

## Is Overtime Creating Dangers for Firefighters and the Public?

By Barbara Reed

Many firefighters work additional hours mainly to make more money. Although there are laws and policies in place designed to protect these firefighters from excess fatigue it may not be enough. There are questions about the amount of extra work a firefighter should be allowed to perform. Some experts believe it should be based on run volume instead of hours. Other experts believe that the danger of an accident increases exponentially with excess hours worked without adequate rest regardless of run volume. Eliminating overtime might appear to be a solution. This paper will examine why there is a high demand for overtime in this first place and why the problem is not easy to solve. There is substantial documentation that firefighter accidents and fatalities happen frequently when overtime is involved and the firefighters are subjected to a high amount of stress and fatigue. The tragedies are not always limited to the firefighters themselves, often the public is involved. The question is not just about overtime. If it were innocuous then there would be little concern. The question is whether it is causing danger.

Firefighters work overtime for a variety of reasons but mostly to make money. Departments do not normally make overtime mandatory unless someone is on vacation. Then the time is limited or if a disaster ensues, and in these cases the period of time probably is limited as well. Oftentimes overtime is appealing because of the fire fighter's financial situation. The reasons could very well include issues that are stressful like divorce, child support, lack of insurance, health issues in the family or the cost of living

is just too high to survive on 40 hours a week. A fire fighter that wants overtime may already be overwhelmed.

Right now we live in a world of mixed departments, union, nonunion, fulltime and part time. Many part time firefighters work in more than one jurisdiction. They may work twenty four hours in Town A then be off a mandatory eight hours and then work another 24 in another department. They might have another eight hours of respite before starting another 24 shift elsewhere. Departments with low run volumes may consider this adequate rest because the demands are low. What they don't take into account is a structure fire that then keeps the fire fighter on a scene for eight or ten or twelve hours. Although its not typical it does occur. No one is sure how much rest the fire fighter has had and might not know until an accident occurs.

Seventy three percent of the fire fighters in America are volunteers according to the National Volunteer Fire Council (2006).<sup>1</sup> Although the causes may not be the same, such as pay issues, the lack of qualified fire fighters is still an issue. Wildland fire fighters job structures differ from other firefighters, in that they are usually deployed to site for two weeks of intense work. The effects of their long work hours relate to physical exhaustion, in addition to sleep loss.<sup>2</sup>

The number one killer of fire fighters was cardiac events between 1994 and 2004 according to Morbidity and Mortality Weekly. The second most common cause of death

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<sup>1</sup> Effects of Sleep Deprivation on Fire Fighters and EMS Responders, Final Report, June 2007, Diane L. Elliot, MD FACP, FACSM, Kerry S. Kuehl, MD, DrPH, page 45

<sup>2</sup> Effects of Sleep Deprivation on Fire Fighters and EMS Responders, Final Report, June 2007, Diane L. Elliot, MD FACP, FACSM, Kerry S. Kuehl, MD, DrPH, page 45

was motor vehicle accidents on the way to emergency scenes.<sup>3</sup> The data does not correlate how many of these deaths were or could have been related to fire fighter fatigue. There are a few studies that are starting to get to the crux of the issue about the negative effects caused by working too many hours. Two of the studies I have read complain that it is difficult to collect data.<sup>4,5</sup> Even the National Fire Fighter Near-Miss Reporting System, which is voluntary and non-punitive cannot seem to get the handle on quality information.<sup>6</sup>

Many fire departments cannot hire enough qualified firefighters to fill their ranks. Some areas just do not have enough firefighters to go around. The shortage stems from a variety of issues but pay for firefighters is one of them that acutely affects staffing. Fire Chiefs will inform their elected officials that it is imperative to keep up with the national averages for pay. Unfortunately, many elected officials feel they are paying firefighters to sleep. Payroll is always the largest part of the budget for career departments and often times it is less expensive to pay for overtime than to add more employees.

