



**NAVAL
POSTGRADUATE
SCHOOL**

MONTEREY, CALIFORNIA

THESIS

**WORKING FIRE: RECRUITMENT AND RETENTION
OF WOMEN FIREFIGHTERS**

by

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September 2022

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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC, 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 2022	3. REPORT TYPE AND DATES COVERED Master's thesis	
4. TITLE AND SUBTITLE WORKING FIRE: RECRUITMENT AND RETENTION OF WOMEN FIREFIGHTERS			5. FUNDING NUMBERS	
6. AUTHOR(S) Heather L. Marques				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) Until the early 1970s, it was illegal for women to serve in the U.S. fire service. Since then, data have revealed that the national population of women in career structural firefighting has scarcely risen above 4 percent of the approximately 380,000 total personnel. Similar industries, such as the military and law enforcement, have increased their female hiring in recent years. By looking at the primary obstacles in fire service integration, including gender-neutral physical fitness exams, socio-cultural dynamics, parental leave issues, and promotional obstacles, this research analyzes gaps in available data as well as makes cohesive recommendations to shift focus away from recruitment and toward retention. Fire service leaders are offered models of understanding for how to identify issues within their agencies and engineer policies for improved integration of women. The thesis concludes that the successful integration of women into the fire service requires a combination of intentional leadership, male mentorship, and realistic expectations for recruitment from a historically small female candidate pool.				
14. SUBJECT TERMS Women firefighters, diversity, gender issues, recruitment, retention, DEI, integration, mentorship.			15. NUMBER OF PAGES 89	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

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**WORKING FIRE: RECRUITMENT AND RETENTION OF WOMEN
FIREFIGHTERS**

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

Until the early 1970s, it was illegal for women to serve in the U.S. fire service. Since then, data have revealed that the national population of women in career structural firefighting has scarcely risen above 4 percent of the approximately 380,000 total personnel. Similar industries, such as the military and law enforcement, have increased their female hiring in recent years. By looking at the primary obstacles in fire service integration, including gender-neutral physical fitness exams, socio-cultural dynamics, parental leave issues, and promotional obstacles, this research analyzes gaps in available data as well as makes cohesive recommendations to shift focus away from recruitment and toward retention. Fire service leaders are offered models of understanding for how to identify issues within their agencies and engineer policies for improved integration of women. The thesis concludes that the successful integration of women into the fire service requires a combination of intentional leadership, male mentorship, and realistic expectations for recruitment from a historically small female candidate pool.

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	RESEARCH QUESTION	4
B.	LITERATURE REVIEW	4
	1. Recruitment Is Not the Only Issue	4
	2. Identifying Underlying Causes	6
	3. Expanding Views.....	8
C.	RESEARCH DESIGN	9
	1. Gap Analysis Framework.....	9
	2. Focus and Scope of Research	10
	3. Limitations.....	11
	4. Outputs.....	12
D.	CHAPTER ROADMAP	12
II.	THIS SIDE OF THE GAP: OBSTACLES AND ISSUES FOR WOMEN FIREFIGHTERS.....	13
A.	PHYSICALITY.....	15
	1. Fire Service Physical Standards—Industrial Athletes	17
	2. The Firefighting Candidate Physical Agility Test.....	18
B.	WORK–HOME SOCIO-CULTURAL INFLUENCES	20
	1. The Proving Grounds	21
	2. The Fire House as a Performance Stage	23
	3. The In-Group/Out-Group Narrative	24
C.	FAMILY PLANNING AND PARENTAL LEAVE.....	25
D.	PROMOTIONAL OBSTACLES	28
E.	SUMMARY	31
III.	WOMEN IN THE U.S. FIRE SERVICE: A GAP ANALYSIS.....	33
A.	KNOWLEDGE: WHAT ARE THE CURRENT CONDITIONS?	34
B.	MOTIVATIONS: WHY DO WE NEED MORE WOMEN?	34
C.	ORGANIZATIONAL INFLUENCE: HOW DO WE FOSTER SYSTEMIC CHANGE?	35
D.	SUMMARY	36
IV.	LESSONS FROM THE CANADIAN FIRE SERVICE AND BEST PRACTICES	37
A.	LESSONS FROM THE NORTH	37
	1. Vancouver	38

2.	Toronto.....	39
B.	BEST PRACTICES FROM THE FIRE SERVICE	40
1.	Sharing the “Brotherhood”.....	40
2.	Defining Diversity	41
3.	Defining Equity	42
4.	Defining Inclusion	42
C.	BEST PRACTICES FROM THE U.S. MILITARY.....	43
1.	Work Schedules.....	43
2.	Organizational Culture	44
3.	Family Planning	44
4.	Dependent Care.....	44
5.	Deployments	44
6.	Sexual Assault	45
D.	SUMMARY.....	45
V.	CONCLUSION AND RECOMMENDATIONS FOR AN INCLUSIVE WORKFORCE	47
A.	RECOMMENDATIONS.....	47
1.	Establish Baseline Data and Definitions	47
2.	Develop a New National Report Card.....	48
3.	Provide a Way Forward with Mentorship and Guidance.....	48
4.	Support Female Leadership.....	49
5.	Address Mental Health and Wellness	51
6.	Shift Focus to Retention	52
B.	FINAL WORDS.....	53
	APPENDIX. THE ECOLOGICAL MODEL OF HUMAN DEVELOPMENT	55
A.	THE MICROSYSTEM	57
B.	THE MESOSYSTEM.....	58
C.	THE EXOSYSTEM.....	58
	LIST OF REFERENCES.....	61
	INITIAL DISTRIBUTION LIST	69

LIST OF FIGURES

Figure 1.	Risk Quadrant.	13
Figure 2.	Four Quadrants of Concern for Women Firefighters.....	15
Figure 3.	The Hero’s Journey.....	22
Figure 4.	Gap between the Current and Desired State.	33
Figure 5.	Bronfenbrenner’s Ecological Model, Adapted for the Fire Service.	56

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LIST OF ACRONYMS AND ABBREVIATIONS

BLS	Bureau of Labor Statistics
CAFC	Canadian Association of Fire Chiefs
CPAT	Candidate Physical Agility Test
EMS	Emergency Medical Services
FDNY	Fire Department of New York City
IAFF	International Association of Fire Fighters
PTSD	post-traumatic stress disorder
P-SEC	Psycho-Social Ethnography in the Commonplace
SWAT	special weapons and tactics
WFI	Wellness Fitness Initiative

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EXECUTIVE SUMMARY

Women comprise only about 4 percent of the U.S. fire service’s career firefighting workforce.¹ The U.S. fire service is not designed to recruit and cultivate female talent. Currently, there are approximately 14,800 women, while 360,000 men serve as professional firefighters.² These numbers are higher among wildland firefighters and volunteer departments, as the coveted positions in municipal career departments have long been a stronghold of men. The fire service’s historical design and practice have influenced this inequity. The first woman was hired in 1974, but almost 50 years later, nationwide percentages of female personnel have not risen much above 4 percent, and more recently, in some major cities, numbers appear to be trending downward.³

This thesis examines the entire trajectory of a female firefighter’s career path from recruitment and initial onboarding to career development and retirement to identify core issues impeding the successful inclusion of women in the fire service. Specifically, it asks, which policies and practices serve as impediments to inclusion and which strategies should be developed to increase the quality and quantity of recruitment, retention, and retirement of female firefighters.

Physicality is the first gate, as it includes the initial fitness performance tests and the recruit academy, which are the most significant causes of “wash out” or elimination of female recruits. Physical requirements are comparable to those of the military’s special operations branches and tactical teams in law enforcement, as these are traditionally gender-neutral fitness tests that bear out similar results to the fire service’s gender-neutral entry tests.

¹ “FAQs on Women in the Fire & Emergency Services,” Women in Fire, accessed January 1, 2021, <https://www.womeninfire.org/faqs/>.

² Bureau of Labor Statistics, “Men Accounted for About 75 Percent of Workers in Protective Service Occupations in 2020,” *Economics Daily*, October 15, 2021, <https://www.bls.gov/opub/ted/2021/men-accounted-for-about-75-percent-of-workers-in-protective-service-occupations-in-2020.htm>.

³ Gabriel Greschler, “Women Still Make up a Fraction of Bay Area’s Firefighters,” *Mercury News*, November 29, 2021, <https://www.mercurynews.com/2021/11/24/thats-not-showing-much-effort-santa-clara-county-fire-department-struggles-recruiting-female-candidates/>.

Women firefighters often report experiencing “othering” or isolation from the dominant group.⁴ Conflicting gender roles and societal expectations create further fracturing of women integrating into the male-dominated industry.⁵ Socio-cultural issues include gender identity, social out-grouping and isolation in a predominantly male workplace, and honor challenges. Women firefighters in both the United States and Canada report similar phenomena with social othering, a source of recent concentration in academic studies.

Women experience different issues related to parenting in the fire service, including challenges with a lack of supportive protocols around pregnancy, birth, and breastfeeding. In the long term, childcare is often a struggle with the long shift work and unpredictable schedules around emergency work and the fire season. Family planning has been identified as a deterrent to recruitment and a cause for early departure from the career.

Promotional challenges are another distinct category, as women firefighters often suffer a cumulative effect of being denied desirable bids for busy firehouses, needing to outperform their competition, and experiencing distrust from subordinates unaccustomed to seeing a woman in a role of tactical leadership.⁶ By defining these four compartments, the pervasive issues preventing women from joining the service and causing them to leave become more easily identifiable.

Problem-solving first begins with identifying the issue. As research and data gathering on women in fire is so sparse, there is no accurate data to date on the exact number of female firefighters, company officers, chief officers, or executive chief officers. A full census-tracking mechanism would require surveying women’s pay status (volunteer, combination, or career departments), rank, years of service, and specialties. Ideally, data

⁴ Canadian Association of Fire Chiefs, *A Fire Service for All: Exploring Ways to Further Diversity and Inclusivity for Women in the Canadian Fire Industry* (Ottawa: Canadian Association of Fire Chiefs, 2020), https://cdn.ymaws.com/cafc.ca/resource/resmgr/reports/updated_a_fire_service_for_a.pdf.

⁵ “Diversity and Inclusion,” Canadian Association of Fire Chiefs, accessed March 6, 2021, <https://cafc.ca/page/diversandinclusion>.

⁶ Marcos O. Marimon et al., “Diversity and Inclusion Leaders in U.S. Fire Departments Impact the Type and Number of Diversity and Inclusion Programs Offered,” *Journal of Occupational and Environmental Medicine* 62, no. 1 (January 2020): e13–16, <https://doi.org/10.1097/JOM.0000000000001780>.

collectors could create a portal for tracking hiring of new female personnel and retirements and departures from service. If these mechanisms were in place, the Department of Homeland Security might have a better sense of the demographics and state of the union in relationship to its first responders.

Recruitment has long been focused on seeking out and finding the best candidates. While that is still fundamentally necessary, outreach is not enough. Leaders need to realize they have a responsibility to attract quality candidates to their agencies. Improved recruitment and retention can be achieved through reputation building, a solid public image, and the development of supportive policies.

The fire service would do well to lean on the best practices of many successful businesses and prioritize psychologically safe and productive work. Apart from focusing on recruitment, it should take care of the women it already has—and acknowledge and support them. Women bring so much to the fire service as an industry. Moreover, as leaders of the most gender-imbalanced workforce in modern U.S. history, fire service executives are feeling increasing public pressure to improve integration. If the leaders' intent is to create an inclusive workplace, the steps toward the goal must be clearly stated, understood by the entire group, initiated, and reassessed. It is up to the leaders and policymakers to change the current environment and pave the way for future success.

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ACKNOWLEDGMENTS

*This thesis is dedicated to Mora and Milani,
who always welcome me home with hugs and kisses.*

* * *

This class was known as the COVID Cohort. In March 2020, weeks into our curriculum, our class went virtual for the first time in the school's history. In a group full of emergency responders from across the nation, many pulled out initially, others waited it out, questioning whether the world was ending or if it was just the flu. Week by week, our numbers dwindled. The few who remained pressed on, fighting historic wildfires, managing the healthcare crisis of the century, and confronting violent protests for police reform. Cohort 2001–2002 was drawn together, virtually, in the crossroads of history.

As this thesis was developing, I was serving as a fire captain in a metropolitan department. I staffed a water rescue station and was the lead paramedic on my crew. Nights were long and 48-hour shifts stretched into 120-hour shifts as first responders encountered the massive staffing shortages shared by agencies across the country, amidst civil unrest and a global pandemic. During all this, my mom, Mary, fell ill and died suddenly. As my world crashed down around me, my cohort reached down to lift me up. People who I had never met in person became my primary support network. Specifically, I must thank Cassie Johnson, Rob Root, Rena Wheeler, Stephan Lopez, and Thaddeus Espy for checking in and keeping me connected. My Jiminy Cricket, Ben Greer, is owed a debt of gratitude for being an ally, a mentor, an editor, and an advocate.

These people demonstrated above-average compassion at the most difficult time in my life, and I am blessed to know them. In an unbelievable stroke of fate, my only brother, Jim, was diagnosed with terminal cancer. He died just months after our mom, and his loss felt insurmountable. No amount of grief or outburst would dissuade my new friends, and I am humbled to acknowledge this unrepayable debt of gratitude. These folks, along with our entire graduating cohort, established an indelible bond. These relationships are the most important outcome of this course of study.

As I regained my focus, three people became very important in my road to completion. Chloe Woida of the Graduate Writing Center provided firm but gentle direction to keep going, and Noel Yucuis, my editor, stood at the end of the tunnel with a lamp to guide my way. Librarian Greta Marlatt provided above-average effort and enthusiasm, for which I am forever grateful. My thesis advisors David Brannan and Carolyn Halladay saw value in the research and stayed with me to see it through. I am grateful for the effort and dedication they afforded me. Through all of this, my agency, the Alameda County Fire Department, provided support and reassurance. A special thanks goes to Fire Chief Willie McDonald for believing in me and allowing me to complete the quest. Your leadership is exemplary.

Above all, at the nexus of my world, is my husband, Steve Marques. Steve, you have been my mentor, my friend, and my partner. You have carried the weight throughout this endeavor and been my sea anchor, keeping our ship righted in the storms. In the end, it is just a paper, just another study. For those who endured the process, we know this represents a metamorphosis. Thank you to all our sea anchors, who have enabled Cohort 2001–2002 to learn, grow, and expand beyond our former selves amid the storm of the century.

I. INTRODUCTION

Women comprise only about 4 percent of the U.S. fire service’s career firefighting workforce.¹ The U.S. fire service is not designed to recruit and cultivate female talent. Currently, there are approximately 14,800 women, while 360,000 men serve as professional firefighters.² These numbers are higher among wildland firefighters and volunteer departments, as the coveted positions in municipal career departments have long been a stronghold of men. The fire service’s historical design and practice have influenced this inequity. Until 1964 and the Civil Rights Movement, it was illegal for women to serve as professional firefighters; 1974 marked the first time a woman was hired as a firefighter in the nation, and women were not included in many departments until the 1980s.³ Almost 50 years later, nationwide percentages of female personnel have not risen much above 4 percent, and more recently, in some major cities, numbers appear to be trending downward.⁴

Public and city administrators have elevated the need for the greater inclusion of women in fire operations. However, recruitment suffers from a small and dwindling candidate pool. The mosaic of gendered challenges is many: the fire service is a physically demanding profession, so much so that only a limited number of women can meet the size and strength required. Fire service differs from comparable professions such as law enforcement and the military where candidates can depend on “equalizers” like weapons or other equipment to compensate for the essential strength amid the strenuous physical

¹ “FAQs on Women in the Fire & Emergency Services,” Women in Fire, accessed January 1, 2021, <https://www.womeninfire.org/faqs/>.

² Bureau of Labor Statistics, “Men Accounted for About 75 Percent of Workers in Protective Service Occupations in 2020,” *Economics Daily*, October 15, 2021, <https://www.bls.gov/opub/ted/2021/men-accounted-for-about-75-percent-of-workers-in-protective-service-occupations-in-2020.htm>.

³ Linda F. Willing, *On the Line: Women Firefighters Tell Their Stories* (Grand Lake, CO: JTD Press, 2011), 11.

⁴ Gabriel Greschler, “Women Still Make up a Fraction of Bay Area’s Firefighters,” *Mercury News*, November 29, 2021, <https://www.mercurynews.com/2021/11/24/thats-not-showing-much-effort-santa-clara-county-fire-department-struggles-recruiting-female-candidates/>.

demands of the profession.⁵ Additionally, societal and cultural barriers in a male-dominated profession can be a significant impediment.⁶ These challenges have proven formidable, and efforts to remediate them have not resulted in a significant substantial recruitment in most American fire departments.⁷

These barriers persist beyond initial hiring and can negatively impact retention and professional development. “Retention” refers to the duration of a firefighter’s career after the probationary period.⁸ Challenges such as ill-fitting uniforms and infrastructure that lacks female facilities like bathrooms and locker rooms make the daily work of women firefighters much harder, thereby depressing morale and shortening careers.⁹ Other intangible barriers are more difficult to articulate and measure and commonly involve social and cultural issues. Women firefighters often report experiencing “othering” or isolation from the dominant group.¹⁰ Conflicting gender roles and societal expectations create further fracturing of women integrating into a male-dominated industry.¹¹ In sum, many of these barriers are interrelated.

