Surviving The Repelling Events and Staying Sane

Understanding and Controlling Stress

In the Fire Service

Steven Berger
Canton Fire Department

An applied research project submitted to the School of Fire Staff and Command

August 2002

ABSTRACT

August 16th, 1987 – a date etched in my memory forever. What happened on this date was the ill-fated flight of Northwest Airlines. Flight #255. I was at work that day and our department was called to assist for mutual aid. When we arrived, I was taken back by the sight of the scene. The cockpit of the plane, along with 4 or 5 rows of seats was still intact, as was the landing gear. But the remainder of the plane and everything on it, was shrapnel. How that little girl survived, I'll never know. After our unit extinguished the fire on the landing gear, we were told to cover up people parts with yellow rescue blankets. We had to tear the rescue blankets into small, little pieces. The landscaped was littered with small, little pieces of yellow rescue blanket. I can still see it to this day.

Why this run? Why this scene? I'd been on the department for 15 years. I'd been in burning houses, seen people burned beyond recognition. Been to plenty of fatal car accidents. I thought I had seen it all. I was OK. I could handle it.

Then August 16th, 1987. It took awhile to get over this run. I remember the police chaplain calling to see if I wanted to talk. I didn't want to talk with him. I didn't want to talk to anyone. I dealt with it by "turning it off", didn't want to know who those people were, their stories. I'd turned the news off, wouldn't read the paper. I just needed time to sort this out in my mind.

Fast forward another 15 years – to today. I've seen more death and despair in my career and still, only two runs stand out in my mind. The Del Larco house fire and Flight #255.

After 30 ½ years on the department, I feel some job stress. The small things add up, contract negotiations, management policy, paperwork, even co-workers who complain about the most idiotic things. Yes, you could say that, at times, I'm stressed out. So, if I feel this way, do others on the department feel it too? What exactly is this stress? And if others feel stressed out, what can be done about it?

The more I read on this subject, the more interesting it became. I found stories of other firefighter's that the stress "got to". I wasn't alone. Every book and journal that had a section about stress was reviewed. The World Wide Web became a good friend – a huge information center right at my fingertips.

Some of the end results were a little disappointing. Work schedules (shift work) will never be changed. Being away from home (on a work day), during a bad storm, won't change. Our township will never spend money to re-design our stations. These are the things that we just have to live with. On the bright side, there are assistance programs to educate firefighter's about stress reduction, as well as debriefing's designed to manage critical incident stress. Could that have helped me? I don't know. Unfortunately, one size doesn't fit all, as each of us are individuals with unique requirements. But it is a step in the right direction – not just for me, but for firefighter's everywhere.

TABLE OF CONTENTS

INTRODUCTION

Stress in the fire service is a problem and it's prevalent in a number of fire departments. And it appears to be growing. One study put the at-risk population of firefighters at 15 to 20 percent. Olin L. Greene, U.S. Fire Administrator, wrote, "Stress is one of the most occupational hazards facing the modern fire service. It is important to recognize exactly how stress can adversely affect our health, job performance, career decision-making, morale, and family life." As this was published by the United States Fire Administration in February 1991, could he have foreseen the coming natural disasters, the acts of terrorism, the presence of weapons of mass destruction and the additional stress these would apply to the fire service community?

The search for information for this paper was narrowed down to those stress reactions that emergency personnel are subject to. Pertinent information was gathered from a wide range of sources to define and help develop a strategy to cope with cumulative stress, acute stress, delayed stress and post-traumatic stress disorder (PTSD).

The methodology used included literature that was connected to the fire service. Pertinent information also came from magazine articles, news articles, journals, books, and the World Wide Web. This research was used to answer to following questions:

1) Are emergency personnel workers, as part of our emergency response system, a group that is at special or additional risk for psychological stress related problems?
2) Which stresses are most prevalent in the fire service and what are their signs and symptoms?

3) What can be done to manage, reduce or eliminate this risk of psychological stress in the general firefighter population?

BACKGROUND AND SIGNIFICANCE

A perfect example of the effects of acute stress, cumulative stress and Post Traumatic Stress Disorder cannot be more clearly illustrated than in the case of firefighter Robert O'Donnell. In October of 1987, 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 abuser, without a job or family and, finally, to a suicide victim. Robert O'Donnell was a psychological trauma victim. He paid the ultimate price on April 27th, 1995 when he died by a self-inflicted gun shot. According to his brother, it was because of the stress and attention of the rescue, and the anti-climax of everyday life afterward.

What is frightening about Robert O'Donnell is that he could have been one of my fellow firefighters or even, myself. The fire service's most important asset has always been its employees. Their psychological, as well as their physiological well being, is not only of vital importance to them, but also to their families, their department and their community. Many of the firefighters I work with are stressed by their own living environment, their protective gear, their officers and leaders, current management styles, co-workers, and the stress of leaving their families and loved ones alone during natural and man-made

disasters. Surprising research found that those emergency workers who were briefed before entering a horrific scene, such as an airplane crash scene, were not as psychologically traumatized, as those who did not receive the briefing.

LITERATURE REVIEW

In the United States today, what was once considered safe environments are now like war zones. In wake of the September 11th tragedy and the Columbine School shootings, no city, town, township and the like, are safe zones. We are all witnessing an alarming increase in homicides, rapes, domestic violence, child abuse, highway injuries and deaths. Fire service personnel are being asked to withstand horrendous physical and psychological assaults as they perform their duty. So why would anyone is his or her right mind, choose a career in emergency services? Oddly enough, those people who choose a career in this path, with all its inherent powerful stressors, have personalities that match them to the work. Otherwise, they would find it intolerable. Recent research shows that emergency personnel, such as firefighters, paramedics, and police officers have very different personalities from the average person who has a far less risky and/or demanding job.

A common trait in emergency personnel is that they are action oriented; they need to be in control. They can make quick decisions under pressure. They are risk takers and become easily bored. They are more interested in details and they pride themselves on a perfect job. This attention to details and the perfect job well done, sets them up for the stress associated with a failure to achieve unusually high expectations.

