

weeks for large projects; in most cities there is an expectation by builders of getting faster service than that.

The Plans Review Section consists of three plan reviewers and a trainee, all of whom are uniformed employees without technical training. The Section receives plans and accompanying documentation from the general engineering section after the latter has completed its review and adjustments for modification. All building plans submitted to DCRA for permits, with the exception of those filed for single-family homes, follow this process. Approved plans are submitted to the inspection division to be scheduled for site inspection by the field inspectors.

The Plans Review Section reviews plans for compliance with the following:

- National Fire Protection Association (NFPA) Life Safety Code
- BOCA Building Codes
- National Electric Codes
- D.C. Supplemental Requirements (Code)

The section's reviews focus on matters related to life and fire safety systems. Deficiencies are noted, and a letter of defect submitted to the client for resolution prior to approval.

The plans review section receives 2-3 new plans daily. If the fire department review team remains focused they can properly review an average of 3-6 plans per week. A staff of three plan reviewers and an occasional trainee are not sufficient for the workload.

Based on the workload statistics provided, the cycle time for plan reviews is excessive. These time frames are established based on the construction cost of structures irrespective of code requirements and level of complexity of the safety systems.

The backlog in plan reviews has been reduced from over 100 in 1996 to approximately 30 in September 1997. This number stood at 70 in March of 1997. Over

662 permit-related jobs were processed by the DCRA in FY96. The majority of these were referred to the Fire Department plans review section for examination and approval.

There is a lack of consistency in how plans are reviewed. Part of the problem is too much turnover of personnel; as they develop experience they often are reassigned to other tasks. In the 1980s, two reviewers were able to keep up with workflow, because they were experienced reviewers. There is some duplication of efforts between the Fire Department reviewers and the general engineering reviewers. Areas of responsibility are not clearly defined. Structural and electrical units sometimes review for the same items.

Fire and Arson Investigation

The fire investigation section is currently handling an arson case through the determination that the fire is incendiary (arson), and then hands it off to the Metropolitan Police Department for identification, location and arrest of the arson offender. This is not leading to an acceptable rate of case closures and a high rate of conviction in court.

There have been questions recently over the quality of the police department's homicide investigations. Arson often is a more difficult crime to investigate than homicide because of the difficulty in proving that a crime took place, in addition to catching the culprit.

Arson investigation requires close cooperation with the police in order to protect and assist investigators in making arrests and testifying. The fire department has had inadequate cooperation from the police, who themselves are overwhelmed.

Several years ago the police had two full-time detectives assigned to work with the fire investigation section. At the present time there are no specially assigned detectives. The fire investigators must request assistance from a general assignment "District" detective who has no special arson investigation training. It is widely known that to successfully bring to closure, with an arrest, a normally clandestine and often complex arson fraud case, a high level of commitment of investigative resources and

highly technical expertise must be evident. This prescription for success does not exist today nor has it existed for the past five years.

In 1993, a U.S. Fire Administration Arson Technical Assistance Management Team reviewed the District of Columbia's arson investigation organizational structure and issued a report indicating several changes were needed to help make the system efficient. To date, most of the recommendations have not been implemented. (See report from USFA dated March 1992.)¹ The U.S. Attorney for the District of Columbia is aware of this problem.

One of the consultant's recommendations five year ago was that the Fire Department give selected investigators peace officer authority, but this was not implemented. The fire inspectors cannot carry weapons or make arrests, which they need to do if the police cannot provide better assistance.²

The result is an extremely low clearance rate of about 10 percent if just the cases reported to the FBI are counted, and about 5 percent if both incendiary fires and suspected arsons are considered (see Table 3-3).

	Number of Arsons
Single Residential	54
Multi-Residential	13
Commercial	7
Other Structures	1
Public Buildings	12
Vehicles	75
Total Arsons	162
<i>Total Cleared by Arrest</i>	<i>17</i>
<i>Percent Cleared by Arrest</i>	<i>10.4 %</i>

¹ TriData Corporation wrote the report under contract to the U.S. Fire Administration.

² FEMS held discussions in mid-September with the police to initiate training of fire investigators at the police academy.

NOTE: During 1996, the Fire Department recorded an additional 240 suspicious fires, for an incendiary/suspicious fires total of 402. The U.S. Attorney's Office reported that 21 of these were closed by arrest, a clearance rate of 5 percent.

Juvenile Firesetters – While the District of Columbia's juvenile firesetting problem has not been adequately quantified and analyzed (it should be), it is serious, especially in economically depressed and low-income areas, based on analogies to similar cities. This situation is exacerbated wherever there is drug-related activity and gang activity. A juvenile firesetter program is a critical element in reducing both intentionally set fires by juveniles and fires set by "curious kids." Such programs have proven to dramatically reduce recidivism among juvenile fire-setters. It is important to nip juvenile firesetting in the bud as it has been shown to be a precursor to life as a professional criminal. Many serial killers have histories of starting as juvenile firesetters. (The "Son of Sam" is one of the notorious examples.)

Modern fire prevention approaches include the establishment of a formal Juvenile Firesetter Counseling program. D.C. has none. To the Department's credit, this gap has been recognized and assistance has recently been obtained from the U.S. Fire Administration to organize a Juvenile Firesetter Counseling workshop in the Fall, involving members of various city departments. References of juveniles to the programs must come from social agencies, health agencies and schools as well as from parents and public safety. (So far, the D.C. school system has declined to participate.) A Juvenile Firesetter Program is a critical element in reducing both intentionally set fires by juveniles and fires set by "curious kids."

Data Collection and Management – The Fire Investigation Section does not have an effective data collection program. The scant information that is being gathered is collected by hand and not maintained in a form that makes it readily available and useable.

There is no single source of data on fire and arson investigations. The Police Department arson section maintains information that pertains to their actual investigations, while the fire department collects its own information of fire investigations. There is virtually no transmittal of information on the disposition of cases

back to the fire department after the police department picks up the cases. Moreover, there is a basic difference in how police and fire personnel report vehicle fires. This affects whether or not they are included in the figures for arson or for destruction of property. That is, the rate of arson presented in public figures will vary depending on which agency investigates them.

As a result of this fragmented record keeping process, the fire investigation and arson prosecution effort is severely handicapped. There is no arson offender "profiling system" used to record suspect address, M.O. motivation, geographical location and socioeconomic background information. In addition, the lack of management data hampers effective deployment of investigative staff. There is no arson management information system (AIMS) to record and analyze factors to be used in arson prevention.

Fire investigation reports need to be based on a standard criminal investigation report format rather than on the present system. It is essential that the fire cause and origin determination process utilized by the investigator be clearly defined. Police detectives and prosecutors must understand how a fire was determined by the Fire Investigator to have been willfully and maliciously set in order to establish that arson took place, and prosecute it successfully.

Case Management and Workload Management – The fire investigation division currently does not have adequate case management and control. This is partly due to the fragmented investigation approach now used in the absence of an effective data collection management program. It is further hampered by the absence of a single authority to establish, implement and maintain a strict and effective case control system. This deficiency results in low productivity due to the failure to identify and develop solvable cases. It frequently also will result in poor case quality, which hampers successful prosecution.

Departmental response criteria for fire investigator call out states that for any fire, accidental or incendiary, with a loss of over \$10,000, an investigator must respond. This can cause a high rate of unnecessary responses. The fire cause often may be evident and

recordable by the company officer who prepares the incident report, without calling the investigator.

Arson Prevention – The fire investigation section has not developed an arson education and intervention program that is needed to combat the incendiary problem in high fire-prone areas. The tremendous increase of fire activity that normally occurs in areas with higher-than-normal crime, drug incident rates and gang activity, can be expected to worsen without the availability of intervention and education programs.

Investigator Training – The current qualifications for assignment to the fire investigation division are passing a written test and experience in the Fire Prevention Division for a prescribed period of time. Some people with higher investigation qualifications and training cannot be used as investigators because they have not met part of the existing criteria for selection.

No minimum level of investigator training is required to enter or to remain in the investigation unit. A formal, on-going investigator training program is essential ensuring both investigator competency and arson awareness among suppression personnel. Training is essential to remain knowledgeable of the requirements of NFPA #921 "Guide to Conducting Fire Investigations".

Arson Detection/Evidence Preservation – Firefighting division personnel have not been given adequate instructions on preservation of evidence as part of their continuing education. This is essential to insure that arson is recognized and evidence protected at potential crime scenes. Fire investigation photographs are not taken and fire scene diagram not made for all fires investigated, a requirement specified in the NFPA #921 Guide.

Investigator Safety – Fire investigators routinely are among the first to arrive on the scene of a fire, along with fire suppression personnel. They are sometimes on their own to complete their investigation. As noted above, fire investigators are not provided with firearms for personal protection, even though they are routinely placed in dangerous

situations investigating criminal activity (arson) at night. This is especially threatening in high crime districts where there is illegal drug-related activity.

