

- 1) I am an Appraiser in the Tax Assessor's office for the City of Providence and a member of Public Employee's Local Union 1033. My primary job duty is to assess taxes for various types of property located in the City of Providence and be able to defend those values. I believe that our Cities and Towns operate best when there is a strong working relationship between Unions and the Cities/Towns in which their members are employed.
- 2) I appear before this committee expressing my own opinions as a concerned resident of the Town of Cumberland; these views are not reflective of those of my employer, union, or anyone else. I want to make it explicitly clear that my views are solely my own.
- 3) The Town of Cumberland is presently considering switching from a 4-platoon system to a 3-platoon system.
- 4) The current Collective Bargaining Agreement requires "minimum manning" of 12 Fire Fighters on-duty at all times (four stations with 3 fire fighters per apparatus.) This totals 2,016 hours of personnel costs per week.
- 5) The current 4 platoon model requires our fire fighters to work a schedule that consists of 42 hours a week, which means the town requires a minimum of 48 fire fighters to meet the "minimum manning". Under the 3 platoon system it would only require 36 fire fighters working 56 hours a week to meet the requirements.
- 6) This change for many of the Fire Fighters in Cumberland will be extreme. When they were hired, they did not agree to these terms nor did their families. Having our Fire Fighters work a mandatory 56 hours a week will add great stress to their family dynamics, personal lives, and safety; it will decrease their overall health & well-being.
- 7) Justine Hofherr of the website boston.com recently wrote that CareerCast ranked Firefighting as the most stressful profession in 2015 based on information from the Census Bureau, the Bureau of Labor Statistics and the Department of Labor. CareerCast ranks 200 jobs by looking at 100 different criteria, including physical demands, environmental conditions, life risk, income, and growth potential, among others. Military Personnel closely followed firefighting as the second most stressful job.
- 8) The reason for making this switch is to help reduce the overall costs associated with the operating the Fire Department, however the department still needs to reach a minimum manning requirement of set hours. If the overtime is an issue with 48 fire fighters trying to reach the minimum staffing, requiring 36 Fire Fighters to meet the minimum manning requirement will prove far less feasible.
- 9) One could assume that an increase in mandatory hours per Fire Fighter may lead to an increase in Fire Fighters calling out sick, requiring leave due to injury and use of vacation days due to the added stress/fatigue. The Fire Department will still need to make up the loss in man power; instead of basing that overtime or call back pay at their regular base salary it would now be at a higher rate after raises are considered.
- 10) Providence Mayor Jorge Elorza recently was quoted saying the 33% increase in base pay after switching to a 3-platoon system, as was done in North Kingston, Coventry, and Tiverton was in

his opinion very fair. The City of Providence has still not reached an agreement with its Fire Fighters regarding the additional compensation for working the increased schedule.

- 11) § 28-9.1-4 of Rhode Island General Law gives our Fire Fighters the right to bargain collectively with their respective cities or towns and be represented by a labor organization in the collective bargaining as to wages, rates of pay, hours, working conditions, and all other terms and conditions of employment.
- 12) If the switch to a 3-platoon system is a management right and if the effected benefits are not negotiated, our Fire Fighters and their respective union will take the Unified Fire District to court. This will be a lengthy and costly venture for the Fire District and ultimately the tax payers of Cumberland who will foot the cost through the Fire Tax Bills. It could cost in the millions of dollars to cover legal fees for arbitration (as evidenced by North Kingston and now Providence).
- 13) North Kingston was one of the first Rhode Island communities to spearhead the 3-platoon change when it enacted the change on March 1<sup>st</sup> 2012. The following figures are the actual personnel staff costs reported in North Kingston's budget.
  - a. 2011 Actual = \$7,977,081
  - b. 2012 Actual = \$7,964,843
  - c. 2013 Actual = \$7,935,911
  - d. 2014 Actual = \$8,002,961
- 14) North Kingston now pays an additional \$25,880 more for personnel staff costs than they did prior to implementing the 3-platoon system.
- 15) Tax rates in 2011 prior to switching platoon system for North Kingston were as follows per the office of municipal finance:
  - a. Residential @ \$17.26
  - b. Commercial @ \$17.26
  - c. Personal Property @ \$17.26
  - d. Motor Vehicle @ \$22.04
- 16) Tax rates in 2014 after switching to the 3-platoon system for North Kingston were as follows per the office of municipal finance:
  - a. Residential @ \$18.91
  - b. Commercial @ \$18.91
  - c. Personal Property @ \$18.91
  - d. Motor Vehicle @ \$22.04
- 17) Tax rates actually increased and the Tax Payers of North Kingston did not see a reduction in their taxes after switching to a 3-platoon system.
- 18) It is easy to illustrate the cost savings under an OVERTIME line item when a 56-hour schedule is required as compared to the currently accounted 42-hour plan. Savings on this line item actually increase the amounts of nearly every other expense that factors into the cost of operating the Fire Department and its personnel.

- 19) At minimum base salaries will increase (due to the 11 extra hours worked, raises to base pay, and 3 hours of overtime per The Federal Fair Labor Standards Act), leading to a rise in retirement costs. Pensions will now be based on a larger base salary than was has been originally budgeted.
- 20) Currently the Cumberland Fire Department is a part of the Municipal Employees' Retirement System (MERS) through the State of Rhode Island. Increasing every Fire Fighter's base salary, as required, will increase the amounts upon which their respective pensions will be based. This will also increase the amount of money that needs to be paid into the MERS system. At present the Fire Fighters are required to pay 10% of the amount owed, while the Fire District's amount is not fixed. This present a situation of great financial uncertainty for the Town of Cumberland.
- 21) To emphasize a higher base pay means a higher pension and a higher pension obligation for the Fire District which will be paid with our tax dollars.
- 22) I respectfully urge this committee to not recommend 3-platoon as I cannot see any legitimate cost savings in doing so, and upsetting the current financial status of our town and it's celebrated Fire Department would result in a great disservice to all those residing in the Town of Cumberland.
- 23) I would be more than happy to answer any questions regarding my testimony or documents supplied.

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# Fire Engineering

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## FIRE DEPARTMENT STAFFING: A NEED, NOT A WANT

08/01/2009

BY KEVIN "WILLY" WILSON

The saying "Do more with less" seems to have been the unofficial motto of the fire service for more than 200 years. The fire service has continued to be a very talented and resourceful group of individuals. No problem is too big or too small for us to solve; if for some reason we get stumped, we use our resources to find the answer. However, one serious dilemma we face regularly is acquiring adequate staffing to do our job safely and protect our community. When the public calls for our help, we run to their aid, but who will run to our aid when we need help?

We can call an additional alarm or rely more on mutual aid, but only if the companies are available. Will they be readily available when we need them? There will come a time when we will be able to do only so much before our resources are depleted. From fires to EMS calls and everything in between, no matter how you look at it, the fire service is the last line of defense when it comes to a community in an emergency situation. So the mentality of doing more with less is not appropriate in our job.

When fewer than four firefighters arrive on a fire scene, the first company is faced with a critical decision. Does it initiate an interior attack without adequate staffing and unnecessarily risk firefighters' safety, or does it delay the interior fire attack until additional resources arrive, causing further fire damage? Neither response is appropriate.

The U.S. Occupational Safety and Health Administration (OSHA) two-in/two-out rule (CFR 29 1910.134(g)(4)1-3) is also cited in National Fire Protection Association (NFPA) 1500, *Standard on Fire Service Occupational Safety and Health Program*, 2007 edition, and in

NFPA 1410, *Standard on Training for Initial Emergency Scene Operations*, 2005 edition.

The 2007 edition of NFPA 1500, page 24, section 8.5.7, states: "In the initial stages of an incident where only one crew is operating in the hazardous area at a working structure fire, a minimum of four individuals shall be required, consisting of two individuals working as a crew in the hazardous area and two individuals present outside this hazardous area available for assistance or rescue at emergency operations where entry into the danger area is required."

Section 8.5.8 states: "The standby members shall be responsible for maintaining a constant awareness of the number and identity of members operating in the hazardous area, their location and function, and time of entry."

Section 8.5.9 states: "The standby members shall remain in radio, visual, voice, or signal line communication with the crew."

The NFPA and the National Institute for Occupational Safety and Health (NIOSH) have reported that fire departments across the nation lack adequate staffing, which has contributed to millions of dollars in time-lost injuries, thousands of on-the-job injuries, and dozens of line-of-duty deaths (LODDs) each year. Unfortunately, several firefighters will pay with their lives before the staffing issue will be brought up again for serious discussion.

In 1990, the Providence (RI) Fire Department conducted a study that showed that the only nationally recognized staffing standard at that time was from the NFPA.<sup>1</sup> It recommended a minimum of four firefighters responding on or with each apparatus. The NFPA reported at that time a 71-percent decrease in time lost because of injury using four-person staffing when compared with three-person staffing. Even though the study is more than 18 years old, it shows that the staffing level today throughout the United States is an issue that still has not been resolved.

Labor boards and at least one court have found that a minimum staffing agreement or ordinance is reasonable for ensuring the protection of the public and personnel. However, many fire departments in the past made no provisions in their staffing rosters for covering scheduled absences; fire companies were allowed to run shorthanded, seriously compromising their operating efficiency and firefighter safety.<sup>2</sup>

My hope is that the information presented in this article will enable fire service members, community members, and government officials to better understand why adequate fire

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My hope is that the information presented in this article will enable fire service members, community members, and government officials to better understand why adequate fire

service staffing is a need, not a want.

## WHY MORE STAFFING?

Residential and business communities continue to grow at a rate that makes it impossible for many departments to serve those additional needs. We cannot continue to do more with less. We need enough firefighters to do the job in a safe and appropriate manner.

NFPA President James Shannon cited in testimony before the U.S. House of Representatives that fire departments have insufficient staffing on responding fire apparatus to safely and effectively fight a fire inside a building in accordance with NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2004 edition, and NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, 2004 edition.<sup>3</sup> He pointed out also that at least 65 percent of our nation's cities and towns don't have enough fire stations to meet the widely recognized Insurance Services Office (ISO) response time guidelines. Shannon told the representatives that that was the reason he supports the Staffing for Adequate Fire and Emergency Response (SAFER) Act of 2003. Information on SAFER is at [www.firegrantsupport.com/](http://www.firegrantsupport.com/).

## MINIMAL RECOMMENDED STAFFING LEVELS

Following are minimal staffing levels recommended by standards and fire service and related organizations.

NFPA recommendations are based on data from actual fires and in-depth fire simulations wherein fire company effectiveness was critically and objectively evaluated. These studies indicate significant reductions in performance and safety when crews responded with fewer members than recommended.

- **NFPA 450**, *Guide for Emergency Medical Services and Systems*, 2009 edition, Chapter 5, Section 5.5.2.3.4: "Most experts agree that four responders [at least two trained in advanced cardiac life support (ACLS) and two trained in basic life support (BLS)] are the minimum required to provide ACLS to cardiac arrest victims." As a side note, a medical call requires just as many personnel as, if not more than, a fire call, so if we can meet the medical need, why can't we meet the fire need?
- **NFPA 1710**: Four on-duty personnel for fire companies whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and

rescue.

Five or six on-duty members in jurisdictions with tactical hazards, high-hazard occupancies, high-incident frequencies, geographical restrictions, or other pertinent factors as identified by the authority having jurisdiction (AHJ).

Four on-duty personnel for fire companies whose primary functions are to perform the variety of services associated with truck work, such as forcible entry, ventilation, search and rescue, aerial operations for water delivery and rescue, utility control, illumination, overhaul, and salvage work—ladder or truck companies. Five or six on-duty personnel for these companies in jurisdictions with tactical hazards, high-hazard occupancies, high-incident frequencies, geographical restrictions, or other pertinent factors as identified by the AHJ.

For ALS emergency responses: two members trained at the emergency medical technician-paramedic level and two members trained at the emergency medical technician-basic level arriving on-scene within the established response time.

•**NFPA 1720**(volunteer departments): "The fire department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate safely and effectively .... Upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within two minutes 90 percent of the time."

The complete NFPA 1710 and 1720, 2004 edition, standards are at [nfpa.org/categoryList.asp?categoryID=999&itemID=24345&cookie%5Ftest=1/](http://nfpa.org/categoryList.asp?categoryID=999&itemID=24345&cookie%5Ftest=1/).

•**NFPA Fire Protection Handbook, 19th edition (2003):**

Fire department emergency medical service transports need additional personnel to maintain basic fire company strength. Some smaller communities may have a relevantly high staffing ratio per population protected because of the need for sufficient on-duty personnel for effective initial attack and rescue operations. A fire department in a large city may operate one engine company per 15,000 to 20,000 population and still have a large number of well-distributed fire companies, whereas two engine companies cannot properly protect a city of 30,000.

In general, each engine company should have a minimum of four firefighters on duty.

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including an officer. It would seem inappropriate to dispatch an engine company to a fire if the crew could not start firefighting and rescue operations because of safety concerns.

An increasing number of fire departments, in recent years, have established minimum staffing levels for each fire company or each duty shift. Many fire departments have established policies that state engine or ladder companies will not operate with fewer than four firefighters, including an officer, on duty. In rare cases, the minimum is five persons on duty per company because of the workload and the population and values protected per company.

(2)

- **NFPA Fire Protection Handbook, 20th edition (2008)<sup>4</sup>**: recommends the following minimum numbers of firefighters/officers to do the job safely. If this sounds like a lot, keep in mind that firefighters will always work in pairs, if not more, to complete the several tasks to get the job done as safely as possible. This includes such tasks as water supply, search and rescue, ventilation, rapid intervention, and so on.

Between 19 and 23 personnel typically constitute the first-alarm assignment to a confirmed single-family dwelling fire, as observed by evaluation teams.

Not fewer than 24 firefighters and two chief officers, one or more safety officers, and a rapid intervention team(s) should respond to high-hazard occupancies (schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings, and other high-life hazard or occupancies with large fire potential).

Not fewer than 16 firefighters, one chief officer, a safety officer, and a rapid intervention team should respond to medium-hazard occupancies (apartments, offices, mercantile, and industrial occupancies not normally requiring extensive rescue or firefighting forces).

Not fewer than 14 firefighters, one chief officer, a safety officer, and a rapid intervention team should respond to low-hazard occupancies (one-, two-, or three-family dwellings and scattered small businesses and industrial occupancies).

At least 12 firefighters, one chief officer, a safety officer, and a rapid intervention team shall respond to rural alarms (scattered dwellings, small businesses, and a farm building).

- **U.S. Fire Administration (USFA)**: recommends that a minimum of four firefighters respond on or with each apparatus.<sup>5</sup>

- **The International Association of Fire Chiefs (IAFC):** advocates a minimum of five persons on engine and ladder companies. Noting that the reduction of members per unit and that the number of units has reached dangerously low levels, the IAFC says it would be "inappropriate" to accept or support further reductions.<sup>6</sup>

- **The International City Management Association (ICMA):** states in "Managing Fire Services" that at least four and often eight or more firefighters, each under the supervision of an officer, "should respond to fire suppression operations." Further, it says, "If about 16 trained firefighters are not operating at the scene of a working fire within the critical time period, then dollar loss and injuries are significantly increased, as is fire spread." It has found five-person companies 100-percent effective, four-person companies 65-percent effective, and three-person companies 38-percent effective.<sup>7</sup>

- **National Institute for Occupational Safety and Health (NIOSH) LODD Reports:** almost every NIOSH LODD report recommends to "provide adequate firefighter staffing to ensure safe operating conditions."

