

homeostatic, a state of equilibrium in the body.” (Paula Ford Martin, Stress, Gale encyclopedia of Alternative Medicine)

The earliest research on stress disorders that increased the psychological burden of those involved comes not from the civilian arena, but rather from the military. While the role of stressful events was identified much earlier than World War I, it was during that war that they were first studied in reasonably scientific and comprehensive fashion. “During World War I traumatic reactions to combat conditions were called “shell shock,” a term coined by a British pathologist, Colonel Frederick Mott, who regarded such reactions as organic conditions produced by minute hemorrhages of the brain.” (Coleman and Broen, 1972) Only later, during WW11, did this error in understanding of combat stress psychology begin to be more clearly and accurately understood. When physical fatigue and psychological factors, (such as long periods without rest, danger, noise, and deprivation) began to be examined, only then did the theories of organic brain damage and the accusations of weak or flawed character dissipate. World War II, the Korean War, and the Vietnam War were important to this research because they were the first situations where significant data related to psychological stress was compiled and examined. This information has been of great importance in studying the occupational stress found in firefighting, law enforcement, and EMS. This is not totally surprising, since these organizations are paramilitary in nature.

Contemporary scientific studies of stress were initiated by Hans Selye, who, as a young medical student in 1926, noted that individuals suffering from a wide range of physical ailments all seemed to a common constellation of symptoms. These involve the loss of appetite, decreases in muscular strength, elevated blood pressure, and a loss of

ambition. Selye referred to stress as a response to stimuli in which an organism developed wear and tear. He more recently defined the concept of stress as the nonspecific response of the body to any demand. (Hans Selye, 1974 pg. 14)

“ The effects of occupational stress, critical incident stress, and post traumatic stress disorder can be clearly illustrated in the case of firefighter Robert O'Donnell. After he rescued baby Jessica McClure in Midland Texas, his life was never the same again. Over a seven and a half year period, Robert O'Donnell went from a high profile hero, to an emotionally troubled firefighter, to a prescription drug user, without a job or family, and finally to a suicide victim. Robert was a psychological trauma victim. He paid the ultimate price after the Murrah Building Bombing in Oklahoma City.” (Munk, 1998).

This was lamented by Ray Sprague, EMT-P, “We go out and bust our butts on a daily basis to save lives. [Then] to see people who have so much to live for [commit suicide], it confuses you...It's a sad thing to see happen. There had to be a better way. Robert and another firefighter who took his own life last year left families, lots of friends and lots of people wondering why.” (Becknell and Ostrow, 1995)

Steve Delsohn, in his book *Dealing with Darkness*, examined the psychological stress of firefighting. The author examines the behavior of fire fighters during and after fires, stabbings, shootings, acts of domestic violence, terrorist acts, automobile accidents, airplane crashes, hurricanes, tornadoes and earthquakes. He examines the public's expectation of toughness, the firefighter's toughness, and also the feigned toughness. As

Delsohn points out, “ Firefighters can feel.” This may not always be evident. The stress can be contained and hidden, but it is still there.

“everybody’s a tough guy when they’re at work.” (Delsohn, 1996)

This hiding and containing of stress are part of the firefighter’s problem.

“Dissociation at the time of trauma may protect the victim from a full conscience appreciation of terror, helplessness, and grief, but at the cost of long term difficulties in integration and mastery of the event. The concept of trauma related dissociation was first developed by Pierre Janet in the 1880’s. (Marmar et al., 1996)

A relevant question to this research was ‘How much stress is out there?’

According to author Les Krantz, in Jobs Related Almanac, he rates the job, firefighter, as the second most stressful job in the United States with a score of 249. Only the President of the United States of America, at 250, received a higher score. Under physically demanding, Krantz rated firefighting as 249 on a scale of 250. NFL football players were rated slightly higher at 250.

“The impact of fire service work upon the human organism must be understood both as an organizational and as a biopsychosocial phenomenon—and not solely viewed as a physical phenomenon. Concern is expressed that local government entities may view physical fitness programs as a “quick fix” for problems associated with firefighter-paramedic work; when, in fact, comprehensive wellness technologies are required to enhance the viability of firefighter personnel at all ranks and levels of experience. Petrie and Rotherham (1982) found that stress in firefighters did not vary with length of time on the job, age, rank, or

factors in the personal lives of subjects, such as marital status, marital satisfaction, income, or number of children. Wellness technologies must be developed to include those components of the firefighting organization that are known to create, maintain, or reduce problematic work performance circumstances and/or stress reactions in firefighters.” (Blum, Stress and Survival in the Fire Service)

PROCEDURES

Research for this project primarily involved a review of literature from current periodicals, newspapers, related applied research projects, and conversations relating to job stressors. Sources were obtained from Eastern Michigan University Hale library, Dearborn Henry Ford Centennial Library, and the World Wide Web. Search engines included Google, Infotrac, Proquest, and First Search.

The primary objective was to identify firefighter/paramedic job stressors and search out any effective techniques that might be helpful in reducing detrimental effects of this unavoidable stress. Another objective of this research was to outline important aspects of a comprehensive wellness plan. Since 15-20% of our personnel are at risk, according to the data I could find, (I think it is much higher) an investment of time and/or money would pay off in less sick time and higher morale.

NFPA Standard 1582, Medical Requirements for Firefighters, was used as a guideline to formulate this rough outline for a complete wellness plan. This research was not extensive enough to recommend a complete wellness plan that was both feasible and implementable. The following are a few ideas that this research uncovered;

FIRST, All new recruits need to be examined by a licensed physician to determine their physical fitness as a firefighter.

SECOND, New recruits be given a comprehensive drug screen to determine the possibility of substance abuse problems prior to their employment.

THIRD, The new recruits be required to complete the Minnesota Multi-phasic Personality Inventory and the Hilson Safety and Security Risk Inventory to assess their psychiatric suitability for the position of firefighter.

FOURTH, Implementation of an ongoing wellness plan that was extensive in education and awareness of this professions unavoidable stress and symptoms of stress reactions.

A limitation was the scarcity of scientific data on the daily stress exerted by firefighters and emergency responders by their environment. Raymond J. Navarre, Human Resources Officer of the Toledo Fire Department describes these below. (Navarre 1987).

1. Need for private space- the need to be away from the public and other firefighters
2. Need for privacy- the need to have an area that is personal.
3. Need for a balance between the institutional quality of the firehouse verses the family atmosphere and the firefighters' relationships as members of the firehouse
4. Need to control the noise and media pollution- the need for quiet relaxation, study, and sleep.

5. Need for relaxing and comfort producing accoutements- need for furnishings and surroundings that are physically, mentally, and psychologically stress reducing, or at least not stress promoting. (Navarre 1987)

Another limitation was that most of the studies examined stress as it related to mass casualty incidents. Finding data on daily stressors of Firefighter/Paramedic was quite hard. However, Boudreaux, Mandry, and Brantley (1995) successfully examine the cumulative stressors using the Social Readjustment Rating Scale (SRRS).

Table 1.

The 15 Most Common Major Life Events Experienced by EMT's using the SRRS as a measure.

HIGH END STRESS

Change in financial status

Vacation

Change in living conditions

Personal injury or illness

Change in sleeping habits

Change in work responsibilities

Mortgage greater than 10,000

Begin or end school

Change in residence

Change in work hours/conditions

Outstanding personal achievement

Change in eating habits

Change in social activities

Change in number of achievements with spouse

Mortgage less than 10,000

LOW END STRESS

Table 2**The 15 Most Common Daily Stressors Experienced by EMT's.**

<u>Daily Hassles Non-Work Days</u>	<u>Daily Hassles Work Days</u>
Thought about unfinished work	had sleep disturbed
Thought about the future	thought about the future
Unable to complete all plans for today	thought about unfinished work
Hurried to meet a deadline	interrupted during task/activity
Money problems	interrupted while thinking/relaxing
Did something you did not want to do	concerned about personal appearance
Had sleep disturbed	hurried to meet a deadline
Concerned about personal appearance	did something you did not want to do
Interrupted during task/activity	had difficulty in traffic
Interrupted while thinking/relaxing	money problems
Worried about another's problems	unable to complete a task
Unable to complete a task	interrupted while talking
Waited longer than wanted to	worried about another's problems
Experienced illness/physical discomfort	unable to complete all plans for today
Interrupted while talking	experienced illness/physical discomfort

RESULTS

The first question this research tried to answer was; Does on the job stress affect the job performance and off duty activities of the firefighter/paramedic? Some of the results of this research were surprising. Learning that firefighters were stressed by their own living conditions was quite surprising. This research also provided some insight into just how detrimental stress can be.

Dr L.N. Blum has done some of the most insightful research on firefighter work related stress. This passage from his paper, “Stress and Survival in the Fire Service; How They Live and Die”, seems to address my research question quite well.

“ Those who serve in firefighting and emergency medical services have been asked to pay a great price for assignment to this most prestigious duty. In the past 15 years of service to firefighters, paramedics, and police officers, this writer has consistently encountered excellent firefighters who posses strikingly high levels of divorces and damage to relationships, physical symptoms of distress and continuing pain, episodes of emotional instability and distress, work performance difficulties in the aftermath of certain types of fires and medical assistance runs, and, under certain circumstances, lapses in firefighter safety during high risk activity.

This is not to say that these fine individuals could not do their jobs. The reality is that firefighters will perform their duties even while parts of their bodies or life might be harmed right in front of them.

The responsibilities, tasks, work demands, and activities performed in firefighting are referred to in the term psychosocial stressors. They

achieve a physical and psychological impact upon the individual performing those tasks. The response that the individual makes to psychosocial stressors encountered in firefighting are referred to in the term, stress response. In the stress response, the brain undergoes activities and changes in its adaptation (for the purpose of survival and equilibrium) to encountered events or circumstance. The neuroendocrine response, or the “fight of flight” response, is “fueled” by excretion of the hormones, adrenaline and noradrenaline. Of critical importance in the human emergency response is the hormone adrenocorticotropic hormone, or ACTH.

The effects of ACTH in the brain involve a shifting of neurological “fuel” or brain activity away from the cerebral cortex (where information obtained by the senses is categorized and processed) to the limbic region of the brain where the emergency response processes occur. As such, ACTH results in the cerebral cortex losing approximately two-thirds of its functioning, to permit the limbic system (the part of the brain which the emergency response) to activate the “fight of flight” response.

The impact of ACTH’s effect upon the cerebral cortex for a firefighter can be observed in their experience of slow motion, “tunnel vision,” muffled sounds, gaps in memory of the incident, detail errors, and episodes where the firefighter’s report of the incident is not corroborated by the physical evidence.” (Lawrence N. Blum, *Stress and Survival in the Fire Service: How They Live and Die*)

Pitman (1986) has demonstrated that the brain becomes conditioned by either repeated encounter with stressful circumstances—or by a single traumatic event—so that it will, with repeated encounter with psychosocial stressors, begin to react under emergency conditions, even when no actual emergency occurs. “Therefore, repeated encounter with psychosocial stressors which initiate stress responses in individuals, will develop a condition in which the body is chronically and continuously in a state of psychophysiological arousal. Examples of the effect of such a condition would be seen in chronic elevation of blood pressure with no evidence of congenital circulatory defect (see, for example, Guidotti,1992; Kristensen 1996; Schawrtz et al, 1996) chronic gastrointestinal distress, multiple awakenings, abrupt change in mood patterns, work habits, withdrawal from normal activities, emotional reactions inappropriate to circumstance, inability to defuse after call is cleared, high risk behavior, psychophysiological distress.”

“Research data has documented that a strikingly high proportion of public safety personnel frequently—and on a continuing basis—take some form of antacid medication—i.e. zantac, tagament, maalox, digel, prilosec, or generic brands with similar purpose. The range of gastrointestinal (GI) symptoms experienced by firefighters—e.g., burning of sour feeling in the stomach; watery, runny bowel movements; spastic bowel; gastroesophageal reflux—can be simply observed in one of the effects adrenergic innervation—a slowing or suppression of the digestive process, resulting in acids not being sufficiently removed from the GI system.

Firefighters have also acknowledged the continuing experience of musculoskeletal pain, stiffness, or discomfort in the absence of physical injury or trauma. One of the effects of adrenaline upon the body is to increase skeletal muscle tension—a critical necessity for readiness for combat or flight. In addition, the increased muscular activity observed in response to adrenaline results in lactic acid and ammonia—the wastes of muscular activity—further increasing the experience of soreness and physical fatigue observed with substantial or prolonged stress.

Still other firefighters have reported the experience of repeated colds, influenza and a lowering of previous levels of resistance to illness. Again, a not surprising result of the effect of adrenaline upon immunosuppression during periods of heightened psychophysiological arousal.”(Blum 1994)

“While it can be credibly stated that firefighting duties contain high levels of job demands, the existence of high job demand will not, in and of themselves, result in adverse health consequences to the individual performing them. It is only when high job demands are not prepared for, managed, or acknowledged, that adverse health problems will be observed.” (Karasek 1979)

The second research question; Are there effective techniques to reduce or eliminate the detrimental effects of stress?

You have experienced a traumatic event of critical incident (any event that causes unusually strong emotional reactions that have the potential to interfere with the ability to function normally). Even though the event may be over, you may now be experiencing or

may experience later, some strong emotional or physical reactions. It is very common, in fact quite normal, for people to experience emotional aftershocks when they have passed through a horrible event.

Sometimes the emotional aftershocks (or stress reactions) appear immediately after the traumatic event. Sometimes they may appear a few hours or a few days later. And, in some cases, weeks or months may pass before the stress reactions appear.

The signs and symptoms of a stress reaction may last a few days, a few weeks, a few months, or longer, depending on the severity of the traumatic event. The understanding and the support of loved ones usually cause the stress reactions to pass more quickly. Occasionally, the traumatic is so painful that professional assistance may be necessary. This does not imply craziness or weakness. It simply indicates that the particular event was just too powerful for the person to manage by himself. It's imperative that the signs and symptoms of a stress reaction be able to be recognized by the individuals involved and by their supervisors.

The following table identifies some signs and symptoms of a stress reaction.

