

FIRE PREVENTION PROGRAM EVALUATION
FOR
FLORENCE FIRE AND EMS DEPARTMENT

Executive Planning

BY: Gary Zumbiel
Florence Fire and EMS Department
Florence, Kentucky

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ABSTRACT

Florence is a growing suburban community located in northern Kentucky. The fire department had operated as a combination department for 25 years. Fire prevention activities within the fire department had not kept pace with needs of the community. The problem was that the fire prevention program had become fragmented when the fire prevention manager position was vacated. Since there was no manager, activities were diminished and opportunities were ignored. The purpose of this research was to evaluate existing fire prevention and public education activities and to evaluate qualifications needed to manage the program. The evaluative research method was used. The research questions answered were:

1. Are existing prevention activities and procedures adequate?
2. What activities should be included in the fire prevention program?
3. What rank and/or special qualifications are required for the fire prevention manager/coordinator?

Research procedures consisted of a literature search and a survey of personnel. Results of the research provided evidence that Florence Fire and EMS was performing some appropriate fire prevention activities, but significant modifications were necessary. A fire prevention program manager was needed to coordinate the program and implement changes. Additional activities and training were to be introduced.

Recommendations included establishing program content, consolidating existing activities in the program, developing fire prevention training, and identifying selection criteria for the program manager.

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INTRODUCTION

The Florence Fire and EMS Department serves the City of Florence, Kentucky and a surrounding unincorporated area known as the Florence Fire Protection District. As in many suburban areas across the country, Florence has experienced rapid growth over the last twenty years. Unfortunately, fire protection and emergency medical services have not kept pace with the growth of the area. Development within the community is finally beginning to stabilize. Florence Fire and EMS can now perform realistic long-term planning, rather than rely solely on guesswork as during the period of rapid growth.

Florence Fire and EMS has evolved into a combination career and volunteer department providing fire protection and rescue services along with Advanced Life Support emergency medical care. There are currently 38 full-time (career) employees, one of which is a non-uniformed Administrative Secretary, and approximately 75 active volunteer members. In addition, two paramedics are utilized daily under contract from a local ALS provider.

Two fire companies and two ALS ambulances are staffed continuously by career personnel. Occasionally, one or two additional fire companies and a BLS ambulance may be staffed by volunteer personnel performing station duty. Other volunteer members may respond to their respective stations as needed.

While development within the community is easing, both emergency service requests (incidents) and non-emergency activities continue to increase at a rapid pace. Funding has increased significantly in recent years. However, Florence Fire and EMS continues to suffer from the traditional fire service woes: understaffed and underfunded.

Personnel turnover has become a serious issue. Florence Fire and EMS must compete for employees with other fire and/or EMS agencies in the area. Many employees are eligible for retirement. Recent changes in the Kentucky retirement system encourage early separation. In fact, the recent retirement of two chief officers has caused redistribution of duties and responsibilities among existing chief officers. One of the vacated positions has been eliminated, while the other remains vacant.

Although operations revolve around a core of career personnel, there is heavy reliance on volunteer members. A variety of programs have been implemented over the last few years to encourage volunteer participation. Unfortunately, there is still concern over the lack of consistent availability of volunteer personnel.

The problem was that the fire prevention program had become fragmented when the fire prevention manager position was vacated. The previous fire prevention manager was appointed Fire Chief. This left the program without a coordinator causing activities to be diminished and opportunities to be ignored.

The purpose of this research project was to evaluate existing fire prevention and public education activities and to evaluate qualifications needed to manage the program. The evaluative research method was used. The research questions to be addressed are:

1. Are existing Fire Prevention activities and procedures adequate?
2. What activities should be included in the Fire Prevention program?
3. What rank and/or special qualifications are required for the Fire Prevention manager/coordinator?

BACKGROUND AND SIGNIFICANCE

Florence has a population of approximately 22,000 while the adjacent Fire Protection District has a population of approximately 10,000. Florence is the largest city in Boone County which is in northern Kentucky. It serves as a regional retail shopping district for the southern suburbs of the Cincinnati, Ohio metropolitan area. Shoppers, workers, and other visitors cause the transient population to swell significantly during business hours. Florence is located about 10 miles southwest of Cincinnati and is directly adjacent to the Cincinnati/Northern Kentucky International Airport .

