CAREER STAFFING LEVELS IN COMBINATION FIRE DEPARTMENTS

EXECUTIVE DEVELOPMENT

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ABSTRACT

This research project explored how combination departments integrate their career and Paid-On-Call personnel to provide services to the community and how department administrators determine what is an appropriate amount of career personnel to meet the service expectations of the community.

The problem that was addressed was how career-staffing levels should be determined in the Geneva Fire Department. The purpose was to learn what, if any, criteria is used by combination fire departments in Illinois to determine acceptable career staffing levels.

Historical research was used in the literature review to determine how staffing has been viewed by the fire service in the recent past and how that might be applied to combination departments today. Descriptive research was used to create a survey instrument that was mailed to all identified combination fire departments in Illinois.

The research questions posed were:

1. To what degree, if any, are POC and career firefighters integrated into the operations of a combination department in Illinois?
2. To what extent, if any, does the presence of POC firefighters reduce the need for career firefighters in combination departments in Illinois?
3. What criteria, if any, are used by combination fire departments in Illinois to determine staffing levels?

Work began with a literature review of staffing studies in the recent past, and how staffing has been determined in departments in the past. Completed surveys were compiled for analysis of the answers.

Administrators of combination departments use the population of their communities as the primary method of deciding if new positions are needed. There is a high level of integration of POC firefighters, but that does not strongly affect the decision on how many career positions are needed.

Based on the research and the analysis of the survey the Geneva Fire Department should maintain its POC membership but use the size of the community to determine staff levels.

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INTRODUCTION

The City of Geneva is a suburban community of almost 20,000 residents that has experienced rapid and continual residential, commercial, and industrial growth over the last ten years. The fire department, a combination of Paid-On-Call (POC) and career firefighters has grown from a membership of 33 in 1989 to 56 personnel today. The POC firefighters are an integral part of the organization, participating in the delivery of the many services offered to the residents. Two significant concerns of the city and the department are controlling costs so that they are affordable today and in the future, and, at the same time, establishing a reasonable staffing level for career positions that will keep up with the residents' service expectations today and in the future.

The problem that prompted this research project is how to determine career staffing levels in the Geneva Fire Department when considering the contributions of the POC firefighters. To date, staffing studies have concentrated either on fireground efficiency or safety (Lawrence, 1991; Mack, 1994; O'Hagen, 1984; Varone, 1994, 1995). The city recognizes that a combination structure is less expensive than that of a fully career department and wishes to maintain that structure. In the absence of an established standard for determining what is the correct mix of career and POC firefighters the purpose of this project is to identify what criteria, if any, is used by combination fire departments in Illinois to establish an acceptable career staffing level in their departments.

Historical research was used in the literature review to determine how staffing principles have been viewed by the fire service and how might they could be applied to

combination departments today. Descriptive research was used in the form of a survey that was mailed to all identified combination fire departments in Illinois.

The research questions examined were:

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BACKGROUND AND SIGNIFICANCE

Geneva, Illinois, a community of nearly 20,000 residents, was first incorporated in 1837 by settlers traveling west from New York. With the establishment in the early 1900's of a rail line running from Chicago to Iowa, Geneva became a stable but small community that provided a quiet place to live and raise a family. By 1974 the town had grown to have a little more than 9,100 residents (Ehresmann, 1977, p. 395). In 1989 the Equalized Assessed Valuation (EAV) for the growing community was $200,471,163 with a population of 12,200. Today, Geneva has an estimated population of 19,700 and a daytime population of 22,000, as estimated by the Northeastern Illinois Planning Commission (personal communication with Marc Thomas, January 26, 2000). The EAV is estimated by the Community Development Department to have grown to $538,000,000 (1999). The city is the county seat for Kane County, housing the Kane County Corrections Complex, county courthouse, and administrative complex. Extensive

efforts have been made over the years to preserve and maintain structures, public and private, with historical significance. This includes a five-block-long retail area containing many former residences that have been turned into thriving businesses.

The Geneva Fire Department has a long and proud history that dates to its organization in 1895. Prior to that the towns people used a hand-drawn fire pump and hose cart owned by a local factory when there was a fire. The department remained a volunteer organization until 1966 when it converted from a volunteer to a Paid On Call (POC) structure. In 1968, the city hired its first full time firefighter to improve the department's response time and start a fire prevention bureau. The POC firefighters staffed the single station on weekday evenings and for 24 hours on weekends while the full time firefighter worked a Monday through Friday 8:00 a.m. to 5:00 p.m. schedule.

In 1989 the department responded to 1,423 incidents, using 10 career firefighters, 6 private contract paramedics and 17 POC firefighters. A three-platoon system, mixing full time and POC firefighters to meet the staffing objectives of the department had been adopted in 1979. In 1999, with 16 full time firefighters, 6 private contract paramedics and 34 POC firefighters the department handled 2,785 alarms. A philosophy developed in 1979, and continues to this day, that quite simply states, all members are trained to the same basic level of firefighting and are expected to do the same job. This excludes specialized areas such as hazardous materials and technical rescue.

The problem is how to determine career staffing levels when the city of Geneva has expressed a strong commitment to maintain the POC firefighters as integral members of the department in an effort to control costs and reduce the need for additional career firefighters. Career and senior POC personnel are assigned to a recruit

academy that is held each year for each new group of POC candidates. The academy takes 12 months to complete. Its primary goal is to train the candidates under the curriculum established by the Illinois State Fire Marshal, Division of Personnel Standards and Education. Firefighters come out of the academy certified as a Firefighter II. The time commitment on the part of the POC candidate is significant and can discourage as many applicants as those that ultimately succeed and become POC firefighters for the city of Geneva. In addition to the training demands, the call volume has long surpassed the ability of most POC firefighters to respond to more than half the alarms, especially during weekday hours. This reduces their availability to participate I the wide variety of services offered by the department on a daily basis.

While automatic response by neighboring departments has supplemented the number of firefighters responding to incidents in the community, it does not address the need for personnel just to accomplish the daily administrative, non-incident-related activities the department handles. All career personnel have at least two areas of significant responsibility and in many cases three or four. As the response load increases so, too, do the associated duties and services the department provides.

This paper has been researched to satisfy the applied research requirement for the *Executive Development* course at the National Fire Academy. The problem addressed by this project is related to the material presented on problem-solving and organizational culture. Specifically, this involves recognizing there is a problem and identifying possible solutions and their potential effect on the organizational culture. It is likely that the results will become a reference for the decisions that will be made in the city of Geneva in the coming years.

LITERATURE REVIEW

Volunteer departments that protect growing populations often struggle to meet the demands made by their paying customers for emergency services. These services can include fire suppression, emergency medical care, the mitigation of hazardous material incidents, fire prevention, code enforcement, public education and the day-to-day administration of the department (Potter, 1994, p. 5). According to Bruegman (1998), “The demands have escalated exponentially. At the same time, the resources have remained static or, in some cases, declined” (p. 15). One of those resources, the ability to provide trained firefighters to respond to meet these expectations, can become as significant a problem to these growing departments as handling the alarms.

Anderson (1994) reported that the recruitment of people who are available during weekday hours has become increasingly more difficult (p. 3). Retaining trained POC firefighters can prove to be just as significant a challenge to an administrator as recruiting. Kenny (1996) reported that more than half of the departments responding to his survey reported a loss of POC members.