Approximately thirty three percent of the payroll budget for full timers is benefits.<sup>7</sup> This means that it is actually cheaper to pay overtime to someone already employed by the

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<sup>3</sup> Morbidity and Mortality Weekly Report, Volume 55/No. 16, ([www.cdc.gov/MMWR](http://www.cdc.gov/MMWR))

<sup>4</sup> Effects of Sleep Deprivation on Fire Fighters and EMS Responders, Final Report, June 2007, Diane L. Elliot, MD FACP, FACSM, Kerry S. Kuehl, MD, DrPH

<sup>5</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, "Plain Language About Shiftwork", Publication 97-145, Roger R. Rosa, Michael J. Colligan, July 1997, Cincinnati, Ohio

<sup>6</sup> Effects of Sleep Deprivation on Fire Fighters and EMS Responders, Final Report, June 2007, Diane L. Elliot, MD FACP, FACSM, Kerry S. Kuehl, MD, DrPH, page 48

<sup>7</sup> Broman, Nathan, Chief, Deerfield Township Fire Rescue, Warren County, Ohio, October, 2007

department than to hire another person. Interestingly, the news media and some elected officials focus on the amount of pay some employees receive for working overtime, totally ignorant of all the issues that created the situation in the first place. Paying overtime instead of hiring new employees may actually keep the department under budget because of the cost of benefit packages. The same elected that complain because a department captain made more money than the chief would also raise hell if the chief ask for a budget increase to eliminate the problem. The elected officials need to clearly understand all facets of the issue instead of worrying about what the media is printing and the bottom line. Fire department budget issues regarding hiring more employees to stop the overtime can be handled in the same creative ways other budgetary issues are being handled. Departments should be charging for services provided to businesses and those who don't live within the jurisdiction. The sooner departments start doing this the sooner they can solve monetary issues.

Often firefighters play multiple roles for our country. They are often subject to recall by the military or they may be in the National Guard. Some are on the Urban Search and Rescue Teams or Hazardous Materials Teams. They may have specialized training in Weapons of Mass Destruction and may be called away by the federal government.

The policies of neighboring departments can have an affect as well if the two have mutual aide agreements. It is dangerous for all the firefighters on the scene, regardless of where they come from if any of them are fatigued or overly tired.

Overtime is not the only variable that can cause injury or fatalities. Stress levels can be high because of the nature of the incidents that are occurring. Situations that are

severe and extremely intense require shorter rotations and more firefighters to be called to the scene. Local resources can be depleted quickly and firefighters can be called back to work before they have had adequate recovery time. The effect on the fire fighters is the same as too much overtime.

In most departments overtime is offered to the people with the least hours that are qualified to work the position that is available. If it is a union shop, the contract may dictate how this is done. Eventually the hours are offered to an employee who will receive overtime pay because the shift will put them over regular work hours. The circumstances can vary. Officers for instance, who work forty hours, Monday through Friday, might pick up shifts from 1800 hours to 0600 hours and then work their regular shift from 0800 to 1400 hours. By day they are fire inspectors and by night they are paramedics, APO, or firefighters. They may get some sleep at night or none at all. Is being a fire inspector different than fighting a fire? Is it different than being a paramedic? Most likely, one would get as many different answers as the number of people queried. Is it permissible to be a firefighter by night because the “day job” is not as demanding? What are the consequences of a mistake by an inspector? Is the issue simply there is room for tragic error because of the hours worked without regard to the kind of work? Throughout the research material no mention has been made of differentiating between the kinds of jobs performed, only the effect of the number of hours worked.