Criminal firesetters do not necessarily know or respect the difference between a fire investigator and a police investigator. Their main concern is dealing with their own predicament, which can and often does place fire investigators in harm's way. An unarmed investigator is quite vulnerable.

Communications Equipment – The fire investigation section is currently located at Engine Company 24. It is essential for investigation units to have immediate and secure direct communications with fire and police dispatch, as well as with other agencies which are normally relied upon – Fire Marshal's office, laboratory resources, and so forth. The investigators are handicapped with inadequate radio equipment. They share channels used by fire operations. Portable radios quite frequently fail in buildings and in other areas of the city. This condition compromises confidentiality that frequently is essential and can create a dangerous situation should the investigator require assistance. (Chapter 8 discusses all communications needs.)

Clerical Support – At present, the fire investigation section does not have any clerical support. The individual investigators file all reports, prepare files and correspondence, and answer the telephone. The extra clerical burden placed on the investigation section takes away from the ability to address more needed and appropriate work such as fire investigation, fire suppression training in the area of fire scene preservation, proper documentation and planning prevention and intervention efforts.

SOP – The Standard Operating Procedures lack a fire investigation section. This is essential to serve as a road map for handling all section activities and to provide a reference document for newly assigned personnel.

Personnel Evaluation – There is no specialized performance evaluation system for investigators. A generic system tends not to be a good basis for the evaluation of personnel in highly technical positions. Investigators should be rated against fire investigation job elements.

Coordination with Other Agencies – There is no U.S. Treasury or Bureau of Alcohol, Tobacco and Firearms "Memorandum of Agreement" on ATF arson investigations in the District of Columbia, though attempts to obtain a MOU have been made. There is also no formal Anti-Arson Advisory group. Some means is needed to coordinate all agencies having a legal interest in the effective control of the arson problem.

Sick Leave – At present two fire investigators have been on sick leave for over 18 months. This causes built-in overtime to provide minimum staffing for the 8:00 p.m. to 8:00 a.m. shift, and an overall loss in productivity. Departmental resolutions provide that after 60 days, the "vice technician" (temporary assignment) must fill the position. This has not been done.

CHAPTER 4 – EMERGENCY MEDICAL SERVICE

In the District of Columbia, emergency medical service (EMS) is delivered by a combination of fire units providing first-responder EMT-level service and the EMS Bureau (EMSB) of the Fire and Emergency Medical Services Department (FEMSD), which provides basic life support (BLS), advanced life support (ALS), and patient transport.¹ The mission of the EMSB is “to provide quality emergency medical care and transportation 24 hours a day.”²

In recent years, the EMSB has responded to over 100,000 calls annually for medical assistance. At one point, the District of Columbia had the second-highest per capita EMS call volume in the nation. By any measure, the EMSB is a high-volume EMS system. Figure 4-1 shows the number of medical incidents for each fiscal year from 1993 to 1997.³ The figure draws a distinction between medical incidents, medical responses, and medical transports.

A medical *incident* is a 9-1-1 call for medical assistance. The tally of medical incidents somewhat *undercounts* the EMS call volume because some calls are not initiated by a citizen calling 9-1-1 (i.e., they are police- or fire-initiated radio calls or are initiated when a person hails a passing EMS unit or walks into a fire station). A medical *response* is a single vehicle responding on a call. Many incidents (about 25 %) generate more than one response. Finally, a *transport* is the actual transportation of a patient to a hospital. About three-quarters of medical incidents result in a transport.

¹ ALS units are staffed by paramedics and provide high-level care such as intravenous therapy, administration of medications, intubation (breathing tube placement), and cardiac monitoring/defibrillation. BLS units are staffed by emergency medical technicians and provide a limited range of essential emergency care procedures including automated defibrillation but not including intravenous therapy, medication administration, or intubation.

² Emergency Medical Services Bureau, *Mission Statement*, June 1997.

³ 1997 data shown are extrapolated from 11 months of FY 1997 data.

Figure 4-1. EMS Call Volume Indicators

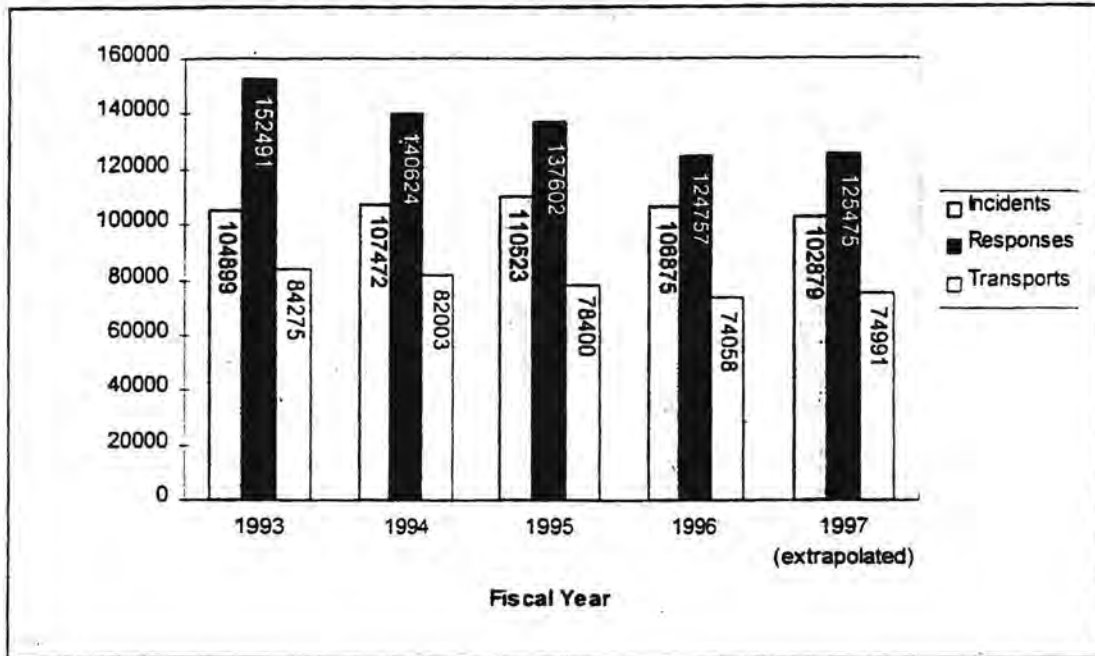
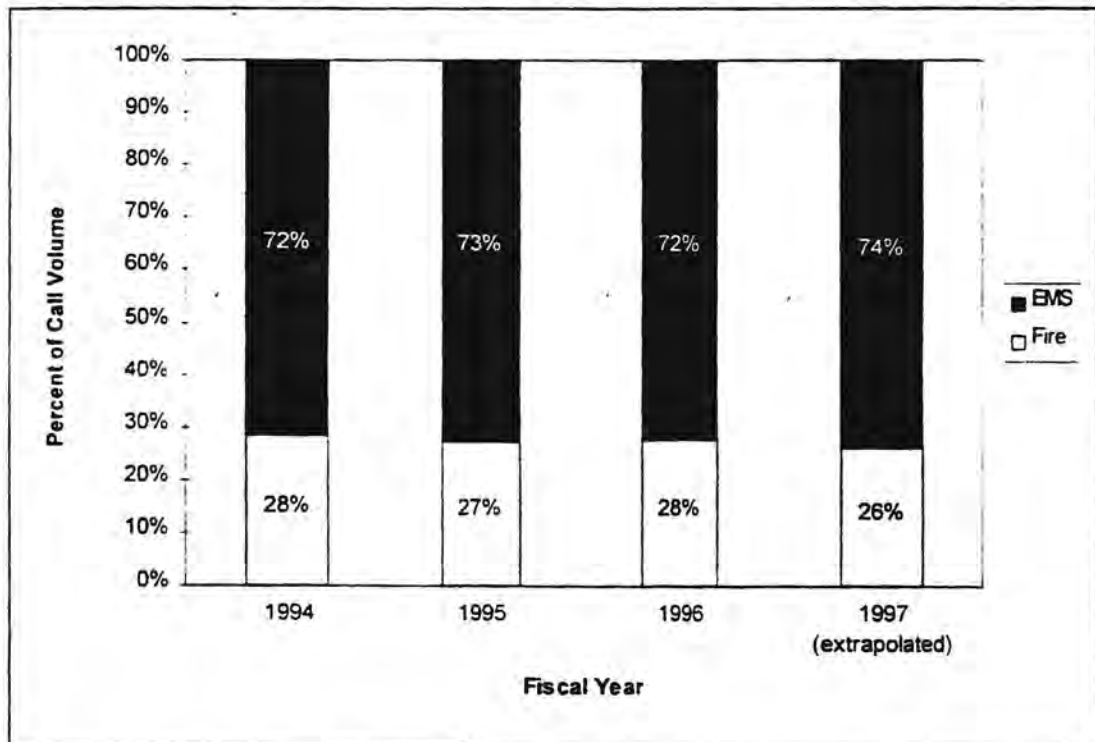


Figure 4-2. EMS vs. Fire Call Volume



As Figure 4-2 demonstrates, medical assistance is by far the most frequent service provided by the fire department.