⁵ Janet L. Contursi, “Women in Leadership in the Fire Service, Law Enforcement, and the Military: A Comparative Study” (PhD diss., Chicago School of Professional Psychology, 2018), ProQuest.

⁶ Walter S. Booth and Charles A. Rohe, “Recruiting for Women and Minorities in the Fire Service: Solutions for Today’s Challenges,” *Public Personnel Management* 17, no. 1 (1988): 53–61, <https://doi.org/10.1177/009102608801700106>.

⁷ Debra Parkinson, Alyssa Duncan, and Frank Archer, “Barriers and Enablers to Women in Fire and Emergency Leadership Roles,” *Gender in Management* 34, no. 2 (2019): 78–93, <https://doi.org/10.1108/GM-07-2017-0090>.

⁸ Richard E. Clark and Fred Estes, *Turning Research into Results: A Guide to Selecting the Right Performance Solutions* (Charlotte, NC: Information Age Publishing, 2008).

⁹ Dakota Smith, “L.A. Has Hired More Female Firefighters. Why Is the Department Still Dominated by Men?,” *Los Angeles Times*, January 27, 2020, <https://www.latimes.com/california/story/2020-01-27/fire-department-los-angeles-gender-gap-women-firefighter-garcetti>.

¹⁰ Canadian Association of Fire Chiefs, *A Fire Service for All: Exploring Ways to Further Diversity and Inclusivity for Women in the Canadian Fire Industry* (Ottawa: Canadian Association of Fire Chiefs, 2020), https://cdn.ymaws.com/cafc.ca/resource/resmgr/reports/updated_a_fire_service_for_a.pdf.

¹¹ “Diversity and Inclusion,” Canadian Association of Fire Chiefs, accessed March 6, 2021, <https://cafc.ca/page/diversandinclusion>.

Recent data indicate very few women in career firefighting roles have achieved the full 30-year service retirement.¹² Low rates of successful retirement significantly impact recruitment as full retirement benefits are one of the greatest appeals of the profession.¹³ One major obstacle is that the body of research on women in the fire service is dated, stale, limited in scope, or incomplete. For example, a seminal report in 2008 by the International Association of Women in Fire and Emergency Services—*A National Report Card on Women in Firefighting*—addressed this underrepresented group.¹⁴ However, it left out key elements of the female firefighter’s experience. Anecdotal evidence indicates women are experiencing sexual harassment, sexual assault, and other forms of discrimination and mistreatment that are not reported, and little formal research exists to validate their experiences.¹⁵

The government’s inclusion of women into preexisting professions that were predominately male is an emerging art. Design, application, and analysis of U.S. national and state fire service integration policies are in their infancy. Many concepts or tactics implemented for ancillary professions may not apply directly to the fire service but may prove to be informative on certain aspects of a successful co-gendered profession. While this thesis seeks to borrow existing analytical frameworks, it recognizes firefighting is a multifaceted, complex, interpersonal profession, one that demands a nuanced discussion and understanding.

Ultimately, a myopically and draconianly designed working environment impedes integration and denies communities the homeland security benefits that female firefighters deliver. Research and history indicate current efforts to increase female firefighters are not working. After more than 40 years of women working in career firefighting, the numbers

¹² Anna L. Schermerhorn-Collins, “The Challenges to Gender Integration in the Career Fire Services: A Comparative Case Study of Men in Nursing” (master’s thesis, Naval Postgraduate School, 2017), <http://hdl.handle.net/10945/53044>.

¹³ Parkinson, Duncan, and Archer, “Barriers and Enablers to Women.”

¹⁴ Denise M. Hulett et al., *A National Report Card on Women in Firefighting* (Fairfax, VA: International Association of Women in Fire & Emergency Services, 2008), <https://www.womeninfire.org/wp-content/uploads/2014/07/35827WSP1.pdf>.

¹⁵ Canadian Association of Fire Chiefs, *A Fire Service for All*.

of female firefighters have not increased. With the changing nature of improved service, including an emphasis on medical aid calls and customer service, there is a greater need to capture qualified female candidates. Redefining recruitment beyond marketing efforts, including emphasizing gender-tailored incentives, is crucial for the fire service in laying the framework to attract the most qualified women candidates available and evolving the fire service into the 21st century.

A. RESEARCH QUESTION

This thesis examines the entire trajectory of a female firefighter’s career path from recruitment and initial onboarding to career development and retirement to identify core issues impeding the successful inclusion of women in the fire service. Specifically, it asks the following: Which policies and practices serve as impediments to inclusion, and which strategies should be developed to increase the quality and quantity of recruitment, retention, and retirement of female firefighters?

B. LITERATURE REVIEW

This literature review synthesizes research and data focused on women in career firefighting roles. Literature includes grand jury studies, journal articles, theses, books, and reports that emphasize issues of recruitment challenges, socio-cultural dynamics, gender-specific obstacles and discrimination against women. This section begins with an overview of fire service issues around recruitment, continues with relevant findings on successful integration, and concludes with literature focused more directly on retention and career development.

1. Recruitment Is Not the Only Issue

Santa Clara County, California, released a report in 2020 in response to a series of complaints and investigations. The report, entitled *Why Aren’t There More Female Firefighters in Santa Clara County?*, is based on the findings of the county’s Civil Grand Jury study. This study was seen as a progressive move toward enlightening citizens and policymakers, but it based some of its premises on faulty data and stale historical records. The study opens with this statement: “While female firefighters have existed in the United

States for over 200 years, the vast majority of firefighters in the nation are men.”¹⁶ This statement refers to an often-quoted historical vignette about a woman named Molly Williams who served as a slave with the Oceanus Engine Company in 1815. This thesis is about the integration of women into the prestigious ranks of paid career firefighting—and the hurdles and demands of attaining membership into that elite group. For one, the use of a single slave as a point of origin for women in firefighting is a false narrative. More to the point, it was illegal for women to work in the U.S. fire service until the early 1970s, so the scope of this study starts there.

The weaknesses of the Santa Clara report go beyond historical misrepresentation to its other sources of data. The Grand Jury’s report relies heavily on data from a 2008 study, the *National Report Card of Women in Firefighting*, whose data are inapplicable to women in the fire service. The two social scientists and two civil rights attorneys who published the *Report Card* built their comparisons on the following industries: “bus mechanics, drywall installers, enlisted military personnel, highway maintenance workers, loggers, professional athletes, refuse collectors, roofers, septic tank servicers, tire builders, and welders.”¹⁷ Their finding—that women represent 17 percent of these 184 occupations—does not fairly parallel the modern fire service.¹⁸ Aside from the profound physical fitness requirements, the fire service diverges in the familial co-habitation, the intrinsic risks to life and limb, exposure to carcinogens and toxins, and the medical training requirements. For the most part, these other professions do not involve night work and 48-hour operational periods.

Abundant data exist to confirm that graveyard shift work has long-term detrimental effects on health and longevity.¹⁹ These unique circumstances make parallel comparisons

¹⁶ Santa Clara County Civil Grand Jury, *Why Aren’t There More Female Firefighters in Santa Clara County?* (San Jose: Superior Court of California, County of Santa Clara, 2020), https://www.sccourt.org/court_divisions/civil/cgj/2020/Why%20Arent%20There%20More%20Female%20Firefighters%20in%20Santa%20Clara%20County.pdf.

¹⁷ Hulett et al., *A National Report Card on Women in Firefighting*.

¹⁸ Hulett et al.

¹⁹ Matthew Walker, *Why We Sleep: Unlocking the Power of Sleep and Dreams* (New York: Scribner, 2018).

with the fire service very difficult. It is a stretch to compare the data statistics of septic tank servicers with the characteristics and demands of structural firefighting. This unstable foundation for reasoning informs many of the Grand Jury’s findings, declaring that the way to solve the imbalance in the fire service is simply to hire more women. Such logic puts the onus of responsibility on municipal fire chiefs and administrators to find women candidates where there are very few. The use of outdated information with limited scope has exacerbated and reinforced historical blind spots.

2. Identifying Underlying Causes

Many excellent studies have been conducted in recent years to identify specific obstacles in gender integration of the fire service. Hailing from the Fire Department of New York City (FDNY), Fire Officer Anna Schermerhorn-Collins composed a study comparing women in the fire service to men in nursing, both representing a minority subgroup in their respective professions. Schermerhorn-Collins identifies significant obstacles for these populations, but she recognizes that breaking into the fire service culture is the greater of the two challenges. She identifies a long legacy of tradition, entitlement, honor, and pride:

The notions of entitlement, belonging, pride, indoctrination, and tradition are essential to understanding the masculine culture of firefighting. The ability to promote change will be ineffective if the value of these concepts is not recognized. As non-traditional populations enter this homogenous workplace culture, the challenge for leadership is to find a way to acknowledge the value of the concepts that define fire service culture while facilitating positive integration of the workforce.²⁰

Schermerhorn-Collins’s lived experience as one of the only women in the ranks of the FDNY in the 1990s lends unique insight into the culture of fire and illuminates why “simply hiring more women” is not always the best approach. Once a woman is hired, she has a host of invisible tripwires to navigate. Hiring takes conscientious and responsible mentorship and strong leadership to ensure a culture of inclusivity. After the hiring, there is a need for shepherds.

²⁰ Schermerhorn-Collins, “The Challenges to Gender Integration.”

Taking a unique feminist historical view on an existing gap in academic knowledge and fire service identity is Sarah Vee Moseley, who examines the role of women's true entrance into the fire service by way of the ladies' auxiliary. She claims that beginning as early as the first World War, women played an integral role in managing the logistics, outreach to the community, and the public image of their fire department:

Auxiliary work often went unacknowledged due to asymmetrical power relations between ladies' auxiliaries and fire departments, but their contributions had a significant impact on fire department reputation. Their work counts as fire department work, complementary to prototypical firefighting and central to fire department efforts by performing the duties outside of the traditionally masculine purview.²¹

Ironically, so many of the traits that endear firefighters to the public are traditionally feminine domestic skills, such as compassion, service to elders and children, cooking, and keeping a clean house. The bravery and courage exhibited in the high-profile work of fire suppression is what makes the trade task-specific and unique, but the public image of the firefighter is that of a selfless and approachable public servant. Early contributions of female partners may have aided in the establishment of this positive image. Moseley states, "By building fire department ethos away from the emergency, ladies' auxiliaries built the department's reputation on a wider foundation; the department's reputation no longer rested solely on firefighter performance but also on the everyday work of the auxiliary—happening quietly in the background."²²

Studies on women in fire concentrate primarily on the strife and limitations of women entering their roles in public safety. Moseley offers a unique and potent perspective highlighting the generations of impact women have had in the industry and its positive reputation. She emphasizes the notion that women have been here all along. Using this logic, she strengthens the position of women in the fire service, even behind the scenes, and brings up an interesting consideration about the complement of femininity to masculinity in balancing a workplace.

²¹ Sarah Vee Moseley, "Women's Entrance into the Fire Department: A Theory of Collaboration and Crisis" (PhD diss., Old Dominion University, 2017), 34, 37, https://digitalcommons.odu.edu/english_etds/.

²² Moseley, 40.

3. Expanding Views

The fire service profession is unique, and its issues must be divined with a microscope, not a macro lens. It is crucial that policymakers and administrators be empowered to base decisions on real facts and validated information, not idealistic notions. The emphasis on hiring more women is often constructed from two premises: that the fire service should reflect the community it serves and that the fire service is comparable to other male-dominated professions. The fire service is what Chief Alan Brunacini has described as a “highly technical blue-collar profession.”²³ A firefighter can go from cutting a hole in the roof of a burning building one minute, to delivering a baby the next, to cutting a victim out of a crashed car the next. This unpredictability and vast knowledge base attract a distinct personality type and require physical, mental, and emotional tenacity to succeed.

These qualities—physical, mental, and emotional tenacity—do not belong to one sex. What they do seem to have in common is a characteristic that Angela Duckworth has coined “grit,” defined in her 2016 book as follows: “*passion* and sustained *persistence* applied toward long-term achievement, with no particular concern for rewards or recognition along the way. It combines resilience, ambition, and self-control in the pursuit of goals that take months, years, or even decades” (emphasis added).²⁴ Long-term studies in psychology and metacognition inform Duckworth’s conclusions that talent and ability are only partially intrinsic—they have more to do with focus and resolve. They involve putting forth the effort, remaining focused on a goal, evaluating progress, and pivoting when circumstances change. Grit could be called a common denominator in fire service success stories. Thousands of women have successfully navigated careers in the fire service, experiencing gratification in their service while laying down tracks for others to follow.

Most studies, grand jury synopses, and theses tend to focus on robust recruitment as the solution to creating a greater female representation. Data trends gathered from the

²³ Alan V. Brunacini, *Essentials of Fire Department Customer Service* (Stillwater, OK: International Fire Service Training Association, 1996), 16.

²⁴ Angela Duckworth, *Grit: The Power of Passion and Perseverance* (New York: Scribner, 2016), 57.

last 47 years indicate that the recruitment pool of women will continue to be limited due to a fundamental lack of interest, physical capability, and other professional obstacles. The solution to improved gender ratios in the fire service should shift to an improved quality of life, which can be addressed by organizations' retention policies. This thesis shifts focus away from the quest of outreach and recruitment to a more direct focus on what it takes to create an environment of inclusivity and a growth mindset. It identifies ways that men and women and those who identify otherwise can serve their agencies and their communities throughout the length and breadth of their careers. This thesis provides a historical perspective of the industry and highlights agencies and individuals who have achieved workplace balance. This research offers recommendations for policymakers to achieve a cohesive comprehensive national inclusion plan for women in the emergency response/fire service profession.

C. RESEARCH DESIGN

This study made use of available data to initiate an informed discussion, designed to aid fire service leaders and decision-making efforts toward recruiting, supporting, and elevating women. This thesis explores the career lifespan of a female firefighter, from recruitment through retirement, and de-emphasizes the short-sightedness of simply filling academy boots.

1. Gap Analysis Framework

To illuminate the causes and motivations that perpetuate the gender imbalance in the American fire service, this author has applied Clark and Estes's gap analysis as a framework to describe which policies and practices are lacking and what has been preventing more successful interventions from being implemented. In 2008, Clark and Estes formulated the gap analysis framework to provide a systematic process to analyze both individual and group performance in achieving organizational goals. According to Clark and Estes, "The framework focuses on the knowledge, motivations, and organizational influences (KMOs) that impact the performance of individuals and the

group at large.”²⁵ Clarke and Estes’ triad of knowledge, motivations, and organizational influences are critical factors in recognizing performance issues and identifying needs. Furthermore, gap analysis is a useful tool in evaluating the U.S. fire service because there is an evident disparity between where it is and where it could be regarding recruitment and retention of women. See the Appendix for a customized framework initially considered for analysis in this thesis.

2. Focus and Scope of Research

This research concentrated primarily on the U.S. challenges in recruiting and developing female firefighters. However, because the Canadian fire service struggles with parallel challenges, comparative data were included to evaluate Canada’s adaptations and solutions. The second scoping factor was the selection of an appropriate timeframe. To properly assess the success rate of female firefighters, it was necessary to understand the historical development of the fire service and when inter-gender service began. Thus, the analysis focused primarily on legal and operational developments across the United States from 1974 to the present. This timeframe was critical to this analysis, as the fire service has a long and proud history; however, female integration has been a relatively new phenomenon. This timeframe was selected because before 1974, the opinions and challenges of women entering this profession were summarily disregarded as not applicable or irrelevant.

While this research examined the design and challenges of the fire service in the United States, where systemic and individualized challenges overlap, other nations and jurisdictions might glean best practices. The data collection for this analysis relied on multiple sources from the United States, Canada, and the United Kingdom, such as journal articles, published federal and state reports, and local and state policies. Secondary sources included articles, books, and other forms of media. Moreover, while this thesis was concerned mostly with the experiences of American female firefighters, this research did consider how some other developed nations have handled their gender imbalances in the

²⁵ Clark and Estes, *Turning Research into Results*, 14.

fire service, as countries such as Canada and Australia have a nearly identical percentage of female firefighters per capita in the structural firefighting profession.²⁶

3. Limitations

This study did not focus on the diverse hiring of minorities but on gender inequality. This issue required a separate lens and course of study. The use of the term *minority* does not accurately describe women, as they represent most of the human population. This word is used here solely in the context of women representing a small proportion of a population within the larger personnel base of the firefighting workforce. The challenges faced by ethnic minorities differ from those of women in that a man of any given race, ethnicity, or national origin will not face that which women exclusively experience as one of the least-represented groups in this industry. In a male-dominated profession, men's issues and women's issues diverge. Though they may have been segregated or marginalized, men of varying creeds and races have been serving in the U.S. fire service for over a century.²⁷ Women are still relatively new to the game.