Certain personality types did not cope well with psychological stress. But research showed that they did cope better with proper training, instruction, and education. This training should come early because the fire service relies heavily on its personnel to meet many challenges and they should be protected from both physical and psychological trauma.

The word “stress” comes directly from the ancient Latin language. It means “force”, “pressure”, or “strain. Today, we define stress as either a response to a perceived threat, challenge or change; a physical and psychological response to any demand; or as a state of psychological and physical arousal. The common thread of these definitions is that stress is a response to something in the environment. When the environment changes, we change.

We all have different levels of stress in our lives. Some stress is helpful and is essential for a full and productive life. Positive or beneficial stress (eustress), is found in all forms of biological activity on earth. It helps us to be creative, productive, and to make necessary changes in our life-style that help preserve our lives and improve our happiness. Life without stress is impossible. Without stress, there would be no change, no growth or no productivity.

But the stress we are referring to in this paper is *distress*, the negative aspects of stress. When stress gets out of control, it becomes a destructive force that has a negative impact on our health, our personalities, our jobs, and our families.

Emergency services are one of our nation's most challenging and potentially rewarding careers. Yet many who enter this field cannot withstand the constant pressures of the job.

.

Some of the most common types of stress that emergency workers face are:

a. Conflict - which is we want to be liked by the people around us and have a difficult time accepting the fact the sometimes, no matter what you say or do, there is going to be someone who just doesn't like you. This conflict stress is not limited to family or friends, it can occur with supervisors, peers, and those we supervise.

b. Chronic Work Stressors – is one of the first signs of stress in emergency personnel. One of the most consistently voiced concerns of emergency workers is shift work. It disrupts everything from biorhythms to social life. But shifts cannot be eliminated, so emergency personnel must learn to adjust to it – but it doesn't mean they have to like it. Other chronic stressors associated with the job are harder to describe. Sometimes it's the stress from just being at work and doing nothing, from just being bored.

c. Intrapersonal Stress – which is the stress in our lives when we are not living our life in either the way or the style that we believe we should. In other words, the person who believes that he or she should be working at a certain rank or income level but is employed far below that will experience intrapersonal stress.

d. Cumulative Stress – which is the classic line "burnout". That the person is suffering through the buildup of a variety of stresses over a period of time.

e. Acute Stress Reactions – (often called critical incident stress) is a reaction to one or more particularly difficult emergency calls. Examples of critical incidents include serious injury or death to a fellow co-worker, working on a person who is a relative or close friend who is dying or in serious condition, suicide of a fellow co-worker, a disaster, a violent person who has personally threatened the emergency worker, medical runs with severely sick, injured or dead children, death to a person caused by emergency operations such as an accident between the person and the responding emergency vehicle, and almost any case with excessive media interest.

In reality, any event can be considered a critical incident if it has the ability to distress an emergency worker by overwhelming that person's usual coping ability. Several studies have indicated that more than 85% of emergency personnel have experienced acute stress reactions after working at one or

more critical incidents similar to those mentioned above. Fortunately, the majority of emergency personnel experience only temporary stress reactions and recover within a few weeks. Others take several months to fully overcome the effects of critical incident, and a small number (2%-4%) may experience such profound effects that their jobs, families, health and happiness are permanently impaired.

f. Delayed Stress – Just as its name implies, delayed stress responses are similar to acute stress reactions in that they are incident specific. Sometimes, stress reactions do not always show up at the time of a certain critical incident. In addition, emergency personnel have a difficult time expressing their emotions thereby making them especially prone to delayed stress responses and the effects of cumulative stress.

g. Post Traumatic Stress Disorder – is a serious condition that can lead to personality changes, illness, and if it is ignored, may end with the person's suicide. PTSD is the abnormal end result of a powerful and overwhelming stressful incident. It occurs when people cannot work through their normal reactions and recover from the terrible experience. They get "stuck" and life for them is changed forever.

What can be done, then, to protect the emergency worker from psychological stress and its ill effects? Since it cannot be avoided, it must be understood and managed. The

concept of good mental health and psychological well-being needs to be taught to fire officers and firefighters alike. But oddly enough, not enough material is published to address these concerns. In *Fire Command,* psychological concerns are not addressed in any of the functional sections such as safety, resources, rehabilitation, or medical. In *Essentials of Fire Fighting,* the psychological concerns of firefighters are only briefly mention, "Firefighters must be physically and mentally prepared …" Then six pages are dedicated to the firefighter's physical well-being including, physical fitness, cardiovascular training, muscle training, back injury prevention, nutrition, the effects of cigarette smoking and safety. These are all very important topics, but the mental health and the psychological wellness of firefighters are not mentioned again. Both *NFPA 1500* and *1582,* mention psychological fitness and well-being, but fail to elaborate on this important area. Is this important? Yes, interestingly enough, several recent articles, a number of books and some texts have listed firefighting as the most stressful occupation in America.

J. Mitchell who explored stress and suicide in emergency personnel wrote: "The recent suicides of (Robert) O'Donnell and other high-profile paramedics lead us to believe that emergency personnel are killing themselves in greater numbers than ever, although statistics to support this assumption are hard to find."

In a 2000 Gallup Poll entitled "Attitudes in the American Workplace", 80% of all workers feel stress on the job, nearly half say they need help in learning how to manage stress and 42% say their co-workers need help badly. Additionally, in the same survey,

9% are aware of an assault or violent act in their workplace and 18% had experienced some sort of threat or verbal intimidation in the past year.

Indeed, firefighters are a stressed subculture within a nation of stress. In 1999, suicide was the 11th leading cause of death in the United States with 29,199 deaths. That is about one death every eighteen minutes. Statistics show that there are more suicides than homicides each year in the United States by a margin of 5 to 3. From 1952 to 1992, the incidence of suicides among teens and young adults tripled. Today, it is the third leading cause of death for teenagers aged 15-19 (after motor vehicle accidents and unintentional injuries). According to the National Institute of Health, more men than women die by suicide. The ratio is four males to one female. They also state that "exposure to the suicidal behavior of others, including family members, peers, and/or via the media in news or fiction stories" has a direct link to the increase in suicides. And most significant is the statistic that 72% of all suicides are committed by white men and traditionally, firefighting is a young, white male occupation.