EMS Benchmarks

In order to provide a point of reference, the delivery of EMS in the District of Columbia was benchmarked against six other East Coast cities. The cities used for comparison are listed in Table 4-1.

Table 4-1. EMS Benchmark Cities

<i>City</i>	<i>Population</i>	<i>Square Miles</i>	<i>Population /Sq. Mile</i>
New York	7,311,966	308.9	23,671
Boston	585,000	47.5	12,316
Philadelphia	1,553,000	135.1	11,495
Miami	367,016	35.6	10,309
Washington, D.C.	585,221	61.4	9,531
Baltimore	726,096	80.8	8,986
Pittsburgh	369,000	55.6	6,637

*Source: U.S. Bureau of the Census 1992 estimates

Organization of EMS Delivery – In most of the cities, EMS is organized within the fire department. Two cities, Boston and Pittsburgh, provide EMS through a separate city government agency. Fire units provide BLS first responder emergency medical care in all of the cities. Miami is the only one of these cities utilizing paramedics on engine companies.

EMS Demand – Table 4-2 shows the raw count and population-adjusted count of EMS incidents in the benchmark cities. The per capita demand for EMS is higher in Washington, D.C. than in any of the other cities in the benchmark group. This is a root cause of many problems in the Fire and EMS Department: high call volume, high stress level, vehicle wear and tear, etc.

Table 4-2. EMS Demand Comparison

<i>City</i>	<i>Population</i>	<i>Number of EMS Incidents in FY 96</i>	<i>Incidents Per 1,000 Population</i>
Washington, D.C.	585,221	106,875	182
New York	7,311,966	1,240,119	170
Pittsburgh	369,000	60,000	163
Miami	367,016	59,707	163
Baltimore	726,096	111,575	154
Boston	585,000	87,000	149
Philadelphia	1,553,000	157,276	101

*Source: U.S. Bureau of the Census 1992 estimates

Number of EMS Units – The number of EMS units on the street varies greatly in each city depending on the time of day and the day of week. All of the cities except Baltimore and Miami place additional units in service or remove units from service when the anticipated call volume increases or decreases respectively. Most of the cities utilize a combination of BLS and ALS units, but Pittsburgh and Miami utilize only ALS units.

Table 4-3. Unit Call Volume Comparison

<i>City</i>	<i>Population Density (per sq. mile)</i>	<i>Incidents Per 1,000 Population</i>	<i>Min. # of Units on the Street</i>	<i>Max. # of Units on the Street</i>	<i># of Calls Per Max. # of Units</i>
Baltimore	8.986	154	18	18	6,199
Pittsburgh	6.637	163	9	13	4,615
Philadelphia	11.495	101	26	38	4,138
Washington, D.C.	9,531	182	20	28*	3,816
Boston	12.316	149	17	23	3,783
New York	23.671	170	unavailable	395	3,139
Miami	10.309	163	25	25	2,388

*Includes two Rapid Response units in a pilot program.

Table 4-3 shows the overall EMS resource levels of the comparison cities. The final column of the table is the annual call load per unit were all the available resources of the EMS system deployed all the time. This is a proxy for relative busyness of the system.

Number of Paramedics Assigned to ALS Transport Units – All of the cities nominally staff ALS transport units with two paramedics except Miami. Miami staffs eight of its units with one paramedic and one EMT and the remaining 13 units with two paramedics.

Ambulance Service Fees – The charge for of BLS transport in Washington, D.C. is \$71 less than the charge in of the other cities in the benchmark group. The charge for ALS services in DC is \$17 more than the average of the other cities. Table 4-4 lists these data.

Table 4-4. EMS Fee/Billing Comparison

<i>City</i>	<i>BLS Charge</i>	<i>ALS Charge</i>	<i>Collection Rate (Percent)</i>
Boston	\$375	\$375	unavailable
Baltimore	150	250	22
New York	350	500	unavailable
Philadelphia	300 + \$4/mile	375 + \$7/mile	44 full 9 partial
Pittsburgh	300	300	80
Miami	195	275	50
Washington, D.C.	207	362	52
Average (excluding D.C.)	278	345	50

EMS Budget – Table 4-5 indicates the relative amount spent on EMS in each of the cities in the comparison group. The District ranks fourth on per capita EMS spending. The average amount spent per capita in the comparison cities, excluding Washington, D.C., is \$26.50 – almost exactly the amount spent per capita in the District.⁴

⁴ The table does not include an average budget since that figure is so severely skewed by the New York City EMS budget.

Table 4-5. EMS Budget Comparison

<i>City</i>	<i>EMS Budget</i>	<i>EMS Budget Per Capita</i>
Boston	\$22,000,000	\$37.61
Pittsburgh	\$13,600,000	\$36.86
Miami	\$10,373,679	\$28.30
Washington, D.C.	\$15,600,000	\$26.66
New York	\$142,600,000	\$19.50
Baltimore	\$9,757,656	\$13.44
Philadelphia	\$16,000,000	\$10.30
Average (excluding D.C.)		\$26.50

EMS Bureau Personnel

Unlike the emergency responders of the Firefighting Division (FFD), EMSB personnel are uniformed civilians. Originally, ambulance duties in the District were performed by the firefighters. The job was ill-regarded and therefore given to whomever had the least seniority (i.e., the "rookies"). Eventually, in the early 1970s, ambulance positions were "civilianized" as a cost-saving move.⁵

Most of the positions in the EMSB are classified in the Department of Personnel "699" series (essential employees). Civilian employees of the FEMSD are not subject to the disciplinary authority of the Fire Chief's General Orders, but rather Chapter 16 of the District Personnel Manual.

By statute, the Medical Director is required to be a physician who is board-certified in emergency medicine. There is a chain of command in place under the Medical Director. A long time ago, the chain of command used civilian titles (such as "Director" and "Deputy Director"). Approximately in the early 1990s, the EMSB converted to a paramilitary rank structure to have a managerial structure more similar to that of the FFD, but that structure was not officially recognized until the last fire chief's

⁵ Some firefighters who were interested in continuing to perform ambulance duties remained in the newly established EMS Bureau. They maintained their status as firefighters and their affiliation with Local 36 of the International Association of Fire Fighters. Three of this group are still employed in the EMSB.

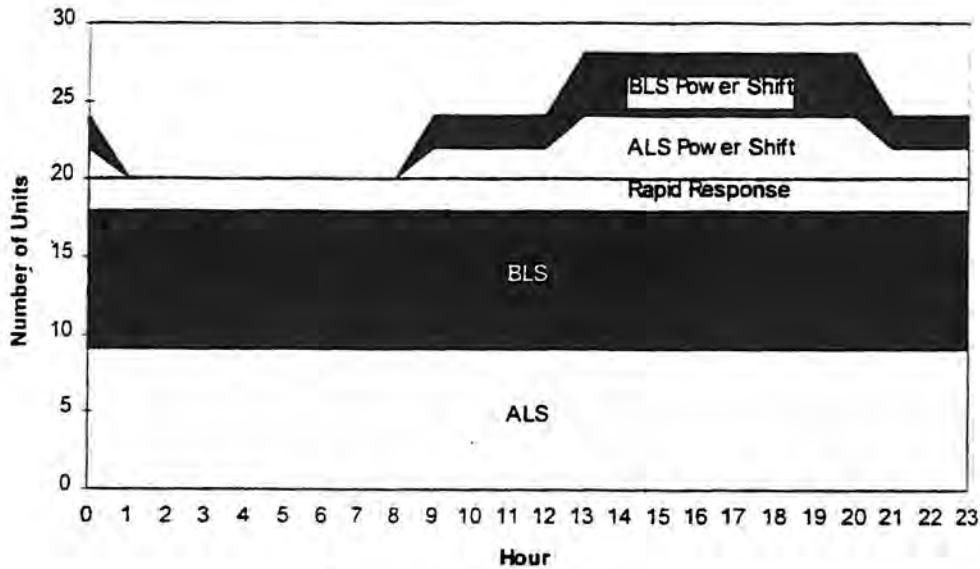
administration. At present, the EMSB is headed by a full-time Medical Director who holds the rank of Assistant Chief for EMS. This is highly unusual relative to other cities, where the Medical Director is a consultant responsible for protocol, quality assurance, and training but is not a line supervisor. In many cities the Medical Director is a part-time consultant.

