Burned: an Analysis of the Shifts in the Firefighting Profession 1970-Present and the Resulting Impa

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Marking the beginning of the fire fighting profession is a complicated task. The Roman Legion was tasked with patrolling the streets of Rome at night to spot and attack fires. However, with the fall of Rome fire vigils fell out of favor for the next 14 centuries. Fire brigades experienced a resurgence following the Great London Fire of 1666. Following the Great Fire private fire insurance companies formed fire brigades manned by part-time pump operators and volunteers. When the fire alarms would sound all of the engine companies would respond but were only obligated to fight the fire if the burning building had a plaque of their employer (the private insurance companies) indicating that they had bought fire insurance from that specific company. This system eventually evolved into a system of mutual aid in London titled the London Fire Engine Establishment under the direction of firefighting pioneer James Braidwood in 1833. Braidwood would die in the Tooley Street fire of 1861 fighting to contain what very nearly became the second great fire of London. Following the Tooley Street fire, London reorganized the Engine Establishment into the Metropolitan Fire Brigade in 1866 under Eyre Massey Shaw.¹ While any of the above mentioned groups could be (and have been) counted as the birth of the firefighting profession, American histories of firefighting usually mark the start of the fire service as either the creation of the first engine company in Boston in 1679 or Benjamin Franklin’s establishment of the First Volunteer Company in Philadelphia in 1736.² However, despite these differences in opinion on

² Dennis Smith. “History of Firefighting in America: 300 Years of Courage.” (Dial press, New York: 1978) 8,12, 21
the origins of the modern fire service, the opinions on the evolutionary arc from the early to modern fire departments are much less diverse.

THESIS

Since the early 1800's firefighting has moved through a significant series of changes in technology, manning and professionalization. The first page of the current best selling firefighters' handbook draws attention to the evolution of the service noting “what is important to recognize is that the task of being a firefighter is an old yet constantly evolving occupation” and that “the fire service today is a direct result of an evolution in the methodology, technology and responsibilities of a service that has been vital to communities since the beginning of civilization.”3 This paper will show how those evolutions of the fire service at the national level mirrored, and sometimes affected changes at the local level. To show the relationship between the changes at the national and local level this paper will use a variety of secondary sources that catalog the history of the fire service at the macro level and compare those sources with the collection of oral histories that comprise the second part of this project to provide evidence of the changes at the micro level. This comparison of evolutions will focus on shifts in the technology, manning, and increases in professionalization experienced. The comparison will proceed by first giving the available historical information about changes at the national level and in larger fire departments and then continue by showing the ways those changes did

or did not manifest at the local, smaller level. This comparison will demonstrate two things. First, the comparison demonstrates how both the national and local levels of the firefighting service have been slow to change in all three areas of technology, manning and professionalization. Secondly, this comparison will demonstrate while the national shifts in the profession coincided with the local level, case study shifts the relationship between the national and local level remains the main not causal.

TECHNOLOGY

Firefighting as a profession remains notoriously slow to adapt to new technology. Even today, forty-eight major US cities have yet to adopt the national standard hydrant thread sizes one hundred years after the Great Baltimore Conflagration of 1904 had shown the danger of non-standard hydrant threads. Namely when mutual aid companies from outside cities are called, they are unable to connect to the nonstandard hydrants. This case of nonstandard hydrants represents a common saying in firefighting that the profession represents “200 years of history unimpeded by progress”. This slowness to adapt to new technologies can be seen from some of the earliest days of the fire service. Despite the invention of steam engine pumps by John Braithwaite in 1830 and workable

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5 Dennis Smith. 109-111.
6 Bruce Hensler. “Crucible of Fire”
models of steam engine pumps being unveiled in the United States in 1840, volunteer fire departments refused to use them because it would have decreased the number of men needed on the fire scene. Not only would this reduction have meant fewer men needed on the scene, it would have decreased their opportunities for a “good time”. To many early volunteers, this “goodtime” was the number one reason to be a volunteer, not a calling to help society. However, this goodtime often turned into rowdy brawls, most notably the volunteer firefighter riot in Cincinnati in 1851. These outbreaks would lead cities to adopt career fire department models in the 1860’s. Moreover, these career departments began the of the use of steam fire engines which accounted for the loss in manning but it wasn’t until the turn of the century that steam engine pumps had achieved widespread use.

In the history of the modern fire department, there are even more examples of tradition, culture and budgetary concerns driving the adoption of new technology without considerations of effectiveness or increased safety for citizens and firefighters at both the national and local level.

A prime example of tradition and culture overriding safety concerns for the adoption of new technology was the introduction of Nomex hoods and turnout gear. Commercially available in 1967, Nomex is a fiber that is thermally resistant and is most notably used in Nomex hoods worn under helmets to help protect the ears, face and neck. Nomex is also commonly used in turnout coats and pants. The

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8 Dennis Smith 57-59
9 Dennis Smith 57-59.
invention and availability of Nomex would seem to be a tremendous advance in firefighting technology. However, departments railed against the use of Nomex across the country.

