DEVELOPING A COMPREHENSIVE DRIVER TRAINING PROGRAM FOR THE FAIRFAX COUNTY FIRE AND RESCUE DEPARTMENT

EXECUTIVE LEADERSHIP

BY:  David L. Rohr
     Fairfax County Fire and Rescue Department
     Fairfax, Virginia

An applied research project submitted to the National Fire Academy
As part of the Executive Fire Officer Program

November 2003
ABSTRACT

The problem was that the Fairfax County Fire and Rescue Department did not have a comprehensive driver training program for either recruits or incumbent firefighters.

The purpose of this applied research project was to develop an outline of a driving program for recruits and incumbents. Descriptive and action research methods were used to answer the following research questions:

1. What National standards or programs exist that provide guidance or benchmarks for the development of a driver training program?
2. What driver training programs and procedures are currently in use by other fire and rescue organizations and what components are prevalent in them?
3. What remedial activities or follow up programs are in place for those departments that have an existing program in place?

Prior to attending the National Fire Academy (NFA) in April of 2003, preliminary research began to identify existing standards and programs in place that addressed driver training in the public safety setting. Research was conducted through the Fairfax County Public Library System, professional trade journals, Internet, and departmental documents. In April 2003, research was conducted at the National Emergency’s Training Center’s Learning Resource Center (LRC).

Interviews were conducted with personnel from other fire and rescue departments and a survey instrument was developed. Results indicated that there are existing programs in place. Components of them are based upon National Fire Protection Association (NFPA)1002, Standard for Fire Apparatus Driver/Operator Professional Qualifications (2003) and NFPA 1451 Standard for a Fire Service Vehicle Operations Training Program (2002). The limitations
found within the Fairfax County Fire and Rescue Department amounted to fiscal and logistical concerns. A draft document was developed (Appendix A) that provided a proposal for the development of an outline for a driver training program for Fairfax County.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>2</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>4</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>5</td>
</tr>
<tr>
<td>BACKGROUND AND SIGNIFICANCE</td>
<td>6</td>
</tr>
<tr>
<td>LITERATURE REVIEW</td>
<td>8</td>
</tr>
<tr>
<td>PROCEDURES</td>
<td>16</td>
</tr>
<tr>
<td>RESULTS</td>
<td>19</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>25</td>
</tr>
<tr>
<td>RECOMMENDATIONS</td>
<td>30</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>32</td>
</tr>
<tr>
<td>APPENDIX A (Draft Proposal)</td>
<td>34</td>
</tr>
<tr>
<td>APPENDIX B (Survey Letter)</td>
<td>37</td>
</tr>
<tr>
<td>APPENDIX C (Survey Questions)</td>
<td>38</td>
</tr>
</tbody>
</table>
INTRODUCTION

The Fairfax County Fire and Rescue Department is a combination department consisting of 1200 uniformed personnel, 200 civilian personnel, and approximately 150 operational volunteers. The department provides comprehensive emergency services to one million residents living in 399 square miles in the western suburbs of Washington D.C. Services are provided from 35 fire station locations and four divisions that support the operational functions of the department.

The Department has experienced an increase in the amount of fire department vehicle accidents in recent years. This has prompted concerns about the training being provided to apparatus drivers. The problem was that the Fairfax County Fire and Rescue Department did not have a comprehensive driver training program for either recruits or incumbent firefighters.

The purpose of this applied research project was to develop an outline of a driving program for recruits and incumbent members of the Fairfax County Fire & Rescue Department.

The descriptive and action research methods were used to answer the following research questions:

1. What National standards or programs exist that provide guidance or benchmarks for the development of a driver training program?
2. What driver training programs and procedures are currently in use by other fire and rescue organizations and what components are prevalent in them?
3. What remedial activities or follow up programs are in place for those departments that have an existing program in place?
BACKGROUND AND SIGNIFICANCE

Fairfax County is located in the immediate western suburbs of Washington D.C. The Washington Metropolitan Area has experienced tremendous growth during the past 20 years. Fairfax County, Virginia is one of the leading technology centers in the country. Fairfax County is home to more than 4,000 technology companies in one of the largest office space markets in the United States. The rapid development has also brought increased population density and traffic congestion to the entire region, but specifically Fairfax County.

During the past ten years the population of Fairfax County has grown from 851,858 to 1,019,000. This is an increase of 19%. This has brought an increase in at place jobs to over 537,669 jobs. This was an increase in over 24% during the last ten years (Northern Virginia Economic Development Coalition, 2003).

This increase in population has also placed new demands on the public safety infrastructure, specifically requests for fire and rescue services. During the past eight years the Fairfax County Fire and Rescue Department’s (FRD) call volume has increased an average of 4% to 87,621 during fiscal year 2003 (FRD, 2003b). This includes requests for fire and rescue services as well as public service requests for lockouts and investigations.

During calendar year 2002 the FRD reported 184 vehicle accidents compared to 120 in 2001 (FRD, 2003a). This was amounted to an increase of 65%. One of the reasons for the large increase was that reporting requirements for non-preventable accidents changed with the County’s Office of Risk Management. Preventable accidents accounted for 64 of the 184 total accidents.

In November of 2002, a lawsuit (Argueta vs. County of Fairfax) was brought against Fairfax County regarding a vehicle accident involving an EMS transport unit with a patient on
board enroute to the hospital. The County paid out a significant fiscal amount for damages in this case and Risk Management began to closely scrutinize the driving practices and training of the Fire and Rescue Department.