This research did not represent a broad comparison of gender studies in other professions, except for the physical requirements of law enforcement's special weapons and tactics (SWAT) members and women in military combat roles. Law enforcement and the U.S. military are utilized to highlight the commonality of outcomes when men and women participate in gender-neutral physical competition. The special teams and special operations roles, like firefighting, are innately physically demanding. These comparisons serve to identify one of the primary reasons that so few women qualify for a career in structural firefighting. Of the relatively few female candidates seeking a career in the fire service, only a small portion of them qualify in the entrance exams.²⁸

²⁶ "Canadian Fire Department Profile, 2014–2016," National Fire Protection Association, accessed March 6, 2021, <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Fact-sheets/CanadianFireDepartmentFactSheet.pdf>.

²⁷ Janice D. Yoder and Lynne L. Berendsen, "'Outsider within' the Firehouse: African American and White Women Firefighters," *Psychology of Women Quarterly* 25, no. 1 (2001): 27–36, <https://doi.org/10.1111/1471-6402.00004>.

²⁸ "Strength & Stamina: Women in the Seattle Fire Department," City of Seattle, accessed January 31, 2021, <https://www.seattle.gov/cityarchives/exhibits-and-education/online-exhibits/strength-and-stamina-women-in-the-fire-department>.

4. Outputs

This research sought to articulate systemic and individualized obstacles for female firefighters entering and succeeding in the U.S. fire service. This thesis concludes by identifying these gaps and challenges as well as promising practices currently implemented in isolated pockets in the United States. Ultimately, it was this author's desire to influence and educate policy- and decision-makers in how to enhance and evolve the fire service structure to encourage and fully benefit from the inclusion of women firefighters. Ideally, a systemic adoption of best/meaningful practices could occur across the United States, and the fire service could fully integrate and elevate women firefighters in this long-held noble profession.

D. CHAPTER ROADMAP

Chapter II provides a historical perspective on how the pervasive gender imbalance formed and why it has remained. Chapter III applies a gap analysis to the U.S. fire service and identifies deficiencies to arrive at a desired state based on societal and political expectations and pressures. Chapter IV offers lessons from the Canadian fire service, which has experienced similar challenges with integrating and supporting women, and best practices for a healthy work environment. Chapter V bridges the identified gaps with policy recommendations, best practices, and reasonable means for improving conditions. Two appendices offer additional resources regarding analytical frameworks and alternative perspectives on the issues examined in this thesis.

II. THIS SIDE OF THE GAP: OBSTACLES AND ISSUES FOR WOMEN FIREFIGHTERS

As women in the role of career firefighting have always been a significantly underrepresented subgroup, research highlighting their experiences has been limited. Thus, this chapter provides a modest historical background of the existing systems and structures of the American fire service, as well as examines practices in comparable professions such as law enforcement and the military.

Hiring more women is usually the goal of policymakers though the issue remains that few women apply for fire service jobs, and even fewer can meet the minimum qualifications.²⁹ Firefighters are named for their responsibility in the high-risk, low-frequency events of structural, vehicular, and wildland firefighting (see Figure 1). This potentiality makes up only about 2–5 percent of the actual job duties, but it represents the standard to which all training qualifies a candidate.³⁰ Firefighters are uniquely equipped and trained to perform these specialty services, and every member of every crew must maintain competencies in these tasks.



Figure 1. Risk Quadrant.³¹

²⁹ Moseley, “Women’s Entrance into the Fire Department.”

³⁰ Barbara R. Russo, “Women Firefighters’ Strategies for Advancement in the Fire Service: Breaking Down Barriers in Gender-Based Occupations” (PhD diss., Oklahoma State University, 2013), 14.

³¹ Source: Gordon Graham, “High-Risk, Low-Frequency Events in Public Safety,” *Lexipol* (blog), July 15, 2020, <https://www.lexipol.com/resources/blog/high-risk-low-frequency-events-in-public-safety/>.

In most states, fire departments also provide emergency medical services (EMS), and this type of response accounts for approximately 80 percent of the job.³² Moreover, the purview of the firefighter includes community outreach and public education, hazardous materials response, technical rescue, water rescue, fire prevention, and auto extrication. All members, male and female, are held to identical rigorous physical standards. This first gate eliminates many candidates. Unlike similar industries—such as law enforcement, the military, or heavy industry—firefighting demands a requisite level of strength and stature. The parallel professions have weapons, technology, and equipment to use as equalizers. This fundamental demand may eliminate a majority of interested candidates. If a woman is selected and hired, this strength and ability will be tested in the recruit academy, which is a grueling boot-camp-like paramilitary environment. If candidates pass this training benchmark, they move into probation, usually a year to two years of evaluated at-will employment. Challenges for women emerge here, in the “recruitment phase,” revealing issues with ill-fitting uniforms, a lack of facilities, hazing, discrimination, and gender bias.

Passing probation and moving into the sworn profession, a whole host of new issues emerge in the “retention phase.” Within the bulk of the woman firefighter’s career emerge questions of maternity and parental leave, injuries, and “brass ceiling” difficulties with promotion, cultural exclusivity, and social pressures of being a minority subgroup. The period in a firefighter’s career from the academy onward represents the indoctrination period and tests an individual beyond one’s physicality and endurance and, in many ways, defines a person’s social status. Very few women in the nation have made a full 30-year career, and the issues that have prompted their early departures have common themes. In examining why the U.S. fire service does not have more women, it needs to turn a mirror on its policies, practices, and behaviors. Culminating in the “retirement phase,” the loss of physical strength, menopause, and emotional wellness have been identified as cause for most women’s premature separations from the profession. Identifying underlying issues

³² Women in Fire, “FAQs.”

and examining failed practices are the key to understanding the problem and building toward a solution.

This background chapter is split into four dimensions identified as obstacles, or gates, during the firefighter’s career: physicality, socio-cultural dynamics, parenting issues, and promotional obstacles (see Figure 2). By defining these four compartments, the pervasive issues preventing women from joining the service and causing them to leave become more easily identifiable.

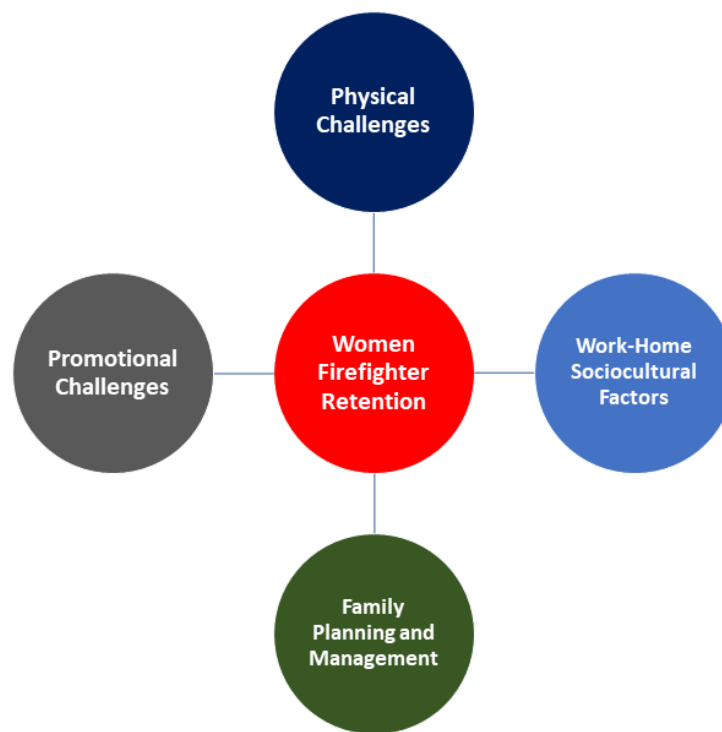


Figure 2. Four Quadrants of Concern for Women Firefighters

A. PHYSICALITY

Physicality is the first gate, as it includes the initial fitness performance tests and the recruit academy, which are the most significant cause of “wash out” or elimination of female recruits. Recognizing that the physical demands of a fire career form a “gateway” through which women often cannot pass, this section examines entry-level criteria in the

U.S. military and law enforcement to illuminate similar candidate selection processes. Specifically, this section compares the physical requirements of the fire service to those of the military's special operations branches and law enforcement's tactical teams, as these are traditionally gender-neutral fitness tests that bear out similar results to the fire service's gender-neutral entry tests. Extensive research exists on gender-specific physical capabilities, and these data form the criteria for some industries to create gender- or age-tailored requirements.

Historical research findings from military, policing, and fire service studies indicate that recruitment of women in traditionally male-dominated professions is desired; however, women make up approximately 15 percent of the armed forces.³³ As expressed by U.S. Marine Corps Commandant General David H. Berger in a 2019 senate hearing, "Furthering gender integration into job fields previously closed to women, expanding maternity leave, and increasing the intellectual bar for infantry troops are among the Marine Corps' top priorities."³⁴ The military can accurately track data and enforce codes and policies service-wide, unlike the vast independent municipal agencies of law enforcement and fire. The limited data on women in firefighting indicate they experience more frequent workplace injuries and are more likely to retire early with an occupational injury.³⁵

The fire service is the most gender-imbalanced of these three comparable professions. While administrators are pressured by elected officials to diversify the workforce, the goal of increased female recruitment remains elusive. As with grand jury reports from Los Angeles and Santa Clara County, which have recommended increased

³³ Douglas Yeung et al., *Recruiting Policies and Practices for Women in the Military: Views from the Field* (Santa Monica, CA: RAND Corporation, 2017), 25, https://www.rand.org/pubs/research_reports/RR1538.html.

³⁴ Immanuel Johnson, "Women in More Job Fields, Added Maternity Leave on Top Marine's Priority List," *Stars and Stripes*, February 24, 2020, <https://www.stripes.com/news/women-in-more-job-fields-added-maternity-leave-on-top-marine-s-priority-list-1.620075>.

³⁵ Brittany S. Hollerbach et al., "Injury Correlates among a National Sample of Women in the U.S. Fire Service," *Journal of Occupational and Environmental Medicine* 62, no. 8 (August 2020): 634–40, <https://doi.org/10.1097/JOM.0000000000001918>.

recruitment efforts, the academic literature also indicates creating and identifying qualified female candidates as the desired commodity.³⁶

1. Fire Service Physical Standards—Industrial Athletes

Though research has emphasized the need for these three industries to integrate women into their workforces, experts differ on the feasibility of increasing female enrollment and integration. Entry-level physical fitness standards have traditionally been designed for and favored male candidates while disproportionately disqualifying female applicants.³⁷ Height and stature requirements have been eliminated in most agencies, and the move to job-related physical testing is prevailing.³⁸ Some experts view this move—to create a legally vetted, standardized fitness test, such as the Candidate Physical Ability Test for the fire service—as degradation or a compromise of established industry standards.³⁹ Firefighting is a rigorous physical profession that does not enjoy the benefit of “equalizers” that other comparable professions employ. Tools such as advanced weaponry like a fighter jet or equipment to compensate for physical strength like a firearm can assist in neutralizing performance. While these tools are task oriented, they are not gender specific and can be used by either male or female candidates. A lack of access to applicable fire service tools too often eliminates many women at the entry level.⁴⁰ Extensive research on physical challenges exists to support this point. Khan, Davis, and Taylor provide data illuminating this issue in their study published in the *Journal of Workplace Behavioral Health*.⁴¹ Physical requirements as an obstacle to recruitment remain at the forefront of the gender disparity. The weight of ladders, hoses, power tools, and unconscious victims do not

³⁶ Smith, “L.A. Has Hired More Female Firefighters”; Santa Clara County Civil Grand Jury, *Why Aren't There More Female Firefighters?*; Los Angeles County Civil Grand Jury, *2017–2018 Los Angeles County Civil Grand Jury Final Report* (Los Angeles: Los Angeles County Civil Grand Jury, 2018).

³⁷ Russo, “Women Firefighters’ Strategies,” 13.

³⁸ Yasin A. Khan, Andrea L. Davis, and Jennifer A. Taylor, “Ladders and Lifting: How Gender Affects Safety Behaviors in the Fire Service,” *Journal of Workplace Behavioral Health* 32, no. 3 (2017): 206–25, <https://doi.org/10.1080/15555240.2017.1358642>.

³⁹ Booth and Rohe, “Recruiting for Women and Minorities in the Fire Service.”

⁴⁰ City of Seattle, “Strength & Stamina.”

⁴¹ Khan, Davis, and Taylor, “Ladders and Lifting.”

change, and there is a foundational need for all members of a firefighting crew to perform at an above-average level. Indeed, firefighting is a varsity sport, and women who successfully pass the entry-level exams and ongoing performance evaluations have proven themselves capable.

2. The Firefighting Candidate Physical Agility Test

The modern firefighter must demonstrate several vitally important physical tasks on the fire ground, and standardized testing has been developed to create a more equitable and measurable fitness standard. The Candidate Physical Agility Test (CPAT) was developed to standardize the physical entrant exams, as most fire agencies across the country utilized different metrics and standards.⁴² The order of CPAT events is as follows: stair climb, hose drag, equipment carry, ladder raise and extension, forcible entry, search, rescue, and ceiling breach and pull.⁴³

When the International Association of Fire Fighters (IAFF) and International Association of Fire Chiefs' Joint Labor Management Wellness Fitness Initiative (WFI) Task Force first met in December 1996, the members agreed, in part, to address the issue of physical performance in the fire service."⁴⁴ The resulting CPAT was developed to provide fire departments with a tool to select inherently physically capable individuals to be trained as firefighters.⁴⁵

The CPAT is considered by some proponents to be a positive change toward the broad goal of diversifying the fire service. All assessments are realistic replications of job skills, including dragging a body, pulling a hose, breaching a ceiling, throwing a ladder, and carrying heavy equipment. Though the CPAT assesses a trainee's ability to carry out these basic functions, it is often criticized for diminishing the intensely stressful and strenuous

⁴² "CPAT at NTN," National Testing Network, accessed July 21, 2022, https://nationaltestingnetwork.com/publicsafetyjobs/cpat_info.cfm.

⁴³ National Testing Network.

⁴⁴ Joint Labor Management Wellness Fitness Initiative Task Force, *Candidate Physical Ability Test*, 2nd ed. (Washington, DC: International Association of Fire Fighters and International Association of Fire Chiefs, 2007), 51, <https://www.iaff.org/wp-content/uploads/2019/04/CPAT-2nd-Edition.pdf>.

⁴⁵ Joint Labor Management Wellness Fitness Initiative Task Force.

activities encountered in real-world fire suppression.⁴⁶ Agencies across the country have rejected the use of the CPAT and opted to perform their own in-house physical programs. However, due to its endorsement at the national level by the IAFF, the CPAT has been increasingly adopted, especially in major metropolitan areas, because it provides a non-discriminatory model of fitness testing that replicates job tasks. Such a model serves an agency in several ways—eliminating the need to fund, produce, and staff an entry-level physical test and providing the facilities and staff to do so. Also, the use of the CPAT reduces liability for the host agency because its criteria have been examined and adapted to be fair and replicable.

Despite the availability and nationwide acceptance of the CPAT as valid, the FDNY always conducted its own in-house physical exam—the Functional Skills Training test. Rates of completion varied drastically between male and female participants, with a passing score of 95 percent for male and 57 percent for female candidates.⁴⁷ This practice was challenged in court in 2014, the outcome of which was the department’s ceasing all physical entry tests because of perceived gender bias.⁴⁸ The FDNY has since reestablished candidate fitness tests.

Law enforcement, like the military, can equalize its force using firearms and weapons, mechanized tools, and technologies. While a female fighter pilot has her aircraft and a patrol officer her gun and taser, a woman firefighter carries combined weight on her body of approximately 100–130 pounds, including her protective equipment and self-contained breathing apparatus. Moreover, on a three-person engine company she may be solely responsible for throwing a 28-foot ladder; retrieving a 60-pound set of extrication spreaders; carrying generators, fans, and extinguishers; and advancing charged hose lines.

⁴⁶ Abby Miller et al., *Promising Practices for Increasing Diversity among First Responders* (Washington, DC: Department of Labor, 2016), https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/FirstResponders_Full_Report.pdf.

⁴⁷ Yoav Gonen and Aaron Short, “FDNY Drops Physical Test Requirement amid Low Female Hiring Rate,” *New York Post*, December 11, 2014, <https://nypost.com/2014/12/11/fdny-drops-physical-test-requirement-amid-low-female-hiring-rate/>.

⁴⁸ Gonen and Short.

B. WORK–HOME SOCIO-CULTURAL INFLUENCES

Socio-cultural issues include gender identity, social out-grouping and isolation in a predominantly male workplace, and honor challenges. Women firefighters in both the United States and Canada report similar phenomena with social othering, which has been a source of recent concentration in academic study.

