran from end to end of the structure. There was a large capacity propane cylinder on Side 3 against the house. The propane was used for cooking.

THE FIRE INCIDENT

On Wednesday February 13, 2002, at approximately 1253 hours, the Montgomery County Emergency Communications Center (ECC) received a 911 call from the son of the resident of 17517 Charity Lane. The wife and her son were the only ones home at the time of the fire. The son stated to the dispatcher that there was a fire in the

bathroom and that it was "burning like crazy." Minutes prior to this 911 call, the wife saw fire and smoke coming from the roof section of the kitchen.

The weather was clear and sunny with the winds out of the North Northwest at 15-25 MPH. The wind was a major factor along with the lightweight construction in the rapid growth of the fire.

At 1254 hours, ECC dispatched Engine 311, Medic Engine 291, Medic Engine 81, Engine 31, Truck 29, Tower 8, Rescue Squad 291, Ambulance 319, the Rockville and Germantown duty officers, and District 3.

A Captain in Car 293 was just clearing another call when the incident at Charity Lane was dispatched. Although not originally placed on the call by ECC, but physically being only a few minutes away from the reported address, the Captain responded and was the first unit to arrive on the scene at 1258 hours. The Captain reported that he saw heavy smoke and fire coming from the attic area. He then confirmed that all occupants were safely out of the house. The Captain established Command 31 (CM31) and retained the responsibilities of the Incident Commander throughout the incident. Car 293 was parked on Side 1 about 80 feet from the house.

The owner's son re-entered the house through the garage. The Incident Commander followed the son into the house without his personal protective equipment (PPE) or SCBA, and ordered the son to leave the house immediately, which he did. While still inside the fire building, the Incident Commander observed a fire in the fireplace. He then went upstairs to the second floor and noticed light smoke with a small fire in the bathroom. The Incident Commander exited the house and gave layout instructions for the first arriving engine via portable radio.

Engine 311 arrived on the scene and laid a single 3 inch supply line down the driveway. The Incident Commander instructed the crew to advance an attack line to the second floor and to concentrate on the fire in the attic. The Incident Commander designated Ambulance 319 as the "2-out."

Rescue Squad 291 and Truck 29 were told by CM31 to go to the second floor and hook ceilings. CM31 then directed the 4th arriving engine to go to the fill site identified at Riffleford Road and Autumn Trail (approximately 2700 feet from the fireground). The Incident Commander also gave several instructions to incoming units regarding pulling a second line and third hand line, and for Tanker 14 to drop and fill their folding tank at the end of the driveway so that Medic Engine 81 could establish a draft.

CM31 requested a Safety Dispatch at 1301 hours. This added Medic Truck 3, Engine 331, and another duty officer to the assignment. An additional ALS or BLS unit was not included in the Safety Dispatch.

Medic Engine 81, which was the third due engine on the assignment, arrived on the scene at 1302 hours and took the second due position at the end of the driveway. The Captain on Medic Engine 81 announced on the radio that his unit would be taking the second due position. They stopped at the end of the driveway and picked up Engine

311's supply line. The crew proceeded on foot down the driveway to the fire building, leaving the driver to establish the draft by himself.

The Chief of the Gaithersburg Washington Grove Volunteer Fire Department (Chief 8) arrived on the scene at 1305 hours. He parked his vehicle, donned his coat and helmet, and then walked down to Car 293 with a clipboard. Chief 8 donned the Incident Command vest at some point after arriving at Car 293.

Tower 8 and Medic Engine 291 arrived on the scene. Medic Engine 291 gave their water to Engine 311 through Medic Engine 81. Both crews reported to the house and assisted with suppression efforts.

District 5 (DTC 5) was responding from Route 27 and Brink Road, and although not originally dispatched, he decided to respond because it was obviously a working fire and because he knew he could arrive before District 3 (DTC 3) who was responding from FS23. While enroute, he attempted to contact the Incident Commander on Channel 1 to ask if he should start working on water supply. CM31 did not respond, so DTC 5 announced to ECC that he was designating himself as the Water Supply Sector. DTC 5 then made several transmissions regarding Tanker 9 dumping its water and having the 4th due engine go to the fill site at Riffleford Road and Autumn Trail. DTC 5 also requested ECC to dispatch two additional tankers.

The Deputy Chief from the Germantown Volunteer Fire Department (Chief 29-1) arrived on the scene at 1308 hours. He proceeded to the house wearing his PPE and SCBA.

Tanker 9 and Tanker 14 arrived at the dumpsite within a few minutes of each other. The crews immediately set up their folding tanks and dumped their water. Both units then proceeded to the fill site at Riffleford Road and Autumn Trail.

