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Counsel to the Committee

Andrew Neuman, Legal

Daryl Finizio, Policy Analyst

Stephen Feger, Finance

Office of Oversight and Investigation:
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Deputy Director

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COMMITTEE ON FIRE AND CRIMINAL JUSTICE SERVICES

Chair Lawrence A. Warden

April 10, 2001

OVERSIGHT: THE PROCUREMENT, DISTRIBUTION AND TESTING OF DIGITAL TWO-WAY
RADIOS BY THE FIRE DEPARTMENT

Introduction

On March 14, 2001, the Fire Department of the City of New York (FDNY) issued new Motorola XTS3500R digital two-way radios (commonly referred to as “handie-talkies”) to firefighters throughout the City. ^[1] On March 19, 2001, while firefighter Luke Healy was battling a fire in the basement of a home on Myrtle Avenue in Richmond Hill, Queens, his oxygen tank began to expire. ^[2] As Healy attempted to exit the basement, his oxygen tank ran out. ^[3] Initial reports indicated that Healy’s seven Mayday calls went unheard by firefighters at the scene and that they were only alerted to his need for assistance after a firefighter at another location, ten blocks away, heard a Mayday call from Healy. ^[4] Subsequently, FDNY documents revealed that Deputy Chief Weinlein, who was at Myrtle Avenue, reported that he and another FDNY official at the scene heard a Mayday, but that when he used the radio to ask who transmitted the Mayday, no one answered. According to Deputy Chief Weinlein, Healy was eventually found by officers who heard his calls for help from the basement, not over the radio. ^[5] On March 21, 2001, the FDNY announced that the following day, the newly issued radios would be recalled from the field with the intention of addressing operational issues with the radios and returning them to service shortly. ^[6]

Subsequently, it was revealed that during the eight days the new radios were in the field, firefighters experienced numerous problems with them, such as delays in transmission, messages not being received, messages getting cut off, and an echoing effect contributing to poor sound quality. Since the radios were recalled, many conflicting reports have circulated concerning the procurement, testing and distribution of the Motorola digital radios by the Fire Department. With the safety of firefighters as its overriding concern, the Committee on Fire and Criminal Justice Services plans to address these and other issues that have arisen with respect to these radios at today’s hearing.

Procurement of the Motorola XTS3500R Digital Radios

Prior to March 14, 2001, the FDNY utilized radios that operated in analog mode ^[7] that it had purchased from Motorola for well over a decade. In 1997, the Department of Citywide Administrative Services (DCAS), pursuant to the FDNY’s request, executed a sole source contract ^[8] with Motorola ^[9] to purchase a total of 750 radios for a total of approximately \$2.9 million. ^[10] According to its terms, the contract could be used by the FDNY to purchase from among three different types of digital radios and two different types of analog radios. ^[11] The contract also included provisions allowing for the substitution of a different radio if it were first approved by the FDNY and were offered at no additional cost.

The Procurement Policy Board (PPB) Rules require that an agency give public notice of its intent to enter into sole source negotiations with a supplier. These public notices are published in the City’s official

newspaper, *The City Record*. If expressions of interest are received, the agency is required to evaluate them and, if it appears that the goods are available from more than a single source, a solicitation is required to be issued in accordance with Chapter 3 of the PPB Rules. The FDNY provided notice in *The City Record* on April 25, 1997, that it intended “to enter into Sole Source negotiations with Motorola to purchase VHF Analog Saber 1 Submersible Radios, UHF Analog Saber II Radios, VHF Astro Digital Capable Saber 1 Submersible Radios, UHF Astro Digital Capable Saber I Submersible Radios, and Astro Digital Capable Saber II Radios; all with spare parts.”^[12] This notice states that “[a]ny vendor who is qualified to compete on this procurement is invited to express their interest in writing by 4-30-97.”