The first complaint lodged against the use of Nomex by departments was that traditionally firefighters had used their ears to discern when a fire was getting too hot to safely continue fighting the fire from the inside. Once the delicate skin on their ears began to burn firefighters knew the fire was getting dangerous and that it was time to leave. The new Nomex hoods protected their ears from the fire and so the firefighters claimed the new hoods were unsafe because it insulated their ears from the heat and therefore they couldn’t tell how hot the fires were. In this case, tradition trumped science. Instead of increasing training and awareness to differentiate the severity of the fire based on other visual factors, firefighters stuck to the traditional method of telling when a fire was getting dangerously hot by repeatedly burning their ears.

Nomex was also resisted in turnout coats and pants. Traditionally turnout gear had consisted of a canvas coat that reached the mid-thigh and rubber “three-quarter boots” that reached between mid-thigh and the groin. This traditional turnout gear left a significant gap in coverage between the tops of the boots and the coat. Much like the arguments against Nomex, fire hoods tradition and budgetary concerns overrode the benefits in safety that Nomex provided. As a result of these arguments against Nomex, Nomex coats only reached widespread use in the late 1980’s and early 1990’s. Large cities such as Boston did not transition from rubber

11 Bruce Henssler 28-29.
coats and three-quarter boots until 1995.\textsuperscript{12,13} (It is significant to note that in 2000 Boston rescinded the policy that had made full turnout gear mandatory and allowed firefighters to use any one of four more traditional options if they chose, which shows the strength that appeals to tradition have in the fire service)

At the local level, the resistance to Nomex hoods and turnout gear is reflected in the collection of oral histories. Upon the introduction of Nomex hoods into Cuyahoga Falls in the late 1980's, the “old school guys” complained that the hoods were too cumbersome to put on and that they “were not a racecar driver why do I need this hood”. These resistant older firefighters had used the ear method for years to tell the heat of fires and were proud of the burn scars on their ears and neck from staying in the fires as long as possible.\textsuperscript{14}

During the 1980’s, the then union president of Cuyahoga Falls had a friend in a neighboring department badly burned when he survived a flashover. Because of the gap in coverage between the rubber coat and the three-quarter boots that constituted traditional turnout gear the firefighter sustained third degree burns from just below his groin through his entire torso. The resulting medical bills for his care and recovery the city topped 60,000 dollars. As a result of this injury, the Union President of Cuyahoga Falls wrote to the fire chief asking if they could get new Nomex turnout gear because of the increased safety that the gear provided. The chief wrote back “If you were concerned about safety you should have been a

\textsuperscript{13} http://www.usfa.fema.gov/downloads/pdf/tr_02dm.pdf
\textsuperscript{14} Bruce Hensler. 73
\textsuperscript{14} Steve Durkit. Interview by Kallie Durkit.
mailman. P.S. I don’t need a pen pal so don’t write me anymore letters.” Safety concerns were again trumped by tradition. The failure of the safety argument also demonstrates the power that chiefs have to make decisions about the equipment that the department uses. Because there is little oversight and very little regulation on equipment, chiefs often have the final decisions on what equipment the department will use. However in the case of Nomex hoods in Cuyahoga Falls, a budgetary argument eventually trumped the “toughguy tradition” based decision of the chief. When the Union President confronted the mayor of Cuyahoga Falls with the information that buying the department full Nomex turnout gear would be less expensive than the city paying the medical bills on another flashover accident the city was finally persuaded to buy turnout gear. This decision making process of the city that is based in budgetary concerns and not safety concerns is directly consistent with the trends seen at the national level.

The slow introduction of Self Contained Breathing Units (SCBA) and the resistance of their use is a further example of resistance to new technology seen at both the national and local level.

The modern variations of the SCBA units have roots in the fire helmets of the 1800’s and the gasmasks of the early 20th century. The canister style gas mask was used by fire departments through the 1970’s. It wasn’t until 1971 that the NFPA published NFPA 19B, which prohibited filter-canister styles of breathing apparatus.

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15 Steve Durkit. Interview by Kallie Durkit.
and insisted on SCBA. This technological shift from canister to SCBA was made surprisingly quickly for the fire service; most departments were using SCBA by the late 1970’s and early 1980’s. The quick adoption of SCBA and the override of tradition were driven by an outside piece of technology, plastics. Plastics burn at much hotter temperatures than wood and also emit many more toxins than wood when they are burned. Furthermore, the fires in the 1970’s and 1980’s were simply becoming too hot to enter without SCBA. Hence, in order to maintain the traditionally aggressive approach of entering the buildings SCBA units were necessary. The tradition of aggressive firefighting techniques trumped the tradition of not using breathing apparatus in fires and departments made the transition to using SCBA units quickly.

SCBA was actually quickly adopted at the local level in Cuyahoga Falls. The switch from filtered masks to SCBA was completed in 1971; the same year NFPA 19B was published. Firefighters hired in the 1970’s remember older firefighters on the department retiring with lung cancer from breathing in the smoke and fumes for so many years. However, the firefighters also remember that the shift to SCBA was still a matter of tradition for many of the men on the department. One firefighter noted that when they would arrive for calls, neighboring fire departments would call them sissies for using the SCBA units. Despite these negative comments the SCBA units became ubiquitous on the department within months of their arrival.