The Fire and Rescue Department currently provides the Virginia State Emergency Vehicle Operator Course (EVOC) during recruit training. The class emphasizes the theory and principles of defensive driving and requires eight hours of classroom and eight hours of practical exercises for completion.

After discussions with Risk Management, the Fire and Rescue Department felt it was time for a comprehensive review of its driver training programs in total. Not only will this reduce the liabilities set forth on the County, but will provide a systematic way to train personnel in the safe and competent operation of department vehicles while driving to and from incidents.

According to the National Fire Protection Association a total of 97 firefighters died on the job in 2002, heart attacks and motor-vehicle accidents caused more on-duty deaths then smoke, heat, flames, or collapsing buildings. Motor-vehicle crashes were the cause of 22 of the deaths in 2002. “The biggest threats to firefighters are not what people may expect,” (Shannon, NFPA 2003).

The demands for service will continue to increase as the County’s population grows. The future impact of not addressing the issues surrounding a comprehensive driver program will influence the operational capabilities of the Department as well as placing the County government in increased liability in the case of future accidents.

This research project was completed in accordance with the applied research requirements of the National Fire Academy’s Executive Fire Officer Program. The problem of not having a comprehensive driver training program for either recruits or incumbent firefighters
in the Fairfax County Fire and Rescue Department relates specifically to the leadership portion of the Executive Leadership course in that effective leaders should be able to define problems through proper analysis. The topic also supports one of the four United States Fire Administration (USFA) objectives; Reduce the loss of life from fire of firefighters. Without a well designed program to train personnel to safely drive and operate emergency vehicles, an organization can not adequately meet the demands and responsibilities of a dependable and respected fire and rescue department.

**LITERATURE REVIEW**

A literature review was conducted to identify driver training programs currently in use by other fire and rescue departments. Additional research was conducted to identify standards or nationally recognized programs that would support a driver training program for recruits and incumbent personnel in the department. Literature searches were initiated at the National Emergency Training Center’s Learning Resource Center in April 2003. Additional research was conducted through the Information Services of the Fairfax County, Virginia Library System. The literature review included review of internal department documents, professional journals, Intranet and Internet resources.

**National Standards or Recognized Programs**

Vincent Brannigan (2003), a professor at the University of Maryland’s Fire Protection Engineering Program stated, “It’s really a national problem, the people driving these trucks are good people, but their perception of the risk is off. It needs to be hammered into their heads:
You have no right to risk people’s lives on the highways to save people trapped in a fire.”

Where should departments turn to find the driver training programs to help?

NFPA 1500, Fire Department Occupational Safety and Health Programs (2002) mandates in Chapter 3, Training and Education, Section 3-1.3 “The fire department shall provide training and education for all fire department members commensurate with the duties and functions that they are expected to perform. Members shall be provided with training and education appropriate for their duties and responsibilities before being permitted to engage in emergency operations,” (NFPA, 2002).

This information influenced the research because it defines the role of fire departments in providing training for their members, but it stops short or making this an ongoing process for incumbents and those personnel that have been driving emergency vehicles for some time.

The researcher found several nationally recognized consensus standards from the NFPA that specifically address emergency vehicle operator programs and related issues. NFPA 1002, Standard for Fire Apparatus Driver/Operator Professional Qualifications (2003), identifies the minimum job performance requirements (JPR) for firefighters who drive and operate fire apparatus. “The JPR’s can be used for training design and evaluation, certification, measuring and critiquing on-the-job performance, defining hiring practices, and setting organizational policies, procedures, and goals,” NFPA1002, Appendix B (2003). The standard is designed to define the job performance requirements for each type of apparatus operated.

NFPA 1002, Chapter 1, Administration, Section 1-3.3 (2003) states “All driver/operators who drive fire apparatus shall meet the objectives specified in Chapter 2.” Chapter 2 of the Standard defines the general requirements required by every driver as Preventive Maintenance and Driving/Operating. Each category lists the job task to be performed as well as the requisite
knowledge and the requisite skills that shall be met. The remaining chapters are presented in a similar fashion with associated job performance requirements as defined in table 1.

Table 1
NFPA 1002 Chapter Content

<table>
<thead>
<tr>
<th>NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 2</td>
</tr>
<tr>
<td>Chapter 3</td>
</tr>
<tr>
<td>Chapter 4</td>
</tr>
<tr>
<td>Chapter 5</td>
</tr>
<tr>
<td>Chapter 6</td>
</tr>
<tr>
<td>Chapter 7</td>
</tr>
</tbody>
</table>

NFPA 1451 *Standard for a Fire Service Vehicle Operations Training Program* (2002) is an additional standard that addresses apparatus driving for the fire service. The purpose of the standard is to define minimum requirements for a fire service vehicle operations training program. In addition, the standard states “The achievement of the objectives of this performance standard shall be intended to help prevent crashes, injuries, and fatalities involving fire service vehicles,” (2002, 1.2.2).

The standard outlines the development of written training materials to include organizational operating procedures, vehicle maintenance, equipment deficiencies, apparatus design, and other areas. NFPA 1451 also defines the knowledge and skills required by officers charged with developing and implementing the operations training program. Like other NFPA standards, NFPA 1451 *Standard for a Fire Service Vehicle Operations Training Program,*
Chapter 4, General Rules and Considerations outlines minimum safety standards and requirements that must be met throughout the program. This includes a risk management plan under the operations training plan and coordinated administrative policies. NFPA 1451 defines the following components of a comprehensive driver training program as outlined in table 2.