In April of 1996, a Jackson (Mississippi) Fire Department firefighter went on a shooting spree, killing his wife and four department officers before being wounded in a shoot-out. Occupational stress and violence are not only expensive in terms of lives lost, but also in terms of financial cost as well. According to the Workplace Violence Research Institute, the cost of workplace violence in the United States amounted to approximately $35.4 billion in 1995. This is ironic as each year, the fire service is asked to do more with fewer resources.

Suicide and workplace violence are only the tip of the iceberg. In far greater numbers, we see firefighters and other emergency workers experience non-life threatening psychological traumas. Some examples of emergency workers suffering from cumulative stress, acute stress and Post Traumatic Stress Disorder, were examined in a *JEMS* editorial:

> "But then I started to overload. I had several bad call; traumas, codes and the like. Although I had been good at shrugging these off as part of the job, I started to bring these overwhelming feelings home. My wife noticed it, but didn't understand it. Things got worse. One of my former partners was killed in a shoot-out with the police. He wasn't just a partner – he was my friend."
>
> "Then, the final straw: I responded to a fellow employee's house for a medical emergency. She refused my care but was in definite need of medical attention. A police officer on scene agreed with me. The next thing I knew, I was transporting my mentor and friend to the ED – in handcuffs – under the authority of a police committal."
>
> In a discussion of emergency services stress being like an emotional pressure cooker, the respondent angrily stated, "I'd been on the job for more than 15 years and now some psychologist from the University of Snootsville was going to miraculously help me cope with my emotions."

One of the first signs of stress in firefighters and other emergency personnel is chronic on-the-job fatigue. This is described in Paul Werfel's article "*Chronic on-the-job Fatigue*". He points out that we are all susceptible to this phenomenon and need to guard against it.

Steve Delsohn, in his book, examined the psychological stress of fire fighting. He looked at the behavior of firefighters during and after fires, stabbings, shootings, acts of domestic violence, terrorist acts, automobile accidents, airplane crashes, hurricanes, tornados and earthquakes. He examined the public's expectation of toughness and the firefighter's toughness. He said, "Firefighters can feel." This may not always be evident. The stress can be contained and hidden, but it is still there. Delsohn continued, "Everybody's a tough guy when they're at work"

This hiding and the containing of stress are part of the firefighter's problem. "Dissociation at the time of trauma may protect the victim from a full conscious appreciation of terror, helplessness, and grief, but at the cost of long-term difficulties in the 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,)

One might wonder, just how much stress is out there? In Les Krantz's work, *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. As recently as July 11, 1999, L.W. Winik was quoted in *Parade Magazine* regarding stress, "Wherever you are, whatever you do, it's a part of your life … and it's probably making you sick." One of the jobs Winik showcased was firefighting and second that was of emergency medical technicians. These jobs are dangerous. They are tough. They are also being combined in cross training throughout the nation. Winik, however, points out that "any job that has unrealistic expectations, poor communication, difficult co-workers, lack of routine or unsettling change will likely to stressful".

And finally, in the book entitled "*Organizational Risk Factors For Job Stress*", the authors examine stress symptom factors in Firefighters and Paramedic's, and come to this conclusion. "The job-stress 'monster in a box' is perhaps no more apparent and menacing than it is for professional firefighters and paramedics." The bottom line of dealing with occupational stress in the fire service is explained clearly in terms of factors and a solution is suggested. "A comprehensive approach to stress management in firefighters and paramedics must necessarily be more broadly based than critical-incident debriefings. Moreover, the results of this investigation suggest that perhaps only 15% to 20% of firefighters and paramedics are at risk and in need of intensive stress-management treatment. Perhaps by studying the mediating variables that seem to be protective for the majority of firefighters and paramedics, we can better develop preventive programs for all firefighters/paramedics and remedial programs for the at-risk groups." As early as 1990, this comprehensive approach had been suggested by

investigators such as Jeffery Mitchell and Grady Bray. In *Emergency Services Stress*, they suggest a six level model appropriately named, "Reaper." "Reaper" is quite useful when an organization begins to address the issue of stress management in a thoughtful, systematic way. Reaper stands for R-recognition, E-education, A-accept, P-permit, E-explore, and R-refer. Each of the components can stand alone, but together they form a matrix of organizational and individual wellness to combat stress in both the organization and in the individual.

PROCEDURES

The research I did was primarily done through reviewing literature from our in-house department library and the Canton Public Library. Extensive research was conducted over the internet using sites such as the International Association of Fire Fighters, the United States Fire Administration, the National Institute of Mental Health and the American Psychological Association, to name a few. Current national and local standards regarding psychological stress and mental wellness were also reviewed including *NFPA 1500 (1997 Edition)* and *NFPA 1500 (2002 Edition).*

My primary goal was to understand the stress factors that we all go through and their symptoms. Understanding "why" I feel like I do sometimes may help alleviate these feelings in the future. And finally, what programs are available to help all firefighters and emergency personnel cope with the stresses associated in our field.

It was surprising to find a scarcity of scientific data on the daily stresses exerted on firefighters and emergency responders by their work environment. Raymond J. Navarre, Human Resources Officer of the Toledo Fire Department describes these below:

1. Need for private space – the need to be away from the public and other firefighters in the fire station.
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 versus the family atmosphere and the firefighters' relationships as members of the firehouse.
4. Need to control noise and the media pollution – the need for quiet for relaxation, study and sleep.
5. Need for relaxing and comfort producing accouterments – need for furnishings and surroundings that are physically, mentally, and psychologically stress-reducing, or at least, not stress promoting.

Many of the studies examined stress as it related to mass casualty disasters, such as the World Trade Center or to specific incidents, like the Baby Jessica rescue. Cumulative stressors while known to exist, were not well examined in the literature. However, one article written by Boudreaux, Mandry and Brantley successfully examined the cumulative stressors using the Social Readjustment Rating Scale (SRRS)

Table 1 – The 14 Most Common Major Life Events Experienced by EMT's, using the SRRS as a Measure.