Over half the fire departments in the United States have no women firefighters on staff.⁴⁹ Assuming that recruiting women into these non-traditional roles is a universally desirable goal, this is a daunting statistic after nearly 50 years of female eligibility in firefighting. Carol Chetkovich offers a socio-cultural analysis of human behaviors and fire service culture, addressing the identity conflicts women experience when trying to integrate into a “man’s world.”⁵⁰ Hyper-masculinized homogenous environments do not create a neutral space for outsiders to enculturate. “Frat house culture” and the “old-boy network” are identified as impediments for women in several sources.⁵¹ These monikers suggest a dominantly male culture that fails to involve and cultivate women in the firehouse, social groups, and leadership roles. It is worthy to question whether women will ever experience equality in the firehouse culture and whether that dynamic deters applicants. As indicated in Santa Clara County’s 2020 Civil Grand Jury report, the women surveyed reported increased hazing, sexual harassment, and exposure to pornography and denied bids to certain firehouses where women were not welcome.⁵²

Carol Chetkovich explores these cultural aspects of the fire service. In her book *Real Heat*, she writes,

Firefighters are expected to be large, strong, athletic, unemotional, cool, good with tools, physically hard-working, brave, aggressive, competitive in the manner of team sports, self-confident, and socially skilled in a loud, group-oriented environment. The genesis of this image could be argued at

⁴⁹ Marimon et al., “Diversity and Inclusion Leaders in U.S. Fire Departments,” e13–16.

⁵⁰ Carol Chetkovich, *Real Heat: Gender and Race in the Urban Fire Service* (New Brunswick, NJ: Rutgers University Press, 1997), 52.

⁵¹ Lloyd Alaban, “Report: ‘Frat House Culture’ Blamed for Lack of Female Firefighters in Santa Clara County,” San José Spotlight, December 29, 2020, <https://sanjosespotlight.com/report-frat-house-culture-blamed-for-lack-of-female-firefighters-in-santa-clara-county/>.

⁵² Santa Clara County Civil Grand Jury, *Why Aren’t There More Female Firefighters?*

length, but its implications for gender segregation are clear: women will have a hard time becoming firefighters to the extent that to be a firefighter means to be a man.⁵³

Chetkovich’s observations highlight the cultural nuances that have long defined the U.S. fire service, which for 250 years was exclusively male and a closed society. What may be partly responsible for this condition is the history of this labor force in the United States. The fire service has existed as a public service in some form for approximately 300 years. An inherently dangerous profession, East Coast fire departments in the 1800s and 1900s comprised primarily low-paid Irish and Italian immigrants and their descendants. Like New York and Boston, Chicago, San Francisco, and Los Angeles populated their fire departments with Irish and Italian Americans. Sons would follow in their fathers’ footsteps—both a source of familial pride and a tradition that fostered nepotism in the modern workforce.⁵⁴

1. The Proving Grounds

One question in the onboarding of women firefighters is the efficacy of the traditional academy model. This first gate can be examined from a broader view of the historical rites of passage. Male rites of passage throughout the world are often defined by exhibitions of honor, courage, or physical strength with a component of public adjudication. The U.S. military boot camp model sets a precedent for the paramilitary professions of law enforcement and fire. The methods of enculturating a new member are archetypal, as identified by Joseph Campbell in the “hero’s journey” (see Figure 3).

⁵³ Chetkovich, *Real Heat*, 37.

⁵⁴ Yoder and Berendsen, “‘Outsider within’ the Firehouse.”

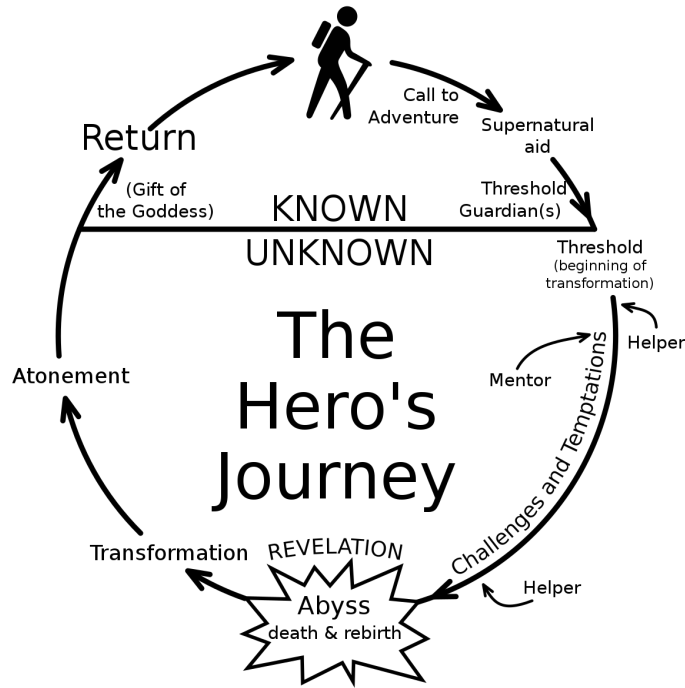


Figure 3. The Hero's Journey.⁵⁵

In this way, recruits enter an indoctrination process in the academy and are stripped of their individuality and personal comforts, as well as freedom and identity. They are put through a series of rigors meant to simulate stress, fear, and confusion and to test their mental and physical limits, including cognition and strength. An innate hierarchy within the group, as well as performance competition and social ranking, emerges. Leadership challenges their integrity, their resolve, and their stamina. Recruits suffer, fail, succeed, and strive together, and in this struggle, they form a bond. When at last they complete their training and emerge from this metaphorical underworld, they are created in a new image, one affiliated with their new in-group. This journey, which resonates a prideful rite of passage, may be a model of personal development that favors men.

⁵⁵ Adapted from Joseph Campbell, *The Hero with a Thousand Faces* (Mumbai: Yogi Impressions, 2017), 12.

2. The Fire House as a Performance Stage

The unique characteristics of a homogenous group, working in a high-stress environment, builds fraternity and a strong sense of shared identity.⁵⁶ Firefighter humor, hazing, and rites of passage have long defined the profession in popular culture.⁵⁷ Practical jokes, tricks, and group humiliation are hallmarks of fire station culture. It is often said that if you are not being teased, they do not like you. Women as outsiders create an unknown dynamic, and even well-intending men may exclude a woman from play to avoid offending or upsetting her. Often, the unintended consequence is that the woman feels dejected and excluded. Introducing women into this well-defined dynamic presents myriad challenges, requiring intentional leadership to guide the transition. It also puts pressure on the company officer to monitor these engagements, which often take place out of view of supervisors in the chain of command. Creating a culture of inclusion that is forward-leaning and intentional can prevent hurt feelings, in-fighting, and potentially formal complaints and lawsuits.

Women often report feeling harassed, verbally abused, and discriminated against. The traditional model of bonding—often including pranks like dumping water buckets on new personnel, hiding their bedding, or drawing on their bodies in permanent marker while they sleep—is commonplace in the fire service. However, being ordered to perform humiliating tasks or assignments, having your underwear frozen and displayed on the flagpole, or finding dead animals in your locker cross over into hostile work environments, even if all members consent to the ritual. The Los Angeles Fire Department has been under significant scrutiny in recent years for initiation “pranks” that have resulted in large-scale lawsuits and terminations.⁵⁸ These included defecating in a women’s shower stall and urinating in a woman’s mouthwash bottle. This level of hostile behavior sends a strong

⁵⁶ James Ward and Diana Winstanley, “Watching the Watch: The UK Fire Service and Its Impact on Sexual Minorities in the Workplace,” *Gender, Work & Organization* 13, no. 2 (2006): 193–219, <https://doi.org/10.1111/j.1468-0432.2006.00304.x>.

⁵⁷ Larry Moran and Gene Roth, “Humor in Context: Fire Service and Joking Culture,” *New Horizons in Adult Education and Human Resource Development* 25, no. 3 (Summer 2013): 14–26, <https://doi.org/10.1002/nha3.20028>.

⁵⁸ Los Angeles County Civil Grand Jury, *Grand Jury Final Report*.

message to the aspiring members that they are not welcome, and they are not safe—even while firefighters often say, “We eat our young.”

3. The In-Group/Out-Group Narrative

Controlling processes inform the identity of the culture in any workplace, and the fire service is no different. Anthropologist Laura Nader defines controlling processes as follows: “how people’s behavior, actions, and at times, thoughts, are controlled by social and cultural mechanisms, and how people avoid, resist, or invent counter-controls.”⁵⁹ Invisible boundaries and belief systems guiding peoples’ behavior are cultural norms unique to their in-group. When recruits graduate from the fire academy and enter the firehouse environment, they are still in the nominal group, or out-group. As with members of elite military forces or SWAT teams, new firefighters—called rookies, probies, or boots, in various parts of the country—must prove their skills and abilities in the field. For firefighters, that proving ground will be a working fire. When a probationary firefighter is with a new crew, the in-group gauges the outsiders’ talents and courage in a prescient moment in the field. This gate cannot be replicated or simulated; it is a demonstration of grit and strength. This passage is a natural part of the hero’s journey, as described by Campbell, a step in the transformation. Unfortunately, this process is not always clear-cut. Within the obscurities of this “becoming” are many opportunities for hurt feelings, misunderstandings, cruelty, and bullying. What to some may be perceived as joking or teasing to the receiver may feel like crushing humiliation or taunting. Membership in the fire station in-group is an elusive aspiration. Recent discrimination cases, injunctions, and lawsuits are evidence of this ongoing reality.⁶⁰ Women often report that their direct complaints are met with dismissal, retaliation, and alienation, and turning to the legal system for remuneration is often the only viable avenue.⁶¹

⁵⁹ Chris Hebdon, “Activating Pedagogy: Civics Lessons from Laura Nader’s Teaching,” *Kroeber Anthropological Society Papers* 102, no. 1 (2013): 40–61.

⁶⁰ Los Angeles County Civil Grand Jury, *Grand Jury Final Report*.

⁶¹ Yoder and Berendsen, “‘Outsider within’ the Firehouse.”

C. FAMILY PLANNING AND PARENTAL LEAVE

Women experience different issues related to parenting in the fire service, including challenges with a lack of supportive protocols around pregnancy, birth, and breastfeeding. In the long term, childcare is often a struggle with the long shift work and unpredictable schedules around emergency work and the fire season. Family planning has been identified as a deterrent to recruitment and a cause for early departure from the career.

A significant challenge faced by women in the fire service is the very fact they are a minority subgroup. Specific issues affecting them are of little effect or consequence to the larger organization. If maternity policies and pregnancy concerns affect fewer than 4 percent of the workforce, they become less relevant. If the boots, turnouts, and protective equipment fit most people, they are unlikely to be replaced. Women have a smaller voice in their agencies and labor unions. Further formal research validating the safety concerns and consequences of inadequate policies will allow departments to make better choices on behalf of this minority group.

Studies indicate that anticipated challenges with family planning have a deterrent effect on women's entering the fire service.⁶² Not all women intend to give birth, of course, so these issues affect only a portion of the women in the workforce. Many agencies across the nation do not have any comprehensive plan for pregnancy and modified duty, nor policies to support the woman in the postpartum phase, including lactation space and a return-to-work plan. When a female firefighter becomes pregnant, she often stays online in operations longer than she would in a different industry. During this time, she is potentially compromising the crew's integrity, as well as exposing the fetus to toxins, dangerous pathogens, hazardous materials, and other immediate dangers to life and health.⁶³ These concerns extend into the postpartum phase, when a recovering mother may be breastfeeding.

⁶² Parkinson, Duncan, and Archer, "Barriers and Enablers to Women."

⁶³ Bradley A. Evanoff and Linda Rosenstock, "Reproductive Hazards in the Workplace: A Case Study of Women Firefighters," *American Journal of Industrial Medicine* 9, no. 6 (1986): 503–15, <https://doi.org/10.1002/ajim.4700090602>.

Maternity and parental leave are reported among the key issues deterring women from entering professional firefighting and are noted as a primary reason for early departure from the job.⁶⁴ Recognizing this gap the military has attempted to address it with recent policy improvements.⁶⁵ Often, no modified duty alternative exists, a woman finds herself out of paid-leave accruals, and she must return to shift work. These work dynamics separate mother from child during critical baby-bonding and may not leave the mother time to heal from birth trauma or C-section surgery or to manage the many potential complications of motherhood. Notably, breastfeeding mothers are compelled to express breastmilk at work and find a place to store the milk discreetly; nevertheless, sleep deprivation and stress associated with firefighting duties can cause disruptions in milk supply and put tremendous stress on the newborn in feeding.⁶⁶

In 1986, shortly after women entered the fire service, a study was conducted to examine the threats and hazards they faced during pregnancy. While the comprehensive examination—*Reproductive Hazards in the Workplace: A Case Study of Women Firefighters*—revealed high risks to both the mother and fetus, over three decades later, most labor unions and departments have not yet instituted a comprehensive plan to provide continuity in pay or benefits while a woman firefighter is pregnant or is caring for an infant.⁶⁷ Even though “reasonable accommodations” are offered in some states, pregnancy is treated as a disability, and traditional paid maternity leave, as seen in corporate and academic settings, does not exist.⁶⁸ Four and a half decades after women entered the workforce, little decisive policy exists even from the IAFF.⁶⁹ The Federal Emergency Management Agency has recently funded studies through the University of Arizona examining stress, cancer risks, and the effects of toxins on the fetus and in nursing mothers’

⁶⁴ Willing, *On the Line*.

⁶⁵ Yeung et al., *Recruiting Policies and Practices for Women in the Military*.

⁶⁶ U.S. Fire Administration, *Emerging Health and Safety Issues among Women in the Fire Service* (Emmitsburg, MD: U.S. Fire Administration, 2019), 34, https://www.usfa.fema.gov/downloads/pdf/publications/emerging_health_safety_issues_women_fire_service.pdf.

⁶⁷ Evanoff and Rosenstock, “Reproductive Hazards in the Workplace.”

⁶⁸ Evanoff and Rosenstock.

⁶⁹ Evanoff and Rosenstock.

breastmilk.⁷⁰ These health risks, as well as the lack of substantive support for pregnancy, childbearing, and childrearing, are an ongoing and under-acknowledged issue in the industry, defining the fire service as one of the least accommodating and supportive workplaces among standard Equal Opportunity Employment Commission–governed professions.⁷¹

In California, leave is provided through the individual’s accrued vacation and sick leave hours, which vary greatly depending on the individual’s age and tenure in the fire service. The Family Medical Leave Act of 1993 is a federally mandated umbrella that provides the individual with the opportunity to utilize vacation and sick leave, but no additional paid family leave is provided.⁷² State legislation also lacks teeth in these areas. For example, the California Family Rights Act overlaps with the federal act by allowing employees to use expired accrued leave, but it provides no further financial support to them.⁷³ Because most firefighters do not pay into Social Security, many do not have access to short-term disability, which would provide 55 percent of pay and continued benefit accrual.

Once leave dries up, there are few other options for women firefighters and their families. Some unions offer an optional limited term disability. Because a healthy pregnancy does not constitute a disability under this program’s definition, it does not apply to most personnel. Besides the leave limitations, if the new mother and child require extended bonding time or a more complicated physical recovery, they will have nothing left in their “leave bank.” After sick leave and vacation have been exhausted, mothers are obliged to go absent without pay. This status requires the individual to pay a percentage of one’s insurance and receive no income during the time it is applied. Some women

⁷⁰ “Researchers Studying Stress, Cancer Risk and Reproductive Toxicity in Women Firefighters,” University of Arizona Cancer Center, January 27, 2021, <https://cancercenter.arizona.edu/news/2021/01/researchers-studying-stress-cancer-risk-and-reproductive-toxicity-women-firefighters>.

⁷¹ “EEOC Suggests Ways to Boost Women in Public Safety Jobs,” FEDweek, July 18, 2018, <https://www.fedweek.com/issue-briefs/eeoc-suggests-ways-to-boost-women-in-public-safety-jobs/>.

⁷² Family Medical Leave Act of 1993, Pub. L. No. 103–3, 107 Stat. 6 (1993), <https://www.govinfo.gov/content/pkg/STATUTE-107/pdf/STATUTE-107-Pg6.pdf>.

⁷³ California Family Rights Act of 1993, Cal. Gov’t Code §§ 12945.1, 12945.2, and 19702.3 (1993).

firefighters, accustomed to comfortable pay, have had to apply for WIC, food stamps, and MediCal after the birth of their children. This approach results in long-term financial hardships, debt, and loss of seniority—seen by women in the field as discriminatory or disparate treatment because it punishes only female employees for “choosing” to have children.

A lack of a comprehensive maternity policy and parental leave plans inhibits the initial recruitment of female firefighters, potentially compromises their income in the long term, affects promotional opportunities, and likely shortens the career span of female firefighters. With many agencies seeking to recruit more women and bring their percentages up beyond 4 percent, this issue requires immediate and focused attention for legal, practical, and ethical reasons.