Resource Deployment

At a minimum, the EMSB deploys nine advanced life support (ALS) ambulances (called "medic units"), nine basic life support (BLS) ambulances, and two ALS "rapid response" units on a 24-hour-a-day basis.⁶ In an effort to match EMS resources with demand, the EMSB also schedules two additional ALS and two additional BLS units to be in service from 9:00 a.m. to 9:00 p.m. and another two ALS and two BLS units to be in service from 1:00 p.m. to 1:00 a.m. Figure 4-2 shows the level of resources deployed at any given hour of the day. Tailoring capabilities to demand is an excellent, efficient practice, but it could be further tailored yet.

⁶ Rapid response units are non-transporting ALS units.

Figure 4-2: EMS Resource Staffing by Hour of the Day



EMS units are stationed in firehouses throughout the District of Columbia. Table 4-6 lists the department's medic units and ambulances, and the engine company number of the station to which they are assigned. Twenty out of 33 fire stations have a medic unit or ambulance (or both).

Table 4-6. Station Assignments of EMS Units

<i>Engine Co.</i>	<i>Medic Unit</i>	<i>Ambulance</i>	<i>Address</i>
1	24		2225 M Street, NW
2	11	15	500 F Street, NW
4		19	2531 Sherman Ave., NW
6		5	1300 New Jersey Ave., NW
8	9	16	1520 C Street, SE
9		2	1617 U Street, NW
12	17		2225 5 th Street, NE
13		6	450 6 th Street, SW
14	18	4	4801 North Capitol Street
15		12	2101 14 th Street, SE
16	14		1018 13 th Street, NW
19	7		2813 Pennsylvania Ave., SE
20		8	4300 Wisconsin Ave., NW
21	1		1763 Lanier Place, NW
24		25	5101 Georgia Ave., NW
25		26	3203 M.L.King Ave., SE
30	22	10 and 13	50 49 th Street, NE
31		20	4930 Connecticut Ave., NW
32	3		2425 Irving Street, SE
33	23	18	101 Atlantic Street, SE

Medic 17

Medic 17 is a technical rescue medic unit, a highly commendable service. It is staffed by specially trained paramedics who have volunteered to receive specialized training in confined space rescue, high-angle rescue, hazardous materials response, and other techniques that enable them to integrate more fully into highly technical emergency operations. Medic 17 does not receive preferential treatment to keep it "in service" (i.e., available for assignment) but if a need for Medic 17's services develops when it is

already on an assignment, another medic unit may be called to take over Medic 17's patient(s) when it is feasible to do so, so that Medic 17 may be released for the technical rescue call.

Engine Company First Response

Every engine company of the FFD is staffed with at least one firefighter cross-trained as a certified emergency medical technician (EMT). Many but not all firefighters are cross-trained. This allows fire suppression apparatus to be used to respond to certain types of medical emergencies in advance of EMSB units. This operating procedure, called "first response," is widely used throughout the United States as a means to deliver trained emergency medical personnel to the scene of medical emergencies rapidly. Since there are 33 engine companies in Washington, DC, the chances are good that an engine company will be in reasonably close proximity to any medical emergency, and arrive faster than an ambulance or medic unit. For time-sensitive (i.e., life-threatening) medical incidents, having an engine company respond will "stop the clock" while an ambulance or medic unit (which are capable of transporting patients) respond from a greater distance. The ambulance units have much higher cycle times than the engines; they spend longer on each call because they usually have to transport a patient, and therefore have lower availability, and are often away from their station. For many ALS cases the engine companies provide drivers or assistance to paramedics during transport, which increases the engine company cycle time, too.

Major Problems With EMS

This section of the report deals with major problems in the FEMSD that hamper the delivery of top-quality EMS in the District of Columbia. Some of these problems can be rectified with "quick fixes," which are identified as such in a subsection of this chapter. Most of these problems, however, are structural or cultural in origin and will require substantial change to remedy.

Poor Response Times

Response times are probably the biggest single problem of the D.C. EMS system. They are *well above* the national standard for both BLS and ALS.

The best way to assess response times is to measure percent compliance with a response time goal cumulative frequency distribution (as opposed to average can be disturbed by a small number of extreme response times). This is because averages can be distributed by a small number of response times.

The national response time standard for an ALS system that uses first responders is to have an ALS unit on scene within 8:59, ninety percent of the time. This year, the 90th percentile response time for ALS arriving on scene to critical medical calls has yet to fall below 20 minutes, and the 90th percentile response time for the first-arriving unit of any kind has yet to fall below 10 minutes. Figure 4-4 shows that the city-wide average is over 10 minutes. For critical patients, these response times can mean the difference between life and death – when the patient's bleeding is stopped or breathing restored, or heart defibrillated in time.

Response times to EMS calls appear relatively similar across wards of the city, (as Figure 4-3 indicates). The initial response by FFD companies responding on medical incidents were close to the city average in virtually every ward (Ward 7 and Ward 4 had slightly higher averages, but less than one minute difference). Figure 4-4 demonstrates that medic unit average response times were slower than the citywide average only in Wards 4 and 9. It should be noted that these figures were compiled from only one recent month's worth of data, but that there is a strong likelihood that they are indicative of the recent experience of the system. In general, the level of service delivery is quite similar across the city.

Figure 4-3. Ward-by-Ward Comparison of Fire Unit Response Times

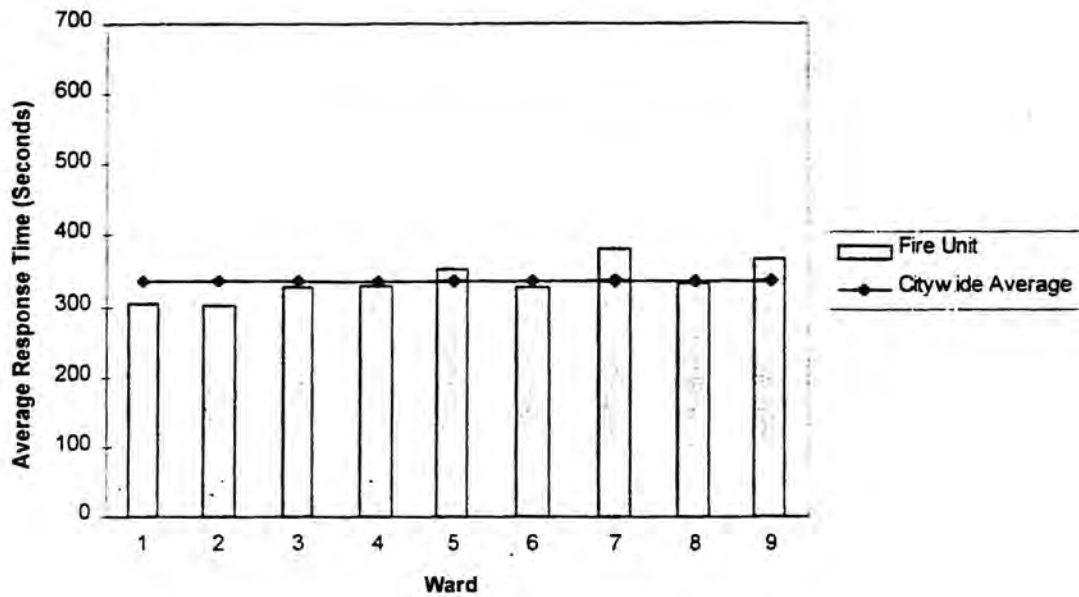
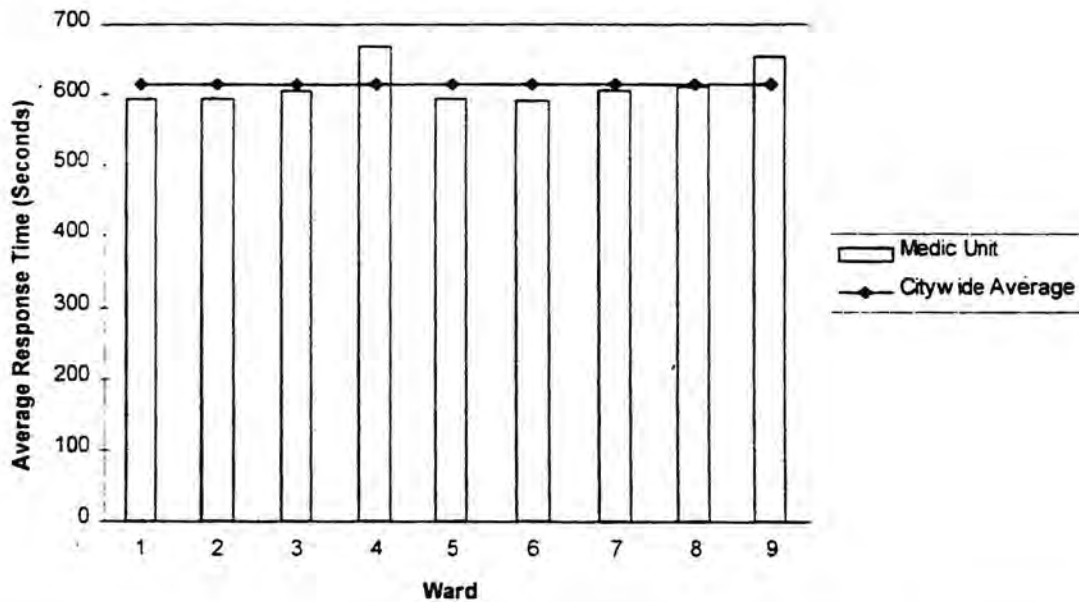