The most frequently cited reasons for the decline was family responsibilities followed by training requirements Kenny (1996, p. 18). He goes on to point out that training requirements have changed the membership of a POC firefighter from a social position with little responsibility to one mirroring that of a career firefighter. External training requirements that do not differentiate between career and POC members can cause members to be unable or unwilling to commit the requisite amount of time to meet those conditions (p. 18).

Potter (1994) reported that the unwillingness of business owners to allow their employees to leave during work hours, in addition to increased training requirements, have been cited as limiting factors to people joining local fire departments (p. 6). Slivinski (1998) cited the increasing costs of training and equipping POC firefighters as a barrier to maintaining their presence on a department.

Career Firefighters

The addition of career firefighters and a community's changing to a combination fire department structure is often seen as an answer to such staffing problems. (Anderson 1994, p. 4; Carter 1989, p. 21; Marinucci 1990, p. 8; Potter 1994, p. 4, Rielage 1993, p. 32;). The National Fire Protection Association (NFPA*) Fire Protection Handbook, 17th Edition* (1991) states that there are no criteria or specific requirements for the type (career, volunteer or POC) of personnel used for a fire department and calls for the decision to be made at the local level after a careful analysis. It goes on to say:

> A situation of this type is probably most evident in the rapidly growing suburban communities surrounding major metropolitan areas. Originally, these outlying areas were composed of small communities that provided a climate suitable for volunteer departments. As times changed, however, these communities experienced rapid growth rates in population, housing and ancillary services. The original corps of volunteers found themselves unable to meet the increased demands or recruit new members. Therefore, many of

these once volunteer fire departments have added the services of career personnel. (p. 9-36).

Once the decision has been made to add career personnel the department will be faced with determining how many positions will be needed. A combination department is designed to ensure that there is adequate staff available to handle alarms during hours when the volunteer or POC personnel are not available (Reilage,1993, p. 33). Therefore to reach an acceptable staffing level a balance is typically struck between the fluctuating availability of POC or volunteer personnel and the relatively constant presence of career employees (Hoetmer 1988, p. 433).

Company Staffing

In 1994, Varone wrote that it was hard to remember a subject that had caused more controversy than that of minimum of staffing (p. 19). In 1991, Lawrence said that the connection between staffing and efficiency that had been made by early authors was the effect of the staffing concepts created by insurance-based groups such as the Insurance Service Office (ISO). Their concern was more about limiting damage to an insured property than the safety of the firefighters (pp. 4-5). As an example, a study of the Dallas Fire Department recommended that there be a minimum of four firefighters on an engine company and five on a truck company to limit the impact on the completion of critical tasks related to fire suppression (O'Hagen, 1984a, p. 16). In 1992, the NFPA released the second edition of its Standard 1500, in which there is a reference to a minimum staffing level of four firefighters to an engine in the appendix which is the non-mandatory portion of the document. In 1994, Mack reported that the number of alarms in Philadelphia were

increasing at the same time the on-duty work strength was reduced and that when injuries occurred they were of a more serious nature (p. 12).

Also looking at the issue from the perspective of firefighter safety, Varone (1995) demonstrated in his study of the injuries, time-loss injuries and time lost due to injury in the Providence, RI fire department that all three remained low when four-person staffing was maintained. He concluded that there was clear support for the conclusion that four-person staffing "significantly reduced the number and severity of firefighter injuries compared to companies with three members" (p.34).

More recently in 1997, the Commission of Fire Accreditation International defined an "effective response force as the minimum amount of staffing and equipment that must reach a specific emergency zone location within a maximum prescribed travel time" (p. 23). It calls for a task-based analysis to be conducted by each department as a part of a risk assessment. In addition, the Commission provides a time by temperature curve that illustrates the growth rate of an unchecked fire and the need for rapid intervention by an effective response force (p. 26). The size of the force is left to the decision of the local authority.

In its draft of a proposed Standard Number 1710, which is geared toward career fire departments, the NFPA (1999) calls for a minimum staffing level of four on an engine company but increases that to five or six for jurisdictions with tactical or high-hazard occupancies (p. 9). A draft of a proposed Standard, Number 1720, is applicable to "substantially volunteer" departments but can also be applied to combination departments "the authority having jurisdiction (AHJ) shall determine if this standard is applicable to their department" (p. 1). The draft does not have a

minimum staffing level for responding apparatus but does call for four members to be assembled before initiating an interior attack. These proposed standards are currently open for public comment and are subject to modification before a final version is published. The wording in number 1720 closely follows the Occupational, Health and Safety Administration (OSHA) *Respiratory Protection Standard 1910.134* (1998) which requires the presence of at least four members on the scene of an incident prior to the start of interior firefighting operations. A combination department administrator is faced with reconciling these concepts, with the realities of staffing levels in the department and the wide variety of services the organization offers.

Combination Staffing

In 1994, Dunkel reported that he was unable to find any staffing efficiency studies using POC or volunteer departments (p. 13). Conducting a series of timed evolutions within his own POC department he concluded that the results strongly supported a minimum of four firefighters. More importantly he also noted that most, if not all, staffing studies have looked solely at fire suppression duties and have ignored the wide array of additional emergency services offered by many departments. These include, but are not limited to, emergency medical services, confined space and trench rescue, swift water rescue, code enforcement and the like.

In 1990, LaLonde, using a survey he conducted of departments in Massachusetts, examined the staffing issue by making a comparison of the ratio of the number of firefighters to 1,000 residents. He determined that on average, there were 1.73 career firefighters per 1,000 residents for communities with a population of

between 20,000 and 40,000 residents and protected by a combination department (p. 5). He also observed that firefighters within his own department were expected to handle multiple types of duty at the same time. The International City Managers Association (1999), conducted its annual survey in 1998 of fire departments in the United States and found that the average number of career firefighters per 1,000 residents was 1.31, a drop from the previous year's average of 1.59. The authors observed that while the staffing pattern had been rather stable over the previous 10 years, the major fluctuations over time were produced by the largest reporting jurisdictions. LaLonde concluded that the base corps of career firefighters in a combination department needs to be large enough to meet the department's day-to-day response load. Interestingly he did not examine the staffing needs of the other services offered by his or the surveyed departments.

Integrating Work Groups

According to (Hoetmer 1988, p. 435; Potter 1994, p.13; Rielage 1993, p. 33) an important factor in maintaining a healthy combination department is that, along with effective, strong leadership and firm management. The department must be structured so that the career and POC and volunteer firefighters are held to the same standards for conduct, training or discipline. As importantly, the two groups must be trained as a team.

Smyth (1994) reported that in survey work he conducted that 93% of those responding said that they had the same performance expectations for volunteer and career firefighters for suppression activities. Training expectations were the same for both groups for 78% of the respondents and 60% said that their volunteers were

required to work station-duty shifts with the career firefighters (p. 12). Departments with organized career firefighters reported that in many instances union leadership had “actively campaigned for the members to limit interaction with volunteer members” Potter (p. 10). Career firefighters can develop the belief that the presence of a POC force denies career positions or reducing the ability to earn overtime, thus potentially creating an enormous morale problem (Coleman, 1982, p. 39). In addition, those members who live in a jurisdiction different from that in which they worked were not allowed to volunteer as a firefighter in those communities (p. 40). Another factor affecting the ability of departments to encourage career and POC members to work together are the rules issued by the United States Department of Labor to implement the Fair Labor Standards Act. Career personnel, who previously volunteered their time for their department during off-duty hours are prohibited from doing so (Hoetmer 1988, p. 434). Thus, the ability for the two groups to work has a direct relationship to the cost of operating the department.

