The City of New York
Department of Investigation

MARK G. PETERS
COMMISSIONER

DOI INVESTIGATION INTO DELAY OF AMBULANCE DISPATCH TO QUEENS FATAL FIRE IN APRIL 2014 REVEALS SIGNIFICANT ONGOING FLAWS IN OVERALL SYSTEM

Mark G. Peters, Commissioner of the New York City Department of Investigation ("DOI"), issued a Report today on DOI's investigation of the delay in dispatching an ambulance to a fatal fire at Bay 30th Street, Queens, in April 2014. The Report concluded that the New York City Fire Department ("FDNY") dispatch system is unduly complicated and unacceptably flawed, and these flaws, combined with human error, delayed medical assistance to two children trapped in the building who ultimately died. The Report found the dispatch of the ambulance – which took approximately 21 minutes to arrive after the initial 9-1-1 calls came in -- was impeded by a highly cumbersome ambulance dispatching process that involved interaction between no less than seven staff members from the New York City Police Department ("NYPD"), FDNY, and Emergency Medical Services (EMS"). A copy of the Report is attached to this release.

DOI Commissioner Mark G. Peters said, "DOI's investigation exposed an antiquated, unwieldy system for dispatching ambulances to the scene of an active fire that substantially increases the opportunity for human error. We must start to overhaul this process immediately. The Fire Department, at DOI's urging, has taken positive first steps by implementing preliminary remedies to streamline the process, but it must continue to pursue more advanced solutions. DOI will continue to monitor this process."

The investigation did not find criminal wrongdoing but determined that there are systemic problems with the City's system for dispatching an ambulance to the scene of an active fire. Specifically:

- The system for dispatching an ambulance to a fire scene requires multiple staff to take multiple steps, increasing the possibility of error and delay.

- Poor supervision of the dispatch staff contributed to the errors in responding to the fire that occurred on April 19-20, 2014, including the mistaken belief by one dispatcher that another had notified EMS of the need to dispatch an ambulance, and the failure to take steps to reassign or retrain a dispatcher with a history of mistakes.

- The City's bifurcated computer-aided dispatch system does not allow FDNY and EMS dispatchers to efficiently share critical information, such as the borough where a fire is

occurring, so EMS dispatchers typically must wait until they receive a telephone call from a FDNY dispatcher to dispatch an ambulance.

DOI recommended the FDNY take several steps to immediately address these problems, specifically:

1. Streamline the dispatch process as much as possible within the current technological constraints of the system, and eliminate some steps so a shorter process can be implemented. FDNY has begun to tighten the dispatch process, including by making EMS the *first* of the two-step notification process, rather than dispatchers reaching out first to an FDNY Deputy Chief.

2. Improve supervision of dispatchers, including scheduling meal breaks and one-to-one relief at Fire Dispatch Central Offices and enforcing FDNY policy regarding the unauthorized use of technology while on duty to ensure that dispatchers are not distracted while they are working. FDNY must better train and manage its supervisors, since in this incident, FDNY leadership was put on notice regarding a dispatcher's skill deficiencies and failed to take any steps.

3. Take immediate steps to enhance communication between the Fire and EMS computer-aided dispatch systems. While the City has undertaken a large-scale project to integrate emergency response, the Emergency Communications Transformation Project, the FDNY must not wait until the completion of that project to address the problems outlined in the Report. To that end, in response to DOI's recommendation, the FDNY has studied the issue and has come up with an interim solution to link the computer-aided dispatch system used by the FDNY with the computer-aided dispatch system used by EMS, which will take up to six months to implement; and a short-term fix, already implemented, that allows EMS dispatchers to view a hard-copy printout of complete information regarding an active fire and then manually enter information into their dispatch system to dispatch an ambulance. DOI notes that while this is an improvement, it still requires a dispatcher to monitor a teleprinter while at their workstation. DOI recommends that FDNY develop additional solutions to further simplify the process.

Commissioner Peters thanked FDNY Commissioner Daniel A. Nigro and Anne Roest, Commissioner of the City Department of Information Technology & Telecommunications, and their staffs, for their assistance in this investigation.

The investigation was conducted by DOI's Office of the Inspector General for the FDNY, including Counsel to the Inspector General Adam Libove and Assistant Inspector General Kate Zdrojeski under the supervision of Inspectors General Shannon Manigault and John Tseng and Associate Commissioner Paul Cronin.

New York City Department of Investigation

Investigation into Significant Delay in Dispatching an Ambulance
to a Queens Fatal Fire in April 2014 and
Overall Systemic Flaws of Dispatch System

MARK G. PETERS
COMMISSIONER

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Executive Summary

On the night of April 19-20, 2014, a fire started at 10-31 Bay 30th Street in the Rockaway neighborhood of Queens (the Bay 30th Street fire). The first calls about the fire came into the City's 9-1-1 system at approximately 11:51 pm. As with all calls to 9-1-1, the calls were initially received by a Police Department (NYPD) telephone dispatcher. Because the calls related to a fire emergency, they were transferred to the Fire Department (FDNY). Less than a minute after the initial calls were received, the first wave of FDNY firefighting resources were dispatched to the Bay 30th Street fire. At approximately 11:56 pm, firefighters arrived at the scene and confirmed an active fire via radio to the FDNY's Queens Fire Dispatch Central Office. The FDNY commander on scene further reported that people were trapped inside the building. However, due to the complex and multistep process required to send an ambulance to the scene of an active fire combined with human error which occurred during the dispatch process, EMS was not officially notified of the incident until seven minutes later, substantially delaying the arrival of medical assistance to two children trapped in the building who ultimately died. At approximately 12:12 am, the first Emergency Medical Services (EMS) ambulance arrived at the scene of the Bay 30th Street fire – approximately 21 minutes after the initial calls about the fire were made to 9-1-1.

After reports that there had been a significant delay by the FDNY in dispatching an ambulance to the scene, the Department of Investigation (DOI) began an investigation to determine the cause of the delay, and, in particular, whether the delay was the result of systems failures that required corrective action. DOI's investigation revealed that the process for dispatching an ambulance to the scene of an active fire is highly cumbersome, often involving multiple staff members from the NYPD, FDNY and the EMS. This multi-step dispatch process, combined with an antiquated and complex 9-1-1 system, creates a systematic vulnerability that substantially increases the likelihood that human error will occur in dispatching an ambulance to the scene of an active fire.

Under the FDNY procedures which were in-place on the night of the Bay 30th Street fire, dispatching an ambulance to the scene of an active fire following a call to 9-1-1 required action by no fewer than seven individuals: one member of NYPD; four members of FDNY; and two members of EMS. DOI's investigation determined that, on the night of the fire, this dispatch process was marred by errors. Due to the complexity of the dispatch system as well as a series of errors and miscommunications between the primary dispatcher who handled the call and the supervisor on duty, a timely notification to EMS to send an ambulance to the scene of the fire was not made. Thus, the initial ambulance arrived on the scene approximately 21 minutes after the first call to 9-1-1. When combined with the complex and antiquated fire dispatch system, the dispatchers' errors resulted in this significant and unacceptable delay.

After four months of investigation, including the review of procedural and technical documents, audio recordings and witness interviews, and collaboration with FDNY's Bureau of Investigations and Trials (BITS), DOI has concluded that the FDNY system for dispatching an ambulance to a confirmed fire scene—including the onerous steps needed to actually summon the ambulance, the inadequate supervision of some dispatchers and the

outdated technology supporting the system – is unacceptably flawed. Specifically, the system requires complicated interaction between multiple individuals that dramatically increases the possibility that errors will occur delaying the dispatch of emergency medical assistance.

DOI's investigation initially focused on the cause of the delay on the night of the Bay 30th Street fire. However, that investigation demonstrated that the issues contributing to the delay were not unique to that incident but were systemic in nature. As a result, DOI has now concluded that the following problems exist with the FDNY's system for dispatching emergency medical assistance to the scene of an active fire:

1. *Process – The system for dispatching an ambulance to a fire scene is cumbersome and requires multiple staff to take multiple steps, thus increasing the possibility of error and delay.* In addition to the two initial individuals from NYPD and FDNY who receive a 9-1-1 call and dispatch firefighting resources, respectively, from the time that a firefighter on the scene confirms an active fire and requests medical assistance to the time an ambulance is actually dispatched, five separate individuals from FDNY and EMS must take five discrete steps. Not only does this chain of responsibilities take time, it dramatically increases the chance of human error since if even one of these steps is delayed, the entire process is at risk. This is exactly what occurred on the night of April 19-20, 2014. While the dispatch system is scheduled to be redesigned as part of the City's overhaul of its 911 system, that redesign is not scheduled to be complete until August 2016 – approximately two years from now.

2. *Supervision – Poor supervision of the dispatch staff contributed to the errors on April 19-20.* Additionally, workers with a history of error continued to sit in crucial posts. The multiple errors by staff on the night of the fire included:

   - The failure to have all positions covered at the FDNY dispatch center. Dispatchers were away from their positions at crucial moments and the ad hoc backup system failed.

   - The mistaken belief by one dispatcher that another dispatcher had notified EMS of the need to dispatch an ambulance. Because of poor communication, the dispatcher who should have notified EMS did not initially do so because she mistakenly believed another dispatcher had made the call.

   - The inability of the supervising dispatcher to competently use the computer technology at issue. She mistakenly input commands that eliminated a reminder that EMS needed to be notified to dispatch the ambulance.