In October 1998, Florence Fire and EMS Department began providing Advanced Life Support services. There were now sufficient career personnel to operate two ALS ambulances. Paramedics, along with appropriate licensing and medical control, were provided through a contractual agreement with Transcare, Inc., a non-profit ambulance service operated by several local hospitals. Projected revenue from ALS services generates sufficient funds to support the ALS program and provide additional career personnel.

In January 1999, one of three career Assistant Chiefs was appointed to a newly created position of Deputy Chief. The vacated Assistant Chief for Operations position, which included management of the fire prevention program, was eliminated. Those duties were spread among the two remaining Assistant Chiefs creating an Assistant Chief for Operations and an Assistant Chief for Training and Support Services. Later in 1999, the Fire Chief and the Assistant Chief for Operations retired. The Deputy Chief was immediately appointed Fire Chief while the vacated Assistant Chief position was eliminated. Rather than loading more duties onto the Assistant Chief for Training and

Support Services, fire prevention program activities were left to the discretion of the three Shift Commanders.

In early 2000, the Deputy Chief position was eliminated and an Assistant Chief position was reestablished. No duties have been assigned to the vacant Assistant Chief position pending a departmental reorganization.

Six of eight career Captains serve as company officers assigned to 24-hour duty tours followed by 48 hours off-duty. One of two captains on-duty every day is considered the Shift Commander. The Shift Commander is assigned to an engine company at a satellite station.

Two career Captains serve as staff officers assigned to headquarters on a 40 hour per week basis. One is the Technical Services Officer, responsible for facilities, equipment, and stores. The other is the Fire/EMS Training Officer. Both report to the Assistant Chief for Training and Support Services.

City of Florence job descriptions summarize prerequisites and general duties and responsibilities of each job classification. They do not, however, describe specific assignments within each classification. Specific duties and responsibilities among chief officers and career Captains are periodically redistributed.

Job descriptions exist for all career job classifications. Staff Captains do not have specific job descriptions and are grouped under the classification title of Fire/EMS Captain along with the shift Captains.

Incidents continue to increase as do the types of incidents to which the department is asked to respond. Community expectations require an expansion of services. Unfortunately, as the base of operations expands, chief officer duties and

responsibilities have been redistributed to accommodate their reduction in number and turnover. Span-of-control and unity-of-command by chief officers has been seriously compromised.

An effective fire prevention program is essential to minimizing losses to life and property caused by fire and related emergencies. Fire prevention and public education activities will contribute significantly toward becoming a much safer community. A coordinated and well-managed fire prevention program within the Florence Fire/EMS Department will provide a safe environment for all those who live, work, or visit the community.

This research project utilized information regarding survey questions presented in the Evaluation Module of the National Fire Academy course Executive Planning.

LITERATURE REVIEW

An extensive amount of published documents were researched at the Learning Resource Center at the National Fire Academy. Information derived from Applied Research Projects can be confusing due to the wide range of organizations represented by the authors. The content of projects with similar titles varies greatly, especially when the words “prevention” and “inspections” are included. Most had very little, if anything, to do with this research project. Of the many Applied Research Projects reviewed, Camp and Reece were selected. Both of these projects focused on the utilization of engine companies to perform fire inspections.

The Foley article presented the argument for the need of a comprehensive public fire protection plan. He mentioned several common activities of a fire prevention program and suggests utilizing two kinds of analysis as a method of performing a program evaluation. Foley also recommended that the NFPA Risk Watch program be implemented.

Compton discussed the concept of the three factors needed to provide fire and life safety: fire prevention, public education, and emergency response. He distinguished between fire prevention and public education.

Murphy discussed the value of an effective fire prevention program including the benefits of fire inspections. He does not think fire inspectors need to be code specialists but he did discuss inspector professionalism.

The Stittleburg article identified the need to consider legal liability and potential costs of a fire prevention program.