Table 2
NFPA 1451 Driver Training Program Requirements

<table>
<thead>
<tr>
<th>NFPA 1451 Standard for a Fire Service Vehicle Operations Training Program</th>
<th>Components</th>
</tr>
</thead>
</table>
| **Chapter 4**
General Rules and Considerations | • Operations Training Program
• Coordinated Administrative Policies |
| **Chapter 5**
Training and Education | • Training Frequency
• Basic Training and Education Requirements
• Instructor Qualifications
• Training Program Safety
• Training Records |
| **Chapter 6**
Laws and Liabilities | • Financial Protection
• Member Assistance Program |
| **Chapter 7**
Emergency Response | • Emergency Response Considerations |
| **Chapter 8**
Crash and Injury Prevention | • Drivers/Operators Responsibility
• Responsibility of Persons Riding on Apparatus |
| **Chapter 9**
Crash Review | • Crash and Injury Report Records |
| **Chapter 10**
Vehicle and Apparatus Care | • Inspection, Maintenance, and Repair of Vehicles
• Vehicle Records |

NFPA 1451 was developed to meet the intent of NFPA 1500, *Standard on Fire Department Occupational and Health Program*, Chapter 6, Section 6.2.1 “Fire apparatus shall be operated only by members who have successfully completed an approved driver training program or by trainee drivers who are under the supervision of a qualified driver,” (2002).
The information from these two NFPA standards had an impact on the research because it clearly defines nationally adopted standards for a public safety driver training program. The components of these two standards can serve as the infrastructure of a comprehensive program.

The Volunteer Fireman Insurance Services (VFIS) provides training and education programs for public safety organizations. The VFIS program is a three part program which targets two specific audiences. The first audience is the new emergency vehicle drivers. This program consists of a didactic program, “Emergency Vehicle Response Safety” which addresses the theory of safe emergency response and the mental demands on the emergency driver. The practical component of the training for new drivers is a program called “The Emergency Vehicle Driver Training Program.” This is a hands on program designed to provide training on the physical aspects of emergency vehicle driving (VFIS, 2003).

The third program which is designed specifically for the incumbent emergency vehicle drive is titled “Dynamics of Emergency Vehicle Response” was developed specifically as a re-certification type of a program. This program combines components of “Emergency Vehicle Response Safety” and the “The Emergency Vehicle Driver Training Program.” Videotape is also used as a method of positive reinforcement to provide examples of good driving habits for emergency responders.

Finally the researcher looked at a regional level to identify what applicable driving standards are in place. The Virginia Department of Fire Programs (VDFP) endorses and provides the Emergency Vehicle Operators Course (EVOC) a course designed to enhance safe vehicle operation by stressing theory and principles of defensive driving in both emergency and non-emergency situations. The course requires 16 hours of instruction consisting of eight hours
classroom and eight hours of practical exercises. A written examination is required for the classroom portion and students are evaluated during the driving exercises (VDFP, 2003).

Two adjunct courses offered by the VDFP are included in the complete driver curriculum offered by the State. The Driver/Operator - Pumper course is a four module course with detailed instruction on the operation, maintenance and design of pumping fire apparatus. The Driver/Operator – Aerial course is a four module course with detailed instruction on the operation, maintenance and design of Aerial Ladder Apparatus.

This information influenced the research in that it there are driver training program standards offered that provide information for developing a comprehensive driver training and risk management program for any fire and rescue department.

Programs and Procedures Currently in Use by other Fire and Rescue Organizations

“Due to the lack of meaningful emergency vehicle training and the fact that 95% to 99% of all emergency vehicle operators have no knowledge of their rights and responsibilities under their states’ vehicle and traffic laws, emergency vehicle training will be mandated” (Wilbur, 1999, p. 137).

The Columbus, Mississippi Fire Department uses a program that has helped there vehicle accidents and firefighter injuries decline in a different way. Operation POP (Pull Over Please) began recently to send two basic messages to the motorists in the community; pull over to the side of the road and stop when you hear approaching emergency vehicles and use caution when passing through emergency scenes (Snapp and Summerall, 2003).

The first phase has been introduced with great success thanks to the assistance of the media and public safety announcements (PSA). These PSA’s were broadcast four to five times
per day for twenty days on local television. After about one week, firefighters noticed a difference. The second phase will begin soon and will focus on emergency scene safety on the roadway.

The author attempted to define programs being utilized in the Washington Metropolitan area as well as other similar departments in the nation. The Arlington County, Virginia Fire Department does have a driver training program in place for its personnel. It provides training for medium duty (EMS units) and large apparatus.

The training curriculum is consistent with Virginia State requirements as they use the Emergency Vehicle Operators Course (EVOC). This course captures both classroom instruction as well as practical training for the different vehicle types described above (Arlington County Fire, 2002).

The Prince William Department of Fire and Rescue is located adjacent to Fairfax County, VA uses a two day program for recruits that consist of didactic and practical evolutions. The training program encompasses sedans, EMS units, and heavy apparatus. In addition, graduated recruits return to the training academy within one year of graduation to participate in a week long driver operator school that concentrates on apparatus operations such as engine and aerial operations. Their curriculum is based upon EVOC standards (Prince William, 2003).

The Newport News, VA Fire Department mirrored other programs within the Commonwealth of VA in that they follow curriculum outlined in the VDFP EVOC class, however the department provides computer generated defensive training at the station level (Newport News Fire Department, 2002).