In its Pre-Solicitation Review Report, dated July 16, 1997, and signed by the FDNY’s Agency Chief Contracting Officer (ACCO) Robert L. Scott, the FDNY reported that this procurement “was initially processed under an open market solicitation.” However, because Motorola was the only bidder that could meet the operational and technical standards, a sole source procurement was sought. In the same document, the FDNY stated that “several manufacturers are developing CAI [Common Air Interface]-compliant products [one of the FDNY’s standards], as digital and narrowband operations are being pushed by the FCC [Federal Communications Commission]” and that “[t]he FDNY will always evaluate new technologies and products as they become available.”

In May 1998, Motorola informed the FDNY that it was discontinuing one of the two analog-only radios included in the 1997 contract – the Saber 1 VHF. In a letter dated February 18, 1999, Motorola informed the FDNY that it was also discontinuing the other analog-only radio in the 1997 contract – the Saber III UHF – and offered to substitute the XTS3500R, which according to Motorola “would provide FDNY/EMSC a radio with greater technical and electrical specifications, analog and digital capability, while reducing the cost to the city.” On February 24, 1999, the FDNY sent Motorola a written request for samples of the XTS3500R. Motorola, in a letter to the FDNY dated November 19, 1999, and referencing an earlier telephone conversation, said it “accepts and concurs with the [FDNY’s] substitution of the XTS3500R Portable Radio Equipment and Appurtenances” for the discontinued analog radio. Thus, despite its acknowledgment two years earlier that several manufacturers were developing technology that might meet FDNY’s CAI specifications, and in apparent disregard of its pledge to evaluate new technologies and products, the FDNY appears to have elected to accept a radio representing an entirely new communications technology from Motorola rather than conduct a competitive review of products and prices.

Compounding its failure to subject this new communications technology to a competitive procurement process, the FDNY also exceeded the 1997 contract’s ceiling on the number of radios to be procured (750 units) and the amount of the contract, \$2.9 million. In December 1999, the FDNY ordered

2,700 XTS3500R radios from Motorola, and in 2000, ordered another 1,118 radios. The total cost for the 3,818 radios was approximately \$14 million. ^[13]^[14]

There were conflicting media reports attributed to the FDNY concerning the amount of the entire contract to Motorola. Initially, several media sources reported on March 22, 2001, that the Motorola radio contract was worth \$4.5 million, according to the FDNY. ^[15] However, subsequent to a conflicting media report concerning the size of the contract, the FDNY adjusted this figure to represent a multi-year contract with Motorola for \$33 million. ^[16] The FDNY explained this discrepancy as the result of an error in calculation and “internal confusion” at the FDNY. ^[17] There were also conflicting accounts from the FDNY presented in various media outlets concerning the number of radios purchased under the Motorola contract. ^[18]

Testing and Distribution of the Motorola XTS3500R Radios by the FDNY

The FDNY reportedly purchased the Motorola XTS3500R (UHF version) digital radios because they would provide better overall quality voice transmission and better radio penetration when used inside buildings. ^[19] Nevertheless, all information provided to date indicates that the XTS3500R’s were not adequately tested to ensure that they would meet the FDNY’s operational needs, and that FDNY firefighters and officers were not sufficiently trained in operating the new radios.

According to the FDNY, prior to placing their order for the new Motorola radios, the Department performed shop testing on the UHF version of the XTS3500R, including receiver and transmitter specifications, submersibility testing of the waterproof characteristics of the radio, a voice clarity test, a drop (shock) test, verification of controls, channels, radio features and accessories, and a battery life test. In addition, the FDNY has indicated that it also performed technical propagation testing and a comparison of VHF versus UHF, and analog versus digital coverage. According to the FDNY, the XTS3500R met these technical specifications.

The FDNY has stated that its Rescue 2 unit tested the radios from July 23, 1999, to August 1, 1999. However, although the Rescue 2 unit tested an analog, VHF model of the XTS3500R, the FDNY purchased a digital, UHF model. Thus, the Rescue 2 unit never tested the radios or technology subsequently purchased by FDNY. Furthermore, the FDNY has indicated that Rescue 2 primarily tested the ergonomics of the radios such as button and knob placement, and other features. ^[20] FDNY officials have admitted that Rescue 2 did not generate any written reports concerning the radio testing.