- **The International Association of Fire Fighters (IAFF):** views inadequate staffing and crew size as contributing factors to LODDs and advocates maintaining adequate staffing as proposed in NFPA 1500, NFPA 1710, and NFPA 1720; the NFPA *Fire Protection Handbook*, 18th edition (1997), Section 10/Chapter 1 (1-34); and OSHA 29 CFR 1910.134 (two-in/two-out).<sup>8</sup>

#### CONSEQUENCES OF INADEQUATE STAFFING

Fireground effectiveness may be compromised when staffing falls below four firefighters per company. Tests conducted with the Houston (TX) Fire Department indicated that staffing below a crew size of four can overtax the operating force and lead to higher losses. Jurisdictions with minimum staffing levels may have to take units out of service if they do not have the funds to support the additional personnel overtime. (2)

The District Chiefs' Technical Advisory Committee (DCTAC) conducted a study of the Houston Fire Department, which determined that fire apparatus staffing is an even greater citizen safety issue than a firefighter safety matter.<sup>9</sup> The report termed the understaffing situation a "crisis situation that demands immediate intervention." Decreasing the number of firefighters without eliminating any of the tasks fire

including an officer. It would seem inappropriate to dispatch an engine company to a fire if the crew could not start firefighting and rescue operations because of safety concerns.

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departments are to accomplish causes the department to delay some of the required tasks or to try to perform all tasks unsafely with inadequate staff, according to the study.

The study also noted the following:

- "Firefighters working in understaffed environments are too often expected to perform beyond their capabilities."
- Inadequate staffing creates "a cumulative effect" caused by combined delays and lost functions of crews, resulting "in an even greater loss of overall effectiveness."
- Understaffing increases physiological stress on firefighters, as they try to compensate.

Another effect of understaffing is that "fire companies with serious staff reduction generally are limited to using small hose streams until additional help arrives, which may adversely affect containment of even a small fire and conducting effective rescue operations." (4)

Over the past three decades, fire department response has expanded to include emergency medical services, terrorism response, hazardous materials response and mitigation, natural disaster response, specialized rescue, and responses to other community needs. Fire departments need adequate firefighting resources to be able to design an acceptable level of resource deployment based on risks and service commitment and to continually evaluate emergency response systems, which are crucial to enhancing firefighter operational safety and occupational health and reducing civilian fire fatalities.<sup>10</sup>

In 2000, Detroit, Michigan, fire officials reorganized the city's fire department and sought to resolve problems, including a shortage of firefighters. At least 21 people had died during the preceding four years when fire trucks sent to their rescue didn't work or the closest stations were temporarily closed. Their daily staffing average was well below the number needed to meet the minimum national standard of four firefighters on each truck. Staffing levels were a key element in two 1998 fires in which three children died; the fire companies nearest to those fires had been closed because of firefighter shortfalls.

Capt. Raymond Furtado, NKFD

The fire department was forced to close fire companies on 61 days that year because of low staffing.”<sup>11</sup> As of May 2009, the *Detroit News* reported that nearly 300 layoffs would occur in the city government and that nearly 500 positions that were then open would not be filled. The article explained: “This is not the final step in the budget process, but a very significant step toward final approval. It will be interesting to see how many positions in the fire department will be lost or not filled. The Detroit Fire Department has been extremely busy with arson fires and abandoned building fires over the past several months.”

Almost nine years later, staffing issues are still unchanged. These stories are those we would like to see changed for the better, not the worse. At this rate, the trend will dig even lower when rock bottom is reached.

#### ACTIONS YOU CAN TAKE

- When responding with an engine with only three persons on duty and on ladder trucks with only two persons, promptly back up such low levels of staffing with off-shift or call personnel or by multiple-alarm response to ensure adequate coverage. (2)
- Apply for a SAFER grant and other grants that can be used to fund additional staffing.
- Continually inform the community (citizens, fire chief, city council, and so on) of your concerns for civilian and firefighter safety that you are sworn to protect, so when a levy or bond is up for vote, you have a better chance of its passing. Provide them with the facts.
- Use new technology. Staffing software and hardware can help with staffing problems. The Vista (CA) Fire Department stated in its 2006 annual report that it had entered into an agreement with a software development corporation for hardware, software, and support for a system that automates daily workforce staffing solutions to improve productivity, reduce the number of personnel needed to manage scheduling activities, and improve management’s ability to make and report on scheduling decisions.<sup>12</sup>
- Use automatic and mutual aid. Work with your neighboring fire departments.
- Search online. Search various search engines with key phrases such as “fire department staffing solutions” and “staffing solution within the fire service.”
- Read articles/books. The “Advanced Fire Administration” student handbook, a

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Over the past three decades, fire department response has expanded to include emergency medical services, terrorism response, hazardous materials response and mitigation, natural disaster response, specialized rescue, and responses to other community needs. Fire departments need adequate firefighting resources to be able to design an acceptable level of resource deployment based on risks and service commitment and to continually evaluate emergency response systems, which are crucial to enhancing firefighter operational safety and occupational health and reducing civilian fire fatalities.<sup>10</sup>

In 2000, Detroit, Michigan, fire officials reorganized the city’s fire department and sought to resolve problems, including a shortage of firefighters. At least 21 people had died during the preceding four years when fire trucks sent to their rescue didn’t work or the closest stations were temporarily closed. Their daily staffing average was well below the number needed to meet the minimum national standard of four firefighters on each truck. Staffing levels were a key element in two 1998 fires in which three children died; the fire companies nearest to those fires had been closed because of firefighter shortfalls.

joint project of the Federal Emergency Management Agency, the USFA, and the National Fire Academy, offers suggestions for using creativity in establishing staffing plans, including "flattening the organization power base with a strong executive team and strong field-level staffing" by eliminating mid-level management positions in favor of direct delivery of services.<sup>13</sup>

- Research magazine articles. A roundtable on budget cuts, for example, relates how other fire departments have responded to staffing issues.<sup>14</sup> Another article describes how the first-arriving engine company fulfills the primary tasks of the initial attack. Even though this does not directly relate to resolving staffing issues, it may help you to be more prepared and resourceful.<sup>15</sup> Still another article explains how to manage a fire scene with limited staffing; lessons learned are included.<sup>16</sup>
- Look to the standards. NFPA 1500, 2002 edition, A.8.4.11, presented the following examples of how a fire department could deploy a team of four members initially at the scene of a structure fire, regardless of how the team members are assembled:
  1. The team leader and one firefighter could advance a firefighting hoseline into the immediately dangerous to life and health (IDLH) atmosphere, and one firefighter and the pump operator become the standby members.
  2. The team leader could designate the pump operator to be incident commander. The team leader and one firefighter enter the IDLH atmosphere, and one firefighter and the pump operator remain outside as the standby members.
  3. Two firefighters could advance the hoseline in the IDLH atmosphere, and the team leader and pump operator remain outside as standby members.
- Train. Attend Strategy and Tactics for Initial Company Officers (STICO) classes locally or at the National Fire Academy. Have your department do hands-on training evolutions to determine what works and what does not work. You won't know if a drill will go according to plan until after it has taken place. Never give up; keep trying.

...

I was taught early in my military career that if there is a problem, I should help to find the solution. The above information is presented to help resolve some of the staffing

Capt. Raymond Furtado, NKFD

problems but not all of them. No one has all the answers. It may not be easy, but we have the resources, grants, and facts to aid us in this journey. It may take a little work and creative thinking, but I am confident that the solutions are there. We cannot continue to ask our fire departments to protect our communities with inadequate resources. We will continue to see the number of injuries and fatalities of firefighters and civilians increase in future years until we get the staffing we need, not just want.

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KEVIN "WILLY" WILSON is a firefighter/paramedic with Camas (WA) Fire & Rescue. His 14-plus years of firefighting experience include having served as a volunteer firefighter in Gladstone, Oregon, and with the Independent Hose Company in Frederick, Maryland; as a U.S. Navy shipboard firefighter (Damage Controlman) in Norfolk, Virginia, from 1993-1997; and as a U.S. Navy fire marshal/paramedic, Naval Support Facility Fire Department, in Maryland. He has been doing extensive firefighter safety research since 2002 and is a firefighter safety survival instructor for Clark County, Washington. He is a hazmat technician and ICC fire inspector I and II and is completing requirements for a B.S. in fire service administration through Western Oregon University.

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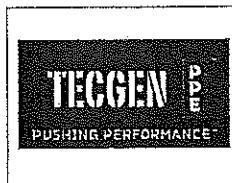
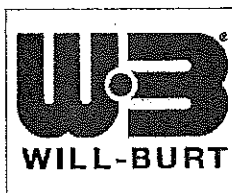
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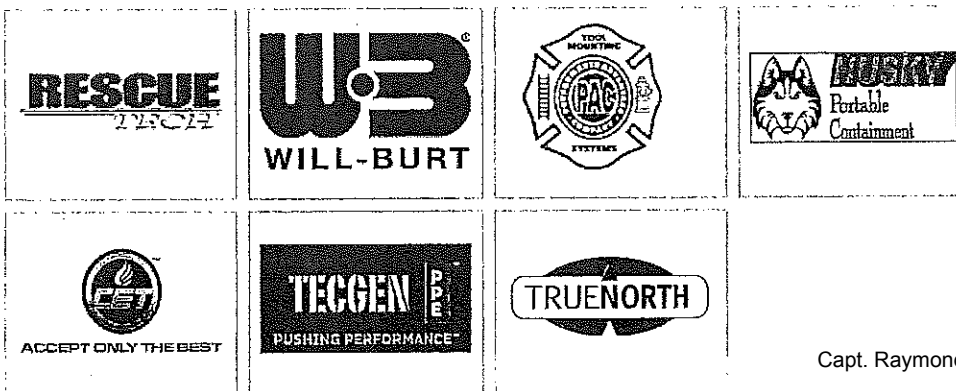
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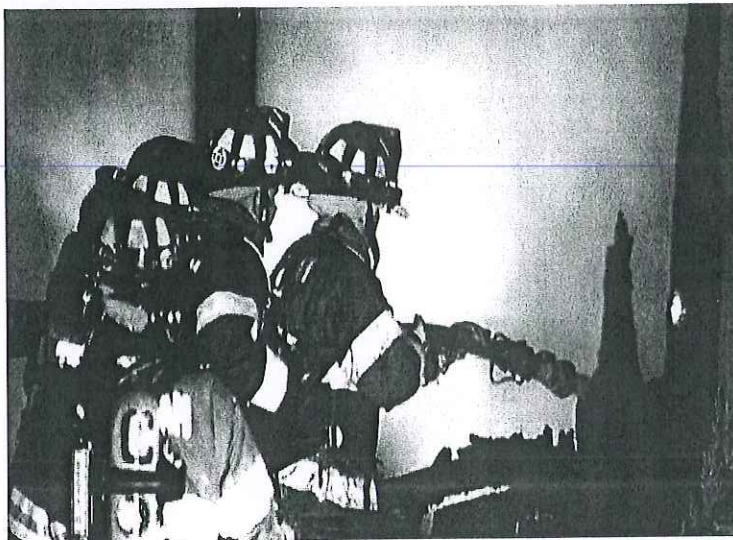
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# Is Firefighter the Most Stressful Job of 2015?



The Boston Globe

By Justine Hofherr

Boston.com Staff | 01.13.15 | 4:16 PM

*"All honor unto gallantry in reverence we pay that others might have days to be these gave their lives away now glory shall enshrine each name and times their deeds defy since humble men who sought no fame have taught us how to die"*

## RELATED LINKS

- **Is Hair Stylist the Least Stressful Job of 2015?**
- **How to Be a Better Employer**
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*-A tribute to Boston firemen at the Firemen's Memorial at Forest Hills Cemetery, by Henry Gillen*

Every year, career information site CareerCast puts out a ranking of the least and most stressful jobs in the nation. Using information from the Census Bureau, the Bureau of Labor Statistics and the Department of Labor, they rank 200 jobs by looking at 100 different criteria, including physical demands, environmental conditions, life risk, income, and growth potential, among others.

Firefighting was ranked 2015's 'most stressful job', followed closely by enlisted military personnel and military general. Last year, it snagged the third spot.

Historically firefighting has always been stressful. You're responsible for others' lives, and must be ready to act at a moment's notice.

"It's traditionally been a stressful job," said Stephanie Schorow, author of "Boston on Fire: A History of Fires and Firefighting in Boston."

CareerCast also mentioned budget cuts to some fire departments' funding, leading to less raises and promotions. But firefighters have better firefighting equipment, improved psychological support systems, and fight fewer fires than ever before—so we asked some experts how the stress of modern firefighting might compare to the past.

### **A Brief History of Boston's Firefighters**

Bostonians have been fighting fires since the 17th century, when it began as a volunteer effort. 1678 saw the first paid municipal fire department, with a fire chief, 12 assistants, and the purchase of the city's first fire engine, according to the Boston Fire Historical Society.

Back then, fires were huge. Many buildings were built with wood, and a dropped match or untended candle could create a deadly conflagration that leapt from narrow street to street in moments. A 1676 fire destroyed 45 buildings near Richmond and Hanover Street in the early morning light. A fire in 1760 ruined 349 buildings, leaving 220 families homeless. Often, the human death toll was uncountable.

"Buildings in the Downtown area were so hot, the fire created its own wind," Schorow said.

Over time, steamers replaced hand engines, and in the 19th century, permanent firemen and engineers were appointed. Stone and brick homes replaced wooden ones, and equipment improved. Gradually, the prevalence of fires decreased.



But the occasional deadly fire still occurred. The Great Fire of 1872 burned 770 buildings, devastating a massive swath of Boston's commercial district and prompting then fire chief, John Damrell, to establish new building codes. Notable tragedies persisted: the Cocoanut Grove nightclub fire of 1942 killed 492, and the Vendome Hotel collapse killed nine firefighters in 1972. These instances reminded city dwellers that it only takes a moment for a fire to change your life.

Boston firemen showed extraordinary bravery in all of these situations, which were undoubtedly stressful. But Schorow said despite the inherent dangers of the occupation, most firemen adamantly loved the nature of their job: "It's a job people were just devoted to. It ran in families. Friendships were made, and friendships were forged."

Schorow said despite how frequent fires used to be, firemen found consolation in their fellowship and shared history.

"Boston firefighters do have a sense of history that gives them comfort because they feel they're part of a tradition that goes back to Chief Damrell in 1872," she added. This alleviated some of the psychological stress that could occur after a particularly traumatic fire.

As building and fire codes are continuously improved, fire-related deaths have also declined in Boston. In 1997, 65 civilians died. In 2013, 44 died, according to the Massachusetts Fire Department.

But less fire to chase doesn't necessarily mean less stress.

### **A Modern Firefighter's Life**

"It's not what you see on 'Sesame Street,'" former Boston Fire Commissioner Paul Christian said. When your job involves the possibility of putting your life on the line everyday, said some can handle the stress, and some can't.

It's true that firefighters spend a lot more time waiting for fires now than years passed. Schorow said this could be stressful for some firefighters who

just want to do the job they were trained to do: "Even 20 to 30 years ago, firehouses would be really busy. Most firefighters I know want to work in a busy house. They want the activity. There's some stress from waiting around, wanting it to happen."

But both Schorow and Christian said even while they wait, firefighters are plenty busy. They constantly practice dealing with different firefighting scenarios. This is even more important now, because less real-live fires can lead to skills degradation.

"Anyone without proper knowledge would be stressed out," Christian said. "But if you find the job stressful, you shouldn't be there."

Christian always wanted to be a firefighter. He used to literally chase fire trucks down the street, waving to the firefighters as they streamed by: "I had tremendous admiration for them...I couldn't imagine not being one. I was drawn to it."

Climbing the ranks of the Boston Fire Department to eventually become Chief, Christian loved his job every step of the way. He said the most rewarding part of the job is helping people at their most vulnerable, though trying to save people on a daily basis can be fraught with tragedy.

Just last March, a horrific Back Bay fire killed Boston firefighter Michael Kennedy and Lt. Edward Walsh.

Christian reminisced about a South Boston fire that destroyed a construction trailer, killing a few homeless people inside. "That one really stuck with me," he said. But for the most part, you have to take the tragedy with the success of saving lives, he said. If you feel so physically or psychologically stressed that you can't sleep at night, you shouldn't be a firefighter, Christian said.