18 Steve Durkit. Interview by Kallie Durkit.
Another example of the tension between safety and tradition in firefighting technology is the example of helmets. Since the earliest days of American firefighting, departments have used leather helmets with a short front brim and a long back brim. This traditional style has been adapted and modified over the years but there are still a significant number of modern fire departments that proudly declare “leather forever”. These modern incarnations of the traditional leather helmets provide the same impact protection that the helmets at the turn of the century did. Leather helmets also burn in fires and have to be replaced in order to maintain any level of protection. Another problem of leather helmets is that when wet leather helmets are conductors of electricity and pose an extreme hazard should a firefighter come into contact with a live wire.

Nationally, there is no standardization of helmets. It is completely up to the discretion of the department, and in some cases up to the individual, what helmet they choose to wear. In the local case study, Cuyahoga Falls began with aluminum helmets that provided no impact or conduction protection and were only useful to keep water from running down the back of your neck. The departments then moved to polycarbonate helmets, similar to what fighter pilots wear. These helmets however had full-face shields that when worn on the fire scenes in the winter were instantly fogged by the firefighters breathing in the cold air. Now the department is moving back towards the traditional leather helmet. This constant revision and

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19 Bruce Hensler. 97
21 Steve Durkit. Interview by Kallie Durkit.
tension between traditional and new technology at the local level is identical to what is seen across the nation.

Another significant shift in the technology used in firefighting has been the evolution of fire engines. The modern fire service has always used self-propelled fire engines, the last of the horse drawn engines were phased out in the 1930's. However, the trucks of the 1940's through the 1960's are very different from the trucks used today. The most significant change to the modern fire engine was the introduction of computers to run the pumps and ladders. Whereas traditional fire engines and pumpers had run on ball valves, new fire trucks operate their pumps using computers. Computer systems now also run everything from tower ladders, to stability control, to seat monitors and SCBA refilling. The trend overtime has been for fire trucks to be increasingly multipurpose. Trucks have moved away from just being ladder trucks, pumpers or tankers and towards combing multiple functions into one.22

This trend towards the more high tech and multipurpose has also been seen at the local level of the Cuyahoga Falls case study. Trucks in the 1970’s required knowledge much like that of a truck driver in order to keep them up and running. Clutches on the older trucks were double pump clutches while the pump and valves to run the water flow were all mechanical. The benefit to the mechanical systems is that when something would break the firefighters had a high level of mechanical

aptitude and would be able to fix them on the fly. In the opinion of a 16 year maintenance manager and 30 year firefighter for the department:

“I do not think younger people don’t have the mechanical aptitude that a lot of us older guys did. The years before I took maintenance over, I would fix stuff, when you worked for Capt. Harrington you would say hey this valve is not working right, and he would say yeah well fix it and you fixed it. You know, you do not have that today, and I think it has to do with number one people do not want the responsibility and two they do not want to get yelled at, and if they break it even worse, and a lot of the electronics they have today, it is not like it used to be, I still say this today with all these electronics you push a button and a valve opens to get water and all this, just keep that back at the factory, I tell you what, you give me the old ball valve and if I need water and I pulled this lever up and I don’t get water, I know what’s wrong with it there is something wrong with that out and there are 4 screws I take that off take that valve out put a new one in and we are in business where as with today’s electronics, zzzzzz (whirring noise of electronics) he says this works in warm gear and all this stuff, and when that breaks you are in trouble.”

Trucks used by departments today are much more likely to have equipment failures because of the increased moving parts and computer systems. These increased equipment failures are especially dangerous because the computer systems are not able to be fixed by the firefighters on the scene. This inability to fix the trucks quickly means that equipment may fail at critical moments and be out of service for a week or more, which could cripple a department.

The evolution fire trucks is an example where the changing knowledge base of the average fire fighter and the push towards technology have coincided and

created fire trucks that are not always the most fail safe. In this case, at both the national and the local level the convenience of being able to push a button to complete what was previously a labor-intensive task has trumped safety.

The resistance to adopting new technologies comes in part from the autonomy that departments have. While police officers have to coordinate with state and federal law enforcement, firefighters do not have national level fire fighting units to coordinate with. Local fire departments at most have to coordinate with other local departments on a call-by-call basis. Therefore, unlike law enforcement agencies, which have developed national standards to facilitate smooth operations between the levels of policing, fire departments have not developed the same standardization. Because there is no gradation of fire departments on the local, state and national levels, there are also no policies that are standard nationwide. Therefore, fire departments operate on an astoundingly autonomous system and are usually only held accountable to the city government.

The closest that the fire service comes to standardization are the policies and codes issued by the National Fire Protection Association (NFPA). The NFPA’s codes and policies act as guidelines of the best practices regarding technology and manning. Yet these NFPA’s communications are not laws, only guidelines. The decision about whether or not to follow the NFPA guidelines usually comes down to negotiations between the city government, the union president and the fire chief during contract negotiations. The real power of the decision making often boils down to what the city finance director will and will not fund for the department.

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Fire departments for the last 200 years have pursued policies that have been more consistent with their traditions than concerns for safety when it comes to the adoption of new technologies. While departments are seemingly free to act autonomously in regards to decisions about when and what technology the department will use, departments have not always had the same autonomy to make decisions about manning.