Rated in Order from High End Stress to Low End Stress

1. Change in financial status
2. Vacation
3. Change in living conditions
4. Personal injury or illness
5. Change in sleeping habits
6. Change in work responsibilities
7. Mortgage greater than $10,000
8. Begin or end school
9. Change in residence
10. Change in work hours/condition
11. Outstanding personal achievement
12. Change in eating habits
13. Change in social activities
14. Change in number of arguments with spouse
15. Mortgage less than $10,000

Table 2 – The 15 Most Common Daily Stressors Experience by EMTs

Daily Hassles (Non-work Days)	**Daily Hassles (Work Days)**
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 that you did not want to do	concerned about personal appearance

had sleep disturbed

concerned about personal appearance

interrupted during task/activity

interrupted while thinking/relaxing

worried about another's problems

unable to complete a task

waited longer than wanted to

experienced illness/physical discomfort

interrupted while talking

hurried to meet a deadline

did something that you did not want to do

had difficulty in traffic

money problems

unable to complete a task

interrupted while talking

worried about another's problems

unable to complete all plans for today

experienced illness/physical discomfort

A big problem is that a complete approach to the subject, even by noted experts, seems to be elusive. One approach looks at critical incident stress management. Others examine the psychological and physical illnesses after the fact. In the literature reviewed, there was definitely a lack of completeness and comprehensiveness. These limitations only emphasize the need for further examination of stress as an occupational hazard in our profession.

Few of the articles have approached the firefighters mental health on a scale starting with recruitment and monitoring it though employee maturation, advancement and finally retirement. It would seem to me that City and/or Township governments would want to leave their employees in at least as healthy a condition as they acquired them. In the critical incident stress management and the Post traumatic stress disorder articles and reports that I found, very little was said about the emotional training, or the stability of

the disaster participants prior to the incident. It makes one wonder if some personnel were already having psychological problems and the incident only acted as a means to bring them crashing down sooner?

RESULTS

Are emergency personnel workers, as part of our emergency response system, a group that is at special or additional risk for psychological stress related problems?

Firefighters are absolutely a group at special risk. Firefighters tend to be life long emergency employees and as lifelong emergency workers, cumulative stress is a significant potential problem. An increasing number of firefighters are also at special risk as the fire service continues to take on more missions, such as EMS (emergency medical services), high angle rescue, trench rescue, and hazardous materials mitigation. As our emergency forces continue to downsize or right-size, fewer responders are taking on more emergencies each year. The variety and the complexity of these emergencies are also growing. As this continues, apprehension will increase as firefighters will not be as sure of what they might encounter on the next response.

The variety of hazards that firefighters are expected to face has also increased. In addition to structure fires, domestic violence, and automobile accidents, firefighters recently have been asked to work in the midst of civil unrest, urban terrorism, structural collapse, earthquakes, and hurricanes. This was clearly evident when terrorist's hijacked

and flew US civilian airplanes into the World Trade Center. In the aftermath, 340 firefighters lost their lives. So now, the fire service has to be prepared for the stress associated with weapons of mass destruction. Firefighters are also at risk because of their inherent work environment; as the old saying goes, two hours of responding and twenty-two hours of expectation, fire stations with little or no privacy, job and domestic conflict issues, long hours, noise pollution, and the physical stress of the job. Those who respond to medical emergencies also have to consider the risk of contracting AIDs, Hepatitis, Tuberculosis, or Meningitis.

Which stresses are most prevalent in the fire service and what are their signs and symptoms?

Minor stresses that the emergency workers face are Conflict Stress, Chronic Work Stress and Intrapersonal Stress. While each of these stresses does take a toil on an emergency worker, they are usually not psychologically or physically damaging. The more dangerous stresses that befall emergency personnel are the Acute Stress Reaction (a/k/a Critical Incident Stress), Cumulative Stress (a/k/a “Burnout”), Delayed Stress, and Post Traumatic Stress Disorder.

Because the signs and symptoms of these more dangerous stresses were so lengthy, I have included the signs and symptoms in Appendix C of this term paper. They ranged from subtle signs, such as a minor increase of silence, to anger, to flashbacks of critical incident scenes and, ultimately, to suicides.

What can be done to manage, reduce or eliminate this risk of psychological stress in the general firefighter population?

First, psychological stress will never be totally eliminated. But being able to manage stress is a desirable plan. Most emergency personnel function on autopilot during an incident. Stress reactions can be reduced if personnel are well trained and properly equipped to perform at maximum level. Management should not only teach the technical skills necessary to prepare them to perform under stressful condition, but should also teach them sufficient "human elements" training, such as crisis intervention and stress management**.** Risk reduction programs should be taught, not just to new recruits, but also to firefighters and fire officers. Situational reviews (case studies involving high stress situations) should also be taught. Knowing what to expect may lead to greater feelings of control to the emergency worker. Knowing what sights, sounds, and smells to expect is an important factor in the reduction of anxiety due to a traumatic death exposure. Emergency workers should be told the worst about any scene, before entry, to minimize any surprises.

It should also be noted that privacy areas in the fire stations should be provided or increased.

Employee counseling should be provided for employees in a more informal setting. Not just to the employee, but for their family as well. Chaplain programs have been identified as extremely helpful as many individuals have a strong religious faith on which to rely for coping with stress related problems.

Emergency workers should be aware of their own vulnerabilities to acute stress reactions and know the signs and symptoms of distress in themselves as well as in others.

Proper eating habits, the right food and regular exercise programs are also beneficial to emergency personnel to keep them healthy to perform their jobs, even under the worst possible conditions.

During a critical incident, leadership should be decisive, effective and efficient. Good leadership does not just happen suddenly, it is built up over a long period of time by those who have a willingness to learn from past mistakes and absorb new and effective ideas.

Emergency workers should be urged to talk about a bad incident with trusted friends. Talking helps to clear one's mind about the incident and put things back in prospective. Generally, it helps them to know that they are not alone in their feelings and thus feel less alone and less abnormal.