The Phoenix, Arizona Fire Department Standard Operating Procedure (SOP) 205.08 Driver Safety, states “It is the responsibility of the drive of each fire department vehicle to drive
safely and prudently at all times. Vehicles shall be in compliance with the Arizona Motor Vehicle Code,” (Phoenix, 2003). The SOP outlines various response issues to include approaching intersections, passing vehicles, and emergency responses criteria. This information from the Washington Metropolitan area departments and the Phoenix and Orange County examples influenced the research because it demonstrates the fact that some departments have put programs in place to address driver training programs. The components that were present in all of these programs were recruit level classroom and practical skills training to some degree.

**Follow up Procedures for Department’s that Currently Have Comprehensive Programs in Place**

The researcher found very few published documents regarding a department’s accident review program. The Orange County, FL fire department does have an accident review board that meets bi-monthly to review accidents and to recommend discipline or defensive driving follow up if needed (Orange County, 2003).

The accident review team of the Phoenix Fire Department meets every three months to review vehicle accidents and determine if they were preventable or non-preventable. In addition to the staff members who represent the department on the review board, members of the Union and any firefighter or civilian employees are welcomed to participate in the process. The person(s) involved in the accident are also invited to the review (Phoenix, 2002).
PROCEDURES

The purpose of this applied research project was to develop an outline of a driving program for recruits and incumbent members of the Fairfax County Fire & Rescue Department. This was done through a systematic process to meet the needs of the project.

The descriptive and action research methods were used to answer the following research questions:

1. What National standards or programs exist that provide guidance or benchmarks for the development of a driver training program?

2. What driver training programs and procedures are currently in use by other fire and rescue organizations and what components are prevalent in them?

3. What remedial activities or follow up programs are in place for those departments that have an existing program in place?

Descriptive research was used to define the current situation and identify practices in other organizations. Action research methods were used to address the goal of developing an outline of a driving program for recruits and incumbent members of the Fairfax County Fire & Rescue Department.

Prior to attending the National Fire Academy (NFA) in April of 2003, preliminary research began to identify existing standards and programs in place that addressed driver training in the public safety setting. Research was conducted through the Fairfax County Public Library System, professional trade journals, Internet, and departmental documents. While attending the Executive Leadership course (April 2003) at the NFA, literature research was conducted at the National Emergency’s Training Center’s Learning Resource Center.
Upon returning from the NFA, the problem was checked for clarity and comprehensiveness. It was determined by the author that the problem had not changed and that the research questions were valid. The proposal was submitted for initial approval and accepted.

**Interviews**

A personal interview was conducted with Deputy Chief Kevin Riley of the Phoenix AZ Fire Department. The purpose of the interview was to understand the driver training programs currently in place in the PFD. K Riley (personal communication, October 3, 2003) stated that there is currently a program in place for recruits and incumbent firefighters. Additionally, the department utilizes a hands-on driver training program in collision avoidance called the Advanced Driver Training program from General Motors. The program utilizes certified instructors to monitor and administer the program. This program is administered to recruits six months through their probationary period of one year. The researcher selected Chief Riley to interview because the PFD and the Fairfax County Fire and Rescue Department are similar in size and operational procedures in many ways. Both of these agencies have worked closely in the past on many firefighter health and safety issues.

A personal interview was conducted with Battalion Chief Steve Meiro from the Contra Costa County, CA fire Protection District. Chief Meiro was selected since he works in a metropolitan department outside of Oakland, CA and the department has a similar number of fire stations as Fairfax County. Chief Meiro (personal interview, September 23, 2003) discussed the driver training program in place within his department.
**Surveys**

In May of 2003, a survey instrument was developed. The survey was provided to three senior staff members of the Fairfax County Fire and Rescue Department for validation. Once the survey was in its final form, a cover letter was written and provided with the survey to each selected department.

Surveys were sent to selected jurisdictions in the Washington Metropolitan Area. This included five fire and rescue departments that represent one fully career organization and the rest are large combination departments. Input from these jurisdictions was critical due to the fact that these departments operate under mutual aid or automatic aide agreements with Fairfax County and share operational and staffing policies. The goal is that they would operate as one seamless entity providing fire and rescue protection to the Nation’s Capital and surrounding suburban jurisdictions. Three of the five departments returned completed surveys.

Additional surveys were sent to 18 departments across the Nation. The demographics of the respondent municipalities ranged in size from 46 personnel to over 1000 uniformed personnel. The organizations were selected based upon their metropolitan location, similarity in organizational structure and operations. Ten responded to the survey. Sixty-five percent of all of the jurisdictions returned the survey. Of the respondents, 100% stated that they have some type of formal driver training program in place today.

**Limitations**

The information retrieved during the research was limited by the fact that comprehensive driver training programs for most departments are found in training division memos or standard operating procedures. In most cases these are not published or accessible from the Internet due
to security reasons. However the excellent response to the survey instrument provided information that was not represented within the literature review.

**Terms**

- **Automatic Aide.** A plan developed between two or more jurisdictions for immediate response regardless of political boundaries. The closest available appropriate resources would be dispatched to a call for help.

- **Incumbent.** Those personnel already holding their rank.

- **Job Performance Requirements.** Minimum acceptable standards for successfully completing a described job.

- **Mutual Aide.** Formalized political agreement that allows an equal exchange of resources across jurisdictional lines. Approval is needed prior to response of resources.

- **Public Safety Announcements.** Radios or television ads that support or identify public safety issues.

- **Virginia Department of Fire Programs.** State appointed office that oversees fire training and certification programs in the State of Virginia.

