



MONTGOMERY COUNTY FIRE RESCUE SERVICE POST-INCIDENT ANALYSIS



2 – ALARM SINGLE FAMILY DWELLING FIRE
BOX AREA 31-33
113 Leekes Lot Way
May 14, 2015
Incident # 15-0057400

THE POST INCIDENT ANALYSIS

The Post Incident Analysis is a critical component in determining the processes used during a major incident and an educational tool for all Montgomery County Fire and Rescue (MCFRS) personnel. Valuable lessons are learned from observations of effective and efficient methods of mitigating a major incident. These include all strategic decisions, operational issues, built-in fire protection devices, and anything else that assisted in mitigating the incident. MCFRS personnel also benefit from learning what has not proven to be effective or efficient.

The Post Incident Analysis requires the incident commander to closely evaluate all conditions, factors, and decisions made during a major incident. This detailed retrospective provides documentation that can be used as an educational tool. Each incident commander should use all available resources to completely and thoroughly describe the incident and the methods used to mitigate it.

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Incident Overview

Note: This post incident analysis is based upon the review of the incident audio tape, interviews with crews who operated at the emergency scene and the review of completed unit reports.

On May 14, 2015, at 0100 hours, MCFRS units responded to 113 Leekes Lot Way, Gaithersburg, Maryland for a report of a house on fire. During the response, units received updates indicating fire coming from the roof. The Emergency Communications Center (ECC) added the Rapid Intervention Dispatch (RID).

Weather at the time of the incident was dry with partly cloudy skies. The temperature was 48 degrees Fahrenheit with 48 percent humidity. The wind was 4.6 miles per hour from the Northwest. The weather was not a factor in fire behavior or the outcome of the incident.



Truck 731 arrived on the scene in front of the residence, and gave an initial on-scene report of a 2 story single family dwelling with fire showing from the roof. Truck 731 established Command in the 'attack mode' and called for a second alarm. After speaking with the owner, Command advised that all occupants were out of the home and the fire started in the chimney and extended to the cedar shake roof. Paramedic Engine 731 gave layout instructions and arrived on Side Alpha behind Truck 731. Battalion 703 arrived on scene, assumed Command and established his vehicle as the command post on the Alpha/Bravo corner behind Paramedic Engine 731.

The roof on Side Alpha was engulfed in fire with no smoke or fire visible on interior of the second floor. Command ordered units to “reset the fire” and Paramedic Engine 731 to extinguish all fire from the exterior. Paramedic Engine 731 pulled a 2 ½ inch hand-line and began to flow water from the Alpha/Delta corner through an attic window. The Volunteer Duty Operations Chief arrived on scene, reported to the command post and operated as part of the Incident Management Team.

Chief 703 Hotel arrived on scene and was assigned as the Division Two Group Supervisor with Engine 753, Truck 731, and Paramedic Engine 732. Paramedic Engine 708 was assigned as the Rapid Intervention Group Supervisor with Truck 734, Rescue Squad 703 and Medic 708 Bravo.

The primary water supply to Paramedic Engine 731 was established by laying out from 339 Tschiffely Square Road. Truck 731’s driver set the truck up for aerial master stream operations. Safety 700 arrived on scene and was assigned Incident Scene Safety Officer (Safety). Emergency Medical Supervisor 703 also arrived and was assigned Emergency Medical Services (EMS) Group Supervisor. Medic 731 was assigned to the EMS Group.

Paramedic Engine 731 advised Command that they had done all they could from their position and requested to enter the building. Command denied the request and ordered their line moved to Side Bravo and to continue with the exterior operation. At this point Truck 731 opened the master stream and began extinguishing the fire on the roof. Command advised the interior units that the aerial was flowing over them and not to enter the attic.

Engine 753 called several times for the hand-line on the 2nd floor to be charged. Rescue Squad 729 was assigned as the Search Group Supervisor and was ordered to complete a primary search starting from the basement working up to the 2nd floor and to control the gas and electric as they searched. Paramedic Engine 722 was assigned to pull a hand-line to Side Charlie and prepare to attack fire on the exterior.

Command noticed that the Alpha-Delta roof had partially collapsed and advised the units



working on the interior of this fact.

EMS703 was updating Command face-to-face when Division Two called Command with an unreadable message. Command asked for the unit calling to repeat the message. ECC advised Command that there was a Mayday. Command acknowledged the Mayday and declared radio silence.