   - Inadequate supervision. The supervisor on duty failed to make sure that employees carried out all of their necessary responsibilities and properly backed up employees who were off of the dispatch floor.

During the course of the investigation, DOI found evidence of the following other issues that exacerbated the errors made on the night of the Bay 30th Street fire:

- The FDNY's informal break policy does not require one-for-one relief. At times, as many as two dispatchers can be off the floor at the same time requiring remaining staff to juggle multiple responsibilities, which, as here, can lead to errors.

- The disciplinary history of dispatch staff on duty. The dispatcher in question had been disciplined for dispatch-related issues in the past. Nonetheless, no steps had been taken to provide her with appropriate remedial training even after supervisors had made such recommendations. Additionally, the supervising dispatcher had been disciplined in the past for failure to properly supervise dispatchers under her command.

3. *Technology – The present computer aided dispatch (CAD) system does not permit EMS dispatchers to see vital information, such as the borough where a fire is occurring. Thus, they cannot dispatch an ambulance until they receive a telephone call from the FDNY dispatcher.* When a firefighter in the field requests an ambulance over the radio, that transmission comes into an FDNY dispatcher who will then call EMS to dispatch an ambulance. Although much of the information about the fire will have already been entered into the FDNY computer system prior to the call, the EMS dispatchers are not trained to access this information. Nor are they required to listen to the fire scanner reporting communications from firefighters in the field. Therefore, when they know a potentially life-threatening fire is in progress, they do not, in practice, dispatch an ambulance until after receiving the call. On April 19-20 there was a delay in making that call and EMS had no ability to react in advance.

Finally, as noted above, preparations for a new FDNY CAD system have been underway since 2011, in connection with the City's Emergency Communications Transformation Project (ECTP), but the system not expected to be operational until August 2016. As the City awaits this long-term solution to improve data sharing between emergency responders, in the interim, FDNY has been pursuing a technological fix to automate Fire-EMS notifications as part of the CAD Operational Readiness Project (COR). One of the components of COR would allow Fire Dispatch to automatically initiate calls for EMS service and vice versa. FDNY has already implemented a short-term fix and a more robust technological solution is under development. FDNY anticipates that the technological solution will cost approximately $200,000 and be completed in four to six months. These solutions are interim measures designed to correct the problem during the development of the FD CAD system and must be made fully operational with no further delay and certainly within FDNY's expected time period of four to six months.

DOI'S INVESTIGATION

I.   Background – Dispatching an Ambulance to the Scene of a Fire

In general, the process for dispatching an ambulance to the scene of a fire is highly cumbersome, often involving multiple staff members from the NYPD, FDNY, and EMS. Reports of an active fire frequently come from civilians via calls to 9-1-1. Those calls are fielded by NYPD dispatchers who, in turn, relay the information to FDNY. The FDNY responds by sending firefighting resources to the scene to confirm whether there is an active fire. Upon confirmation, firefighters at the scene report the fire to FDNY dispatchers, who then telephone EMS to request an ambulance if needed.

In sum, as described in more detail below, dispatching an ambulance to the scene of a fire following a call to 9-1-1 requires action by no fewer than seven individuals: one member of NYPD (a telephone dispatcher to take the 9-1-1 call and send the information to FDNY); four members of FDNY (a dispatcher to send firefighting resources to respond to the incident; a firefighter to confirm the active fire and request EMS; a second dispatcher to enter the request for EMS into the FDNY's computer system; and a third dispatcher to telephone EMS); and two members of EMS (a dispatcher to enter the request for an ambulance into EMS's computer system and a second dispatcher to send the ambulance).

*   *   *

When a fire is reported by a call to 9-1-1, as with the Bay 30th Street incident, that call is first routed to a NYPD telephone dispatcher—not the Fire Department. The NYPD dispatcher gathers information about the fire from the 9-1-1 caller and enters that information into the NYPD's Intergraph Computer Aided Dispatch system (ICAD). The NYPD dispatcher then electronically transmits the information to the FDNY's computer aided dispatch system, known as Starfire.

The NYPD dispatcher also initiates a conference call between the 9-1-1 caller and an FDNY telephone dispatcher, who asks the caller a series of questions to verify the nature and location of the fire.[1] While the FDNY telephone dispatcher, known as an Alarm Receipt Dispatcher (ARD), speaks to the 9-1-1 caller, another FDNY dispatcher[2] reviews the information that has been transmitted electronically from ICAD to Starfire and begins assigning firefighting resources to respond to the incident. The firefighting resources respond to the scene and communicate with FDNY dispatch via radio. If firefighting resources arrive on scene and confirm an active fire, they notify dispatch by radioing the FDNY code, "10-75" (*i.e.*, active fire).

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[1] FDNY dispatchers work out of Fire Dispatch Central Offices (COs). Each borough has its own CO, staffed by dispatchers assigned to that borough. In general, when a fire is reported via a call to 9-1-1, the incident is routed to the corresponding borough's CO.

[2] This dispatcher, called the Decision Dispatcher, is the manager of FDNY field resources during a fire emergency. He or she is responsible for making continuous choices regarding the nature of the FDNY's response to an incident.

Two additional FDNY dispatchers are assigned to monitor radio communications to and from the firefighters in the field. One dispatcher, the Radio Out (RO) position, speaks over the radio with the firefighters who have been dispatched to the scene. The second dispatcher, the Radio In (RI) position, inputs the information received from the field into the Starfire system.

The information entered by the RI causes the Starfire system to generate lists of "secondary notifications"[3] that, depending on the nature of the fire, need to be made telephonically to one or more agencies (*e.g.*, notifications to EMS, to the NYPD, to ConEd, etc.). The secondary notifications may be requests for resources from an agency or updates as to the status of an incident. The FDNY dispatcher responsible for making those notifications is assigned to the Voice Alarm/Notification (VA/Notification) position. Entering the code "10-75" into Starfire causes the system to prompt the dispatcher seated at the VA/Notification position to make two secondary notifications: first, to an FDNY Deputy Chief and second, to EMS.

An EMS dispatcher, upon receiving telephonic notification of an active fire from FDNY, enters the information into the EMS Computer Aided Dispatch system (EMSCAD). The information is then transmitted electronically to a second EMS dispatcher, who assigns an ambulance to respond to the incident.

As set forth below, on the night of the Bay 30th Street fire, this fire dispatch process was marred by errors.

II.   Chronology of FDNY Dispatchers' Actions During the Bay 30th Street Fire

On April 19, 2014 at 11:51 pm, the NYPD was notified of a house fire at 10-31 Bay 30th Street, Queens, via two calls to 9-1-1. As with all calls to 9-1-1, these calls were automatically routed to NYPD telephone dispatchers who collected information related to the type of emergency and the callers' locations. The first 9-1-1 call came into the NYPD at 11:51:06 pm.[4]

As they spoke with the 9-1-1 callers, the NYPD dispatchers entered the information they gathered regarding the incident into the NYPD's ICAD system and sent the information electronically to Starfire. According to Starfire documents, the FDNY was

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[3] Within FDNY dispatch centers, there are two types of notifications: primary and secondary. Primary notifications are those made by the Decision Dispatcher to field units that will ultimately respond to an incident. Secondary notifications are every other kind of notification, and are made over the telephone before being documented in Starfire. See **Exhibit A** for an example of a secondary notification screen.

[4] **Appendix C** contains a timeline of the incident. The bolded text indicates a radio or telephonic communication; regular text indicates a computer entry in Starfire.

electronically notified of the fire at 11:51:51 pm. The information related to the fire was transferred to FDNY Fire Alarm Dispatchers (FADs) located in the Queens CO.[5]

At the time the NYPD dispatchers notified the FDNY of the fire, there were five FADs and one Supervising FAD (SFAD) on duty in the Queens CO and assigned to the following positions: Justin Zydor (Decision Dispatcher), James Morrison (VA/Notification), John Newsom (RI/RO),[6] Kathleen Valentine (ARD), Christopher Kalisak (ARD), and Jacquelin Jones (SFAD). At some point before the NYPD notified the FDNY of the fire, FADs Zydor and Newsom had both stepped away from their positions. According to the other FADs on duty that night, Zydor was in the kitchen area at the time that the notification of the Bay 30th Street fire came in, while Newsom had been in and out of the bathroom all night due to illness. Various witnesses stated that SFAD Jones assigned FAD Morrison to cover the RI/RO position while Newsom was away and assigned FAD Valentine to cover the VA/Notification position for Morrison.[7] As is customary, Jones herself covered the Decision Dispatcher position while Zydor was off the floor.[8] In sum, only four of the six FDNY dispatchers on duty were physically at their positions at 11:51:51 pm, when the FDNY was first notified of the Bay 30th Street fire.

At 11:51:55 pm and 11:51:59 pm, respectively, the NYPD connected ARDs Kalisak and Valentine to the two 9-1-1 callers who reported the fire. Valentine and Kalisak gathered details about the fire from the callers and entered the information into the Starfire system.

At 11:51:58 pm, SFAD Jones, acting as the Decision Dispatcher, used the Starfire system to assign the first wave of FDNY firefighting resources that responded to the fire: three engines, two ladder companies and one Battalion Chief. Those resources arrived on scene between 11:56:26 pm and 11:56:48 pm, approximately five minutes after dispatch.