Despite the lack of field testing, the FDNY began ordering the digital XTS3500R’s (UHF version) in December 1999. According to the FDNY, the original shipment of 2,700 radios was received in January 2000. The FDNY began “shop testing” (lab testing) the radios in February 2000. In March 2000, all of the

radios were returned to Motorola after the FDNY detected a problem regarding the submersibility characteristics of the radios. Motorola attempted to solve this problem and re-delivered 100 radios to the FDNY in May 2000. The FDNY found that the problem was not adequately addressed and again returned the radios to Motorola. In July 2000, Motorola re-shipped 1,000 radios, with a random sample passing FDNY tests. In October, 2000, FDNY ordered another 418 radios. Between September 2000 and December 2000, Motorola fulfilled the FDNY orders. In January 2001, all radios from the original order and the 418 from the second order were tested for frequency assignment, transmission power output, receiver sensitivity, a vacuum test, and transmitter error. According to FDNY officials, the radios met all specifications, and were accepted for use by the Department.

According to conversations with FDNY officials and media reports, approximately 20 of the radios were then “field-tested” at the FDNY Fire Training Academy on Randall’s Island between January and February 2001.^[21] Acknowledging that, as of April 3, 2001, they were still gathering departmental documents related to this alleged testing, FDNY officials were unable to provide Council staff with further details surrounding this alleged testing, such as whether written instructions concerning the scope of testing were provided to training officers; whether written reports were requested of and transmitted by officers; or who decided the radios should be tested at the Fire Academy. Noting that they were collecting documentation as part of their internal investigation, these FDNY officials said that they would have them in time for the City Council’s hearing.

Pursuant to procedure, the FDNY field-tests products prior to actual purchase. The FDNY has asserted that the XTS3500R radios were field-tested at the Fire Academy, but this was after the FDNY had already accepted delivery of all 3,818 radios. Moreover, representatives of the Uniformed Fire Officers Association (UFOA) state that the radios were *not* tested at the Fire Academy. Officers at the Academy were told to utilize the new radios in simulated drills merely to “familiarize” them with the new radios, and that the exercises were not intended to evaluate the radios.^[22] Nevertheless, problems with the radios were detected through this familiarization. According to the UFOA, an officer told the Assistant Commissioner for the Bureau of Fire Communications, Stephen M. Gregory, on several occasions during the training at the Fire Academy in January and February of 2001 that there were serious flaws in the radios and that “at least one senior department official was aware of the problems since January [2001].”^[23] According to the UFOA, the officer was told directly by Assistant Commissioner Gregory not to file a written report of problems observed with the new digital radios, and that the FDNY was already aware of these problems.^[24]

The radios were delivered to FDNY firehouses in February/March 2001. The FDNY put the

XTS3500R radios into service on March 14, 2001. According to the FDNY, firefighters and officers received training through an instructional video produced by the FDNY and through at least one visit from a battalion chief to each firehouse. Inasmuch as the video should contain instructions to firefighters and officers on any operational idiosyncrasies inherent to the radios, logically, it should have been produced *after* field testing. However, the video was produced before the fall of 2000, well before the radios were sent to the Fire Academy. This explains why the instructional video does not mention transmission delays and echoes, or any other problems identified in January and February 2001 at the Fire Academy.

According to FDNY officials, within the first few days of the XTS3500R's being put into service, the Department received oral reports from the field of problems with the radios, including reports of messages being "stepped on"^[25] and messages not being received. Based on these reports, Donald J. Burns, FDNY Citywide Tour Commander, sent a memorandum on March 16, 2001, to all Deputy and Battalion Chiefs directing them to forward a report to the Bureau of Operations, and to provide immediate telephone notification through the chain of command to the Citywide Chief, if they encountered any problems "in the use of the new handie-talkies at fire or other operations." The memorandum further states that "[t]here have been some rumors of problems but there has been NO official notification of any problems." Despite this assertion, there were two March 14, 2001, reports from Battalion Chiefs of problems encountered with the use of the new radios. Reports of problems were also submitted on March 15, 2001.