Command sent the Rapid Intervention Group (RIG) into the residence with the order to locate all units in Division Two and remove them. Only Paramedic Engine 708, the Rapid Intervention Company, was on the scene. The rest of the units assigned to the Rapid Intervention Group had not yet arrived or assembled. The Volunteer Duty Chief called on 7 Hotel for all second alarm units to report to the command post ready to work.

Command called the Mayday unit asking for their Location, Unit, Name, Air, and Resources Needed (LUNAR). Chief 703 Hotel (Division Two) responded stating that he was the Mayday and he had self rescued with the assistance of Truck 731.

Command acknowledged Chief 703 Hotel's message and then continued with Personnel Accountability Reports (PAR's) for all units. Engine 753 responded that they were PAR with three personnel exiting the structure. Command called Paramedic Engine 732 three times for PAR, did not receive an acknowledgement, and then directed the RIG to locate Paramedic Engine 732. At this point, Paramedic Engine 732 transmitted that they were PAR with three personnel on Side Alpha. Command completed the PAR with positive responses from Truck 731, Paramedic Engine 731, and Paramedic Engine 722.

After receiving positive responses from Paramedic Engine 708 and Safety, Command gave an update to Montgomery that all units were PAR and the Mayday was cleared.

Command ordered all units to exit the structure to regroup and then reengage with an interior attack and also ordered Truck 731 to shut the ladder pipe down. Command sent Paramedic Engine 723 as the Supervisor with Tower 703 to Division Two with direction to locate and extinguish all remaining fire on that Division. The RIG was to reform on Side Alpha with Paramedic Engine 708 as the supervisor, Truck 734 and Rescue Squad 703.



The EMS Group was ordered to evaluate all units that were operating in Division Two during the Mayday. Medic 708 was assigned to the EMS Group to assist. EMS reported that Chief 703 Hotel, two personnel from Truck 731 and two personnel from Engine 753 would be transported to local hospitals for evaluations. Paramedic Engine 732 was not in the area of the collapse and was cleared to return to the fire ground.

Paramedic Tower 708 was named Search Group Supervisor and was to complete primary searches on the first and second floors starting with the second floor. Rescue Squad 729 was assigned Basement Division with direction to search that floor and control the electric. Safety advised Command that the Side Delta wall was compromised and that units would not be operating on that side. Command acknowledged the unsafe condition and asked Safety to mark the area off with danger tape. Paramedic Engine 722 was ordered to evaluate the wooded area around the dwelling for possible spot fires from embers.

Primary and secondary searches were completed with negative results. Division Two reported that all fire had been extinguished and overhaul was completed. All units were sent to the EMS Group for rehab and were cleared. The fire was declared under control and the incident was downsized. Gaithersburg City Fire Code Compliance personnel evaluated the fire building as unsafe for occupation. Fire Explosives and Investigation personnel were on scene and the building was turned over to them for the investigation.