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[5] The Queens CO is located in a two-story building on Woodside Avenue in Queens. The second floor of the building, as depicted in the diagram attached as **Appendix A**, serves as the central work area for staff assigned to the Queens CO. Within the rotunda and annexes are a number of workstations (desks with multiple computers and various radios/scanners). The Queens CO can accommodate many more FADs than the average number assigned there per tour, as the building is designed to serve as the backup center for both the Brooklyn and Staten Island borough facilities. Queens CO staff use approximately one third of the workstations currently available, as described below and depicted in the diagram.

[6] In general, two FADs are assigned to monitor radio communications. However, from 11:00 pm through 7:00am, the Queens CO is staffed with five FADs rather than six and one FAD covers both the RI and RO positions.

[7] FADs are trained on all five positions and may be assigned to work at any of them during a given tour. A description of the duties and responsibilities of each FAD position and the SFAD is attached as **Appendix B**.

[8] According to various witnesses, the SFAD typically takes over the Decision Dispatcher function when coverage is needed.

At 11:56:55 pm, the Battalion Chief on scene radioed the FDNY code "10-75," to the Queens CO. That radio transmission was received by FAD Morrison, who was assigned to cover the radio for FAD Newsom at the time. The FDNY code "10-75" indicates that there is an "active fire," and the transmittal of this code requires the dispatch of additional firefighting resources (*e.g.,* engines and ladders). The code also requires the FADs to notify an FDNY Deputy Chief and EMS of the fire. The FAD assigned to the VA/Notification position is ultimately responsible for making both of those notifications. Here, as FAD Valentine was assigned to cover the VA/Notification position while FADs Newsom and Zydor were away from their positions, the responsibility for notifying EMS was hers.

At 11:57:10 pm, FAD Morrison entered the 10-75 code into the Starfire system.[9] Morrison's entry caused the Starfire system to prompt both the Decision Dispatcher (here, SFAD Jones) and the VA/Notification position (here, SFAD Valentine) to take additional action (*i.e.,* dispatch additional fire resources, and notify an FDNY Deputy Chief and EMS).

At 11:57:18 pm, in response to the 10-75, SFAD Jones used the Starfire system to dispatch additional FDNY resources to the fire. Meanwhile, recordings of calls from the Queens CO indicate that from 11:57:15 pm until 11:57:52 pm, FAD Valentine was on the phone with an FDNY Deputy Chief (Division 13), notifying him about the fire. At 11:57:58 pm, FAD Valentine documented the notification to the Deputy Chief in Starfire. At the conclusion of her call to the Deputy Chief, Valentine should have notified EMS. Due to a series of errors and miscommunications between Valentine and SFAD Jones, discussed in Section III *infra*, the notification to EMS was not made.

At 11:58:58 pm, the Battalion Chief on scene radioed to FAD Morrison: "We have one line stretched; good source of water; we have reports of people trapped." At 12:00:47 am, FAD Valentine entered the following comment into Starfire: "BC47 RPTS 1L/S THEY HAVE GOOD WATER SOURCE" (*i.e.,* Battalion Chief 47 reports one line stretched, they have a good water source).[10] Valentine did not enter the comment, "PEOPLE TRAPPED,"

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[9] According to witnesses, entry of the 10-75 into the Starfire system was followed by a tone alert, generated by FAD Morrison from the RI/RO position, over the radio. The tone alert is audible in the background of recordings of the phone calls made to and from the Queens CO during the incident. FAD Kalisak and FAD Valentine both testified that they recognized this tone as indicative of the 10-75 and heard it via the fire scanner located on FAD Kalisak's desk.

[10] Although the RI/RO position is responsible for entering the "10" codes received via radio transmission into Starfire, the VA/Notification position is responsible for listening to the radio and entering substantive comments made by field personnel. The RI/RO position, unlike the other FAD positions, does not have a full keyboard and therefore cannot enter text comments into Starfire.

into the Starfire system; nor did Valentine enter a 10-44 code (*i.e.,* "request EMS") into the Starfire system.[11]

At 12:03:11 am, the Battalion Chief radioed a "10-45" code (*i.e.,* "fire-related injury")[12] to FAD Morrison. Approximately one minute into this radio transmission, the Battalion Chief demanded that EMS be sent to the front of 10-31 Bay 30th Street. At 12:03:25 am, FAD Morrison entered the 10-45 code into the Starfire system, which prompted the VA/Notification position to take additional action (*e.g.,* notify EMS).

At 12:04:03 am, the first recorded telephonic communication between FAD Valentine and the EMS dispatch center (EMS ARD Christopher DeFrancesco)[13] began. Audio recording of the call indicates that FAD Valentine called DeFrancesco and stated: "I have a 10-45 from that fire on Bay 30th Street." ARD DeFrancesco responded: "Um…Bay 30th Street, did you guys give us Bay 30th Street? I was just about to call you." In the background, the recording of the call indicates that Valentine then asked FAD Kalisak: "Did we ever get in touch with EMS on that fire?" Kalisak responded: "No idea. I didn't call them."[14]

Valentine ended the call with EMS at 12:05:41 am and documented the notification into the Starfire system at 12:05:47 am.[15] According to EMS records, EMS assigned two

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[11] As discussed in **Section III.B**, although such entries are not required by FDNY dispatch policy, multiple witnesses testified that a notification to EMS would have been appropriate following a radio transmission of "PEOPLE TRAPPED."

[12] A 10-45 requires five notifications in the following order: EMS, FDNY Staff Chief, FDNY Operations Center (FDOC), FDNY Deputy Chief and FDNY's Bureau of Fire Investigation (BFI).

[13] As discussed in **Section III.C**, ARD DeFrancesco was on duty at the EMS Fire Liaison Desk on the night of the fire. This desk is part of the EMS Emergency Medical Dispatch center located in Brooklyn.

[14] Also on the audio recording of that telephone call, a "chirp" from a cell phone is audible. In her DOI interview, FAD Valentine identified the chirp as an alert from her cell phone. Valentine testified that her cell phone was in her purse at the time she was making the call to EMS. The use of personal cellphones for phone calls or texting by Fire Dispatch personnel is prohibited in any Operations Area, *see* FDNY Bureau of Communications, Unauthorized Use of Technology, June 9, 2009, and multiple witnesses testified that cell phones should not be visible while staff are on duty.

[15] At 12:04:11 am, while FAD Valentine was on the phone with EMS, the FDNY Battalion Chief at the fire scene again demanded EMS at the location via radio. One second later, at 12:04:12 am, FAD Morrison entered fire code 10-44 (*i.e.,* "Request EMS") into the Starfire system. At 12:05:39 am, the Battalion Chief radioed two additional 10-45's (now three in total) to FAD Morrison and again demanded EMS. Each 10-45 corresponds to a different injured person. FAD Morrison entered the additional 10-45 codes into the Starfire system and informed the Battalion Chief that EMS has been notified. In the minutes following her initial notification to EMS, FAD Valentine made two additional calls to EMS to report information received from FDNY field personnel: At

ambulances to respond to the scene 35 seconds later, at 12:06:12 am. EMS records, corroborated by a radio transmission from the Battalion Chief, indicate that the first ambulance arrived at the fire scene at 12:12:03 am. Thus, the ambulance arrived on the scene approximately 21 minutes after the first call to 9-1-1.[16]

III.   Systemic Issues Raised by the Bay 30th Street Fire: Process, Supervision, and Technology

A. Process – The Process for Dispatching an Ambulance to a Fire is Cumbersome and Requires Numerous Actions by Members of Service from Multiple Agencies

As set forth above, among the multiple steps necessary to dispatch an ambulance to a fire, a fire dispatcher must make a secondary notification to EMS so that an EMS dispatcher may assign an ambulance to an incident. In this instance, although FAD Morrison entered the 10-75 into Starfire at 11:57:10 pm (requiring notifications to Deputy Chief and EMS) and FAD Valentine made telephonic notification to the FDNY Deputy Chief approximately 8 seconds later, at 11:57:18 pm, she failed to notify EMS until 12:04:04 am.

In her testimony to DOI, FAD Valentine stated that she believed she had been "moded in"[17] to the VA/Notification position on April 19-20, 2014 and that she was moded in at the time of the Bay 30th Street fire. Valentine remembered the 10-75 code being transmitted over the radio and confirmed that she knew the code required two notifications: one to an FDNY Deputy Chief and one to EMS. Valentine said that she spoke with the Deputy Chief over the phone, and documented the notification in Starfire.

Valentine testified that when she released the screen related to the Deputy Chief notification, she expected another screen prompting her to call EMS to pop up. Instead, she received a notification screen for an unrelated job. The notification screen prompted her to

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approximately 12:08:45 am, FAD Valentine, as required, notified EMS via telephone of the three 10-45's; she also informed EMS that FDNY units on scene were requesting a rush. At 12:10:45 am, the Battalion Chief on scene radioed to FAD Morrison the following transmission in sum or substance: "We have three 10-45's two in cardiac arrest, is there any word on EMS?" At 12:11:08, FAD Valentine notified EMS of the two patients in cardiac arrest.

[16] According to the Fiscal Year 2014 Mayor's Management Report, the average response time for "life-threatening medical emergencies by ambulance units" was 9 minutes, 33 seconds. (Sept. 2014 MMR, p. 41.)