Donner wrote about the importance of code enforcement. Donner suggested that company inspections are the best way to perform fire inspections. Reece also favored a company inspection program but suggested some modifications implemented by his department such as fire prevention training. Camp also mentioned the need for additional training.

The O'Connor article discussed the NFPA Fire Inspector I Certification Program and the role of a fire inspector.

Fire Protection Handbook presented an overview of a model fire prevention program. Included are discussions on various prevention activities and a brief mention of professional qualifications: NFPA 1031, *Standard for Professional Qualifications for*

Fire Inspector; NFPA 1033, *Standard for Professional Qualifications for Fire Investigator*; and NFPA 1035, *Standard for Professional Qualifications for Public Fire and Life Safety Educator*.

NFPA *National Fire Codes* were reviewed. NFPA 1201, *Standard for Developing Fire Protection Services for the Public* (1994) included chapters containing basic information about public fire safety education, code enforcement, and fire investigation. NFPA 1031, *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* (1998) included performance criteria for selecting fire inspectors. NFPA 1033, *Standard for Professional Qualifications for Fire Investigator* (1998) included performance criteria for selecting fire investigators. NFPA 1035, *Standard for Professional Qualifications for Public Fire and Life Safety Educator* included performance criteria for selecting public education personnel.

The Fire Chief's Handbook provided a wide range of information regarding fire prevention activities. However, the information is too broad to be useful.

The findings of the published material assisted in the determination of the research questions. The published material provided a point of reference on which to base the Florence Fire and EMS fire prevention program.

PROCEDURES

Research began with a literature search conducted in the Learning Resource Center at the National Fire Academy in October 1999. Additional literature searches

were performed in Florence, Kentucky at the Boone County Public Library, the Florence Fire and EMS Department library, and at the author's residence during February 2000.

Applied Research Projects from the Executive Fire Officer Program at the National Fire Academy were researched. Sources obtained through the literature searches provided extensive publications concerning fire prevention, public education, and related topics. Many of these articles, however, were not relevant to the research. Some referred to legal or code-related items. Some were related to specific inspection procedures. And some discussed public education topics.

A survey was conducted of career personnel from the Florence Fire and EMS Department in March 2000. Research questions were used as the basis for the survey. The purpose of the survey was to identify existing fire prevention programs and activities and to determine opinions of career personnel regarding those activities. The intent was to survey all career personnel, however, some personnel were not available. There were 36 surveys distributed and 27 were returned. A copy of the survey is included as Appendix A.

Survey results may have been limited by several factors. Questions that were unclear would cause personnel to interpret the questions differently from what the author intended and would yield incorrect results. The survey may have omitted questions that would prove important to the research. It did not give sufficient or appropriate choices for all questions. Questions with a large number of choices may have persuaded those surveyed to select choices that they would not normally consider. An introductory section to clarify terms and concepts would have been beneficial.

Inconsistent terminology within the fire service makes definition of terms important. The following definitions are applicable to the Florence Fire and EMS Department and this research project:

career personnel:

full-time paid employees

volunteer members:

receive a stipend for both station duty and for incidents attended when not on station duty

fire prevention program:

includes all code enforcement, pre-incident planning, public education, and investigation activities

public education:

includes fire safety education, CPR, First-Aid, and emergency response training for all ages; does not include media relations and PIO duties

fire prevention manager/coordinator:

coordinates all fire prevention activities internally and externally; serves as Fire Marshal; coordinates fire prevention training

RESULTS

Generally, the population surveyed thinks that both the quality and variety of prevention activities offered are inadequate. The population is divided on the value of state certification as adequate training for conducting routine fire inspections, yet all

agree that periodic training is needed to maintain competence as a fire inspector. A large majority agree that all career personnel should participate in the program and that fire prevention activities should be performed by more than those with a special interest. All agree that Florence Fire and EMS should continue to perform code enforcement under deputized authority from the State Fire Marshal's Office and all but one of those surveyed agree that fire prevention and public education should receive more emphasis. Most of the population prefers not to use individual members to conduct inspections and most prefer not to use full-time fire inspectors. Those surveyed like to separate pre-incident planning activities from fire inspections. All agree that Florence Fire and EMS should be more aggressive in public education, but some invitations should be declined.