Table 3. Signs and Symptoms of Stress Reactions

Physical	Cognitive	Emotional	Behavioral
Chills	Confusion	Fear	Withdrawal
thirst	nightmares	guilt	antisocial acts
fatigue	uncertainty	grief	inability to rest
nausea	hypervigilance	panic	intensified pacing
fainting	suspiciousness	denial	erratic movements

twitches	intrusive images	anxiety	change in social activity
vomiting	blaming someone	agitation	change in speech patterns
dizziness	poor problem solving	irritability	loss or increase in appetite
weakness	poor abstract thinking	depression	hyperalert to environment
chest pain	poor attention/decisions	intense anger	increased alcohol consumption
headaches	poor concentration/memory	apprehension	change in usual communications
elevated BP	disorientation of time, place, or person	emotional shock	
rapid heart rate	difficulty identifying objects or people	feeling overwhelmed	
muscle tremors	heightened or lowered alertness		
shock symptoms	increased or decreased awareness of surroundings		
grinding of teeth			
visual difficulties			
profuse sweating			

difficulty breathing			
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The International Critical Incident Stress Foundation Inc. (ICISF) has compiled a list of things that may be helpful to the individual in mitigating the effects of critical incident stress.

Table 4. ICISF Recommendations

- Within the first 24-48 hours, periods of appropriate physical exercise, alternated with relaxation will alleviate some of the physical reactions
- Structure your time; keep busy
- You're normal and having normal reactions; don't label yourself crazy
- Talk to people; talk is the most healing medicine
- Be aware of numbing the pain with overuse of drugs or alcohol, you don't need to complicate this with a substance abuse problem
- Reach out; people do care
- Maintain as normal a schedule as possible
- Spend time with others
- Help your coworkers as much as possible by sharing feelings and checking out how they are doing
- Give yourself permission to feel rotten and share your feeling with others
- Keep a journal; write your way through those sleepless hours
- Do things that feel good to you

- Realize that those around you are under stress
- Don't make any big life changes
- Do make as many daily decisions as possible that will give you a feeling of control over your life, i.e., if someone asks you what you want to eat, answer him even if your not sure.
- Get plenty of rest
- Don't try to fight reoccurring thoughts, dreams or flashbacks-they are normal and will decrease over time and become less painful
- Eat well balanced and regular meals (even if you don't feel like it)

The International Critical Incident Stress Foundation also has some things that family members and friends can do to help the stress reaction.

Table 5. Tips for Family Members

- Listen carefully
- Spend time with the traumatized person
- Offer your assistance and a listening ear if they have not asked for help
- Reassure him that he is safe
- Help him with everyday tasks like cleaning, cooking, caring for the family, minding children
- Give him some private time
- Don't take his anger or other feelings personally

- Don't tell him that he is "lucky it wasn't worse," a traumatized person is not consoled by those statements. Instead, tell him you are sorry such an event has occurred and you want to understand and assist him.

For many people in today's world, stress is a fact of life. Although it is impossible to eliminate all stress from daily life, it is possible to control the effect stress has on the body and the mind. The first step in managing stress is to become aware of events in your life that cause you stress. The causes of stress vary from person to person, so that what causes you stress may not cause stress for another person. once you are aware of what causes you stress, the goal is to find ways to avoid or control these things.

Relaxation techniques, when used consistently, can prove effective in controlling stress by helping you reach a state of mental calm, even when in the middle of a stressful situation.

There are several relaxation techniques provided by Access Health Inc. which can be done almost anywhere at any time to help control stress. These techniques include:

Table 6. Stress Reduction Techniques

- deep breathing
- active relaxation
- viaualization
- passive relaxation
- yoga, and
- biofeedback
- deep breathing is a simple technique that can relax tense muscles,

- focus energy and help one be more productive. To use the technique,
- simply breath in deeply through the nose, letting your stomach
- expand as much as possible. It may be helpful to place your hands firmly and comfortably on your stomach during the exercise. Once you've breathed in as much as possible, hold your breath for a
- few seconds and then exhale slowly through your mouth. Repeat this for three or four breaths several times a day
- active relaxation is a process that can help you actually feel the difference between tension and relaxation. It is accomplished by first tensing and then relaxing each muscle in the body. Start with the muscles in the head and move down to the muscles in the feet. This is also called progressive or systemic relaxation.
- stretching exercises are a simple, easy way to loosen up tight
- muscles and combat stress. Muscle tension is an automatic physical response to stress, and the benefit of simple stretching exercises
- is often overlooked as a relaxation technique.
- another relaxation technique that can help reduce stress is clearing the mind or visualization. Visualization a type of directed meditation which involves using the minds eye to clear away mental clutter or to actually visualize how a stressful situation can be handled successfully. This is done by picturing the stressful situation in your mind such as a business presentation or an athletic performance and then visually rehearsing the outcome. Visualization techniques also may be

used to imagine a peaceful scene such as ocean waves lapping up on the beach to create relaxation.

- meditation and self-hypnosis are passive relaxation techniques that can be used to create relaxation. Four elements are used in meditation: a quiet environment,
- a point of focus like a neutral word that can help with concentration,
- a passive accepting attitude, and
- a comfortable position
- meditation once or twice a day for ten to twenty minutes each time can bring rapid relief from chronic stress and also increase a person's ability to tolerate stress.
- Yoga is the use of deep meditation and concentration to free oneself and unite with a supreme spirit. It uses certain postures and carefully controlled breathing to turn off behaviors that cause stress. For specific information on how to practice yoga, you may consult various books available on the subject, take a
- class at your local college, adult program or health club.
- and finally, if a person has difficulty zeroing in on a stress
- reaction or the ability to relax, the practice of biofeedback
- can be helpful. Biofeedback is a technique in which a person can learn to modify the body's physical reactions to forms of stress. Biofeedback involves sending direct messages to various parts of the body to get a desired response. For example, people
- have actually been able to prevent frostbite from developing in conditions of extreme cold by sending a message to their hands to stay warm. Biofeedback has

also been used for control of chronic pain problems, such as back pain or migraine headaches.

To begin with, it may be helpful to work with a certified biofeedback practitioner and specialized equipment to learn the technique. However, once learned, biofeedback can be used in any environment to help control blood pressure, heart rate, pain or physical or emotional stress. It is not important which relaxation techniques are used. What is important is the attitude with which relaxation is pursued and what is comfortable for the person.

DISCUSSION

The importance of psychological wellness and stress reduction for firefighters was clearly underlined by The United States Fire Administration's Stress Management Model Program for Firefighter Well-Being, FA 100, as early as February 1991. Other leading agencies such as The International Association of Firefighters in cooperation with The International Association of Fire Chiefs have picked up on this lead. The Fire Service Joint Labor Management Wellness/Fitness Initiative has incorporated psychological wellness into their overall plan. "Firefighters must continue to respond to emergency incidents that require extreme physical output and often result in physiological and psychological outcomes. Such situations, over time, can and do affect the overall wellness of the firefighting and emergency response system" (Fire Service Joint Labor Management Wellness/Fitness Initiative, 1999) One of the key points identified by the

task force to investigate is: “ Develop a holistic wellness approach that includes; medical, fitness, injury/fitness/medical rehabilitation and behavioral health.” This is being investigated directly to protect the wellness of the firefighter. “ The project seeks to prove the value of investing wellness resources over time to maintain a fit, healthy, and capable firefighter throughout his/her 25-30+ year career and beyond.”

“A study by the Medstat group in Washington D.C., found that people with high stress levels at work sustain healthcare costs that are 46% higher than those incurred by people with less stress. The American Institute of Stress reports that between 75% and 90% of physician visits have stress as a major contributing factor to the patients reason for the visit.” (William Atkinson, *Purchasing*, Supply Chain Stress: Coping with professional Pressures, Issue 18, 2001)

“The literature indicates that several large private corporations have realized cost benefits through initiating or expanding wellness programs. AT&T, Union Pacific Railroad, Du Pont Chemical Corporation, and the Travelers Corporation of \$1.50 to \$3.40 for every dollar invested in wellness programs.” (Ken Riddle, Deputy Fire Chief, Las Vegas Fire Department, ARP submitted to the National Fire Academy, April 1999)

Chief Riddle initiated his departments health and wellness program in late 1993, with very impressive results. There were a significant decrease in number of injuries, sick time usage, and improved morale. The following table illustrates the results he achieved in the first four years of implementing his health and wellness plan.

Table 7. Results from Las Vegas Fire Department's Health and Wellness Plan

YEAR	Days Missed	Light Duty Days	Injuries with work days lost	Injuries With No Work Days Lost
1994	628	154	30	35
1995	278	427	32	24
1996	227	321	16	22
1997	20	70	5	6

The dramatic results Chief Riddle achieved is proof that comprehensive health and wellness plans are needed in the fire service to help maintain viable and productive personnel.

RECOMMENDATIONS

“Concern is expressed that local government entities may view physical fitness programs as a ‘quick fix’ for problems associated with firefighter-paramedic work; when, in fact, comprehensive wellness technologies are required to enhance the viability of firefighter personnel at all ranks and levels of experience. Petrie and Rotherham (1982) found that stress in firefighters did not vary with length of time on the job, age, rank, or factors in the personal lives of subjects, such as marital status, marital satisfaction, income, or number of children. Wellness technologies must be developed to include those components of the firefighting organization that are known to create, maintain or reduce problematic work performance circumstances and/or stress reactions in firefighters.”(L.N. Blum)

If it is true that our people are our number one resource, then the cost of a comprehensive wellness program is negligible compared to the long term benefits and cost savings it will provide.

Initiating a health and wellness program will most likely depend on available resources of the organization. Education and an awareness of potential health problems is essential if most individuals are to enjoy a 25-30 year career.

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The Psychology Of Firefighting

[By Marianne Peso on October 9 2014]

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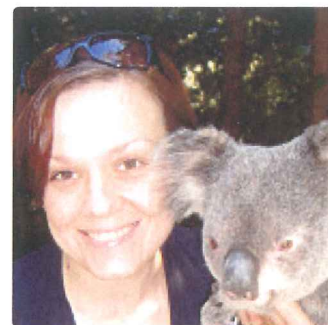
Firefighters are amazing. As the rest of us turn to run from a blazing building, they're the ones running towards it, putting themselves in danger in order to save people, animals and property from damage. It is therefore not surprising that firefighters have been the subject of several lines of psychological investigation, especially as a model population for studies related to trauma and stress.



Professional firefighters undergo psychological testing as part of the hiring process, partly in order to determine how a prospective hire may cope with stressful situations. According to the Government of WA Fire and Emergency Services Manual, firefighters

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are frequently (1-2 of every three days) exposed to traumatic incidents including extreme injuries and even death. However, there are many additional stressors that firefighters experience, from multiple alarms going off to tight spaces and heights. Between 33% and 41% of firefighters report significant psychological stress. Dan Maxwell, a professional firefighter in Western Australia says that the psychological and physical testing that firefighters undertake in the hiring process test an individual's reaction to all of these stressors, and potentially their risk of contracting post traumatic stress disorder (PTSD), which can result from exposure to a highly traumatic event.

Several studies of firefighters suggest that it is not only call-outs to fires themselves that cause stress, but repeated calls that compound stress levels. The physiological stress has been shown to be linked to psychological stress and can even cause short and long-term changes in the immune system.

In a study on South Australian firefighters conducting a prescribed burn, researchers measured blood cytokine levels (molecular markers of immunity) before and after their shifts over several days. They found that repeated shifts (working two days in a row) caused a significant increase in the firefighters' cytokine levels, providing evidence that the human body adapts to stress by adjusting the body's regulatory set point in order to increase an individual's chances of survival.

Not only do repeated exposures to firefighting efforts increase stress, they also increase the perception of stress.

behavioural and physiological development. She has also had the opportunity to work with jumping spiders and fiddler crabs. Presently, she is working on testing models of honey bee colony collapse in the field in the hope that we can do something to help save the bees.

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Another firefighting study examined how firefighters' perceive their own level of exertion. Firefighters performed a standardised set of firefighting tasks (e.g. carrying a hose up stairs) involving live fires while being monitored for markers of stress. The firefighters repeated the set of tasks three times and the firefighters' perceived levels of exertion increased from trial to trial despite heart rate measurements not changing significantly between trials. In other words, when firefighters repeatedly perform standard tasks in the same day, they perceive the repetitions as increasingly stressful even if it was not.

So how do firefighters cope with all this stress?

Despite repeated exposure to stressors and terrible tragedies, and the increased awareness and availability of various mental health programs, it is the camaraderie, or the bonds of friendship between the firefighters in a brigade that has the most protective effect on the emotional health of these individuals.

This is echoed by a volunteer firefighter in Western Australia, Rebecca Moran. She calls her brigade a 'family.' Both of the firefighters I interviewed agree that firefighters primarily cope with their stress through informal discussions (sometimes including black humour) amongst their peers.

Does it take a special kind of person, or personality to

be a firefighter? Studies of the 'big 5' personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) in firefighters provide some insight.

A 2010 personality study examined police and firefighter recruits compared to data collected from the general population. Compared to 'regular' people, police and firefighters scored higher on excitement seeking (a facet of extraversion) and firefighters showed more alertness but less reaction to a stressor than the police recruits.

Although not a trait easily measured in the big 5, both Dan and Rebecca suggest the desire to help others and a sense of community are the primary motivators for individuals to become firefighters. We owe them, and all of the world's firefighters, our gratitude and respect.

Did you like this blog?
You may be interested in watching the footage from *Mercury Rising: Extreme Bushfires*, a recent interactive event on the science of bushfires.



By Marianne Peso (@MariannePeso)

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Statistics, Damned Statistics, and Lies

THERE IS A CURIOUS sort of civic self-loathing among Rhode Islanders that seems to leave us perpetually ready to believe the worst about our state. We are the smallest state, for sure, but are we also the weakest, dumbest, most expensive, and most corrupt? Those who believe this sort of claptrap don't get out much, really. After all, Connecticut, right next door, sent one governor, one treasurer and three mayors to prison in recent years. And Illinois Governor Rod Blagojevich's national self-immolation this past winter was another welcome purgative for Rhode Island's feelings of inadequacy.

Still, as absurd as this low self-esteem is, it's foolish to deny it exists. In our public discourse, it acts like a puddle of gasoline, waiting for a match, an apt opening simile for an article about the cost of fire protection.

The Rhode Island Public Expenditure Council (RIPEC) is, of course, always ready to supply that match. They publish an annual accounting "How Rhode Island Compares" that presents a collection of state rankings of various spending categories compared to each state's total personal income, and to its population. From these reports, politicians at the state and local level learn that we pay too much for fire protection and education and not enough for roads, and so on, according to comparisons with other states.