D. PROMOTIONAL OBSTACLES

Promotional challenges are another distinct category, as women firefighters often suffer the cumulative effect of being denied desirable bids for busy firehouses, needing to outperform their competition, and experiencing distrust from subordinates unaccustomed to seeing women in a role of tactical leadership.⁷⁴ The brass ceiling refers to the invisible barriers to upward advancement in high-ranking positions in the military, law enforcement, and fire and is a play on the corporate “glass ceiling” that women encounter. With so few women in the career fire service nationwide, their representation in the company officer and chief officer ranks is negligible. Current data indicate that only approximately 180 women in the U.S. career fire service are chief officers.⁷⁵ That infinitesimal number in proportion to 380,000 career firefighters highlights the challenges women experience in finding role models in high-ranking positions. Being the only woman in a classroom, training, or drill adds a dimension of pressure, but being the only woman in a promotional

⁷⁴ Marcos O. Marimon et al., “Diversity and Inclusion Leaders in U.S. Fire Departments Impact the Type and Number of Diversity and Inclusion Programs Offered,” *Journal of Occupational and Environmental Medicine* 62, no. 1 (January 2020): e13–16, <https://doi.org/10.1097/JOM.0000000001780>.

⁷⁵ Women in Fire, “FAQs.”

process may add additional stressors. Studies from the military sector have indicated that soldiers, too, have an intrinsic distrust of women in combat leadership.⁷⁶

In some agencies, the pathway to promotion is blocked with innumerable obstacles. Women are often alienated and marginalized from the point of entry, in the academy and into probation. Surprisingly, having other women in the workplace can also create toxic levels of competition and distrust. Studies indicate multiple incidents of women sabotaging other women in the fire service.⁷⁷ Some women are often so focused on maintaining the status quo and fitting in that they undermine the success of another woman or avoid association with her. There is no prescription for firefighters seeking allegiances. It may be a male colleague, administrative personnel, or a city representative who provides support and guidance to the female firefighter, but it will take someone open to seeing a different face at the table to recognize the potential talent pool.

Strong leadership from both male and female leaders is imperative to set a course for the agency. Researchers have identified some of the characteristics of successful female chief officers, and the findings reflect those of Angela Duckworth's study on grit. Female fire chiefs tend to demonstrate passion and perseverance. As Duckworth quips, "Most dazzling human achievements are, in fact, the aggregate of countless individual elements, each of which is, in a sense, ordinary."⁷⁸ It is possible that because women in the fire service face extreme criticism and skepticism before they even begin their careers, the series of ordinary feats adds up to a heightened level of accomplishment. Possibly, because they are marginalized and doubted, they work hard to build up their knowledge, skills, and abilities. When it comes to promotional opportunities, they may be better prepared to perform in environments where education, eloquence, patience, and communication are emphasized. These are characteristics that may be perceived as weaknesses in the firehouse setting, but in a promotional test, they are invaluable.

⁷⁶ Micah Ables, "Women Aren't the Problem. Standards Are," Modern War Institute, February 5, 2019, <https://mwi.usma.edu/women-arent-problem-standards/>.

⁷⁷ Yoder and Berendsen, "Outsider within' the Firehouse."

⁷⁸ Duckworth, *Grit*, 83.

In her dissertation, Janet Contursi explores the commonalities among executive chief officers. Her interviews with female fire chiefs revealed they

were personable, loved what they were doing, were committed to their organization's overall mission, willing to help their co-workers succeed and ambitious. The differences were in the environment in which they were operating and, most prominently, in the attitudes of the leaders in their respective organizations. Those attitudes dictated policies, procedures and how women were viewed, accepted and supported—or not. Each of the women was all intelligent, resilient, and possessed a great sense of humor.⁷⁹

Humor again finds its way into the narrative. For line firefighters, humor is a coping mechanism, a way to bond to with one another amidst the horror of things witnessed and experienced. Humor is a way to show humility and vulnerability in an environment of bravado and imperviousness. For chief officers, specifically women chiefs, good humor is as much a survival mechanism as it is a characteristic of in-group affiliation. A woman at the top ranks has likely experienced decades of disenfranchisement, scrutiny, and adversity. The commonality of a “great sense of humor” is likely a good predictor of success and survivability for a woman in the fire service. Perhaps humor should be measured in entry-level applicants as it has proven a recurring theme in fire service success.

Contursi also examines the different ways female chief officers perform in their role, as she parallels her experience as a firefighter in the U.S. Navy. She observes their shared hallmarks of success:

Each of them had found ways to navigate, and prevail, in the choppy waters of their traditionally male-dominated organizations. What stood out most for me was their ability to create strong working relationships, network and find mentors—both male and female—who would eventually help propel them to the next level. Something that was very present in my military experience—and lacking in my fire service experience—is the absolute expectation that leaders inspire, encourage and support their subordinates just as much as they supervise and manage them. Incidents involving discrimination, harassment or inappropriate sexual behaviors were not tolerated at any level in the military.

⁷⁹ Janet Contursi, “Breaking the ‘Brass Ceiling’: Women Face Unique Obstacles in the Fire Service,” *FireRescue1*, September 18, 2019, <https://www.firerescue1.com/leadership/articles/breaking-the-brass-ceiling-women-face-unique-obstacles-in-the-fire-service-am49Nem3qPWdEBWO/>.

This zero-tolerance policy was not always the norm, but since instituted, conditions and morale in the military have improved.⁸⁰

The fire service often refers to itself as a paramilitary organization, as evidenced by its ranks, structural hierarchies, chains of command, and boot-camp-style academies. Contursi makes an important observation that the military enforces a zero-tolerance policy for incidents of bad behavior, in contrast to the fire service, which has a record of permissiveness. Increasing awareness, reporting mechanisms, and consequences for inappropriate behaviors reduces liability for the organization and brings the fire service more in line with professional working conditions in the private sector and in educational environments. Many things that happen in the firehouse and on the line would not be tolerated in the military.

Other military norms that may benefit the fire service include transparency around bids and station placements. Many organizations uphold a practice of competitive bidding for stations. However, women firefighters in the United States and Canada report being blocked from desirable stations and busy houses.⁸¹ Such treatment can hamper the person's ability to acquire training and access to more coveted equipment, like the ladder trucks or heavy rescue. Double houses and battalion houses are often desirable assignments, as their personnel communicate more directly with leadership and have access to more organized training and more fires. Many departments send a clear message that women are not welcome in certain houses.⁸² This form of bid-blocking can create a case for hostility and discrimination.

E. SUMMARY

By re-engineering some of the existing obstacles on the road to promotion, women firefighters may have access to increased wages and benefits, more control over their daily working environment, and a higher level of job satisfaction. Valuing the individual contributions that women bring to the workforce fosters inclusion and may result in increased retention. Chapters III helps to define the underlying knowledge, motivation, and organizational influences contributing to the current situation.

⁸⁰ Contursi, "Women in Leadership," 75.

⁸¹ Parkinson, Duncan, and Archer, "Barriers and Enablers to Women."

⁸² Canadian Association of Fire Chiefs, *A Fire Service for All*.

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III. WOMEN IN THE U.S. FIRE SERVICE: A GAP ANALYSIS

It has been nearly 50 years since the first woman stepped onto a fire engine in a paid capacity. Thousands of sworn uniformed women have made their passage through the ranks. Nevertheless, little effort has been made to accommodate their presence in the fire station, and no meaningful path forward is being paved. There are pockets of inclusivity throughout the country, but the workforce is and will continue to be predominantly male. It is reasonable to assume this data pattern is a forecast of the future, so building a more welcoming and integrated model for inclusion involves identifying gaps between the current circumstances and the future the fire service wishes to realize.

The previous chapters identified major obstacles for women’s career success in the U.S. fire service. A gap analysis is useful in examining the space between the current reality and the desired state (see Figure 4). It considers three important factors: knowledge, motivations, and organizational influences—dimensions that examine basic objectives and help to determine whether they are being met. If they are not, the analysis can identify needs and areas for improvement.

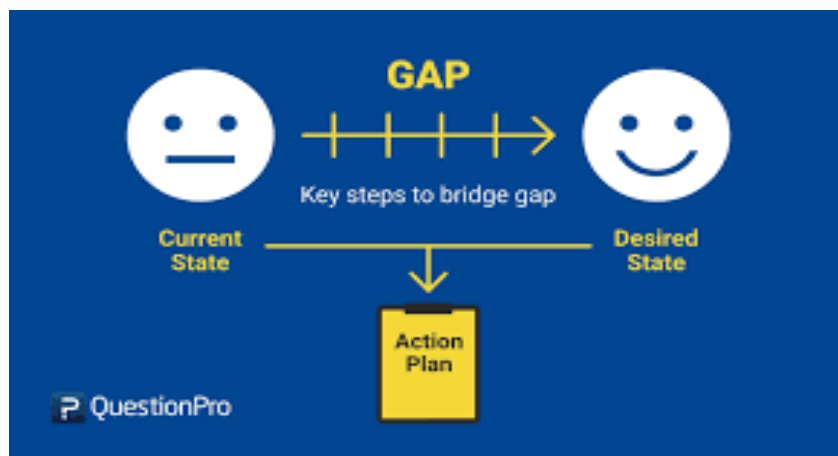


Figure 4. Gap between the Current and Desired State.⁸³

⁸³ Source: “What Is Gap Analysis: Definition, Method and Template with Example,” *QuestionPro* (blog), accessed September 23, 2022, <https://www.questionpro.com/blog/gap-analysis/>.

A. KNOWLEDGE: WHAT ARE THE CURRENT CONDITIONS?

Women want to be firefighters. Despite years of low numbers and no indication that enrollments will significantly increase, trends in female applicants show only a slight increase.⁸⁴ Social media campaigns, television, and public outreach to youth groups may increase the number of applicants, but the numbers of successful hires continue to stagnate. The fire service will expand inclusion and integration, but its speed and success will depend on how well fire service leaders and policymakers respond to long-standing and emerging challenges. Universities and colleges, corporations, and businesses, as well as the military and law enforcement, show increased female membership over the past three decades.⁸⁵ It stands to reason that women will continue to be a part of the fire service, and the tendency to exclude them from the profession's priorities and identity is counter-productive. Women are in the back row of the family portrait, and there is an opportunity for them to be acknowledged as equal members of the team.

B. MOTIVATIONS: WHY DO WE NEED MORE WOMEN?

Raising percentages and improving the optics on social demographics remain apparent motivations for political influencers and community leaders. The question of why it is necessary emerges. If the fire service has functioned successfully without women in the ranks for two centuries, perhaps it is fine as it is. Notably, pressures to diversify the workforce persist, and women want to enter the workforce. Indeed, they have been granted the rights to qualify under a set of pre-determined, gender-neutral criteria. Furthermore, fire service agencies are motivated to fulfill the wishes of their represented community leaders. As it stands, even if organizations are committed to doubling their hiring of female candidates, these are changes that will take decades or generations to recalibrate.

Because she can, does she want to? The reality in the historical trends indicates that over 47 years, few women ever apply for the fire service. This research indicates that major barriers to women's applying for the work mirror the same factors deterring women in

⁸⁴ Juan Byron, "Career Paramedic-Firefighter Staffing Problems: Is Recruiting Women Part of the Solution?" (master's thesis, Naval Postgraduate School, 2018), <http://hdl.handle.net/10945/61323>.

⁸⁵ Bureau of Labor Statistics, "Men Accounted for About 75 Percent."

other public safety careers and the military. Women surveyed doubt their own physical abilities see the profession as an exclusively masculine job and are deterred by the danger, manual labor, and social dynamics.⁸⁶ Overnight shift work is reported as undesirable, perhaps because being away from home is hard on children and on romantic relationships. Women who have the enhanced physical and performative capabilities to be firefighters likely have a variety of other less demanding professional options.

If organizations want to increase the number of women in the fire service, expanding job descriptions or providing specialized work may be effective. An affiliated EMS program with single-role medics affiliated with the fire service can bring up the numbers of women in uniformed positions. The higher percentages of women seen employed by the Los Angeles Fire Department (13 percent), the San Francisco Fire Department (15 percent), and the Minneapolis Fire Department (17 percent) are partially due to counting non-suppression female paramedics.⁸⁷ Such a simple change is a positive step for agencies motivated to increase numbers of women in the ranks, including those who cannot perform the rigorous duties of structural firefighters.⁸⁸

C. ORGANIZATIONAL INFLUENCE: HOW DO WE FOSTER SYSTEMIC CHANGE?

Organizational change takes one of two forms: internal change, by in-house procedure and policy reform, or external change, by forces outside the agency such as through legislation or court cases. Internally motivated change is likely to be less disruptive, as the organization can tailor the evolution to its specific needs and desires. An outside force, on the other hand, may try to make sweeping change via broad public policy or a generalized legal rule for widespread application. While all the change needs to be within a reasonable spectrum, internally motivated change is likely to be most successful

⁸⁶ Michael Totty, “Why Aren’t There More Women Firefighters?,” *UCLA Anderson Review*, October 9, 2019, <https://anderson-review.ucla.edu/firefighters/>.

⁸⁷ Smith, “L.A. Has Hired More Female Firefighters”; Santa Clara County Civil Grand Jury, *Why Aren’t There More Female Firefighters?*; Joni Thome and Frances Baillon, “Minneapolis Fire Dept—Kris Lemon’s Story,” *Insider Exclusive*, accessed September 4, 2022, <https://insiderexclusive.com/minneapolis-fire-dept-kris-lemons-story/>.

⁸⁸ Byron, “Career Paramedic-Firefighter Staffing Problems.”

and have a lasting effect. Organizations that have direct control of the shape and form of their evolution are more invested in its long-term success. Imposed, rigid rules are often rejected and subverted, causing an inverse affect to the desired policy.

With a focus on both racial diversification and gender integration, the fire service has an opportunity to harness massive pools of untapped talent and reshape its identity. Taking ownership and demonstrating accountability will allow leaders to determine the methods and approach, without being subject to external pressures and hiring mandates. It should be a goal to strive for acceptance, not just tolerance.

D. SUMMARY

This chapter has analyzed the gap between the current and desired state in the fire service, toward fostering an environment that feels welcoming to women. Specifically, it summarized what needs to change, why it needs to change, and how to implement change in the fire service based on organizational and leadership principles. The following chapter explores successes and failures in the Canadian fire service and offers several best practices in fostering a hospitable environment for women in the U.S. fire service. By redefining the problems and definitions, then taking best practices from similar industries, and then reaffirming leaders' intent, the fire service can begin to bridge the gap between where it was and where it wants to be in the future.

IV. LESSONS FROM THE CANADIAN FIRE SERVICE AND BEST PRACTICES

Canada is a nation slightly larger than the neighboring United States but has a career and volunteer firefighting force of 152,650 personnel.⁸⁹ Of that total, approximately 6,717 firefighters are women. Female firefighters in Canada share many similar experiences with their southern neighbors. In recent years, legal battles have arisen citing workplace safety, sexual discrimination, and sexual assault among fire service members.⁹⁰ Moreover, the U.S. military has also faced these issues among its ranks and offers lessons for its public safety counterparts. This chapter explores lessons from two of Canada's metropolitan fire departments, as well as offers best practices gleaned from the fire service and the military, applicable to women firefighters in the United States.

A. LESSONS FROM THE NORTH

The Canadian government and the Canadian Association of Fire Chiefs (CAFC) have partnered to create panels to explore and examine gender bias and equal opportunities in fire and rescue services. Many of these recommendations have been adopted across the nation's 3,500 departments, with varying degrees of success. The CAFC has created a Women Fire Chiefs and Company Officers Network, which has helped to develop a standardized diversity and inclusion policy.⁹¹ This association and subgroup serve to gather and collate data and research from around the country to inform administrators and officers in provinces and municipalities. One of the many foci of the CAFC's diversity and inclusion policy is the recognition that communities are calling for a representative workforce.

Canadian statistics on personnel demographics have also been established by a methodology and the Psycho-Social Ethnography in the Commonplace (P-SEC) Research

⁸⁹ Canadian Association of Fire Chiefs, *A Fire Service for All*, 6.

⁹⁰ Parkinson, Duncan, and Archer, "Barriers and Enablers to Women."

⁹¹ "Home Page," Fire Fighting in Canada, accessed February 18, 2021, <https://www.firefightingincanada.com/>; Canadian Association of Fire Chiefs, "Diversity and Inclusion."

Group, whose publication, “Othering of Full-Time and Volunteer Women Firefighters in the Canadian Fire Services,” warns that “women firefighters mostly operate in a patriarchal context; they are often ignored, harassed, and treated poorly due to the intersectionality of factors.”⁹² Canadian fire leadership has recognized that the gender disparity is significant, resembling comparable societies, including the United Kingdom, the United States, and Australia, but few studies have focused directly on Canadian female firefighters.⁹³

To determine how the policies served the rank and file when applied, this section examines two major Canadian cities: Vancouver and Toronto. This brief investigation compares practices that have been effective with those that have been unsuccessful. These two cities have a higher population of women firefighters than most other regions of the country, so they have developed measurable systems and structures that contrast their Canadian—and American—counterparts.