Figure 4-4. Ward-by-Ward Comparison of Medic Unit Response Times



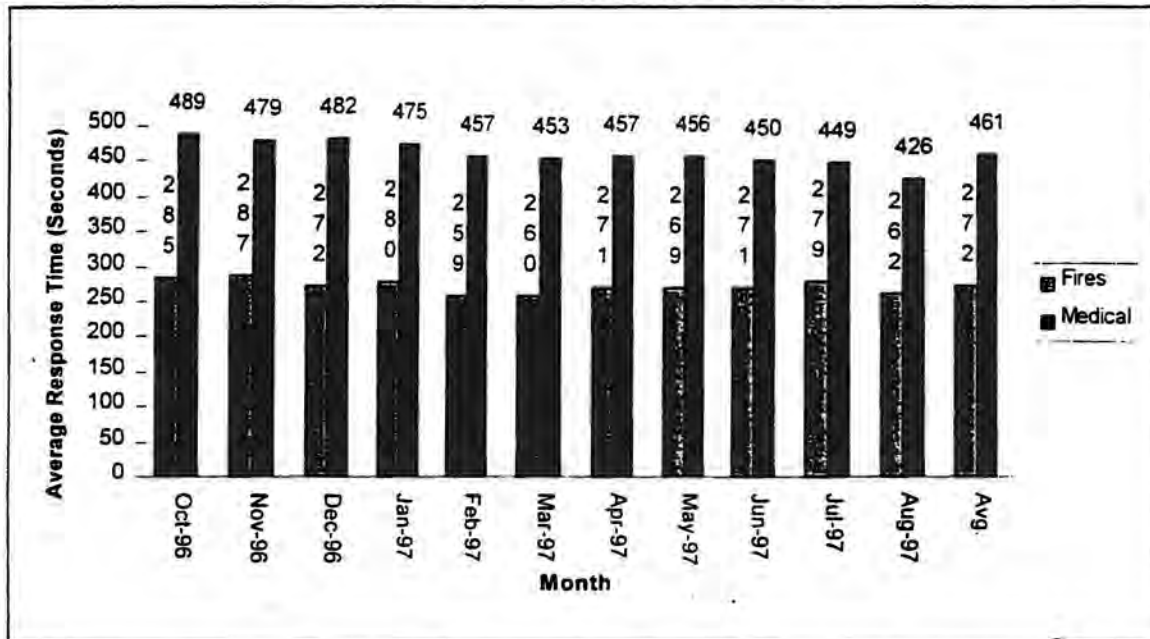
True Response Time – Unfortunately, the response time picture is *worse* than the statistics indicate. The way in which response times are calculated underreports the length of time it takes to reach a patient. The response time reported by the FEMSD is the interval from when a call is received by the FEMSD communications center, to the time the first unit arrives on the scene and alerts the dispatcher by radio. (This is the usual method cities use to compute response time.) In Washington, D.C., many patients are located in buildings at other than the street level. True response time is not only the “horizontal response time” (i.e., how long it takes a vehicle to get to the scene), but also the “vertical response time” (i.e., the amount of time it takes for EMS personnel to get from the vehicle to the patient’s side). In some instances, this vertical response time can be quite great, and it is not captured anywhere in the usual response statistics. It is necessary to add from one to five minutes to published response times in order to get an idea of how long it truly takes to begin treatment on a patient.

Response time data are also subject to random error because events are manually timestamped. Neither fire nor EMS vehicles are capable of transmitting computer-encoded timestamps via the radio. Dispatchers must manually enter event timestamps (such as the arrival of a unit on the scene of an emergency) into the computer-assisted dispatch (CAD) system. Since there are sometimes delays in entering the information, any calculations that rely on these data are subject to error, unless adjustments are made.

Disparity Between Engine Company Response Times for Fire and EMS Calls – There is a marked disparity between the response times for fire apparatus responding to fire calls as opposed to their responses to critical medical (Charlie- and Delta-level) calls. Figure 4-5 shows that the average difference in response times between the two types of calls is 3:09. When the call-to-scene times of fire units responding to medical emergencies are adjusted for a slightly longer dispatch interval (an extra 1:16 on the average), fire units still take an average of 1:53 longer to respond on critical medical emergencies.⁷

⁷ Dispatch intervals on medical calls are longer than dispatch intervals on fire calls because the Medical Priority Dispatch protocol takes longer to complete than a fire dispatch.

Figure 4-5. Fire Unit Average Call-to-Scene Times by Type of Call



Assuming that fires and medical emergencies have a reasonably similar spatial distribution in a given engine company's first-due area, it appears to be that the fire units are simply taking more time to respond to medical calls than to fires. Our subjective impressions of engine company activation periods hinted at that empirical observation. Although suppression crews race to beat each other out of their fire stations on fire calls, they tend to adopt a less aggressive attitude on EMS calls. One possible reason for this difference may be an accumulated cynicism after going out on too many non-emergency or non-critical EMS calls. No one with whom we spoke really had an answer for the difference. Regardless of the underlying cause, this problem requires immediate attention on the part of the FEMSD. It can be corrected by company officers leading their crews to respond as quickly to medical emergencies as they do to fires, and by battalion chiefs seeing that engine company officers provide such leadership.

Note that even with the disparity discussed above, the engine companies generally get to incidents faster than EMS units. The first responder system using the engine companies works well, but could be even better.

EMS Unit Delays for Engine Company Triages – TriData heard anecdotes – but saw no evidence – that some EMS units remain at fire stations and do not immediately respond to a medical call until the first responding engine company has triaged the patient and given a radio report. Such actions, even if they occur occasionally, are not acceptable and would constitute gross negligence were a patient to suffer an untoward event because of such a delay. This type of behavior was not observed while TriData analysts were in fire stations or riding with EMSB personnel, though the presence of outside observers probably would be sufficient to inhibit that particular practice.

Heavy Work Load/Too Few Units

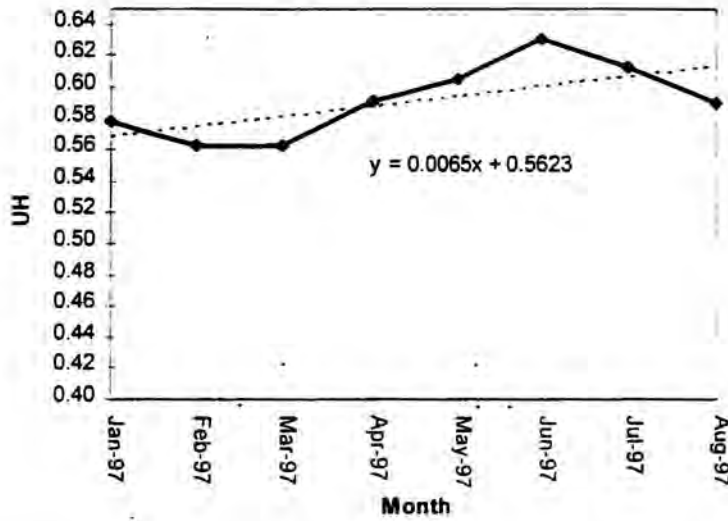
By national standards, EMSB personnel have a heavy work load. The EMS industry measure of workload is called “unit-hour utilization” (UHU), a ratio which expresses the amount of time an EMS system is using its resources. In Washington, DC, the UHU averaged 0.566 for the time period from January 1997 through August 1997. This means that the average EMS unit spent almost 57 percent of its available service time handling runs, way above the industry standard of 42 percent.

High-performance EMS systems seek to optimize performance through close monitoring of the Unit Hour Utilization measure. System parameters are adjusted to guide the UHU toward the industry standard of 0.420. Higher UHUs translate into longer response times. It is felt by system status managers in most high-performance EMS systems that UHUs above 0.420 mean that response times are slower than they should be and personnel are worked harder than is reasonable for effective caregiving and safety.