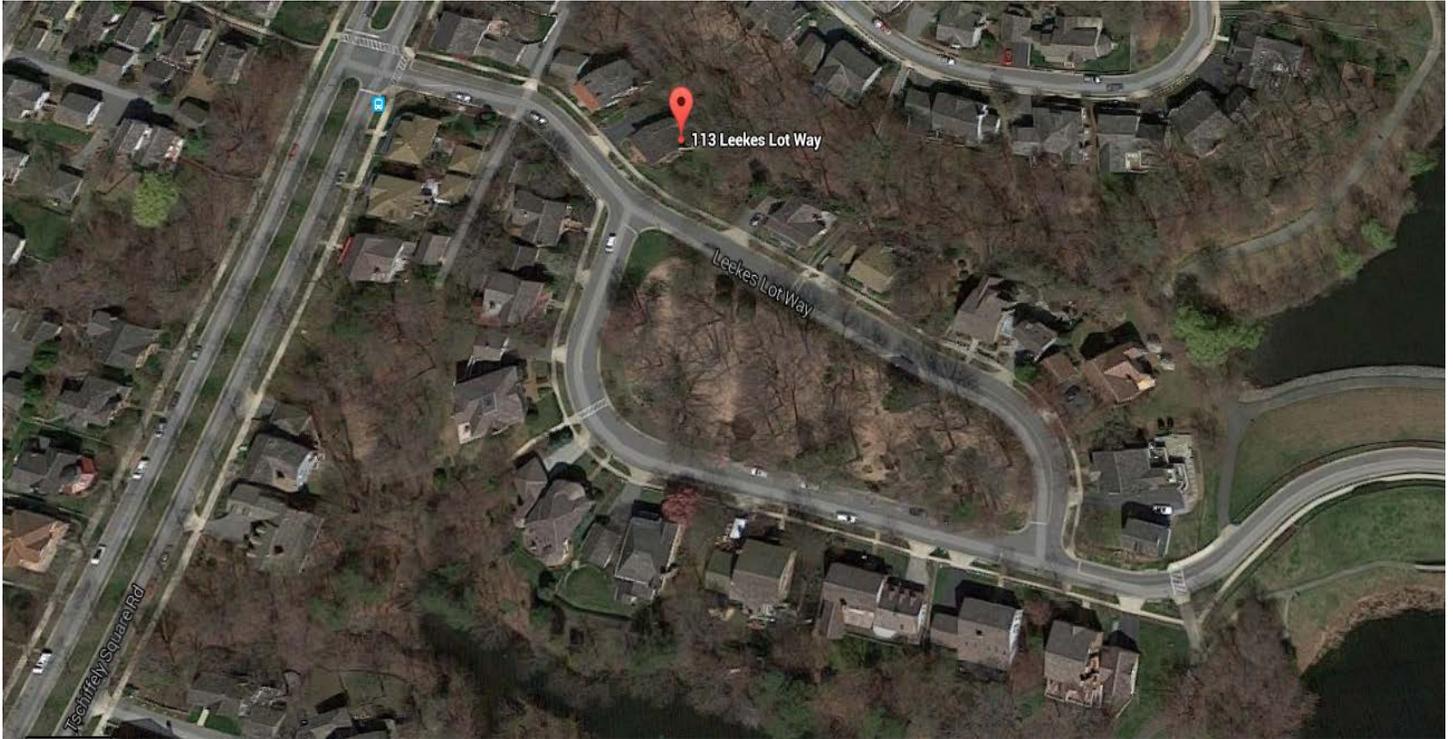
Building Structure/Site Layout

The structure at 113 Leekes Lot Way built in 1994, and is part of a residential neighborhood comprised of similar style and constructed homes. Side Charlie is three stories with a walk out basement.

The home is Type Five construction with truss constructed roof, brick veneer siding except for Side Charlie which has vinyl siding, and cedar shake roof covering. The home is 2595 square feet and sits on .24 acres. There is a one story, two vehicle attached garage on Side Bravo. On Side Delta there is a wood-burning fireplace with a brick chimney that rises above the roofline. There are two decks on Side Charlie; the first is off of the basement entrance, the second off of the first floor.

The closest hydrant is eighty feet away on Firehouse Lane but was not used. Instead the hydrant at 339 Tschiffely Square Road, which is three hundred feet away, was used.