Cost

The per capita costs of operating a combination department are generally lower than those in fully paid departments (*Municipal Service Workbook*, 1977, p. III/6-3; Carter 1989, p. 19). Communities faced with increasing growth can look to a combination department to manage labor costs (Baltic, 1994, p. 73). This would be a preferred alternative to the closing or consolidation of stations in an effort to keep expenses in check (p. 70). Rapid growth from an influx of new residents and annexations of large tracts of land can create a delayed fiscal impact on local governments who incur ensuing demand for services (Rubin, 1982, p. 33).

Summary Statement

Determination of career staffing levels in a combination department is a critical decision-making process. It considers the presence of POC firefighters, their abilities and training, incident scene efficiency and safety, overall department services, functions, and cost. The first descriptive step is the examination of what combination departments in Illinois are actually doing.

PROCEDURES

Descriptive research was conducted through a literature review, personal interview, and use of a survey instrument.

Literature Review

Literature searches were initiated at the National Emergency Training Center's (NETC) Learning Resource Center in September 1999 during the author's attendance at the National Fire Academy and in October of 1999 through Internet on-line searches. Additional searches were also conducted in the local libraries of Geneva and St. Charles, Illinois and of the Founders Library at Northern Illinois University in DeKalb, Illinois. Online searches were conducted through Internet search engines to locate additional published academic material and Web sites of organizations that concentrate on issues related to local government in general and public safety in particular.

Survey Instrument

A survey instrument was developed to collect information related to the way combination fire departments in Illinois utilize their POC firefighters and how their presence affects the organization. This was mailed to all combination fire departments in

the State of Illinois as identified through a search of the database maintained by the Office of the Illinois State Fire Marshal.

The survey instrument was initially reviewed by Mr. Richard Solomon, P.E., for clarity and thoroughness. As a field test of the questions, a second draft of the survey was then mailed to the chief's of three combination departments in the six-county metropolitan region that includes Chicago. The comments that were received resulted in two additional revisions of the questions' structure and focus.

The survey was originally mailed out on November 3, 1999 to the fire chiefs of 204 combination fire departments in Illinois, based on information provided by the Office of the Illinois State Fire Marshal. To encourage a response a cover letter was included with each survey (Appendix A) which explained the focus of this project and stressed the survey's anonymity. Each cover letter and survey instrument included a stamped, self-addressed envelope for return mailing to the author. Using the same mailing list a post card was mailed on November 22, 1999 to each of the 204 departments asking that the chiefs take the time to complete and return the survey at their earliest convenience (Appendix A). Due to time constraints imposed by the EFOP, a cutoff date of January 1, 2000 was set by the author for the last returned surveys. A total of 115 (56%) completed surveys were returned. Of those, 18 (16%) came from departments that classified themselves as a fully volunteer / POC or career department. Those surveys were set aside and not included in the analysis since they did not meet the definition of a combination department that was used in this project. That left 97 surveys (48%) for analysis.

The information from the returned surveys was entered into a table format in *Microsoft Excel 97 for Windows*. This information was separated into two tables: those departments within the six-county metropolitan area (Metro) and those departments outside that area (Non-metro). As information was entered it was sorted by the size of the community and grouped by increments of 10,000 residents, with the upper limit set at 60,000.

The grouped data was then transferred to a sub-set of tables to allow an analysis of the information within each population range (Tables 1 - 21). The analysis was broken down by question and then tabulated by population range for each question or data field (Appendix B).

Personal interviews were also conducted with Mr. Richard Solomon, P.E., on the construction of the survey instrument and the interpretation of the data. An interview was also conducted with Mr. Marc Thomas of the Northeastern Illinois Planning Commission regarding the creation of the six-county metropolitan area and its significance in relation to the survey conducted for this project.

Assumptions and Limitations

Literature searches outside the Learning Resource Center proved that most publications addressing the issue of combination fire departments were limited in scope and number and many were published more than five years ago. The author concentrated on more recent information that might include data relative to training standards, labor and management relations, and the effect of recent regulatory changes. Searches into academic sources and private sector publications located articles related to the fire service, but none talked specifically about combination fire departments.

Survey results were limited by a number of factors. The first was the assumption that the surveys reached their intended subjects and that the individual answering had sufficient knowledge to provide accurate information. This was not always true. In some instances specific dollar amounts were not provided, in others the respondent when asked for a specific number, such as the number of career firefighters employed by the department would circle the field and not provide a specific number. When it was not possible to determine the intent of the respondent by comparing answers to related but separate questions, it was assumed that the information was not available or the respondent did not know the answer. In the instance of question eleven, too few departments responded to provide a large enough sample to form an opinion.

Finally, the research project was limited in time by the six-month submission criteria of the EFO program, which does not allow for expansion of research into related issues such as employee relations between two sometimes diverse groups – career and POC firefighters.

Definition of Terms

Budget. For the purposes of this study is defined as inclusive of all expenditures made by a fire department during its twelve-month fiscal year. This includes operational, personnel and capital-related costs.

Career Firefighter. Individuals who are employed by a fire department to function in the role of firefighter and maintain a work schedule of 40 to 56 hours per 7-day period. They are compensated for their efforts at a rate that is typically higher than that of a POC firefighter and are provided job-related benefits.

Combination Fire Department. Fire protection provided by a mixture of career and volunteer or POC personnel. The base staffing for a department may consist of career firefighters providing an initial response assisted by the volunteer and POC firefighters. Or, the volunteer and POC may work on shifts with the career firefighters and are a part of the initial response.

Equalized Assessed Valuation. The value of real property for the purpose of levying property taxes. In Illinois, this is considered to be approximately one-third of the market value of the property.

Emergency Medical Technician – B. Commonly referred to as EMT, a certification issued by the Illinois Department of Public Health.

Emergency Medical Technician – P. Commonly referred to as a paramedic, a certification issued by the Illinois Department of Public Health.

Firefighter II. Refers to the certification issued by the Illinois State Fire Marshal, Division of Personnel Standards and Education after the successful completion of all cognitive and practical learning objectives.

Firefighter III. Refers to the certification issued by the Illinois State Fire Marshal, Division of Personnel Standards and Education after the successful completion of all cognitive and practical learning objectives.

Hazardous Materials. Refers to the Illinois State Fire Marshal, Division of Personnel Standards and Education's four certification levels for hazardous material training: Awareness, Operations, Technician A, and Technician B. The Awareness level is part of the overall Firefighter II certification.

Paid On Call (POC). Individuals who are employed by a fire department to function in the role of a firefighter and maintain a work schedule that, on average is less than 40 hours in a 7-day period. They are compensated for their efforts at a rate that is typically lower than that of a career firefighter and with fewer, if any, benefits.

Per Capita Cost. Derived from the Latin words *per*, meaning "by," and *capita*, meaning "heads", this calculation takes the total cost of an operation and divides it by the total population served.