[17] The Starfire system contains a function, known as "moding," that allows a FAD seated at one workstation to remotely perform the functions of another FAD. The function is most often performed to "mode in" a FAD to the VA/Notification position. Starfire alerts the position moded in that there are notifications pending in the queue by turning the screen red.

verify the address of the unrelated job. Valentine said that it was around this time that SFAD Jones informed her that she (Jones) had pulled up the EMS notification screen at the VA/Notification computer terminal.[18] Valentine said that she told Jones to release the EMS notification screen to her (Valentine) and she would make the telephonic notification.

According to Valentine, however, she never received the EMS notification screen. She assumed that, because the screen never appeared on her computer, one of her colleagues made the notification to EMS. Valentine stated that it is not unusual for two or more FADs to divide up the notifications on a particular job, but she acknowledged that for a 10-75, the same person often makes the notifications to both the Deputy Chief and EMS. Valentine further acknowledged that because she was assigned to cover the VA/Notification position, it was her responsibility to ensure that all requisite notifications had been made.

Valentine had a second opportunity to notify EMS at 12:00:47 am, when she heard the Battalion Chief indicate that there were "PEOPLE TRAPPED." She failed to do so. Other FADs on duty that night testified to DOI that they would have notified EMS after hearing a firefighter in the field report that people are trapped. However, FDNY policy and regulations do not affirmatively require such a notification.

According to FDNY data from January 1, 2014 through September 30, 2014, the citywide average time between receipt of a 10-75 by a fire dispatch Central Office and EMS notification was approximately 1.33 minutes. Here, the notification to EMS took seven minutes.

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[18] When a FAD is moded in, the Starfire prompts indicating that a notification is pending appear on *both* that FAD's computer and at the VA/Notification terminal. However, the actual notification can only be accessed by one position at a time. For example, if the FAD physically seated at the VA/Notification position brings up a notification screen on his or her computer terminal, that notification screen cannot be accessed by another FAD until it is released from VA/Notification position's computer, and vice versa. Here, data from the Starfire system indicates that FAD Valentine was moded into notifications from 10:00:39 pm on April 19, 2014 until after the incident at issue.

B. Supervision – Poor Supervision of FDNY Dispatch Staff Contributed to the Delay in Dispatching An Ambulance to the Bay 30th Street Fire[19]

The delay in dispatching an ambulance to the scene of the Bay 30th Street fire was primarily due to human error on the part of FAD Valentine, who failed to make a timely telephonic notification to EMS. However, as described below, SFAD Jones, FAD Valentine's supervisor, also contributed to the delay by failing to properly supervise her staff and by executing a series of incorrect commands while working in the Starfire system. When combined with the complex, antiquated fire dispatch system, the dispatchers' errors resulted in a significant delay on the night of April 19-20, 2014. As currently configured, the system does not have internal safeguards to prevent such errors.

Actions of SFAD Jones

While FAD Valentine was ultimately responsible for making the telephonic notification to EMS, SFAD Jones, was responsible for ensuring that the Starfire system was properly monitored at all times and that all required notifications to emergency responders were properly made. Therefore, when two of the assigned FADs were off the floor at the time that the Bay 30th Street fire calls came into the Queens CO, Jones had the duty to ensure that all positions were adequately covered and both FDNY and EMS were sent to the fire scene.

On April 19, 2014, at 11:51:51 pm, the Queens CO was first notified of the Bay 30th Street fire call when the NYPD dispatcher transmitted the incident from ICAD to Starfire. Within seven seconds of receiving this notification, the Queens CO dispatched FDNY firefighting resources to the scene. Because Jones was covering the Decision Dispatcher position, she became actively engaged in assigning FDNY units to the fire scene in addition to performing her supervisory duties.

When the 10-75 call was entered into Starfire, a secondary notification alert to contact the FDNY Deputy Chief and EMS appeared on both FAD Valentine's terminal

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[19] It is worth noting that over the course of its investigation, DOI learned that FDNY's training standards for FADs and SFADs currently fail to comply with state and industry standards, including the New York State Minimum Standards Regarding Call-Taker/Dispatcher Training, 21 NYCRR Part 5201, and various industry standards promulgated by The Association of Public-Safety Communications Officials (APCO) International and the National Fire Protection Association (NFPA). For instance, according to the Director Designee of FDO, Christopher Carver, and corroborated by other witnesses, there is only minimal formal training for newly-promoted SFADs, focusing only on basic policy and procedures, equipment and other related matters, with no instruction regarding principles of supervision, liability and other critical tasks as described in applicable standards. FDO has implemented a plan to ensure compliance with these standards by 2015. This plan was in motion before the Bay 30th Street fire.

screen and the screen for the regularly assigned VA/Notification position. [20] At 11:57:58 pm, FAD Valentine made the required notification of the active fire to the FDNY Deputy Chief, but did not notify EMS of the active fire.

During this time, SFAD Jones testified that she was walking back and forth between her assigned supervisor's terminal, where she was also performing the functions of the Decision Dispatcher, and the VA/Notification position. While standing at the VA/Notification position, Jones noticed that there was a pending secondary notification for EMS and pulled up the notification onto the screen. Due to the functional limitations of the Starfire system, when Jones accessed this notification, the other FADS, including FAD Valentine, were unable to simultaneously access the notification.[21]

Audio recordings of communications from the Queens CO to FDNY units sent to the Bay 30th Street fire captured some of the background conversation on the floor. DOI's review of these recordings revealed that, at approximately 11:59 pm, Jones and Valentine had a brief exchange about the pending secondary notification alert.[22] In the exchange, Valentine asked Jones to release the secondary notification screen, so that she (Valentine) could access it. Starfire data indicates that Jones made several attempts to clear the secondary notification alert from the VA/Notification position terminal but she executed the wrong commands and the alert remained on the screen.[23]

Jones testified that she attempted to release the screen, so that Valentine could document the notification to EMS. However, Jones admitted that she executed the wrong commands, which is corroborated by the Starfire data. As a result, the notification screen remained on the VA/Notification terminal and did not appear on Valentine's screen. Valentine did not ultimately make the notification to EMS until approximately 12:04 am.

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[20] See note 18, *supra*.

[21] Starfire data examined by DOI indicates that after a system alert appeared on the VA/Notification terminal, Jones executed a command to view this notification screen.

[22] The layout of the Queens CO is such that the ARDs sit in a different section than the main dispatch floor where the SFAD and other dispatch staff sits. This requires staff to yell across a large room when communicating with one another. Witnesses indicated that the layout presents a communications challenge. *See* **Appendix A** for a diagram of the Queens CO.

[23] Automated command functions within the Starfire system help facilitate dispatch. The NOTIF command is used to display a notification on the Starfire terminal. The DEFER command is used by the Decision Dispatcher to temporarily postpone automatically suggested resources while a fire incident develops. Data from the Starfire system examined by DOI indicates that the "DEFER" function was executed on the VA/Notification terminal three times at 11:58:34, 11:59:07 and 11:59:08 pm, followed by the "NOTIF" command at 11:59:11. According to Starfire experts at FDNY, the execution of the DEFER and NOTIF commands at the VA terminal while there is a notification on the screen produces an error, which would appear to the user as if nothing was happening.

Jones testified that she took no steps to ensure that Valentine actually notified EMS because, in Jones' opinion, receipt of a 10-75 is an ordinary and regular occurrence and she had no reason to believe that EMS had not been notified by Valentine. Nor did she direct any of her staff to assist FAD Valentine with notifications or any of her duties and responsibilities. Further, Jones testified that she did not consider calling FAD Zydor back from the kitchen to assist on the dispatch floor, also due to the routine nature of a 10-75.

Dispatcher Valentine Had Been Previously Disciplined For Operational Errors But Received No Additional Training

Valentine's failure to make a timely notification to EMS on April 19-20, 2014 was not the first time she has made an error on duty. On two occasions in November 2013, FDNY supervisors documented serious failures by Valentine for: (1) entering incorrect information into the Starfire system; and (2) failing to process alarms according to FDNY protocol.[24] Further, Jones was disciplined by a Chief Dispatcher for Valentine's failure to enter incorrect information into the Starfire system.[25]

In addition to Valentine's documented instances of poor work performance, her supervisors had expressed concern to senior EMS officials about her ability as a dispatcher. SFAD Jones testified to DOI that, in her opinion, Valentine was not a "strong dispatcher." Jones said that following the November 12, 2013 incident, she verbally recommended to her supervisor, Chief Dispatcher Juan Gonzalez, that Valentine receive retraining. Jones testified that Chief Dispatcher Gonzalez spoke to then Deputy Director Christopher Carver about providing retraining for Valentine but that Valentine never received any such training.[26] Additionally, a second SFAD assigned to the Queens CO said he met with Deputy Director Carver in March 2014 and expressed concern about Valentine's inattentiveness on duty, job knowledge, and work performance. Specifically, the SFAD said that he told Carver he believed Valentine was "a liability" if she was allowed to remain at the Queens CO.

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[24] On November 12, 2013, while attempting to enter a Signal 2-2 for Queens Alarm Box 9689, FAD Valentine entered a Signal 2-2 for Queens Alarm Box 5386 at the Radio position. While the error in entering this incorrect signal did not cause a disruption in the assignment of companies to Box 9689, it caused a disruption in the availability of dispatch personnel to receive and process alarms. On November 18, 2013, FAD Valentine received a conference call for Alarm Box 6632-01 stating "smoke" and made it a complaint. She also did the same thing for Box 3137-01. Had she processed these alarms properly, they would have dispatched prior to the NYPD alarm as is protocol.