Firefighters: Nature of the work and working conditions

The U.S. Department of Labor, Bureau of Labor Statistics maintains job descriptions in the Occupational Outlook Handbook.<sup>8</sup>

“During duty hours firefighters must be prepared to respond immediately to a fire or any other emergency that arises. Because fighting fires is dangerous and complex, it requires organization and teamwork. At every emergency scene, fire fighters perform specific duties assigned by a superior officer. At fires, they connect hose lines to hydrants; operate a pump to send water to high-pressure hoses, and position ladders to enable them to deliver water to the fire. They also rescue victims, provide emergency medical attention as needed, ventilate smoke-filled areas, and attempt to salvage the contents of buildings. Their duties may change several times while the company is in action. Sometimes they remain at the site of a disaster for days at a time, rescuing trapped survivors and assisting with medical treatment.”

Working conditions are described as: “Work hours of fire fighters are longer and vary more widely than hours of most other workers. Many work more than 50 hours a week, and sometimes they may work even longer. In some agencies, fire fighters are on duty for 24 hours, then off for 48 hours, and receive an extra day off at intervals. In others, they work a day shift of 10 hours for 3 or 4 days, a night shift of 14 hours for 3 or 4 nights, have 3 or 4 days off then repeat the cycle. In addition, firefighters often work extra hours at fires and other emergencies and are regularly assigned to work holidays. Fire fighting involves the risk of death or injury from sudden cave-ins of floors, toppling walls, traffic accidents when responding to calls, and exposure to flames and smoke.

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<sup>8</sup> U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, [www.bls.gov](http://www.bls.gov), Fire Fighting Occupations

Firefighters may also come in contact with poisonous, flammable, or explosive gases and chemicals, as well as radioactive or other hazardous materials that may have immediate or long-term effects on their health. For these reasons, they must wear protective gear that can be very heavy and hot.”

In discussing the issue of what constitutes too many hours of work for firefighters it must also be taken into account the nature of the work. The job description prepared by the federal government leaves no doubt about how dangerous and stressful it can be to be a firefighter. The National Institute for Occupational Safety and Health’s publication, “Plain Language About Shiftwork” explains the problems that arise when employees work nightshift and varying shifts.<sup>9</sup> Some of the issues are physiological and caused by the human body’s circadian rhythm.<sup>10</sup> When it becomes dark outdoors the human body naturally prepares for sleep by producing melatonin. This chemical tends to make people drowsy. A well-rested individual can overcome the urge to sleep but those who are sleep deprived have trouble with concentration and motor skills. Some studies indicate that each hour of sleep deprivation has the same effect as drinking an ounce of alcohol. The publication indicates that even those on a permanent night schedule never really overcome the urge to sleep. Those individuals on rotating schedules, a scenario that

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<sup>9</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, “Plain Language About Shiftwork”, Publication 97-145, Roger R. Rosa, Michael J. Colligan, July 1997, Cincinnati, Ohio

<sup>10</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, “Plain Language About Shiftwork”, Publication 97-145, Roger R. Rosa, Michael J. Colligan, July 1997, Cincinnati, Ohio, page 7

would be applicable to firefighters, have a greater problem overcoming fatigue and drowsiness. The speed of the rotation is a mitigating factor as well as the direction. The speed refers to the amount of time the worker has to rest between changing from one shift to another. The direction of the rotation refers to whether they are going from a daytime schedule to nighttime or vice versa. The publication indicates it is easier for a worker to go from a day schedule to a night schedule with limited rest in between.<sup>11</sup> The more a person works, the less time they have to rest. Life does not revolve around work for most people. They still have responsibilities at the end of the workday, children, spouses, errands, doctor appointments, etc. It is important for employers to realize that just because an employee worked overtime he or she may not be able to go home and go to sleep. Fatigue is compounded when employees continue to work extra hours day after day and requires a longer recovery time to get adequate rest to return to status quo.<sup>12</sup>

Firefighters by description are ticking time bombs simply because they are continually working, day, evening and nighttime shifts in an occupation that is inherently dangerous and stressful. Adding overtime, especially over an extended period of time puts the firefighters and those they serve in danger. At minimum, overtime should be

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<sup>11</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, "Plain Language About Shiftwork", Publication 97-145, Roger R. Rosa, Michael J. Colligan, July 1997, Cincinnati, Ohio, page 8

<sup>12</sup> U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, "Plain Language About Shiftwork", Publication 97-145, Roger R. Rosa, Michael J. Colligan, July 1997, Cincinnati, Ohio, page 10

limited for each employee. There is enough research to indicate that too much overtime is harmful.