But is there only one explanation for numbers like these? If there are other explanations, don't we need more

information to judge between them? And if we do, why is it not in this report?

The answers are no, yes, and you'll have to ask RIPEC.

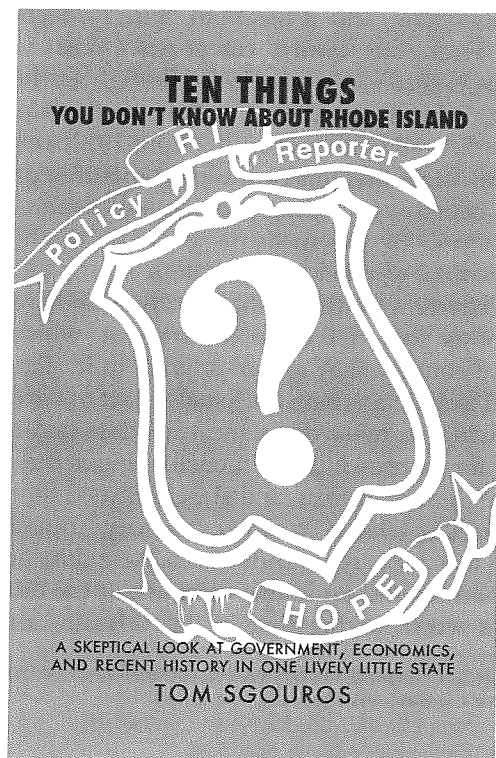
Take the education numbers as an example. Apart from the lists themselves, the report text largely confines itself to capsule histories of those comparisons. For example, we learn from the 2007 report that:

"...since FY 1995, the Ocean State has increased elementary and secondary education expenditures from \$46.23 per \$1,000 of personal income [to \$50.15] and has risen in the rankings from 28th highest to 19th highest in FY 2005."¹

Following that, there is a quick mention of where Connecticut and Massachusetts fall in these rankings (lower than RI), and then we move on to a discussion of Medicaid and welfare payments. There is no discussion of what this statistic means to the state, how it came to pass, what manner of policy changes it might suggest, or whether it's even a valid comparison. It's just a factoid, waiting to be interpreted.

So let's interpret it. The Census bureau tracks government payrolls in their census of government. In 1995, they counted 18,513 elementary and secondary education employees in Rhode Island (14,701 teachers). In 2005,

¹"How Rhode Island Compares," 2007 edition, page 13, also see Tables 14 and 15, ripec.org.



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there were 20,663 (16,157 teachers). So the decade saw us gain 10% more teachers and 18.5% more administrators. Why? Partly because the growth was not even. Between 1998² and 2005, Providence (2%), Pawtucket (7%), Warwick (5%) and other urban districts lost a small percentage of students, while districts like Barrington, Portsmouth, Cumberland, and East Greenwich all gained around 10%.

Because of limitations on the number of kids in a classroom, losing a few percent of your students seldom means you can lose an equal percentage of teachers. If you have a hundred fourth-graders, that's four classrooms. If ten of them go away, that's still four classrooms. If you get 110, you have to hire another teacher.

Obviously, the details depend on how the districting and numbers work out, and sometimes a district can get lucky and have it work the other way. But the general rule stands: a small percentage change will likely have no effect on the cost of managing a district, and a large one will. So districts that lost a few students will likely have the same number of teachers, but districts that gained a lot for their size will have had to hire.

What's more, we created around a half-dozen charter schools in that period. Counting the whole state, we weren't educating any more children (actually about 2% less), but we spread them among more school districts in a less concentrated way. So there are more teachers and more administrators.

What about teacher pay? The mean teacher's pay did go up during that period, from \$3,485 per month to \$4,877 per month. This works out to about 0.8% faster than inflation. So you can blame teacher contracts, too, if you like, but the big issue is our collective "decision" to educate more of our children in the suburbs and in charter schools.

Fire protection alarm The same series of RIPEC reports tell us that Rhode Island spends proportionally far more on fire protection than any other state in the union. According to the 2006 rankings,³ Rhode Island spent \$228 per citizen on fire protection, a huge amount ahead of next-place California at \$170, Alaska at \$164 and Nevada

and Massachusetts right behind. The US average was \$114, exactly half Rhode Island's sum.

This is a colossal amount compared to other states, and this statistic has gone far, doing much to shape the public discourse about fire protection and municipal spending in general.⁴ Even more than the education number, this demands some kind of interpretation, but there isn't any text at all about it in the RIPEC report.

Trying to understand this figure, I read some of the Census Bureau government finance classification manual.⁵ This document describes what belongs in which categories and what doesn't. For example, you learn here that employee benefits like health insurance are only reported here if they are allocable to a fire department. If they are not (if they are paid as a lump sum, or in certain cases of self-insurance), they belong in another category, called "Other and Unallocable." So I looked at the ranking for that category. The range there is huge, from \$707 per person in DC and \$626 in New York, down to \$33 in Delaware. Rhode Island, at \$191 per person, wasn't particularly low on the list (10th, well behind Massachusetts and Connecticut), but the dollar difference between states is enough to suggest that you can't discount classification issues as a cause for Rhode Island's standing in the fire protection list.

We don't have to leave it there, though. Again, the payroll report is available, and it has both "Fire Protection Total" and a "Firefighters Only" categories. What you learn from that is that we have a lot of firefighters here (2d on the list, behind only DC), but that we don't pay them particularly well (23d on the list, about 10% behind the US average). Note that this counts only monthly payroll costs, not benefits, including pension and health insurance premiums. By this measure, we're on the high side only in the total number of firefighters.

One possible reason for that is that locally, ambulances are thought of as part of the fire department, whereas in much of the country they are an adjunct to it. Emergency medical technicians here are usually part of the fire department, while in most states they are classified under "Health" for purposes of the Census. I called a researcher at the Census Bureau, and she confirmed for me that EMTs could be placed in either category,⁶ but also told me there was no way to know from their data how many EMTs had wound up in one category or the other. That said, it's worth noting that in the "Health" cate-

People are always ready to believe the worst about Rhode Island, but is that really what the data says?

²The first year in the RI Department of Education statistics web site, see www.ride.ri.gov/Applications/statistics.aspx.

³From the 2008 RIPEC report, see table 29

Rhode Island Policy Reporter

What's really going on, instead of what's said about it.

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⁴And, of course, it surfaced in the ongoing labor dispute between Providence Mayor Cicilline and the firefighter union.

⁵ftp2.census.gov/govs/class06/2006.classification_manual.pdf

⁶See the Classification guide above, page 5-30.

Table 1: The overall cost of our state and local governments, in dollars per person per year and per \$1,000 of personal income, according to my calculations with the Census data mentioned in the article. This counts only current expenses, and excludes capital costs and welfare payments. (Object code E, for the technically inclined.) Tenth on the list is nothing to crow about, but it's not worth hysterics, either.

	\$ per capita		\$ per \$1,000
DC	12,939	Alaska	281
Alaska	11,263	New Mexico	210
New York	9,024	Mississippi	209
Wyoming	8,562	DC	207
Delaware	7,384	New York	194
California	7,222	Maine	194
New Jersey	7,215	Vermont	190
Massachusetts	7,171	South Carolina	187
Vermont	7,133	Nebraska	186
Rhode Island	6,951	West Virginia	185
Nebraska	6,785	Delaware	184
Hawaii	6,781	Wyoming	181
Connecticut	6,769	Alabama	179
Maine	6,602	Ohio	177
New Mexico	6,459	Utah	174
Minnesota	6,341	Rhode Island	174
Pennsylvania	6,325	Tennessee	174
US Average	6,183	Arkansas	173
Washington	6,162	Hawaii	172
Wisconsin	6,104	California	172
Ohio	6,101	Michigan	171
Maryland	6,065	Iowa	168
Mississippi	5,990	Louisiana	168
Oregon	5,911	Wisconsin	168
Louisiana	5,910	Oregon	168
Iowa	5,898	Kentucky	166
Michigan	5,889	Indiana	166
North Dakota	5,835	Pennsylvania	163
South Carolina	5,833	Montana	162
Tennessee	5,828	North Dakota	161
Alabama	5,818	North Carolina	161
Florida	5,773	US Average	160
Illinois	5,712	Minnesota	154
Virginia	5,602	Idaho	153
Kansas	5,553	Kansas	152
Indiana	5,523	Georgia	150
West Virginia	5,455	Arizona	150
North Carolina	5,448	Florida	150
Colorado	5,419	Washington	149
Montana	5,392	Missouri	149
New Hampshire	5,363	Massachusetts	146
Nevada	5,300	New Jersey	145
Arkansas	5,229	Oklahoma	145
Utah	5,207	Illinois	139
Kentucky	5,137	South Dakota	135
Oklahoma	5,096	Virginia	134
Missouri	5,061	Nevada	132
Georgia	5,056	Texas	131
Arizona	4,942	Colorado	131
Idaho	4,883	Maryland	130
Texas	4,881	New Hampshire	128
South Dakota	4,860	Connecticut	123

gory, Rhode Island is 51st in the number of employees per capita and 50th in the amount of money we spend in that category, as a fraction of personal income. In other words, though we may be tops in the firefighter category, we're at the very bottom of spending in municipal health services, a fact that—curiously—seldom makes it onto lists like RIPEC's. When you add the health and firefighters category, Rhode Island falls down around eighth.

Why do we have a lot of firefighters? It's beyond certain that minimum-staffing provisions of union contracts are relevant to the issue. However, it's also undoubtedly true that the same dynamic described above for teachers also applies to fire departments. When houses are spread thinly across the landscape, it isn't cheap to provide urban-level response times.

The lesson once again: it's worth being very skeptical when you see us atop those lists of inter-state comparisons. After all, what are Wyoming and Alaska doing on the same list with Rhode Island? Is there anything we can learn from largely rural states where it's as far from one town to the next as it is from our eastern to our western border? Even apart from that question, there are a hundred thorny issues usually hiding in the underbrush of comparisons like this. If you really want to learn from a statistic—as opposed to just using it to score debate points—you have to hunt down every one. That's what honesty demands. ■

Natural energy

JUDITH REILLY

As we grapple with the current economic crisis, many eyes have turned to the "green economy" as a source of new jobs, new revenues, and a revitalized state. The potential benefits of renewable energy are enticing: environmental, geopolitical, and economic (if renewable energy prices can be made competitive with non-renewables). Add to these benefits the possibility of creating new jobs and increasing the tax base, and you get an attractive package. The problem is making the theoretical real, which requires an enormous investment in new infrastructure.

To help things along, the General Assembly has created two consumer-funded programs to encourage investment in renewable energy. Under the Renewable Energy Standard, electricity suppliers must ratchet up the percentage of renewables in the power they sell to RI customers from a minimum of 3% in 2007 to 16% in 2019. Suppliers are allowed to pass their costs on to the consumer with a "Renewable Energy Charge" that currently stands at \$0.00093 per kilowatt-hour (kWh), around thirty cents for the average monthly household bill.

Judith Reilly is a grumpy Providence taxpayer and homeowner.

As always, the devil is in the details. As National Grid puts it, "electricity customers in New England are served by an integrated power grid, not particular generating (plants)." Your electricity comes from a "pool" of power generated in many states. Your supplier purchases "certificates" from this pool as evidence of the theoretical sources of your power. For 2007, the 3% goal was met with a mix of power from hydroelectric, wood, and

How do we persuade the market to let us buy renewable energy?

landfill gas-burning plants. Unfortunately, only about 4% of that energy was generated in RI, with the rest coming from

nearby states. Clearly, ratepayers might want more renewable energy production here in Rhode Island in order to generate jobs and tax revenues.

This is where the state's second program comes in. The Renewable Energy Development Fund⁷ has two funding mechanisms. If an electricity supplier is not able to purchase enough certificates from the regional energy pool, it can make an Alternative Compliance Payment (ACP) to the Fund. For 2007, these payments amounted to \$217,000.

The Fund also receives another surcharge on consumers. For a ten-year period commencing January 1, 2003, the General Assembly directed electric distribution companies to collect \$.0003 per kWh of energy purchased by consumers. The Fund is currently receiving \$200,000 per month, according to the RI Economic Development Corporation (EDC), which took control of it in July 2008. As of November 2008, the Fund had a balance of \$4.1 million and two EDC full-time staffers.

For the most part, the renewable energy (RE) technologies supported by the Fund are those used to produce electricity and not heat: solar, wind, wave and tide, geothermal, ocean thermal, biomass, and small hydro. Biodiesel is not covered. The Fund is supposed to prioritize projects actually located in Rhode Island, and can be used not only for construction of power-producing facilities, but to fund R&D and other activities "directly related" to in-state RE projects.

As of November 2008, \$3.2 million of the Fund has been committed to support the development of the RI Ocean Special Area Management Plan (SAMP). The SAMP, slated for completion in 2010, is basically a zoning process for off-shore waters, which will create zones for commercial fishing, wildlife, shipping, and energy production. According to the state, having a SAMP will enable the planned Deepwater Wind LLC off-shore wind farm to proceed on the basis of a simpler environmental assessment in lieu of the usually time-consuming environmental impact statement process. The governor's office

says the Deepwater development, if completed on schedule, will be the first off-shore wind farm in North America and will provide 1.3 million megawatt hours per year of renewable energy—15% of all electricity used in the state. Deepwater Wind is supposed to repay the SAMP money.

Beyond the SAMP, starting in 2009, the General Assembly has mandated that the lesser of 50% of the annual surcharges collected or \$1 million be spent on municipal renewable energy projects, and the lesser of 10% or \$200,000 be spent on renewable energy in non-profit affordable housing projects. Additionally, the EDC has put in place a Pre-Development Consultant and Technical Feasibility Program which will be allocated the lesser of 10% or \$200,000 per year. Anything above the \$1.4 million maximum per year directed to those three programs goes to the "Renewable Energy Development Program." Both the feasibility program and development program are open to non-profit and for-profit organizations, in addition to municipalities and affordable housing developers. These programs make both loans and grants, depending on the situation.

This program has brought us the Town of Portsmouth's new wind turbine, which came on-line early this year. The first municipal wind turbine in RI, it was partially funded by a \$400,000 15-year loan from the RE Fund. In an interview with the Providence Journal, town finance director David P. Faucher said the turbine will lower the town's electricity bill by 25%. Additionally, credits for the electricity produced will help pay off the financing bonds and loan, as Portsmouth generates and sells the Renewable Energy Certificates mentioned above.