After the March 16, 2001, memorandum from Donald J. Burns was distributed, numerous written reports were sent to FDNY staff concerning problems encountered in the field with the new XTS3500R's. Reported problems included:

- transmitted messages that were never received;
- simultaneous transmissions that cancel each other out;
- messages "getting cut off;"
- slight delays in transmissions;
- "transmissions from remote companies are interspersed with fireground transmissions;"
- quality of transmissions were better when speaking with personnel not present at the scene of an incident;
- "when in close proximity ... a reverberation or echo is experienced"; and
- difficulties experienced in discerning voice inflections.

According to FDNY officials, after the March 19, 2001, Mayday incident, five Deputy Chiefs

convened at the FDNY's training site on Randall's Island on March 20, 2001, to test the radios' reported problems. After testing the radios and experiencing the same or similar problems reported from the field, the Chiefs recommended that the radios be removed from service to address these problems. Subsequently, on March 21, 2001, FDNY Commissioner Thomas Von Essen ordered that the XTS3500R radios be removed from the field the following day.

Upon recalling the radios from the field, the FDNY initially stated that the Motorola XTS3500R radios were currently utilized by fire departments in Boston and Chicago.^[26] However, as later reported by the media, firefighter unions in Boston and Chicago stated that their departments do not use the same Motorola model.^[27] In fact, the Boston and Chicago fire departments had considered – and rejected – digital systems, opting instead to continue purchasing analog radios under an analog system.^[28]

Mistakes Repeated

In 1980, two firefighters died when a safety rope broke at a Manhattan fire. Top fire officials insisted that the rope broke after it was cut on the broken edge of the roof coping. In fact, a subsequent investigation by the New York City Department of Investigation (DOI) concluded that the Fire Commissioner, Chief of Department, Chief of Training Division, and other chiefs knew for as many as five months before the accident that the rope had repeatedly failed to meet safety standards established by the FDNY and the cordage industry.^[29] In addition to determining that upper levels of FDNY management actually knew of the rope's substandard performance, the DOI report also concluded that the FDNY internal investigation was handled unprofessionally, and that FDNY officials carelessly made inaccurate and unsubstantiated public statements about this incident.

A review of the FDNY's procurement, testing, distribution, and recall of the Motorola XTS3500R digital radios reveals that FDNY officials failed to heed the recommendations made by DOI in its 1980 report. Specifically, the FDNY did not follow testing and evaluation protocols established subsequent to the DOI report, including consulting with the fire unions about the testing or introduction of safety equipment. Moreover, following the March 19, 2001, Mayday incident, the FDNY repeatedly released incorrect or incomplete information to the media. Despite this, and the passage of 20 days, there has been no information released by the FDNY from their internal investigation.

DOI Recommendation: New FDNY Testing and Evaluation Protocols

The safety equipment provided to firefighters is a vital lifeline. Recognizing this, the DOI report made several recommendations concerning the proper evaluation and testing of “newest technologies, as well as routine changes in the standards, usages, and reliability of existing equipment.”^[30] The DOI report

recommended that the FDNY create a new bureau whose full-time concern would be to review and evaluate all equipment. Subsequent to the release of the DOI report, the FDNY upgraded its then existing safety unit to form the Safety Division.^[31] Within the Safety Division of the FDNY is a Research and Development Unit.