**MANNING**

For there to be a fire service you have to have people who are willing to risk their lives to protect the property and lives of others. The number of men that it takes to protect those lives and property has changed over time. These shifts have been reflected in the professionalization of the force from volunteer to career departments and the reasons for this shift in professionalization will be discussed later in this paper. However, the changes in the number of men on the departments represent a significant shift in the profession over time. Another shift in the manning situation of fire departments is what types of people are eligible to serve as firemen today as opposed to the early days of firefighting. For the overwhelming majority of its existence firemen, specifically young white men, have manned the fire service. Today the fire service is comprised by a majority of white men, but there have been significant shifts in who serves as a fireman in the modern fire service.
One of the earliest shifts in manning was the reduction of numbers of men needed in departments when departments transitioned from volunteer to career departments. Early hand pumper fire engines, used by the volunteers, needed up to 100 men to keep the water flowing over the course of a fire. The introduction of the steam engine allowed there to be significant reductions in the number of men needed on the fire scene and therefore the emerging professional companies that made use of the steam engines could field fewer people.

Since this original adjustment of numbers tied to the shift from volunteer to professional departments the number of men employed by departments to man engines and eventually squads has varied greatly over the years.

Manning in fire stations is organized around the number of men assigned to each piece of equipment. Much like the technology used by departments, manning does not have any standardization across the profession. A significant contributing factor to the variation in manning is that fire departments have traditionally had very few resources to justify hiring and manning decisions. Namely there were no studies about how many men constituted the optimum level of men on a rig. As a result of the lack of empirical data, chiefs and city officials based their manning calls on common sense conclusions drawn from each chief’s personal experience.

It wasn’t until the late 1970’s that studies investigating the relationship between manning and safety, as measured in response times, rescue outcomes and efficiency, began to be conducted. The first of these studies were a series of

25 Dennis Smith. 56-60.
experiments conducted by the Dallas Fire Department in 1977. These experiments tested the differences in physical exhaustion for the task of laying a hose line to the third floor of a school for 3, 4, and 5 man teams. The initial study showed that exhaustion decreased with each man that was added. This first study was the catalyst for a series of further studies documenting the relationship between safety outcomes and increased manning. Notable studies from this period include reports from the United States Fire Administration (USFA), the National Fire Academy (NFA), The IAFF, McManis and Associates and the Cushman study.27 The conclusions of all of these studies supported the Dallas Study findings that having more men on a rig resulted in greater safety outcomes. The most recent findings show that a four-person crew is seven minutes or 30% faster than a two-person crew and that a four-person crew is 25% or 5.1 minutes faster than a two-person crew.28

The expected outcome of these studies would have been that departments would have had the necessary empirics to justify hiring more people in order to place more men on the rigs thereby increasing safety outcomes. Yet, nationally from the 1970’s on, the years that these studies became available, the average number of men per rig has decreased.

Until the early 1970’s, the trend in manning on fire departments had been an increase of the number of firefighters employed by departments. The reversal of the trend ironically came with an expansion of service. In the mid 1970’s, departments began to transition from being just fire departments to incorporating emergency medical services (EMS) with the fire services already provided. While there were

27 Ibid.
28 Ibid. 10.
firefighters hired to cover this expansion in service, not enough firefighters were hired to fully staff both the ambulances and the engines used in EMS and fire calls. In the local case study, the firefighters described the new practice as “robbing Peter to pay Paul”. Departments and cities took men from ladders and engines and moved them to cover squads and vice versa. This dual manning of equipment was a significant savings of money that negated the cost of new salaries and benefits of additional hires. It became the practice for departments to only have two men per piece of equipment. In Cuyahoga Falls, the current numbers are at 13 people to cover 5 stations and run all of the fire and EMS calls per day.\(^{29}\)\(^{30}\)\(^{31}\) This trend to have dangerously low levels of coverage is not just seen in the case study but is a national trend in the manning of fire departments across the country.\(^{32}\)

Another shift in the profession associated with the trend of decreasing numbers of firefighters fielded by departments is the increasing reliance on mutual and automatic aid. Departments call mutual aid when they do not have the manning necessary to respond to a call in their district. Examples of when mutual aid becomes necessary are if all units in a city are already out on a call (once on a call units are not allowed to prioritize calls or leave a call to go to another) or if a fire is too big for one department to handle. Departments prior to 1970 rarely used mutual aid; however, as departments started to decrease the amount of Manning relative to the cities size, departments were increasingly overwhelmed and had to

\(^{29}\) Steve Durkit. Interview By Kallie Durkit
\(^{30}\) Mike Caporaletti. Interview by Kallie Durkit August 2012. Cuyahoga Falls, Ohio. Appendix 101
\(^{31}\) Appendix 133-116
\(^{32}\) Bruce Henssler. 16.
call neighboring departments for help. Mutual aid calls became such a frequent occurrence in the case study and nationwide that automatic aid was developed. Automatic assistance is given without a department having to call for it. Once a call comes into the dispatch center, it is automatically given to the nearest department outside of the district of origin. This speaks to the fact that routinely neighboring departments have to be called because cities are finding with increasing frequency that they cannot cover their districts. The increase in automatic and mutual aid has created tension between cities over automatic and mutual aid agreements. Cities that rarely, if ever, call mutual aid feel as if they are subsidizing the larger towns that are frequently calling for mutual aid. This is beginning to manifest in cities refusing to offer mutual aid to neighboring cities, which puts both the firefighters and citizens at increased risk when the departments are overwhelmed.  