Feedback, both positive and negative, is also important for emergency workers. They need to know when and how a not-so-good job was done and what can to done to correct their mistakes. But most importantly, they need to know that they did a good job and their efforts were most appreciated.

DISCUSSION

The importance of psychological wellness and stress reduction for firefighters was clearly outlined by The United States Administration's Stress Management Model Program for Firefighter Well-Being. Other leading agencies such as The International Association of Fire Fighters along 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. The following was found on the IAFF Fitness and Wellness Initiative website: "Fire fighters 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 fire fighting and emergency response system." One of the key points that was 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 to 30 plus year career and beyond."

A logical plan would be to:

- Screen potential firefighter recruits. There are several published studies that describe what personality types are at special risk for psychological stress.
- De-stress our operational environment, starting with the fire stations.
- Involve department leaders must at all levels.
- Stress education must not just involve the firefighter, but also his/her family and significant others in their lives.
- Critical incident stress management and critical incident stress debriefing information must become an important part of the department's beliefs and management strategy. Trying to use CISD on the spur of the moment creates problems; we need to determine the appropriate time for this involvement.
- Routine bench marking needs to take place throughout each employee's career. As pointed out earlier, 15% to 20% of the emergency employees currently in the field are believed to be at significant risk for mental health problems. We cannot wait until they crash. Once they crash, recovery is difficult and, at times, impossible. There must be a pro-active approach, rather than a re-active approach.
- And finally, employee exit interviews should have a mental health section. This will assure us that the individual in not leaving the fire service for the

wrong reasons. It is important to determine if the decision to retire is premature and if the employee is truly prepared to leave his/her major support group.

RECOMMENDATIONS

After researching the information for this term paper plus my own 30 plus year's of dedicated service in the Canton Fire Department, I would recommend the following:

- Psychological screening should begin in recruit school. Recruits should be made aware of the inherent dangers in this particular field, including statistics on casualties in the Fire Service. (See Appendix A). Those individuals who show signs of high risk for occupational stress as outlined in several of the articles reviewed, should receive additional training in the avoidance of occupational stress. (See Appendix B)
- On duty training should include psychological as well as physiological stress management components. This training should be provided on a yearly basis.
- Encourage leaders and fire officials to help erase the stigma often associated with seeking help for mental health problems by persuading emergency workers to use stress-reduction programs and/or individual counseling.

- All personnel should be familiar with the signs of psychological stress that may be noticeable in one or more of their co-workers. (See Appendix C)
- All fire officers should be familiar with the assistance programs available, such as:

  CISD, Critical Incident Stress Debriefings

  DNR, Disaster Response Network

  Employee Assistance Program Services

  Chaplain Programs
- Work schedules should be re-examined to enhance down time and to alleviate boredom.
- Fire Station interiors should be re-deigned for more privacy and areas of relative quiet.
- Family interaction should be encouraged to relieve feeling of duty conflict and abandonment.

In closing, there is a genuine need for stress education in the fire service. While this subject is still being explored and studied, there are firefighters out there that need help now.

Much of the information that I gathered from psychiatric websites, management text, fire service periodicals and emergency medical publications, were well informed in some areas while lacking in other areas. Even as recent as October of 2000, when the American Psychology Association invited 20 health professionals from all over the United States to attend their October conference entitled “Mental Health Needs of

Emergency Medical Services for Children Providers," there was concern about the fact that many emergency rooms and police, fire and paramedic units have no formal or informal services to address the mental health needs of service providers. Participants agreed that even scheduling debriefings or counseling sessions after stressful events is difficult. Speaker Wayne Zygowicz, division chief of the Littleton Fire Department in Littleton, Colorado described the feelings of anger, distress and guilt that firefighters who worked the Columbine High School shooting in April 1999 experienced after the incident. Underscoring the need for protocol in helping stressed staff, Zygowicz says he was unable to find comprehensive information on how to help his staff. "We found that there were no road maps for what was going to happen [with people] down the line," he says. "No one could give us the answers."

Emergency institutions and leaders need more information on ways to manage critical-incident stress and address the psychological needs among all emergency workers. More research is needed on the effectiveness of stress-reduction programs, who should provide interventions and offer debriefings, when debriefings should occur and whether interventions can make stress symptoms worse. Someone needs to consolidate this information to provide a more accurate picture for the fire service. As someone once said on another topic, "Now is the time that we must think globally, and act locally." Global knowledge and local action will help keep firefighters psychologically well in the future.

REFERENCES

American Institute of Stress. (2001). *Job Stress*. Website. Yonkers, N.Y. **www.stress.org/job.htm**

American Psychological Association. (2001) *Disaster Response Network Fact Sheet.* Website. Washington, DC. **www.apa.org/practice/drnindex.html**

American Psychological Association. (2001). *Emergency caregivers are at risk when working with children*. Website. Washington, DC **www.apa.org/monitor/feb01/emergency.html**

Beaton, R, Murphy, S, Pike, K, and Jarrett, M. (1995). *Organizational Risk Factors For Job Stress*. Washington, DC: American Psychological Association

Boudreaux, E., Mandry, C., and Brantley, P.J. (1995). Awake and Hassled, What Stresses an EMT. *JEMS, Journal of Emergency Medical Services*.