1. Vancouver

Vancouver has been a source of public attention because workplace hostility and othering have resulted in a large-scale investigation and lawsuits, after “a firefighter who quit the force last year says in her seven years at [Vancouver Fire Rescue Services] she witnessed bullying, harassment, sexism, racism, homophobia, transphobia, gaslighting, victim blaming/shaming, gear tampering, inadequate facilities for women, inadequate protective equipment for women and extreme levels of toxic masculinity.”⁹⁴ These criminal behaviors resulted in the loss of one person’s employment, but the long-term outcome from societal perceptions might become deterrents for future applicants. Moreover, the Vancouver fire chief states that the selection rate for new female recruits is directly proportional to the number of women applying.

⁹² Lynne Gouliquer, Carmen Poulin, and Jennifer McWilliams, “Othering of Full-Time and Volunteer Women Firefighters in the Canadian Fire Services,” *Qualitative Sociology Review* 16, no. 3 (2020): 48–69, <https://doi.org/10.18778/1733-8077.16.3.04>.

⁹³ Robyn Urback, “Robyn Urback: Fire Services Plans to Hire More Women and Minorities Because Diversity Is Good,” *National Post*, July 15, 2013, <https://nationalpost.com/opinion/robyn-urback-fire-services-plans-to-hire-more-women-and-minorities-because-diversity-is-good>.

⁹⁴ Penny Daflos, “‘It’s Not Acceptable’: Vancouver Fire Chief Addresses Workplace Bullying, Harassment Allegations,” *CTV News*, December 13, 2019, <https://bc.ctvnews.ca/it-s-not-acceptable-vancouver-fire-chief-addresses-workplace-bullying-harassment-allegations-1.4726507>.

The situation appears to be pervasive across Canada and the neighboring United States.⁹⁵ Very few women want to work as firefighters, and even fewer are physically or logistically able. Public impressions that the workplace is hostile, unwelcoming, or dangerous may shrink those numbers even more. When attention turns to recruitment, and young potential candidates are research the industry, these negative conditions may serve to dissuade young women from a career in which mortal danger, toxic exposures, and hostile work environs appear to be the norm.

2. Toronto

Toronto Fire Services boasts what appears to be the most successful record in recruitment and retention of women. Under direct order from the city government in 2015, Toronto Fire Services set about a massive campaign to improve and increase its diversity profile. Measuring data was the focus, and city managers recognized that merely stating the intention was insufficient for measuring the goal with reliable metrics.⁹⁶ This push has placed Toronto Fire Services into the limelight as the nation’s most diverse fire department, with a female firefighter population of 15 percent in every class hired since 2013.⁹⁷

One of the frameworks Toronto adopted from CAFC recommendations was the notion that “if you can’t see it, you can’t be it.”⁹⁸ Its leadership has recognized that the presence of more women in the field stepping off rigs on calls and attending public education events serves as a potent recruitment tool. Toronto fighters also recognize the implications of the department’s majority white-male foundation:

Back in the bad old days, it was a kind of Irish Protestant bastion. . . . There was a lot of nepotism—there were sons who were hired. If your father was on, you could get on, if your uncle was on, you could get on. Back in the

⁹⁵ Kathryn Sinden et al., “A Qualitative Study on the Experiences of Female Firefighters,” *Work* 45, no. 1 (2013): 97–105, <https://doi.org/10.3233/WOR-121549>.

⁹⁶ Matthew Pegg, “Diversity and Recruitment Update—Operations Firefighter Recruit Class 2017–02” (official memorandum, Toronto: Toronto Fire Services, 2018).

⁹⁷ Contursi, “Breaking the ‘Brass Ceiling.’”

⁹⁸ Canadian Association of Fire Chiefs, “Diversity and Inclusion.”

day, Toronto was so heavily white, that ethnic makeup just became entrenched in the department.⁹⁹

Toronto has pivoted with public pressure to actively alter the identity of its department, serving as a success story by measurable standards.

Toronto instituted a Firefighter Career Access Program, which allows men and women with no formal firefighting training to qualify for the hiring process while committing to continuing training. The department has also eliminated the term “fireman” from its lexicon, always using the gender-neutral term “firefighter” to foster a sense of inclusivity. It bears repeating that Toronto Fire Services currently has the highest percentage of female firefighters in Canada, at 15 percent.¹⁰⁰

B. BEST PRACTICES FROM THE FIRE SERVICE

The following subsections detail concepts that other fire services—including the U.S. fire service—can adopt from the Canadian fire service, the private sector, and academia to improve the environment to attract and retain women firefighters.

1. Sharing the “Brotherhood”

Fire departments are built on the concept of fraternity. The Canadian Association of Fire Chiefs writes,

Traditionally, this “tight culture” has served the firefighting purpose well, as team members rely heavily on one another in life-threatening fire and rescue operations. Although this reliance still exists, the nature of fire service has changed and today, there is an ever-broadening range of roles including increased calls for community safety, public service, high-quality emergency medical care, and non-emergency assistance. This evolution has required the fire service to develop additional specialized skills, including interpersonal communications and interaction with diverse audiences, and to recognize that an inclusive and respectful workplace is an essential

⁹⁹ Patrick Cain, “Investigation: Slowly, Toronto Firefighters Become More Diverse,” Global News, March 17, 2015, <https://globalnews.ca/news/1872085/slowly-toronto-firefighters-become-more-diverse/>.

¹⁰⁰ Canadian Association of Fire Chiefs, *A Fire Service for All*.

element of a psychologically safe and mentally healthy work environment.¹⁰¹

Awareness of these factors can help foster an environment where women feel respected and safe—and a part of the family. Grounded, well-connected people are more productive, happier, and more likely to stay in the organization.

2. Defining Diversity

Diversity extends beyond racial and gender demographics. Diversity encompasses all aspects of the human experience, including origin and ancestry, language and culture, faith and religion, sexuality, and age. Firefighters of various racial backgrounds have populated the fire service for over a century, and while their trials and struggles cannot be overstated, they have made strides in the industry. Women, on the other hand, have been sparsely represented for almost 50 years, and the statistical data gathered for this research lead to further questions about the success of the integration to date. Highlighting the importance of welcoming women into the fold of the fire service, a longitudinal study of women in corporate leadership has identified how their inclusion in socially diverse work environments can improve morale and innovation, as well as demonstrate greater financial successes for organizations.¹⁰²

Aside from primary divisions of race and gender, diversity of thought seems to be the most relevant consideration in group dynamics. Senior members question the work ethic and integrity of the millennial generation while junior members confront the stale and outdated habits and traditions of the fire service—and lack of technological savvy—with disdain and disconnection. One’s worldview and life experience manifest in behavior and relatability. Thus, socioeconomic upbringing and social caste may have a greater influence on individuals than their nation of origin, skin color, or sex. As Katherine Phillips points out, diversity offers myriad benefits for an organization: “Diversity enhances creativity. It encourages the search for novel information and perspectives, leading to better decision-

¹⁰¹ Canadian Association of Fire Chiefs, *A Fire Service for All*, 7.

¹⁰² Katherine W. Phillips, “How Diversity Makes Us Smarter,” *Greater Good*, September 18, 2017, https://greatergood.berkeley.edu/article/item/how_diversity_makes_us_smarter.

making and problem-solving. Diversity can improve the bottom line of companies and lead to unfettered discoveries and breakthrough innovations.”¹⁰³ Diversity as a lens must be broad enough to see beyond superficial characteristics and recognize the vast resources available to leaders when they cast a broad net.

3. Defining Equity

Equity is a term frequently used in modern business and politics. It focuses less on an equal outcome than on equal access. Equity is

the fair treatment, access, opportunity, and advancement for all people, while at the same time striving to identify and eliminate barriers that have prevented the full participation of some groups. Improving equity involves increasing justice and fairness within the procedures and processes of institutions or systems, as well as in their distribution of resources. Tackling equity issues requires an understanding of the root causes of outcome disparities within our society.¹⁰⁴

As a starting point, with recruitment for instance, the person who has never been inside a fire station may have a more difficult path in learning the ways of the fire service than one who grew up in a fire service family. Equity is the notion that some individuals may need different resources from others. This is often true of women seeking entrance into the industry, and additional exposure, mentorship, and guidance are needed to bring them up to the starting line. It does not seek to provide preferential treatment but a fair and balanced chance at success.

4. Defining Inclusion

The Canadian Fire Chiefs Association succinctly recognizes the importance of leaders being accountable and intentional with integration and inclusion. Inclusion starts with merit-based achievement and respect for those who earn it. The Canadian Fire Chiefs identified, “In an inclusive department, the leadership, organizational structure, training, policies, and procedures remove barriers to full participation while they protect and

¹⁰³ Phillips, “How Diversity Makes Us Smarter.”

¹⁰⁴ Laura King, “Diversifying,” *Canadian Firefighter*, February 1, 2016, <https://www.cdnfirefighter.com/toronto-aims-to-reflect-multicultural-community-22423/>.

promote equal opportunity, so everyone can succeed.”¹⁰⁵ Inclusion may be the pinnacle of diversification because it represents functionality. Inclusion is the opposite of othering and a level above tolerance. Inclusion means having disparate parts moving as one, as represented in the vision of a winning team.

C. BEST PRACTICES FROM THE U.S. MILITARY

The U.S. military experiences some similar issues to the fire service in retaining its female members. A recent study of women in the military by the Government Accountability Office identified six key issues in women’s leaving the armed forces: work schedules, organizational culture, family planning, dependent care, deployments, and sexual assault.¹⁰⁶ As the professions are relatively similar and share a similar gender ratio, it may be reasonable to assume that women firefighters experience these issues, too, but no comprehensive studies have documented them. Nevertheless, the military has gathered data and identified patterns of concern among women who leave the service ahead of their original schedule. By concentrating on these six reasons—which uncannily mirror the concerns of women in the fire service—policymakers can adapt policy to avoid pitfalls.¹⁰⁷

1. Work Schedules

Each fire department has its unique work schedules that cannot be altered to serve a subgroup. The part of this issue that can be addressed is the facilities and accommodations a woman uses while at work. Separate sleeping accommodations reduce the threat of unwelcome sexual advances in the dorm and reduce the uncomfortable intimacies of a co-gendered bedroom. Spending 48 hours in a common dorm or without access to a private toilet stall is an unacceptable condition for women to endure. Focus on standardizing workspaces for gender separation when appropriate.

¹⁰⁵ Canadian Association of Fire Chiefs, *A Fire Service for All*, 8.

¹⁰⁶ Brenda S. Farrell, *Female Active-Duty Personnel: Guidance and Plans Needed for Recruitment and Retention Efforts*, GAO-20-61 (Washington, DC: Government Accountability Office, 2020), 28, <https://www.gao.gov/assets/gao-20-61.pdf>.

¹⁰⁷ Patricia Kime, “Women Nearly 30% More Likely to Leave the Military Than Men, New Report Finds,” *Military News*, May 19, 2020, <https://www.military.com/daily-news/2020/05/19/women-nearly-30-more-likely-leave-military-men-new-report-finds.html>.

2. Organizational Culture

Women have experienced the reported othering, which often limits their access to training opportunities and mentorship. Women are also often denied bids to desirable fire stations because men prefer not to have a woman at their station. This practice should be examined and neutralized as it perpetuates inequities. Emphasis must be placed on enforcing anti-harassment and discrimination policies.

3. Family Planning

The American and Canadian fire services have a substantive lack of maternity and childcare benefits. This has been a major deterrent for young women entering the industry, and much potential talent is lost because of having to choose work over family.¹⁰⁸ Maternity and postpartum policies must be updated to accommodate the physical recovery of the mother, breastfeeding, and pumping, and allow for adequate bonding with the newborn. The fire services lag the corporate world and the military in this regard.

4. Dependent Care

Some sort of alternative/emergency childcare must be developed for mandated overtime/holdovers, or an exemption plan for single parents should be introduced. This policy could be gender neutral. Having overnight duty inhibits the use of most pay-by-the-hour babysitters. Family care issues are a leading cause of women departing the fire service prematurely.¹⁰⁹ Firefighter mothers often do not have the benefit of a stay-at-home partner as the primary caregiver of their dependent children.

5. Deployments

Firefighters deploy out of town for campaign wildfires, special operations like urban search-and-rescue missions and other task forces. Proper planning to ensure they have separate sleeping accommodations and access to facilities such as private toilets and separate changing

¹⁰⁸ Sinden et al., “A Qualitative Study on the Experiences of Female Firefighters.”

¹⁰⁹ Sara A. Jahnke et al., “Maternal and Child Health among Female Firefighters in the U.S.,” *Maternal and Child Health Journal* 22, no. 6 (June 2018): 922–31, <https://doi.org/10.1007/s10995-018-2468-3>.

areas can improve conditions for deployed women. These concerns are frequently overlooked by planners. Pre-planning for deployment logistics should include reasonable accommodations for women.

6. Sexual Assault

This issue remains the greatest disgrace in the industry. Both in Canada and in the United States, a multitude of cases have cited sexual harassment, abuse, assault, and rape.¹¹⁰ These lead to headline reports that discredit an organization's reputation and deter applicants, who cannot be assured a safe and secure workplace. Complaints of sexual assault should be properly investigated, their legitimacy determined, and perpetrators properly punished. The culture of fear that prevents many women from reporting these events leads to women making sudden and unexplained departures from their careers, sometimes by resigning, sometimes by suicide.¹¹¹ If one issue could be emphasized to encourage recruitment and retention of women, the proper handling of sexual assault allegations would be paramount. Women should know they can enter a male-dominated industry and be treated with equal regard, and know they are safe from physical harm. It is a reasonable expectation and a good place for fire service leaders to start.

D. SUMMARY

The fire service boasts proudly of its 200 years of progress as an institution. However, resistance to change is a hallmark of firefighter culture. As discussed in this chapter, the North American fire services—both Canadian and American—have intrinsic issues hampering their growth and development, particularly in retaining the talent of women firefighters. As technology and culture is changing exponentially around the fire service, it must choose to adapt or perish. The ethnic and racial makeup of both countries' populations have changed dramatically in recent decades, and so will the candidate pool of public safety agencies. A growth mentality and intentionally inclusive hiring practices are necessary and overdue, both for women and others who have traditionally been relegated as outsiders by the institution.

¹¹⁰ Daflos, "It's Not Acceptable"; Willing, *On the Line*.

¹¹¹ Los Angeles County Civil Grand Jury, *Grand Jury Final Report*.

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V. CONCLUSION AND RECOMMENDATIONS FOR AN INCLUSIVE WORKFORCE

The U.S. fire service is unique in the world. As a public service, first responders have become embedded in the American psyche as heroes and defenders of the nation. Yet women have long been denied access to this privileged identity. This thesis explored the history of fire institutions' homogenous social identity across two centuries, and the gradual introduction of women into that closed environment. The last 50 years have seen significant changes in presumed gender roles in other heavy industries, the military, and law enforcement. The fire service trails those fields in female hiring due to several relevant factors that consistently amplify the gap. Despite immutable foundational factors, such as the innate physical rigors of firefighting, the fact remains that some women are physically capable and psychologically fit for duty, and they want to work. The fire service was founded on courage, honor, and community service, and these characteristics are not exclusive to men. Indeed, there is plenty of work to go around.

A. RECOMMENDATIONS

Change begins with intention. With a broadened understanding of public expectation, fire service history, and organizational needs, creative and beneficial solutions have a place to develop and flourish. The following recommendations bridge the gap between the U.S. fire service's past and its promising future in retaining talented women in the rank and file.

1. Establish Baseline Data and Definitions

Problem-solving first begins with identifying the issue. As research and data gathering on women in fire are sparse, no accurate data exist to analyze the current number of female firefighters, company officers, chief officers, or executive chief officers. The Bureau of Labor Statistics (BLS) and Women in the Fire Service, or I-Women, state on

their websites that census materials are inaccurate and have not been obtained.¹¹² The BLS collates data from the public and private sector and does not distinguish between wildland and municipalities while I-Women uses data from 2008. Unlike the military, which tracks national data, communication silos from multiple agencies create haphazard statistics and outdated information. A full census-tracking mechanism would require surveying women's pay status (e.g., volunteer, combination, or career departments), rank, years of service, and specialties. Ideally, data collectors could create a portal for tracking the hiring of new female personnel, as well as retirements and departures from service. If these mechanisms were in place, the Department of Homeland Security might have a better sense of the demographics and state of the union in relationship to its first responders.

2. Develop a New National Report Card

It is time to update the fire service–based national survey to identify numbers of female personnel as well as the issues they are facing. National attention to the hazing, harassment, and sexual assaults will draw necessary focus from lawmakers and politicians. Dysfunctional organizational behaviors must be identified and corrected to create a psychologically safe workplace. Moreover, having a clearer picture of the many successes and leadership roles women have attained will serve to better inform public opinion. Much of what goes on in the U.S. fire service is a mystery to average citizens. They are exposed to sensationalized entertainment media and negative headlines in news reports, so a factual counterbalance of positive accomplishments and leadership may help to normalize the role and presence of women in the firehouse. Gathering accurate and updated data is an important first step. The next step is to consider the holistic view of a firefighter's need to survive and thrive.