In addition to the shifts in the numbers of firefighters that are being employed by fire departments, there have also been significant shifts in the types of people being employed as firefighters. The two most significant shifts in the manning of firefighters have been the additions of minorities and women to the fire service. These two groups have pushed the fire service away from the employment of firemen to firefighters.

The first minority group to be employed as firefighters were African Americans. The first record of a minority in the fire service was actually a female slave. Molly Williams was a slave owned by a member of the Oceanus Engine Company No. 11 in New York City. She is recorded as being present at every fire

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that her owner was at and earned high praise in 1815 for her service in a fire on the night of an extreme blizzard. According to some records, she had been serving as early as the 1780’s.\textsuperscript{34,35} While Molly Williams may have been the first recorded minority to serve on a fire department, it is likely that there were even earlier cases of slaves acting as fire crews or in other fire related capacities.

Other early records of African Americans serving on fire departments include companies formed in New Orleans and Philadelphia circa 1820. The majority of these early black firefighters were slaves. However, there are some references to Free black companies and black firefighters in the first half of the 19\textsuperscript{th} century yet because of the vagueness of the records it is hard to pin point where these companies existed. In the second half of the 19\textsuperscript{th} century there are more specific records of African American firefighters. One of the most notable African Americans in the early fire service was the first black fire chief. Patrick H. Raymond was appointed as the Chief Engineer (Chief of the Department) of Cambridge, Massachusetts on January 5, 1871. He retired from the department in 1879 as a fully pensioned employee. While the example of P.H. Raymond is impressive for its early inclusion and equality of opportunity for black firefighters it is far and away the exception. From the earliest days of the fire service onward, the incorporation of African Americans has been abysmal.\textsuperscript{36}

The modern fire service has always and continues to struggle with minority hiring and equal opportunity of promotion. While there had been African

\begin{itemize}
\item \textsuperscript{34} Dennis Smith. 42.
\item \textsuperscript{35} Chuck Milligan and Ron Ballew. “History of Black Firefighters” http://www.legeros.com/history/ebf/national.shtml
\item \textsuperscript{36} ibid.
\end{itemize}
Americans and other minorities breaking their way into the fire service in the 1940’s and 1950’s, it wasn’t until after the civil rights movements that significant numbers of minorities began to enter the fire service. This new influx of diversity was a shock to the system. The firemen who had served their entire careers in the white mans club of the fire service, were not willing to give up their traditional firehouse dynamic. This resistance to change is evidenced by the numerous court cases that required departments to reevaluate who they were hiring and how they made hiring decisions. These court ordered practices to increase racial parity have been extremely controversial in the history of the fire department.

One example of a court ordered increase on a fire department was the 1974 Beecher decision, which required the city of Boston to hire one minority for every white firefighter until parity was reached.37 Other examples of court ordered minority hiring from the period include Minneapolis in 1970,38 Jacksonville in 197139, Philadelphia in 1974, and Cleveland in 1986.40 The number one complaint cited by departments was that court ordered minority hiring was reverse discrimination. White firefighters argued that in order to fill the minority quotas departments would have to skip over many higher scoring applicants before they reached a minority. This meant that they were filling the ranks with less qualified applicants solely because they were African American or Latino. This argument in

37 Joseph E. Quinn V. City of Boston, 02, 1727. (Massachusetts, 1974)
some ways is well grounded. It is true that in order to higher the numbers of minorities that the courts required departments did have to pass over higher scoring applicants who were white. Yet, the reverse discrimination component of the argument has not held up in court. Despite the inability of the reverse discrimination to reverse minority-hiring requirements the argument is still being used by firefighters in Boston, Chicago and New York City in the most recent minority hiring battles. In 2011, the City of Chicago was ordered by the Federal Court of Appeals to hire 111 black firefighters and pay $30 million in damages to these firefighters that had not been hired.\(^41\) In 2012, Judge Nicholas G. Garaufis of the Federal District Court of Brooklyn ordered the city to pay $70 million in retroactive pay to black firefighters who were passed over in promotional hiring.\(^42\)

The case study provided further evidence of the lingering discontent over minority hiring. While Cuyahoga Falls was never ordered to enact affirmative action measures like many cities, they saw the writing on the wall and hired African Americans onto the force in 1986 before it became a court issue.\(^43\) Mirroring the concerns of many of the court ordered cities, firefighters in Cuyahoga Falls felt that the minorities hired were political hires.\(^44\) There were also lingering tensions from many of the Cuyahoga Falls Firefighters who took the hiring test for Cuyahoga Falls


\(^{43}\) Steve Durkit. Interview by Kallie Durkit.

only because they were passed over on the City of Akron tests due to court ordered
minority hiring in Akron, the neighboring large city.

In 1974, Akron was ordered to enact hiring policies ensuring that with every
hiring cycle at least 33 percent of those hired would be minorities. As explained by
a former chief of Akron the Akron Fire Department, there were extreme tensions on
the department because “The whites would take a test along with the blacks and you
have the white scoring in the high, you know, up on the list of say 300 people they
are up real high you are hiring 20 people say, well one 3rd of them had to be black.
So you hired the 13 whites and then you had to go way down into the 3 and 400’s of
the list and pick [a minority].” The minorities hired in the 1970’s and 1980’s
through this policy would later be eligible for promotions. When African Americans
scored lower than their white counterparts on these promotional tests the African
American firefighters were subsequently being passed over in the promotion.
Feeling that they had been discriminated against the African American firefighters
that had been passed over took the City of Akron to court again to sue for positions
as lieutenants and captains. These repeating lawsuits caused significant amounts of
friction on the Akron Fire Department and are similar to the discontent experienced
across the nation in departments experiencing similar situations. There was a
sentiment in some departments that young white guys had better “hurry up and get
moved up the ranks” or else have their spot filled by a minority with a court order.