It's certainly not for everyone, but Christian said 'stress' depends on the individual. Being an NFL quarterback or a war correspondent would be incredibly stressful to him, he said. Besides, modern firefighters have even

more support systems in place than their historical counterparts.

"In the 1980s, we created employee assistance programs for Post Traumatic Stress Disorder," Christian said. Those who used to rely solely on fellow firefighters for psychological support now have other outlets.

Though the Great Recession's budget cuts have been a real issue for fire departments in Minneapolis, Detroit, Kansas City, and Los Angeles in recent years, the Boston fire department is not taking the same hit.

You can say that again – at least for the BFD brass.

Boston Fire and EMS payroll is the most expensive of the 30 largest cities in the country, with 148 supervisors earning more than former Governor Deval Patrick, according to WCVB. The base salary of a district fire chief in Boston is \$162,118, while Baltimore's is \$95,193, Chicago's is \$131,552, and New York's is \$146,583.

According to 2014 data from the Pioneer Institute, Boston firefighters make roughly the national average, which CareerCast listed as \$45,600.

In addition to reasonable pay, Christian said modern Boston firefighters' camaraderie with the city and with each other is the biggest stress alleviator, Christian said.

"You make friends that last a lifetime. I've had a lot of friends die over the years, but it's part of the price we pay. When you're in a position where people depend on you, it rallies your emotional state," Christian said. He wouldn't take back a moment of his 38 years with the Boston Fire Department.

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# The Most Stressful Jobs of 2015



By CareerCast.com

The most stressful jobs of 2015 can be physically dangerous, psychologically taxing—and a great match for those with the passion and drive necessary to succeed in such an environment.

David Barckhoff of Pittsburgh fits the bill. Barkchoff says he became interested in a career as a firefighter, the most stressful job of 2015, at age eight or nine.

"I was interested in the excitement. I remember seeing the truck go down the road with the lights on," he says. "The idea of rescuing people...and the camaraderie" with other firefighters appealed to him then and now. For some, the job's challenges might be a deterrent. But not for Barckhoff, who was already used to

working in a stressful occupation.

Barckhoff transitioned into firefighting from a stint in the second-most stressful job of 2015, as an enlisted military specialist in the United States Navy. He says the two paths share similarities.

"The fire academy is almost like going through boot camp," he says. "They take you from the beginning stages, then through all the hazards you could possibly face, with experts teaching from their real-world experience."

Learning from the experience of others is invaluable in any career, but in the most stressful jobs of 2015, it's critical. The conditions faced in such stressful jobs as firefighter, enlisted military personnel and police officer constantly change. The most important lesson from the experience, Barckhoff says, is to avoid complacency.

"When you get complacent ... that's when something is going to kill you," he says. The same mindset is necessary for airline pilots, the fourth-most stressful job of 2015. For the millions of Americans who entrust their safety to them every year, airline pilots must be able to adapt to changing conditions when in flight without losing their cool.

Of course, not all of the most stressful jobs of 2015 find workers responsible for public safety, but they are entrusted with seeing that the expectations of large groups are met without problem.

Event coordinator is one such career. The tight deadlines, the high expectations of clients and the keen attention to detail needed to succeed as an event coordinator land it on the list.

And with experience in the No. 1 and No. 2 most stressful jobs, Barckhoff has an interesting frame of reference for other jobs' stress. After 25 years in firefighting, he added another career path that was not nearly as death-defying, but still among the most stressful: He became an actor.

Barckhoff has worked in different phases of television and movies, including stunts and writing. He says his military and firefighting experience helps him add believability to fiction.

"It's still stressful," he says. "You have deadlines and work long hours," and you never know where or when the next job will emerge.

Yes, stress can come from a variety of factors. You need not necessarily put your own life at risk to be in a stressful work environment. Tight deadlines, like those faced on a daily basis by photojournalists, newspaper reporters and broadcasters, contribute to high stress. So, too, does working under the constant scrutiny of the public eye. It takes a thick skin and keen attention detail to thrive in these work environments.

The following are the 10 most stressful jobs of 2015, according to the 2015 Jobs Rated report.

## Jobs Rated Stress Links

- [The 10 Least Stressful Jobs of 2015](#)
- [Stress Methodology](#)
- [Infographic](#)



## Most Stressful Jobs of 2015: 1. Firefighter

**Jobs Rated Stress Score:** 71.59

**Median Annual Salary:** \$45,600

**Projected Growth by 2022:** 7%

Firefighters face dangerous situations in ever-changing conditions, and their work is not limited to battling blazes. Firefighters also assist with medical emergencies and natural disasters.



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# Fire Engineering

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Home > Firefighting > Fire Department Staffing: A Need, Not a Want

## FIRE DEPARTMENT STAFFING: A NEED, NOT A WANT

08/01/2009

BY KEVIN "WILLY" WILSON

The saying "Do more with less" seems to have been the unofficial motto of the fire service for more than 200 years. The fire service has continued to be a very talented and resourceful group of individuals. No problem is too big or too small for us to solve; if-for some reason we get stumped, we use our resources to find the answer. However, one serious dilemma we face regularly is acquiring adequate staffing to do our job safely and protect our community. When the public calls for our help, we run to their aid, but who will run to our aid when we need help?

We can call an additional alarm or rely more on mutual aid, but only if the companies are available. Will they be readily available when we need them? There will come a time when we will be able to do only so much before our resources are depleted. From fires to EMS calls and everything in between, no matter how you look at it, the fire service is the last line of defense when it comes to a community in an emergency situation. So the mentality of doing more with less is not appropriate in our job.

When fewer than four firefighters arrive on a fire scene, the first company is faced with a critical decision. Does it initiate an interior attack without adequate staffing and unnecessarily risk firefighters' safety, or does it delay the interior fire attack until additional resources arrive, causing further fire damage? Neither response is appropriate.

The U.S. Occupational Safety and Health Administration (OSHA) two-in/two-out rule (CFR 29 1910.134(g)(4)1-3) is also cited in National Fire Protection Association (NFPA) 1500, *Standard on Fire Service Occupational Safety and Health Program*, 2007 edition, and in

NFPA 1410, *Standard on Training for Initial Emergency Scene Operations*, 2005 edition.

The 2007 edition of NFPA 1500, page 24, section 8.5.7, states: "In the initial stages of an incident where only one crew is operating in the hazardous area at a working structure fire, a minimum of four individuals shall be required, consisting of two individuals working as a crew in the hazardous area and two individuals present outside this hazardous area available for assistance or rescue at emergency operations where entry into the danger area is required."

Section 8.5.8 states: "The standby members shall be responsible for maintaining a constant awareness of the number and identity of members operating in the hazardous area, their location and function, and time of entry."

Section 8.5.9 states: "The standby members shall remain in radio, visual, voice, or signal line communication with the crew."

The NFPA and the National Institute for Occupational Safety and Health (NIOSH) have reported that fire departments across the nation lack adequate staffing, which has contributed to millions of dollars in time-lost injuries, thousands of on-the-job injuries, and dozens of line-of-duty deaths (LODDs) each year. Unfortunately, several firefighters will pay with their lives before the staffing issue will be brought up again for serious discussion.

In 1990, the Providence (RI) Fire Department conducted a study that showed that the only nationally recognized staffing standard at that time was from the NFPA.<sup>1</sup> It recommended a minimum of four firefighters responding on or with each apparatus. The NFPA reported at that time a 71-percent decrease in time lost because of injury using four-person staffing when compared with three-person staffing. Even though the study is more than 18 years old, it shows that the staffing level today throughout the United States is an issue that still has not been resolved.

Labor boards and at least one court have found that a minimum staffing agreement or ordinance is reasonable for ensuring the protection of the public and personnel. However, many fire departments in the past made no provisions in their staffing rosters for covering scheduled absences; fire companies were allowed to run shorthanded, seriously compromising their operating efficiency and firefighter safety.<sup>2</sup>

My hope is that the information presented in this article will enable fire service members, community members, and government officials to better understand why adequate fire

NFPA 1410, *Standard on Training for Initial Emergency Scene Operations*, 2005 edition.

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Section 8.5.9 states: "The standby members shall remain in radio, visual, voice, or signal line communication with the crew."

The NFPA and the National Institute for Occupational Safety and Health (NIOSH) have reported that fire departments across the nation lack adequate staffing, which has contributed to millions of dollars in time-lost injuries, thousands of on-the-job injuries, and dozens of line-of-duty deaths (LODDs) each year. Unfortunately, several firefighters will pay with their lives before the staffing issue will be brought up again for serious discussion.

In 1990, the Providence (RI) Fire Department conducted a study that showed that the only nationally recognized staffing standard at that time was from the NFPA.<sup>1</sup> It recommended a minimum of four firefighters responding on or with each apparatus. The NFPA reported at that time a 71-percent decrease in time lost because of injury using four-person staffing when compared with three-person staffing. Even though the study is more than 18 years old, it shows that the staffing level today throughout the United States is an issue that still has not been resolved.

Labor boards and at least one court have found that a minimum staffing agreement or ordinance is reasonable for ensuring the protection of the public and personnel. However, many fire departments in the past made no provisions in their staffing rosters for covering scheduled absences; fire companies were allowed to run shorthanded, seriously compromising their operating efficiency and firefighter safety.<sup>2</sup>

My hope is that the information presented in this article will enable fire service members, community members, and government officials to better understand why adequate fire



service staffing is a need, not a want.

## WHY MORE STAFFING?

Residential and business communities continue to grow at a rate that makes it impossible for many departments to serve those additional needs. We cannot continue to do more with less. We need enough firefighters to do the job in a safe and appropriate manner.

NFPA President James Shannon cited in testimony before the U.S. House of Representatives that fire departments have insufficient staffing on responding fire apparatus to safely and effectively fight a fire inside a building in accordance with NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2004 edition, and NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, 2004 edition.<sup>3</sup> He pointed out also that at least 65 percent of our nation's cities and towns don't have enough fire stations to meet the widely recognized Insurance Services Office (ISO) response time guidelines. Shannon told the representatives that that was the reason he supports the Staffing for Adequate Fire and Emergency Response (SAFER) Act of 2003. Information on SAFER is at [www.firegrantsupport.com/](http://www.firegrantsupport.com/).

## MINIMAL RECOMMENDED STAFFING LEVELS

Following are minimal staffing levels recommended by standards and fire service and related organizations.

NFPA recommendations are based on data from actual fires and in-depth fire simulations wherein fire company effectiveness was critically and objectively evaluated. These studies indicate significant reductions in performance and safety when crews responded with fewer members than recommended.

- **NFPA 450**, *Guide for Emergency Medical Services and Systems*, 2009 edition, Chapter 5, Section 5.5.2.3.4: "Most experts agree that four responders [at least two trained in advanced cardiac life support (ACLS) and two trained in basic life support (BLS)] are the minimum required to provide ACLS to cardiac arrest victims." As a side note, a medical call requires just as many personnel as, if not more than, a fire call, so if we can meet the medical need, why can't we meet the fire need?
- **NFPA 1710**: Four on-duty personnel for fire companies whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and

rescue.

Five or six on-duty members in jurisdictions with tactical hazards, high-hazard occupancies, high-incident frequencies, geographical restrictions, or other pertinent factors as identified by the authority having jurisdiction (AHJ).

Four on-duty personnel for fire companies whose primary functions are to perform the variety of services associated with truck work, such as forcible entry, ventilation, search and rescue, aerial operations for water delivery and rescue, utility control, illumination, overhaul, and salvage work—ladder or truck companies. Five or six on-duty personnel for these companies in jurisdictions with tactical hazards, high-hazard occupancies, high-incident frequencies, geographical restrictions, or other pertinent factors as identified by the AHJ.

For ALS emergency responses: two members trained at the emergency medical technician-paramedic level and two members trained at the emergency medical technician-basic level arriving on-scene within the established response time.

•**NFPA 1720**(volunteer departments): "The fire department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate safely and effectively .... Upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within two minutes 90 percent of the time."

The complete NFPA 1710 and 1720, 2004 edition, standards are at [nfpa.org/categoryList.asp?categoryID=999&itemID=24345&cookie%5Ftest=1/](http://nfpa.org/categoryList.asp?categoryID=999&itemID=24345&cookie%5Ftest=1/).

•**NFPA Fire Protection Handbook, 19th edition (2003):**

Fire department emergency medical service transports need additional personnel to maintain basic fire company strength. Some smaller communities may have a relevantly high staffing ratio per population protected because of the need for sufficient on-duty personnel for effective initial attack and rescue operations. A fire department in a large city may operate one engine company per 15,000 to 20,000 population and still have a large number of well-distributed fire companies, whereas two engine companies cannot properly protect a city of 30,000.

In general, each engine company should have a minimum of four firefighters on duty.

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including an officer. It would seem inappropriate to dispatch an engine company to a fire if the crew could not start firefighting and rescue operations because of safety concerns.

An increasing number of fire departments, in recent years, have established minimum staffing levels for each fire company or each duty shift. Many fire departments have established policies that state engine or ladder companies will not operate with fewer than four firefighters, including an officer, on duty. In rare cases, the minimum is five persons on duty per company because of the workload and the population and values protected per company.  
(2)

- **NFPA Fire Protection Handbook, 20th edition (2008)<sup>4</sup>:** recommends the following minimum numbers of firefighters/officers to do the job safely. If this sounds like a lot, keep in mind that firefighters will always work in pairs, if not more, to complete the several tasks to get the job done as safely as possible. This includes such tasks as water supply, search and rescue, ventilation, rapid intervention, and so on.

Between 19 and 23 personnel typically constitute the first-alarm assignment to a confirmed single-family dwelling fire, as observed by evaluation teams.

Not fewer than 24 firefighters and two chief officers, one or more safety officers, and a rapid intervention team(s) should respond to high-hazard occupancies (schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings, and other high-life hazard or occupancies with large fire potential).

Not fewer than 16 firefighters, one chief officer, a safety officer, and a rapid intervention team should respond to medium-hazard occupancies (apartments, offices, mercantile, and industrial occupancies not normally requiring extensive rescue or firefighting forces).

Not fewer than 14 firefighters, one chief officer, a safety officer, and a rapid intervention team should respond to low-hazard occupancies (one-, two-, or three-family dwellings and scattered small businesses and industrial occupancies).

At least 12 firefighters, one chief officer, a safety officer, and a rapid intervention team shall respond to rural alarms (scattered dwellings, small businesses, and a farm building).

- **U.S. Fire Administration (USFA):** recommends that a minimum of four firefighters respond on or with each apparatus.<sup>5</sup>



- **The International Association of Fire Chiefs (IAFC):** advocates a minimum of five persons on engine and ladder companies. Noting that the reduction of members per unit and that the number of units has reached dangerously low levels, the IAFC says it would be "inappropriate" to accept or support further reductions.<sup>6</sup>

- **The International City Management Association (ICMA):** states in "Managing Fire Services" that at least four and often eight or more firefighters, each under the supervision of an officer, "should respond to fire suppression operations." Further, it says, "If about 16 trained firefighters are not operating at the scene of a working fire within the critical time period, then dollar loss and injuries are significantly increased, as is fire spread." It has found five-person companies 100-percent effective, four-person companies 65-percent effective, and three-person companies 38-percent effective.<sup>7</sup>

- **National Institute for Occupational Safety and Health (NIOSH) LODD Reports:** almost every NIOSH LODD report recommends to "provide adequate firefighter staffing to ensure safe operating conditions."