Six-County Metropolitan Area. Planning area that was created in 1957 by the Illinois State Legislature as a part of the creation of the Northeastern Illinois Planning Commission. (70 ILCS 1705 / 1, Pg.1300). The Commission was charged with the development and adoption of a comprehensive plan for future growth and development in the designated area. Five of the counties – Lake, McHenry, Kane, DuPage and Will, surround the sixth - Cook County, in which the city of Chicago is located.

RESULTS

Answers to Research Questions

Research Question 1. To what degree, if any, are POC and career firefighters integrated into the operations of combination departments in Illinois?

An analysis of the survey results indicates that combination departments in the six-county metropolitan planning area (metro) overwhelmingly schedule POC and career firefighters to work together. In communities of up to 39,999, the percentage of departments reporting that they schedule both groups to work together ranges from a low of 58% to a high of 80%. However, for communities in the 40,000-to-60,000 range,

less than 34% report that the POC and career firefighters work together. Combination departments outside the six-county metropolitan planning area (non-metro) are less likely to schedule their POC and career firefighters together.

The percentage of those departments protecting communities with populations of up to 39,999 residents reporting this result ranged from a low of 50% to a high of 69% (Table 1).

Table 2 shows the results to the question of using POC firefighters to count toward a minimum staffing level the department may have established. The metro departments are clearly split on this issue. Seventy percent of the reporting departments in communities with 1-to-9,999 and 30,000-to-39,999 residents report that the POC firefighters count toward a minimum staffing level while the three remaining ranges do not. Non-metro departments are somewhat more evenly divided between those that do count the POC firefighters and those that do not. Very similar results were obtained on the question of using POC firefighters to fill in for career firefighters. Table 3 indicates that the majority of non-metro departments do not use POC personnel to fill in open career shifts. With the exception of the 1-to-9,999 and 30,000-to-39,999 population groups, the metro departments, on average, follow the same procedure.

A strong majority of both metro and non-metro departments reported that while they have POC fire officers, these officers do not command career personnel (Tables 4 & 5).

Organized Labor

It is clear that as the population increases so too, does the percentage of departments that are organized under a collective bargaining agreement (Table 6). Based on this finding, Tables 1,2,3, and 5, were re-sorted into a separate sub-set to test for the effect of union presence on an organization's personnel practices. Of the 97 respondents, 61 (63%) reported that they are organized while 36 (37%) said they were not organized. An interesting difference emerges between metro and non-metro departments. Organized non-metro departments, with rare exception, do not schedule POC firefighters to work or fill in for career firefighters, nor do POC firefighters count toward a minimum staffing level. Organized metro departments, on the other hand, do schedule their POC firefighters to work with the career personnel. These departments are split about counting the POC firefighters toward a minimum staffing level. Departments in the 1-to-9,999 and 30,000-to-39,999 ranges count POC firefighters while the rest do not. This is the same pattern that appeared when looking at the data without sorting for organized agencies. Neither metro nor non-metro organized departments allow their POC officers to command the career firefighters (Tables 7, 8, 9, and 10).

Training And Function

On the subject of training, a dramatic difference appears between the metro and non-metro departments. Table 11 shows that at least 75% of the non-metro departments in the ranges of 1-to-9,999 and 10,000-to-19,999 and 100% of the departments in the 30,000-to-39,999 range do not require their POC firefighters to have the same certification as their career firefighters. Metro departments, with the exception of those in the 30,000-to-39,999 population range, require the same certifications. This finding

appears to conflict with the earlier reported results, primarily that departments in the 30,000-to-39,999 range had consistently reported that POC firefighters were scheduled to work shifts with career personnel, count toward minimum staffing and fill in open career shifts. To do this would seem to demand that the POC personnel have the same training as the career personnel. This could point to an error in the interpretation by the respondent to the way in which the question was worded. Further evidence appears in the next question concerning the subject areas in which the POC members were expected to be trained. Table 12 shows that on average, 94% of metro and non-metro departments require certification as a Firefighter II with another 53% requiring certification as an Emergency Medical Technician, followed to a lesser degree by certification in hazardous materials (42%). The two remaining certification areas, Firefighter III and Paramedic, are hardly a factor, showing very few positive responses.

The survey next looked at how POC personnel are utilized by combination departments in the delivery of emergency and non-emergency services. It was assumed that if a space were left open on the survey that the service, such as fire inspections or public education, was either not offered by the department or that POC members were not involved in that area. It is clear that, the non-metro departments involve their POC firefighters in many areas of the department's operations but with a strong emphasis on fire suppression. With the exception of fire inspections, more than half of the non-metro departments indicated that they utilized POC staff in several areas of operations (Table 13). The single largest category was fire suppression. On average non-metro departments were more likely than metro departments to utilize their POC members in all areas of the department's operations. While a significant majority of the metro

departments said that they use POC firefighters in fire suppression activities, involvement in other areas was far less common.

It should be noted that some of the returned surveys had written comments indicating that the POC firefighters on that particular department are used for salvage and overhaul only after fire suppression activities have been completed by the career personnel. Tables 11, 12, and 14 break down the results by population range and metro and non-metro departments as opposed to Table 13, which shows the results for metro and non-metro departments only.

Research Question 2. To what extent, if any, does the presence of POC firefighters reduce the need for career firefighters in combination departments in Illinois?

For a combination department to offset the need for career personnel by utilizing POC members requires that there are enough trained and active POC firefighters to handle those duties performed by a career member. To that end, the survey asked departments if the number of POC firefighters in their departments was increasing or decreasing. Both metro and non-metro departments report that the numbers were dropping but they also reported that they plan on maintaining their POC staff's with some indicating that they intended to increase the numbers (Tables 15, 16).

When asked why the number of POC firefighters were decreasing, only 19 of the metro and none of the non-metro departments answered. Of those 19 departments, six reported that they were not getting enough applicants, two said that the reduction was caused by conflict with career personnel, four said it was the lack of time to meet training requirements, four more said that it was the lack of availability for responding to calls and three others selected the "other" category but did not provide an explanation.

Both metro and non-metro departments reported that the presence of POC firefighters did not reduce the need for career firefighters. In addition, metro departments said that if they did not have POC firefighters that the local government would not provide more career personnel. This could point to budget limitations that restrict the ability of the local governments to add career personnel (Tables 17,18).

Research Question 3. What criteria, if any, are used by combination fire departments in Illinois to determine staffing levels?

More than 80% of the metro and non-metro departments said that they establish their staffing levels based primarily on the size of the population they serve. Interestingly, 54% of the non-metro departments said that regulatory rules and / or standards affect their decision while only 17% of the metro departments listed that as a reason for setting staffing levels (Table 19).

With one exception the majority of the departments reported that the number of career positions would not be increased if the department did not have POC firefighters. This would appear to echo the results of Table 17 in that the presence or lack of POC firefighters does not mean that more career position will be created (Table 18). The exception to this is that the 53% of the non-metro departments in the 1-to-9,999 range said that they would have new career positions created if they did not have POC firefighters. Meanwhile, 44% of the metro departments in the 40,000-to-60,000 range said that they, too, would have more career positions created if they did not have POC firefighters. This is the same group that reported that the POC members of the department do not work duty shifts with or for career members and that POC members do not count toward minimum staffing levels.