Despite all of the hard fought gains made through these affirmative action
suits, minorities have not reached parity in the fire service nationwide. As of 2000,

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46 Ibid.
African Americans constituted 11.8% of the fire service nationwide and Latinos represented 3.9% of firefighters nationwide. These numbers show the strength of tradition in the fire service and the uphill battle that minority firefighters still have in front of them.

Women firefighters have had a similarly difficult journey to break into the fire service. While the first recorded non-white male firefighter was an African American female, female firefighters were not able to capitalize on Molly Williams’s service. Only Lillie Hitchcock Coit and Marina Betts are noted for their service on the bucket brigades and early engine companies in the mid 1800’s. It wouldn’t be until 1973 that the first woman was hired as a full time career firefighter. From 1973 onwards women began to enter the fire service in increasing numbers. One of the reasons for these increasing numbers was the repeal of height and weight requirements by the civil service commission in 1973. These height and weight requirements had been an easy way for fire departments to discriminate against women candidates.

Yet, despite these fundamental barriers being repealed, women firefighters have not benefitted from the affirmative action lawsuits that minority males have. Female firefighters received some boosts in hiring from a change in the mindset regarding diversity, and in some cases by departments wanting to avoid the upheaval that the resistance to hiring minorities caused. However despite their

47 Dennis Smith. 42-43.
increasing numbers over the years, women are not represented in large number on
the fire service. In 2010, female firefighters were only 3.6% of the total number of
career firefighters.50

Regarding the case study, the struggle of female fighters to gain legitimacy
and respect in the fire service was shockingly evident. Male firefighters interviewed
expressed that they believed the first two women hired by the department were
political hires and were not fit to do the work. This opinion was also expressed by
the third female firefighter hired.5152

A surprising finding from the case study concerning the female firefighter
interviewed was that she has had a lot more trouble with the “young guys” versus
the “old guys”. In addition, she had more trouble on the volunteer departments that
she worked at than on the career department. When interviewed, she attributed the
reason she has had more trouble with younger guys on the department is that the
older guys have seen more changes in their lives and on the department, making
them more tolerant of change in general. She also believes that the more
professionalized atmosphere of the career department tempered some of the
discrimination and sexist behavior that she had felt on the volunteer departments.53

Another interesting example of discrimination found in the case study was
that even at the highest level of city government, female firefighters are still faced
with condescending comments. At the swearing in of a new senior officer, the

53 Ibid. 59.
mayor of Cuyahoga Falls approached the female firefighter and said to the person standing next to her, “She is in uniform?” to which the she in question replied “yes sir” and the mayor said “and I hired you?” She replied “Yes sir.” His response was “But you’re so little how can you do anything?” This example makes it easy to understand why male firefighters may think it is ok to continue to say condescending comments. When comments like these are coming from the very top, it is easy to think that behavior is ok.

This was just one of the more mild examples of discrimination and condescension that she faced as a female firefighter and is not unique to her situation. Female fighters everywhere face doubts about their physical and emotional capabilities that are only founded in stereotypical notions of gender.

In the course of 300 years, firemen have transitioned to being firefighters. This transition was the result of the personal fortitude of the minorities and women who pursued their passions and interests while withstanding massive amounts of discrimination stemming from the white male tradition of the fire service. While today ethnic minorities and women in the fire service are nowhere near levels of parity with the general population, the hope remains that the trends in the slightly increasing numbers can continue.

PROFESSIONALIZATION

Fire departments originated as volunteer fire departments created by private insurance companies to protect the buildings that the companies insured. Later on,
these volunteers formed mutual aid agreements to cover multiple insurance companies and later came under city jurisdiction when responding to alarms. The first paid fire department in the United States was formed in Cincinnati in 1853. Since the creation of the first paid fire department, cities moved towards professionalizing their forces from the rowdy volunteers to full time career fire departments. Once established as career departments, the fire service went through further professionalization as levels of education and hiring standards increased. However, today there are still wide discrepancies in the levels of education amongst departments and the ratio of career to volunteer firefighters.

The causes for this shift from volunteer to full time career departments are hard to pinpoint. In **Cause for Alarm**, Amy S. Greenburg attributes the shift to social changes. Greenburg’s theory is couched in the greater population migration from the farm to the cities in 19th and 20th century America. As the economy shifted from an agrarian economy to a more urban, industrial economy, men had less time to volunteer. Greenburg discusses how it was unlikely that a man working in a factory could be dashing out at all hours of the workday to answer the alarm. What was even less likely is that the factory worker would hear the alarm at all. Fewer opportunities for men to volunteer meant fewer volunteers. Cities, as well as insurers, wanted to insure that there was a fire company ready no matter what time it was. From this concern, career departments were formed.