- **The International Association of Fire Fighters (IAFF):** views inadequate staffing and crew size as contributing factors to LODDs and advocates maintaining adequate staffing as proposed in NFPA 1500, NFPA 1710, and NFPA 1720; the NFPA *Fire Protection Handbook*, 18th edition (1997), Section 10/Chapter 1 (1-34); and OSHA 29 CFR 1910.134 (two-in/two-out).<sup>8</sup>

#### CONSEQUENCES OF INADEQUATE STAFFING

Fireground effectiveness may be compromised when staffing falls below four firefighters per company. Tests conducted with the Houston (TX) Fire Department indicated that staffing below a crew size of four can overtax the operating force and lead to higher losses. Jurisdictions with minimum staffing levels may have to take units out of service if they do not have the funds to support the additional personnel overtime. (2)

The District Chiefs' Technical Advisory Committee (DCTAC) conducted a study of the Houston Fire Department, which determined that fire apparatus staffing is an even greater citizen safety issue than a firefighter safety matter.<sup>9</sup> The report termed the understaffing situation a "crisis situation that demands immediate intervention." Decreasing the number of firefighters without eliminating any of the tasks fire

including an officer. It would seem inappropriate to dispatch an engine company to a fire if the crew could not start firefighting and rescue operations because of safety concerns.

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- **U.S. Fire Administration (USFA)**: recommends that a minimum of four firefighters respond on or with each apparatus.<sup>5</sup>

departments are to accomplish causes the department to delay some of the required tasks or to try to perform all tasks unsafely with inadequate staff, according to the study.

The study also noted the following:

- “Firefighters working in understaffed environments are too often expected to perform beyond their capabilities.”
- Inadequate staffing creates “a cumulative effect” caused by combined delays and lost functions of crews, resulting “in an even greater loss of overall effectiveness.”
- Understaffing increases physiological stress on firefighters, as they try to compensate.

Another effect of understaffing is that “fire companies with serious staff reduction generally are limited to using small hose streams until additional help arrives, which may adversely affect containment of even a small fire and conducting effective rescue operations.” (4)

Over the past three decades, fire department response has expanded to include emergency medical services, terrorism response, hazardous materials response and mitigation, natural disaster response, specialized rescue, and responses to other community needs. Fire departments need adequate firefighting resources to be able to design an acceptable level of resource deployment based on risks and service commitment and to continually evaluate emergency response systems, which are crucial to enhancing firefighter operational safety and occupational health and reducing civilian fire fatalities.<sup>10</sup>

In 2000, Detroit, Michigan, fire officials reorganized the city's fire department and sought to resolve problems, including a shortage of firefighters. At least 21 people had died during the preceding four years when fire trucks sent to their rescue didn't work or the closest stations were temporarily closed. Their daily staffing average was well below the number needed to meet the minimum national standard of four firefighters on each truck. Staffing levels were a key element in two 1998 fires in which three children died; the fire companies nearest to those fires had been closed because of firefighter shortfalls.

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The fire department was forced to close fire companies on 61 days that year because of low staffing.”<sup>11</sup> As of May 2009, the *Detroit News* reported that nearly 300 layoffs would occur in the city government and that nearly 500 positions that were then open would not be filled. The article explained: “This is not the final step in the budget process, but a very significant step toward final approval. It will be interesting to see how many positions in the fire department will be lost or not filled. The Detroit Fire Department has been extremely busy with arson fires and abandoned building fires over the past several months.”

Almost nine years later, staffing issues are still unchanged. These stories are those we would like to see changed for the better, not the worse. At this rate, the trend will dig even lower when rock bottom is reached.

#### ACTIONS YOU CAN TAKE

- When responding with an engine with only three persons on duty and on ladder trucks with only two persons, promptly back up such low levels of staffing with off-shift or call personnel or by multiple-alarm response to ensure adequate coverage. (2)
- Apply for a SAFER grant and other grants that can be used to fund additional staffing.
- Continually inform the community (citizens, fire chief, city council, and so on) of your concerns for civilian and firefighter safety that you are sworn to protect, so when a levy or bond is up for vote, you have a better chance of its passing. Provide them with the facts.
- Use new technology. Staffing software and hardware can help with staffing problems. The Vista (CA) Fire Department stated in its 2006 annual report that it had entered into an agreement with a software development corporation for hardware, software, and support for a system that automates daily workforce staffing solutions to improve productivity, reduce the number of personnel needed to manage scheduling activities, and improve management’s ability to make and report on scheduling decisions.<sup>12</sup>
- Use automatic and mutual aid. Work with your neighboring fire departments.
- Search online. Search various search engines with key phrases such as “fire department staffing solutions” and “staffing solution within the fire service.”
- Read articles/books. The “Advanced Fire Administration” student handbook, a

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joint project of the Federal Emergency Management Agency, the USFA, and the National Fire Academy, offers suggestions for using creativity in establishing staffing plans, including "flattening the organization power base with a strong executive team and strong field-level staffing" by eliminating mid-level management positions in favor of direct delivery of services.<sup>13</sup>

- Research magazine articles. A roundtable on budget cuts, for example, relates how other fire departments have responded to staffing issues.<sup>14</sup> Another article describes how the first-arriving engine company fulfills the primary tasks of the initial attack. Even though this does not directly relate to resolving staffing issues, it may help you to be more prepared and resourceful.<sup>15</sup> Still another article explains how to manage a fire scene with limited staffing; lessons learned are included.<sup>16</sup>
- Look to the standards. NFPA 1500, 2002 edition, A.8.4.11, presented the following examples of how a fire department could deploy a team of four members initially at the scene of a structure fire, regardless of how the team members are assembled:
  1. The team leader and one firefighter could advance a firefighting hoseline into the immediately dangerous to life and health (IDLH) atmosphere, and one firefighter and the pump operator become the standby members.
  2. The team leader could designate the pump operator to be incident commander. The team leader and one firefighter enter the IDLH atmosphere, and one firefighter and the pump operator remain outside as the standby members.
  3. Two firefighters could advance the hoseline in the IDLH atmosphere, and the team leader and pump operator remain outside as standby members.
- Train. Attend Strategy and Tactics for Initial Company Officers (STICO) classes locally or at the National Fire Academy. Have your department do hands-on training evolutions to determine what works and what does not work. You won't know if a drill will go according to plan until after it has taken place. Never give up; keep trying.

...

I was taught early in my military career that if there is a problem, I should help to find the solution. The above information is presented to help resolve some of the staffing

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problems but not all of them. No one has all the answers. It may not be easy, but we have the resources, grants, and facts to aid us in this journey. It may take a little work and creative thinking, but I am confident that the solutions are there. We cannot continue to ask our fire departments to protect our communities with inadequate resources. We will continue to see the number of injuries and fatalities of firefighters and civilians increase in future years until we get the staffing we need, not just want.

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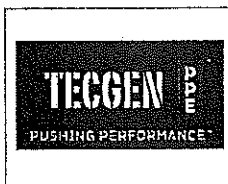
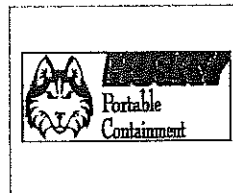
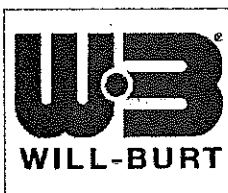
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[fireengineering.com/news/newsArticleDisplay.html?id=157094/](http://fireengineering.com/news/newsArticleDisplay.html?id=157094/).

KEVIN "WILLY" WILSON is a firefighter/paramedic with Camas (WA) Fire & Rescue. His 14-plus years of firefighting experience include having served as a volunteer firefighter in Gladstone, Oregon, and with the Independent Hose Company in Frederick, Maryland; as a U.S. Navy shipboard firefighter (Damage Controlman) in Norfolk, Virginia, from 1993-1997; and as a U.S. Navy fire marshal/paramedic, Naval Support Facility Fire Department, in Maryland. He has been doing extensive firefighter safety research since 2002 and is a firefighter safety survival instructor for Clark County, Washington. He is a hazmat technician and ICC fire inspector I and II and is completing requirements for a B.S. in fire service administration through Western Oregon University.

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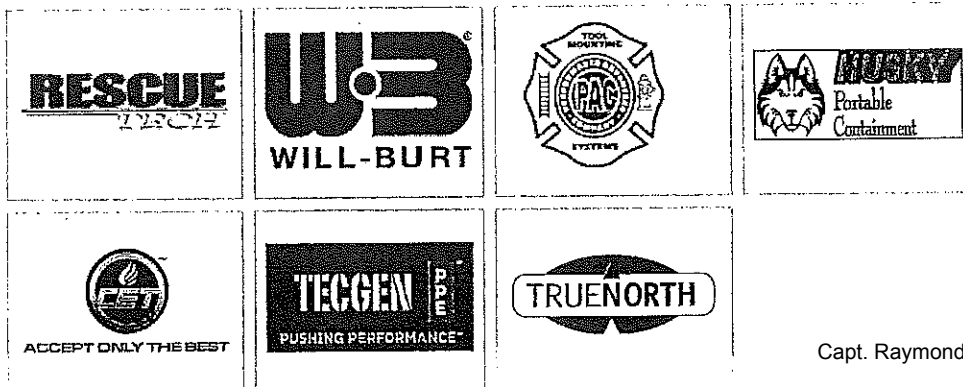
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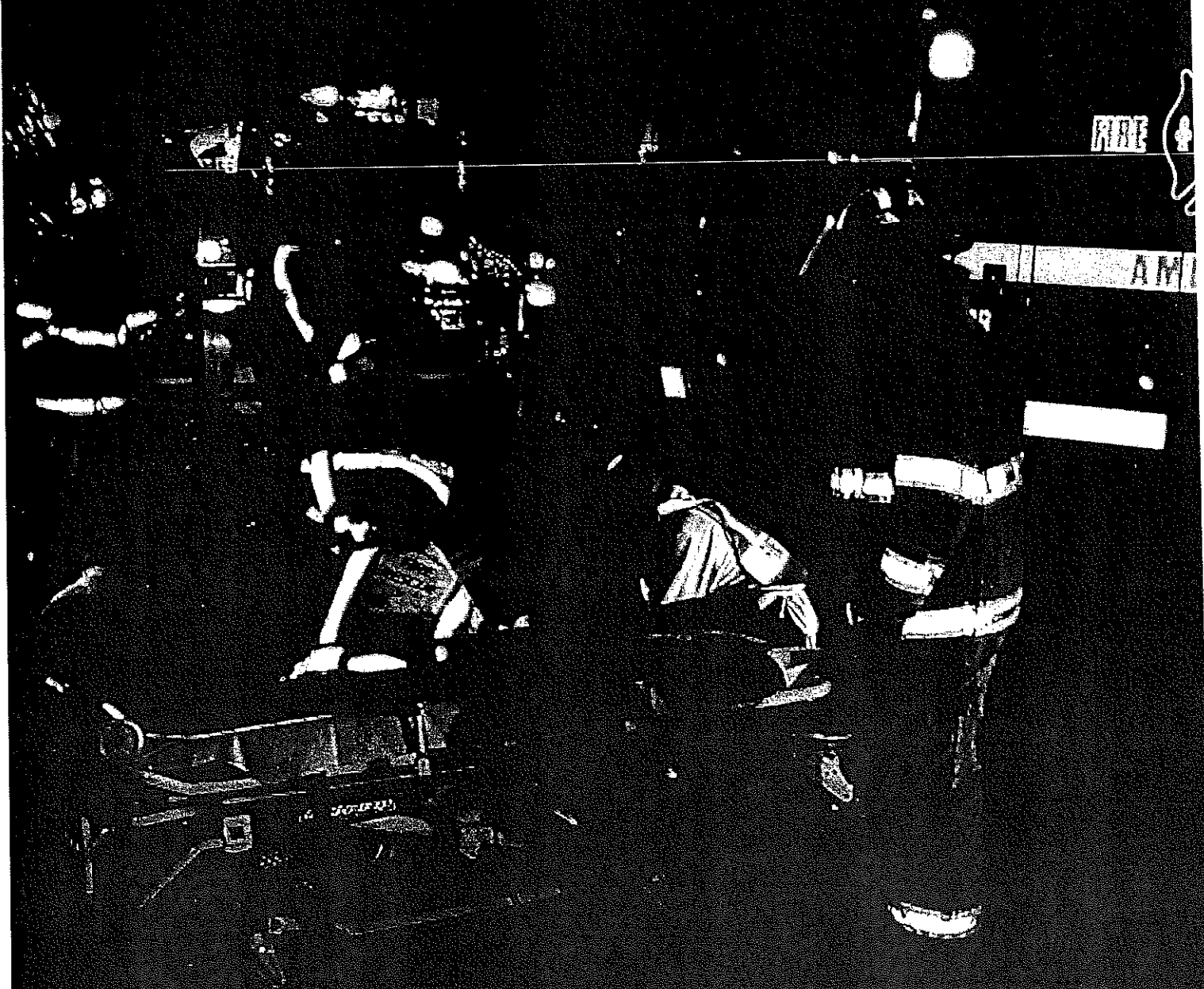
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## BUYERS GUIDE FEATURED COMPANIES





# **The Effects of Sleep Deprivation on Fire Fighters and EMS Responders**



**Final Report, June 2007**



## Section 4: Fire Fighters, EMS Responders and Sleep Deprivation

### 4.1 Introduction and Descriptions of Work Settings

In the past few decades, the U.S. has become increasingly dependent upon shift workers to meet the economic demands of globalization and our 24 hour society. From a productivity standpoint, shift work is an effective means to increase efficiency and customer service without major increases in infrastructure, and it is a necessity when providing 24/7 emergency medical services. However, because it deviates from our biologically preferred daily rhythm and sleep schedule, it also has inherent potential risks (as described in Section 1).

The term fire fighter includes career, volunteer and wildland fire fighters. According to the National Volunteer Fire Council, approximately 73 percent of the 1.1 million U.S. fire fighters are volunteers (National Volunteer Fire Council, 2006). Issues concerning work hours and fatigue-related health effects are presented as they relate to both career and volunteer fire fighters. Among fire fighters, job specifics vary. For example, fire fighters include individuals assigned to engines, trucks and special response units; those with paramedic training; and officers and employees assigned to the Fire Inspector office, training division and other specialized units. Superimposed on the variability in job descriptions are the unique characteristics of different fire departments/bureaus/districts and stations within those organizations.

Wildland fire fighters' job structures differ from other fire fighters, in that they usually are deployed to sites for two weeks of intense work. The effects of their long work hours relate to physical exhaustion, in addition to sleep loss. Those issues are discussed on page 54.

We and others have documented that fire fighters are a high-risk group, with an increased prevalence of obesity, hypertension, high cholesterol levels, certain malignancies and chronic musculoskeletal complaints (Elliot et al., 2004 & 2007; Aronson, Tomlinson & Smith, 1994; Guidotti, 1995; Reichelt & Conrad, 1995; Gledhill & Jamnik, 1992). Fire fighters' cardiovascular risks, combined with episodic intense physical exertion involving extreme heat and life-threatening situations, may account for heart attacks causing half of on-the-job deaths (Kales et al., 2003 & 2007), compared to approximately 10 percent for EMS personnel (Maguire, 2002).

Much less data are available on work-related morbidity and mortality for other groups of first responders. Among all occupations, the highest risk of cardiovascular disease is with law enforcement officers (Calvert, Merling & Burnett, 1999), whose life expectancies are 15 years less than the average American's. They have a higher prevalence of cardiovascular risks, heart disease and certain malignancies (Franke, Collins & Shelley, 2002; Richmond et al., 1998).

EMS responders can include paramedics, other emergency medical technicians (EMTs), and those involved in medical air transport. Fire fighters can be full time career employees, volunteers or wildland fire fighters. Many fire fighters also have EMS training. In this Section, each of those categories is discussed as it relates to sleep deprivation.

Management strategies have been developed to minimize the adverse health consequences of the sleep loss and circadian disruption of shift work and extended work hours. Those are presented in Section 5.