Brunacini, A.V. (1985). *Fire Command.* College Park, MD, YBS Productions

Bureau of Labor Statistics. (1999) *Fatalities among Firefighters*. Website. Washington, D.C. **www.bls.gov/opub/ted/1999/jul/wk1/art04.htm**

Carlisle, Clifford F. (1999) *The Role of Occupational Stress in the Contemporary Fire Service, Its Causation, Identification, Treatment, Reduction, and Resolution*. Applied Research Project submitted to the National Fire Academy. Emmitsburg, MD

Delsohn, S. (1996). *The Fire Inside: Firefighters Talk About Their Lives*. New York, N.Y. Harper Collins Publishers

Emotional Pressure Cookers. (1999) *JEMS, Journal of Emergency Medical Services*

International Association of Firefighters. (1999). *Fire Service Joint Labor Management Wellness/Fitness Initiative Summary.* **www.iaff.org/safe/wellness2.html**

Krantz, L. (1999). *Jobs Rated Almanac*. New York, N.Y. Saint Martin's Press

Leusch, J. (1999). In Harm's Way. *Fire Chief.*

Marmar, C.R., Weiss, D.S., Metzler, T.J., Delucchi, K.L., Best S.R., and Wentworth, M.A., (1996). Characteristics of Emergency Services Personnel Related to Peritraumatic Dissociation During Critical Incident Exposure. *American Journal of Psychiatry*

Mitchell, J. (1995) Medic Suicide. *JEMS, Journal of Emergency Medical Services*

Mitchell, J. & Bray, G. (1990). *Emergency Services Stress, Guidelines For Preserving The Health and Careers of Emergency Services Personnel*, Englewood Cliffs, N.J. Brady Publishing

National Fire Protection Association. (1997). *Standard on Fire Department Occupational Safety and Health Program* (NFPA 1500). Quincy, MA

National Fire Protection Association. (1997). *Standard on Medical Requirements for Fire Fighters* (NFPA 1582). Quincy, MA

National Fire Protection Association. (2002). *NFPA Fact Sheets*, Website, Quincy, MA

National Institute of Health. (2000). *Suicide Facts*, Website, Bethesda MD.

National Institute of Mental Health. (2001). *Facts about Post-Traumatic Stress Disorder*, Website, Bethesda, MD. **www.nimh.nih.gov/anxiety/ptsdfacts.cfm**

Navarre, R.J. (1987). Developing a Stress Reducing Fire Station. *Fire Chief.*

Rainone, Peggy Sweeney. (2000) *A Proposed Program to Support the Emotional Wellness of Firefighters*. Research Paper. Website. **www.emergency-world.com/hugs/researchpaper1.html**

United States Fire Administration. (1991). *Stress Management, Model Program For Maintaining Firefighter Well-Being*. Emmitsburg, MD: United States Fire Administration.

Werfel, P., (1999). Chronic on-the-job Fatigue. *JEMS, Journal of Emergency Medical Services.*

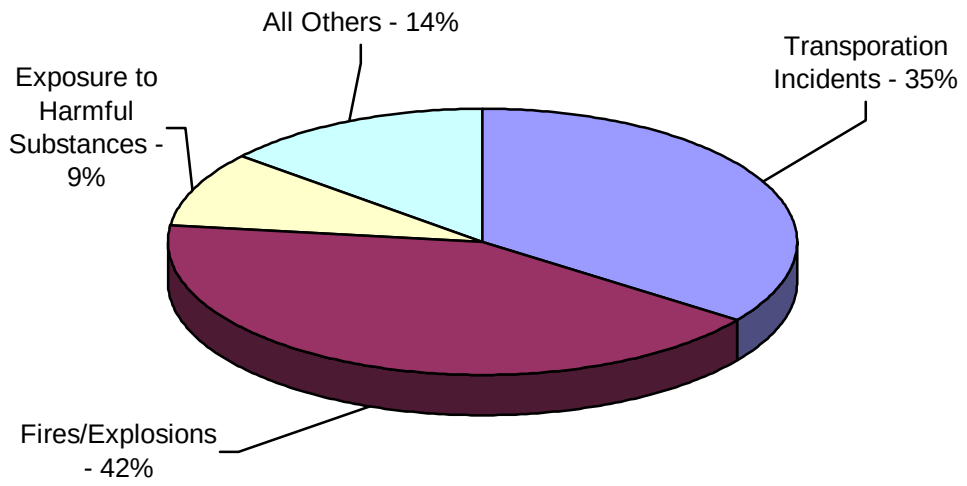
Wieder, M.A., Smith, C., and Brackage, C. (1992). *Essentials of Fire Fighting, Third Edition.* Stillwater, OK, Fire Protection Publications

Winik, L.W., (1999). Let Go Of Stress. *Parade Magazine*

Workplace Violence Research Institute. (1999) *The Cost of Workplace Violence to American Business*. Website, Palm Springs, CA **www.noworkviolence.com/articles/cost_of_workplace_violence.html**

APPENDIX A

Fatalities to Firefighters - from 1992 through 1997



Other Facts and Figures Posted On-Line

by the National Fire Protection Association:

- A total of 439 firefighters were fatally injured while on duty in 2001. Of these, 364 were career firefighters, 63 were volunteer firefighters, and 12 were non-municipal firefighters (those not employed by local public fire departments. This includes the 340 firefighters killed at the World Trade Center
- In 2000, 84,550 firefighters were injured in the line of duty. 43,056 of these injuries occurred on the fireground

APPENDIX B

Individuals That Show a Greater Chance of Experiencing Work-Related Stress Problems After Working an Incident Where There Has Been Significant Suffering and/or Death.

These personality traits may predispose a firefighter to suffer acute dissociative responses to trauma and subsequently psychological distress:

- Younger in age
- Shy, inhibited or uncertain about their identify
- Reluctant to take leadership roles
- Global cognitive styles
- Believe that their fate was determined by factors beyond their control
- Practice emotional suppression
- Utilize wishful thinking

(Marmar et al,)

APPENDIX C

Signs and Signals of Distress

Acute, delayed or cumulative stress reactions all have signals by which they can be recognized. Some are easy to notice, such as if you saw a person punch a wall. But sometimes, distress signals are more subtle and remain hidden behind a variety of distracting behaviors, communications, and issues. Even a minor increase in silence on the part of the emergency worker is a subtle sign that may have many meanings. A change like this may not be very obvious to even the co-workers of this individual.

Signals of distress may have various levels of intensity, depending on the severity of the stress reaction. A very mild, but stressful, event produces a mild stress reaction and set of distress signals which may be barely noticeable. As the intensity of the stressful situation increases, so does the intensity of the stress signals that are experienced or displayed. The greater the number and intensity of the distress signals, the more need there is for emergency personnel to recognize them quickly and respond actively and effectively. Moderate to severe stress signs and signals, when ignored or denied by that individual, are almost certain to cause illness or other forms of disruption in most men and women.