The survey looked at annual budgetary costs for all reporting departments. This has been translated into a per capita (average) cost per resident. The metro departments' higher operating costs are on average, $132.78, while the non-metro departments' costs averaged $80.64 (Table 20). With the exception of the 1-to-9,999 range, the standard deviation for the average per capita cost for each population range is fairly constant for the metro departments. As a general rule the interval of one standard deviation below the average and one standard deviation above the average will contain 68% of the measurements. This indicates that at $117.54, there is a wide variance in the per capita costs for the metro departments in the 1-to-9,999 range while the per capita costs for the larger communities are fairly consistent with each other. The same is true for the non-metro departments. The variance in fact is even smaller for non-metro departments than for metro departments.

At the same time the equalized assessed valuation (EAV) for the metro departments is substantially larger than that of the non-metro departments. Given that 80% of the departments indicated that population size is used as the criterion for determining staffing levels, the data was sorted to provide the number of firefighters per 1,000 residents in each reporting department. The results indicate that the ratio of career positions drops as the population increases for metro departments (Table 21). Starting with a high of 1.98 for departments in the 1-to-9,999 range the ratio drops to .88 for departments in the 40,000-to-60,000 range. The same results are seen for POC positions, with a high of 2.57 and a low of .24 firefighters per 1,000 residents. The non-metro departments have a similar downward slide (.94 to .45) until the 30,000-to-39,999 range is reached; the ratio then jumps to 1.22 (Table 21). The POC ratio follows the

metro POC pattern more closely in that it, too, starts high at 3.25 per 1,000 and then drops to .28 per 1,000.

DISCUSSION

According to Potter (1994) and Rielage (1993), an important factor in managing a healthy combination department is that the department is structured in a manner that holds both career and POC firefighters to the same standards. These include, but are not limited to, training, discipline and job performance. As important, is the manner in which the organization is administered and the perception the career and POC firefighters have of the impartiality of the administration. Both groups also should be trained as a team to accomplish the multiple tasks of the fireground. The metro departments are fairly consistent in that on average, the POC and career firefighters are scheduled to work together and are held to the same basic training expectations. These include Firefighter II, Emergency Medical Technician, and to a lesser degree, hazardous materials.

Non-metro departments on average do not schedule POC members to work with career members but do require the same certifications as the metro departments. These results mirror those obtained when Smyth (1994) looked at combination departments in Montana, Utah, Nebraska, Colorado and New Mexico and found a fairly high degree of integration between the career and POC firefighters. Training requirements can cause POC members to leave because they no longer have the time to attend the classes or continuing education sessions. Departments are faced with the expectations of maintaining specific training standards that, at the same time, can have the sum effect of reducing the POC force (Anderson, 1994; Kenny, 1996; Potter, 1994). The Geneva Fire

Department has maintained a joint training schedule and personnel policies for all members which has been supported through the annual budget by the City Council. The research clearly supports this policy and its continued use as a positive method of administering a combination department.

Relations between POC firefighters and career and union personnel can be strained, (Potter 1994; Coleman 1982) due to perceived threats to each group's position within the organization. The effect of an organized workforce on a combination department appears to be greater in the non-metro departments. On average, the POC and career firefighters do not work together; if there were POC officers they did not command career staff and POC members did not fill open career shifts or count toward minimum staffing. An important part of integrating the two groups is the services they are involved in on a regular basis. Ideally POC personnel would work in all areas but the realities of some functions, such as technical rescue skills, can limit that participation because of time constraints the POC members face in obtaining and maintaining the necessary skills. More than one-half of the non-metro departments use POC firefighters in all five identified areas in the survey while a little more than one-third of the metro departments do the same.

The Geneva Fire Department has involved its POC membership in as many areas of operations as practical, especially in areas in which an individual may have skills that few other members of the department have. The research supports this policy however. The survey however, indicates that for the metro area where Geneva is located this is an exception to the rule, which may, over time create pressure on the department administration to limit the POC involvement.

Career Staffing

It is clear from the survey results that the majority of the departments and their governing bodies use population as the primary determining factor for making staffing size decisions (Table 19). Surprisingly the effect of regulatory rules or standards while cited by some respondents was not nearly as strong a factor as might be expected. Expressed as the ratio of firefighter per 1,000 residents can provide a basis for comparison across many communities (LaLonde 1990; *Municipal Yearbook 1999*). This ratio, on average, actually drops as the community grows (Table 20). It was also clear that the presence of or lack of POC firefighters does not affect the number of career positions in the departments. That indicates that while the POC firefighters are making a significant contribution to many of the departments, it is not so great as to influence career staffing decisions. The Geneva Fire Department currently has a ratio of .91 career firefighters per 1,000 residents while the survey indicates that on average, departments in the same population range have a ratio of .87 career firefighters per 1,000 residents. Given the veritable avalanche of paper and words that have been used to quantify the issue and identify a solution, (Dunkel, 1994; Hood, 1996; Lawrence, 1991; National Fire Protection Association 1500 1992; O'Hagen 1984; Varone, 1994, 1995) it is clear that the final decision on career positions is based on the factor of the number of residents which, in turn, is directly affects the cost of providing fire protection services.

The per capita operating costs for the metro departments are significantly higher than for non-metro departments in the same population ranges. This fact is also reflected in the EAV reported by each respondent (Table 20). The EAV is the basis for determining the amount of revenue that can be collected from a property tax levied by

the local taxing body. The various EAV figures clearly reflect the differences in land values between the metro and non-metro departments as well as the ability of the local governments to afford to provide services to the residents. An organization with a limited revenue stream can be hard pressed to provide services above those deemed to be absolutely necessary. Such an organization is likely to make its decisions solely on that basis (Varone, 1994, p. 20). Revenue or the lack of it is a significant factor in the staffing equation. Local governments operating combination departments recognize the operating efficiencies such a department brings with it as opposed to fully career departments (Baltic,1994, p.70; Carter,1989, p. 20). In Illinois, the majority of the responding departments indicated that they are intent on maintaining, if not increasing the POC membership of the organization (Table 16). That confirms the viability of this type of organizational structure and the value that is attached to it by the administrators on the front line. The research supports the goal established by the city of Geneva to maintain a combination department as an effective method of managing costs.

RECOMMENDATIONS

Little significant research has been done on the combination fire department, its structure, culture, operational objectives, or ability to meet the demands of its customers, the taxpayers. Much of the literature on staffing has been based on research involving fully career departments that often have significantly higher call loads, specialized hazards or tactical situations, and staffing levels that can vary greatly from those experienced by a combination department. In Illinois, POC firefighters are integrated into the operations of a department to varying degrees to meet the needs of that particular

department. This should continue to occur within the Geneva Fire Department and, in fact, that integration should be increased whenever possible.

Even with the strong economic climate that the United States is currently enjoying, the economic advantages of a combination department over a fully career department are attractive to local government's. The ability to effectively manage personnel costs through the use of POC firefighters does not, however, come without another type of "cost." That cost is one of establishing and maintaining an organizational culture that strongly supports the career and POC structure through clear communication, clear expectations and fair application of procedures and policies.