Fire Code History

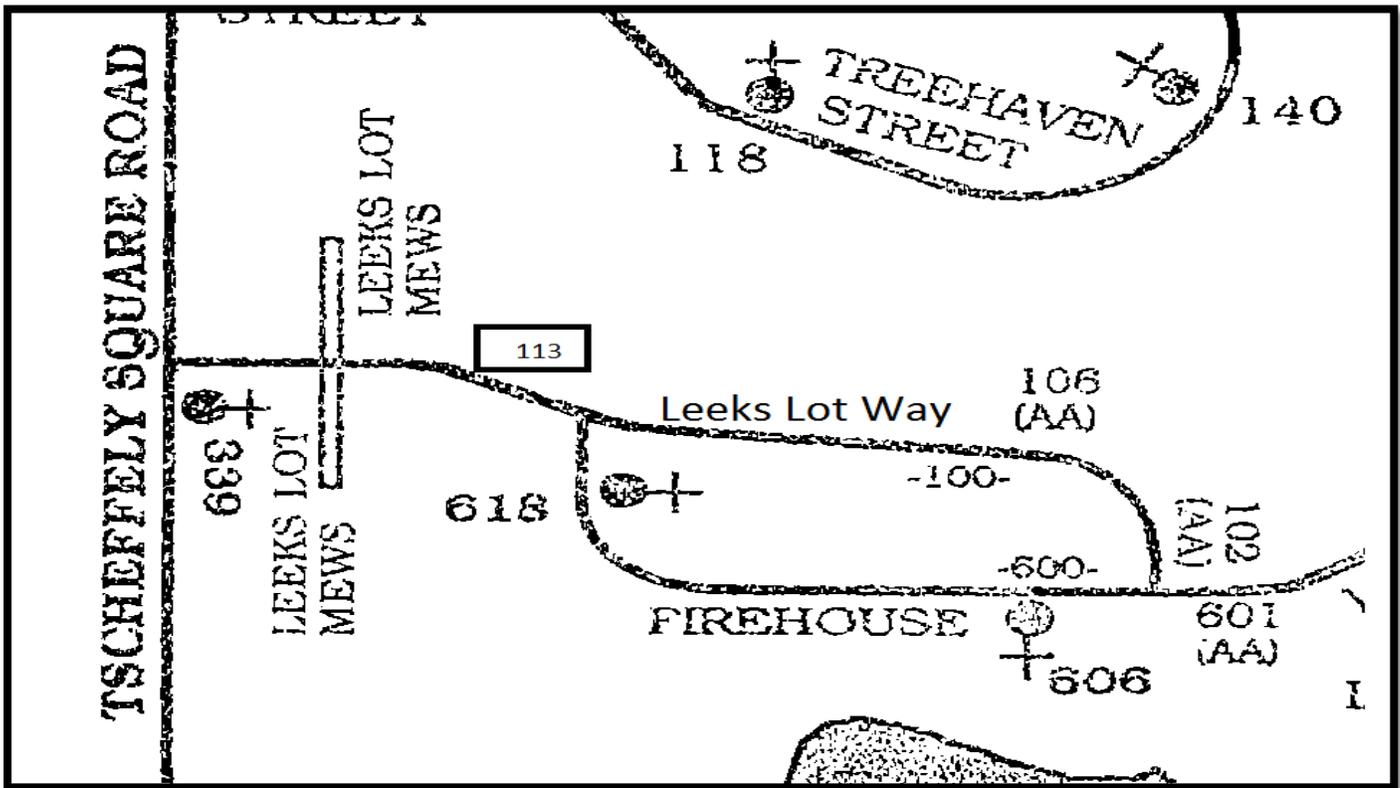
A review of the past and current fire code requirements for the structure revealed no code compliance issues.

Communications

The incident was assigned to the 7 Golf talk group with second alarm units on 7 Hotel. The 7 Golf operator effectively communicated during a complex incident with a Mayday. Radio reception was good and the Vehicle Repeater System (VRS) was not needed or engaged.

Pre-Emergency Planning

There is no pre-fire plan for the structure other than the current street map prepared by Fire Station 31's personnel. The map was available in all responding units that had operating Mobile Data Computers. The map was not accessed or required for use by the Incident Commander.



Staging

The units dispatched on the second alarm were assigned to operate on 7 Hotel and ordered to stage on Tschiffely Square Road. Before units could arrive in staging, the Mayday was called and all units were told to report to the scene. No additional units were assigned to staging.

Support Functions

The EMS Group was established early and it included a rehabilitation component. Its location was in front of 115 Leekes Lot Way. EMS703 was the Group Supervisor with Medic 708 Bravo, Medic 731, and Ambulance 708. Canteen 708, worked in unison with the EMS Group to ensure personnel were hydrated. Air 733 ensured all self contained breathing apparatus cylinders were filled and available for service. Five firefighters were treated and transported to a local hospital for evaluation and treatment of injuries that occurred during the Mayday.

Multiple outside agencies were involved including County Police, American Red Cross, PEPCO, and Washington Gas The gas was shut off at the street and the outside electrical meter was pulled. Fire Code Compliance posted the home as unfit for occupation.

Safety Considerations

Paramedic Engine 731 announced while en route that Medic 731 would be the two-out crew. On arrival, the officer of Paramedic Engine 731 was in direct contact with the homeowner and reported all residents were out of the structure and accounted for. Paramedic Engine 708 was the third due Engine and was the Rapid Intervention Crew per policy. The Rapid Intervention Dispatch: Truck 734, Rescue Squad 703 and Medic 708 Bravo were assigned to fill the Rapid Intervention Group. Safety 700 arrived on scene and was assigned as Safety.