EDC Interim Director J. Michael Saul sees the RE Fund as just one tool in a strategic plan to make RI a green economy hub. EDC stresses job creation in assessing projects funded through the Fund's development program. For instance, the construction and installation of Deepwater Wind's 100 turbines

promises to bring 800 jobs to Quonset. The Fund also complements other EDC initiatives, such

as workforce training and an on-going study to see which manufacturers could re-tool to participate in the green economy, such an industrial plater moving from servicing the moribund auto industry to supplying solar panel manufacturers.

Occasionally the RE Fund's relationship to economic development gets a bit muddled. For instance, the EDC's decision to award \$700,000 over 10 years to United Natural Foods Inc. (UNFI) seems a bit of a stretch. That money is to pay the natural and organic food wholesaler's portion of the installation costs of solar panels at its new headquarters in Providence. This grant seems to have

A renewable energy fund shows a possible way to shape the market.

⁷RI General Laws §39-2-1.2. The RES is from §39-26

been less about increasing renewable energy production in RI than about adding a sweetener to the pot of tax-breaks offered to UNFI to relocate 150 jobs from Connecticut to Providence, with hopes that the company would add 90 more jobs within 3 years. The EDC believed that the good publicity generated by the grant would help "re-brand" Rhode Island as a center for green business. However, the publicity turned sour when UNFI had to delay its relocation due to the financial implosion of Struever Bros., the developer of the new location. A recent report in the Providence Business News says UNFI's new digs will be completed by September, a four month delay.

In general, it is wise for cities and states to avoid trying to hitch their economic development wagons to the next hot thing, because identifying such trends on time is difficult. However, it seems hard to believe that renewable energy will not become an important part of the national economy in the near future. Is it too much to hope that Rhode Island could regain its long-lost industrial might via green industry? With our coastal location, universities, and a trained and educated workforce, it is possible. With about \$2.6 million flowing into the Renewable Energy Development fund each year, plus repayment of previous loans, the Fund has the capital to finance projects that could seriously improve Rhode Island's future. The Fund comes mostly from ratepayers, including those just scraping by. Hopefully, the EDC's leadership will have the insight to identify the projects that will lead us all to a brighter, greener tomorrow. ■

BOOK REVIEW

Taming Markets

Animal Spirits

George A. Akerlof and Robert J. Shiller, Princeton University Press, 2009, 230 pages

Why are people unemployed, anyway? According to the standard economic models, an oversupply of something (like people who want to work) will see its price "adjust" until every willing seller can find a buyer. That is, wages will decline until everyone is employed.

Of course, it never works that way, and the standard answer why is that the labor market isn't free, and is distorted somehow, by minimum wage laws, by unions, or by people's unaccountable desire to eat. But for those details, all would be well, and unemployment mythical.

This is the perspective that has made so many economists into implacable foes of organized labor, but in truth, only free-market ideologues were ever satisfied with it. Over the past 25 years, a better answer has emerged, called the "efficiency wage" theory. This says an employer not only wants an employee to work, but to work well. If the wages violate some standard of fairness, you'll get a resentful employee who won't work well, and might even sabotage your business. The usual result is that wages tend to remain above the level where the market would "clear," and some people remain unemployed.

But where did this "fairness" business sneak in, and what right does it have to mess up the tidy abstractions of supply and demand?

George Akerlof and Robert Shiller step in here with their new book to say that fairness is one of the five important "animal spirits" that cause our economy to diverge from the predictions of orthodox mathematical economics. Their perspective is that these effects are every bit as real as the supply and demand curves economists so often sketch, perhaps even more so.

The authors speak from some authority. Both have made their names as thoughtful critics of free markets, committed to capitalism, but aware of how often markets seem to run off the rails when left to themselves. Akerlof won the 2001 Nobel Prize in economics for his work on "asymmetric information," the situation where sellers know far more about the goods on offer than buyers. He wrote that a high degree of asymmetry leads inevitably to a market failure, even for quality goods, because no buyer can know what they're buying. He originally found his corroboration in the used car market, but it's hard to imagine a more dramatic confirmation than the financial market upheavals of the past year.

Shiller is best known for his work in showing how the stock market is not "efficient" in the technical economics sense. His findings are that investor confidence and the prevailing wisdom (such as it is) have much more to do

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with a stock's price movements than petty details like price-to-earnings ratios.

So what are these animal spirits? Along with fairness, they list confidence, corruption, stories and money illusion. We've already seen the effect of fairness, and confidence need little explanation—confidence in the economy makes people invest, and a lack of confidence makes people divest—but the others do. Take corruption. Its effect on investor confidence is pretty easy

An economics that incorporates human nature and not just mathematical models is long overdue.

to see, but what isn't so obvious is what a large role it plays. Yet it has played a major part in each of the past three economic contractions the US economy has undergone, with the Savings and Loan crisis in the early 1990's, the Enron debacle of 2001, and the failure of the bond rating agencies like Moody's and Standard & Poor's in the current crisis.⁸ The authors gently point out that the coincidence of these scandals with financial rout is hardly a coincidence. Each made significant contributions to the loss of confidence that resulted in that rout. Ignoring the corruption creates needless mystery.

What's money illusion? A college friend told me once about taking a summer job in an Alaska cannery. Lured by wages twice as high as she could earn in Seattle, she went only to discover that all the groceries cost twice as much. Money illusion is what brought her to Alaska, and the loss of it is what happened when she arrived.

In the 1970's, after noticing that many labor contracts have cost of living adjustments (COLAs), Milton Fried-

man declared that money illusion was a thing of the past, and built his monetarist economics on that foundation. You don't have to be a naïve sophomore to fall for this. Most discussions of COLAs run aground on these shoals, too. Is a 3% COLA a raise or not? Are you happy when you get one, or just relieved? What's more, corporate accounting is not done with inflation-adjusted dollars, so money illusion is built into corporations' books. In other words, Friedman seriously overstated the case, leaving his grand monetarist edifice with a foundation of Jell-O.⁹

The authors also spend some time on the economic effects of the stories we tell each other about the economy and how to succeed. But the best part of the book follows the introduction of these animal spirits. This is where they take these insights, and other findings from behavioral economics, and apply them to the important questions, like why unemployment persists, why real estate markets boom and bust, and why poverty persists among some minorities. What they show is that a number of phenomena that remain poorly understood using the standard economic models, become fairly easy to account for when you incorporate some basic insights about human nature.

In many ways, this is the economics that John Maynard Keynes envisioned in his *General Theory*, was championed by John Kenneth Galbraith later, but was sidetracked by the mathematization of the field in the postwar years. People hope and fear as well as think and spend, and an economics that takes that into account is long overdue. Welcome it by checking out this book. ■

⁸As a bonus, the book gives the best putdown of Milton Friedman's monetarism I've run across. In pointing out that Friedman had some good insights but made far too much of them, Paul Samuelson said of him that he was like the boy who learned how to spell banana, but didn't know when to stop.

⁸Not to mention Bernie Madoff's own gargantuan chicanery.

Coming out July 20:
"Ten Things You Don't
Know About Rhode
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United States Department of Labor

Fair Labor Standards Act of 1938:

Maximum Struggle for a Minimum Wage

By [Jonathan Grossman](#)

When he felt the time was ripe,
President Roosevelt asked
Secretary of Labor Perkins,
'What happened to that
nice unconstitutional bill
you had tucked away?'

On Saturday, June 25, 1938, to avoid pocket vetoes 9 days after Congress had adjourned, President Franklin D. Roosevelt signed 121 bills. Among these bills was a landmark law in the Nation's social and economic development -- Fair Labor Standards Act of 1938 (FLSA). Against a history of judicial opposition, the depression-born FLSA had survived, not unscathed, more than a year of Congressional altercation. In its final form, the act applied to industries whose combined employment represented only about one-fifth of the labor force. In these industries, it banned oppressive child labor and set the minimum hourly wage at 25 cents, and the maximum workweek at 44 hours.¹

Forty years later, a distinguished news commentator asked incredulously: "My God! 25 cents an hour! Why all the fuss?" President Roosevelt expressed a similar sentiment in a "fireside chat" the night before the signing. He warned: "Do not let any calamity-howling executive with an income of \$1,000 a day, ...tell you...that a wage of \$11 a week is going to have a disastrous effect on all American industry."² In light of the social legislation of 1978, Americans today may be astonished that a law with such moderate standards could have been thought so revolutionary.

Courting disaster

The Supreme Court had been one of the major obstacles to wage-hour and child-labor laws. Among notable cases is the 1918 case of *Hammer v. Dagenhart* in which the Court by one vote held unconstitutional a Federal child-labor law. Similarly in *Adkins v. Children's Hospital* in 1923, the Court by a narrow margin voided the District of Columbia law that set minimum wages for women. During the 1930's, the Court's action on social legislation was even more devastating.³

New Deal promise. In 1933, under the "New Deal" program, Roosevelt's advisers developed a National Industrial Recovery Act (NRA).⁴ The act suspended antitrust laws so that industries could enforce fair-trade codes resulting in less competition and higher wages. On signing the bill, the President stated: "History will probably record the National Industrial Recovery Act as the most important and far-reaching legislation ever enacted by the American Congress." The law was popular, and one family in Darby, Penn., christened a newborn daughter Nira to honor it.⁵

As an early step of the NRA, Roosevelt promulgated a President's Reemployment Agreement "to raise wages, create employment, and thus restore business." Employers signed more than 2.3 million agreements, covering 16.3 million employees. Signers agreed to a workweek between 35 and 40 hours and a minimum wage of \$12 to \$15 a week and undertook, with some exceptions, not to employ youths under 16 years of age. Employers who signed the agreement displayed a "badge of honor," a blue eagle over the motto "We do our part." Patriotic Americans were expected to buy only from "Blue Eagle" business concerns.⁶

In the meantime, various industries developed more complete codes. The Cotton Textile Code was the first of these and one of the most important. It provided for a 40-hour workweek, set a minimum weekly wage of \$13 in the North and \$12 in the South, and abolished child labor. The President said this code made him "happier than any other one thing...since I have come to Washington, for the code abolished child labor in the textile industry." He added: "After years of fruitless effort and discussion, this ancient atrocity went out in a day."⁷

A crushing blow. On "Black Monday," May 27, 1935, the Supreme Court disarmed the NRA as the major depression-fighting weapon of the New Deal. The 1935 case of *Schechter Corp. v. United States* tested the constitutionality of the NRA by questioning a code to improve the sordid conditions under which chickens were slaughtered and sold to retail kosher butchers.⁸ All nine justices agreed that the act was an unconstitutional delegation of government power to private interests. Even the liberal Benjamin Cardozo thought it was "delegation running riot." Though the "sick chicken" decision seems an absurd case upon which to decide the fate of so sweeping a policy, it invalidated not only the restrictive trade practices set by the NRA-authorized codes, but the codes' progressive labor provisions as well.⁹

As if to head off further attempts at labor reform, the Supreme Court, in a series of decisions, invalidated both State and Federal labor laws. Most notorious was the 1936 case of *Joseph Tipaldo*.¹⁰ The manager of a Brooklyn, N.Y., laundry, Tipaldo had been paying nine laundry women only \$10 a week, in violation of the New York State minimum wage law. When forced to pay his workers \$14.88, Tipaldo coerced them to kick back the difference. When Tipaldo was jailed on charges of violating the State law, forgery, and conspiracy, his lawyers sought a writ of habeas corpus on grounds the New York law was unconstitutional. The Supreme Court, by a 5-to-4 majority voided the law as a violation of liberty of contract.¹¹

The Tipaldo decision was among the most unpopular ever rendered by the Supreme Court. Even bitter foes of President Roosevelt and the New Deal criticized the Court. Ex-President Herbert Hoover said the Court had gone to extremes. Conservative Republican Congressman Hamilton Fish called it a "new Dred Scott decision" condemning 3 million women and children to economic slavery.¹²

A switch in time. Wage-hour legislation was a campaign issue in the 1936 Presidential race. The Democratic platform called for higher labor standards, and, in his campaign, Roosevelt promised to seek some constitutional way of protecting workers. He tried to pave the way for such legislation in his speeches and new conferences in which he spoke of the breakdown of child labor provisions, minimum wages, and maximum hour standards after the demise of the NRA codes.

When Roosevelt won the 1936 election by 523 electoral votes to 8, he interpreted his landslide victory as support for the New Deal and was determined to overcome the obstacle of Supreme Court opposition as soon as possible. In February 1937, he struck back at the "nine old men" of the Bench: He proposed to "pack" the Court by adding up to six extra judges, one for each judge who did not retire at age 70. Roosevelt further voiced his disappointment with the Court at the victory dinner for his second inauguration, saying if the "three-horse team [of the executive, legislative, and judicial branches] pulls as one, the field will be ploughed," but that the field will not be ploughed if one horse lies down in the traces or plunges off in another direction."¹³

However, Roosevelt's metaphorical maverick fell in step. On "White Monday," March 29, 1937, the Court reversed its course when it decided the case of *West Coast Hotel Company v. Parrish*.¹⁴ Elsie Parrish, a former chambermaid at the Cascadian Hotel in Wenatchee, Wash., sued for \$216.19 in back wages, charging that the hotel had paid her less than the State minimum wage. In an unexpected turn-around, Justice Owen Roberts voted with the four-man liberal minority to uphold the Washington minimum wage law.

As other close decisions continued to validate social and economic legislation, support for Roosevelt's Court "reorganization" faded. Meanwhile, Justice Roberts felt called upon to deny that he had switched sides to ward off Roosevelt's court-packing plan. He claimed valid legal distinctions between the Tipaldo case and the Parrish

case. Nevertheless, many historians subscribe to the contemporary view of Robert's vote, that "a switch in time saved nine."¹⁵

A young worker's plea

While President Franklin Roosevelt was in Bedford, Mass., campaigning for reelection, a young girl tried to pass him an envelope. But a policeman threw her back into the crowd. Roosevelt told an aide, "Get the note from the girl." Her note read,

I wish you could do something to help us girls....We have been working in a sewing factory,... and up to a few months ago we were getting our minimum pay of \$11 a week... Today the 200 of us girls have been cut down to \$4 and \$5 and \$6 a week.