Given that departments responding to the author's survey indicated that they use population as the primary criteria for determining career staffing, it is recommended that additional research be conducted to determine if there is a relationship between the number of firefighters per 1,000 residents and the suggested staffing patterns found in NFPA and OSHA standards and rules. The Geneva Fire Department has, for planning purposes, established a ratio of 1 career firefighter per 1,000 residents, which relies on the continued strong presence of POC firefighters for it to remain an effective force. While the ratio takes the staffing recommendations listed elsewhere in this project into account, there is not necessarily a positive connection between the two. Research should also be conducted that examines the "average" training and experience of a POC firefighter and that of a career firefighter to determine if a reliable, fact-based ratio of POC to career firefighter could be created and used as a management tool for setting staffing levels. This would require a method that quantifies the effectiveness of a given POC firefighter in comparison with a career firefighter. The difficult aspect with this

recommendation would be the generalizations or assumptions about training, experience and availability that might be required to create a scale. The goal would be to develop a credible standard that is accepted and used by the fire service and local governments in the United States.

To those who wish to replicate the survey results, it is suggested that the survey be confidential instead or anonymous. This would allow a way for the researcher to contact responding agencies and question them about some of their answers and perhaps eliminate sometimes contradictory information. A follow-up question that should have been included in the survey is whether the responding department has automatic aid agreements established with its neighbors and if this affects staffing needs. Many departments have taken advantage of this procedure which may be driven by the need to increase staffing at the scene of an incident and hold the line on personnel costs.

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Appendix A

Survey Instrument Materials

October 28, 1999

Dear

I am currently enrolled in the Executive Fire Officer Program at the National Fire Academy. I just completed the first-year course, *Executive Development.* Part of the requirement for entering the second year of the program is the successful completion of an applied research project, which must examine a topic that is of importance to my department. My city, Geneva, is growing rapidly and so, too, are the demands on the department. How we choose meet those demands in the future with a combination department is the subject I have chosen to evaluate.

To facilitate this work I have developed a survey for combination fire departments in Illinois. I ask that you take the time out of your busy day to anonymously answer the questions and return the completed form in the enclosed stamped, self-addressed envelope. For the purposes of this project Paid on Call or Paid on Premise firefighters are defined as members of your department who are compensated for activities related to the operations of the department but are not full time employees.

Please feel free to write any additional comments you may have on the questionnaire. You may also call me at (630) 232-2530.

Thank You

Stephen Olson
Fire Chief

COMBINATION FIRE DEPARTMENT SURVEY

Population: _____ Equalized Assessed Valuation: _____

1999 Budget: Capital: _____ Operations:_____ EMS: _____ Total: _____

Personnel: Career Paid-on-Call Contractual

Minimum staffing level (if applicable): _____

Average Daily Staffing:

	Weekdays	Weeknights	Weekend Day	Weekend Night
Career				
Paid On Call				
Contractual				

How many alarms has your department responded to in the last three years?

(Please use your data from Illinois Professional Firefighters Assoc. "working & wage conditions survey" if applicable)

	EMS	FIRE	OTHER	TOTAL
1996				
1997				
1998				

PAID-ON-CALL FIREFIGHTERS (POC)

1. Do your POC Firefighters work duty shifts with career personnel? YES NO

2. Do POC Firefighters count towards minimum staffing levels? YES NO

3. Can POC Firefighters fill in for career firefighters? YES NO

4. Is the number of people annually seeking POC positions within your department increasing or decreasing in numbers? ___ Increasing ___ Decreasing

5. Does your department require the same certification levels of the POC as the career firefighters? YES NO

6. Which if any area(s) below are required for POC firefighters?
   ___ Firefighter II ___ Firefighter III ___ EMT - B
   ___ EMT – P ___ Hazardous Materials

7. Does your department have POC officers? YES NO

8. Do they command career firefighters? YES NO

9. How are the POC personnel used in your department?
   ___ Suppression ___ EMS ___ Inspections
   ___ Special Teams ___ Public Education Programs ___ All areas of OP's

___ Other ___ ___

10. Does your department plan on maintaining, increasing or reducing active POC firefighters in the coming years? YES NO

11. If you answered "NO" to the above question, what factors would force the elimination of POC firefighters from your department?
___ Lack of applicants
___ Conflicts between career and POC firefighters
___ Inability of POC Firefighters to obtain or maintain certification levels
___ Not available during key times of the day or week
___ Other (please specify)

CAREER FIREFIGHTERS

12. Are your career firefighters organized? YES NO

13. Has your department established a maximum number of career firefighter positions it will create in the future? YES NO

14. If "YES", how many? _____

15. How did your department demonstrate a need for additional career positions?

_____

_____

16. Was this decision (referring to # 15):
___ Based on anticipated population growth in your jurisdiction.
___ A result of a collective bargaining agreement.
___ Influenced by the presence of active POC firefighters in your department.
___ Based on regulatory standards such as the OSHA Respiratory Standard (2 inand2out).

17. Has the presence or level of integration of POC firefighters into the operations of your department reduced the need for additional career positions? YES NO

18. If you did not have POC personnel, would your government provide more career personnel? YES NO

ADDITIONAL COMMENTS: _____

_____

_____

_____

Follow-up Postcard Message Mailed to Combination Fire Departments.

A few days ago you received a Combination Fire Department Survey form. If you have completed and returned the survey, thank you. If not, won't you please take the time to complete it and mail it back? This is a part of a research project that will likely affect the delivery of fire and rescue services in the City of Geneva in the future. If you have misplaced the form call 630-232-2530 and another will be sent to you.

Thank You

Steve Olson

Appendix B

Tables of Survey Results

Table 1

Do POC Firefighters Work Duty-Shifts With Career Firefighters?

	Yes	No
	Metro Fire Department	
1 – 9,999	70.0%	30.0%
10,000 – 19,999	58.3%	41.7%
20,000 – 29,999	65.0%	35.0%
30,000 – 39,999	80.0%	20.0%
40,000 – 60,000	33.3%	66.7%
	Non-Metro Fire Department	
1 – 9,999	43.8%	56.3%
10,000 – 19,999	30.8%	69.2%
20,000 – 29,999	40.0%	60.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 2

Are POC Firefighters Counted in Minimum Staffing Levels?

	Yes	No
	Metro Fire Department	
1 – 9,999	70.0%	30.0%
10,000 – 19,999	25.0%	75.0%
20,000 – 29,999	35.0%	65.0%
30,000 – 39,999	70.0%	30.0%
40,000 – 60,000	11.1%	88.9%
	Non-Metro Fire Department	
1 – 9,999	56.3%	43.8%
10,000 – 19,999	30.8%	69.2%
20,000 – 29,999	60.0%	40.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 3

Can POC Firefighters Fill In for Career Firefighters?

	Yes	No
	Metro Fire Department	
1 – 9,999	70.0%	30.0%
10,000 – 19,999	33.7%	66.3%
20,000 – 29,999	35.0%	65.0%
30,000 – 39,999	60.0%	40.0%
40,000 – 60,000	22.2%	77.8%
	Non-Metro Fire Department	
1 – 9,999	56.3%	43.7%
10,000 – 19,999	30.8%	69.2%
20,000 – 29,999	40.0%	60.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 4

Does the Department Have POC Officers?