In March 1983, the FDNY established protocols within the Safety Division for the testing and evaluation of new products with the creation of “All Units Circular (A.U.C.) 273.” The FDNY stated that the purpose of A.U.C. 273 is to “insure that information about new equipment placed in the field for pilot testing is available to all members of the Department in the event that their operations might involve or be concerned with these programs.”^[32] Under protocols established by A.U.C. 273, before products are purchased by the FDNY, they are distributed in a pilot phase to selected fire units across the City to be tested in actual field conditions. All units across the City are notified of this pilot phase through addenda to A.U.C. 273, not just the fire units that are selected to participate in the pilot-testing phase. Selected fire units then file written reports directly to the Research and Development Unit based upon their experience with a product. Council staff obtained numerous examples of the FDNY’s adherence to this protocol, even when there were only slight changes to the specifications of a product currently being used by the FDNY. For example, since October 25, 2000, a new fire hose has been pilot-tested by several FDNY engine companies, with pilot testing scheduled to end on April 15, 2001.^[33] In this case, fire units are to file reports to Research and Development any time a hose is stretched. A.U.C. addenda for other products reveal varied reporting guidelines.

In the case of the XTS3500R radios, there has been no documentation presented by FDNY that indicates that a notice pursuant to A.U.C. 273 protocol was issued at all. The FDNY asserts that actual field tests of the XTS3500R digital radios by units was not possible because the digital radios could not communicate with the analog radios already being used in the field.^[34] However, the XTS3500R radios could have been tested in field simulation drills that are conducted by multiple units while out of actual field service, such as the FDNY’s “Pipeline” drill, airport drill, Penn Station drill, and other multi-unit drills that are conducted within battalion districts. Additionally, the radios could have been tested prior to purchase under simulated fire conditions at the Fire Academy, as the FDNY claims they subsequently were.

DOI Recommendation: Consultation With Fire Unions in Testing of New Products

The 1980 DOI report also recommended that fire unions should be fully represented and consulted in the testing and evaluation process of new products, as well as with changes in standards and reliability of existing equipment. Subsequent to the issuance of the DOI report, the FDNY named an eight-member

Safety Committee, chaired by the First Deputy Commissioner, *with both management and union representation*.^[35] Although union representatives told Council staff that the Safety Committee does not meet on a pre-determined basis, they did say that they are routinely notified and consulted about the testing and evaluation of new products and proposed changes to existing equipment by way of the Safety Committee and in other ways, including the contractually established Labor-Management Committee and other meetings. For instance, when bunker gear was introduced (during which time, the current FDNY Commissioner was then the president of the UFA), the UFOA and UFA report that they were actively involved in the process.^[36]

In the case of the XTS3500R digital radios, the UFA and the UFOA have stated that fire unions were not consulted at any point in the FDNY's decision to procure the new digital radios, marking a distinct departure from existing FDNY protocols.^[37]

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DOI Recommendation: Proper Investigation of Reported Incidents:

The DOI report states that the FDNY conducted their investigation of the 1980 rope incident unprofessionally, and noted serious managerial weakness within the FDNY at that time in conducting formal investigations.^[38] The DOI investigation found in the case of the rope incident that the FDNY had “engaged in a number of actions that raised questions about the competence and objectivity of command investigations conducted internally within the Department.”^[39] The DOI report recommended that a new “emergency response investigative unit” be created within the FDNY to respond to unusual incidents that would be “independent of all intermediate commands,” but that the investigative unit should “maintain close working relations with and draw on the expertise of the Inspector General’s office, the Fire Marshals and the Office of Legal Affairs.”^[40] This unit would seek, among other things, “to ascertain whether there are any major flaws in the way firefighting practices and equipment are employed so that the loss of life may be prevented in the future.”^[41] The report also stated that “the persons involved in any disaster should be professionally and thoroughly interviewed as soon as possible after an incident occurs.”^[42] DOI concluded that when it was directed to conduct its investigation less than one month after the tragic incident, “individual witness recollections were growing stale; and various individuals and entities had developed interests in the outcome of the matter that might affect the version of what happened.”^[43]

With regard to the FDNY's current internal investigation regarding the procurement, inadequate testing and training, and operational difficulties with the XTS3500R radios, FDNY officials have been reported as saying that their “internal review has first focused on the radios themselves, with the

Department questioning Motorola engineers about what problems may exist with the technology.”^[44] This is consistent with UFOA’s statement that none of the UFOA members who reported problems with the radios have been interviewed as part of the FDNY’s internal investigation.^[45] It has been 20 days since the FDNY Commissioner’s decision to recall the XTS3500R digital radios, and the FDNY has yet to interview key witnesses or release any results of its reported investigation.