- **Washington Metropolitan Area.** The localities that surround the city of Washington D.C. and make up the suburbs of Washington. The area extends in all geographic directions and continues to expand as populations grow in the suburban areas. The most definitive borders are the city of Baltimore, MD to the North and the city of Richmond, VA to the South.

**RESULTS**

The problem that resulted in the development of this research project was that the Fairfax County Fire and Rescue Department did not have a comprehensive driver training
program for either recruits or incumbent firefighters. Following detailed research and analysis, a draft outline of a driving program for recruits and incumbent members of the Fairfax County Fire & Rescue Department was developed and is provided in Appendix A.

Research Question One – What National standards or programs exist that provide guidance or benchmarks for the development of a driver training program?

Research indicates that there are several NFPA standards that directly relate to driver training standards or training programs. First, NFPA 1500, *Fire Department Occupational Safety and Health Programs (2002)*, mandates in Chapter 3, Training and Education, Section 3-1.3 “The fire department shall provide training and education for all fire department members commensurate with the duties and functions that they are expected to perform. Members shall be provided with training and education appropriate for their duties and responsibilities before being permitted to engage in emergency operations.”

This training and education is addressed in two additional standards. NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications (2003)*, identifies the minimum job performance requirements (JPR) for firefighters who drive and operate fire apparatus. The standard is designed to define the job performance requirements for each type of apparatus operated.

NFPA 1451 *Standard for a Fire Service Vehicle Operations Training Program (2002)* is an additional standard that addresses apparatus driving for the fire service. The purpose of the standard is to define minimum requirements for a fire service vehicle operations training program. In addition, the standard states “The achievement of the objectives of this performance
standard shall be intended to help prevent crashes, injuries, and fatalities involving fire service vehicles,” (2002, 1.2.2).

The standard outlines the development of written training materials to include organizational operating procedures, vehicle maintenance, equipment deficiencies, apparatus design, and other areas. NFPA 1451 also defines the knowledge and skills required by officers charged with developing and implementing the operations training program. Like other NFPA standards, NFPA 1451 _Standard for a Fire Service Vehicle Operations Training Program_, Chapter 4, General Rules and Considerations outlines minimum safety standards and requirements that must be met throughout the program.

The Volunteer Fireman Insurance Services (VFIS) also provides training and education programs for public safety organizations. One of these programs is a well recognized driver training curriculum. The VFIS program is a two part program which targets new drivers and incumbent drivers. The first audience is the new emergency vehicle drivers. This program consists of a didactic program, “Emergency Vehicle Response Safety” which addresses the theory of safe emergency response and the mental demands on the emergency driver. The practical component of the training for new drivers is a program called “The Emergency Vehicle Driver Training Program.” This is a hands on program designed to provide training on the physical aspects of emergency vehicle driving.

The second program is designed specifically for the incumbent emergency vehicle driver and is titled “Dynamics of Emergency Vehicle Response.” This program combines components of “Emergency Vehicle Response Safety” and the “The Emergency Vehicle Driver Training Program.” Videotape is also used as a method of positive reinforcement to provide examples of good driving habits for emergency responders.
Research Question Two – What driver training programs and procedures are currently in use by other fire and rescue organizations and what components are prevalent in them?

A survey was conducted which involved five Washington Metropolitan fire and rescue departments and 18 other departments from across the country. Sixty five percent of the departments responded to the survey. The following tables highlight information extracted from the survey responses.

Table 3
Presence of a Formal Driver Training Program

<table>
<thead>
<tr>
<th>Driving Program Status</th>
<th>f</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently Have A Formal Driving Program In Place.</td>
<td>13</td>
<td>100.0</td>
</tr>
<tr>
<td>Do Not Have A Formal Program In Place.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Program Serves As A Component Of Recruit School</td>
<td>9</td>
<td>69</td>
</tr>
</tbody>
</table>

NOTE: F=frequency; P = percent; n=13

Three of the departments that responded indicated that their program did not include training on sedan type staff vehicles. The survey asked if the training was for “Sedans, Medium Duty Vehicles (i.e. EMS Units), or Heavy Apparatus. The researcher did not define the term “formal driving program” for the survey recipients so it was understood that there is a program in place that represents a regular practice. Ten of the respondents (77%) indicated that their program was developed in accordance with an approved EVOC curriculum or state sponsored program.

The Prince William Department of Fire and Rescue is located adjacent to Fairfax County, VA and uses a two day program for recruits that consist of didactic and practical evolutions. The
training program encompasses sedans, EMS units, and heavy apparatus. In addition, graduated recruits return to the training academy within one year of graduation to participate in a week long driver operator school that concentrates on apparatus operations such as engine and aerial operations. Their curriculum is based upon EVOC standards (Prince William, 2003).

The Orange County, FL Fire and Rescue Department responded that they currently use a driver training program that encompasses recruit level training as well as training for incumbents. Recruits participate in a program designed after EVOC, while other personnel are trained on a computer based defensive driving course developed by the National Safety Council. This training must be complete every three years or if involved in repetitive accidents within a 12 month period. Drivers of heavy apparatus must complete an 80 hours driving program conducted by the Central Florida Training Academy and then be signed off by their company officer.

The Columbus, Mississippi Fire Department uses a program that has helped there vehicle accidents and firefighter injuries decline in a different way. Operation POP (Pull Over Please) began recently to send two basic messages to the motorists in the community; pull over to the side of the road and stop when you hear approaching emergency vehicles and use caution when passing through emergency scenes (Fire Chief, 2003).