	Yes	No
Metro Fire Department		
1 – 9,999	50.0%	50.0%
10,000 – 19,999	66.7%	33.3%
20,000 – 29,999	60.0%	40.0%
30,000 – 39,999	40.0%	60.0%
40,000 – 60,000	66.7%	33.3%
Non-Metro Fire Department		
1 – 9,999	50.0%	50.0%
10,000 – 19,999	61.5%	38.5%
20,000 – 29,999	80.0%	20.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey. The total of the percentages in each row is the total response to the question for each population range.

Table 5

Do the POC Officers Command Career Firefighters?

	Yes	No
	Metro Fire Department	
1 – 9,999	30.0%	70.0%
10,000 – 19,999	33.3%	66.7%
20,000 – 29,999	25.0%	75.0%
30,000 – 39,999	20.0%	80.0%
40,000 – 60,000	22.2%	77.8%
	Non-Metro Fire Department	
1 – 9,999	31.3%	68.8%
10,000 – 19,999	38.5%	61.57%
20,000 – 29,999	20.0%	80.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 6

Are the Career Firefighters in the Department Organized Under a Collective Bargaining Agreement?

	Yes	No
	Metro Fire Department	
1 – 9,999	30.0%	70.0%
10,000 – 19,999	50.0%	50.0%
20,000 – 29,999	60.0%	40.0%
30,000 – 39,999	70.0%	30.0%
40,000 – 60,000	100.0%	0.0%
	Non-Metro Fire Department	
1 – 9,999	37.5%	62.5%
10,000 – 19,999	61.5%	38.5%
20,000 – 29,999	40.0%	60.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 7

Do POC Firefighters Work Duty-Shifts With Career Personnel?

	Union		Non-Union	
	Yes	No	Yes	No
	Metro Fire Department			
0 – 9,999	20.0%	10.0%	50.0%	20.0%
10,000 – 19,999	33.3%	16.7%	25.0%	25.0%
20,000 – 29,999	30.0%	30.0%	35.0%	5.0%
30,000 – 39,999	45.5%	18.2%	27.3%	0.0%
40,000 – 60,000	33.3%	66.7%	0.0%	0.0%
	Non-Metro Fire Department			
0 – 9,999	12.5%	25.0%	31.3%	31.3%
10,000 – 19,999	11.8%	35.3%	11.8%	17.6%
20,000 – 29,999	0.0%	40.0%	40.0%	20.0%
30,000 – 39,999	33.3%	33.3%	33.3%	0.0%

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey. The total of the percentages in each row is the total response to the question for each population range.

Table 8

Are POC Firefighters Counted in Minimum Staffing Levels?

	Union		Non-Union	
	Yes	No	Yes	No
	Metro Fire Department			
0 – 9,999	20.0%	10.0%	50.0%	20.0%
10,000 – 19,999	16.7%	33.3%	8.3%	41.7%
20,000 – 29,999	20.0%	40.0%	15.0%	25.0%
30,000 – 39,999	40.0%	30.0%	30.0%	0.0%
40,000 – 60,000	11.13%	88.9%	0.0%	0.0%
	Non-Metro Fire Department			
0 – 9,999	12.5%	25.0%	31.3%	31.3%
10,000 – 19,999	11.8%	35.3%	11.8%	17.6%
20,000 – 29,999	0.0%	40.0	40.0%	20.0%
30,000 – 39,999	33.3%	33.3%	33.3%	0.0%
40,000 – 60,000	-	-	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey. The total of the percentages in each row is the total response to the question for each population range.

Table 9

Can POC Firefighters Fill in for Career Firefighters?

	Union		Non-Union	
	Yes	No	Yes	No
	Metro Fire Department			
0 – 9,999	20.0%	10.0%	50.0%	20.0%
10,000 – 19,999	8.3%	41.7%	25.0%	25.0%
20,000 – 29,999	10.0%	50.0%	25.0%	15.0%
30,000 – 39,999	40.0%	30.0%	20.0%	10.0%
40,000 – 60,000	22.2%	77.8%	0.0%	0.0%
	Non-Metro Fire Department			
0 – 9,999	25.5%	12.5%	31.3%	31.3%
10,000 – 19,999	7.7%	53.8%	23.1%	15.4%
20,000 – 29,999	0.0%	40.0%	40.0%	20.0%
30,000 – 39,000	33.3%	33.3%	33.3%	0.0%
40,000 – 60,000	-	-	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey. The total of the percentages in each row is the total response to the question for each population range.

Table 10

Do the POC Officers Command Career Firefighters?

	Union		Non-Union	
	Yes	No	Yes	No
	Metro Fire Department			
0 – 9,999	10.0%	20.0%	20.0%	30.0%
10,000 – 19,999	8.3%	41.7%	25.0%	25.0%
20,000 – 29,999	10.0%	50.0%	15.0%	25.0%
30,000 – 39,999	0.0%	70.0%	20.0%	10.0%
40,000 – 60,000	22.2%	77.8%	0.0%	0.0%
	Non-Metro Fire Department			
0 – 9,999	6.3%	31.3%	25.0%	37.5%
10,000 – 19,999	15.4%	46.2%	23.1%	15.4%
20,000 – 29,999	0.0%	40.0%	20.0%	40.0%
30,000 – 39,999	0.0 5	50.0%	50.0%	0.0%
40,000 – 60,000	-	-	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey. The total of the percentages in each row is the total response to the question for each population range.

Table 11

Are POC Firefighters Required to Have the Same Certification as Career Firefighters?

	Yes	No
Metro Fire Department		
1 – 9,999	90.0%	10.0%
10,000 – 19,999	58.3%	41.7%
20,000 – 29,999	55.0%	45.0%
30,000 – 39,999	40.0%	60.0%
40,000 – 60,000	66.7%	33.3%
Non-Metro Fire Department		
1 – 9,999	37.5%	62.5%
10,000 – 19,999	38.5%	61.5%
20,000 – 29,999	80.0%	20.0%
30,000 – 39,999	0.0%	100.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 12

What Areas of Certification Are Required of POC Firefighters?

	FFII	FF III	EMT-P	EMT-B	HM
Metro Fire Department					
1 - 9,999	90.0%	20.0%	20.0%	60.0%	40.0%
10,000 – 19,999	90.9%	9.1%	9.1%	18.2%	18.2%
20,000 – 29,999	100.0%	10.5%	0.0%	68.4%	47.4%
30,000 – 39,999	80.0%	0.0%	0.0%	40.0%	20.0%
40,000 – 60,000	100.0%	0.0%	0.0%	55.6%	55.6%
Non-Metro Fire Department					
1 - 9,999	80.0%	6.7%	0.0%	33.3%	53.3%
10,000 - 19,999	100.0%	0.0%	0.0%	0.0%	40.0%
20,000 - 29,999	100.0%	0.0%	0.0%	40.0%	0.0%
30,000 – 39,999	100.0%	0.0%	0.0%	100.0%	0.0%
40,000 - 60,000	-	-	-	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey. FFII = Firefighter II, FF III = Firefighter III, EMT-P – Emergency Medical Technician – Paramedic, EMT-B = Emergency Medical Technician – Level B, HM = hazardous materials operations level.

Table 13

Duties Performed by POC Firefighters in Combination Departments.