DOI Finding: Misleading Information

In 1980, the DOI report found that the FDNY had released misleading information to the public regarding the rope incident. Similarly, subsequent to the first public reports of problems with the new XTS3500R digital radios, there have been several instances of inaccurate and incomplete information provided by FDNY to the media:

- Based upon conversations with the FDNY, many media outlets reported on March 22, 2001, that the FDNY contract for the new digital radios was \$4.5 million.^[46] Another news story indicated that Motorola and FDNY officials provided a total figure of \$18 million to replace the old analog radios.^[47] In subsequent reports, this figure was adjusted to \$33 million for the entire multi-year contract with Motorola, which included all components of the new digital system.^[48]
- The FDNY also initially provided incorrect information to media outlets that the Boston and Chicago Fire Departments used the same digital XTS3500R radios being used by the FDNY.^[49] Boston and Chicago Fire Department officials subsequently denied that they had ever used digital XTS3500R radios,^[50] and this was later confirmed by Council staff.
- The FDNY also provided conflicting information about the number of digital radios that were purchased under their Motorola contract and the cost for those radios. On March 22, 2001, several news stories stated that the FDNY had purchased 2,700 new digital XTS3500R radios from Motorola,^[51] while another news story on the same date put the figure at 4,000 radios.^[52] The 2,700 figure on the number of radios was then quoted from the FDNY sources in subsequent news stories. Finally, the figure was adjusted to 3,818 radios on March 31, 2001.^[53]
- Finally, the FDNY has also provided the media with misleading information concerning the contents of the instructional video provided to firefighters for the XTS3500R radios. Assistant Commissioner Gregory reportedly stated to a senior FDNY official that problems that had been reported to him during January and February 2001, when the radios were been “tested” at the Fire Academy -- “half-second delays in transmission and echoes that are inherent to the digital

technology” -- were discussed in the XTS3500R instructional training video.^[54] Council staff reviewed the instructional video, and there is no mention of transmission delays or echoes.

[1] William Murphy and Melanie Lefkowitz, “Static Over Radios; FDNY Recalls New Models After Firefighter’s Close Call,” *Newsday*, March 22, 2001; March 20, 2001 memorandum from FDNY Chief of Operations Daniel Nigro to All Divisions.

[2] Herbert Lowe, “Mayor Backs FDNY’s Use of Radios,” *Newsday*, March 26, 2001; Larry Celona and William Neuman, “Firefighter’s Close Call Leads to \$4M Radio Recall,” *New York Post*, March 22, 2001.

[3] Larry Celona and William Neuman, “Firefighter’s Close Call Leads to \$4M Radio Recall,” *New York Post*, March 22, 2001.

[4] Susan Saulny, “In Safety Move, Fire Department Pulls New Radios From Service,” *New York Times*, March 22, 2001.

[5] March 19, 2001 memorandum from FDNY Deputy Chief Weinlein to Chief of Operations Daniel Nigro regarding “Ht Operations at Box 2-2 9635.”

[6] March 20, 2001 memorandum from FDNY Chief of Operations Daniel Nigro to All Divisions; Michele McPhee, “New FDNY Radios Fizzle,” *Daily News*, March 22, 2001.