[25] Jones was disciplined for Valentine's November 12, 2013 mistake for failing to supervise.

[26] Emails provided to DOI by FDO confirm that in or about early March 2014, Chief Dispatcher Gonzalez requested that Valentine receive retraining. Based on this request, then-Deputy Director Carver noted that there were not any serious deficiencies in Valentine's 2013 Annual Evaluation and asked Gonzalez for examples, which were never provided. It appears that the request for Valentine to receive retraining did not advance any further. It is also worth noting that Valentine's 2012 evaluation indicates "FAD Valentine should have access to additional training."

FDNY Dispatch Relief Policy

According to multiple witnesses, FADs and SFADs at Fire Dispatch Central Offices work 12-hour shifts and do not have a formal break schedule. As such, they take breaks as necessary, for example, to use the restroom, cook, purchase meals or make personal cell phone calls. Under the current practice, when a FAD takes a break, there is no designated FAD to cover his or her position. As such, the SFAD will direct the remaining dispatchers to cover the position of the FAD who is off the floor and often cover another position him or herself. Accordingly, at times, as many as two dispatchers can be off the floor at the same time. The informal break policy requires remaining staff to juggle multiple responsibilities, which, as during the Bay 30th Street fire, can lead to errors. The failure to have a formal break schedule increases the likelihood that staff will not be properly in place and thus increases the chance of human error in an emergency.

C. Technology – EMS ARDs at the Fire Liaison Desk are not trained to use FDNY Technology

Although EMS uses its own CAD system, EMSCAD, the agency has access to Starfire and can electronically view fire incidents. However, EMS dispatchers are not trained to interpret Starfire data and, therefore, must wait for telephonic notification from FDNY before they are able to dispatch an ambulance to the scene of a fire.

FDNY Requests for EMS

In the event that a firefighter in the field requests an ambulance over the radio, the VA/Notification position makes the telephonic notification to an Assignment Receiving Dispatcher (ARD)[27] assigned to the Fire Liaison Desk at the Emergency Medical Dispatch (EMD) Center located at the Public Safety Answering Center in downtown Brooklyn (PSAC-1). The EMS ARD assigned to the Fire Liaison Desk is required to monitor the Starfire terminal. That terminal, however, does not indicate in which borough the incident is occurring. During DOI's investigation, multiple witnesses testified that the ARDs assigned to the Fire Liaison Desk are not trained in how to use the Starfire system. As a result, the Fire Liaison Desk ARDs are left to simply observe fire incidents on the Starfire monitor; because they cannot view additional details, they cannot take action regarding an incident.

Actions of EMS ARDs at the Fire Liaison Desk

In addition to the delay caused by FAD Valentine's and SFAD Jones' actions, DOI and FDNY's BITS determined that the actions of the EMTs assigned to the Fire Liaison Desk at EMD also contributed to the delay in dispatching ambulances to the scene of the

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[27] All the ARDs assigned to EMD are certified Emergency Medical Technicians or Paramedics.

incident. EMS ARD Ann Grochulski was scheduled as the Relief ARD on the night of April 19-20, meaning she covered other ARDs' positions while they took their scheduled breaks.[28] Grochulski testified that she did not see the Bay 30th Street fire on the Starfire terminal during her 11:30am – 12:00am shift at the Fire Desk. Surveillance video shows Grochulski leaving the dispatch floor at approximately 11:56 pm and returning at approximately 12:00am.[29] Grochulski testified that she did not recall leaving the dispatch floor but that she was not feeling well and probably left the floor to use the restroom, after notifying a colleague who was stationed at the adjacent Community-Based Emergency Medical Services (CBEMS) desk. ARD Ortiz, who was assigned to the CBEMS position, testified that he did not recall Grochulski asking him to cover her position so she could step away. EMS ARD DeFrancesco, who was assigned to the Fire Desk that evening, testified that when he came back to his position close to 12:00am, Grochulski was not there.

In addition to Grochulski's leaving the Fire Desk unstaffed for several minutes, no one on duty at PSAC-1 took independent action to dispatch an ambulance to the scene of the fire. During the course of its investigation, DOI learned that EMS has a policy (Dispatch Order #12-032) specifically related to 10-75 Fire Assignments. The policy's stated purpose is "to expedite EMS response to a reported 10-75 fire," which it purports to accomplish by requiring EMS dispatchers seated at the Fire Liaison Desk to take action upon receiving notification of a 10-75 fire by any means (*e.g.,* radio, telephone, computer terminal). Thus, according to the policy, EMS dispatchers who heard the 10-75 over the radio or observed the entry in Starfire would be required to take action. However, according to witnesses, the policy is unworkable in practice as most EMS dispatchers (1) are not trained to read Starfire incident histories; (2) do not – nor are they required to – listen to the Fire radio while on duty; and (3) cannot dispatch resources without knowing the borough location of the fire, information that is not viewable at the Starfire terminal at the EMS Fire Liaison desk.

IV.   Policy and Procedure Recommendations

In the course of its investigation, DOI determined that a variety of systemic problems in the dispatch system increases the risk of human error. As such, DOI recommended the following measures to FDNY.

Process Recommendations

The multi-step process for dispatch increases the chance that human error will occur. DOI recommended that FDNY streamline the process as much as possible within the current technological constraints of the system. Specifically, DOI recommended that some of the steps (and thus individual actors) be eliminated and a shorter process be implemented.

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[28] Unlike the FDNY dispatchers, EMS dispatchers have break schedules and one-for-one relief.

[29] Grochulski identified herself in the surveillance video.

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In addition, DOI recommends that FDNY issue a dispatch directive to formalize its practice of requiring dispatchers to enter a 10-44 into the Starfire system (*i.e.,* "request EMS") when radio transmissions indicate that people are trapped.

DOI is still waiting for FDNY's full re-structuring plan, but notes that FDNY has already begun to implement some steps to tighten the dispatch process. FDNY has changed its dispatch process such that the notification to EMS is the *first* of the two-step notification – dispatchers will now contact EMS before reaching out to an FDNY Deputy Chief.[30] We believe this is an important first step and will monitor its utility going forward. However, we anticipate that the integration of the FDNY and EMS dispatch systems, discussed in detail below, will significantly improve the process.

Supervision Recommendations

DOI found that dispatch personnel were away from their positions due to the 12-hour shifts they work and the informal break and meal policy. To address this, DOI recommends that FDNY implement scheduled meal breaks and one-to-one relief at Fire Dispatch Central Offices. Similarly, to ensure that dispatchers are not distracted while on duty, FDO should ensure that the memorandum dated June 9, 2009 issued to Fire Dispatch personnel regarding Unauthorized Use of Technology[31] is enforced at all FDO facilities.

To ensure that SFADs are able to effectively supervise dispatchers, FDO should consider relocating the ARDs at the Queens Central Office so that they are closer and within line of sight and sound to the SFAD and the rest of the dispatch staff. This would lessen the chances of miscommunications about which staff has made required notifications.[32]

Finally, FDNY leadership was put on notice regarding a dispatcher's skill deficiencies and failed to take any steps to improve such dispatcher's performance. FDNY

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[30] In addition, FDNY is making EMS radio frequencies available in all field apparatus. This will ensure that firefighters on scene are able to communicate directly with responding EMS units instead of having to communicate with dispatch as an intermediary.

[31] A copy of the June 9, 2009 memorandum is attached as **Appendix D.**

[32] With respect to training, FDNY should implement the training and retraining initiatives for SFADs and FADs it has proposed and also include additional training regarding secondary notifications. In addition, FDNY should ensure that FDO complies with New York State and industry training standards regarding SFADs and FADs. While these standards are advisory and not required by law, they represent best practices to which FDNY should adhere. FDNY plans to and should continue to provide basic training to EMS ARDs assigned to the Fire Desk in how to operate the Starfire system, including how to view additional details about a pending fire incident and should provide those ARDs will full access to the system.

must better train and manage its supervisors to ensure that appropriate re-training and enhanced supervision are provided where necessary.

Technology Recommendations

During the course of this investigation, DOI observed the Starfire CAD system used by dispatchers at Fire Dispatch Central Offices. As discussed above, multiple dispatchers are needed to dispatch an ambulance to the scene of a fire. In addition, the system is antiquated and requires constant communication among dispatchers who are each carrying out discrete tasks. The failure to notify EMS that occurred in connection with the Bay 30th Street fire led DOI to question what the City is doing to replace the Starfire system.

As described in greater detail below, the City has undertaken a large scale project to integrate emergency response, the Emergency Communications Transformation Project (ECTP), which will include the unification of computer aided dispatch for Fire and EMS. To address the issues set forth in this report pending the completion of ECTP, DOI recommended that FDNY implement an electronic link between Starfire and EMSCAD that would automate the request for an ambulance when a 10-75 is communicated to FDO. Utilizing this link, a 10-75, 10-45 and any other appropriate communication called in from field units would automatically trigger the dispatch of an ambulance with input from fewer dispatchers.

In response to DOI's recommendation, FDNY has studied the issue, solicited vendor input and come up with two solutions, described in greater detail below: A short-term fix that FDNY has already implemented and a more robust technological solution in development, which is estimated to cost $200,000 and be completed in four to six months. These solutions are interim measures designed to correct the problem during the development of the FD CAD system, which is being designed to enhance dispatch Department-wide, as well as address the 10-75 situation. DOI recommends that the crucial interim measures detailed below be implemented immediately and fully funded by the City.