To a reporter's question, the President replied, "Something has to be done about the elimination of child labor and long hours and starvation wages."

-FRANKLIN D. ROOSEVELT

Public Papers and Addresses, Vol. V

New York, Random House, 1936), pp. 624-25.

Back to the drawing board

Justice Roberts' "Big Switch" is an important event in American legal history. It is also a turning point in American social history, for it marked a new legal attitude toward labor standards. To be sure, validating a single State law was a far cry from upholding general Federal legislation, but the Parrish decision encouraged advocates of fair labor standards to work all the harder to develop a bill that might be upheld by the Supreme Court.

An ardent advocate. No top government official worked more ardently to develop legislation to help underpaid workers and exploited child laborers than Secretary Frances Perkins. Almost all her working life, Perkins fought for pro-labor legislation. To avoid the sometime pitfall of judicial review, she consulted legal experts in forming legislation. Her autobiographical account of her relations with President Roosevelt is filled with the names of lawyers with whom she discussed legislation: Felix Frankfurter, Thomas Corcoran, Gerard Reilly, Benjamin Cohen, Charles Wyzanski, and many others both within and outside Government.

When, in 1933, President Roosevelt asked Frances Perkins to become Secretary of Labor, she told him that she would accept if she could advocate a law to put a floor under wages and a ceiling over hours of work and to abolish abuses of child labor. When Roosevelt heartily agreed, Perkins asked him, "Have you considered that to launch such a program... might be considered unconstitutional?" Roosevelt retorted, "Well, we can work out something when the time comes."¹⁶

During the constitutional crisis over the NRA, Secretary Perkins asked lawyers at the Department of Labor to draw up two wage-hour and child-labor bills which might survive Supreme Court review. She then told Roosevelt, "I have something up my sleeve....I've got two bills ...locked in the lower left-hand drawer of my desk against an emergency." Roosevelt laughed and said, "There's New England caution for you.... You're pretty unconstitutional, aren't you?"¹⁷

Earlier Government groundwork. One of the bills that Perkins had "locked" in the bottom drawer of her desk was used before the 1937 "Big Switch." The bill proposed using the purchasing power of the Government as an instrument for improving labor standards. Under the bill Government contractors would have to agree to pay the "prevailing wage" and meet other labor standards. The idea had been tried in World War I to woo worker

support for the war. Then, President Hoover reincarnated the "prevailing wage" and fair standards criteria as conditions for bidding for the construction of public buildings. This act -- the Davis-Bacon Act -- in expanded form stands as a bulwark of labor standards in the construction industry.

Roosevelt and Perkins tried to make model employers of government contractors in all fields, not just construction. They were dismayed to find that, except in public construction, the Federal Government actually encouraged employers to exploit labor because the Government had to award every contract to the lowest bidder. In 1935, approximately 40 percent of government contractors, employing 1.5 million workers, cut wages below and stretched hours above the standards developed under the NRA.

The Roosevelt-Perkins remedial initiative resulted in the Public Contracts Act of 1936 (Walsh-Healey). The act required most government contractors to adopt an 8-hour day and a 40-hour week, to employ only those over 16 years of age if they were boys or 18 years of age if they were girls, and to pay a "prevailing minimum wage" to be determined by the Secretary of Labor. The bill had been hotly contested and much diluted before it passed Congress on June 30, 1936. Though limited to government supply contracts and weakened by amendments and court interpretations, the Walsh-Healey Public Contracts Act was hailed as a token of good faith by the Federal Government -- that it intended to lead the way to better pay and working conditions.¹⁸

A broader bill is born

President Roosevelt had postponed action on a fair labor standards law because of his fight to "pack" the Court. After the "switch in time," when he felt the time was ripe, he asked Frances Perkins, "What happened to that nice unconstitutional bill you tucked away?"

The bill -- the second that Perkins had "tucked" away -- was a general fair labor standards act. To cope with the danger of judicial review, Perkins' lawyers had taken several constitutional approaches so that, if one or two legal principles were invalidated, the bill might still be accepted. The bill provided for minimum-wage boards which would determine, after public hearing and consideration of cost-of-living figures from the Bureau of Labor Statistics, whether wages in particular industries were below subsistence levels.

Perkins sent her draft to the White House where Thomas Corcoran and Benjamin Cohen, two trusted legal advisers of the President, with the Supreme Court in mind, added new provisions to the already lengthy measure. "Ben Cohen and I worked on the bill and the political effort behind it for nearly 4 years with Senator Black and Sidney Hillman," Corcoran noted.¹⁹

An early form of the bill being readied for Congress affected only wages and hours. To that version Roosevelt added a child-labor provision based on the political judgment that adding a clause banning goods in interstate commerce produced by children under 16 years of age would increase the chance of getting a wage-hour measure through both Houses, because child-labor limitations were popular in Congress.²⁰

Congress-round I

On May 24, 1937, President Roosevelt sent the bill to Congress with a message that America should be able to give "all our able-bodied working men and women a fair day's pay for a fair day's work." He continued: "A self-supporting and self-respecting democracy can plead no justification for the existence of child labor, no economic reason for chiseling worker's wages or stretching workers' hours." Though States had the right to set standards within their own borders, he said, goods produced under "conditions that do not meet rudimentary standards of decency should be regarded as contraband and ought not to be allowed to pollute the channels of interstate trade." He asked Congress to pass applicable legislation "at this session."²¹

Senator Hugo Black of Alabama, a champion of a 30-hour workweek, agreed to sponsor the Administration bill on this subject in the Senate, while Representative William P. Connery of Massachusetts introduced corresponding legislation in the House. The Black-Connery bill had wide Public support, and its path seemed

smoothed by arrangements for a joint hearing by the labor committees of both Houses.

Generally, the bill provided for a 40-cent-an-hour minimum wage, a 40-hour maximum workweek, and a minimum working age of 16 except in certain industries outside of mining and manufacturing. The bill also proposed a five-member labor standards board which could authorize still higher wages and shorter hours after review of certain cases.

Proponents of the bill stressed the need to fulfill the President's promise to correct conditions under which "one-third of the population" were "ill-nourished, ill-dad, and ill- housed." They pointed out that, in industries which produced products for interstate commerce, the bill would end oppressive child labor and "unnecessarily long hours which wear out part of the working population while they keep the rest from having work to do." Shortening hours, they argued, would "create new jobs...for millions of our unskilled unemployed," and minimum wages would "underpin the whole wage structure...at a point from which collective bargaining could take over." [22](#)

Advocates of higher labor standards described the conditions of sweated labor. For example, a survey by the Labor Department's Children's Bureau of a cross section of 449 children in several States showed nearly one-fourth of them working 60 hours or longer a week and only one-third working 40 hours or less a week. The median wage was slightly over \$4 a week.[23](#)

One advocate, Commissioner of Labor Statistics Isador Lubin, explained to the joint Senate-House committee that during depressions the ability to overwork employees, rather than efficiency, determined business success. The economy, he reported, had deteriorated to the chaotic stage where employers with high standards were forced by cut-throat competition to exploit labor in order to survive. "The outstanding feature of the proposed legislation," Lubin said, is that "it aims to establish by law a plane of competition far above that which could be maintained in the absence of government edict." [24](#)

Opponents of the bill charged that, although the President might damn them as "economic royalists and sweaters of labor," the Black-Connery bill was "a bad bill badly drawn" which would lead the country to a "tyrannical industrial dictatorship." They said New Deal rhetoric, like "the smoke screen of the cuttle fish," diverted attention from what amounted to socialist planning. Prosperity, they insisted, depended on the "genius" of American business, but how could business "find any time left to provide jobs if we are to persist in loading upon it these everlastingly multiplying governmental mandates and delivering it to the mercies of multiplying and hampering Federal bureaucracy?"[25](#)

Organized labor supported the bill but was split on how strong it should be. Some leaders, such as Sidney Hillman of the Amalgamated Clothing Workers Union and David Dubinsky of the International Ladies' Garment Workers' Union, supported a strong bill. In fact, when Southern congressmen asked for the setting of lower pay for their region, Dubinsky's union suggested lower pay for Southern congressmen. But William Green of the American Federation of Labor (AFL) and John L. Lewis of the Congress of Industrial Organization (CIO), on one of the rare occasions when they agreed, both favored a bill which would limit labor standards to low-paid and essentially unorganized workers. Based on some past experiences, many union leaders feared that a minimum wage might become a maximum and that wage boards would intervene in areas which they wanted reserved for labor-management negotiations. They were satisfied when the bill was amended to exclude work covered by collective bargaining.

The weakened bill passed the Senate July 31, 1937, by a vote of 56 to 28 and would have easily passed the House if it had been put to a vote. But a coalition of Republicans and conservative Democrats bottled it up in the House Rules Committee. After a long hot summer, Congress adjourned without House action on fair labor standards.[26](#)

Congress-round II

An angry President Roosevelt decided to press again for passage of the Black-Connery bill. Having lost popularity and split the Democratic Party in his battle to "pack" the Supreme Court, Roosevelt felt that attacking abuses of child labor and sweatshop wages and hours was a popular cause that might reunite the party. A wage-hour, child-labor law promised to be a happy marriage of high idealism and practical politics.

On October 12, 1937, Roosevelt called a special session of Congress to convene on November 15. The public interest, he said, required immediate Congressional action: "The exploitation of child labor and the undercutting of wages and the stretching of the hours of the poorest paid workers in periods of business recession has a serious effect on buying power".²⁷

Despite White House and business pressure, the conservative alliance of Republicans and Southern Democrats that controlled the House Rules Committee refused to discharge the bill as it stood. Congresswoman Mary Norton of New Jersey, now chairing the House Labor Committee, made a valiant attempt to shake the bill loose".²⁸ Many representatives had told her that they agreed with the principles of the bill but that they objected to a five-man wage board with broad powers. Therefore, Norton told the House of Representatives that the Labor Committee would offer an amendment to change the administration of the bill from a five-man board to an administrator under the Department of Labor. Urging representatives to sign a petition to jar the bill out of committee, Norton appealed:

I now hope and urge that these Members will keep faith with me, as I have kept faith with them, and sign the petition . . . we are approaching Thanksgiving Day, . . . I do not see how any Member of this House can enjoy his Thanksgiving dinner tomorrow if he fails to put his name to that petition this afternoon.

Though Norton missed her Thanksgiving Day dead-line, by December 2, the bill's supporters had rounded up enough signers to give the petition the 218 signatures necessary to bring the bill to a vote on the House floor.²⁹

With victory within grasp, the bill became a battle-ground in the war raging between the AFL and the CIO. The AFL accused the Roosevelt Administration of favoring industrial over craft unions and opposed wage-board determination of labor standards for specific industries. Accordingly, the AFL fought for a substitute bill with a flat 40-cent-an-hour minimum wage and a maximum 40-hour week.

In the ensuing confusion, shortly, before the Christmas holiday of 1937, the House by a vote of 218 to 198 unexpectedly sent the bill back to the Labor Committee.³⁰ In her memoir of President Roosevelt, Frances Perkins wrote:

This was the first time that a major administration bill had been defeated on the floor of the House. The press took the view that this was the death knell of wage-hour legislation as well as a decisive blow to the President's prestige.³¹

Roosevelt tries again

Again, Roosevelt returned to the fray. In his annual message to Congress on January 3, 1938, he said he was seeking "legislation to end starvation wages and intolerable hours." He paid deference to the South by saying that "no reasonable person seeks a complete uniformity in wages." He also made peace overtures to business by pointing out that he was forgoing "drastic" change, and he appeased organized labor, saying that "more desirable wages are and should continue to be the product of collective bargaining."³²

The day following Roosevelt's message, Representative Lister Hill, a strong Roosevelt supporter, won an Alabama election primary for the Senate by an almost 2-to-1 majority over an anti-New Deal congressman. The victory was significant because much of the opposition to wage-hour laws came from Southern congressmen. In

February, a national public opinion poll showed that 67 percent of the populace favored the wage-hour law, with even the South showing a substantial plurality of support for higher standards.³³

Reworking the bill. In the meantime, Department of Labor lawyers worked on a new bill. Privately, Roosevelt had told Perkins that the length and complexity of the bill caused some of its difficulties. "Can't it be boiled down to two pages?" he asked. Lawyers trying to simplify the bill faced the problem that, although legal language makes legislation difficult to understand, bills written in simple English are often difficult for the courts to enforce. And because the wage-hour, child-labor bill had been drafted with the Supreme Court in mind, Solicitor Labor Gerard Reilly could not meet the President's two-page goal; however, he succeeded in cutting the bill from 40 to 10 pages.

In late January 1938, Reilly and Perkins brought the revision to President Roosevelt. He approved it, and the new bill went to Congress.³⁴

Roosevelt and Perkins prepared for rugged opposition. Roosevelt put pressure on Congressmen who had ridden his coattails to election victory in 1936 and who then knifed New Deal legislation. Perkins added to her staff Rufus Pole, a young lawyer, to follow the bill through Congress. Pole worked resourcefully pinpointed the issues that bothered some Congressmen, and identified a large number of Senators and Representatives who could be counted on to vote favorably.

Norton appointed Representative Robert Ramspeck of Georgia to head a subcommittee to bridge the gap between various proposals. The subcommittee's efforts resulted in the Ramspeck compromise which Perkins felt "contained the bare essentials she could support."³⁵ The compromise retained the 40-cent minimum hourly wage and the 40-hour maximum workweek. It did not provide for an administrator as had the previous bill which had been voted back to the committee by the House. Instead, the compromise allowed for a five-member wage board which would be less powerful than those proposed by the Black-Connery bill.