EMS responders include a range of job descriptions. In general, they are employed for pre-hospital care by private companies, public municipalities and hospitals. Paramedics have the highest level of training and are able to perform more duties than EMT-First Responders, EMT-Basics and EMT-Intermediates. Because many fire departments answer medical calls, fire fighters often are cross-trained in EMS skills. Other EMS responders work within clinic systems, hospitals or other administrative structures. The National Association of Emergency Medical Technicians estimates that there are approximately 142,000 paramedics and 600,000 EMTs in the U.S. The category of EMS responder also includes those involved in air medical transport.



When assessing the effects of long work hours, many other variables must be considered. Specifics of the job description, work structure and its context and characteristics of the individual employee all may affect outcomes. Accordingly, those issues must be taken into account when generalizing study findings and applying any conclusions to other settings. As a result, in presenting information, we have tried to provide specifics concerning the study group and methodology when describing information.

#### 4.2 Fire-Fighter and EMS Responders' Unique Shift Structures

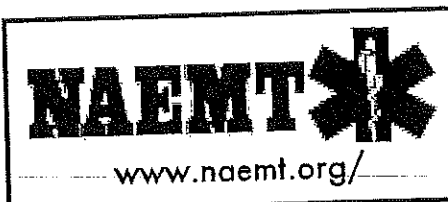
In any fire department, the shift schedules are based on local needs and preferences. The National Fire Fighter Near-Miss Reporting System is a voluntary, non-punitive means to capture and learn from incidents and near-incidents, and its 2006 summary report provides a convenience sample of the many different shift structures of fire fighters (Figure 4.1) (<http://www.firefighternearmiss.com>). Among reports submitted to the Near-Miss Reporting System, 12 percent indicated that their department had 2 shifts (days and nights) of 10 to 14 hours length. The majority of reports were from departments using three platoons or shifts deployed in rotations. Thirty percent reported 24-on/48-off formats, and 23 percent indicated alternative 24 hour rotations. The latter usually is an on-off-on-off-on then 4 off schedule (depending on nuances, called 3/4, modified Detroit or modified Berkeley). More than 19 variations on those basic three platoon rotation patterns are in use. Most departments have a Kelly or off day every 8<sup>th</sup> shift to reduce the number of hours worked from becoming overtime. Some departments maintain a fourth smaller platoon to staff Kelly days and leaves. The result is a work week that for most fire fighters averages 48 to 56 hours, not counting overtime.

In the last few years, a 48 hours on and 96 hours off schedule has become more popular. In the Near-Miss reports, 3 percent of departments listed the newer 48-on/96-off schedule. The format originated in Southern California, because fire fighters were unable to afford local housing and faced long commutes, which were reduced in half with that schedule. Because it represents a new work format, descriptive information is available from departments adopting that schedule, which is summarized in Section 4.3.

EMS responders' shift structures vary even more widely than fire fighters, because they often work for agencies smaller than fire departments. Shift duration, even within one worksite, includes lengths of 8, 10, 12, 14, 16 and 24 hours. In general,

[www.firefighternearmiss.com/](http://www.firefighternearmiss.com/)

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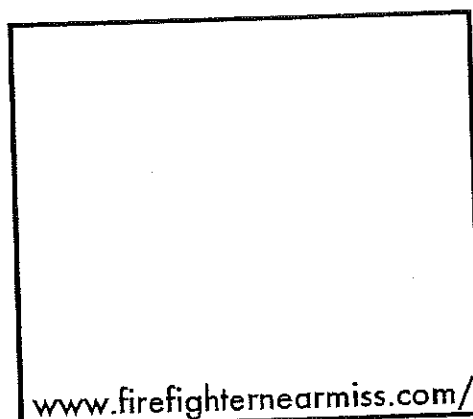
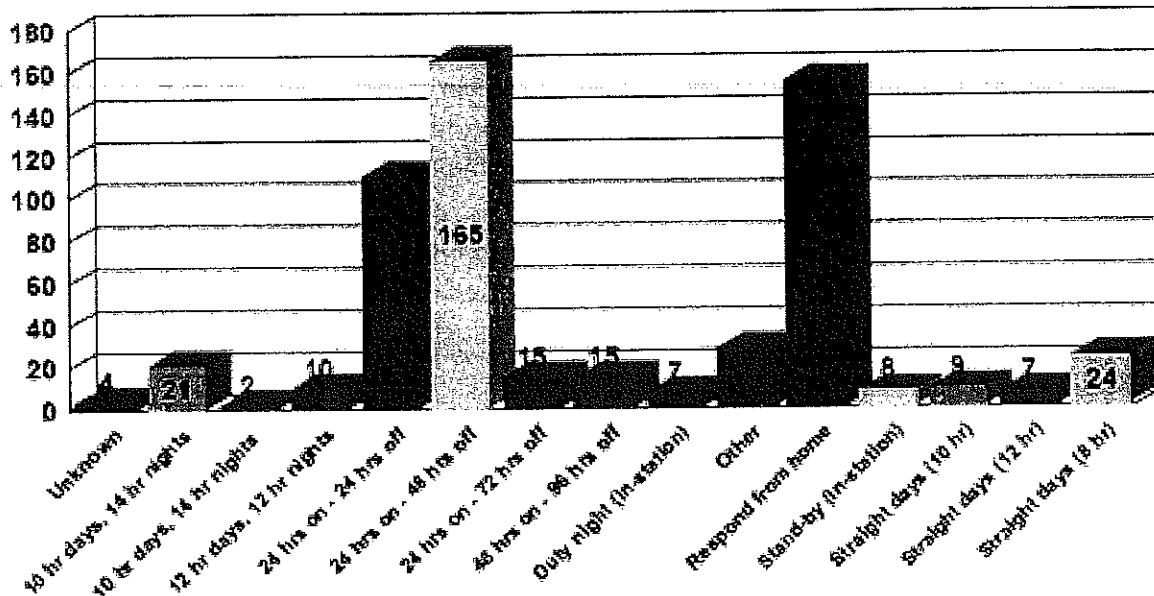




Figure 4.1. Distribution of Work Schedules in 2006 Near-Miss Accident Reports \*



\*The Near-Miss Reporting System is a convenience sample and may under represent volunteer fire fighters. Only approximately one-third of reports are from volunteer departments, when nationwide volunteer departments represent 71 percent of fire departments.

the total hours worked per week averages approximately 54 hours but often reaches higher totals. For example, a staffing pattern might be 12 hour shifts, with a maximum of three in a row, with a guarantee of 48 hours per week and an attempt to provide employees 60 hours each week. Within organizations, efforts are made to distribute the workload, so that shifts at busy locations are 12 hours, with longer shifts reserved for those with fewer calls, where the EMS responders are likely to get 4 to 6 hours of sleep during a night. The staffing patterns are complex, and web-services are available to aid in meeting those demands, such as <http://www.emsmanager.net>.

Medical air transport personnel also work long shifts. Among those workers, because of helicopters and fixed-wing craft pilot regulations, which limit work hours, staffing patterns for pilots and medical personnel differ; pilots generally work 10 to 14 hour shifts, while the medical teams are approximately equally divided as working either 10 to 12 hour shifts or 24 hour schedules. There is scheduling diversity among air medical transport work sites, depending on work load, whether privately operated or hospital-based and other factors (Frakes & Kelly, 2004).

### 4.3 Anecdotal Effects of Work Hours

Internet sites, such as FireEngineering.com and firehouse.com, contain discussion forums that occasionally involve schedules, sleep and fatigue issues contributed by fire fighters and other EMS responders. In general, fire fighters have an established tradition of working 24 hour shifts, and few complaints are registered about that pattern. Those who question the wisdom of that scheduling format, on the grounds of either safety or economics (Philpot, 2005), have received harsh criticism from fire fighters submitting comments (Firehouse Forum, 2003).

The National Fire Fighter Near-Miss Reporting system (National Fire Fighter Near-miss Reporting System, 2007), described in the previous section, allows searching of their database for particular types or categories of incidents. One of the available search terms is 'fatigue.' When the 35 reports identified with that term were reviewed, only 18 appeared potentially related to sleep deprivation or a particular long work structure, and with closer inspection, only seven of more than 1000 total reports appeared relevant. Pertinent issues included responding to events when on duty for more than 15 hours, driving home from busy 24 hour shifts and fatigue when awoken for early morning calls. The near-miss records have a place for incident time, but summary reports indicate that for most submissions, that information is not included, and specifics concerning the relationship between time of day and near-misses is not available.

Among paramedics, a tragic fatigue-related death was highly publicized. That crash involving post-shift fatigue and the public concern that followed resulted in a policy change in one EMS organization. Brian Gould, a 42-year-old paramedic, died when driving home from an overnight shift when his car crossed lanes and struck a semi head-on. Drugs, alcohol and weather were not factors. Because of the incident, the ambulance service, which previously had moved from 24 to 12 hour shifts due to paramedic fatigue issues, instituted a policy that if a crew gets less than four hours of uninterrupted sleep during a 24 hour shift, colleagues were to take them and their vehicles home after work (Erich, 2007). A similar incident, when a San Francisco Fire Department paramedic died when she fell asleep while driving home after a long, busy shift, was one of the factors leading to that department's replacing 24 hour ambulances with 10 hour crews, as the call volume had become too exhausting to function with the longer work hours (Garza, 2007).

With restructuring from 24 hour shifts to 48-on/96-off formats, departments have done assessments of that change, and findings have been posted to the internet to assist other departments considering making similar changes. In general, fire fighters, their union, management and budgetary officials have collaborated on designing the new format, with all agreeing on a specific trial plan. Follow up reports, 6 to 12 months after the change, generally have indicated parties' satisfaction with the extended 48 hour schedule, and most report a decrease in sick leave ([www.sjff.org/items/L230\\_48-96.ZIP](http://www.sjff.org/items/L230_48-96.ZIP)). Whether reduced sick leave indicates improved health is unclear, as sick-time is known to be influenced by 'not-illness' factors, such as employee morale and seasonal variables.

West Metro Fire Protection District in suburban Denver did a thoughtful review of outcomes after switching to the 48-on/96-off schedule, including a consultant's report, work-related findings and focus group information ([www.westmetrofire.org/docs/2006/ops/west%20metro4896final.doc](http://www.westmetrofire.org/docs/2006/ops/west%20metro4896final.doc)). The department has 15 stations and 310 uniformed personnel. Calls per station varied from approximately 3500 calls (busiest) to 300 calls (least busy) per year.

They found that the fire fighters slept more while on shift with the 48 hour format. Prior to the change, fire fighters reported getting 5.6 hours of sleep per night, compared to 6.4 hours after the change. When not at work, hours slept also increased after the change; individuals reported an average of 7.1 and 7.4 hours sleep per night (before and after, respectively). The average number of times awakened at the station was 1.9 before and 1.6 after instituting the longer shifts. Making the change did not appear to adversely impact citizen complaints, damage reports, turnout times, injuries or overall vehicle accidents. However, when the first

Additional information from fire fighter fatality, wildfire incidents, ambulance crashes and EMS incident/death reporting systems is included in those specific sections.

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and second day of the 48 hours were compared, during day two, there was a significant increase in injuries and a trend toward increased EMS-related complaints (3 vs. 8 and 16 vs. 26, respectively). Sick leave decreased with the longer format, which also was reflected in decreased need for overtime.

The majority of fire fighters and their families liked the 48-on/96-off schedule. Fire fighters felt that it interfered significantly less with family, leisure and social activities. And although fire fighters reported that their spouses were less supportive of the 48 hour schedule, when families directly were asked, they reported general satisfaction with the longer format. Findings from an internet survey of citizen feedback were positive concerning the fire department performance both before and after the change. Importantly, the percentage of fire fighters supporting the change went from 64 percent before the switch to 86 percent after the 6 month trial interval.

Commuting home following a prolonged shift may be a vulnerable time, with an increased risk of motor vehicle crashes (see page 29). No departments have reported systematic information relating to fatigue on commutes home following the extended hours of either the 24 or 48 hour shift format.

#### 4.4 Work Hours and Fire Fighters

The general effects of long work hours are reviewed in Section 1. For fire fighters, longer work hours have been related specifically to stress and injury rate. The concept of 'stress' is complex, and current worksite models consider stress affected by several factors in addition to work hours, such as the job context and organization, relationships among workers and management and features of the work itself (Salazar & Beaton, 2000). Among fire fighters, work stress is compounded by critical incidents and life threatening events, and in general, those latter issues are reported as the greatest sources of fire fighter stress (Beaton et al., 1999).

Disrupted sleep patterns are a recognized source of occupational stress, and fire fighters are not immune from those adverse consequences. A survey of more than 700 fire fighters assessed job stressors and found that sleep disturbances (disruption, poor quality of sleep, not enough) were ranked as an important cause of stress by approximately one-third of fire fighters (Murphy et al., 1994). The participants were professional fire fighters from the Pacific Northwest who responded to an anonymous mailed survey that used a standard instrument indexing occupational stress. Most were male, and on average, they had been fire fighters for 12 years. Other studies also have noted fire fighters' work structure as a source of stress (Murphy et al., 2002; Murphy et al., 1999; Oginska-Bulik, 2005).

Fire fighters and EMS responders may be called upon to work long hours with disasters or other unforeseen occurrences. For example, the headlines in the September 2, 2005 Times-Picayune read, "Katrina Doesn't Stop Fire Fighters from Working Around the Clock," and the article reported that "men and women of the fire service along the Gulf Coast have truly put themselves on the frontline to protect their communities by working endless shifts, throughout the day and night, before, during and now after this horrendous storm."

Extended work hours refers to shifts longer than the typical eight hours. Additional information about the advantages and disadvantages of long work hours is found in Section 5.

One study used a biological marker for increased stress of fire fighters. Serum cortisol is a hormone produced by the adrenal gland, and its level increases in response to stress (Munck, 1984). Elevated levels have been associated with feelings of depression, impaired memory and suppression of immunity (Plotsky, Owens & Nemeroff, 1998; Lupien et al., 1997). When Welch fire fighters' morning cortisol levels were assessed, those younger than age 45 had significantly higher cortisol levels compared to normal individuals. The fire fighters' specific work schedules were not reported. The researchers termed the finding the "neuro-endocrinological price paid for fire fighting work." Older fire fighters did not have elevated cortisol levels, and it was not clear whether that represented selection or adaptation to fire fighting work (Brody et al., 2006).

Although they disrupt sleep and increase fatigue, calls during the night appeared to have a positive effect on fire fighters' mood (Paley & Tepas, 1994).

The effects of night work among fire fighters appear comparable to others working nights. Bos and colleagues (2004) compared Dutch fire fighters working a 24-on/48-off schedule to Dutch industrial shift workers, and they found that the fire fighters' self reported sleep disturbances and recovery needs were not increased above the industrial night shift workers.

For fire fighters, the night work varies and is unpredictable, in that they may be answering calls, performing other duties or sleeping. That format differs from typical shift workers with fixed job routines. Among stations, the number and type of calls varies widely. Intuitively, greater station call volume might be anticipated to relate to higher stress levels. Paradoxically, rather than sustained higher call volumes causing stress, some have found that alarms after periods of inactivity are more stressful (James & Wright, 1991; Beaton & Murphy, 1993).

The effects of fire fighting on the spouse and family are becoming better recognized (Pfefferbaum et al., 2002; Menendez, Molley & Magaldi, 2006). For fire fighters, family impact usually relates to critical incidents, and only a single study has reported the effect of shift work (Regehr et al., 2005). Wives of Toronto fire fighters reported that while they valued their husbands' traits that led their spouses to be fire fighters, shift work was a stressor. The long work hours contributed to disruptions in family routine, and wives often noted feelings of loneliness and being a single parent.

The wives reported missing their husbands due to physical absences of work and fire fighter camaraderie to the exclusion of families, with the perception that home needs came second. This study also mentioned that most of the fire fighters had second jobs during their time off from the fire station. The potential impact of second jobs has not been examined in other studies. A study limitation was that it involved a relatively small number of participants from a single site, and researchers did not quantify established dimensions of family life, such as intimacy, conflict and parenting styles (Shakespeare-Finch, Smith & Obst, 2002).