FDNY's Long-Term Solution – ECTP

Launched in 2004, the Emergency Communications Transformation Project (ECTP) is a multi-year initiative to enhance communications and dispatch operations for NYPD and the Fire and EMS functions of FDNY. ECTP includes a portfolio of projects, all related to the 9-1-1 system, and provides for upgrades to computer dispatch systems, improved integration and data sharing between agencies, new 9-1-1 telephony networks and software, and other improvements.[33] In March 2008, FDNY requested a certificate to proceed from the New York City Office of Management and Budget (OMB) in connection with elements of Stage 1 of ECTP. At the time that FDNY made the request, a combined CAD system was projected to be completed within five to seven years. Thus, FDNY

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[33] At the request of the Mayor, DOI is currently investigating ECTP and will issue a report once its investigation is complete.

requested interim funds for the "Stay Alive Projects" to continue to support, maintain and repair its two CAD programs, Starfire and EMSCAD, [34] until the completion of a consolidated system.

According to documents produced by FDNY and witnesses interviewed by DOI, the Starfire Stay Alive Projects included a System Change Request to implement a functionality allowing a dispatcher to enter a request for a Fire response to an Emergency Medical Dispatch (EMD) incident or for an EMD response to a Fire incident.

According to documents produced by OMB, the Stay Alive Project was funded until in or about June 2012. At that point, OMB declined to continue capital funding for the projects pursuant to Comptroller's Directive No. 10 because a unified FDNY CAD system to replace Starfire and EMSCAD, known as FD CAD or Fire CAD, was scheduled to be implemented under ECTP in less than five years.[35] At the time that capital funding was discontinued in June 2012, the Office of Citywide Emergency Communications (OCEC) projected that FD CAD would go live within two to two and half years.

It should be noted that there have been numerous iterations of the FD CAD project (i.e. consolidation of Starfire and EMSCAD into a single CAD system) that have failed, dating back to at least 2000. Preparations for the most current FD CAD replacement project, anticipated to be developed and implemented by Intergraph, began in February 2011.[36] According to testimony of the former director of OCEC taken before DOI in August 2013, OCEC's plan was to transition Starfire and EMSCAD to an Intergraph

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[34] As initially outlined, there were three phases of the project: Phase 1 covered the initial implementation of critical upgrades and development of detailed requirements; Phase 2 covered CAD software and interface changes; and Phase 3 contemplated upgrades for the EMSCAD and the Starfire Message Switch.

[35] Section 3.3 of that directive provides in part: "A project's expected useful life, for City purposes, must be at least five years for the expenditure to be classified as a Capital Project."

[36] According to a Statement of Work (SOW) prepared by DoITT and Northrop Grumman Corporation (NGC), (the former system integrator of the FD CAD project) during contract negotiations starting in mid-2010 and completed in the end of 2011, the objectives of the FD CAD project are "to design, implement, install, integrate, test, cut over, operate and maintain a CAD Subsystem for FDNY Fire and Emergency Medical Dispatch, EMS Command, the Office of Medical Affairs, Voluntary Hospital Personnel, the Office of Emergency Management, City Hall and other current EMSCAD and Starfire users, and provide training for Operators and System Administrators." According to the SOW, the proposed FD CAD system would perform the following functions: E9-1-1 Call Handling, Event Receipt, Event Entry, Dispatch Functions, Mapping Functions, Messaging, Hospital sub-system, Event Query and Report Generation, Mobile Functions, User Preferences, Voluntary Hospital Functions, User Preferences, Voluntary Hospital Functions, and System Administration. Further, pursuant to the SOW, the proposed FD CAD system will integrate with the following other ECTP Subsystems: Facility, Network Infrastructure, E9-1-1, NYPD's ICAD system, Voice and Data Radio systems, logging and recording, ERS/BAAS, FDNY Data warehouse and computerized triage.

product either in the fourth quarter of 2014 or the beginning of 2015. As of May 19, 2014, the FD CAD project was scheduled for installation in PSAC-1 by July 17, 2015. According to documents provided by OCEC, as of June 2, 2014, the FD CAD project is now scheduled for completion by August 31, 2016, more than 18 months after OCEC estimated. The delays in completion of the FD CAD project will be examined in more detail in a subsequent DOI report. For purposes of this report it is sufficient to note that a solution at least two years away is not, alone, a properly timely response to this immediate problem.

According to witnesses from OCEC, the FD CAD system will still require FDNY field units to manually communicate a 10-75 to an FDNY Dispatch Central Office, but the CAD system will automatically notify the Deputy Chief and EMS. When implemented this will be a significant, though not complete, solution to the issues noted here.

FDNY's Interim Solution – The CAD Operational Readiness Project (COR)

According to witnesses at FDNY, the projects formerly known as EMSCAD and Starfire Stay Alive Projects are now included under the CAD Operational Readiness Project (COR). COR includes several projects to enhance the interaction between the two CAD systems used by Fire and EMS. One planned component is the establishment of a link between Starfire and EMSCAD that would allow Starfire users to open an incident in EMSCAD automatically, which it cannot currently do.[37] In sum, FDNY would be able to automatically dispatch an ambulance to a fire incident without making a manual or telephonic notification to EMS. Because the operational specifications of this component have not been fully defined yet, some manual input by dispatchers may still be required. Moreover, no firm date for implementation has been given to DOI, but we have been informed that it is at least four to six months in the future.

FDNY's Short-term Solution

Due to the four to six months required to implement the link between Starfire and EMSCAD described above, the FDNY is pursuing a short-term solution in two (2) phases.

In phase one, FDNY has installed an Alarm Teleprinter Selector (ATS) device at the Fire Liaison Desk at EMD, which replaces the existing Starfire monitor. This allows fire dispatch to assign an incident to the ATS for each 10-75. The assignment appears on the ATS and prints a "ticket" automatically. EMD then acknowledges this assignment on

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[37] According to witnesses, the current interface between Starfire and EMSCAD could be configured to open incidents in the other system for anything for which there is an operational need but those requirements would need to be ascertained from operational staff. DOI was provided with the interface control document (ICD) generated by FDNY's technical staff. It contains details of already existing functionality, but does not include operational details, such as whether receipt of a 10-75 would automatically cause Starfire to communicate with EMSCAD to request an ambulance. However, according to FDNY's draft COR Summary, the proposed link would allow Fire Dispatch to automatically initiate calls for EMS service and vice-a-versa.

the ATS and enters the call information into EMSCAD. The use of the ATS device supplements the telephonic notification and provides a safeguard in case the telephone call is delayed or omitted.

FDNY estimates that most, if not all, of the work on Starfire will be done in-house for approximately $50,000, if vendor support is needed for development and/or testing. FDNY estimates that this initiative will take approximately one month to fully complete, barring any unforeseen technical issues.

In phase two, FDNY plans to add to the existing CFR infrastructure by adding to the existing Starfire call table and EMSCAD call type. This function will provide an acknowledgement back to Starfire once the incident is entered in EMSCAD, thus improving coordination and documentation. In addition, this will allow FDO and EMD to see each other's data.

FDNY will be able to perform most, if not all, of the Starfire and EMSCAD work in-house. Approximately $50,000 to $100,000 may be expended if vendor support is needed for development and/or testing. This initiative is likely to take two months to complete barring any unforeseen technical issues.

V.   Conclusion

In the course of our investigation into the events of the night of April 19-20, 2014 at 10-31 Bay 30th Street in Queens, DOI identified several deficiencies in FDNY's processes, practices, and systems that raised larger concerns about the way that ambulances are dispatched to the scene of an active fire. That night, as a result of the complexity of the dispatch system as well as a series of errors and miscommunications between the primary dispatcher who handled the call and the supervisor on duty, EMS did not receive timely notification to send an ambulance to the scene of the Bay 30th Street fire. EMS was not officially notified of the incident until seven minutes after FDNY received a report that people were trapped inside the burning building, delaying medical assistance to two children who ultimately died. The multi-step process for dispatching an ambulance to the scene of an active fire is extremely cumbersome, which, when combined with an antiquated and complex 9-1-1 system, creates a systematic vulnerability that substantially increases the likelihood that human error will occur. The recommendations issued in this report endeavor to mitigate this vulnerability.

As a result of this investigation, FDNY has already implemented two measures to improve the process of dispatching an ambulance to the scene of an active fire. First, after confirmation of an active fire, FDNY dispatchers now first call EMS to request that an ambulance be sent to the fire scene – prior to calling the FDNY Deputy Chief to report an active fire. This procedural change reverses the order of the calls from the procedures in place on the night of the Bay 30th Street fire in order to expedite the dispatch of emergency medical resources to an active fire scene. Although this is an improvement over the previous process, this measure does not eliminate the need to make a phone call in order to notify EMS. The process of dispatching of an ambulance to a fire still contemplates an FDNY dispatcher placing a call to an EMS dispatcher. Accordingly, the reversal of the

order of calls in the dispatch process is a positive step, but it is plainly not sufficient to address the larger issue of streamlined communication between FDNY and EMS.