The Phoenix, Arizona Fire Department Standard Operating Procedure (SOP) 205.08, Driver Safety, states “It is the responsibility of the drive of each fire department vehicle to drive safely and prudently at all times. Vehicles shall be incompliance with the Arizona Motor Vehicle Code.” (Phoenix, 2003). The SOP outlines various response issues to include approaching intersections, passing vehicles, and emergency responses criteria.
Research results indicated that the Newport News and Orange County fire departments are using computer based training for certain modules of their respective training.

**Question Three – What remedial activities or follow up programs are in place for those departments that have an existing program in place?**

Of the departments that responded to the survey, they indicated varying degrees of remedial or follow up programs in place to investigate or correct problem driving. These are represented in table 4 below.

**Table 4**
Follow Up Components of Driver Training Program

<table>
<thead>
<tr>
<th></th>
<th>f</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident Review Board in Place</td>
<td>12</td>
<td>92</td>
</tr>
<tr>
<td>Review Board has the Authority to <strong>Recommend</strong> Discipline or Remedial Training</td>
<td>12</td>
<td>92</td>
</tr>
<tr>
<td>Vehicle Accidents are Reported on a Regular Basis to Department Personnel</td>
<td>6</td>
<td>46</td>
</tr>
<tr>
<td>Additional Training Required of Personnel Involved in Preventable Accidents</td>
<td>9</td>
<td>69</td>
</tr>
</tbody>
</table>

_{NOTE: F=frequency; P = percent; n=13}_

The majority of the departments did have some type of accident review board in place to investigate and review vehicle accidents. The authority and make up of the review boards
differed for almost all locations. The larger metropolitan departments have a more structured program in place for addressing additional training needs for drivers involved in preventable accidents.

Information from interviews conducted revealed that the Phoenix Fire Department often requires training for an entire crew based upon the type of accident. Contra Costa, CA Fire requires all engineers to recertify for periodic testing and this includes a module for Quint operations. In addition, the department is approved by the California Department of Motor Vehicles as an alternate licensing facility for heavy apparatus.

Only 47% of the responding departments indicated that they published the accident statistics of their organization to the general department populous. In the other cases, the information was only shared with senior level staff personnel or risk management.

**DISCUSSION**

“Due to the lack of meaningful emergency vehicle training and the fact that 95% to 99% of all emergency vehicle operators have no knowledge of their rights and responsibilities under their states’ vehicle and traffic laws, emergency vehicle training will be mandated” (Wilbur, 1999, p. 137). This view is shared by the researcher as well. Each year nearly 25% of all firefighter deaths are attributed to vehicle accidents responding to or returning from incidents. In addition, the mandatory use of seatbelts in apparatus and other emergency vehicles may reduce the death rate from driving accidents by as much as 70%.

NFPA 1500, *Fire Department Occupational Safety and Health Programs* (2002), mandates in Chapter 3, Training and Education, Section 3-1.3 “The fire department shall provide training and education for all fire department members commensurate with the duties and
functions that they are expected to perform. Members shall be provided with training and education appropriate for their duties and responsibilities before being permitted to engage in emergency operations.” These two very profound statements above really set the stage for public safety departments and the driver training programs they can be expected to develop and implement.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications (2003)*, identifies the minimum job performance requirements (JPR) for firefighters who drive and operate fire apparatus. “The JPR’s can be used for training design and evaluation, certification, measuring and critiquing on-the-job performance, defining hiring practices, and setting organizational policies, procedures, and goals,” NFPA1002, Appendix B (2003). The standard is designed to define the job performance requirements for each type of apparatus operated.

NFPA 1451 *Standard for a Fire Service Vehicle Operations Training Program (2002)* is an additional standard that addresses apparatus driving for the fire service. The purpose of the standard is to define minimum requirements for a fire service vehicle operations training program. In addition, the standard states “The achievement of the objectives of this performance standard shall be intended to help prevent crashes, injuries, and fatalities involving fire service vehicles,” (2002, 1.2.2).

There are nationally recognized standards that can serve any department to develop and implement a comprehensive driver training program. In addition to those mentioned above, the VFIS offers a three part comprehensive training package that serves to meet the needs of the NFPA standards. Each of these documents provides information to develop a credible and valid program.
It is very clear that NFPA 1500 mandates that we provide the training for the job we are asking personnel to perform. The Fairfax County Fire and Rescue Department has a comprehensive training division that is very capable of putting a program in place. The standards and programs identified in the research will provide a very sound background to develop the program with very little fiscal impact on the organization since facilities and staff personnel are already in place.

The author found several examples of driver training program that were currently in place. These ranged from a public safety service announcements program in the Columbus, Mississippi Fire Department to standard operating procedures.

Operation POP (Pull Over Please) used in Columbus, MI began recently and involved sending two basic messages to the motorists in the community; pull over to the side of the road and stop when you hear approaching emergency vehicles and use caution when passing through emergency scenes (Fire Chief, 2003).

The first phase has been introduced with great success thanks to the assistance of the media and public safety announcements (PSA). These PSA’s were broadcast four to five times per day for twenty days on local television. After about one week, firefighters noticed a difference. The second phase will begin soon and will focus on emergency scene safety on the roadway.

The author attempted to define the programs being utilized in the Washington Metropolitan area as well as other similar departments in the nation. The Arlington County, Virginia Fire Department and the Prince William County Fire Department both have driver training programs in place for their personnel. They both provide training for medium duty (EMS units) and large apparatus.
The training curriculum is consistent with Virginia State requirements as they use the Emergency Vehicle Operators Course (EVOC). These curriculums capture both classroom instruction as well as practical training for the different vehicle types described above.