Two safety issues were transmitted over the radio to all crews. Crews were told the floor on Division Two, Quadrant Charlie was unstable and to avoid the area. Crews were also advised that there would be no operations on Side Delta as the chimney on that side had shifted and was in danger of collapsing. Safety marked the collapse zone with danger tape.

Safety

Safety 700 responded from Public Safety Headquarters (PSHQ). On arrival, he performed a 360 walk-around of the house and once that was completed made entry into the home via the front door.

The ISSO's account of the Mayday:

"ISSO could see onto the second floor. A crew was flowing into a hole in the ceiling. Seconds later, there was commotion, and then a Mayday was sounded. At that point, the Captain from Paramedic Engine 708 went to the top of the stairs and ensured that all personnel were accounted for and made them exit the structure via the front door."

As the five injured firefighters were being evaluated, Safety advised Command that he would be dealing with the personal protective equipment (PPE) and self contained breathing apparatus (SCBA) of the injured firefighters and the Safety role would have to be filled with another qualified individual.

All PPE and SCBA were taken back to PSHQ and photographed and documented. The PPE was then taken to Maryland Fire Equipment for inspection. Maryland Fire Equipment returned all gear to the safety office and reported no issues with the PPE coats, hoods, gloves, boots, or pants. They condemned two of the three helmets that were both over 20 years old, but they were condemned for age not damage.

All SCBA were taken to the SCBA shop for inspection and testing. There were no issues with the SCBA involved in the Mayday. All SCBA were returned to their respective stations after inspection.

Mayday

The Mayday event occurred at 0114 hours, nine minutes after the arrival of Battalion Chief 703 and twelve minutes after the arrival of the first unit (Truck 731). The Mayday resulted from a roof collapse

on the 2nd floor, Quadrant Charlie and was called by Chief 703 Hotel. He was pushed to the floor and entangled from ceiling and roof materials falling on him. Command did not hear the Mayday call at first. Command asked for the “unit calling” and ECC advised of the Mayday. Truck 731 found Chief 703 Hotel within a minute and relayed that they were extricating him. The Rapid Intervention Company, Paramedic Engine 708, was with Chief 703 Hotel within two minutes and assisted him with exiting the building.

Paramedic Engine 732 failed to answer Command when called during the Personnel Accountability Report (PAR). Command directed RIG to locate Paramedic Engine 732. Immediately after the order given, Paramedic Engine 732 reported to Command that they were PAR on Side Alpha. The PAR was conducted for all other units without incident.

The Mayday was cleared and operations were transitioned back to normal operations. The total time from when the Mayday was declared to resuming normal operations was six minutes. A total of five personnel were struck by falling debris. All were evaluated by the EMS Group and transported to the emergency room with non-life threatening injuries.

Resources

First Alarm

Paramedic Engine 731	Truck 731	Battalion 703
Paramedic Engine 753	Paramedic Tower 708	Battalion 705
Paramedic Engine 708	Rescue Squad 729	Volunteer Duty Chief 700
Paramedic Engine 732	Medic 731	Chief 703 Hotel
Paramedic Engine 722		Safety 700

Rapid Intervention Dispatch

Truck 734	Fire Marshal 752
Rescue Squad 703	Fire Marshal 757
Medic 708 Bravo	Fire Marshal 758

Second Alarm

Paramedic Engine 729	Tower 703	Air 733
Paramedic Engine 734	Tower 723	Canteen 708
Paramedic Engine 723	Medic 708	Command Support 700
Paramedic Engine 728		

Other

Duty Chief 700
Emergency Medical Supervisor 703
Chief 703 Charlie
Ambulance 708
Ambulance 732

Accountability

Crews were accounted for utilizing the Incident Tactical Worksheet and the Daily Lineup form carried in the Battalion 703 vehicle. Additionally, crews were accounted for utilizing the required PAR based on the required Incident Duration Reminders (IDR) timeline. All personnel provided timely reports.

Investigation

Fire Marshal 758 located the homeowner in the front yard of an adjacent residence. The homeowner stated he had a fire in the fireplace during the evening. The homeowner heard noises that sounded like a chimney fire. The homeowner exited the structure and noticed sparks coming from the chimney, which quickly died down. The homeowner returned to the house and considered calling 911 and looked out the window to see a glow in the leaves of the trees. The homeowner exited the structure, observed fire on the roof area near the chimney, and called 911.