Second, FDNY has installed a teleprinter device at the Emergency Medical Dispatch Center that allows EMS dispatchers to contemporaneously view a printout of complete information from Starfire regarding an active fire. As a result of the implementation of this provisional solution, EMS dispatchers are now able to manually enter information obtained from the Starfire printout into EMSCAD to dispatch an ambulance. We note that this interim measure provides a safeguard to the telephonic notification to EMS. However, dispatchers must currently monitor the teleprinter device and turn from their workstations to obtain the necessary information from Starfire regarding the active fire. The teleprinter device offers a helpful safety net, but it ultimately adds (albeit on a parallel track) rather than eliminates a step in the process – and thereby does not address the urgent need to simplify the ambulance dispatch process. While the installation of the teleprinter was a cost-effective and easy to implement temporary fix for the inability of EMS dispatchers to view Starfire data, we strongly recommend that FDNY develop additional technical provisional solutions to further simplify the complexity of the ambulance dispatch process and integrate the FDNY and EMS dispatch systems.

The best solution to the issues discussed in this report is the integration of the FDNY and EMS dispatch systems, the Long-term Solution. Unfortunately, the completion of a unified system is at least two years away. The Short-term Solution that has been implemented by FDNY is truly stop-gap. The Interim Solution, which would create a link between Starfire and EMSCAD, would most closely approximate the Long-term Solution, in that it would allow FDNY to dispatch an ambulance to an active fire at their workstations, (albeit on a split screen), without manual or telephonic notification to EMS. Although FDNY has received estimates for the approximate cost and time of completion, it has not yet finalized its plans to implement this measure. It should do so immediately.

Appendix A – Diagram of Queens CO

Woodhaven Blvd
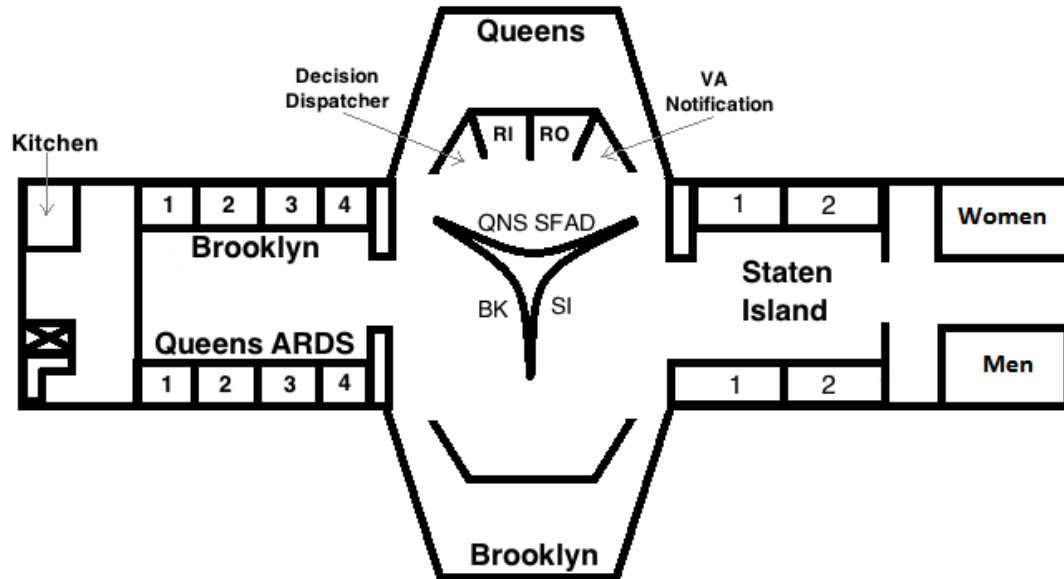
Appendix B – Description of FAD and SFAD Positions

Alarm Receipt Dispatcher (ARD):[38] An ARD's primary responsibility is to converse with 9-1-1 callers. NYPD telephone dispatchers conference 9-1-1 callers with FDNY ARDs, who verify the address of an emergency and enter pertinent information (beyond that which has been gathered by the NYPD) into Starfire. Any additional information entered into Starfire by an ARD is transmitted to the Decision Dispatcher.

Decision Dispatcher (DD): The Decision Dispatcher is responsible for assigning FDNY units (*e.g.,* fire engines, ladders, Battalion Chiefs, etc.) to respond to an incident, and assigning additional fire resources when the need arises. The DD receives the data from Starfire after an incident is entered by the NYPD dispatcher and the ARD and begins assigning resources to respond to the incident.

Radio Out (RO): The Radio Out FAD is responsible for communicating with FDNY resources in the field (*e.g.,* engines, ladders, Battalion Chiefs, etc.). The RO communicates with and receives reports from field personnel over the radio and is responsible for relaying those messages to the Radio In FAD and other dispatch personnel assisting with an incident.

Radio In (RI): The Radio In FAD is responsible for entering the radio communications received by the RO (above) into Starfire, using the SEP terminal. For example, if a firefighter radios the code "10-75," the RO would receive the communication, and the RI would enter "10-75" into Starfire using the SEP terminal. The RI position is eliminated between the hours of 11:00 pm and 7:00am. During that time, the FAD assigned to cover the RO position handles both the RO and the RI positions.

Voice Alarm (VA)/Notification: The VA/Notification position's primary responsibility is to notify various agencies regarding an incident after the RI generates the notifications in Starfire.[39] For example, after the RI enters the code "10-75" into Starfire using the SEP terminal, Starfire sends electronic and audio alerts to the VA that there are notifications pending. [40] The VA FAD will make the requisite notifications over the phone and document his or her actions in Starfire. Starfire alerts the VA FAD that there are notifications pending in the queue by turning the screen red, and if the dispatcher does not hit the "Next" button, an audible alarm goes off at the terminal.

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[38] Three ARDs are on duty from 7:00am through 11:00 pm, while only two work from 11:00 pm through 7:00am.

[39] The VA's secondary responsibility is to serve as a backup in the event firehouses lose connection to the Starfire system. When communication is lost, the VA uses the voice alarm to make audio notifications over a loud speaker at a firehouse.

[40] FDNY has a list of 10 codes and each requires anywhere from two to eight or more separate notifications.

SFAD: The SFAD is responsible for monitoring the staff on duty and the dispatch of FDNY resources to fire emergencies.[41] He or she must also ensure that all positions are covered when a FAD steps away for a break. In addition, the supervisor has various administrative tasks to complete (*e.g.,* paperwork, staff timesheets, etc.).

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[41] Dispatchers Directive No. 09-01 requires SFADs to ensure compliance with the procedures outlined in that directive, including provisions on professionalism, routine telephone answering procedure, alarm receipt interrogation procedure and phraseology, procedures for responding to persons trapped or seeking instruction, mandatory use of recorded telephones and accountability. Section 6.1.1 provides: "Tour Supervisors will ensure compliance with these procedures; and Chief Dispatchers will oversee that compliance. Each will be held accountable for failure to take immediate corrective action appropriate to any deficiency noted."

- 11:51:06 pm – NYPD dispatch center receives 9-1-1 call regarding fire at 10-31 Bay 30th Street
- 11:51:50 pm – NYPD dispatcher transmits electronic notification regarding the fire from ICAD system to FDNY's Starfire system
- 11:51:51 pm – Starfire receives electronic notification sent by ICAD regarding the fire
    - **11:51:55 pm – NYPD dispatcher conferences FAD Kalisak with 9-1-1 caller reporting the fire**
    - **11:51:59 pm – NYPD dispatcher conferences FAD Valentine with 9-1-1 caller reporting the fire**
- 11:51:58 pm SFAD Jones uses Starfire system to dispatch FDNY resources (3 engines, 2 ladders, 1 Battalion Chief)
- 11:52:03 pm - NYPD dispatch center enters second 9-1-1 call regarding fire at 10-31 Bay 30th Street into ICAD
- 11:56:26 pm-11:56:48 pm – FDNY resources arrive on scene
    - **11:56:55 pm – Battalion Chief on scene radios 10-75 to FAD Morrison. A 10-75 (i.e. "active fire") requires a two-step FDNY response: (1) notification to an FDNY Deputy Chief; and (2) notification to EMS**
- 11:57:10 pm – FAD Morrison enters 10-75 notification into Starfire
    - **11:57:15 pm – A tone alert for the 10-75 can be heard on the audio recording of an unrelated 9-1-1 call. The presence of this tone on the recording demonstrates that FADs Kalisak and Valentine had scanner turned on at the ARD positions and were able to hear the alerts.**
- 11:57:18 pm – SFAD Jones uses Starfire system to dispatch additional FDNY resources (1 squad, 1 engine, 1 ladder, 1 battalion, 1 rescue)
    - **11:57:15 pm – FAD Valentine notifies FDNY Deputy Chief of 10-75 via telephone**
- 11:57:58 pm –FAD Valentine enters notification to Deputy Chief into Starfire
    - **11:58:58 pm – Battalion Chief on scene radios to FAD Morrison: "We have people trapped … good water source"**
- 12:00:47 am – FAD Morrison enters comment into Starfire: "BC47 RPTS 1L/S THEY HAVE GOOD WATER SOURCE" (i.e. Battalion Chief 47 reports one line stretched, they have a good water source). Morrison does not enter, "PEOPLE TRAPPED," or a 10-44 notification (i.e. "request EMS"), which is not required by protocol but is considered best practice.