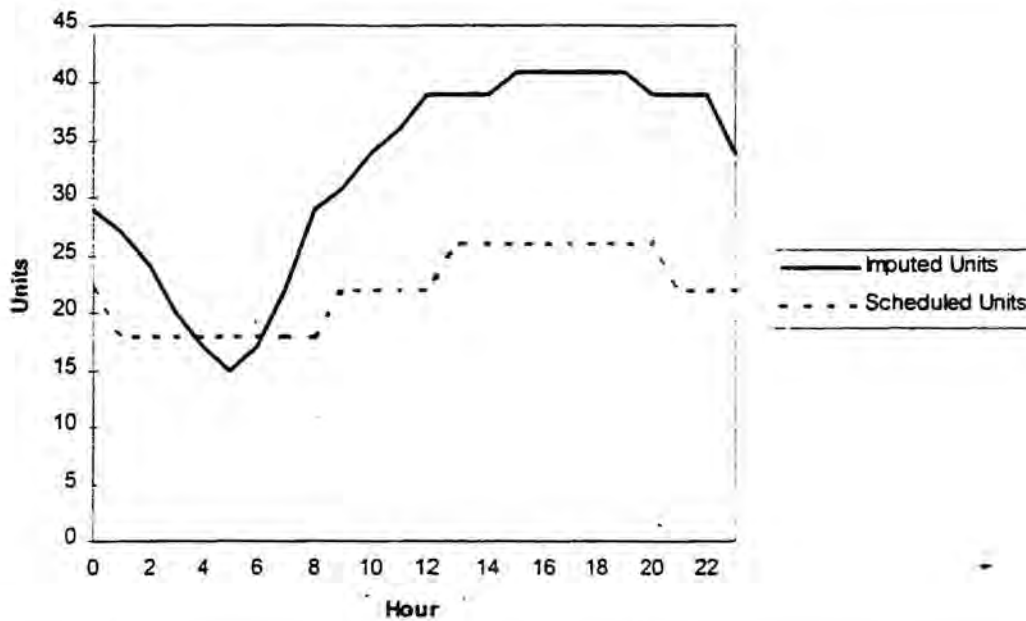
Washington, DC has seen a monthly increase of 0.007 in its UHU since the beginning of 1997 (see Figure 4-5 on the next page). Bringing the UHU into line with the national standard target of 0.420 should be a priority for the FEMSD. Accomplishing this will result in lowering response times, improving morale among FEMSD personnel, and improving EMS quality.

The UHU could be lowered by adding more units. Figure 4-6 shows the number of units that are scheduled for each hour of the day and the number of units that should be scheduled as imputed by the average hourly EMS demand and a target UHU of 0.420.

Figure 4-5. UHU Trend (Jan. to Aug. 1997)



**Figure 4-6. Number of Scheduled vs.
Number of Imputed EMS Units Needed**



As can be seen, the current number of EMS units is sufficient only from 4:00 a.m. to 6:00 a.m. At all other times during the day the number of units required to maintain a UHU of 0.420 well exceeds the number of schedule units. The maximum number of units needed (41) would be from 3:00 p.m. to 9:00 p.m.

This lack of units is the primary driving factor behind the slow response times and an equally dangerous result – “burnout” of personnel.

Personnel “Burnout”

EMSB personnel report and exhibit poor morale. Several employees contacted TriData personnel on their own volition to express their level of dissatisfaction. A number indicated that they were preparing to quit their jobs as soon as financially or logistically possible.

Stress among employees is rampant. Many EMS personnel in the FEMSD seem to be “burned out.” There is high personnel turnover: of the 364 EMS providers hired in the last 11 years, 147 – about 40 percent – were either terminated or resigned. There is short tenure: 49 percent have six or fewer years on the job. The turnover and tenure are manifestations of the burnout problem. The problem is exacerbated by the tension between firefighters and EMS personnel, and perceived inequities.

The causes of burn-out in the EMSB include the following:

- ***Units often have many back-to-back calls*** – The UHU of EMS units is high. Units stay busy, and some can spend their entire 12-hour shift on “back-to-back” calls.⁸
- ***There is no provision for meal breaks*** – In the Metropolitan Police Department, officers can request the dispatcher to grant them a “10-70E,” which allows an officer a 30-minute meal-break with a reasonable assurance of not being interrupted unless no other officer is available to handle an emergency. No such provision exists for EMS units. Meals are eaten on a “catch-as-catch-can” basis. Fire companies also do not have a provision for a meal break, and sometimes it is difficult for them to eat regularly too; however, this is the case most of the time for EMS units, especially those that spend most of their shift running back-to-back calls.
- ***Lack of respect from colleagues*** – The lack of respect which many FFD personnel have for EMS personnel adds to their stress. Although firefighters are not to blame for the stress, EMS personnel cannot readily turn to them for support. This makes the EMS workers more susceptible to burnout.

⁸ Calls are said to be “back-to-back” when a call is given to an EMS unit just after it “clears” from an earlier call. There is no set definition of what constitutes “back-to-back.” A working definition is perhaps any call that occurs within 15 minutes of completing the previous call.

- ***The career ladder is short*** – The possibilities for advancement in the EMSB are minimal. An oddity in the personnel classification scheme makes it all but impossible to be promoted into a field supervisory position without being in the training division. This, in conjunction with the D.C. residency preference, means that the only people who have a strong chance of being promoted from the field are D.C. residents who are assigned to EMS Training. Because the opportunities for advancement within the department are so limited, highly skilled personnel are looking for employment in places where advancement is more regular. Loss of trained and experienced personnel for these reasons represents an unfortunate, preventable circumstance that debilitates the system.

Vehicle “Wear and Tear”

The high call volume means that the EMS vehicles are subject to constant use. Under such conditions, vehicle “wear and tear” increases almost exponentially. The Fleet Maintenance Division does not have an automated vehicle tracking system, so it is not possible to calculate an EMS vehicle break-down rate (e.g., the number of EMS vehicle breakdowns suffered per 100,000 miles traveled). However, based on our observations and anecdotal information, it seems probable that this rate is substantially higher in D.C. than that in other systems. By comparison, an exemplary vehicle maintenance system such as that employed in Albuquerque, New Mexico, yields an “out-of-service” rate for mechanical reasons of less than one percent.

The current plan to replace a third of the EMS fleet each year would be an excellent step forward in reducing the mechanical problems which take EMS vehicles out of service.

A minor side problem: new EMS vehicles are usually used to replace those assigned to the busiest units. Some neighborhoods have complained about always getting second-hand units. Since these are generally areas with a lower call volume, the current policy is reasonable and needs to be explained to the citizens when objections to it are raised.

Excessive "Drop Time" at Hospitals

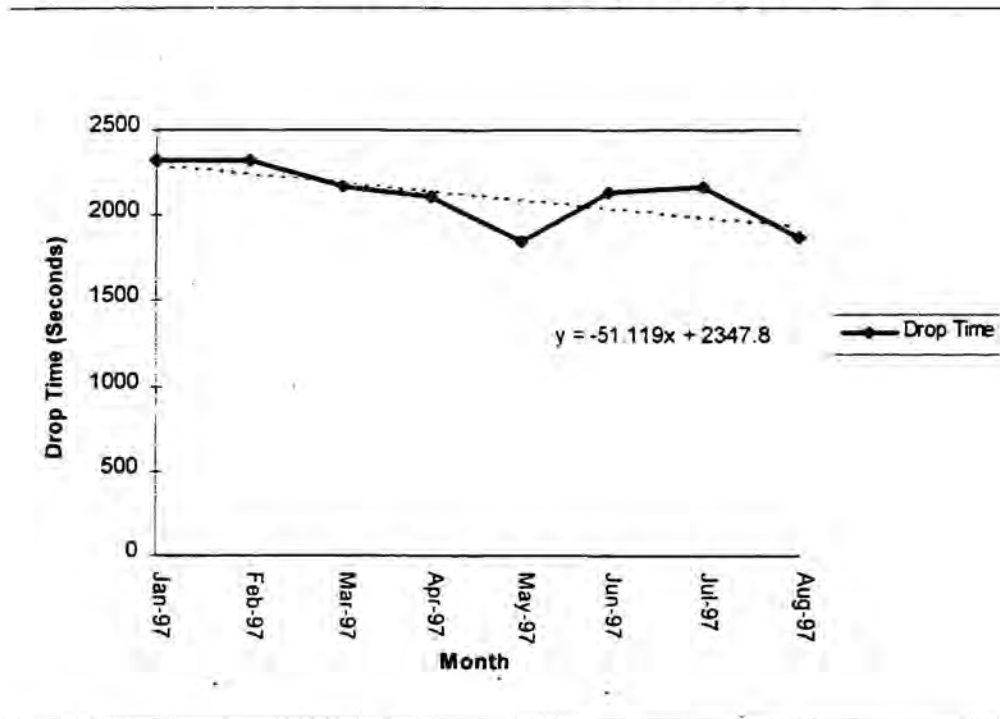
The interval between arrival at a hospital and returning to service is called "drop time." Drop times are monitored by the communications center and field supervisors. When a unit's drop time gets too long, a field supervisor will go to the hospital to determine the reason for the delay and to expedite that unit going back into service.