Congress-the final round

The House Labor Committee voted down the Ramspeck compromise, but, by a 10-to-4 vote, approved an even more "barebones" bill presented by Norton. Her bill following the AFL proposal, provided for a 40-cent hourly minimum wage, replaced the wage boards proposed by the Ramspeck compromise with an administrator and advising commission, and allowed for procedures for investigation into certain cases.³⁶

A message from the voters. Again, the House Rules Committee (under Rep. John J. O'Connor of New York, whom Roosevelt called an "obstructionist" who "pickled" New Deal programs) prevented discussion of the bill on the House floor by a vote of 8 to 6.³⁷ The President then put his prestige on the line. On April 30, 1938, for the sixth time since taking office, he communicated with Congress over wages and hours through a letter to Mrs. Norton. He said he had no right whatsoever as President to criticize the rules but suggested as an ex-legislator and as a friend that "the whole membership of the legislative body should be given full and free opportunity to discuss [exceptional measures] which are of undoubted national importance because they relate to major policies of Government and affect the lives of millions of people." He avoided judgement of the bill but noted that the Rules Committee, by a narrow vote, had prevented 435 members from "discussing, amending, recommitting, defeating or passing some kind of a bill." He concluded: "I still hope that the House as a whole can vote on a wage and hour bill. ...I hope that the democratic processes of legislation will continue."³⁸

Three days later, May 3, 1938, Congressman Claude Pepper won a resounding victory over anti-New Dealer J. Mark Wilcox in the Florida Senate primary. Wilcox had made New Deal programs the major issue and had labeled Pepper "Roosevelt rubber stamp."

Nothing impresses Congressmen more than election returns. The January and May victories of New Deal advocated in the South brought home to Southern Congressmen the message of how their constituents felt about fair labor standards. A petition to discharge the bill from the Rules Committee was placed on the desk of the Speaker of the House on May 6, at 12 noon. In 2 hours and 20 minutes, 218 members has signed it, and additional members were waiting in the aisles.³⁹

Braving the floor battle. Proponents of the wage-hour, child-labor bill pressed the attack. They continued to point to "horror stories." One Congressman quoted a magazine article entitled "All Work and No Pay" which told how, in a company that paid wages in scrip for use in the company store, pay envelopes contained nothing for a full week's work after the deduction of store charges.

The most bitter controversy raged over labor standards in the South. "There are in the State of Georgia," one Indiana Congressman declaimed, "canning factories working ... women 10 hours a day for \$4.50 a week. Can the canning factories of Indiana and Connecticut of New York continue to exist and meet such competitive labor costs?"⁴⁰ Southern Congressmen, in turn, challenged the Northern "monopolists" who hypocritically "loll on their tongues" words like "slave labor" and "sweat-shops" and support bills which sentence Southern industry to death. Some Southern employers told the Department of Labor that they could not live with a 25-cent-an-hour minimum wage. They would have to fire all their people, they said. Adapting a biblical quotation, Representative John McClellan of Arkansas rhetorically asked, "What profiteth the laborer of the South if he gain the enactment of a wage and hour law -- 40 cents per hour and 40 hours per week -- if he then lose the opportunity to work?"⁴¹

Partly because of Southern protests, provisions of the act were altered so that the minimum wage was reduced to 25 cents an hour for the first year of the act. Southerners gained additional concessions, such as a requirement that wage administrators consider lower costs of living and higher freight rates in the South before recommending wages above the minimum.

Though the revised bill had reduced substantially the administrative machinery provided for in earlier drafts, several Congressmen singled out Secretary Perkins for personal attack. One Perkins detractor noted that, although Congress had "overwhelmingly rebelled" against delegation of power,

We delegate to Madam Perkins the authority and power to 'issue an order declaring such industry to be an industry affecting commerce.' Now section 9 is ...one of the 'snooping' sections of the bill. Imagine the feeling of the merchant or the industry up in your district when a 'designated representative'...of Mme. Perkins' enter and inspect such places and such records'...I know no previous law going quite so far.⁴²

A resulting compromise modified the authority of the administrator in the Department of Labor.

The bill was voted upon May 24, 1938, with a 314-to-97 majority. After the House had passed the bill, the Senate-House Conference Committee made still more changes to reconcile differences. During the legislative battles over fair labor standards, members of Congress had proposed 72 amendments. Almost every change sought exemptions, narrowed coverage, lowered standards, weakened administration, limited investigation, or in some other way worked to weaken the bill.

The surviving proposal as approved by the conference committee finally passed the House on June 13, 1938, by a vote of 291 to 89. Shortly there-after, the Senate approved it without a record of the votes. Congress then sent the bill to the President. On June 25, 1938, the President signed the Fair Labor Standards Act to become effective on October 24, 1938.⁴³

Jonathan Grossman was the Historian for the U.S. Department of Labor. Henry Guzda assisted. This article originally appeared in the Monthly Labor Review of June 1978. The final section, titled "The act as law" and containing dated material, has been omitted in the electronic version.

NOTES

1. The New York Times, June 27, 28, 1938; Harry S. Kantor, "Two Decades of the Fair Labor Standards Act," Monthly Labor Review, October 1958, pp. 1097-98.
2. Franklin Roosevelt, Public Papers and Address, Vol. VII (New York, Random House, 1937), p.392.
3. Hammer v. Dagenhart, 247 U.S. 251 (1918); Adkins v. Children's Hospital, 262 U.S. 525 (1923).
4. The proper initials for the Law are NIRA. The initials for the National Recovery Administration created by the act as NRA. Following a common practice, the initials NRA are used here for both the law and the administration.
5. Roosevelt, Public Papers, II (June 16, 1933), p.246.
6. Roosevelt, Public Papers, II (July 24 and 27, 1933), pp. 301, 308-12.
7. Roosevelt, Public Papers, II (July 9 and 24, 1933), pp. 275, 99; Frances Perkins, The Roosevelt I Knew (New York, Viking Press, 1946); pp. 204-08.
8. Schechter Corp. v. United States, 295 U.S. 495(1935).
9. Arthur M. Schlesinger, The Age of Roosevelt (Boston, Mass., Houghton-Mifflin Co., 1960), pp. 277-83; Roosevelt, Public Papers, IV (May 29, 1935), pp. 198-221; John W. Chambers, "The Big Switch: Justice Roberts and the Minimum-Wage Cases," Labor History, Vol. X, Winter 1969, pp.49-52.
10. Morehead v. Tipaldo, 298 U.S. 587 (1936).
11. Ironically, like the four Schechter brothers in the NRA case who went broke, Tipaldo also suffered financially. "My customers wouldn't give my drivers their wash," he lamented. Columnist Heywood Broun quipped. "Those who live by the chisel will die under the hammer." Chambers, "Big Switch," p. 57.
12. Chambers, "Big Switch," pp. 54-58.
13. Roosevelt, Public Papers, VI (Feb. 5 1937), pp. 51-59; VI (Mar. 4, 1937), p. 116; George Martin, Madam Secretary Frances Perkins(Boston Mass., Houghton-Mifflin Co., 1976), pp. 388-90.
14. West Coast Hotel Company v. Parrish, 300 U.S. 379 (1937).
15. Chambers, "Big Switch," pp. 44, 73; Robert P. Ingalls, "New York and the Minimum-Wage Movement, 1933-1937," Labor History, Vol. XV, Spring 1974, pp. 191-97.
16. Perkins, Roosevelt, p. 152
17. Perkins, Roosevelt, pp. 248-49, 252-53; Roosevelt, Public Papers, V(Jan. ` 3, 1936), p. 15; Jonathan Grossman with Gerard D. Reilly, Solicitor of Labor, Oct. 22, 1965.
18. 25th Annual Report, Fiscal Year 1937 (U.S. Department of Labor), pp. 34-35; Herbert C. Morton, Public Contracts and Private Wages: Experience Under the Walsh-Healey Act(Washington, D.C., The Brookings Institution, 1965), pp. 7-10; The Department of Labor (New York, Praeger Publishers, 1973), pp. 19-20, 211-13.
19. Letter from Thomas Corcoran to Jonathan Grossman, Ap. 10, 1978.

20. Perkins, Roosevelt, pp. 254-57; Roosevelt, Public Papers, V(Jan. 7, 1937); Jeremy P. Felt, "The Child Labor Provisions of the Fair Labor Standards Act," Labor History , Vol. XI, Fall 1970, pp. 474-75; Interview, Jonathan Grossman with Gerard D. Reilly, Solicitor of Labor, Oct. 22, 1965.
21. Roosevelt, Public Papers, VI(May 24, 1937), pp. 209-14.
22. Record of the Discussion before the U.S. Congress on the FLSA of 1938, I.(U.S. Department of Labor, Bureau of Labor Statistics)(Washington, GAO, 1938), pp.20-21.
23. Hearings to Provide for the Establishment of Fair Labor Standards in Employments in and Affecting Interstate Commerce and for Other Purposes, Vol. V.(1937). (U.S. Congress, Joint Committee on Education and Labor, 75th Cong., 1st sess), pp. 383-84.
24. Isador Lubin, Testimony, Hearings to Provide Fair Labor Standards(1937), pp.309-10.
25. Record of Discussion of FLSA of 1938, I(U.S. Department of Labor), pp.38, 115, 124.
26. Perkins, Roosevelt,pp. 257-59; Paul Douglas and Joseph Hackman, "Fair Labor Standards Act, I," "Political Science Quarterly Vol. LIII, December 1938, pp. 500-03, 508; The New York Times, Aug. 18, 1937.
27. Roosevelt, Public Papers, VI (Oct. 4, 1937, Oct. 12, 1937, Nov. 15, 1937), pp. 404, 428-29, 496
28. Mrs.Norton replaced Representative Connery as chair of the House Labor Committee after his death.
29. Record of Discussion of FLSA of 1938, (U.S. Department of Labor), (1937), p. 415.
30. The New York Times, Dec. 13, 1937; Douglas and Hackman, "FLSA," pp.508-11.
31. Perkins, Roosevelt, p. 261.
32. Roosevelt, Public Papers, VII (Jan. 3, 1938),p.6.
33. The New York Times, Jan. 5, Feb. 16, May 9, 1938.
34. Perkins, Roosevelt, p. 261.
35. Roosevelt, public Papers, VII (Aug. 16, 1938), pp. 488-89; Perking, Roosevelt, pp. 262-63.
36. Roosevelt, Public Papers, VI(May 24, 1937), pp. 215; Perking, Roosevelt pp. 262-63.
37. Perking, Roosevelt, p.263; Roosevelt, Public Papers, VII (Aug. 16, 1938), p.489.
38. Roosevelt, Public Papers, VII(Apr. 30, 1938), pp.333-34.
39. The New York Times, May 6, 7, 1938; Perking, Roosevelt, pp.263-64 (Perking makes an error in the date of Lister Hill's primary victory); Jonathan Grossman and James Anderson, interview with Clara Beyer, Nov, 5, 1965.
40. Record of Discussion of FLSA of 1938. V (U.S. Department of Labor), p. 873.
41. "Interview with Clara Beyer, No. 25, 1965; U.S. Record of Discussion of FLSA of 1938. V (U.S. Department of Labor), pp. 873, 915, 929.
42. Record of Discussion of FLSA of 1938. V (U.S. Department of Labor), p. 902.
43. Roosevelt, Public Papers, VI (May 24, 1937), pp. 214-16.

Random Thoughts...

Monday, August 1, 2011

The 56 hour work week for firefighters.. The harsh reality of it..

So there has been a lot buzz about many of the cities and towns in Rhode Island switching their fire department's work schedule from an average 42 hr. work week to a 56 hr. model. Replacing a 4 platoon system with a 3 platoon system. The current systems in place of 2-10 hr. days followed by 2-14 hr. nights or 24 hrs. on, 24 off, 24 on then 5 off being replaced with working every 3rd day. Most politicians want to do this and give an insult of a pay increase or none at all. The Mayor of Woonsocket offered \$80.00 per week while the Town Administrator of Middletown offers NO pay increase. Think about that. Increase your work load by about a third for virtually nothing. Show me many other professions in which this happens!

Let's figure this out by hours. In a current 2/2/4 schedule, a typical firefighter would work an average of 182.5 days at an average of 12 hours a day for a total of 2,190 hrs. A 1/1/1/5 works an average of 91.25 days with the same amount of hours at 2,190. In the proposed schedule firefighters would now work an average of 121.66 days per year with a total of 2,920 hrs. worked. This model used elsewhere provides for a "Kelly Day" which is a day off after so many shifts. There hasn't been any mention of this provision to my knowledge. The hours worked per year is increasing by 730 or 1/3. That's 730 more hours a year away from our families, missing holidays and any other important events in our lives. Also as the realities of living in the 21st century dictate, many of us work 2nd or even 3rd jobs to have a halfway decent existence. That is 730 less hours you can't do something else. This especially hits when little or no pay increase is involved. Divorce and domestic discord are already high amongst firefighters, try to sell this to your significant others who already try to keep the house together in your absence.

Let's now touch on pay. I'll use a round number of \$20.00 an hour to illustrate. Currently now a firefighter making this working a 42 hour work week will gross \$840 a week or \$43,680 a year. Under a 56 hour work week that \$20.00 an hour is now \$15.00 an hour. Guess what? You can get a job as a Basic EMT at some private ambulance companies making more. This in addition to many other jobs not in emergency services that pay comparable wages to this and less stressful or dangerous. Mayor Fontaine's proposal of \$80 more a week works out to \$1.42 more per hour. That is a complete and total insult! Let's not forget that in addition to your now meager pay, you will probably be asked to pay more for healthcare, contribute more for your pension (ironic since it is politician's mismanagement that led to pension underfunding) and any other tangibles to help their bottom line. Oh and take away paid holidays, longevity and any stipends that are contractually allowed that help bump our pay up a little bit in order to have a livable wage and we really are going to qualify for WIC.

Another argument is staffing. How long before our minimum manning clauses are abolished? Contrary to the popular belief that politicians and know-it-all citizens claim is a scam for overtime, minimum manning was established to ensure the safety of both citizens and firefighters alike. Showing up with 1 or 2 firefighters on apparatus is not even close to safe for anyone. Woonsocket has closed an engine, ladder and created a "squad" consisting of an engine/rescue with 4 firefighters assigned. If the rescue is out, the engine doesn't roll. Leaving a city of 50,000 with 3 engines and a ladder to fight a fire, provided they aren't on any other calls. Is Leo going to reopen these companies, staff them properly and agree to contract language to ensure this? I think not! The politicians want to show a surge in manpower when this is implemented, then allow attrition to thin the ranks to bare bones. Bare bones staffing + Overworked staffing = tragedy in waiting. Oh and these are the politicians who are leading a firefighter's funeral. They will appear somber and respectful,

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About Me



Sean McNulty RI


I am a public servant who is educated and believes in the nobility of serving others. I feel government has grown too large and away from the core values our forefathers envisioned. I believe in Theodore Roosevelt's philosophy of bring ourselves up by our own boot straps, a theory that we have gotten away from as people have relied too much on government to provide for their every need and that in our

get up and eulogize you as a brave firefighter and what a great person you were to give your life in doing your job all the while forgetting that perhaps their ignorance may have been a key reason in your demise. Politicians are great at spinning tragedy for political gain. Seeing then Mayor Cicilline leading the LODD funeral for DAC Day 5 years ago made me want to throw up.