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55 Dennis Smith 20-30, 59.
Another factor pushing cities toward the adoption of career departments was a critical level of weariness that had been reached by the public. The volunteers were notorious for their brawling and battling. When alarms sounded, volunteers would race to the fire scenes in order to ensure that they could be the ones credited with putting out the fire. However, with increasing frequency in the mid 1800’s fire scenes were turning into huge fistfights with “plug-uglies” (the men sent to race to the fire hydrant nearest the fire and fight all of the other companies. Thus, effectively guarding the hydrant until their own company arrived) and the rest of the companies more interested in fighting over hydrants than putting out the fire. This focus on fighting each other and not the fire lead to many buildings burning to the ground unnecessarily. By 1853 the public of Cincinnati, Ohio had had enough.

In 1853, the city of Cincinnati instituted the first paid fire department and with it the first steam engine, something the volunteers had refused to use. When the new paid fire department ran their first fire call, the volunteers vowed they would stop the steam engine from operating. However when the first call came, the volunteers rushed to the scene and were met a group of citizens ready to protect the new fire department and in 20 minutes the public had routed the volunteers.\textsuperscript{57}

Whatever the reason for the shift, in 2010 of the 1,103,300 firefighters in the United States, 30 percent were career and 70 percent were volunteer. While these numbers would seem to indicate that the majority of fire fighters are still volunteer, it is significant to note that 73% of career firefighters protect cities of 25,000 or more while 95% of volunteers protect cities of 25,000 or less with the majority of

\textsuperscript{57} Dennis Smith. 59.
those volunteers serving areas with fewer than 2,500 people. These numbers show that the majority of people in America are being served by career firefighters.\textsuperscript{58}

The shift from volunteer to professional fire departments was mirrored in the Cuyahoga Falls case study. In 1837, a group of citizens formed the first volunteer fire department known as the Hook and Ladder Company. Originally housed in the basement of City Hall, in 1927 the Hook and Ladder Company was moved to its own building which would become Fire Station 1. At the time of the move in 1927, a mix of part and full time firefighters staffed the Company. By 1932, the station was staffed by all full-time, paid firefighters.\textsuperscript{59} However through the 1960’s, the fire department used schoolteachers to cover the vacation time that the career firefighters would usually schedule in the summer. The departments would run short in the summer because many of the firefighters wanted to schedule their vacations during that time. The departments would pay teachers, who had the summers off, to fill those empty slots created by the firefighters on vacation. These teachers had no fire training.\textsuperscript{60} This practice eventually ceased; however, it highlights the fact that even those departments may have become full time relatively early held to vestiges of the volunteer tradition long after the professionalization of the department.

While the transition from volunteer to full time in Cuyahoga Falls is typical of the national trend towards an early push of professionalization, neighboring towns of similar size to Cuyahoga Falls have had a much different trajectory.

\textsuperscript{58} NFPA. “The U.S. Fire Service” NFPA Fire Statistics. 2010.
\textsuperscript{60} Steve Durkit. Interview by Kallie Durkit.
In the neighboring town of Stow, Ohio the fire department didn’t transition to all full time until 1985. The city also decided that it didn’t want to fire any of the volunteers in the transition. Therefore the volunteers were allowed to stay on and fight fires if they chose to do so. As a result the last volunteer didn’t leave the Stow Fire Department until 2009-2010.\textsuperscript{61}

Another neighboring town of Tallmadge, Ohio decided in 1996 to overhaul their system to include three more full time firefighters to help transition from their volunteer based system. The station still employs part time firefighters.\textsuperscript{62}

This disparity between towns is not uncommon across the country. While the majority of big cities have shifted from volunteer to full time departments, smaller towns that do not have full time departments frequently rely on help from outside their city. These differences have led to a phenomenon called double hatting.

Firefighters’ schedules are set up to be 24 on 48 off. This means that firefighters work a 24-hour day and then have two full days off. These two days of free time mean that firefighters often work a “B Job” during those two days off to make more money. Because of their skills, it is a frequent occurrence that firefighters will work their 24 hour shift in a large city with a full time force and then travel back to their hometown to work part-time or as a paid volunteer. This practice of working in two different departments is called double hatting.

\textsuperscript{61} Bill Kaulbaugh. Interview by Kallie Durkit. August 2012. Stow, Ohio. Appendix
The International Association of Fire Fighters (IAFF) is the national union for firefighters. The IAFF adamantly opposes double hatting and outlines the practice as grounds for dismissal from the Union.\textsuperscript{63} The IAFF’s problem with double hatting is that the practice keeps small volunteer forces from becoming professional, full time departments. When the full-time career firefighters work in smaller volunteer cities, they fill voids in service and with all of their volunteer positions filled smaller cities don’t see a need to have a full time department because their volunteer force is apparently working fine. If the smaller city didn’t have these full timers filling in they would have a substantially weakened volunteer force and would be compelled to become a full time department to ensure the safety of its citizens. The IAFF also opposes double hatting because it takes jobs away from other potential firemen. In addition to professionalization and manning concerns with double hatting there are safety concerns as well. Firefighters who are working double shifts constantly could become more fatigued at their full time job, possibly causing a safety issue.\textsuperscript{64}

On the other hand, small towns are concerned they won’t have a department at all if this rule against double hatting were to be strictly enforced. Volunteer departments are finding recruitment and retention of firefighters increasingly difficult. These career firefighters are in many cases filling spots that might not