Measures of fire fighter alertness during their work hours parallel those found in other studies: alertness falls after 10 to 12 hours of work and during nighttime hours. Dormrachev, Savchenkov and Mikhailova (2004) studied 120 Russian fire fighters working a 24 hour work, 72 hour

Outside employment or a second job is an acknowledged occurrence among fire fighters and other workers. The overall prevalence of second jobs in the U.S. is uncertain, because of the difficulty in defining jobs as they relate to household duties, care-giving in the home and personal entrepreneur activities. However, estimates by the Families and Work Institute are that more than 15 percent of workers have two paychecks.

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rest schedule. They used self reported fatigue and also measured retinal sensitivity as an objective index of alertness. Both self reported energy level and retinal electrical sensitivity threshold indicated progressive fatigue after 12 hours on duty.

Knauth (1995) conducted a study of 29 U.K. fire fighters to assess the effect of a 24 hour workday on performance, mood, sleep and circadian rhythm. As expected, during the night, fire fighters' body temperature and alertness decreased, while reaction time increased. The authors proposed a two hour nap during each night due to the documented decrements in alertness.

Fire fighters' night work is episodic and unpredictable. More night calls and the associated fragmented sleep increase overall fire fighter fatigue. In a small study of 11 fire fighters in Japan, timing of calls and their impact were assessed. Investigators found that fire fighters disturbed from 01:00 to 05:00 had the greatest reduction in sleep quality, felt more fatigue and experienced the greatest change in their measured reaction time (Takeyama et al., 2005). The authors concluded that a night shift schedule ensuring undisturbed naps would be beneficial in reducing fire fighter fatigue.

In other settings, long work hours and night shift work increase the rates of occupational accidents (see Section 1). Figure 4.2 shows the National Fire Protection



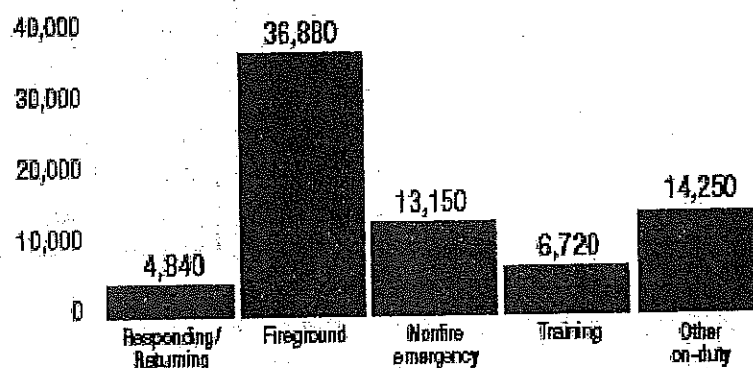
**National Fire  
Protection Association**

[www.nfpa.org](http://www.nfpa.org)

Association (NFPA) 2004 data concerning injuries by duty type among fire fighters. The majority of injuries occur on firegrounds. In 2003, the NFPA analyzed those fireground injuries using findings from the United States Fire Administration's National Fire Data Center's National Fire Incident Reporting System (NFIRS) to examine factors relating to possible causes of fireground accidents, including nature of injury, fire fighter age and importantly, time of day.

The peak period for structure fires attended by fire departments was noon to midnight (62.6%), and the fewest occurred in the early morning hours of midnight to 6:00 AM (16.4%) (Figure 4.3). As expected, the majority of fireground injuries occurred during the peak fire hours of noon to midnight. However, an unexpected finding was that a disproportionate increase in injuries happened during the midnight to 6:00 AM interval (25.7% injuries for 16.4% fires, Figure 4.3). This point is made more apparent when fireground injuries per 100 structure fires are examined (Figure 4.4).

**Figure 4.2. U.S. Fire Fighter Injuries by Type of Duty 2004**



Source: NFPA Annual Survey of Fire Departments for U.S. Fire Experience (2004)

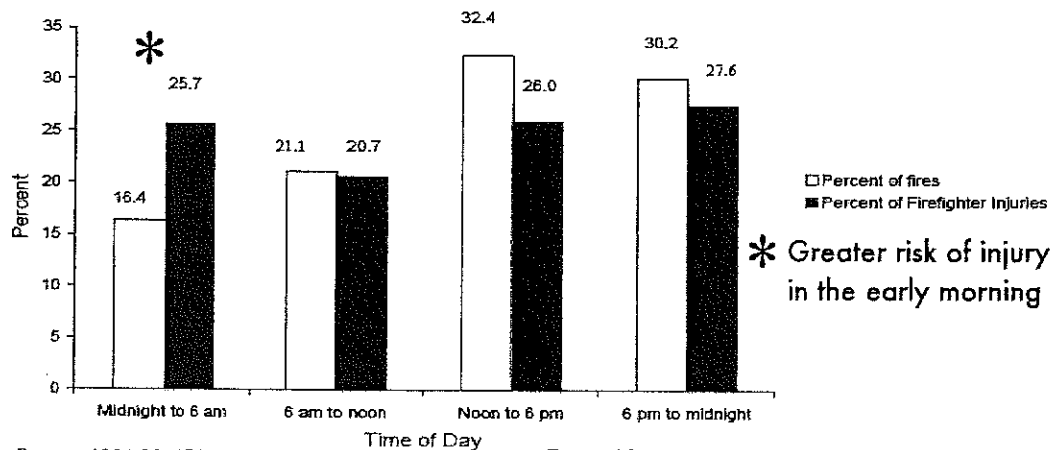
The highest injury rates per 100 fires occurred in the midnight to 6:00 AM times, when about 3.9 injuries occurred per 100 structure fires attended. The report author speculated that finding a higher injury rate during the nighttime hours could relate to lack of visibility, cold temperatures and lower alertness of fire fighters.



Any increase in accidents with extended work hours might relate to decreased alertness, and it also might be due to physical fatigue. To investigate the latter possibility, Sobeih and colleagues (2006) studied the effects of working long shifts and wearing turnout gear, including self-contained breathing apparatus, on fire fighters' postural stability. They measured strength, balance, and postural stability with a force plate system at the beginning of the shift and repeatedly over 12 hours among 16 healthy Cincinnati fire fighters. For each assessment, fire fighters changed into their gear and were assessed performing different activities, in their uniforms and when wearing personal protective equipment.

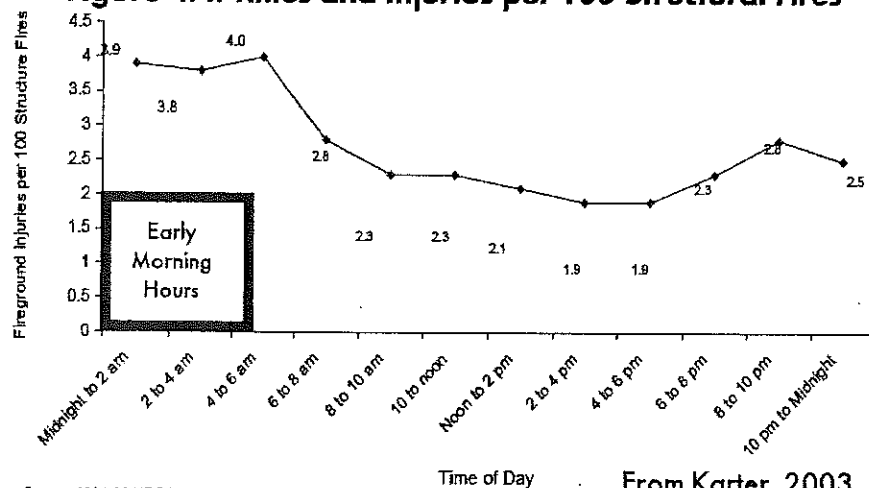
Perhaps because of the anchoring effect of their gear, researchers found that postural sway (an indicator of muscle fatigue and/or weakness) decreased when fire fighters wore their personal protective equipment. They reported a trend for decreased postural stability over the 12 hour work shift. One fire fighter was measured over a 48 hour shift, and he showed even greater loss of stability near the end of that shift. Approximately 20 percent of moderate and 10 percent of severe

**Figure 4.3. Comparison Times of Injuries and Times of Fires**



From Karter, 2003.

**Figure 4.4. Times and Injuries per 100 Structural Fires**



From Karter, 2003.

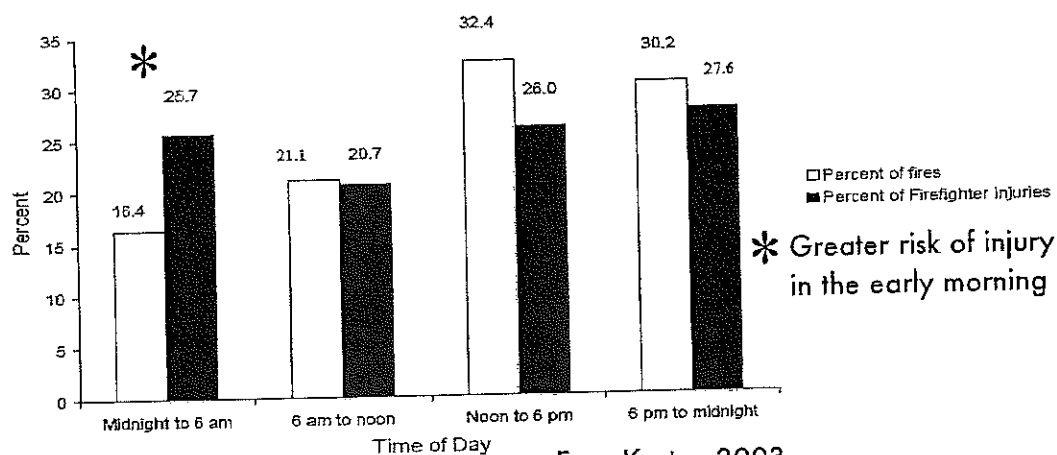
Rates of injuries from midnight to 6 AM more than doubled those of mid-afternoon.



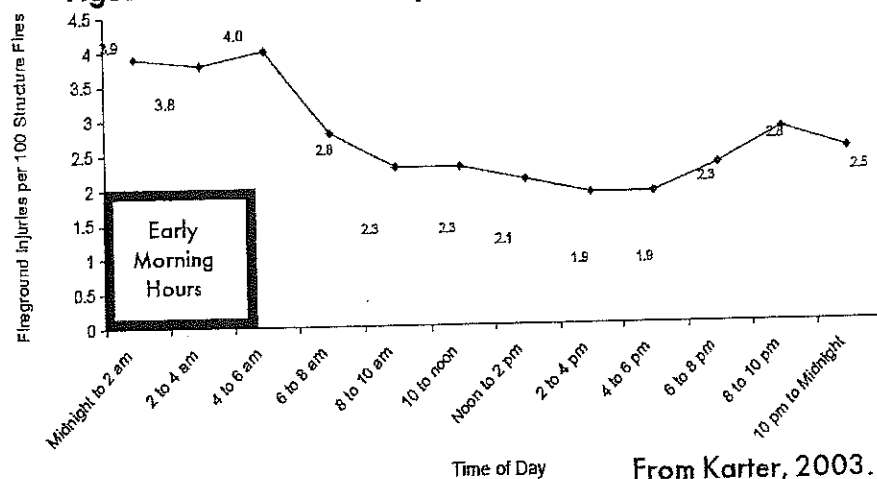
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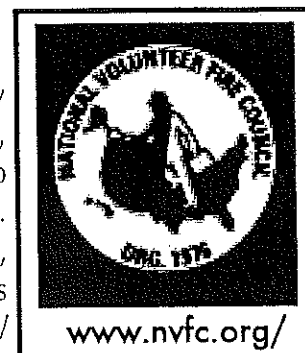


Rates of injuries from midnight to 6 AM more than doubled those of mid-afternoon.

fire fighter injuries are due to slips (Karter, 2003). The authors felt that their findings indicated that prolonged shifts may contribute to the high prevalence of slips and falls among fire fighters. They also noted that their study was at risk for the "healthy worker effect," which tends to minimize findings as volunteer subjects often are least likely to be affected by the test conditions.

#### 4.5 Work Hours and Volunteer Fire Fighters

According to the National Volunteer Fire Council (NVFC) approximately 800,000 U.S. fire fighters are volunteers (National Volunteer Fire Council, 2006). Volunteers must meet physical ability requirements, undergo reference/background checks and complete training requirements. Volunteers primarily serve communities with fewer than 25,000 inhabitants, and others work as part of a combination system, where career fire fighters provide the majority of emergency services (NFPA, [www.nfpa.org/index.asp?cookie%5Ftest=1](http://www.nfpa.org/index.asp?cookie%5Ftest=1)). The term volunteer also may be used in reference to part-time or on-call fire fighters who may have other occupations. Although they volunteer to respond, they are compensated as employees when working. Volunteer fire fighters are supported by national organizations, and many resources are available, such as the National Volunteer Fire Council's Retention and Recruitment Guide for the Volunteer Emergency Services: Challenges and Solutions (2005).



Data from the Firefighter Fatality Investigation and Prevention Program compares fatalities among volunteer and career fire fighters (Centers for Disease Control and Prevention, 2006). Fifty-three percent (610 of 1,141) of U.S. fire fighters who died while on duty during 1994-2004 were volunteers, and 32 percent were career fire fighters. The remaining 15 percent were among other fire fighters (e.g., wildland, paid on call, and part-time fire fighters). Although the overall death rates were roughly comparable among career and volunteer fire fighters, their causes of death differed. For both career and volunteer fire fighters, cardiac events were the leading cause of death (i.e., deaths from myocardial infarction or arrhythmias). However, for volunteers, motor vehicle crashes were the second leading cause of death.

In general, volunteers live within a specified distance of the fire department, and they often use their personal vehicles to respond to a fire alarm. The majority of volunteer fire fighter crashes were on route to a call. The reporting system is limited by only tabulating fatalities; other non-fatal crashes are not indexed. Review of motor vehicle-related fatalities, based on available information concerning circumstances and time of day, revealed only one (in 1999) that appeared clearly fatigue-related. That incident occurred early in the morning (0655), when a volunteer on route to a fire may have been driving immediately after awakening (FACE Investigative Report #99F-44, Fire Fighter Fatality Investigation and Prevention Program, 2007).

As mentioned, family stress from extended work shifts can be significant, and that factor may be even greater given the unpredictability of volunteer fire fighters' schedule. As a result, the NVFC has proposed means to involve families in the activity of its volunteer members, such as creating a family auxiliary open to all, inviting family members to help out around the station and with public education and by holding social functions (NVFC Retention and Recruitment Guide, 2005).

Since the late 1990s, all fire fighter fatalities have been investigated, compiled and analyzed in the Firefighter Fatality Investigation and Prevention Program (<http://www.cdc.gov/niosh/fire/>). This has provided an important source of information concerning health hazards (Centers for Disease Control and Prevention, 2006). While reporting of on duty deaths is complete, the system does not capture nonfatal events. Importantly there is no data on crashes that occur during the commute home following a shift, which may be a vulnerable time for fatigued employees.

#### 4.6 Work Hours and Wildland Fire Fighters

Wildland fire fighters generally are employed by the Forest Service and the Department of the Interior to control, extinguish, manage and prevent wildland fires. Most wildland fire fighters work on a seasonal basis. They stay at a base camp during off-duty hours and work at the fire sites for shifts that extend beyond the typical eight hours and involve physical demands well above those of even the most vigorous of other occupations. Because different organizations employ wildland fire fighters, the National Wildfire Coordinating Group (NWCG) (2004) helps coordinate programs and provide more effective execution of each agency's fire management program.



The NWCG recommends 14 day duty assignments, excluding travel, and during those times, a work to rest ratio of 2:1, (that is, for every 2 hours of work or travel, provide 1 hour of sleep and/or rest). Generally, crews are deployed as two shifts, working 10 to 12 hours per shift. Work shifts that exceed 16 hours and/or consecutive days that do not meet the 2:1 work/rest ratio should be the exception, and no work shift should exceed 24 hours. After completion of a 14 day assignment and return to the home unit, two mandatory days off should be provided. In additions, no driver may drive more than 10 hours during any duty day.