Because there is no provision for meal breaks, there is only one sure time for EMSD personnel to get enough time to go to the bathroom, get a bite to eat, or simply relax for a few minutes – the interval between having transferred the patient to the hospital staff's care and going back into service. At all other times, EMS personnel are subject to being dispatched on a call or are on a call.

Since crews need to clean their vehicles, restock, and give reports to the hospital personnel, there is a plausible reason for some delay at the hospital. Accordingly, there is an incentive for crews to delay going in service at the hospital.

Of late, closer monitoring of drop times has caused an improvement. Figure 4-7 shows 1997 year-to-date average drop times for EMS transport units. A monthly reduction of almost a minute (0:51) per month can be noted. Despite this improvement, the August 1997 ALS-BLS composite drop time of 31:23 still remains *well above* that of highly performing EMS systems (e.g., in Richmond, Virginia drop times average between 22 and 23 minutes; in Albuquerque, New Mexico, drop times on critical medical emergencies average 13 minutes, and only 9 minutes for non-critical calls).

Figure 4-7. 1997 YTD Average Drop Times



Transporting Patients Who Do Not Need Ambulance Transport

Mayoral orders and the EMSB medical protocol dictate that any patient wishing to be taken to the hospital by ambulance shall be transported. Anecdotes abound about people who call for an ambulance simply because they know that they can get a “free” ride to the hospital for clinic appointments, medication refills, etc. Although there is a nominal user fee charged for ambulance transportation, this is hardly a deterrent because the FEMSD is unable to collect on 48 percent of its patient bills (another problem area). Most abusers of the EMS system know that they can get away without paying, and hence have no incentive to secure alternative means to transportation to the hospital.

Because the FEMSD does not offer any alternative modes of transportation, valuable ambulance resources are consumed without any means of more appropriately matching the level of service required to the demand for service. This creates delays in response times when the system becomes overloaded.

Different Cultures

The FEMSD is a composite of two organizations with two different mission statements, and two cultures. While the missions overlap in places, the philosophical approaches and organizational cultures operative in completing those missions differ greatly. The mission statement of the FEMSD is as follows:

The mission of the Fire and Emergency Medical Services Department is to improve the quality of life for those who choose to live, work, visit, and do business in the District by preventing fires before they occur; extinguishing those fires that do occur; and by providing emergency medical and ambulance service.⁹

Although EMS accounts for approximately 75 percent of the FEMSD's call volume (see Figure 4-2), the EMS function appears last on the list in the department's own statement of what it does and takes the second position in the name of the organization. The prevention role in the mission statement does not include prevention of injuries. Some fire departments have changed names to reflect the equality if not primacy of the EMS function, and go to lengths to indicate the dual mission. Regardless of the semantics and word order, the EMS personnel have been made to feel they are second class citizens.

Wilson (1989) describes "organizational culture" in terms which are particularly relevant to the understanding the chasm which currently exists between the FFD and EMSB:

Every organization has a culture, that is, a *persistent, patterned way of thinking* about the central tasks of and human relationships within an organization. Culture is to an organization what personality is to an individual. Like human culture generally, it is passed on from one generation to the next. It changes slowly, if at all.¹⁰

The culture of an organization defines its sense of right and wrong, helps dictate its mission, and controls its willingness to accept new ways of doing things.

⁹ D.C. Fire and Emergency Medical Services Department. *Agency Mission Statement*, 1992

¹⁰ Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do and Why They Do It*. New York: Basic Books. p.91 (emphasis added)

Because the firefighters are uniformed (i.e., are sworn public servants, not civilians), they perceive themselves as different from the EMS personnel, whom they equate with civilians. There are many firefighters who joined the fire department to fight fires (“to put the wet stuff on the red stuff” in the parlance of firefighter), especially the older ones, but even some younger firefighters espouse a condescending view of EMS personnel.

Whereas firefighters perceive themselves as providing a public safety service, EMS personnel perceive themselves as delivering a medical service – more a part of the system of public health than the system of public safety. This perception is congruent with the desire of the medical community.

It disturbs some firefighters that they have to wear the same uniform as EMS personnel, and it was quite upsetting to many firefighters to have the “D.C. Fire Department” renamed the “D.C. Fire and EMS Department” several years ago. Such changes were intended to elevate the stature of EMS within the department and to provide a “more unified” organization.

There are two main factors that make the fire service culture the dominant culture in the FEMSD. The most important is that the two cultures report to the Fire Chief, who is perceived as being from the fire service. The Fire Chief sets the priorities and the tone for the department. Although EMS constitutes approximately 75 percent of the Department’s call volume, EMSB personnel note that their budget is only about 15 percent of the departmental budget. (All agree that the budget should not be based on proportion of calls, but rather what is needed to provide the EMS service.) Second, the fire role predates the EMS role.

Lack of Respect – The cultural differences translate into a lack of interpersonal respect for EMS personnel, who report being made to feel unwelcome in many fire stations. In some stations, EMS personnel are not permitted to eat with the firefighters. The lack of respect has added to a situation of low morale within the EMSB. Poor treatment of EMS personnel by firefighters is not reserved for EMSB personnel only. We heard reports of shoddy treatment of EMS personnel from other fire

departments outside of D.C. that have provided mutual aid to D.C. for large events such as the Million Man March and presidential inaugurations. Some services have reportedly declined recent requests for further mutual aid from the EMSB, on the basis of how they have been treated in the recent past.

Split Structure – The command structure for EMS is separate from that of the rest of the fire department. EMSB supervisors do not have authority over FFD personnel, whereas fire officers maintain nominal authority over EMSB personnel while they are in the fire station and not on assignment.

Whereas fire officers can transfer from one division in the fire department to another, EMSB supervisors cannot. Many positions outside of the EMSB require detailed knowledge of and experience in firefighting; however, many do not. Nonetheless, those positions are not open to EMSB personnel. Because the EMSB budget is subsumed in the fire department budget, over which the Fire Chief has virtually full control, EMS management is viewed primarily as advisory in nature – at least that is the perception of many EMSB managers.

Since control of the EMSB budget was shifted from the Medical Director to the Fire Chief, part of the EMS budget has been used for fire suppression items. For example, money earmarked for the EMSB to purchase a special, heavy-duty ambulance for Medic 17 to carry its specialized rescue equipment was used to purchase equipment for the FFD. While there is no doubt that the FFD had major equipment needs, and the re-allocation of funds was reasonable, the EMS personnel's perception was that they were "raided."

Difficulties in Accountability/Discipline

The split lines of authority for EMS personnel can cause problems in accountability and discipline. When they are in quarters, the EMS crews are supposed to report to the station officer. When they are at emergencies, EMS personnel report to an EMS supervisor.

This creates problems for the fire officials. They report that EMS personnel are difficult to manage or discipline, and don't follow the directions of station officers. Fire officers report that EMS personnel maintain an "I-don't-answer-to-you" attitude because they know that the fire officer will have to send a complaint up the chain of command, across to the EMSB at the level of the Medical Director, and back down the chain of command in order to discipline the EMT or paramedic.

Further exacerbating this situation is the opinion of many fire officers that nothing is ever done about the complaints they file. For example, firefighters who are late for duty can be disciplined within the FEMSD's progressive discipline system. EMS personnel are not subject to that system of discipline. There is little that the fire officer can do to ensure that EMS personnel report to work on time. In the fire service culture, this lack of accountability is intolerable, and adds to the split on the cultures.

Difficulties in Timekeeping

Fire officers are hesitant to sign overtime authorization because they don't really know the EMS crew's schedules and when overtime is appropriate.

Perceived Lack of Parity in Pay and Retirement

One of the major sources of poor morale within the EMSB is their perception of a lack of parity in pay and retirement benefits with firefighters.

Comparisons are complicated by differences in shifts and in FLSA rules for overtime. The difference in the base pay scales for firefighters and EMTs seems justified

because firefighters should be compensated for the higher risk of death or injury they face. EMS personnel are killed and injured in the line of duty, too, but not with the frequency with which firefighters are killed or injured. EMS work, while not without its dangers, *is* inherently less dangerous than firefighting.

The same rationale seems less convincing to explain pension differences (city-wide pensions are being examined by another consultant study).