The on-duty investigators conducted an origin and cause investigation from the exterior. The scene was consistent with the homeowner's statements and the fire was ruled accidental.

Fire Marshall 758, 752 and 757 committed for 2 .5 hours.

Lessons Learned

One of the more important lessons learned was regarding the communication of proper strategy such as offensive versus defensive. Command needs to communicate this mode or strategy early and in a way that will be understood by all units. Goals were not clearly communicated on this incident leaving units with no clear understanding of what Command's intent was.

Command ordered the units to "reset the fire". Units and Command had different understandings of what this terminology meant. This fire was not a "resettable" situation but rather should have been a defensive or a transitional attack. Command failed to recognize the situation and did not correct the error.

The strategy, mode, or primary objective should be transmitted during an initial on-scene report, or as soon as possible if the situation is not clear on arrival. When a chief officer assumes Command, the strategy, mode, or primary objective must be transmitted.

Other lessons were also learned regarding communication. Command began assigning divisions for interior crews. His intention was to transition into an interior firefight after the fire in the roof area was controlled. Command used the phrase "when we get into

this". The communication given to these interior crews was not clear and the Division Supervisor was not asked to acknowledge the orders. Units entered the structure before Command was ready. This was a disconnect between units and Command. Command must do a better job of verbalizing Command's specific intent, and must have division and group supervisors acknowledge said orders.

Units began firefighting operations on Division Two before Command intended. He heard units on Division Two and did not remove them from the Division. An elevated master stream was placed into service on the roof above the units on Division Two. Command recognized the dangerous situation and only advised the units of this. Units continued to work on Division Two and the elevated master stream continued to flow into the attic space. Command saw the truss roof collapse into the attic and advised the interior units of the collapse. In all three of these actions, Command noticed the dangerous situations but failed to act. Command could have had the units working on Division 2 retreat to Division One or exit the structure which may have kept the Mayday from ever happening. Command also could have had the master stream shut down thereby slowing the progress of the roof collapse. This action seems less likely to have stopped the Mayday.

The Mayday was called and Command missed the radio transmission. Montgomery had to advise Command of the Mayday. During the radio transmission, Command was talking to a unit outside of the command vehicle through an open window. During operations when units are operating in an Immediate Dangerous to Life or Health (IDLH) environment, Command must keep the windows up and focus on communicating with units operating in the IDLH. Face-to-face communication should not occur with Command during an active operation. There are two issues with this type of communication. First, vital information is not heard by all units. If the transmission were given via radio all units both on the fire ground and responding would have heard the Side Charlie report. Second, Command's attention was diverted and thus vital information was missed and in this case a Mayday was not heard. Command must attempt to keep a *sterile* command post with his or her attention focused on all of the units operating.

Apparatus positioning was not optimal. Arriving units must make all attempts take their assigned positions and if unable to do so must advise units via the radio.

Ground ladder placement on this incident was minimal. It would have been difficult to place ladders on Side Charlie because of the terrain. However Sides Alpha and Delta were accessible and needed to be laddered. There were no ladders in place on the

Alpha/Delta corner windows .The roof collapse that occurred started on Side Delta and continued halfway across the roof. If firefighters had needed to rapidly extricate themselves via the windows in that corner, they would not have found ladders in place to facilitate their escape

The main stairway of the dwelling was directly behind the front door. As firefighters made their way to Division Two, the stairs became crowded which made egress or evacuation difficult. It is important that firefighters move up and down stairs quickly. If movement is impeded then firefighters should retreat and clear the stairs until movement can occur.

Lastly, unit officers must be aware of tactical assignments. One unit on this incident was thought to be unassigned but that unit was later found to be operating with Division Two. As a result, that unit was not called for early on in the PAR. If Command had known the actual location of the unit and that the personnel could have been involved in the collapse, he would have known to account for them and remove them from the building sooner. If Command does not assign a particular unit to a group or a division then that unit should not be in the building. If the crew enters the building before the level two command post is established and the crew is not subsequently assigned to a task, group, or division once it is established, then the unit officer must notify Command of their location and task, so that Command can track units.