The examples found in Arlington and Prince William met the basic requirements found in NFPA 1002 and NFPA 1451. Both departments stated that their respective programs appear to be meeting their basic needs. They did express concern that the logistics of their program would become more cumbersome as the numbers of personnel participating grows.

The Newport News, VA Fire Department mirrored other programs within the Commonwealth of VA in that they follow curriculum outlined in the VDFP EVOC class, however the department provides computer generated defensive training at the station level (Norfolk Fire Department, 202).

Computer generated driving programs are becoming more prominent. These include skills reflex type programs to online testing programs. “Simulation” programs are also available that take drivers through virtual driving scenarios. The utilization of computer based training has great implications for the Fairfax County Fire and Rescue Department. This tool can be used in individual work locations for didactic training such as recertification and reviewing pertinent driving laws. Another benefit of using computer generated programs as a component of a comprehensive program is the access to instant results. Students may receive instant results and training supervisors are able to recover data easily from an automated system.

The organizational concerns of using computer generated programs for Fairfax are logistical and fiscal in nature. Licensing is an issue for over 40 work locations and costs can range from several hundred dollars to many thousands of dollars for some programs. The ideal
scenario for testing would be a simulation lab at the training academy, however physical space continues to be an issue.

Phoenix, Arizona Fire Department Standard Operating Procedure (SOP) 205.08, Driver Safety, states “It is the responsibility of the drive of each fire department vehicle to drive safely and prudently at all times. Vehicles shall be in compliance with the Arizona Motor Vehicle Code.” (Phoenix, 2003). This procedure coupled with The SOP outlines various response issues to include approaching intersections, passing vehicles, and emergency responses criteria.

The Fairfax County Fire Department has a similar procedure in place that outlines many similar areas. It is imperative that departments define their expectations as it relates to response criteria. Response operational procedures do not however remove the responsibility that a department has to properly train personnel to drive within their state laws as they relate to emergency response. In addition, it should not replace a well documented driver training program.

The researcher found limited information regarding programs that offered structured follow up training direction or reporting mechanisms. While the survey results did indicate that 69% of the respondents had some type of follow up component in place they were extremely fractured in their approaches. This ranged from a mandatory program for any preventable accident to “it depends on the nature and seriousness of the accident.”

This is part of the problem that has enunciated the issue in Fairfax County. The Department began to hold personnel accountable for their actions by enforcing discipline. In the past, this had been somewhat relaxed especially if it was a first time accident preventable or not. Now personnel and officers are held accountable and may receive a written reprimand or time off depending upon the circumstances of the accident.
Ninety-two percent of the reporting jurisdictions stated that they had some type of accident review board to oversee accident reporting and investigations. The author found that this group was most often made up of a cross representation of the department which frequently included civilian staff, management, safety or risk management representatives, and labor.

One of the most interesting facts taken from the survey was that a little under half (46%) of the jurisdictions did not share the accident information or statistics with the rest of the department personnel. This fact alone has tremendous organizational implications. Accident information needs to be shared with training and operations personnel. These are the people that need to learn from other incidents and have lessons reinforced through training and case studies.

The other half of the reporting departments stated that they published this information in monthly newsletters or reports to the department. This information proves to be a very valuable risk management and training tool. The researcher’s experience shows that personnel want to know this type of information. To not see it means something is being hidden. The only instance when this would not provide a positive influence on the organization would be in the case of a potential liability case.

**RECOMMENATIONS**

As previously stated, the problem that prompted this research project was that the Fairfax County Fire and Rescue Department did not have a comprehensive driver training program for either recruits or incumbent firefighters. Based upon the findings of the research, the Department should begin the process of designing a comprehensive driver training program for recruit and incumbent firefighters as outlined in the attached proposal in appendix A.
Specific curriculum development should include appropriate material from NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications (2003)* and NFPA 1451, *Standard for a Fire Service Vehicle Operations Training Program (2002)*. These are two national consensus standards that specific job performance requirements as well as qualifications for officers conducting fire training. Each of them provides critical information that should be referenced when developing a program. In addition to the above mentioned documents, the researcher found the Volunteer Fireman Insurance Services (VFIS) driver training programs that also provide comprehensive information for driver training programs.

Specific needs and delivery methodology should be explored to meet the identified goals of the department. Alternative course delivery methods such as remote access to classroom portions of the program must be considered. There components of successful models already in place. The challenge is to take pieces of the programs that have been successful and bring those together. There must also be a marketing piece of the program that provides support from upper management as to the benefits of reduced vehicle accidents.

Finally, fiscal and logistical impact must be considered and addressed. Implementation guidelines must be developed. New employees must know the steps of the program from the very beginning of their training. Policies outlining the training program, accident review policies, and enforcement policies must be put in place along with the program so that all employees understand the comprehensive program.
REFERENCES


I would like to submit the following outline for the development of a comprehensive driver training program.

**Program Purpose:** To provide ongoing driver training at the entry level and for incumbents within the department. Training will strengthen driving skills and abilities and reduce the risks associated with fire department vehicle accidents to our personnel and citizens of the County.

**Objective:** To provide current course curriculum on defensive driving; legal aspects of emergency response operations; safe vehicle handling; review of departmental standard operating procedures on driving; regional response issues; and specific information as determined by curriculum development group.
Curriculum
Curriculum will be developed by a curriculum development committee made up of representatives from all employee labor groups, Risk Management, field training and a member of each rank from lieutenant through deputy chief.