At 1311 hours, seventeen minutes after the initial dispatch, and while Tanker 14 was dumping its water; CM31called for an evacuation of the second floor. There was some discussion between Chief 8 and the Incident Commander regarding this decision. They were both concerned about the heavy fire spread and the fact that a sustained water supply from the dumpsite to the fireground had not been established.

CM31 requested a Task Force Assignment bringing Engines 281, 141, Engine Tanker 171, Tower 23, and another duty officer at 1312 hours.

Meanwhile, Medic Engine 81 experienced continued difficulty establishing a draft from the folding tanks at the dumpsite at the end of the driveway. Engine 31 was directed to establish a draft from the folding tanks to overcome Engine 81's inability to draft. Engine 31 did establish a draft initially however Engine 31 lost its draft after the side of the folding tank was sucked into the uncovered hard sleeve and subsequently burned up the priming motor in their attempt to reestablish a draft. At some point Engine 331 was also asked to get a draft from the folding tank, which they successfully accomplished. About this same time, Medic Engine 81 was able to get a sustained draft to supply Engine 311. The attempts to establish a sustained water supply lasted until approximately 1338 hours.

DTC 3 arrived on the scene at 1319 hours. DTC 3 was instructed by the Incident Commander to work on the water supply problem at the dumpsite.

At 1320 hours, CM31 announced to the crews operating on the fireground that there was no more water and instructed everyone to make sure they were in a safe area.

A District Chief from Germantown (Duty 29) arrived on the scene at 1321 hours.

At 1324 hours, the Safety Sector made a transmission advised CM31 that there was a partial collapse of the second floor. One of the 60 foot I-beams had fallen, breaching the wall on Side 3 quadrant C.

District Chief 5C (DTC 5C) arrived on the scene and assumed Operations Sector.

From this point forward, offensive or interior operations were not possible as the fire involved most of the house. The second floor had collapsed onto the first. The firefighting efforts became exclusively defensive.

The Incident Commander, and other command officers, later dealt with a large capacity propane tank with fire impingement in the rear of the house. This hazard required them to evacuate crews temporarily and move apparatus to a safe location. Several brush trucks also handled many spot brush fires.

THE FIRE ORIGIN

The fire was investigated by the Montgomery County Fire Marshal's Office, which performed oral interviews and took written statements from the owner's wife and son. The wife explained that, earlier in the day, she cleaned ashes from the wood stove and then restarted a fire in the wood stove with oak logs. This fire reportedly burned for approximately 45 minutes. According to a unit officer, she said she had heard crackling noises coming from the attic for about the past 40 minutes. She went out the garage to work on her son's car when she heard the "crackling" sound coming from the rear of the house. She saw half of the roof of the kitchen on fire.

The wife and her son attempted to extinguish the fire from the second story bathroom window, but it was spreading too quickly. During this time, the son called 911.

Based on the information collected, the Fire Investigator concluded the most probable cause for this fire was the ignition of the cedar shingles by burning material from the wood stove.

INCIDENT RESPONSE TIMELINE

12:54:04	911 call received by ECC
12:54:31	Rural Box assignment dispatched
12:58:23	Car 293 arrives on the scene- Command 31 established
13:00:14	Engine 311 arrives on the scene
13:00:58	The Incident Commander advises Ambulance 319 has the "2-out"
13:01:58	The Incident Commander requests a Safety Dispatch

13:05:17	Chief 8 arrives on the scene
13:08:24	District Chief 5 assumes Water Supply Sector
13:08:37	Tanker 9 arrives on the scene
13:08:55	Chief 29-1 arrives on the scene
13:11:08	Tanker 14 arrives on the scene
13:11:28	The Incident Commander evacuates the second floor
13:12:12	The Incident Commander requests a Task Force
13:13:45	ECC switches Water Supply to Channel 3
13:19:13	District Chief 3 arrives on the scene
13:21:48	Duty 29 arrives on the scene
13:24:--	Approximate time District Chief 5C arrives on the scene
13:24:37	Safety reports a partial collapse of the second floor
13:26:54	Chief 200 arrives on the scene
13:38:08	The Incident Commander confirms a sustained water supply has been established

A summary of the Panel findings are listed below: (they are in no particular order)

Stationary Command Post: The Incident Commander suffered many maladies by failing to maintain a stationary Command Post. Within the early minutes of the incident, CM31 performed several tasks not associated with his ICS role or position.