[7] Analog and digital radio systems have substantially different transmission characteristics. In an analog radio system, the signal generated by the speaker’s voice remains unchanged from the transmitter to the receiving radio. Analog radio operations are generally less expensive to implement, and remain the most widely used communications system. In a digital radio system, a voice frequency is sampled at the transmitter and converted into a digital signal by a voice encoder. Once the digital signal is received, it must be converted again to an analog copy of the original voice. While a digital signal is largely consistent over the entire coverage area, an analog signal grows weaker and noise levels increase the further a receiver is from the point of transmission. Digital systems are capable of superior spectrum efficiency and are said to provide better building penetration. See <http://www.mot.com/LMPS/RNSG/conv/types.htm>; See also, Nebraska State Radio Communications Task Force, “Recommendations for a State and Local Government Public Safety Statewide Wireless Communications Infrastructure” January 1, 1999, available at <http://www.doc.state.ne.us/radiotf/NRCFinalReport.html>

[8] Section 3-05 of the Procurement Policy Board (“PPB”) Rules governs the procedures to be used for sole source contracts. Specifically, the rules require that sole source procurements be used only when there is one source for the required goods. In such situations, the accepted price and terms and conditions shall be achieved through negotiation between the agency and the supplier. In determining whether to sole source a contract, the Agency Chief Procurement Officer (“ACCO”) shall make a written determination that there is only one source for the required goods. For sole source procurements for goods and services of \$10,000 or more, the ACCO is required to include a description of the efforts made to ensure that offers were solicited from other sources, and where applicable, a statement of intended actions to develop competition in the future. A copy of the ACCO’s determination must be forwarded to the Comptroller’s office within five days of completion.

[9] A review of the VENDEX system reveals that New York City issued 168 contracts and 531 purchase orders to Motorola, with a total value of \$167.8 million.

[10] DCAS Pre-Solicitation Review Report for FDNY Contract With Motorola, IV.C.4.

[11] According to FDNY officials, the City’s Department of Information Technology and Telecommunication (DoITT) had determined that the FDNY should move toward modernization of its radio communications, including the ability to communicate with other City agencies and outside public safety agencies. Interoperability between the FDNY and other agencies is easier to achieve with a digital radio system.

[12] VHF frequency bands for public safety include frequencies between 150 - 174 megahertz (MHz) while the UHF public safety bands encompass frequencies between 450 - 512 MHz. In general, natural and manmade noise is found at higher levels at lower frequencies. In general, UHF frequencies have shorter wavelengths and better building penetration. See Kathy J. Timel and James W. Hart, P.E. “Understanding Wireless Communications in Public Safety: A Guidebook to Technology, Issues, Planning, and Management,” *The National Law Enforcement and Corrections Technology Center*, March 2000, available at <http://www.nlectc.org>

[13] In a memorandum dated November 12, 1999, Donald E. Stanton, the Assistant Fire Commissioner for the FDNY’s Bureau of Technology Development and Systems, requested “that DCAS perform the necessary tasks to facilitate the substitution of the existing SABER III portable radio with the new XTS3500R portable radio.” It should be noted that in its February 18, 1999,

letter informing the FDNY that the SABER III was to be discontinued, Motorola listed the price of the XTS3500R as \$3,132. However, in all its memoranda to DCAS, the FDNY lists the price of the XTS3500R as \$3,154, the price of the discontinued SABER III. In addition, the Stanton memorandum states that the new radio “is to be supplied at no extra cost.” This is technically true, since, in Stanton’s memorandum, the XTS3500R is said to be replacing the SABER III portable radio, which Motorola sold to the FDNY for \$3,154 per radio.

[14] To date, the FDNY has encumbered \$13,969,142 for the XTS3500R radios and has paid for \$5,858,927 worth of XTS3500R radios and accessories.

[15] William Murphy and Melanie Lefkowitz, “Static Over Radios; FDNY Recalls New Models After Firefighter’s Close Call,” *Newsday*, March 22, 2001; Susan Saulny, “In Safety Move, Fire Department Pulls New Radios From Service,” *New York Times*, March 22, 2001.