Course development will be based upon several factors as determined by the group. The core curriculum will be based upon NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications (2003)*, which identifies the minimum job performance requirements (JPR) for firefighters who drive and operate fire apparatus. Consideration should also be given by the curriculum development committee to NFPA 1451 *Standard for a Fire Service Vehicle Operations Training Program (2002)* which is a standard that also addresses apparatus driving for the fire service. The purpose of the standard is to define minimum requirements for a fire service vehicle operations training program. The table below defines the various components of NFPA 1451 to be included within the program design.

<table>
<thead>
<tr>
<th>NFPA 1451 Standard for a Fire Service Vehicle Operations Training Program</th>
<th>Components</th>
</tr>
</thead>
</table>
| **Chapter 4** General Rules and Considerations | • Operations Training Program  
• Coordinated Administrative Policies |
| **Chapter 5** Training and Education | • Training Frequency  
• Basic Training and Education Requirements  
• Instructor Qualifications  
• Training Program Safety  
• Training Records |
| **Chapter 6** Laws and Liabilities | • Financial Protection  
• Member Assistance Program |
| **Chapter 7** Emergency Response | • Emergency Response Considerations |
| **Chapter 8** Crash and Injury Prevention | • Drivers/Operators Responsibility  
• Responsibility of Persons Riding on Apparatus |
| **Chapter 9** Crash Review | • Crash and Injury Report Records |
| **Chapter 10** Vehicle and Apparatus Care | • Inspection, Maintenance, and Repair of Vehicles  
• Vehicle Records |
The comprehensive program should be developed within the following recommended parameters:

- Completion of a recognized emergency vehicle training program such as the Emergency Vehicle Operators Course (EVOC) or the Volunteer Fireman Insurance Service (VFIS) course.
- A minimum of four hours classroom training concentrating on defensive driving, legal aspects of driving emergency vehicles, physical dynamics of response vehicles, standard operating procedures, and a comprehensive written test at the conclusion of this session.
- Ten hours of documented behind the wheel training on the type of vehicle to be driven and tested on.
- Annual classroom refresher training focusing on defensive driving, legal aspects of driving emergency vehicles, physical dynamics of response vehicles, standard operating procedures.
- Practical refresher training not more than every three years for all drivers.
- Drivers returning to duty after being inactive for more than six months shall be required to re-certify.

Course Delivery
The initial classroom training shall be delivered in a typical classroom type environment with a lead instructor certified to teach the class.

The refresher training will be presented in a modular format and provide students with the maximum amount of flexibility as possible to obtain the defined training. Delivery methods will include components of distance learning and self-study when possible.

Practical training will be conducted at a suitable location to meet the needs of the defined exercises.

Compensation
Personnel will be provided the training program while on duty. In the case of extenuating circumstances, compensation will be provided if the employee needs to attend training on their off days.
March 10, 2003

Dear Fire Service Professional,

This spring I will be attending the final year of my Executive Fire Officer program at the National Fire Academy. As you are aware, each class requires a research paper as a component of the class for completions. My research this time will focus on the issue of fire department vehicle accidents. Specifically to find out what the mechanisms are currently in place around the country to train personnel in vehicle operations specific to driving. From there it is my intention to look at what we are doing as a profession to take corrective action once accidents do occur.

I feel certain that you find this an interesting topic as I have and one that we can certainly improve in our efforts to minimize firefighter injuries and property damage within our own jurisdictions.

I am asking if you would take just a few minutes to respond to the attached questionnaire so that I can gather the necessary data regarding what your department is currently doing to address these issues. If you are not the person to provide this information, please forward it to someone that can help.

**I would like to have the information back to me by May 1, 2003.**

I would prefer to have it emailed back as an attachment to: david.rohr@fairfaxcounty.gov or you can fax it to the Fairfax county Fire & Rescue Training Division @ 703-378-5347. Thanks again, be safe and let me know if there is anything I can do to help.

David Rohr
Chief Training Officer
Fairfax County Fire and Rescue Department
4600 West Ox Road
Fairfax, VA 22030
Appendix C

Developing a Departmental Vehicle Accident Corrective Action Program

Department Name

Number of Uniform Personnel    Population served

1. Does your department currently have a formal driver training program in place for the following types of vehicles:

   Sedans: Yes   No
   Medium Duty vehicles (EMS, light trucks): Yes   No
   Heavy Apparatus: Yes   No

2. Can you briefly describe the training indicated above? (i.e. classroom or practical, formal or informal)

3. Does your department provide a driver training component as a part of your recruit school curriculum and if so is it an approved program such as EVOC or VFIS?

4. Does your department currently have a mechanism in place to review vehicle accidents that take place in department vehicles? Yes   No
   (If you answered no please go to question #10)

5. What is the main task or role of the group?
6. Who oversees the committee or sits as the chair of the group?

7. What is the makeup of the group either by rank, work affiliation, or special interest group? (i.e. Operations deputy, field battalion chief, member of police agency, etc)

8. How often do they meet?

9. Does the group have the authority to recommend discipline and or remedial training? If not, who does?

10. Does your department require any additional training for personnel that have been involved in vehicle accidents where they are found to be at fault?

11. Are vehicle accident statistics reported to the department on a regular basis? (i.e. safety bulletins, newsletter, email, Intranet). If so, who are they distributed to?

Thank you for taking the time to respond to this survey. Please return survey as an attachment to david.rohr@fairfaxcounty.gov (preferred) or you can fax it to the Fairfax County Fire & Rescue Training Division @ 703-378-5347