Identifying the location of the Command Post: The Incident Commander parked his vehicle about 80 feet away from the fire building on Side 1. This location provided a view of the house and enough space for the Command Staff to operate, however CM31 never communicated the location of the Command Post to incoming units by radio.

Ineffective radio communications: This was an ongoing issue throughout the critical stages of the incident. The lack of a stationary Command Post and the use of portable radios were significant factors adding to this problem. The use of a portable radio hinders the Incident Commanders' ability to receive and transmit important, possibly critical, information. There were also various radio transmissions, about which the Incident Commander was unaware. This, the Panel believes, confused multiple personnel on the fire ground and disrupted CM31's Incident Command Structure.

Command Terminology: Some of the Command Staff gave reports to CM31 by radio using incorrect terminology (i.e. Exposure B or Exposure Control - incorrect per the FRC policy in force at the time of the incident).

Use of an Incident Management Chart: An adequate Management Chart or Tactical Worksheet was never used during this incident. The Incident Commander never wrote anything down regarding unit placement or tasks being assigned. Other command officers wrote some of the unit numbers down, but failed to write the associated assignments of those units. The Panel believes that Command failed to have a clear understanding of the resources available to him. This resulted in critical functions being duplicated, delayed or not done altogether.

Building the Command Structure: There was insufficient development of an Incident Command Structure on this fire. A total of ten (10) command officers arrived on the scene within the first 40 minutes of the incident. CM31 assigned only two of them to command level functions. Several command officers assumed self-appointed positions, such as Operations and Water Supply. Other command officers reportedly arrived to take pictures.

Wearing the appropriate Command Vest: Part of the confusion regarding who filled the role of Incident Commander was directly related to the fact that very few members of the Command Staff wore the proper ICS identification vests.

Transferring Command to another unit or command officer when a rescue or rapid fire attack is critical: Shortly after the Incident Commander established CM31, he observed the owner's son re-enter the building. In response, the Incident Commander entered the house not wearing his PPE or SCBA. While it may be an acceptable risk to follow an occupant who has re-entered a burning structure, the Incident Commander took an unacceptable risk by not wearing PPE or SCBA. He also failed to communicate his actions by radio, which could have proven tragic if he or the son had gotten lost or trapped. When CM31decided to make a rescue of the occupant's son and leave his Incident Commanders' responsibilities, he should have donned all of his PPE and passed Command to another incoming unit or command officer.

Transfer of Command from the first arriving unit officer to an appropriate command officer: The first arriving unit officer appropriately assumed Command after his arrival on the scene. Subsequent arriving command officers failed to properly assume command resulting in the first arriving unit officer maintaining the role of Incident Commander throughout the incident. The first arriving unit officer failed to pass Command to a command level officer.

The ranking officer on the scene cannot delegate the responsibility for the proper handling or the final outcome of a given incident: The FRC Regulation is clear that the ***highest ranking*** officer on the scene is responsible for the outcome of the incident.

Undispatched on-duty and off-duty personnel must exercise discretion when assisting units with firefighting activities: There were issues with undispatched on-duty and off-duty firefighters arriving on scene in personal vehicles and fire service vehicles. While they may have been well intentioned, there is some speculation that they hindered water supply efforts at the dumpsite. Possibly, this potential hindrance could have been alleviated if those on/off-duty firefighters had reported to the Command Post first for assignment. The Panel believes that any off-duty firefighters that come to a fire ground should use discretion when assisting units outside the hot zone, and refrain from firefighting activities unless specifically sanctioned by someone in the Incident Command Structure.

Personnel/Unit Accountability System: The safety of our fire and rescue personnel operating at an incident is our paramount goal. First, the Incident Commander must determine the viability of sending firefighters into a hazardous situation; whether it is for civilian life exposure or for reasonable personal property protection through a hazard and risk assessment. Second, when Command does commit personnel to an IDLH

environment, Command must know the location and maintain the welfare of those firefighters while they are deployed into that environment. Accountability reporting should be transmitted to ECC no more than twenty minutes after the initial dispatch.

EMBRS and Incident Documentation: Incident commanders and unit supervisors must be held accountable, as identified in existing FRC Policy, for completing all required incident documentation; including full and detailed descriptions of their actions.

Recommendation Items:

As a result of the Panels' findings, the following recommendations are proposed:

1. **Advocate a change to Fire Rescue Commission (FRC) Policy "Command Officers Professional Development and Improvement" (COPDI) annual requirements for command officer certification.**

   The change would include the addition of a practical demonstration of incident command system (ICS) operational positions knowledge and execution skills through evaluated simulation.