	Supp.	EMS	Insp.	Sp. Team	Pub Ed.	All
Metro	63%	46%	8%	20%	38%	38%
Non-Metro	78%	51%	39%	56%	53%	52%

Note . Supp. = suppression, EMS = emergency medical service, Insp. = fire inspections, Sp. Team = special teams, Pub Ed. = public education programs, All = all service areas of the department. N = 97.

Table 14

In Which Areas of the Department Are POC Firefighters Used?

	Suppres.	EMS	Insp.	Sp. Team	Pub Ed.	All
			Metro Fire Department			
1 - 9,999	50.0%	40.0%	0.0%	20.0%	30.0%	40.0%
10,000 – 19,999	50.0%	41.7%	8.3%	8.3%	33.3%	50.0%
20,000 – 29,999	45.0%	25.0%	0.0%	10.0%	20.0%	50.0%
30,000 – 39,999	80.0%	80.0%	20.0%	50.0%	60.0%	40.0%
40,000 – 60,000	88.9%	44.4%	11.1%	11.1%	44.4%	11.1%
			Non-Metro Fire Department			
1 - 9,999	62.5%	31.3%	6.3%	31.3%	31.3%	50.0%
10,000 – 19,999	100.0%	61.5%	38.0%	61.5%	69.2%	46.2%
20,000 – 29,999	100.0%	60.0%	60.0%	80.0%	60.0%	60.0%
30,000 – 39,999	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
40,000 – 60,000	-	-	-	-	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey. Respondents could select more than one category. Those selecting “ALL” were not included in the first five categories.

Table 15

Are the Number of POC Firefighters Increasing or Decreasing?

	Increasing	Decreasing
	Metro Fire Department	
1 – 9,999	50.0%	50.0%
10,000 – 19,999	16.7%	83.3%
20,000 – 29,999	40.0%	60.0%
30,000 – 39,999	30.0%	70.0%
40,000 – 60,000	22.2%	77.8%
	Non-Metro Fire Department	
1 – 9,999	25.0%	75.0%
10,000 – 19,999	23.1%	76.9%
20,000 – 29,999	40.0%	60.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 16

Does Your Department Plan on Maintaining, Increasing, or Reducing the Number of POC Firefighters?

	Maintaining	Increasing	Reducing
	Metro Fire Department		
1 - 9,999	70.0%	10.0%	20.0%
10,000 – 19,999	66.7%	66.7%	25.0%
20,000 – 29,999	60.0%	30.0%	10.0%
30,000 – 39,999	70.0%	30.0%	0.0%
40,000 – 60,000	25.0%	33.3%	33.3%
	Non-Metro Fire Department		
1 - 9,999	75.0%	75.0%	25.0%
10,000 – 19,999	69.2%	46.2%	0.0%
20,000 – 29,999	50.0%	50.0%	0.0%
30,000 – 39,999	50.0%	50.0%	0.0%
30,000 – 39,999	-	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 17

Has the Presence or Level of Integration of POC Firefighters Reduced the Need for More Career Firefighters?

	Yes	No
Metro Fire Department		
1 – 9,999	20.0%	80.0%
10,000 – 19,999	16.7%	83.3%
20,000 – 29,999	31.6%	68.4%
30,000 – 39,999	20.0%	80.0%
40,000 – 60,000	11.1%	88.9%
Non-Metro Fire Department		
1 – 9,999	31.3%	68.8%
10,000 – 19,999	7.7%	92.3%
20,000 – 29,999	20.0%	80.0%
30,000 – 39,999	0.0%	100.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 18

Would More Career Firefighters be Hired if the Department Did Not Have POC Firefighters?

	Yes	No
Metro Fire Department		
1 – 9,999	40.0%	60.0%
10,000 – 19,999	16.7%	83.3%
20,000 – 29,999	31.6%	68.4%
30,000 – 39,999	11.1%	88.9%
40,000 – 60,000	44.4%	55.6%
Non-Metro Fire Department		
1 – 9,999	53.3%	46.7%
10,000 – 19,999	23.1%	69.2%
20,000 – 29,999	40.0%	60.0%
30,000 – 39,999	50.0%	50.0%
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 19

How Do Department's Reach Staffing Level Decisions for Career Positions?

	Pop.	CBA	POC'S	Stnds.	Other
Metro Fire Department					
1 - 9,999	100.0%	0.0%	0.0%	20.0%	0.0%
10,000 - 19,999	85.7%	0.0%	14.3%	28.6%	0.0%
20,000 - 29,999	85.7%	7.1%	14.3%	21.4%	7.1%
30,000 - 39,999	80.0%	10.0%	30.0%	0.0%	0.0%
40,000 - 60,000	85.7%	14.3%	0.0%	14.3%	0.0%
Non-Metro Fire Department					
1 - 9,999	88.9%	0.0%	11.1%	22.2%	0.0%
10,000 - 19,999	85.7%	0.0%	0.0%	42.9%	0.0%
20,000 - 29,999	100.0%	0.0%	0.0%	21.4%	0.0%
30,000 – 39,999	50.0%	0.0%	0.0%	100.0%	0.0%
40,000 - 60,999	-	-	-	-	-

Note . Respondents could select more than one item. Pop. = Population, CBA = Staffing established in a collective bargaining agreement, POC'S = based on presence or level of integration of POC firefighters in department operations, Stnds. = external standards or rules e.g. Respiratory Protection Standard, Other = not listed by survey. No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 20

Average E.A.V., Budget, Cost Per Capita, and Standard Deviation for Per Capita Costs.

	E.A.V.	Budget	Per Capita	Std. Dev.
Metro Fire Department				
1 – 9,999	$184,727,056	$1,313,698	$199.03	$117.54
10,000 – 19,999	$381,488,324	$1,691,991	$119.89	$55.73
20,000 – 29,999	$440,493,920	$2,840,026	$115.28	$56.29
30,000 – 39,999	$574,002,215	$4,029,488	$118.97	$48.70
40,000 – 60,000	$968,651,871	$5,127,648	$110.73	$50.11
Non-Metro Fire Department				
1 – 9,999	$73,380,927	$374,507	$89.45	$63.13
10,000 – 19,999	$106,734,025	$762,044	$58.12	$25.58
20,000 – 29,999	$136,092,420	$1,307,653	$56.97	$28.88
30,000 – 39,999	$492,122,485	$4,500,000	$118.00	$8.00
40,000 – 60,000	-	-	-	-

Note . E.A.V. = total assessed value of real property within a political boundary for the purpose of establishing a tax levy for a unit of government, Budget = combination of capital, operational and personnel costs, Per Capita = average cost per resident. No department in the non-metro area with a population greater than 40,000 responded to the survey.

Table 21

Average Number of Career and POC Firefighters per 1,000 Residents.

	Career	POC
	Metro Fire Department	
1 – 9,999	1.98	2.57
10,000 – 19,999	1.06	1.40
20,000 – 29,999	0.87	1.05
30,000 – 39,999	0.99	0.63
40,000 – 60,000	0.88	0.24
	Non-Metro Fire Department	
1 – 9,999	0.94	3.25
10,000 – 19,999	0.76	1.49
20,000 – 29,999	0.45	1.74
30,000 – 39,999	1.22	0.28
40,000 – 60,000	-	-

Note . No department in the non-metro area with a population greater than 40,000 responded to the survey.