Crew leaders must allow appropriate rest for their crew and monitor members for signs of fatigue. The crew leaders especially must get enough rest, as long shifts and lack of sleep impair cognitive function more quickly than physical abilities, and they are responsible for organizing the work to minimize crew member fatigue, such as changing assignments to help maintain interest.

Wildland fire fighting is extremely physically demanding. Studies of energy expenditure during this arduous work indicate that daily energy expenditure approximates that of running a marathon and is more than twice that of recreationally active college students (Heil, 2002; Ruby et al., 2003). Because of that physical drain, along with long hours and lack of sleep, researchers have looked for physiological manifestations of work stress, such as depressed immune function. For example, investigators studied wildfire crews by obtaining saliva samples just prior to and immediately after shifts of different lengths, and they found that after working 12 hours, there was a fall in immunoglobulins (disease fighting antibody levels). When fire fighters worked longer than 12 hours, the immune response did not recover by the following day and remained depressed for five additional work days. Based on their findings, the researchers noted the importance of being well rested prior to deployment, obtaining seven to eight hours of sleep each night and using short (less than 20 minutes) or long (more than 90 minute) naps when possible (Childress, 2004).



# Elorza: OT Bill Would Devastate Cities & Towns; Firefighters Disagree, Fault Elorza

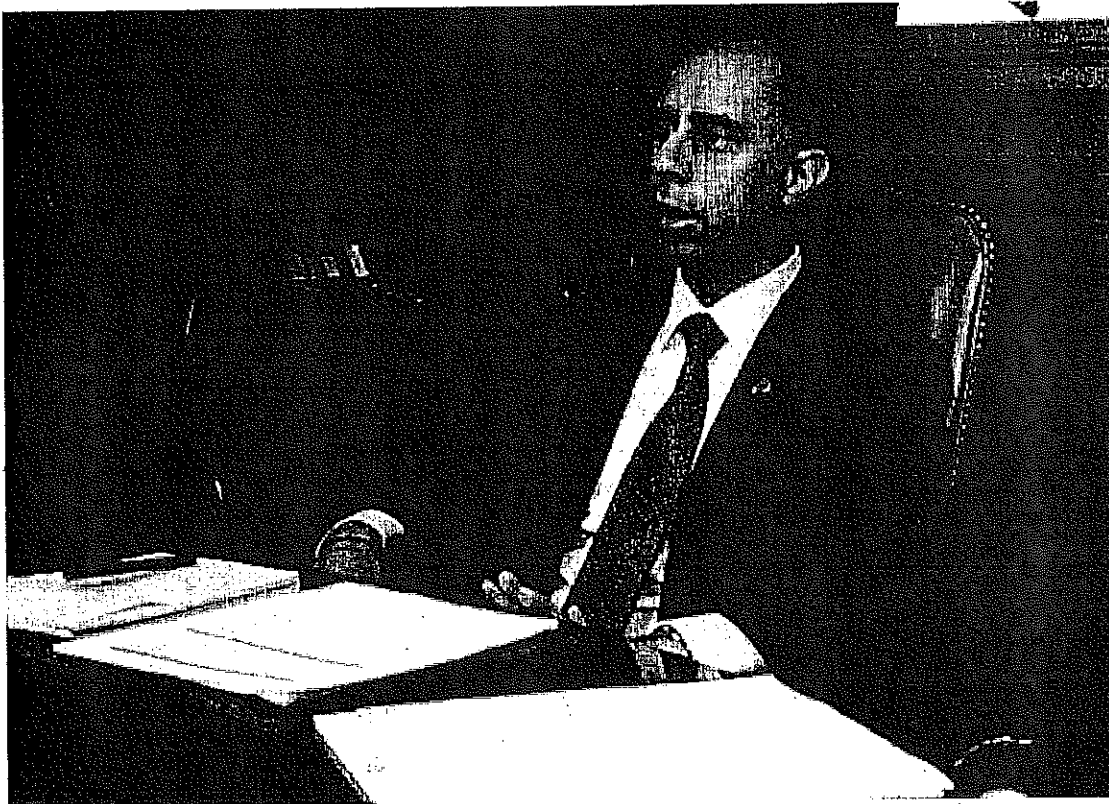
By IAN DONNIS · JUN 8, 2015

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Providence Mayor Jorge Elorza on Monday made an urgent plea for lawmakers to reject a bill that would create a 42-hour workweek for firefighters, saying it would drive up overtime costs for cities and towns across Rhode Island. But the head of the city firefighters' union disputes the likely impact, and he blames Elorza for causing the standoff over the legislation.

During a City Hall news conference, Elorza said, "If this [overtime bill] passes, it will be absolutely crippling and devastating for municipalities throughout the state, and it would force us to look at raising taxes. Taxes are already too high. We have a business culture, an environment, that's not very friendly to business. Providence already has one of the highest tax rates for commercial properties in the country. We cannot afford to raise taxes, because after a certain point it's this death spiral that we fall into."

Elorza said the OT bill would remove the incentive for firefighters to negotiate reduced overtime costs and, by changing the work week for

firefighters from eight to seven days, drive up the cost of current overtime.

But Paul Doughty, president of Local 799 of the International Association of Firefighters, disagrees with Elorza's view that the bill would drive up firefighter overtime spending for cities and towns. He also faults Elorza for trying to abruptly change firefighters' platoon structure without first discussing it with the union.

House and Senate Labor Committees are slated to take up versions of the bill Tuesday afternoon. Lieutenant Governor Daniel McKee and the RI League of Cities and Towns are holding a joint Statehouse news conference at 2 pm Tuesday to oppose the bill.

Elorza recently announced a plan -- now delayed -- to shift Providence firefighters from four platoons a day to three, a move that he said could ultimately save about \$5 million a year.

"He sent me a letter, said he's putting into effect now, but suspending its implementation," Doughty said of the platoon change. "So from a legal perspective, he says that it's in effect right now. He's just simply suspended it until June 30 and then absent an agreement, he'll implement it."

Doughty said the overtime bill would not erode incentives for firefighters to negotiate changes that would reduce overtime spending. He notes that Providence firefighters now have a 42-hour threshold before overtime kicks in.

"If a contract expired, you would follow the existing terms, so there's no increase or decrease in your relative bargaining position," Doughty said. "And ultimately if you reach agreement, it would be whatever that agreement is that would control. So we think that it is not an incentive or a disincentive for either side's bargaining position."

Yet City Hall says there's a key distinction: that firefighters now work an average of 42 hours a week in standard time, with more hours some weeks and fewer hours in other weeks. Under the firefighter OT bill, any time worked over 42 hours in a seven-day period would trigger overtime pay, unless there was an agreement otherwise.

and willing to pay firefighters more as part of an intended change from a 42-hour work week to a 56-hour work week, although he declined to say how much.

Doughty called the offer "insulting. What it is, it would come out to a \$4 hour a pay for the [additional] 14 hours, so it's about 50-odd dollars for those extra 14 hours. It's almost 50 below, half of what the legal minimum wage is."

For his part, Elorza said, "I've been very concerned that firefighters are saying that I'm asking them to work more hours and not get paid any more. We are currently at the negotiating table. I have offered to pay them more. It's always been my intention to pay them more. And if you look at other cities and towns -- North Kingstown, for example, gave their firefighters a 33 percent increase to their salary, their pensionable base salary, over the span of seven or eight years. Tiverton has done the same, Coventry has done the same, and I think that is very fair."

The Senate bill sponsored by Senator Frank Lombardi (D-Cranston) calls for creating a 42-hour work week for firefighters and rescue personnel, and a 40 hour work week for municipal police officers "unless otherwise agreed upon by the parties with regard to the payment of overtime." The cosponsors include Senate Majority Leader Dominick Ruggerio, Majority Whip Maryellen Goodwin, and Senators Paul Jabour and Frank Ciccone, all of Providence.

Elorza said the legislation drive up Providence's \$9 million in annual firefighter overtime costs by redefining firefighters' work week from an eight-day to a seven-day schedule.

The mayor said he's personally expressed his opposition to the firefighter overtime bill to House Speaker Nicholas Mattiello and Senate President Teresa Paiva Weed. He said the legislative leaders listened to his view, but didn't indicate what is likely to happens to the legislation.

Elorza said he's working with other municipal leaders to rally opposition to the overtime bill.

During his news conference, Elorza walked a line between sounding conciliatory to firefighters angered by his approach to changing their platoon structure and underscoring the need for savings in Providence's budget.



"I can understand the impulse to want to help the firefighters. They do extraordinary work," he said. "But helping the firefighters shouldn't come at the expense of bringing cities and towns to their knees, and that's what this bill does. It not only prevents us from realizing savings, but it also adds additional costs to our already bloated overtime budget."

Asked if there's common ground to be found between the two sides, Doughty said he hopes to move beyond a personal clash with Elorza. "This should be about the services we provide and the costs," he said, "so I'll try to maintain a professional relationship and focus on the issues, not the personalities."

*This post has been updated.*

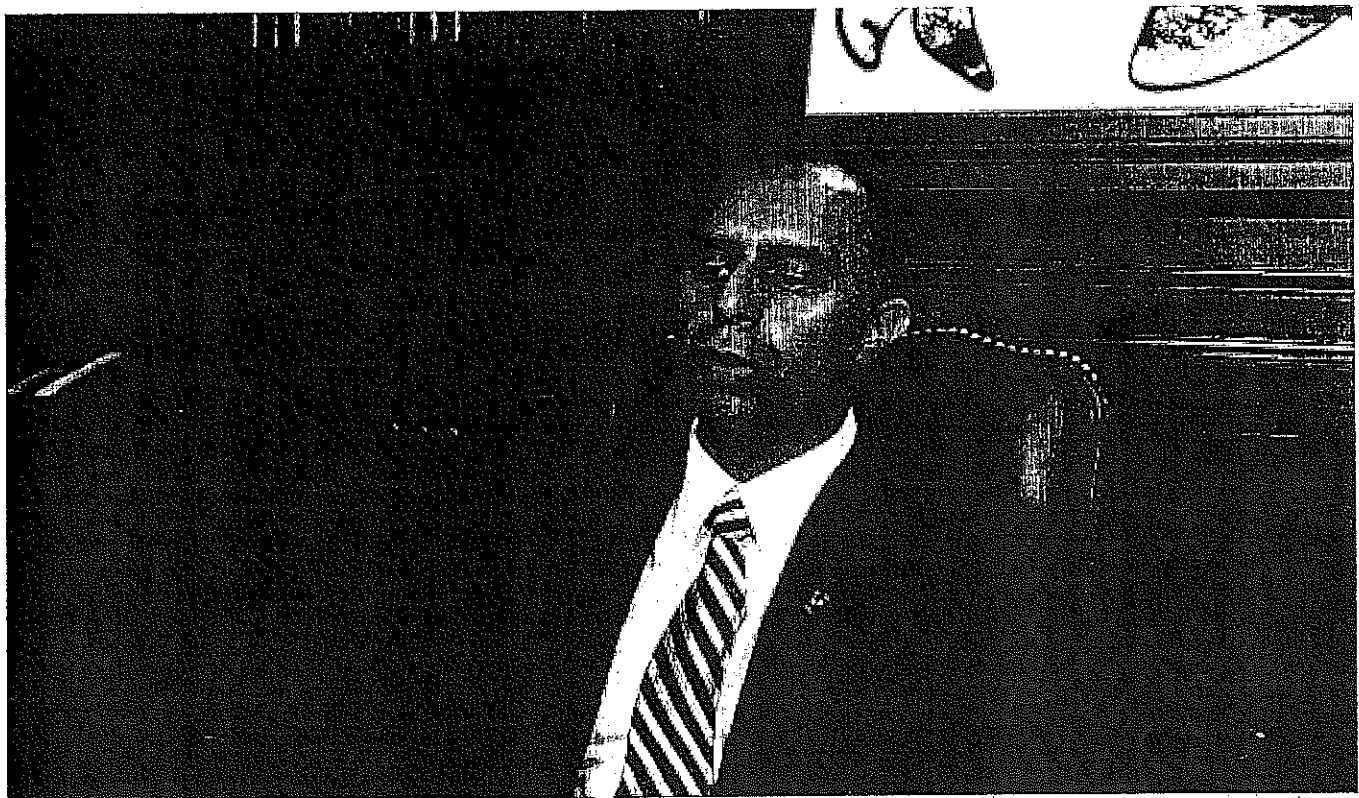




## With no platoon deal in place, Elorza plans to pay firefighters 8% more

Dan McGowan, WPRI.com Reporter

Published: July 31, 2015, 5:06 pm | Updated: August 3, 2015, 11:41 am



Mayor Jorge Elorza talks to reporters in his office. (Photo by Dan McGowan/WPRI 12)

PROVIDENCE, R.I. (WPRI) – There is no deal in place, but Providence firefighters will receive a pay increase for working an additional 14 hours each week beginning Sunday.

Mayor Jorge Elorza said Friday he will move forward with an 8% across-the-board pay increase for firefighters when the fire department switches from four platoons to three this weekend, even though he hasn't reached an agreement on the changes with Local 799 of the International Association of Firefighters.

"We've reached a point where negotiations have ended," Elorza told reporters gathered in his City Hall office. He said the union rejected two offers, including a 33% pay increase for all hours actually worked that wouldn't have counted toward firefighters' pensions. The other was a 10% increase that would count toward the pension.

Elorza's plan will require firefighters to go from working an average of 42 hours per week to an average of 56 hours. Implementation will begin Sunday at 8 a.m., according to Public Safety Commissioner Steven Pare.

Under the new three-platoon system, firefighters will continue to work two 10-hour days followed by two 14-hour nights, but they will now have two days off. (Under the four platoon structure, they had four days off.)

Elorza claims his proposal will ultimately save the city between \$5 million and \$7 million a year, but he acknowledged that he doesn't know how much savings will be achieved for the current fiscal year that started July 1.

Paul Doughty, the union president, did not respond to repeated requests for comment Friday.

*[Continue the discussion on Facebook \(https://www.facebook.com/groups/PVDpolitics/\)](https://www.facebook.com/groups/PVDpolitics/)*

*Dan McGowan ( [dmcgowan@wpri.com](mailto:dmcgowan@wpri.com) (<mailto:dmcgowan@wpri.com>) ) covers politics, education and the city of Providence for WPRI.com. Follow him on Facebook (<https://www.facebook.com/groups/PVDpolitics/>) and Twitter: [@danmcgowan](https://twitter.com/danmcgowan) (<https://twitter.com/danmcgowan>)*



# TITLE 28

## Labor and Labor Relations

### CHAPTER 28-9.1

#### Firefighters' Arbitration

#### SECTION 28-9.1-4

**§ 28-9.1-4 Right to organize and bargain collectively.** – The fire fighters in any city or town have the right to bargain collectively with their respective cities or towns and be represented by a labor organization in the collective bargaining as to wages, rates of pay, hours, working conditions, and all other terms and conditions of employment.

History of Section.

(P.L. 1961, ch. 149, § 1.)



# 24-Hour Shift For Firefighters Passes 3-2

*Effective March 1, firefighters will work 24-hour shifts.*

By SAMANTHA TURNER (Open Post)

January 31, 2012



Residents, firefighters and their families took to the microphone for 40 minutes Monday night, pleading their case against 24-hour-long shifts for the North



Kingstown Fire Department. In the end, the North Kingstown Town Council narrowly approved the change to town law with a 3-2 vote – Democrats Michael Bestwick and Charles Brennan opposing.

The measure reduces the t from four platoons to three and moves firefighters from working 10- and 14-hour shifts to 24-hour shifts. The new shift changes will result in 56-hour work weeks and add 14 hours to firefighters' weekly schedule. Originally, the town offered no compensation for these additional hours but modifications to the ordinance now include a 10 percent increase to annual pay.