- o **12:03:11 am – Battalion Chief on scene radios 10-45 (i.e. "fire-related injury") to FAD Morrison.**
- 12:03:25 am – FAD Morrison enters 10-45 notification into Starfire
  - o **12:04:03 am – First recorded telephonic communication between FAD Valentine and EMS dispatch center begins**
  - o **12:04:11 am –Battalion Chief, via radio, demands EMS to front of the building**
- 12:04:12 am – 10-44 (i.e. "request EMS") entered into Starfire by FAD Morrison
  - o **12:05:41 am – Recorded phone call between FAD Valentine and EMS (ARD No. 8690) ends**
  - o **12:05:39 am – Battalion Chief on scene radios two additional 10-45's (now three in total) to FAD Morrison; Battalion Chief again demands EMS, FAD Morrison tells him EMS has been notified**
- 12:05:47 am- Notification to EMS entered into Starfire by FAD Valentine
- 12:06:12 am – EMS assigns 2 ambulances to respond to scene
- 12:06:33 am – FAD Morrison enters second 10-45 notification into Starfire
- 12:06:35 am – FAD Morrison enters third 10-45 notification into Starfire
- 12:06:35 am – FAD Valentine enters notification to EMS into Starfire
  - o **12:06:38 am – FAD Valentine notifies FDOC via telephone of the three 10-45's**
- 12:07:13 am – FAD Valentine enters notification to FDOC into Starfire
  - o **12:07:40am – FAD Valentine notifies Fire Marshall via telephone of 10-45's**
- 12:08:32 – FAD Valentine enters notification to Fire Marshall into Starfire
  - o **12:08:45 am –FAD Valentine notifies EMS via telephone of the three 10-45's, tells EMS that FD on scene is requesting a rush**
- 12:09:15 am – FAD Valentine enters second notification to EMS into Starfire
  - o **12:10:45 am – Battalion Chief on scene radios to FAD Morrison "We have three 10-45's two in cardiac arrest, is there any word on EMS?"**
- 12:11:08 – RSEP position (FAD Morrison) enters 10-44 into Starfire
  - o **12:11:08 – FAD Valentine notifies EMS (EMS ARD No. 8690) via telephone that there are two patients in cardiac arrest**
- 12:11:59 am - FAD Valentine enters third notification to EMS into Starfire
  - • 12:12:03 am – First EMS ambulance (Basic Life Support) arrives on scene

Appendix D – Unauthorized Use Memorandum

FIRE DEPARTMENT
Bureau of Communications
Office of the Director

MEMORANDUM

To: Fire Dispatch Personnel   All Units

From: Gerard Neville   Director of Communications
                 John Porcelli   Director - Fire Dispatch Operations

Date: June 9, 2009

Subject: UNAUTHORIZED USE OF TECHNOLOGY

Fire Dispatch Operations personnel are reminded that the use of *personal* laptop computers, voice recording equipment, and/or photographic devices, is **strictly prohibited** in any Fire Dispatch Operations Facility while on-duty.

Additionally prohibited is the use of a *personal* cell phone and/or Blackberry for voice or "texting" while at an Operations Area position; or the use of its voice recording and/or photographic capabilities <u>anywhere in the facility or on its grounds</u> at any time.

The use of Fire Department equipment with any of the indicated capabilities is governed by, and subject to, the FDNY POLICY ON LIMITED USE OF OFFICE AND TECHNOLOGY RESOURCES, which is found on the Home Page of the FDNY Intranet.

Fire Dispatch Operations personnel are also reminded that, in accordance with existing policy, the photographing / video taping of any facility, or its operation, equipment, personnel, CAD screens, etc, shall be considered unauthorized, whether on or off duty, unless Bureau management level authorization has been obtained. Likewise, any voice recording or audio reproduction of an operation or its personnel is also unauthorized. Furthermore, the publishing of any unauthorized photos, videos or recordings, whether on the internet or another venue is a serious infraction that will be subject to appropriate and formal disciplinary action.

The ranking Supervisor On-Duty in the facility shall be responsible for ensuring compliance in the above; and shall take immediate, appropriate action in cases of non-compliance. Supervisors shall also monitor the use of applicable FDNY equipment to ensure compliance with the FDNY POLICY ON LIMITED USE OF OFFICE AND TECHNOLOGY RESOURCES.

Borough Supervisors shall review and reinforce this Memorandum with their respective borough personnel; indicating specifically that failure to comply with the outlined internal Bureau policies and the FDNY LIMITED USE OF OFFICE AND TECHNOLOGY RESOURCES will result in disciplinary action and may also be subject to the penalties delineated within the aforementioned limited use policy.

<u>A COPY OF THIS MEMORANDUM SHALL BE POSTED CONSPICUOUSLY, AND EACH MEMBER OF THE OPERATION SHALL BE ISSUED A COPY THAT IS TO BE ACKNOWLEDGED ON A REQUIRED DOCUMENT RECEIPT FORM.</u>

GN:JP:jp
Memo 09 - Reinforcement Unauthorized Devices

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23:58:01.39
Terminal: QMNT
ALT1 SECONDARY NOTIFICATION
BOX # - LOCATION 1169 - 10-31
BAY 30 ST
MAIN STREET 10-31 BAY 30 ST
INTERSECTION DWIGHT AVE
BESSEMUND AVE
DESCRIPTION D=PRIVATE DWELL
10-75
X. DEPUTY CHIEF
 . EMS
PERSON NOTIFIED:
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10-44   FDNY radio code meaning "request EMS."

10-45   FDNY radio code meaning "fire related death on arrival/injury;" used with codes 1-4, 1: victim deceased, 2: critical/life threatening; 3: non-life threatening injury; 4: minor injury.

10-75   FDNY radio code meaning "notification fire/emergency;" used by firefighters to indicate there is a working fire.

ARD (EMS)   Assignment Receiving Dispatcher: an emergency medical technician (EMT) who has received specialized training and whose job is to evaluate incoming emergency calls and data and enter the information into the EMSCAD system.

ARD (FDNY)   Alarm Receipt Dispatcher: an FDNY employee assigned to an FDNY Central Office responsible for conversing with 9-1-1 callers. NYPD telephone dispatchers conference 9-1-1 callers with ARDs, who verify the address of an emergency and enter pertinent information (beyond that which has been gathered by the NYPD) into Starfire.

BITS   FDNY Bureau of Investigations and Trials, the disciplinary unit at the FDNY.

BTDS   FDNY's Bureau of Technology, Development and Systems.

CAD system   Computer Aided Dispatch system.

CO   Fire Dispatch Central Office: FDNY location responsible for dispatching FDNY resources (*e.g.,* fire engines, ladders, Battalion Chiefs, etc.) and communicating with firefighters in the field and other agencies, including EMS, NYPD and Con Ed.

DD   Decision Dispatcher: The Decision Dispatcher is responsible for assigning FDNY units (*e.g.,* fire engines, ladders, Battalion Chiefs, etc.) to respond to an incident, and assigning additional fire resources when the need arises. The decision dispatcher receives the data automatically after an incident is entered by the NYPD dispatcher and/or an ARD and then the DD begins assigning resources.

ECTP   Emergency Communication Transformation Program: an initiative launched by the City in 2004 to enhance call taking and dispatch operations for NYPD, FDNY, and EMS.

EMD   FDNY's Emergency Medical Dispatch Center at 11 Metrotech in Brooklyn

EMS   Emergency Medical Service, a division of the FDNY.

EMSCAD   Emergency Medical Service Computer Aided Dispatch system.

FAD   Fire Alarm Dispatcher: an FDNY employee assigned to a Fire Dispatch Central Office responsible for managing the dispatch of Fire resources (*e.g.,* fire engines, ladders, Battalion Chiefs, etc.) and communicating with firefighters in the field and other agencies, including EMS, NYPD and Con Ed.

FD CAD   Unified computer aided dispatch system planned for use by EMS and FDNY.

MDT   Mobile Data Terminal, a touchscreen computer that runs the EMSCAD program in ambulances or the Starfire program in Fire apparatuses, by which emergency personnel can see incidents to which they are being assigned.

NYPD ICAD Intergraph Computer Aided Dispatch system.

OCEC   Mayor's Office of Citywide Emergency Communications.

PSAC-1   Public Safety Answering Center at 11 Metrotech in Brooklyn, part of the ECTP initiative and the co-location of NYPD, FDNY and EMS.

Queens CO The Fire Dispatch Central Office located in Queens.

RI   Radio In: The RI position at the CO is responsible for entering the radio communications received by the RO (below) into Starfire, using the Status Entry Panel (SEP) terminal.

RO   Radio Out: The RO position at the CO is responsible for communicating with FDNY resources in the field (*e.g.,* engines, ladders, Battalion Chiefs, etc.). The RO communicates with and receives reports from field personnel over the radio and is responsible for relaying those messages to the Radio In operator and other dispatch personnel assisting with an incident.

SFAD   Supervising Fire Alarm Dispatcher; responsible for monitoring the staff on duty and the dispatch of FDNY resources to fire emergencies. He or she must also ensure that all positions are covered when a FAD steps away for a break. In addition, the supervisor has various administrative tasks to complete (*e.g.,* paperwork, staff timesheets, etc.).

Starfire   Computer aided dispatch system used by Fire Dispatch

VA   Voice Alarm/Notification: The VA/Notification position's primary responsibility is to notify various agencies regarding an incident after the RI generates the notifications in Starfire. The VA makes the requisite notifications over the phone and documents his or her actions in Starfire. The VA's secondary responsibility is to serve as a backup in the event firehouses lose connection to the Starfire system. When communication is lost, the VA uses the voice alarm to make audio notifications over a loud speaker at a firehouse.