Approximately fifty-nine percent of the population surveyed think a reasonable goal is to inspect all buildings (except one- and two-family dwellings) at least annually while twenty-six percent would choose to inspect selected target facilities at least annually and inspect other facilities every two years.

Thirteen of fourteen choices presented as potential activities of the Florence Fire and EMS fire prevention program were selected by more than half of those surveyed. Activities selected by more than seventy-five percent of the population included fire inspections, public fire education, plans review, new construction visits, pre-incident planning and mapping, emergency response training, and inspections of installation of fire protection features. Activities selected by less than seventy-five percent included hydrant flow-testing and water supply, issuance of permits, fire cause investigation, regulation of storage, handling, and use of hazardous materials, public and media relations, public CPR and First-Aid training, and occupational license inspections.

As qualification for fire prevention manager/coordinator, state certification as a fire inspector was selected by ninety-three percent of those surveyed. In-house training, local and regional schools, and fire code seminars were selected by more than half of the population as qualifications for manager/coordinator. Approximately thirty-nine percent thought an assessment center was needed to qualify and one-third thought some college was needed. A bachelor's degree was considered to be a qualification by nineteen percent. Since the survey asked to choose all appropriate qualification criteria, all of those surveyed selected two or more items.

None of the suggested ranks/titles for fire prevention manager/coordinator was selected by a majority of the population. Chief Officer was selected by one-third of the population. Staff Captain and Senior Firefighter/EMT were each selected by nineteen percent. All other choices were selected by at least one person.

The first research question attempted to determine if existing fire prevention activities and procedures are adequate. Survey questions one through fourteen addressed this question. Research indicated that fire prevention activities are not adequate, but the procedures utilized for performing those activities are acceptable to the population surveyed. Florence Fire and EMS must increase its emphasis on fire prevention. Fire prevention training should be implemented. Improvements are needed in the quality and variety of fire prevention activities.

The second research question asked what activities should be included in the fire prevention program. Survey questions seventeen and eighteen addressed this question. Research indicated that the fire prevention program should include fire inspections, public fire education, emergency response training, pre-incident planning and mapping,

plans review, new construction visits, and inspections of installation of fire protection features. All buildings (except one-and two-family dwellings) should be inspected at least annually.

The final research question addressed rank and special qualifications required for fire prevention manager/coordinator. Survey questions fifteen and sixteen explored this issue. The fire prevention manager/coordinator must be a certified fire inspector who has participated in a variety of in-house fire prevention training, local and regional schools, and fire code seminars. Fire prevention manager/coordinator duties will be assigned to a Chief Officer.

Progressive fire departments have begun to shift emphasis from fire suppression to fire prevention. Fire prevention, public education, and emergency response is one suggested mix of services to be offered. While the potential benefits of increased emphasis on fire prevention is obvious, the actual value of fire prevention activities is extremely difficult to measure. Legal liability of the code enforcement process must be considered.

Fire prevention programs usually include fire inspections, code enforcement, plans review, and public education. Public education now reaches beyond fire safety into all-risk education. Basic fire inspections are often conducted by fire companies rather than fire prevention bureau personnel. Company inspectors need general fire prevention training.

Several unexpected results from the survey were discovered. All but two of those surveyed thought that all personnel should participate in fire prevention activities. Everyone agreed that Florence Fire and EMS should continue to inspect as a deputized

agency. Only one person thought that fire prevention and public education should not be treated as a higher priority. Everyone surveyed said Florence Fire and EMS should actively pursue public education activities. As qualification for the fire prevention program manager/coordinator, nine people said some college was needed and five people said a bachelor's degree was needed. One person said a civilian should be the manager/coordinator, while five people suggested a Senior Firefighter/EMT should be the manager/coordinator.