3. Provide a Way Forward with Mentorship and Guidance

In this research, several major themes emerged that contribute to successful retention of women firefighters. Researchers have repeatedly pointed to mentors and

¹¹² Women in Fire, "FAQs"; Bureau of Labor Statistics, *Women in the Labor Force*, Report 1040 (Washington, DC: Bureau of Labor Statistics, 2013), <https://www.bls.gov/cps/wlf-databook-2012.pdf>.

champions as key career influences. In a profession where 96 percent of the workforce is male, women need to look to their senior male firefighters and officers for support. In their book, Johnson and Smith illustrate the crucial role that mentorship plays in professional women's careers:

Organizations that retain and promote top talent—both female and male—are more likely to thrive. But the mentoring landscape is unequal. Evidence consistently shows that women face more barriers in securing mentorships than men, and when they do find a mentor, they may reap a narrower range of both career and psychological benefits. When a man mentors a woman, they explain, the relationship is often complicated by conventional gender roles and at times hostile external perceptions. Traditional notions of mentoring are often modeled on male-to-male relationships—the sort that begin on the golf course, involve a nearly exclusive focus on career achievement, and include more than a few slaps on the back over drinks after work. But women often report a desire for mentoring that integrates career and interpersonal needs. Women want a mentor who not only “gets” this, but truly honors it. Men need to fully appreciate just how crucial their support of promising junior women can be in helping them to persist, promote, and thrive in their vocations and organizations.¹¹³

Men and women in positions of authority and leadership need to actively participate in modeling behavior and investing in their new talent. As with the hero's journey, when young warriors emerge from the underworld, the mentor must be there to affirm their new identity and move them forward with grounding and focus. In a profession where asking for help is seen as a sign of weakness, a mentor must be proactive in providing resources and guidance. The master–apprentice relationship is at the core of the fraternal model, and women should not be excluded from it.

4. Support Female Leadership

Harvard University's Women in Public Policy Program published a study indicating women are more trusted in leadership roles when organizations are in times of crisis. As highlighted by the study,

Relational skills include the ability to anticipate and manage other people's emotions through modulating the situation, attentional focus, messaging,

¹¹³ W. Brad Johnson and David Smith, *Athena Rising: How and Why Men Should Mentor Women* (Brookline, MA: Bibliomotion, 2016).

and emotion response. Women are, on average, more likely to adopt a relational approach to leadership than men are. Because women are more likely to exhibit high levels of relational behavior, and because organizations increasingly require relational behaviors for successful leadership, women may be preferred for filling leadership roles in modern organizations, a phenomenon that researchers call the “female leadership advantage.”¹¹⁴

This research raises the question of whether women’s tendencies toward empathetic communication and networking are more valued at the chief officer ranks. Worthy of discussion is how the gender playing field becomes neutralized when a woman steps out of the firehouse culture and out of operations. Results may indicate that opportunities for women’s achievement at the executive level are greater than they are at the lower ranks. Characteristics known as “soft skills” in the corporate world provide advantages in dealing with politicians, citizen groups, and other department heads. Women in executive fire leadership likely experience a similar level of success.

If the “female leadership advantage” notion is valid, departments may consider the value of elevating women into their leadership ranks, but not too quickly. Time in grade is heavily emphasized in the fire service, as experience and seniority define firefighters’ reputation and credibility. These are often measured by how many fires they have fought and at which stations they have served. A traditional career layout might be the 10–10–10 model—10 years as a firefighter, 10 years as an engineer/operator, and 10 as a captain. This trajectory does not include executive leadership opportunities, so anyone advancing more quickly may draw scrutiny. In his book *Outliers: Stories of Success*, author Malcolm Gladwell popularized the notion of “10,000 hours” of experience to develop mastery over a task, and about half that to achieve competency.¹¹⁵ Though this social theory has been disputed, it lends itself as a framework in the fire service. With people being hired much later in life, and retirement eligibility in many agencies falling around the age of 50, accelerating one’s leadership path may be the new normal. Maybe, in the modern climate

¹¹⁴ Corinne Post, Ioana M. Latu, and Liuba Y. Belkin, “A Female Leadership Trust Advantage in Times of Crisis: Under What Conditions?,” *Psychology of Women Quarterly* 43, no. 2 (June 2019): 215–31, <https://doi.org/10.1177/0361684319828292>.

¹¹⁵ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Little, Brown and Company, 2008).

of redefining work–life balance and the “great resignation,” the 30-year fire career is a thing of the past.

5. Address Mental Health and Wellness

Firefighters witness and endure things that most people will not. In a study on urban firefighters in Canada and the United States published in the *Journal of Occupational Health Psychology*, researchers found that approximately 20 percent of firefighters and paramedics reach threshold criteria for post-traumatic stress disorder (PTSD) during their career, compared to a 6.8 percent lifetime risk for the general population.¹¹⁶ The connection between PTSD and traumatizing rescue work is clear. Moreover, women are potentially at higher risk of injury due to the dynamics of social othering and a lack of cohesive support. Despite the relative prestige of the profession, as highlighted in media and popular culture, disconnection and discontent can begin in the onboarding process, academy, and probation. Long-term exposures to tragedy are pervasive factors in the deterioration of the firefighter’s mental and physical well-being. As a major issue in the industry, behavioral health and wellness is gender neutral, and the intrinsic stressors of the work, as well as combined sleep deprivation, strained co-habitation, and exposure to toxins and carcinogens, create a steep grade for all firefighters.¹¹⁷ Women, as sisters in the brotherhood, have notably less support, acknowledgement, and means to reach out.¹¹⁸ Many learned from the very beginning of their careers that such behavior is a sign of weakness.¹¹⁹ Thus, the very culture that drew many women to the profession, to be part of an extended family, has subsequently excluded them.¹²⁰

¹¹⁶ Wayne Corneil et al., “Exposure to Traumatic Incidents and Prevalence of Posttraumatic Stress Symptomatology in Urban Firefighters in Two Countries,” *Journal of Occupational Health Psychology* 4, no. 2 (1999): 131–41, <https://doi.org/10.1037/1076-8998.4.2.131>.

¹¹⁷ Susan Edelman, “Seventy Percent of the FDNY’s Females Are Retiring on Disability,” *New York Post*, February 22, 2015, <https://nypost.com/2015/02/22/seventy-percent-of-fdnys-females-are-retiring-on-disability/>.

¹¹⁸ Gouliquer, Poulin, and McWilliams, “Othering of Full-Time and Volunteer Women Firefighters.”

¹¹⁹ Smith, “L.A. Has Hired More Female Firefighters.”

¹²⁰ Chetkovich, *Real Heat*.

Firefighters like other first responders are at increased risk for substance abuse and suicide. Indeed, the fire service suffers catastrophic numbers of suicides, even higher than line-of-duty deaths, annually.¹²¹ Also, the divorce rate for firefighters is upwards of 70 percent.¹²² Furthermore, the likelihood of contracting cancer is three times as high as for other professions, and firefighters have significantly reduced lifespans.¹²³ The Federal Emergency Management Agency identified alarming finding significant to women firefighters in a 2019 study:

There are a number of risk factors that contribute to mental health problems and suicide, and some risk factors are more salient for women, including job-related isolation, job demands, stressful work environments, and work–home imbalance. Most of the listed risk factors can be attributed to three domains: personal, occupational, and cultural. Personal factors include the increased prevalence of depression and anxiety, particularly for women; a higher divorce rate for women firefighters; stigma surrounding mental illness; and barriers to seeking help.¹²⁴

6. Shift Focus to Retention

Recruitment has long been focused on seeking out and finding the best candidate. While that is still fundamentally necessary, outreach is not enough. Leaders need to realize they have a responsibility to attract quality candidates to their agency. Improved recruitment and retention can be achieved through building the agency’s reputation, creating a solid public image, and developing supportive policies. The finest advertisement for a place of employment is abundant happy employees—they take care of themselves, their coworkers, and the customer, and they recruit for the business. The fire service would do well to lean on the best practices of many successful businesses and prioritize

¹²¹ Rita F. Fahy and Jay T. Petrillo, *Firefighter Fatalities in the U.S. in 2020* (Quincy, MA: National Fire Protection Association, 2021), <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osFFF.pdf>.

¹²² U.S. Fire Administration, *Emerging Health and Safety Issues*.

¹²³ University of Arizona Cancer Center, “Researchers Studying Stress.”

¹²⁴ Federal Emergency Management Agency, *Emerging Health and Safety Issues among Women in the Fire Service* (Washington, DC: Federal Emergency Management Agency, 2019), 30, https://www.usfa.fema.gov/downloads/pdf/publications/emerging_health_safety_issues_women_fire_service.pdf.

psychologically safe and productive work. Apart from focusing on recruitment, it should focus on taking care of the women it already has—and acknowledge and support them.

B. FINAL WORDS

Women bring so much to the fire service as an industry. However, as one of the most gender-imbalanced workforces in modern history, the fire service continues to feel the public push toward improved integration. If leadership's intent is to create an inclusive workplace, the steps toward the goal must be clearly stated, understood by the entire group, initiated, and reassessed. It is up to the leaders and policymakers to change the current environment and pave the way for future success.

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APPENDIX. THE ECOLOGICAL MODEL OF HUMAN DEVELOPMENT

The ecological model of human development is a customized holistic model for considering the priorities and needs of a woman to thrive in the fire service. This customized design serves as an analytical framework to examine the knowledge, motivation, and organizational influences associated with women pursuing and persisting as paid career firefighters.¹²⁵ Urie Bronfenbrenner contends that “human beings create the environments in which they live and that these, in turn, help shape their development.”¹²⁶ This framework provides a solid evaluation platform to analyze factors and traits inherent to the people performing those roles. The ecology model allows for compartmentalization of the challenges of the work–home life balance and helps to explain the concentric circles of a firefighter’s roles (see Figure 6).

¹²⁵ Carlos Rey and Miquel Bastons, “Three Dimensions of Purpose: Knowledge, Motivation, and Action,” in *Purpose-Driven Organizations: Management Ideas for a Better World*, ed. Carlos Rey, Miquel Bastons, and Phil Sotok (Cham, Switzerland: Springer International Publishing, 2019), 29–41, https://doi.org/10.1007/978-3-030-17674-7_3.

¹²⁶ Urie Bronfenbrenner, *The Ecology of Human Development: Experiments by Nature and Design* (Cambridge, MA: Harvard University Press, 1979).

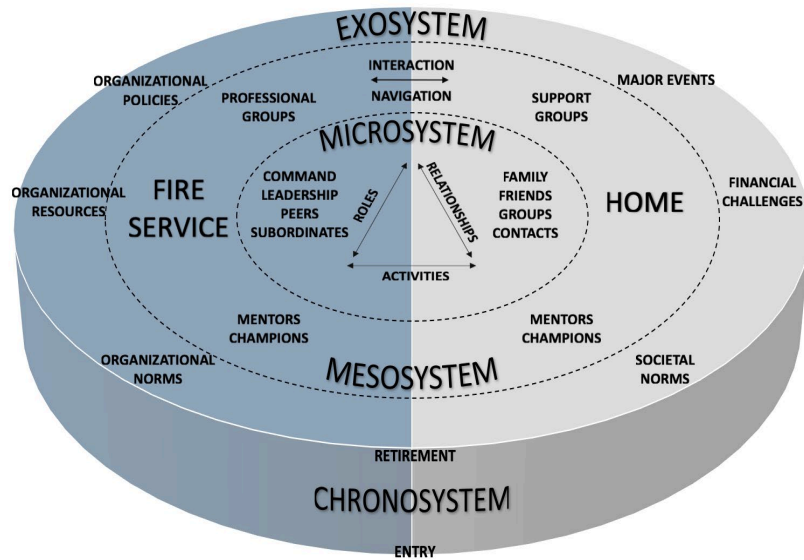


Figure 5. Bronfenbrenner’s Ecological Model, Adapted for the Fire Service.¹²⁷

Three circles of influence are embedded into a dimensional lifespan, represented by the *chronosystem*. This diagram provides a visual map of the components of a woman’s life as she moves through the course of a career journey from entry to departure. The ecological model guides the interpretations in the review of existing literature, as well as the decisions about how to move the history, data points, and behavioral trends gathered from case studies into a useful structure. The interpretations carry through the chronological lifespan. This adaptation of the ecological model for the fire service is helpful in considering firefighter retention and career longevity. It divides the work–life balance, highlighting the individual’s personal and professional factors and the way experiences can be shaped and directed. Dissecting a person’s life features can help detect the presence of obstacles or the existence of deficits.

¹²⁷ Adapted from Bronfenbrenner, *The Ecology of Human Development*.

A. THE MICROSYSTEM

The inner circle represents one's private life and personal influences in the *microsystem*. This component at the core of a person's existence mirrors Maslow's pyramid, involving personal roles, activities, and relationships. In the home, this section is where family, marriage, and friendships reside. In the workplace, this would resemble the fire station or administrative office colleagues. Identified here is the presence of allies, mentors, supportive subordinates, and work norms. When a woman is surrounded by support and encouragement from her most intimate relationships, she has a fundamental advantage in maintaining a successful career path. Many women firefighters anecdotally report that their romantic partners or spouses do not approve of their work and are threatened by the time away from home or the close friendships developed there. The need to defend professional choices to friends and family is daunting, especially when the job's duties intrude on the outside life. Firefighters miss family holidays, kids' birthdays, weddings, and funerals. These missed connections can greatly affect the woman and her extended network. The burdens of baby-nursing and childrearing also place heavy responsibilities on the spouse at home. Women, perhaps even more so than men, require an exceptionally strong support network in their home life. The organization has the ability to reach out and affect these issues through policies and practices that affect

Professionally, developing trusted colleagues and coworkers can in many ways define long-term success. Because women are likely to be excluded from social outings and gatherings for the reasons mentioned in the previous paragraph, conscientious leaders need someone to turn to for support and camaraderie. Leaders in the fire service should be particularly aware of the many ways gender defines social activities and make efforts to ensure women are not consistently excluded from these team-building opportunities. Sports teams, firefighter Olympics, union events, and conferences should acknowledge the opportunity to include women, as department-endorsed off-duty activities are community-building opportunities. Years of separate-but-equal behaviors lead to social isolation and out-grouping.

B. THE MESOSYSTEM

The next segment represents external components like support groups, mentors, and professional affiliations in the *mesosystem*. The middle ring of the circle, the mesosystem, identifies an important aspect in the work–life balance, as the issues are almost mirror-images. In both the personal and professional life, successful women depend on webs of support. At home, that might be extended family, neighbors in the community, or church. Mothers might have parent groups or play groups. On the professional side, this may be women’s groups, teams, or affiliations with outside fire agencies. Women do not need to be in exclusively female support networks to find comradery, training, and direction. Of the many invisible landmines in the culture of the fire service, it is important to have a safety network to lean on with delicate questions, ethical dilemmas, or ideas for successful adaptation. Mentors and champions, both at home and at work, are invaluable in the career of the firefighter. In a profession with so few female leaders to set formal and informal examples, a woman must often identify a trusted senior man to help steer course. Mentorship influences mental health and wellness, career development, succession planning, and performance in the field. Mentors have been identified as the lifeline in the chain of survival for the female firefighter. Close consideration of the conditions of the individual’s mesosystem may reveal the deficits in her career path, and shepherding her toward the group or senior member for guidance is often an easy fix to a complex problem.

C. THE EXOSYSTEM

The *exosystem* or outer ring represents the larger dynamics, things that are likely out of an individual’s circle of influence but have a strong impact on one’s livelihood. The *chronosystem* provides the three-dimensional visual representation of the career lifespan from entry into the career through retirement. These dimensions are useful to illuminate a multi-factorial approach to successfully retaining female firefighters. As discussed in early chapters, the four quadrants that create impediments to success involve physicality, social dynamics, parental leave, and promotional obstacles. The organizational level of influence dwells in the exosystem. The firefighter has little influence over the elements in the outer ring but may be profoundly influenced by them. Leaders have a capacity to effect rules,

both proactively and retroactively, by creating operating procedures or enforcing consequences for actions. The exosystem is an excellent starting point when a decision maker wants to determine how the action might contribute to the success, or added stress, of the end user, in this case, the woman firefighter.