"We have constructed a structure which is financially unsound and unsustainable," said Council Member Charles Stamm, who spoke of the impacts dwindling state aid and increasing expenses have had on the town's budget. "This proposal gives us an opportunity for significant savings going ahead."

According to the town, North Kingstown lost \$2.1 million in state aid alone for this year and anticipates spending upwards of \$721,000 from its general fund balance to level this year's budget. For next year's budget, .

The language in the amended ordinance claims the town can save \$1.2 million in savings in the first year the new shift structure is implemented. The ordinance also says that "the same savings, efficiencies and level of protection to the town" could only be attained if the fire department switches from all-professional to a volunteer department with call persons and private contractors.

Members of the North Kingstown Fire Department argued that the burden of balancing the town's budget should not fall upon the backs of its firefighters and

their families. Under the new shift structure, firefighters will work a 24-hour shift (10-hour on-duty day shift followed by a 14-hour on-duty night tour) followed by 48 hours off.

"This mandated 56-hour work week will not only affect 64 firefighters," said Justin Puckett, member of the North Kingstown Fire Department. "This will leave 90 or so kids wishing they had more time with dad."

According to Town Council Member Carol Hueston, the town and Local 1651 have met multiple times since October to hammer out a contract. In the latest meeting, the town offered the department a 20 percent salary increase and 20 percent pension increase for the 24-hour shifts, along with 17 full weekends off each year and at least one weekend day off each week. The union, Hueston says, rejected the offer.

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### from North Kingstown Patch

Flash Flood Watch in Effect  
Through Thursday

"FINAL Day to Vote Miss Rhode  
Island to Miss America Top 15"

RI Natural Gas Customers Could  
See 10 Percent Price Drop this  
Winter

*Patch Localstream:* North  
Kingstown Chamber of  
Commerce

*Patch Localstream:* NK Booster  
Club

---

The changes will take effect March 1 of this year as the town and fire union – Local 1651 – continue arbitration for the second year in a row. Last year, the town's proposal to switch the fire department to the 24-hour shift .

According to Union President Ray Furtado, this move by the council circumvents the collective bargaining process and violates state law. The union filed an unfair labor charge with the state back in December, Furtado says. Though Furtado says the union is "willing to negotiate" with the town, the battle may very well be on its way to court.

"If you continue down this path of recklessness you're going to leave us no alternative but to fight this until the last breath is taken," said Furtado during Monday night's public hearing.

The town is already embroiled in a legal battle with the North Kingstown School Department over a possible \$1.2 million revenue shortfall in the school department. Attorney Dan Kinder, a labor lawyer, is arguing the case for the town and, according to figures from one North Kingstown resident, has racked up substantial billable hours with the town.

Chris Demers, a resident of Old Baptist Road, presented the council with a handout showing that the Town of North Kingstown has made \$1.1 million in payments to Kinder and his associates. Demers urged the town to not spend more taxpayers' money on labor lawyers.

"It greatly disturbs me that this council won't think twice about paying the lawyers for hours billed but cries poverty when it come time to paying its own employees," said Demers during public comment. "Instead, you aim to balance your mismanaged budget on the backs of working families."

"The damages of this if awarded after legal fees will leave a crater where the undesignated fund balance is right now," said Furtado.



## ARTICLE 22 – ARBITRATION

### **Section 1:**

If agreement cannot be reached via the procedure set forth in the Article 21 on any grievance, the grievance may be referred to arbitration. Either party will give written notice. The parties shall endeavor to select an impartial arbitrator by mutual agreement; but in the absence of such agreement within seven (7) calendar days after receipt of such notice, the matter shall be referred to the American Arbitration Association for selection of an arbitrator and arbitration proceedings in accordance with its Voluntary Labor Arbitration Rules. The fees and expenses of the impartial arbitrator shall be born equally by both parties.

## ARTICLE 23 –SAFETY

### **Section 1:**

It is in the interests of both parties to this agreement that the equipment used and practices followed in the discharge of duties of the Firefighters conform to the N.F.P.A. 1500 or other applicable standard of safety.

The Chief or his designee shall create a NFPA 1500 - compliant Health and Safety committee (H & S comm.) The H & S committee will serve as an advisory group to the Chief of the department.

The Chief of the department shall be advised of any unsafe equipment or practices promptly. Unsafe equipment or practices reported and not corrected shall be grieved in accordance with the provisions of ARTICLE 21 contained herein.

## ARTICLE 24 - MINIMUM MANPOWER

### **Section 1:**

(There shall be a minimum of twelve (12) firefighters scheduled, on duty, and able to respond on four (4) in service apparatus at all times.)

### **Section 2:**

There will be a minimum of three (3) firefighters per apparatus on duty at all times. This does not prevent the Company Officer from detailing one (1) member to another piece of apparatus for a special call (example: brush fire with brush truck) special detail or other department related/sanctioned activity.

### **Section 3:**

At no time will there be more than one (1) probationary firefighter assigned to an individual apparatus at one time.





# **North Kingston Personnel Fire Budget ACTUAL Costs:**

	2011	2012	2013	2014	2011 vs. 2014
Classified Full Time	\$ 3,776,640.00	\$ 3,789,014.00	\$ 3,969,357.00	\$ 4,027,050.00	\$ 250,410.00
Collateral Pay	\$ 13,756.00	\$ 8,348.00	\$ 25,000.00	\$ 25,000.00	\$ 11,244.00
Dental	\$ 65,053.00	\$ 63,893.00	\$ 56,953.00	\$ 50,829.00	\$ (14,224.00)
FICA	\$ 440,683.00	\$ 410,737.00	\$ 420,140.00	\$ 424,656.00	\$ (16,027.00)
Health Insurance	\$ 951,283.00	\$ 1,090,536.00	\$ 1,124,966.00	\$ 1,098,659.00	\$ 147,376.00
Holiday Pay	\$ 319,084.00	\$ 297,685.00	\$ 353,000.00	\$ 353,000.00	\$ 33,916.00
Life Insurance	\$ 13,230.00	\$ 14,079.00	\$ 13,732.00	\$ 13,125.00	\$ (105.00)
Out of Rank	\$ 1,250.00	\$ 5,812.00	\$ 24,975.00	\$ 24,975.00	\$ 23,725.00
Overtime	\$ 1,688,062.00	\$ 1,487,013.00	\$ 988,860.00	\$ 988,860.00	\$ (699,202.00)
Paid Training	\$ 17,649.00	\$ 13,141.00	\$ 30,000.00	\$ 30,000.00	\$ 12,351.00
Retirement	\$ 532,957.00	\$ 633,930.00	\$ 828,138.00	\$ 864,534.00	\$ 331,577.00
Termination of Pay - Retirement	\$ 54,961.00	\$ 37,442.00	\$ -	\$ -	\$ (54,961.00)
Unclassified Full Time	\$ 83,433.00	\$ 89,683.00	\$ 92,850.00	\$ 94,243.00	\$ 10,810.00
Unclassified Part Time	\$ 19,040.00	\$ 23,530.00	\$ 7,940.00	\$ 7,940.00	\$ (11,100.00)

**Totals: \$ 7,977,081.00 \$ 7,964,843.00 \$ 7,935,911.00 \$ 8,002,871.00 \$ 25,790.00**

Note: All data was found using the budgets posted on the town of North Kingston's website <http://www.northkingstown.org/>





**Rhode Island Tax Rates by Class of Property**  
**Assessment Date December 31, 2010**  
**Tax Roll Year 2011**  
**FY 2012**

MUNICIPALITY	NOTES	RRE	COMM	PP	MV
BARRINGTON		\$17.95	\$17.95	\$17.95	\$42.00
BRISTOL	3	12.43	12.43	12.43	17.35
BURRILLVILLE		16.15	16.15	16.15	40.00
CENTRAL FALLS	8, 9	22.03	33.23	67.11	48.65
CHARLESTOWN	3	9.06	9.06	9.06	13.08
COVENTRY	3, 8	18.06	21.76	18.06	18.75
GRANSTON		20.26	30.39	30.39	42.44
CUMBERLAND	1, 3	15.34	15.34	27.50	19.87
EAST GREENWICH		17.49	17.49	17.49	22.88
EAST PROVIDENCE	1, 9	20.09	22.25	49.59	37.10
EXETER		13.44	13.44	13.44	32.59
FOSTER		17.58	17.58	24.16	36.95
GLOCESTER	2	21.66	24.62	43.13	24.37
HOPKINTON	3	19.34	19.34	19.34	21.18
JAMESTOWN		9.21	9.21	9.21	14.42
JOHNSTON	9	24.75	24.75	59.22	41.46
LINCOLN	9	21.65	24.75	34.00	30.66
LITTLE COMPTON		5.33	5.33	10.66	13.90
MIDDLETOWN	8	13.73	18.26	13.73	16.05
NARRAGANSETT		8.97	13.45	13.45	16.46
NEW SHOREHAM	6	4.74	4.74	4.74	9.75
NEWPORT		9.93	13.76	13.76	23.45
NORTH KINGSTOWN		17.26	17.26	17.26	22.04
NORTH PROVIDENCE	3, 9	24.15	30.85	69.00	41.95
NORTH SMITHFIELD		15.32	17.65	43.00	37.62
PAWTUCKET		17.78	24.54	52.09	53.30
PORTSMOUTH	3, 7, 8	13.91	13.91	13.91	22.50
PROVIDENCE	9	31.89	36.75	55.80	60.00
RICHMOND	2, 7	18.46	18.46	18.46	22.64
SCITUATE	6, 7, 8	32.73	40.30	39.12	30.20
SMITHFIELD		15.85	15.85	57.93	39.00
SOUTH KINGSTOWN		14.51	14.51	14.51	18.71
TIVERTON		15.71	15.71	15.71	19.14
WARREN		17.18	17.18	17.18	26.00
WARWICK		17.69	26.53	35.38	34.60
WEST GREENWICH	2, 4, 9	22.30	22.30	33.47	19.02
WEST WARWICK	5, 8	21.40	See Note 5	33.95	28.47
WESTERLY		9.74	9.74	9.74	29.67
WOONSOCKET	9	25.10	36.14	46.58	46.58

Source: Division of Municipal Finance

Represents tax rate per thousand dollars of assessed value.

**CLASSES:**

RRE = Residential Real Estate    COMM = Commercial Real Estate    PP = Personal Property    MV = Motor Vehicles

**NOTES:**

- 1) Rates support fiscal year 2011 for Cumberland & East Providence.
- 2) Municipality had a revaluation effective 12/31/10.
- 3) Municipality had a statistical update effective 12/31/10.
- 4) Vacant land taxed at \$15.89 per thousand of assessed value.
- 5) Real Property taxed at four different rates: \$24.95 (code 03); \$26.13 (codes 04, 05, 06, 07, 24, 14, 98, 10, 15); \$31.72 (codes 40, 50, 30, 02); \$21.40 (all state codes not otherwise specified)
- 6) New Shoreham & Scituate's Real Property is assessed at 80% & 50% of Fair Market Value, respectively, at the time of revaluation/update. Real Property in all other municipalities is assessed at 100%.
- 7) Motor vehicles in Portsmouth, Richmond & Scituate are assessed at 70%, 80%, & 95% of the values prescribed by the Rhode Island Vehicle Value Commission, respectively. Motor Vehicles assessed at 100% in all other municipalities.
- 8) Rates rounded to two decimals
- 9) Denotes homestead exemption available

FY 2015 Rhode Island Tax Rates by Class of Property  
Assessment Date December 31, 2013  
Tax Roll Year 2014

MUNICIPALITY	NOTES	RRE	COMM	PP	MV
BARRINGTON		\$18.30	\$18.30	\$18.30	\$42.00
BRISTOL	2	13.06	13.06	13.06	17.35
BURRILLVILLE		18.88	18.88	18.88	40.00
CENTRAL FALLS	8	27.26	39.48	73.11	48.65
CHARLESTOWN	2	9.90	9.90	9.90	13.08
COVENTRY	2, 7	20.40	24.58	20.40	18.75
CRANSTON		22.84	34.26	34.26	42.44
CUMBERLAND	2	17.08	17.08	29.53	19.87
EAST GREENWICH		23.26	23.26	23.26	22.88
EAST PROVIDENCE	1, 8	22.95	25.40	56.67	37.10
EXETER		14.63	14.63	14.63	32.59
FOSTER		21.06	21.06	28.96	36.95
GLOUCESTER	2	21.77	24.74	43.34	24.37
HOPKINTON	2	20.64	20.64	20.64	21.18
JAMESTOWN		8.75	8.75	8.75	14.42
JOHNSTON	8	28.75	28.75	59.22	41.46
LINCOLN	8	23.57	26.94	37.02	30.66
LITTLE COMPTON		5.64	5.64	11.28	13.90
MIDDLETOWN		16.07	21.34	16.07	16.05
NARRAGANSETT		10.04	15.06	15.06	16.46
NEW SHOREHAM	5	5.34	5.34	5.34	9.75
NEWPORT		12.06	16.72	16.72	23.45
<del>NORTH KINGSTOWN</del>		<del>18.91</del>	<del>18.91</del>	<del>18.91</del>	<del>22.04</del>
NORTH PROVIDENCE	2, 8	27.94	34.68	69.91	41.95
NORTH SMITHFIELD		16.02	17.77	42.80	37.62
PAWTUCKET		23.06	30.88	52.09	53.30
PORTSMOUTH	2, 6	15.80	15.80	15.80	22.50
PROVIDENCE	9	19.25	36.75	55.80	60.00
RICHMOND	2, 6	20.94	20.94	20.94	22.64
SCITUATE	6, 7	18.98	21.94	40.38	30.20
SMITHFIELD		17.13	17.13	59.70	39.00
SOUTH KINGSTOWN	7	15.48	15.48	15.48	18.71
TIVERTON		19.30	19.30	19.30	19.14
WARREN		20.07	20.07	20.07	26.00
WARWICK		20.06	30.09	40.12	34.60
WEST GREENWICH	2, 3, 8	22.55	22.55	33.85	19.02
WEST WARWICK	4	25.39	See Note 4	40.13	28.47
WESTERLY		10.64	10.64	10.64	29.67
WOONSOCKET	8	35.94	39.99	46.58	46.58

Source: Division of Municipal Finance

Represents tax rate per thousand dollars of assessed value.

**CLASSES:**

RRE = Residential Real Estate    COMM = Commercial Real Estate    PP = Personal Property    MV = Motor Vehicles

**NOTES:**

- 1) Rates support fiscal year 2014 for East Providence.
- 2) Municipality had a revaluation or statistical update effective 12/31/13.
- 3) Vacant land taxed at \$16.07 per thousand of assessed value.
- 4) Real Property taxed at four different rates: \$36.28 (apartments 6+ units); \$30.85 (combination, commercial I, commercial II, industrial, commercial condo, comm./ind. vacant land, comm. buildings on leased land, utilities and rails, other vacant land); \$36.45 (two to five family); \$25.39 (one family residence, estates, farms, seasonal/beach property, residential vacant land, residential buildings on leased land, residential condo, time shared condo, farm/forest/open space, mobile homes, two-family owner occupied properties)
- 5) New Shoreham's Real Property is assessed at 80% of Fair Market Value at the time of revaluation/update. Real Property in all other municipalities is assessed at 100%.
- 6) Motor vehicles in Portsmouth, Richmond & Scituate are assessed at 70%, 80%, & 95% of the values prescribed by the Rhode Island Vehicle Value Commission, respectively. Motor Vehicles assessed at 100% in all other municipalities.
- 7) Rates rounded to two decimals
- 8) Denotes homestead exemption available
- 9) Providence's homestead exemption eliminated effective FY 2014. Tax classification utilized in its place with owner occupied residential property taxed at \$19.25 and non-owner occupied residential property taxed at \$33.75.