DISCUSSION

Fire departments in many communities are shifting emphasis from fire suppression to fire prevention. "A comprehensive public fire protection plan is the concept that it is infinitely better for a community to prevent fires altogether, or to mitigate them automatically through fire safety education and built-in fire protection features" says Foley (2000, p.10). The Compton article discusses the concept of the three factors needed to provide fire and life safety: fire prevention, public education, and emergency response. Florence Fire and EMS must place more emphasis on fire prevention and public education. All personnel should participate in the program.

The value of an effective fire prevention program is difficult to measure. According to Murphy (1996, p. 91), "Statistics do not reveal how many lives have been saved because fire inspectors have checked exits and inspected fire alarm and fire suppression systems, preventing fires in the inspected buildings from developing into substantial incidents." Florence Fire and EMS personnel think that fire prevention and

public education should receive more emphasis and that public education activities should be actively pursued. They said all personnel should participate in these activities.

Legal liability and potential costs of a fire prevention program, specifically code enforcement, must be considered. Stittleburg (1995, p. 28) writes, "Government has typically argued that such activities constitute only a general duty being performed for the good of society as a whole. As such, they do not create any special duty to anyone and consequently give no right of recovery to injured persons when that duty is breached." Stittleburg cites an example where a fire code violation in a building was not brought into compliance in a timely manner. A fire occurred in the building prior to compliance. An adjacent structure was damaged and the fire department was held responsible. Stittleburg (1995, p.30) sums up by saying "The time might be approaching when governing bodies have to choose between streamlining the enforcement process and getting out of the inspection business." All Florence Fire and EMS personnel prefer to continue to perform fire inspections as a deputized agency of the Kentucky State Fire Marshal's Office. This adds credibility and legal support to the program. Additional training will increase inspector competence.

The activities and services that comprise a fire prevention program may vary by fire department or region. Foley (2000, p.10) states, "Typical fire department services would also include fire prevention programs--such as code administration and enforcement through plan review, inspection services, and public education." Compton (2000, p.) makes a distinction between fire prevention and public education:

Fire prevention codes that incorporate current practices and requirements form a foundation for safe structures and help people survive incidents that occur in

those structures. It's also important that built-in protection, such as sprinkler systems and general plans review efforts, be included in the prevention equation. All-risk public education programs are a must for fire departments. It is critical that public education programs are designed around meeting the educational needs of the entire mission, not just fire safety education.

Fire inspections are generally considered to be the backbone of any fire prevention program. Sometimes the terms fire inspection and code enforcement are used interchangeably. According to Murphy (1996, p. 91), fire inspections provide more benefits than just code enforcement:

The major goals of fire inspections include the following:

- to raise the public's awareness of fire safety considerations in their immediate surroundings
- to identify fire hazards that must be eliminated for a safer environment
- to record inspection information for inclusion in the public record, and
- to verify the proper functioning/maintenance of installed fire protection systems and other building fire protection equipment/features.

Donner (1997, p. 100) believes, "Codes are the first line of defense in fire protection. There is a direct link between code enforcement and life safety, because even the best fire codes are worthless without an effective inspection program."

Florence Fire and EMS personnel see the need to include a variety of activities within the fire prevention and public education program in order to improve the quality of the program. Suggested priority activities include fire inspections, public fire

education, plans review, new construction visits, pre-incident planning, emergency response training, and inspections of installation of fire protection features.

There is a difference of opinion on who should actually perform fire prevention duties. Some suggest that company personnel can perform the majority of routine fire inspections while others think that Fire Prevention Bureau personnel should perform all fire prevention activities. Still others prefer some combination of company personnel and Fire Prevention Bureau personnel. Donner suggests that company inspections are the best way to perform fire inspections. “The difficulty is finding the time and staff to complete all the inspections. Fire suppression companies can provide the solution (Donner, 1997, p. 100).” Reece also favors a company inspection program but suggests some modifications implemented by his department. “The use of quotas or mandated inspection frequencies can create an atmosphere which leads to sloppy inspections due to backlogs. Reducing the number of inspections would provide more time to conduct quality inspections (Reece, 1998, p. i).” Donner (1997, p. 104) agrees: “Allowing the fire companies to substitute quality for quantity lets us regain control of inspection workloads.”