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LIST OF REFERENCES

- Ables, Micah. "Women Aren't the Problem. Standards Are." Modern War Institute, February 5, 2019. <https://mwi.usma.edu/women-arent-problem-standards/>.
- Alaban, Lloyd. "Report: 'Frat House Culture' Blamed for Lack of Female Firefighters in Santa Clara County." San José Spotlight, December 29, 2020. <https://sanjose-spotlight.com/report-frat-house-culture-blamed-for-lack-of-female-firefighters-in-santa-clara-county/>.
- Booth, Walter S., and Charles A. Rohe. "Recruiting for Women and Minorities in the Fire Service: Solutions for Today's Challenges." *Public Personnel Management* 17, no. 1 (1988): 53–61. <https://doi.org/10.1177/009102608801700106>.
- Bronfenbrenner, Urie. *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press, 1979.
- Brunacini, Alan V. *Essentials of Fire Department Customer Service*. Stillwater, OK: International Fire Service Training Association, 1996.
- Bureau of Labor Statistics. "Men Accounted for About 75 Percent of Workers in Protective Service Occupations in 2020." *Economics Daily*, October 15, 2021. <https://www.bls.gov/opub/ted/2021/men-accounted-for-about-75-percent-of-workers-in-protective-service-occupations-in-2020.htm>.
- . *Women in the Labor Force*. Report 1040. Washington, DC: Bureau of Labor Statistics, 2013. <https://www.bls.gov/cps/wlf-databook-2012.pdf>.
- Byron, Juan. "Career Paramedic-Firefighter Staffing Problems: Is Recruiting Women Part of the Solution?" Master's thesis, Naval Postgraduate School, 2018. <http://hdl.handle.net/10945/61323>.
- Cain, Patrick. "Investigation: Slowly, Toronto Firefighters Become More Diverse." Global News, March 17, 2015. <https://globalnews.ca/news/1872085/slowly-toronto-firefighters-become-more-diverse/>.
- Campbell, Joseph. *The Hero with a Thousand Faces*. Mumbai: Yogi Impressions, 2017.
- Canadian Association of Fire Chiefs. "Diversity and Inclusion." Accessed March 6, 2021. <https://cafc.ca/page/diversandinclusion>.
- . *A Fire Service for All: Exploring Ways to Further Diversity and Inclusivity for Women in the Canadian Fire Industry*. Ottawa: Canadian Association of Fire Chiefs, 2020. https://cdn.ymaws.com/cafc.ca/resource/resmgr/reports/updated_a_fire_service_for_a.pdf.

- Chetkovich, Carol. *Real Heat: Gender and Race in the Urban Fire Service*. New Brunswick, NJ: Rutgers University Press, 1997.
- City of Seattle. “Strength & Stamina: Women in the Seattle Fire Department.” Accessed January 31, 2021. <https://www.seattle.gov/cityarchives/exhibits-and-education/online-exhibits/strength-and-stamina-women-in-the-fire-department>.
- Clark, Richard E., and Fred Estes. *Turning Research into Results: A Guide to Selecting the Right Performance Solutions*. Charlotte, NC: Information Age Publishing, 2008.
- Contursi, Janet. “Breaking the ‘Brass Ceiling’: Women Face Unique Obstacles in the Fire Service.” *FireRescue1*, September 18, 2019. <https://www.firerescue1.com/leadership/articles/breaking-the-brass-ceiling-women-face-unique-obstacles-in-the-fire-service-am49Nem3qPWdEBWO/>.
- Contursi, Janet L. “Women in Leadership in the Fire Service, Law Enforcement, and the Military: A Comparative Study.” PhD diss., Chicago School of Professional Psychology, 2018. ProQuest.
- Cornell, Wayne, Randal Beaton, Shirley Murphy, Clark Johnson, and Ken Pike. “Exposure to Traumatic Incidents and Prevalence of Posttraumatic Stress Symptomatology in Urban Firefighters in Two Countries.” *Journal of Occupational Health Psychology* 4, no. 2 (1999): 131–41. <https://doi.org/10.1037/1076-8998.4.2.131>.
- Daflos, Penny. “‘It’s Not Acceptable’: Vancouver Fire Chief Addresses Workplace Bullying, Harassment Allegations.” CTV News, December 13, 2019. <https://bc.ctvnews.ca/it-s-not-acceptable-vancouver-fire-chief-addresses-workplace-bullying-harassment-allegations-1.4726507>.
- Duckworth, Angela. *Grit: The Power of Passion and Perseverance*. New York: Scribner, 2016.
- Edelman, Susan. “Seventy Percent of the FDNY’s Females Are Retiring on Disability.” *New York Post*, February 22, 2015. <https://nypost.com/2015/02/22/seventy-percent-of-fdnys-females-are-retiring-on-disability/>.
- Evanoff, Bradley A., and Linda Rosenstock. “Reproductive Hazards in the Workplace: A Case Study of Women Firefighters.” *American Journal of Industrial Medicine* 9, no. 6 (1986): 503–15. <https://doi.org/10.1002/ajim.4700090602>.
- Fahy, Rita F., and Jay T. Petrillo. *Firefighter Fatalities in the U.S. in 2020*. Quincy, MA: National Fire Protection Association, 2021. <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osFFF.pdf>.

- Farrell, Brenda S. *Female Active-Duty Personnel: Guidance and Plans Needed for Recruitment and Retention Efforts*. GAO-20-61. Washington, DC: Government Accountability Office, 2020. <https://www.gao.gov/assets/gao-20-61.pdf>.
- Federal Emergency Management Agency. *Emerging Health and Safety Issues among Women in the Fire Service*. Washington, DC: Federal Emergency Management Agency, 2019. https://www.usfa.fema.gov/downloads/pdf/publications/emerging_health_safety_issues_women_fire_service.pdf
- FEDweek. “EEOC Suggests Ways to Boost Women in Public Safety Jobs.” July 18, 2018. <https://www.fedweek.com/issue-briefs/eecoc-suggests-ways-to-boost-women-in-public-safety-jobs/>.
- Fire Fighting in Canada. “Home Page.” Accessed February 18, 2021. <https://www.firefightingincanada.com/>.
- Gladwell, Malcolm. *Outliers: The Story of Success*. New York: Little, Brown and Company, 2008.
- Gonen, Yoav, and Aaron Short. “FDNY Drops Physical Test Requirement amid Low Female Hiring Rate.” *New York Post*, December 11, 2014. <https://nypost.com/2014/12/11/fdny-drops-physical-test-requirement-amid-low-female-hiring-rate/>.
- Gouliquer, Lynne, Carmen Poulin, and Jennifer McWilliams. “Othering of Full-Time and Volunteer Women Firefighters in the Canadian Fire Services.” *Qualitative Sociology Review* 16, no. 3 (2020): 48–69. <https://doi.org/10.18778/1733-8077.16.3.04>.
- Graham, Gordon. “High-Risk, Low-Frequency Events in Public Safety.” *Lexipol* (blog), July 15, 2020. <https://www.lexipol.com/resources/blog/high-risk-low-frequency-events-in-public-safety/>.
- Greschler, Gabriel. “Women Still Make up a Fraction of Bay Area’s Firefighters.” *Mercury News*, November 29, 2021. <https://www.mercurynews.com/2021/11/24/thats-not-showing-much-effort-santa-clara-county-fire-department-struggles-recruiting-female-candidates/>.
- Hebdon, Chris. “Activating Pedagogy: Civics Lessons from Laura Nader’s Teaching.” *Kroeber Anthropological Society Papers* 102, no. 1 (2013): 40–61.
- Hollerbach, Brittany S., Christopher M. Kaipust, Walker S. C. Poston, Christopher K. Haddock, Katie M. Heinrich, and Sara A. Jahnke. “Injury Correlates among a National Sample of Women in the U.S. Fire Service.” *Journal of Occupational and Environmental Medicine* 62, no. 8 (August 2020): 634–40. <https://doi.org/10.1097/JOM.0000000000001918>.

- Hulett, Denise M., Marc Bendick, Sheila Y. Thomas, and Francine Moccio. *A National Report Card on Women in Firefighting*. Fairfax, VA: International Association of Women in Fire & Emergency Services, 2008. <https://www.womeninfire.org/wp-content/uploads/2014/07/35827WSP1.pdf>.
- Jahnke, Sara A., Walker S. C. Poston, Nattinee Jitnarin, and Christopher K. Haddock. “Maternal and Child Health among Female Firefighters in the U.S.” *Maternal and Child Health Journal* 22, no. 6 (June 2018): 922–31. <https://doi.org/10.1007/s10995-018-2468-3>.
- Johnson, Immanuel. “Women in More Job Fields, Added Maternity Leave on Top Marine’s Priority List.” *Stars and Stripes*, February 24, 2020. <https://www.stripes.com/news/women-in-more-job-fields-added-maternity-leave-on-top-marine-s-priority-list-1.620075>.
- Johnson, W. Brad, and David Smith. *Athena Rising: How and Why Men Should Mentor Women*. Brookline, MA: Bibliomotion, 2016.
- Joint Labor Management Wellness Fitness Initiative Task Force. *Candidate Physical Ability Test*. 2nd ed. Washington, DC: International Association of Fire Fighters and International Association of Fire Chiefs, 2007. <https://www.iaff.org/wp-content/uploads/2019/04/CPAT-2nd-Edition.pdf>.
- Khan, Yasin A., Andrea L. Davis, and Jennifer A. Taylor. “Ladders and Lifting: How Gender Affects Safety Behaviors in the Fire Service.” *Journal of Workplace Behavioral Health* 32, no. 3 (2017): 206–25. <https://doi.org/10.1080/15555240.2017.1358642>.
- Kime, Patricia. “Women Nearly 30% More Likely to Leave the Military Than Men, New Report Finds.” *Military News*, May 19, 2020. <https://www.military.com/daily-news/2020/05/19/women-nearly-30-more-likely-leave-military-men-new-report-finds.html>.
- King, Laura. “Diversifying.” *Canadian Firefighter*, February 1, 2016. <https://www.cdnfirefighter.com/toronto-aims-to-reflect-multicultural-community-22423/>.
- Los Angeles County Civil Grand Jury. *2017–2018 Los Angeles County Civil Grand Jury Final Report*. Los Angeles: Los Angeles County Civil Grand Jury, 2018.
- Marimon, Marcos O., Katerina M. Santiago, Alberto J. Caban-Martinez, Natasha Schaefer Solle, Manuel Fonseca, and Noella Dietz. “Diversity and Inclusion Leaders in U.S. Fire Departments Impact the Type and Number of Diversity and Inclusion Programs Offered.” *Journal of Occupational and Environmental Medicine* 62, no. 1 (January 2020): e13–16. <https://doi.org/10.1097/JOM.0000000000001780>.

- Miller, Abby, Sue Clery, Samantha Richardson, Amelia Topper, Stephanie Cronen, Samantha Lilly, Emma Hinkens, and Michelle Yin. *Promising Practices for Increasing Diversity among First Responders*. Washington, DC: Department of Labor, 2016. [https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/First Responders_Full_Report.pdf](https://www.dol.gov/sites/dolgov/files/OASP/legacy/files/FirstResponders_Full_Report.pdf).
- Moran, Larry, and Gene Roth. "Humor in Context: Fire Service and Joking Culture." *New Horizons in Adult Education and Human Resource Development* 25, no. 3 (Summer 2013): 14–26. <https://doi.org/10.1002/nha3.20028>.
- Moseley, Sarah Vee. "Women's Entrance into the Fire Department: A Theory of Collaboration and Crisis." PhD diss., Old Dominion University, 2017. https://digitalcommons.odu.edu/english_etds/34.
- National Fire Protection Association. "Canadian Fire Department Profile, 2014–2016." Accessed March 6, 2021. <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Fact-sheets/CanadianFireDepartmentFactSheet.pdf>.
- National Testing Network. "CPAT at NTN." Accessed July 21, 2022. https://nationaltestingnetwork.com/publicsafetyjobs/cpat_info.cfm.
- Parkinson, Debra, Alyssa Duncan, and Frank Archer. "Barriers and Enablers to Women in Fire and Emergency Leadership Roles." *Gender in Management* 34, no. 2 (2019): 78–93. <https://doi.org/10.1108/GM-07-2017-0090>.
- Pegg, Matthew. "Diversity and Recruitment Update—Operations Firefighter Recruit Class 2017–02." Official memorandum. Toronto: Toronto Fire Services, 2018.
- Phillips, Katherine W. "How Diversity Makes Us Smarter." *Greater Good*, September 18, 2017. https://greatergood.berkeley.edu/article/item/how_diversity_makes_us_smarter.
- Post, Corinne, Ioana M. Latu, and Liuba Y. Belkin. "A Female Leadership Trust Advantage in Times of Crisis: Under What Conditions?" *Psychology of Women Quarterly* 43, no. 2 (June 2019): 215–31. <https://doi.org/10.1177/0361684319828292>.
- QuestionPro* (blog). "What Is Gap Analysis: Definition, Method and Template with Example." Accessed September 23, 2022. <https://www.questionpro.com/blog/gap-analysis/>.
- Rey, Carlos, and Miquel Bastons. "Three Dimensions of Purpose: Knowledge, Motivation, and Action." In *Purpose-Driven Organizations: Management Ideas for a Better World*, edited by Carlos Rey, Miquel Bastons, and Phil Sotok, 29–41. Cham, Switzerland: Springer International Publishing, 2019. https://doi.org/10.1007/978-3-030-17674-7_3.

- Russo, Barbara R. “Women Firefighters’ Strategies for Advancement in the Fire Service: Breaking Down Barriers in Gender-Based Occupations.” PhD diss., Oklahoma State University, 2013.
- Santa Clara County Civil Grand Jury. *Why Aren’t There More Female Firefighters in Santa Clara County?* San Jose: Superior Court of California, County of Santa Clara, 2020. https://www.sccourt.org/court_divisions/civil/cgj/2020/Why%20Arent%20There%20More%20Female%20Firefighters%20in%20Santa%20Clara%20County.pdf.
- Schermerhorn-Collins, Anna L. “The Challenges to Gender Integration in the Career Fire Services: A Comparative Case Study of Men in Nursing.” Master’s thesis, Naval Postgraduate School, 2017. <http://hdl.handle.net/10945/53044>.
- Sinden, Kathryn, Joy MacDermid, Stephanie Buckman, Bonnie Davis, Tracy Matthews, and Carrie Viola. “A Qualitative Study on the Experiences of Female Firefighters.” *Work* 45, no. 1 (2013): 97–105. <https://doi.org/10.3233/WOR-121549>.
- Smith, Dakota. “L.A. Has Hired More Female Firefighters. Why Is the Department Still Dominated by Men?” *Los Angeles Times*, January 27, 2020. <https://www.latimes.com/california/story/2020-01-27/fire-department-los-angeles-gender-gap-women-firefighter-garcetti>.
- Thome, Joni, and Frances Baillon. “Minneapolis Fire Dept—Kris Lemon’s Story.” Insider Exclusive. Accessed September 4, 2022. <https://insiderexclusive.com/minneapolis-fire-dept-kris-lemons-story/>.
- Totty, Michael. “Why Aren’t There More Women Firefighters?” *UCLA Anderson Review*, October 9, 2019. <https://anderson-review.ucla.edu/firefighters/>.
- University of Arizona Cancer Center. “Researchers Studying Stress, Cancer Risk and Reproductive Toxicity in Women Firefighters.” January 27, 2021. <https://cancercenter.arizona.edu/news/2021/01/researchers-studying-stress-cancer-risk-and-reproductive-toxicity-women-firefighters>.
- Urbach, Robyn. “Robyn Urbach: Fire Services Plans to Hire More Women and Minorities Because Diversity Is Good.” *National Post*, July 15, 2013. <https://nationalpost.com/opinion/robyn-urbach-fire-services-plans-to-hire-more-women-and-minorities-because-diversity-is-good>.
- U.S. Fire Administration. *Emerging Health and Safety Issues among Women in the Fire Service*. Emmitsburg, MD: U.S. Fire Administration, 2019. https://www.usfa.fema.gov/downloads/pdf/publications/emerging_health_safety_issues_women_fire_service.pdf.

- Walker, Matthew. *Why We Sleep: Unlocking the Power of Sleep and Dreams*. New York: Scribner, 2018.
- Ward, James, and Diana Winstanley. "Watching the Watch: The UK Fire Service and Its Impact on Sexual Minorities in the Workplace." *Gender, Work & Organization* 13, no. 2 (2006): 193–219. <https://doi.org/10.1111/j.1468-0432.2006.00304.x>.
- Willing, Linda F. *On the Line: Women Firefighters Tell Their Stories*. Grand Lake, CO: JTD Press, 2011.
- Women in Fire. "FAQs on Women in the Fire & Emergency Services." Women in Fire. Accessed January 1, 2021. <https://www.womeninfire.org/faqs/>.
- Yeung, Douglas, Christina E. Steiner, Chaitra M. Hardison, Lawrence M. Hanser, and Kristy N. Kamarck. *Recruiting Policies and Practices for Women in the Military: Views from the Field*. Santa Monica, CA: RAND Corporation, 2017. https://www.rand.org/pubs/research_reports/RR1538.html.
- Yoder, Janice D., and Lynne L. Berendsen. "'Outsider within' the Firehouse: African American and White Women Firefighters." *Psychology of Women Quarterly* 25, no. 1 (2001): 27–36. <https://doi.org/10.1111/1471-6402.00004>.

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