One thing about most firefighters is that we truly love our jobs and give 110% day in and day out. The people we serve know if they call, we will respond and come to a solution to their problem. We don't differentiate among color, creed, religion or economic status. We serve everyone the same. It doesn't matter if you live in a million dollar mansion or a squatter in a dumpster. If you have an emergency we will respond and gladly lay our own lives on the line if need be. All we ask is that we are given the tools to effectively and safely do our jobs as well as be fairly compensated for the knowledge and expertise that we bring to the job. The politicians need to be held more accountable for their actions. Virtually destroying the lives of those who serve is a gross injustice. I would just like to remind the bean counters that you get what you pay for.

To all of my brothers and sisters, STAY STRONG, fight the good fight and don't give up! Unity will help us persevere, division will doom us to fail! Union strong, Union proud!

Posted by SeanMcNultyRI at 12:53 PM

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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.

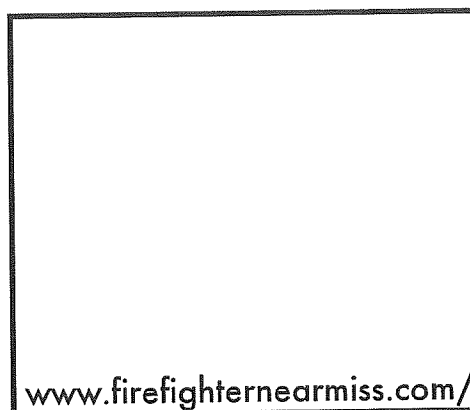
When assessing the effects of long work hours, many other variables must be considered. Specifics of the job description, work structure and its context and characteristics of the individual employee all may affect outcomes. Accordingly, those issues must be taken into account when generalizing study 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 8th 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.

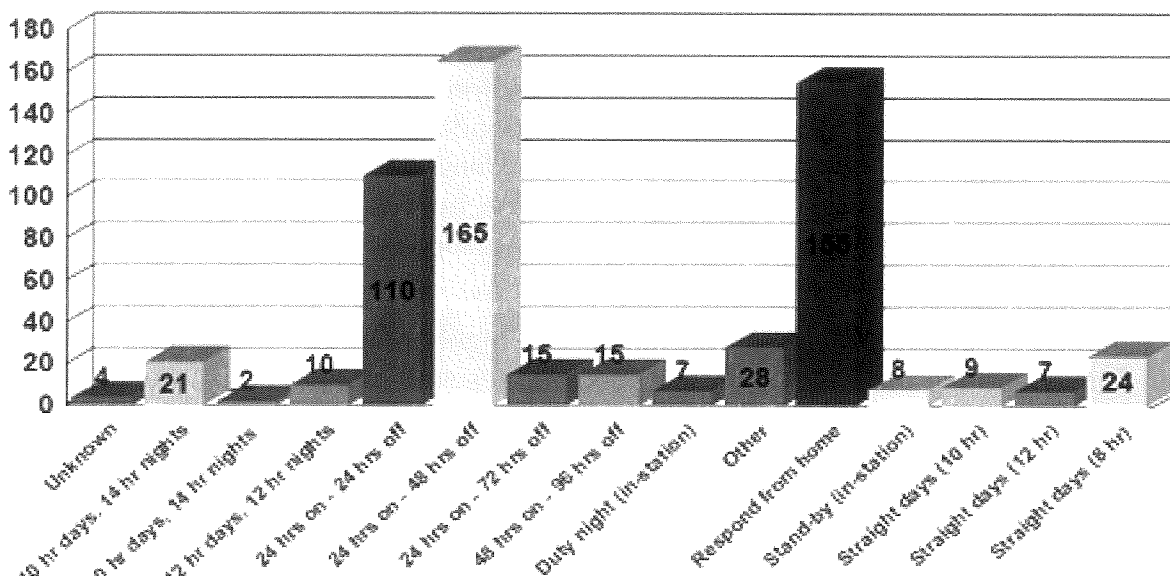
In the last few years, a 48 hours on and 96 hours off schedule has become more popular. In the Near-Miss reports, 3 percent of departments listed the newer 48-on/96-off schedule. The format originated in Southern California, because fire fighters were unable to afford local housing and faced long commutes, 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/

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). 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). 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.

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.

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.

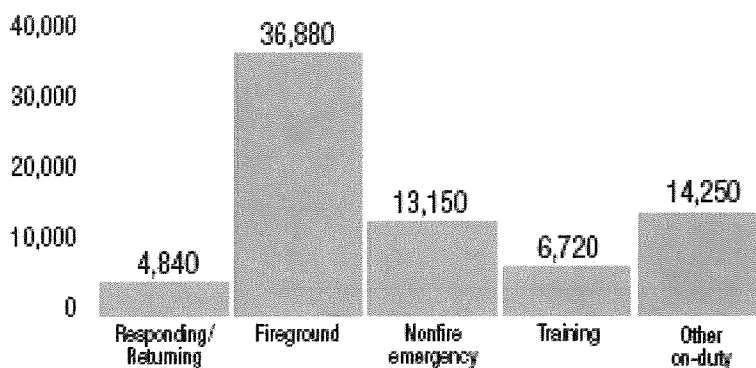
In other settings, long work hours and night shift work increase the rates of occupational accidents (see Section 1). Figure 4.2 shows the National Fire Protection



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 Experiences (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

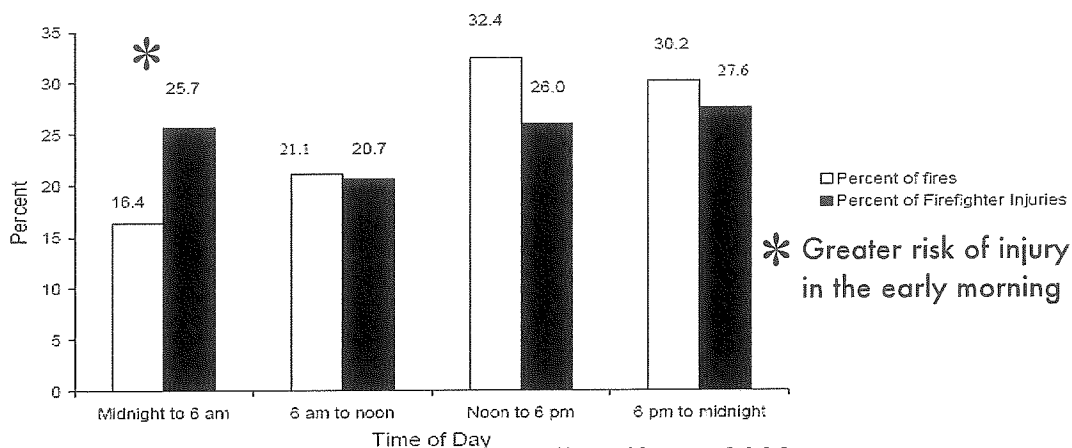
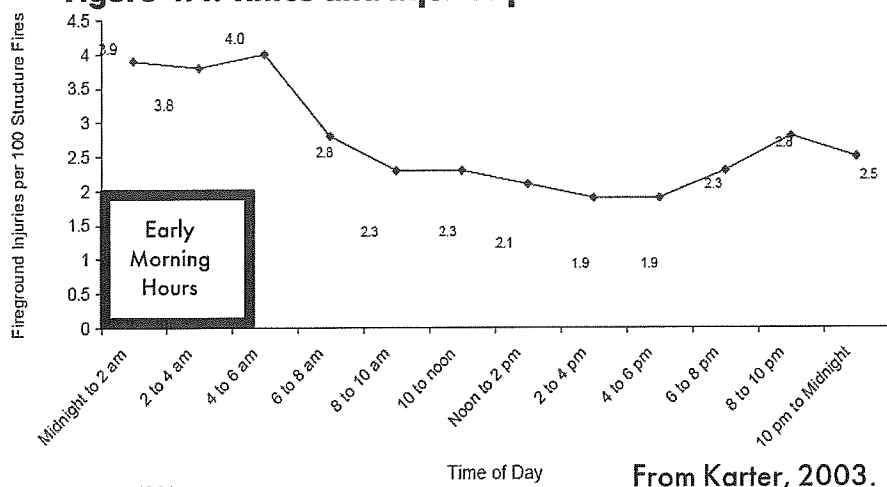


Figure 4.4. Times and Injuries per 100 Structural Fires

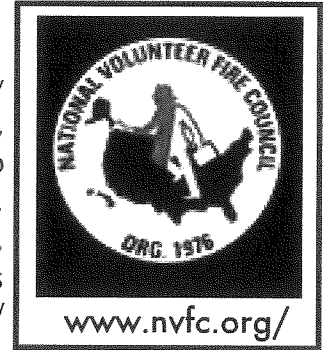


Rates of injuries from midnight to 6 AM more than doubled those of mid-afternoon.

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). 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).



LEADING THE TEAM

by Linda Willing

9 sources of firefighter stress

Firefighting was crowned most-stressful job; understanding what makes it so is key to reducing that stress

Feb 9, 2015

By Linda Willing

When I read the recent article that declared firefighting to be the most stressful job in the United States, I remembered a conversation I had long ago with a friend who was a paramedic with the private ambulance service in town.

We were talking about stress, and he said, "I don't know why everyone always talks about going on calls as being stressful. That's the fun part of the job. Dealing with company managers, that's the stressful part of the job."

He was only partly kidding. Of course there are emergency calls that cause stress for first responders. All firefighters have at least one story about a call that really got to them. But firefighters are also often in a better position to deal with that kind of job stress as they have a built-in support group among their crew, where they can talk things out, make rude jokes, and find ways to move on.

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This is not to say that firefighters don't suffer from stress. They do, but the sources of stress go far beyond just the occasional disturbing emergency response.

Based on years of working with fire departments across the country and many hours of conversation with firefighters of all ranks, I offer a list of some of the other sources of stress firefighters face.

1. Shift work

When I was single, working 24-hour shifts was fantastic. When I had a family, shift work became much more difficult to manage. Partners of firefighters who are not in the emergency services often feel like single parents and may resent being stuck doing all the work at home when the other is on shift.

For firefighters in relationships with other emergency responders, finding reliable childcare for 24- or 48-hour shifts is a real challenge. And working opposite shifts can take its toll on any relationship.

2. Sleep deprivation

Studies show that a large percentage of firefighters are chronically sleep deprived. This lack of quality sleep over time can contribute to physical and mental issues including immune system problems, more frequent accidents, changes in mood and temperament, and poor decision making.

3. Inadequate training

Well-trained firefighters are confident and tend to make good decisions. They work well in teams. Poorly trained firefighters will either feel fearful or as if they have something to prove.

The result can be either holding back when action is needed or dangerous freelancing. Both outcomes are bad for the organization and dangerous for all involved.

4. Technical problems

Gear that doesn't fit. Tools that don't work and are not replaced. Apparatus that is always breaking down when you need it most.

Firefighters are resourceful by nature and the occasional breakdown will be seen as a challenge. But chronic problems in this area will lead to the feeling that department leaders don't care about those who are doing the work in the field.

5. Bad crews

You're stuck with these people for 12, 24, or 48 hours. So having coworkers who get on your nerves can become a source of real stress over time. These behaviors may not be deliberate — the dorm snorer, the talkative political extremist, the close talker with bad breath.

But if a crew cannot work through its differences, the result can be a source of dread before every work shift.

6. Malicious coworkers

There are people who annoy you by accident. And then there are the ones who focus on making life miserable for others.

These behaviors range from just being an inconsiderate jerk to outright harassment. At all levels, the stress is considerable for all involved, not just the person who may be targeted at any given time.

7. Inconsistent policies

One person has an accident with a truck and he's verbally counseled about it. The next person who has a similar accident is suspended for three days without pay.

One firefighter becomes pregnant and is given an alternate duty assignment for the duration of her pregnancy. The next woman who gets pregnant is told that no such assignments are available.

Policies are supposed to create a sense of order and consistency in an organization, but when they are applied unevenly or based on individual preferences, the result is that no one can predict what will happen in any given circumstance. And that is a real source of stress.

8. Poor leadership

It all comes down to this, doesn't it? When firefighters trust their leaders, from company officer on up, they feel more secure.

They have faith that their leaders will make decisions with everyone's best interests in mind. They believe that decisions are fair. They see their leaders as good role models and they respect them.

But when trust and respect are absent due to leaders behaving badly or being poorly prepared for their roles, the entire organization will be stressed.

9. Those bad calls

A child who has been beaten to death by an abusive parent. The sight of a body that has fallen from the 10th story of a building. The smell of a badly burned person recovered from a fire.

These are hard things to experience, and many firefighters will benefit from some intervention after these tough calls. Many departments have different levels of support in place from peer teams to formal debriefs. The key to success with any intervention is to make sure that what is done helps and does not add to the stress already existing.

Stress is part of any job, and firefighters may have more than their share. But there also may be a tendency to focus on the stress that can develop as a result of difficult emergency response while other sources of stress might be completely overlooked. The best leaders look at mitigating all forms of workplace stress, and bravely look in the mirror as they make that assessment.

About the author

Linda F. Willing worked for more than 20 years in the emergency services, including 18 as a career firefighter and fire officer. For more than 15 years, she has provided support for fire and emergency services and other organizations through her company, RealWorld Training and Consulting. Linda's work focuses on developing customized solutions in the areas of leadership development, conflict resolution, diversity management, team building, communications and decision making. She is the author of "On the Line: Women Firefighters Tell Their Stories." Linda is also an adjunct instructor and curriculum advisor for the National Fire Academy Executive Fire Officer Program. She has a B.A. in American Studies from the University of Pennsylvania, an M.S. from Regis University in Denver in Organization Development, and is a certified mediator. To contact Linda, e-mail Linda.Willing@FireRescue1.com.



Stress takes heavy toll on firefighters, experts say

Kirsti Marohn, USA TODAY 6:52 p.m. EST January 15, 2015



(Photo: Dave Schwarz, St. Cloud (Minn.) Times)

MELROSE, Minn. — Jerry Hartsworm was the kind of firefighter who didn't wait for the alarm.