Florence Fire and EMS personnel want to conduct company fire inspections rather than utilize full-time fire inspectors. They would like to separate fire inspections from pre-incident planning visits. All personnel should participate in the inspection program. The proposed goal is to inspect all buildings (except one- and two-family dwellings) at least annually.

Fire prevention training is another important issue. Reece (1998, p. i) reported in an Applied Research Project that “lack of inspection knowledge was identified as a

concern. Provide training for firefighters.” Camp (1999, p. 3) agreed in an Applied Research Project by saying “Provide additional and more technical training to engine company personnel and officers.”

Murphy does not think inspectors need to be code specialists. “Inspectors need not be familiar with every point of a broad fire inspection code. When a more detailed analysis of the code is needed, inspectors should reference code standards or consult with supervisors (Murphy, 1996, p. 92).” Murphy (1996, p. 94) comments on fire inspector professionalism:

A fire inspector can advance professionalism by participating in functions related to fire prevention. These functions may include formal classes; continuing education seminars; studying periodicals and other literature; and affiliations with fire prevention associations, where inspectors can share experiences and discuss current trends in fire protection equipment, proposed fire safety legislation, and other areas.

The O’Connor article discusses the NFPA Fire Inspector I Certification Program and the role of a fire inspector. “In addition to being a code enforcer, today’s fire inspector must also be part detective, part reporter, part technical consultant, part missionary, and part salesperson. The fire inspector may be one of the most skilled and educated members of his or her department (O’Connor, 1998 p. 116).”

Florence Fire and EMS personnel think periodic fire prevention training is necessary to maintain competence. Many are not convinced that the state inspector certification process is adequate training to perform code enforcement inspections.

Based on research results, several aspects of the fire prevention program will not require changes. The goal to inspect all buildings (except one- and two-family dwellings) at least annually will remain. Florence Fire and EMS will continue to act as a deputized agency of the State Fire Marshal's Office. And, fire inspections will continue to be performed as company inspections.

Several more aspects will require changes. Focusing more attention on fire prevention and public education rather than emergency response will require a significant attitude change. This change will probably be more philosophical than operational. There may be concerns that emergency activities are being abandoned. Public education goals and activities must be expanded. Finally, training in areas of fire prevention and public education must be developed and delivered.

RECOMMENDATIONS

Fire prevention activities within the Florence Fire and EMS Department must receive greater attention. Fire prevention program activities will include fire inspections, public fire education, plans review, new construction visits, pre-incident planning, emergency response training, and inspections of installation of fire protection features. The program manager can evaluate the needs of the community to determine additional activities to be implemented.

Fragmented activities must be consolidated. Public education activities should be realigned to become part of the fire prevention program. The manager must have adequate authority to implement necessary changes. Existing duties of various personnel may require reclassification.

Routine fire inspections will continue to be conducted by fire companies. Florence Fire and EMS will continue to conduct code enforcement fire inspections as a deputized agency of the State Fire Marshal's Office. Prioritizing and scheduling of inspections will be performed by the program manager. The program manager should be consulted for fire code interpretations. In addition, fire companies will perform other types of non-technical inspections and activities.

Florence Fire and EMS must consolidate existing public education activities. The fire prevention program manager can secure contacts throughout the community to identify areas of need. Activities will then be developed to meet those needs. Florence Fire and EMS personnel with special talents and interests should be utilized in public education activities.

Florence Fire and EMS must improve training in fire prevention. Published training programs and fire prevention experts can be utilized. The fire prevention program manager may need to develop new courses. NFPA and National Fire Academy courses should be considered.

A strong fire prevention program manager can drive the program. The program manager will hold an officer rank within the department, preferably the rank of Assistant Chief. With authority delegated by the Fire Chief, the program manager will be able to coordinate activities and implement program changes as needed. To qualify for the position, a candidate must be a certified inspector in the state of Kentucky and must have participated in training sessions at various regional schools and fire code seminars. Some college background in fire prevention will be helpful. Other selection criteria will be

based on Florence Fire and EMS position requirements and on NFPA 1031 and NFPA 1035.

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Appendices Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.fema.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.