[16] William K. Rashbaum, “Fire Union Demands Inquiry Into Contract for New Radios,” *New York Times*, March 25, 2001. A report from WNBC-TV that aired on March 23, 2001, initially reported the \$33 million figure. A review of contract documents submitted to the Council by DCAS, to date, does not support this \$33 million figure, however.

[17] William K. Rashbaum, “Fire Union Demands Inquiry Into Contract for New Radios,” *New York Times*, March 25, 2001.

[18] Michele McPhee, “New FDNY Radios Fizzle,” *Daily News*, March 22, 2001; Patrice O’Shaughnessy and Maki Becker, “FDNY in a Radio Daze; Heat Rises as Faulty System Nixed,” *Daily News*, March 25, 2001.

[19] Kevin Flynn, “Unions Say Fire Dept. Ignored Concerns Over New Radios,” *The New York Times*, March 31, 2001.

[20] As a result of the Rescue 2 testing, design changes were implemented by Motorola.

[21] The Fire Academy teaches new firefighters, as well as provides fire companies with continuing education, in the classroom and through simulated fireground training.

[22] William Van Auken, “UFOA Calls for Von Essen to Quit Fire Department,” *The Chief*, April 6, 2001.

[23] William Van Auken, “UFOA Calls for Von Essen to Quit Fire Department,” *The Chief*, April 6, 2001. This article states that several officers reported problems to Assistant Commissioner Gregory. Also in this article, a senior FDNY official is reported to have stated that the problems experienced during the Fire Academy “testing”, which Assistant Commissioner Gregory was alerted to, “involved the half-second delays in transmission and echoes that are inherent to the digital technology.” Also see Kevin Flynn, “Unions Say Fire Department Ignored Concerns Over New Radios,” *New York Times*, March 31, 2001.

[24] Ibid.

[25] A term used to describe when several individuals transmit messages concurrently, causing some messages to be interrupted or lost.

[26] Michele McPhee, “FDNY Chief Says Radios Cost City \$33M,” *Daily News*, March 26, 2001; Michele McPhee, “New FDNY Radios Fizzle,” *Daily News*, March 22, 2001.

[27] Michele McPhee, “FDNY Chief Says Radios Cost City \$33M,” *Daily News*, March 26, 2001.

[28] The Boston Fire Department has confirmed to Council staff that they do not use the XTS3500R as part of their analog radio system. The Chicago Fire Department has confirmed to Council staff that they use an analog version of the XTS3500R, in addition to other analog radios, as part of their analog system. Moreover, while the Baltimore Fire Department does have a digital system in place, it does not use the XTS3500R digital radio. The Philadelphia Fire Department presently has an analog system and will be implementing a digital system in the near future similar to that of the Baltimore Fire Department. Council staff also contacted public safety agencies in a number of other cities and municipalities, including Atlantic City, New Jersey; Hamilton County, Ohio (metropolitan Cincinnati); Traverse City, Michigan (which has a system linking much of northern Michigan); and Boca Raton, Florida. None of these municipalities use the XTS3500R radio.

[29] New York City Department of Investigation, “Investigation into the Circumstances Surrounding the June 27, 1980, Fire During Which Two Firemen Were Killed During an Attempted Rescue With a Roof Rope,” Report 1034/80D, December 1980.

[30] Ibid.

- [31] 1981 Preliminary Mayor's Management Report, p. 37.
- [32] FDNY, "Pilot Programs – Equipment/Apparatus," All Units Circular 273, March 29, 1983.
- [33] A.U.C. 273 Addendum #287, October 25, 2000.
- [34] William Van Auken, "FDNY Pulls Plug on Faulty Radios", *The Chief*, March 30, 2001.
- [35] 1981 Preliminary Mayor's Management Report, p. 37.
- [36] William Van Auken, "UFOA Calls for Von Essen to Quit Fire Department," *The Chief*, April 6, 2001.
- [37] *Ibid.*
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