The most significant distress signal is change and all too often, emergency workers tend to deny or ignore this change. By denying or ignoring this change in themselves is dangerous in itself because the type and degree of change indicates the level of disruption

produced by the stress reactions. Change in an individual or a group may be noticed in four major areas. Changes may occur in an emergency person's (1) body or general health, and the way in which they (2) think, (3) feel, and/or (4) acts. Any significant change in one of the four major areas or a series of changes in one or more of the areas should be taken seriously as a distress signal. The greater the number of changes noticed in an emergency worker, the greater the level of distress.

Fortunately, changes that signal distress are usually temporary for emergency workers that are experiencing an acute or delayed stress reaction. Understanding and support from officers and other concerned people improve the chances of rapid recovery and usually help emergency workers to eliminate the signals of distress and restore themselves to their normal health, feelings, thoughts and usual activities. Also personal actions designed to lessen stress reactions help the recovery process.

Sometimes, changes become permanent. This is particularly common in the cumulative or chronic stress reactions. Most people will need help from a doctor if the change is a physical one or from a mental health professional if the change has occurred in the emergency worker's thinking process, emotions, or behaviors. Quick action in response to a significant change in an individual or a group may help prevent changes from becoming permanent. Therefore, emergency personnel should be urged to notice and react to stress-related changes in themselves or their fellow co-workers.

Warning Signals of Acute Stress

During a critical incident, there are many warning signals of acute stress reactions. It is not necessary for an emergency worker to have all or even a number of the signs and symptoms to be considered in the midst of a stress reaction. Even just a handful of signs and symptoms from one or more of the four main categories in each list would be enough to judge the degree of intensity of the warning signals.

It is important for the emergency worker to remember that signals of stress do not indicate weakness. They are normal in every way; they simply indicate a need for corrective action to limit the impact of a stressful event or to begin the recovery process.

Some signs or symptoms from each of the four areas listed (physical, cognitive, emotional and behavioral) are usually present in either an acute or a delayed stress reaction. Most of these signs and signals usually appear during the emergency response or within a 24 hour period following the emergency response. The lists show only some of the signs/symptoms, as stress is known to produce a wide variety of signs and signals from person to person.

Distress Signals Requiring Immediate Correction Action

Physical	Cognitive
Chest Pain	Decreased alertness to surroundings
Difficulty breathing	Difficulties making decisions
Excessive blood pressure	Hyper alertness
Collapse from exhaustion	Generalized mental confusion
Cardiac arrhythmias	Disorientation to person, place, time
Signs of severe shock	Serious disruption in thinking
Excessive dehydration	Seriously slowed thinking
Dizziness	Problems in naming familiar items
Excessive vomiting	Problem recognizing familiar people
Blood in stool	
(Note: Any of these physical changes require medical attention)	

Emotional	Behavior
Shock-like state	Excessively angry outbursts
Phobic reaction	Crying spells
General loss of control	Antisocial acts (violence)
Inappropriate emotions	Extreme hyperactivity

Common Signs and Symptoms of Distress NOT Requiring Immediate Action

Physical	Cognitive
Upset stomach	Lowered attention span
Tremors (lips, hands)	Calculation difficulties
Feeling uncoordinated	Memory problems
Profuse sweating	Poor concentration
Chills	Seeing an event over and over
Diarrhea	Distressing dreams
Rapid heart rate	Disruption in logical thinking
Muscle aches	Blaming someone
Sleep disturbance	
Dry mouth	
Shakes	
Vision problems	
Fatigue	

Emotional	Behavioral
Anticipatory Anxiety	Change in activity
Denial	Withdrawal
Fear	Suspiciousness
Survivor guilt	Change in communications
Uncertainty of feelings	Change in interactions with others

Depression

Grief

Feeling hopeless

Feeling overwhelmed

Feeling lost

Feeling abandoned

Worried

Wishing to hide

Wishing to die

Anger

Feeling numb

Identifying with victim

Increased or decreased food intake

Increased smoking

Increased alcohol intake

Overly vigilant to environment

Excessive humor

Excessive silence

Unusual behavior

Signs of Delayed Stress

Many emergency workers show little or no noticeable reaction to stress at the incident scene. Their reactions tend to show up days, or even weeks, after the incident has occurred. But the signs and symptoms of stress are just as real and painful as they would be if they occurred at the time of, or shortly after, the crisis event.

Delayed stress reactions are often recognized by the existence of intrusive images. Intrusive images may appear in the form of bothersome thoughts. They can get in the way and cause a person to experience difficulties with attention span, concentration, and

other mental functions. They may also show up as daydreams or nightmares. Usually the dreams/nightmares are vivid memories of the critical incident, sometimes exactly as the critical incident occurred or sometimes as a bizarre distortion of the incident. Sometimes the intrusive images show up through visual, auditory, smell/taste impulses. They can see the scene over and over again in their minds, or hear the sounds that occurred during the incident. Others may re-experience smells that were present at the scene, even though they are nowhere near anything that would give off such odors.

The most common physical sign of delayed stress is sleep disturbance. Emergency workers who have experienced a stressful event may have trouble falling asleep, while others wake up numerous times during the night or have bad dreams that interfere with their sleep. Still others wake up early or wake up in the morning feeling tired. Other signs include nausea, muscle tremors, cold sweat and startle responses. Loud noises, odors, and certain sights may cause a dramatic reaction in emergency workers who are suffering from delayed stress reactions.

Emotionally, an emergency worker with delayed stress can have feelings of intense grief and depression. Generally, these feelings are long after the critical incident has happened and they do not see any connection between what happened in the past and how they are feeling now. Other common signs are a growing sense of isolation, anger, irritability and rage. Other emotions include a sense of hopelessness or despair, general anxiety or fear of future events. These feelings of guilt, despair, anxiety, hopelessness and anger at oneself, which are out of control, may eventually produce suicidal thinking.

The cognitive signs of delayed stress are generally in an emergency workers thinking process. They may have mental confusion along with a lowered attention span. It may become more and more difficult for that person to make decisions or to perform problem-solving activities. They lose their ability to concentrate or to sort things out as they had done in the past. Many describe "tunnel vision" – the only thing they are able to think about is the critical incident.