Interestingly, it appears that drawing conclusions about sleep deprivation caused by too much overtime is difficult to assess. The June, 2007 report on “The Effects of Sleep Deprivation on Fire Fighters and EMS Responders” admits it is difficult to draw conclusions because most of the data available is anecdotal. Research is going to be necessary to evaluate the issues of the subject directly.<sup>13</sup>

**What actions could be taken to reduce the risk of fire fighters?  
working too many hours?**

In order to subrogate the problem of overtime creating overly tired firefighters a nationwide campaign should be established in America. Ideally the International Association of Fire Fighters should head up this cause. Their members are the ones that are most at risk. They are at risk because they are putting in the overtime and because they must work with part timers who put in too many hours. The union should limit the overtime their members can work by contract negotiation. The union should also refuse to work with part timers who are working extensive overtime. This may sound like an impossible task but if they negotiate the requirements over a period of years it will gradually reduce the risk. The governments will have to increase payroll in order to compensate for the lack of fire fighter hours available. Increasing pay rates and reducing the potential of danger will encourage more people to become fire fighters and apply for the positions.

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<sup>13</sup> Effects of Sleep Deprivation on Fire Fighters and EMS Responders, Final Report, June 2007, Diane L. Elliot, MD FACP, FACSM, Kerry S. Kuehl, MD, DrPH

Fire departments can reduce the risk caused by overtime fatigue by minimizing the number of hours a fire fighter can work. The immediate result will be a shortage of employees to cover shifts. Many departments can survive this decision because they have extensive mutual aide agreements with surrounding jurisdictions. The departments simply request more “help” if they find themselves short. Some departments can maintain this tactic over long periods of time because the number of actual structure fire calls is low. Doing it this way is a little more problematic for ambulance calls when they are 80 % of the calls. Whether not it would work would be dependent upon the total call volume. Every solution is a calculated risk because no one can simply produce fire fighters to fill the open positions.

The fire departments could take more aggressive steps in interviewing and evaluating those employees that volunteer for overtime. The fire department could create a predetermined set of criteria that must be met before an employee can work overtime. Some of the criteria could include questions that are rated numerically about the employee’s life outside the fire department. Although some could construe this as invasive, others would consider it a form of protection for the employee, the public and other firefighters.

Criteria to be rated could include:

- Number of hours worked in the last four weeks
- What is the number of runs for the employee in the last month?
- Does the employee have other employment?
- Is the employee enrolled in school, fulltime or part time?

- The employee could be given the “Life Events Survey”, a tool used to determine the stress level of a person’s life.<sup>14</sup>
- How often has the employee been out sick in the last six months?

The employee would be required to score at a certain level in order to be considered for the overtime assignment.

### **Conclusion**

There does not appear to be an immediate and decisive solution to the problem. It does appear though; those who are willing to take an aggressive stance could remedy the problem over a period of time. There is no doubt that there will be legal issues to overcome as well but in light of the problems that runaway overtime is causing those issues don’t appear to be of any greater consequence. Overtime fatigue is not something that can be completely eliminated because of large-scale emergent situations and manmade and natural disasters. Regular shift fatigue brought on by high stress levels and the nature of the work is cause enough to limit overtime. There are some issues that endanger fire fighters and the public that we can control; regular extensive overtime is one of them.

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<sup>14</sup> *The Anxiety and Phobia Workbook*, Fourth Edition, Edmund J. Bourne, Ph.D. New Harbinger Publications, Inc, Oakland, California, page 39