Retirement Systems – There are presently three different retirement systems in place in the FEMSD. Which system a person is a member of depends on that individual's job classification (uniformed vs. civilian) and original date of hire.

Personnel within the EMSB who have an original date of employment prior to October 1, 1987 fall under the federal civil service retirement plan, which allows one 50 years of age or older to retire after 20 years of service at 50 percent of salary. Those employees with an original date of employment of October 1, 1987 or later fall under the Defined Contribution plan of the D.C. government. They are eligible to retire at 50 percent of salary after their 50th birthday if they have completed thirty years of service. The Defined Contribution plan seems unsuitable for EMS personnel given the nature of the work they perform. EMS work is physically demanding and mentally stressful. Thirty years of field EMS work will take its toll on a person's body – back and leg problems are common among EMTs, as is stress. Since there is limited opportunity for advancement in the EMSB rank structure, the average EMSB employee is likely to remain in the field until he or she is eligible to retire. While the Defined Contribution plan may be adequate for an office or clerical worker – in other words, thirty years of office work is probably not going to be as debilitating as thirty years as a field care provider – it forces EMS personnel to stay in the field long after they are ready to leave the system.

Pay – When firefighter/EMTs from the FFD are detailed to work on ambulance units, they generally drive the ambulances (i.e., fill the ACA position), while the EMSD partner is in charge and the primary caregiver. This seems unfair to the EMSD personnel since being the ACA entails somewhat less work than being the ACIC and since the

responsibility for the patient, the unit, and the crew rests with the ACIC. The disparity in pay is worse when the FFD EMT is working on overtime to fill in.

Because of the work rotations of EMS personnel, they end up working two "short" weeks of 36 hours apiece followed by two "long" weeks of 44 hours apiece. Although this equates to the same number of base hours over a one month period as if they were working 40-hour weeks, EMS personnel lose benefits on the short weeks because District Personnel Regulations state that any person working less than 40 hours per week shall have benefits prorated. This means that although EMS personnel are scheduled to work over 2,500 hours per year (most full-time jobs are 2,080 hours per year) they are not considered full-time employees.

This quirk in the compensation package of EMS personnel seems even more unfair to the EMSB personnel because, under FLSA rules, firefighters do not lose benefits when they work short weeks.

Medic 17 Protective Gear

Only 10 of 25 paramedics assigned to Medic 17 (the most fully cross-trained and integrated medic unit in the FEMSD) have the proper personal protective equipment they need to carry out the specialized, technical rescues they are trained to perform. This lack of equipment diminishes the value of the unit and can jeopardize the safety of the personnel assigned to the unit and people needing the rescue skills.

EMS Training Short-Falls

A complaint of some EMSB personnel is that their training needs seem to take a back seat to those of the FFD. For example, it was noted that there are approximately 16 EMSB personnel who are prohibited from driving because they were involved in collisions. Some of these people had been scheduled for the required remedial driver training at the Blue Plains training center, but found that their training had been canceled without notice so that firefighters could be trained to drive fire apparatus. These EMS

personnel are having a very tough time getting cleared to drive again, meaning that they cannot rotate driving and patient care responsibilities with their partners.

Since it is difficult and expensive to train (and retrain) paramedics, and since their continuing education requirements are far more stringent than those of other personnel in the FEMSD, they should receive at least equal if not higher priority for filling training requests (barring unusual other demands).

Few Paramedic Training Classes – The Department has run only four paramedic training classes since 1989. Providing training for personnel to upgrade their certification from EMT-Basic to EMT-Paramedic is essential to provide upward mobility within the EMSB. Personnel from both the EMSB and the FFD have had to seek out paramedic training elsewhere. It is encouraging to note that they are motivated to become paramedics; that will be important for the likely future of the fire service.

Lack of Trust in EMS and Fire Management

Field EMS personnel widely expressed a lack trust of both EMS and fire managers. Specific examples of what engendered this distrust were not given. In part it is a sense that information “from the top” isn’t communicated down to the line personnel. Generic statements that managers don’t look out for or back their personnel (presumably in instances of conflict with the public or the use of professional judgment) were commonplace.

The lack of trust can be exceptionally damaging, because it causes employees to think first about safeguarding their employment status and only after that to take other things into consideration. That also detracts from accountability, because of the reluctance to hold subordinates accountable if not backed up by one’s own supervisor.

Other Problems With EMS

This section deals with problems that interfere with the delivery of top-quality EMS services, but which cannot be characterized as having the same urgency or

complexity as the issues described above. This is not to say that these problems have a minimal impact on service delivery, but rather to indicate priorities.

EMS Billing

Data collection for EMS billing is still less efficient than desirable, despite notable improvements made over the past year.¹¹ Problems include lack of automation equipment, poor documentation, excessive forms handling, poor paperflows, and antiquated and inadequate physical facilities.

Paper Handling Problems – The most obvious problem with the EMS billing procedure is that it is paper-based. Elsewhere in the United States, EMS systems are moving towards pen-based or laptop-based EMS documentation, although the vast majority of systems still utilize paper-based documentation. Given the large annual volume of EMS incidents in D.C. which need to be documented, assessed, analyzed, and billed, it is essential that the FEMSD implement some sort of computerized EMS documentation system.

The billing process is initiated when EMS personnel collect patient information on an EMS run sheet (FD form 151). One copy of the FD form 151 is submitted to the receiving hospital to become part of the patient's medical record. The other two copies are taken back to the fire station and deposited into a "lock-box."

The forms are collected and brought to the EMSB offices, where they are checked by three personnel for accuracy and completeness. They are then forwarded to Lockheed IMS, the bill processing vendor, for bill generation and collection.

FFD EMTs use FD form 902 to document calls for which engine companies provide medical first response. These forms, too, are submitted to the EMS Billing Unit for review and filing. In the event of an inquiry or investigation, they are accessed for

¹¹ The collections rate improved from 34 percent of billings to 54 percent. Total revenues exceeded \$6.4 million, an improvement from the previous year of over \$1 million.

supporting information. The FD-902 form, if properly completed, can provide information omitted from an FD-151 that would allow a bill to be processed.

Poor Documentation – Because the FD-151 is a paper document, no instantaneous error-checking is possible. EMS personnel frequently fill out the forms improperly or incompletely. One reason for this is that the FD-151 is crowded and complicated – it is not “user-friendly.”

The high rate of defective documentation results in a relatively high percentage (approximately 35 percent) of FD-151s being classified as “non-billable.”¹²

Work Process Inefficiencies – The work performed in the EMS Billing Unit is excessively manual and labor intensive. All documents submitted to the unit are examined manually. The staff processes volumes of documents on a daily basis to determine levels of completeness. Most of this work could be performed in a sampled format or in conjunction with another activity. None of this work would be necessary were an automated documentation system in place.

The staff follows no established or enforceable standards for processing documents within the unit. Essentially, documents are visually inspected for missing information or errors, but no proper records are maintained for continuous quality improvement and consistency.

There are steps in the billing process in which duplicate work is being performed by the current in-house staff and the contractor. This causes confusion, inefficiency, and poor customer satisfaction. For example, customer calls are being received by the EMS Billing Unit, the Public Affairs Office, and Lockheed IMS. These calls may require attention from any one of these areas. The recipient of the call may take the request and perform the research work or refer the caller to another office. This is often necessary because files are being held in different locations based on time period, and there is no joint data system.

¹² Also, approximately 30 percent of the FD-902s filled out by engine company crews are being completed.

The files located in the Billing Unit at 13th Street are not well streamlined to satisfy inquiries and research expeditiously. The staff has to rely on their memory in some cases and, in others, a general filing method which is time consuming and inefficient to use.

The current staff of the Billing Unit is performing functions that would be unnecessary with the proper automation of EMS documentation and electronic communication with the billing vendor. The EMSB staff currently assigned to forms review could be put to much better use on any number of vital office functions and special projects.

Poor Facilities/Antiquated Equipment – The physical facilities housing the billing unit are in a poor condition, and the equipment located at the EMS Billing Unit is severely outdated.

The building contains an elevator that is unreliable and located in an ADA-inaccessible and inconveniently constructed lobby. The elevator lobby lacks clear, conspicuous direction signage for members of the public or other officials visiting building.

Interior office space is not presentable or professional in appearance. Partitions and walls in areas visited by the public are in poor condition, and lighting and ventilation are insufficient for a pleasant, efficient, and effective working environment. There is not even a working water fountain on the floor.

Document storage is disorganized. Although the office staff appear to be able to work with the files as they are, this requires “institutional memory,” and it is unlikely that a person temporarily assigned to the EMSB offices would be able to locate needed records with any degree of success or efficiency. Files are scattered in various rooms, with limited (or no) security from the scrutiny of unauthorized eyes. There is a shortage of storage space and file cabinets, which results in numerous documents being held in temporary boxes.