\textsuperscript{64} Steve Durkit. Interview by Kallie Durkit
otherwise be filled and if the volunteer spots aren’t filled the towns become extremely vulnerable to fires.\textsuperscript{65}

As evidenced by the local case study, double hatting remains very common. Firefighters in the case study said they don’t know of a department that doesn’t have firefighters moonlighting from or to other departments.\textsuperscript{66} Many of the firefighters interviewed worked at volunteer stations before they were hired at career department. As a result, they have maintained their relationship with the volunteer departments. Sometimes the relationships are two hatted and sometimes they are not, but the line between career and volunteer is often more blurry than the IAFF guidelines would want.\textsuperscript{67,68}

The shift from volunteer to full time departments is not the only shift in professionalism experienced in the fire service. Another shift has been the trend towards more training and education in the fire service.

The first firefighters were volunteers who were concerned citizens or men looking for adventure. These men had no formal training. The entirety of the training the early volunteers had consisted of what they learned on the scene from other volunteers. This system of “on the job training” lasted well into the 20th century.

Some of the earliest calls for advanced training for firefighters came from Parkersburg, West Virginia by Lloyd Layman. In the 1950’s, Layman advocated for

\textsuperscript{66} Steve Durkit. Interview by Kallie Durkit
\textsuperscript{67} Josh Bell. Interview by Kallie Durkit. August 2012 Cuyahoga Falls. Appendix
\textsuperscript{68} Steve Durkit. Interview by Kallie Durkit.
the advanced training of fire officers in his texts on firefighting tactics. However, it was not until the 1980’s the concept of more advanced training became widely accepted. Until that point, it was the norm for firefighters to not possess a college degree. Those that did would often try to hide their education to fit in with the staunchly blue-collar departments.69

In the progression of advanced training in the fire department, the case study was a textbook example of the national trends. When Steve Durkit joined the Cuyahoga Falls department in 1978, no one on the fire department had a college degree. The majority of firefighters hired during that era had no fire training or previous education. The standard at the time was after a firefighter was hired, the department would send the new hires to the State Fire Academy within one year of their hiring. The State Fire Academy consisted of eight weeks of training to obtain their 240 card, a card that indicated completion of the required amount of training, which consisted of 240 hours. By and large, the system remains the same today. The major evolutions in training have been that the number of training hours has increased and in order to be more competitive in the fire hiring test candidates often attend fire school before they are hired70 Another of the most significant changes is that candidates for the fire service, in increasing numbers, are earning their two or four year degrees in fire science. With these few exceptions, very little about the training process for firefighters has changed. Furthermore, it is very possible for a

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69 Bruce Hensler. 97.
70 Multiple. See Appendix 30, 59, 158
person to be hired onto a fire department without a college degree and without any prior training.\footnote{ibid.}

This experience at the local level of slowness to change the training techniques or the culture of firefighting is consistent with the national theme of the fire service’s penchant for maintaining the status quo.

Conclusion

The story of technology, manning and professionalization of the fire service is one that tells of a profession that is incredibly loyal to tradition. This loyalty to tradition dictates the speed at which change comes to the fire service and as this analysis has shown that change can be incredibly slow.

The purpose of this analysis has not been to criticize the fire service for their slowness to adapt technology but rather to document a theme of loyalty in firehouse culture and the firefighting mindset that is stronger than in almost any other profession. This loyalty to days gone by may explain some of the romanticism surrounding firehouse culture and the “brotherhood” that many fire fighters are conscious of. Firefighting to the people that work in the profession is one of the last holdouts of the blue-collar worker. Firefighters embody a mindset that puts emphasis on the physical rather than the mental and the toughness of the individual, “an honest days work for an honest days pay” mentality. Firefighters have the unique position of being a blue-collar job that cannot be outsourced to another country. However, the culture and the profession is in trouble. Budget cuts, the

\footnote{ibid.}
recession and the rising costs of technology and pensions that compensate these men and women for the work they do are all issues that are boiling to the surface. It was the opinion of many of the firefighters during the interviews conducted for the case study that the fire department they were hired on to is not the one that exists today. Moreover, they expressed that the fire service they identify with will be a thing of the past in the near future. It was their opinion that the fire service will be forced to make drastic changes in order to compensate for lower budgets and lower levels of manning. These changes include regionalization; part-time departments and career departments devolving into volunteer departments were all visions of the fire fighting future.\textsuperscript{72}

Even if these predictions don’t come to pass this study has shown the progression of changes to the firefighting profession. Technology, manning and professionalization are all integral to what firefighting is. The changes to technology, manning and professionalization are fundamental in understanding the shifts in the fire service and how those shifts have shaped the modern fire service. This study has also shown that the changes that have not happened in the fire service are equally telling in regards to how strong the service adheres to its number one value of tradition.

While it would be easy to say that these traditions and changes are only seen in small town departments, the uniformity of slowness to change at the national level and the similarities between the case study and big city departments speak to the consistency in departments across the country and across the profession.

\textsuperscript{72} multiple. See appendix
There will always be fires. So there will always be a fire department. What that department will look like in the future is an intriguing question but the trends documented in this paper guarantee that changes in technology, manning and professionalization will continue to be central to the evolution of the fire service.