   Every command officer would participate in an emergency response simulation (table-top or Vector Command), much in the same approach as a commercial airline pilot re-qualifies annually on the aircraft they are authorized to fly. The simulation would create an environment of time compressed decision making, resource allocation, and emergency communications typical of the emergency response environment in Montgomery County.

   An example would be a three hour session in which a group of command officers rotate through assigned ICS positions. Examples include: Command, Interior Division, Safety, Accountability, etc. Certified evaluators would run simulated scenarios with each scenario including a graded critique of every officer's performance in their assigned ICS positions.

2. **Advocate the formal implementation of Incident Benchmarking ("Primary Search Completed", "Fire Under Control" , "Fire Out") within the FRC ICS and Safe Structural Firefighting Policies so that Command and all units on the fireground, through proper radio communications, will have a better understanding of the Incident Action Plan (IAP); and what stage of the incident, Command believes the incident is in.**

   Implementation of a formal incident benchmarking policy would create a safer and better coordinated operation because firefighters could predict and depend on what Command expects to happen sequentially during the course of an incident.

   A lack of a formal incident benchmarking process in existing MCFRS operational policies did not cause command failures at this fire. However, it is clear that the addition of a formal incident benchmarking process would improve our

operational effectiveness and fireground safety.

The Charity Lane fire, like all fires, evolved through reasonably predictable incident stages: an initial stage where Command needs to evaluate and act on the civilian rescue potential; second, address the fire problem; and last, mitigate any environmental or property conservation concerns. These predictable phases of fire incidents would serve as a standard game plan that would direct our efforts.

At this fire, Command, upon arrival, attempted to ensure that all occupants were out of the house and mentally developed an action plan for incoming units. CM31 made an announcement over the radio and thus "benchmarked" that to his satisfaction a Primary Search had been completed, and that no civilians were still in the building. CM31 gave further instructions to incoming units regarding water supply and fire attack tasks. If we followed this standard benchmarked game plan, ECC and arriving fire officers who were able to hear CM31's portable radio transmissions, would have known at this point that Command was not concerned about, or going to allocate resources to perform an additional search of the structure.

3. **Ensure that Command establishes "Accountability" on all working incidents and legitimately accounts for all personnel operating per existing Montgomery County policy.**

Establishment of Accountability is a critical part of firefighter safety, and a direct responsibility of the incident commander. Accountability is an existing component of the MCFRS, FRC approved, ICS Policy. It is critical that this policy is followed to ensure the safety of MCFRS firefighters.

4. **Ensure that Command establishes "a stationary command post" on all working incidents and utilizes a Tactical Worksheet to organize the incident and allocate resources appropriately.**

A Tactical Worksheet was not utilized to organize the incident and allocate resources appropriately. The use of a tactical worksheet provides a formal means of managing resources on the fireground and should be used on every working fire.

5. **Advocate that "Lessons Learned" from this and future incidents be distributed to the entire Montgomery County Fire and Rescue Service so that a mind-set of continuous improvement is cultivated throughout our Service, and that each succeeding generation of command officers do not have to repeat hard learned lessons of the past.** As an educational component of this recommendation, the Panel advocates an annual training module for MCFRS Command Officers that ensures a standard procedure of Briefing, and Transfer of Command as identified in FRC Policy is included.

The review of our response to emergencies is beneficial from a learning perspective, only, if that gained knowledge is distributed throughout our ranks in

a manner that reinforces proper behavior.

The fireground or emergency scene is a complex technical system. Personnel, apparatus, and equipment are brought together in emergency fashion to provide a life-saving difference and mitigate a varied type and magnitude of hazards. Fire and rescue service personnel, and the individual incident commander, are charged with rapidly assessing the hazards; then making immediate decisions on a course of action which typically places subordinate personnel in potentially hazardous or "at risk" positions. The incident commander is further charged with continually assessing the incident scene to maintain the safest operation possible and matching the risks we take against savable human life and property.

Over the last two hundred plus years, many members of the American Fire Service have been lost due to the poor management of the fireground. We, as the leaders of the Montgomery County Fire and Rescue Service, have a duty to protect our members and employees health and welfare. We have a duty to maintain their trust in us, and to ensure that we pass on whatever knowledge we may have that will prevent or lessen future injuries or fatalities of emergency responders in Montgomery County.

Conclusion

The Panel wishes to thank all personnel involved in giving their forthright and succinct depictions of this incident.

It is our sincere hope that the members of our Service, career and volunteer alike, not dwell on the personalities involved in this incident. Rather, the Panel earnestly hopes to engage the Service with lessons learned from this incident and subsequently become a stronger, safer, more effective, and integrated Fire and Rescue Service.