Delayed stress reactions also show up in a person's behavior. Behaviors are the side effects of a mixture of physical, emotional, and cognitive factors. Withdrawal from contact with others, who love them most, is the most common (and saddest!) of the distressed emergency worker. An angry outburst toward a family member, friend or co-worker is another indication of a distressed emergency worker. Others may become very quiet while others become extremely talkative or make excessive attempts to be funny. The important point to make is that their current behavior is changed substantially from their previous behavior.

Recognizing Post Traumatic Stress Disorder

Experiencing a critical incident does not necessarily mean that a person is going to develop Post Traumatic Stress Disorder (PTSD). Most emergency personnel (over 86%) who go through a critical incident will experience acute and/or delayed stress reactions. Fortunately, most are able to recover fully either by themselves or with the help of friends or professionals. But when a critical incident is extremely powerful, when it is well

outside the usual range of human experience, it may cause PTSD in a small number of emergency personnel. There is no way to predict who will be susceptible; it seems to be somewhat random.

Some studies show that debriefing people very soon after a catastrophic event may reduce some of the symptoms of PTSD. A study of 12,000 schoolchildren who lived through a hurricane in Hawaii found that those who got counseling early on were doing much better two years later than those who did not.

People who suffer from PTSD have many of the following characteristic signs and symptoms.

- Disturbing memories of the event which pop to mind unexpectedly
- Dreams or nightmares related to the incident
- Feeling as if the event were happening again
- Psychological distress around the anniversary of the traumatic event
- Numbing of one's emotions
- Avoidance of thoughts or feelings associated with the event
- Avoidance of activities that recall the incident
- Loss of memory associated with important aspects of the event
- Loss of interest in activities previously enjoyed
- Feeling detached and estranged from others
- Loss of loving feelings toward others

- A sense of a shortened future
- Difficulty falling asleep and staying awake
- Intense irritability
- Difficulty concentrating
- Startle reflexes
- Excessive suspicion and caution in dealing with others
- Physical reactions in circumstances similar to the original incident
- Feeling keyed up and unable to relax
- Loss of emotional control

If an emergency worker has experienced a single, extraordinary past event or a series of events that they found very distressing and if you notice that an emergency worker has a number of the signs and symptoms from the list above, than they may be suffering from Post Traumatic Stress Disorder. PTSD does not just disappear by itself; they should seek professional help

Signs of Cumulative Stress

Cumulative Stress occurs as a result of prolonged exposure to a great many stressors over a long period of time. The stressors do not necessary have to be severe, as is the case with an acute or critical incident stress. As a result, cumulative stress reaction is not easily recognizable. It builds up slowly, sometimes taking several years to develop. By the time it is noticed, permanent damage to a person's health and happiness have already

happened. Generally, these stressors are made up of a mixture of personal and job related problems which grow steadily worse over time.

Cumulative stress reactions can be experienced in four distinct phases. First is the warning phase. Second, the mild symptom phase. Third, the entrenched phase and finally, the fourth is the severe/debilitating phase.

The warning signs are predominately emotional in nature. They may take a year or more to grow to any noticeable degree. Most commonly, they are feelings of vague anxiety, boredom, emotional fatigue, depression and indifference. If these feelings are neglected or ignored, the warning signs become fixed and strengthen. Over a period of six to eighteen months, a person who is moving deeper into a cumulative stress reaction begins to show additional signs of distress.

In addition to their feelings in the warning phase, they may start feeling irritability, muscle aches, more frequent headaches, colds, and/or stomach problems, more frequent loss of emotional control, sleep disturbances, intensified physical and emotional fatigue, withdrawal from contact with others and intensifying depression.

To reach phase 3, Entrenched Cumulative Stress Reaction, the person has totally ignored the previous two phases in which many subtle and obvious signs and symptoms of distress have occurred. People in this phase are suffering through some of the most painful conditions they have ever encountered in their lives. In most cases, people do not

get out of a phase 3 cumulative stress reaction without the help from either a medical or psychological professional. People with phase 3 will normally experience at least some of the following signs and symptoms.

Skin Rashes	Intense physical and emotional fatigue
Intense depression	Increased alcohol use
Use of nonprescription drugs	Increased smoking
Elevated blood pressure	Migraine headaches
Poor appetite	Loss of sex drive
Ulcers	Intense irritability
Marital/Relationship problems	Crying spells
Intense anxiety	Cardiac problems
Rigid thinking	Restlessness
Sleeplessness	Withdrawal from friends, family and
Other physical and emotional symptoms	Co-workers

Allowing oneself to deteriorate so much that when one enters phase 4 of the cumulative stress reactions is a clear indication that a person cannot or will not pay attention to a great many signals of distress in his or her lives. This person may be in a self-destructive mode. Usually after five to ten years of ignoring all the previous signs and symptoms of growing stress problems and refusing to do anything about it, this person enters the ultimately destructive final phase. They usually are quite sick, both emotionally and physically; their careers end prematurely as well as their lives.

Most people who have neglected themselves enough to end up in a phase 4 cumulative stress reaction will have a number of the following severe signs and symptoms:

Asthma	Coronary artery disease
Heart attacks	Diabetes
Cancer	Severe emotional depression
Lowered self-esteem	Lowered self-confidence
Inability to perform one's job	Inability to manage one's personal life
Severe withdrawal	Uncontrolled emotions; anger, grief, rage
Suicidal or homicidal thinking	Muscle tremors
Extreme chronic fatigue	Over reactions to minor events
Agitation	Chronic feelings of tension
Poor concentration & attention span	Frequent accidents
Carelessness	Forgetfulness
Feelings of hostility	Intense feelings of paranoia
Moderate to severe thought disorders	
Other severe physical and emotional signs and symptoms	

The cumulative stress reaction usually takes from one to ten years to develop fully. It is almost totally preventable if people take sufficient care of themselves, know the danger signs, and are ready to keep their work and home lives in a state of balance.

(Mitchell, J. & Bray, G.)