Nine months ago, when he heard over his pager that a nearby department was responding to a barn fire, he jumped into his truck and headed to the station, knowing his department likely would be called to help.

What happened at the fire left Hartsworm changed.

He was injured, possibly by a falling beam or debris, and found himself lying face-down with flames all around him.

His physical injuries healed, but the mental scars he suffered have left him tormented and unable to work. Adding to the pain is the legal battle he has faced to get the city's insurance carrier to cover his medical expenses and lost wages.



USA TODAY

New bio: Jackie Kennedy suffered from PTSD

(<http://www.usatoday.com/story/life/books/2014/12/06/jacqueline-bouvier-kennedy-onassis-the-untold-story/19884731/>)

For Hartsworm, 50, who spent four years as a volunteer on the Melrose Fire Department in central Minnesota, life has become a daily struggle.

"Every one of us, when that pager goes off, we know there's a possibility that we're going to die," he said. "And we accept the fact that we could die. But what I cannot accept is the fact that I'm discarded — that I didn't get hurt the right way to be covered."

Firefighters are often thought of as heroes, bravely rushing into a dangerous situation to help others without a thought for their own safety.

But experts say they often pay a mental and emotional price. Post-traumatic stress disorder, depression, substance abuse and suicide are common problems among firefighters.

A 2014 report from the National Fallen Firefighters Foundation found that a fire department is three times more likely to experience a suicide in a given year than a line-of-duty death.

"What they're dealing with is not what the average person who works a 9-to-5 office job is going to see," said Chief Philip Stittleburg, chairman of the National Volunteer Fire Council. "We're finally coming to realize that these sorts of incidents take a toll on you."

For volunteer fire departments, which are often found in small towns and rural areas, there's a heightened chance that someone on the department will know the victim of a fire or accident, Stittleburg said.

"That adds a whole additional stress level to the operation," he said.

While career firefighters generally work regularly scheduled hours, volunteers can get called anytime of the day or night. They have to juggle those duties with family and work obligations, Stittleburg said.

"It does take a toll on the family when you're opening the Christmas presents and suddenly, off you go to a call," he said.

Firefighters often don't talk about the emotions of their job because they don't want to show any weakness to their colleagues, the community or themselves, said Jeff Dill, founder of the Firefighter Behavioral Health Alliance.

"We try to handle it ourselves, and unfortunately, that's where the problems come in," Dill said.



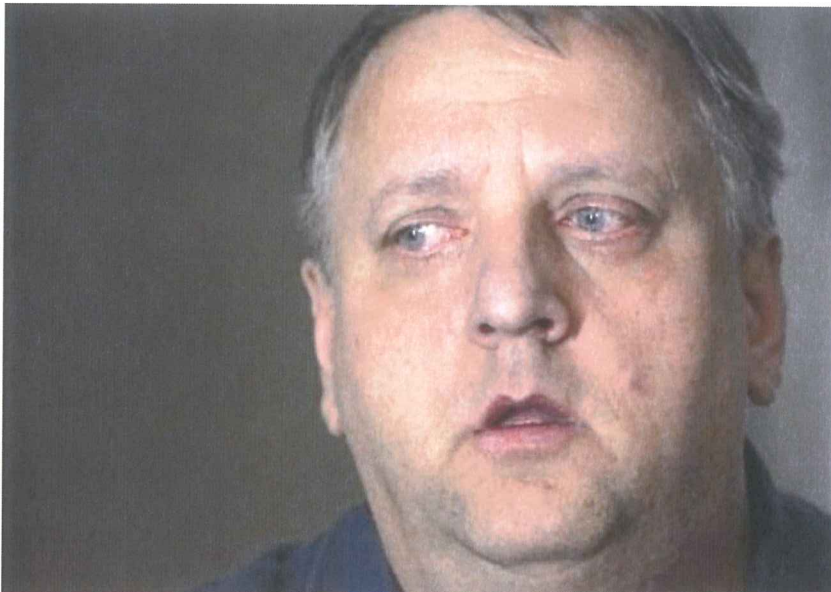
A barn fire burns in Oak Township, Minn., on May 3, 2104 . (Photo: Stearns County Sheriff's Office)

After Hartsworm was injured in the barn fire last May, he spent three days in the hospital and two more weeks recovering at home, suffering from headaches and sensitivity to light. Hartsworm's doctor sent him to a neurology clinic in the Twin Cities, where he was diagnosed with a mild traumatic brain injury.

Hartsworm began having nightmares that he was trapped, burning, with no air to breathe, watching other firefighters get killed.

He spent five weeks in a psychiatry program, where he was diagnosed with PTSD. He still struggles with depression and anxiety and hasn't been able to return to his job as a supervisor at a local food-processing plant.

"I fight for my life every day," Hartsworm said. "This is as real as going into a fire every day for me."



Volunteer firefighter Jerry Hartsworm of Melrose, Minn., was injured fighting a fire last May. (Photo: Dave Schwarz, St. Cloud (Minn.) Times)

Stittleburg's organization and others are trying to reduce the stigma surrounding mental health that exist in many fire departments.

"I think there is awareness, but it is growing at a much slower rate than we would like to see," he said.

Local officials can help by making sure there are employee-assistance programs available and that managers in the fire department are trained to recognize symptoms of stress, Stittleburg said.

Chief Kenneth Finlay

"It all boils down to changing the culture of the profession, and that in turn boils down to leadership," he said.

Dill travels around the country presenting workshops on mental health to fire departments. He said attitudes about mental health are changing.

"Fire chiefs are saying, 'We need to pay attention to this,' " Dill said. "People are starting to see the light. And that's what we need, because we're losing too many of our brothers and sisters."

Marohn also reports for the St. Cloud Times

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Random Thoughts...

Thursday, May 28, 2015

The Current Assault on Firefighters in Rhode Island...

There is major doings here in Rhode Island regarding professional firefighters and their current work schedule. The majority of professional firefighters work an averaged workweek of 42 hrs. in an 8 week cycle. This is done in either a 24 on, 24 off, 24 on then 5 off model or the more traditional 2-10 hr. days, 2-14 hr. nights followed by 4 days off. This pretty much brings firefighting in line with other careers that work a normal 40 hr. week, as part of being a productive, middle class citizen in the United States today.

The waters have become muddled as a certain labor lawyer, looking to make a name for himself, introduced the 56 hr. work week to the North Kingstown Town Council and it's Town Manager almost 4 years ago. The NK Council unilaterally implemented the change, changing how the firefighters in this community had worked for over 30 yrs. in an attempt to "save money". Mind you this is not a "distressed" community, this is a rather affluent community with heavy industry and what is considered to be one of the best deep sea ports on the east coast. Several court battles and conflicting decisions later, the RI Supreme Court affirmed this decision, albeit done because they lack the political will to hold pols accountable for violating collective bargaining RIGHTS and didn't want to saddle the taxpayers with the costs of their decisions. (mind you, the NK FF's union offered a very generous settlement that would've cost less and preserved the platoon structure to no avail.) This type of rhetoric started popping up all over the state, namely Woonsocket, Coventry and Tiverton to which the latter 2 ended up with the 56 hr. schedule; one unilaterally as a result of "receivership" the other due to negotiation. The former had it's council use the threat of it to "death roll" them in negotiations. This being a community that is a political minefield, it's former longtime mayor being the female equivalent of Beau James Walker, James Michael Curley and Buddy Cianci. She politically used about a decade of no tax increases and variable one-time fixes to push that city into financial oblivion by 2009.

Last week, the mayor of Providence announced that he was unilaterally moving the Providence Fire Dept. from their current schedule to the 56 hr. work week in an attempt to save \$5 million/yr. in overtime while laying no one off and NO pay raise for the additional hours!! The PFD stopped working a 56 hr. work week in 1966!! What's even more laughable is the fact that the mayor included funding for a fire academy of 52 in his new budget as well as participated in the IAFF's Fire Ops 101 class, an hands on class designed to educate politicians about the rigors of firefighting. He even allegedly had dinner at Engine 8/Ladder 2 the night before the announcement and knew what was coming! Shame on him! The Providence Fire Dept. is one of the busiest fire departments in the country per capita, responding to 40,000+ emergency calls per year. What is most disturbing is that Local 799 is under contract with the city until June 30, 2017 and their collective bargaining agreement spells out the terms of their work week!

This is a well orchestrated vendetta against Local 799 by a member of the mayor's administration. Funny, as they were once opponents, but neither could win alone so they joined forces. If that doesn't happen, Elorza isn't mayor, IN FACT he's not even the Democratic nominee. Talk about selling your soul! The city has inherent problems, in fact many of them I see as insurmountable to a degree, but these were problems created by the POLITICIANS! The people that get up and go to work everyday are the ones who are affected, while politicians play dangerously with your money for their own political gains! This quagmire is not the fault of the firefighters, teachers, police or other city workers, it's the fault of the politicians elected for the "best interests" of their constituents, but in the end make decisions based on what keeps them in power. It's an almost incurable disease, and

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About Me



Sean McNultyRI

I am a public servant who is educated and believes in the nobility of serving others. I feel government has grown too large and away from the core values our forefathers envisioned. I believe in Theodore Roosevelt's philosophy of bring ourselves up by our own boot straps, a theory that we have gotten away from as people have relied too much on government to provide for their every need while those in our shrinking middle class are being squeezed from above and below... My opinions and views are mine and do not reflect any organizations that I am affiliated with.

Chief Kenneth Finlay

its endemic to both parties. People often ask; "Why do public employees need unions for? There are labor laws." The answer is simple, to protect us from the ever changing political winds and to protect the rights of people who work far longer than politicians are in office!

The solutions to this financial issue are numerous, however I do believe that it can be worked out without trampling on the rights of the worker. One is to strengthen the provisions of the Firefighters Arbitration Act. This will allow loopholes to be closed and spell out in stronger language what is negotiable and what is management rights. Another would be regionalization. As a union firefighter I may take a lot of flack for saying this, but in a state of this size and density it may now a feasible option for long term survival. One hallmark of regionalization is that when you start stripping individual communities of agencies, you no longer need the extensive political bureaucracy running them. Politically, you would need at most a council to act as a taxing authority. Perhaps a tax office and assorted smaller municipal services such as recreation and elderly affairs, but the larger services are all independent of the community. No longer would we need mayors and their expensive entourages. Consider this, Mayor Elorza has basically 2 of the same positions in his administration; Chief of Staff and Chief Operating Officer. Both are expensive, both are redundant. But then again political prostitution makes this a necessary evil. Time to eliminate that and start to effect real change.

Having said all this, the biggest issue that I, along with my peers have is the lack of voice in this process. We understand the financial limitations of some of our communities and are willing to be part of the solution, however unilateral action puts us on the defensive which then makes it hard for us to be amenable to concessions. Adding a 1/3 more work to a worker's schedule without a corresponding pay raise is borderline criminal. I'm aware of FLSA and what it spells out however there are contracts and bargaining and we are afforded that right by law. Imagine if your boss told you that you had to work 14 more hours a week with no raise? You'd probably either quit or be looking for a new job. By the way, to put it into these terms, a 56 hr. work week on a normal person's schedule works out to the equivalent of working an 8 hr. day every day of the year with out a day off. Now, that's also a 1/3 more work without the pay OR a corresponding increase in time off. Yes this schedule is done in other parts of the U.S. but it is negotiated and compensated for. The "savings" the politicians claim would then be negated. Contrary to popular belief, the large majority of firefighters are not living "lavish" lifestyles, we work other jobs as well as have spouses who work just to be able to have our piece of the American Dream that our parents and grandparents could afford on ONE income! Who made that happen? Politicians! They've put the American Dream out of reach and moves like this put the carrot on an even longer stick.

Posted by **SeanMcNultyRI** at 12:00 PM

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Preview

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"

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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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Table 1 Firefighters per Population 2009/2010

Source: US Census 2009 data and Individual Fire Department Data

Agency	Rank	# of Residents per FF	FF per 1,000 Residents
Washington, DC	1	273	3.67
Memphis	2	366	2.73
Cincinnati	3	414	2.41
Rochester	4	419	2.39
Baltimore	5	425	2.35
Boston	6	451	2.22
Cleveland	7	498	2.01
Pittsburgh	8	499	2.01
Columbus	9	529	1.89
Nashville-Davidson	10	536	1.86
Newark	11	553	1.81
Houston	12	579	1.73
Seattle	13	605	1.65
Milwaukee	14	614	1.63
Chicago	15	655	1.53
San Francisco	16	663	1.51
Denver	17	668	1.50
Charlotte	18	675	1.48
Oklahoma	19	695	1.44
Austin	20	729	1.37
New York City	21	749	1.33
Dallas	22	749	1.33
Portland	23	750	1.33
Atlanta	24	751	1.33
Philadelphia	25	771	1.30
Indianapolis	26	773	1.29
Miami	27	795	1.26
Detroit	28	798	1.25
Fort Worth	29	805	1.24
San Antonio	30	839	1.19
Tucson	31	861	1.16
Jacksonville	32	899	1.11
Minneapolis	33	918	1.09
El Paso	34	949	1.05
Boise	35	952	1.05
Phoenix	36	978	1.02
Los Angeles	37	1100	0.91
Miami-Dade	38	1191	0.84
San Diego	39	1291	0.77
San Jose	40	1805	0.55

US Fire Department Staffing and Resource Allocation Survey

Spring 2011

This is a survey of the Fire Departments of the 40 largest cities in the United States (by population). Each city in the sample was surveyed for its most recent staffing and infrastructure levels at the time of the survey (Spring 2011). Data was collected from Fire Department Annual reports or by the staffing levels as reported on official Fire Department websites or by the Departments themselves. City population data is taken from the US Census of population for 2009. Cities are ranked based on their level of resource or staffing allocation along each of the metrics.

The tables in this survey provide a current picture of how the largest cities in the US are currently staffing their fire departments on a per-population basis. All staffing estimates are based on the number of uniformed firefighters and do not include staffing levels of paramedics and EMT's assigned to working ambulances *only*. The results here are therefore specific to uniformed firefighters and officers.

It is recommended that these tables are used in conjunction with each other in order to get the best picture of staffing and resource commitments across cities. The last table in this document, Table 5, provides such a summary of resources by adding up all the ranks from Tables 1-4 to get a final ranking for each city.

NFPA 1.5 FF/1,000 = 51
Chicago 670/1ff = 51
ALL Ride 4 on Engine
5 on Ladder