Factors That Influence Firefighters' Non-Compliance with the Akron (OH) Fire Department Seat Belt Policy

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CERTIFICATION STATEMENT

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ABSTRACT

This research study addressed the problem of non-compliance with the seat belt policy by members of the Akron Fire Department (AFD). The focus of the study was an attempt to understand why AFD members, and firefighters in general, ignore safety rules. The purpose of the study was to identify and describe factors that contribute to non-compliance with the AFD seat belt regulation and safety rules in general.

Descriptive research was used to study the situation, combining first hand observation to establish baseline compliance levels, interviews with focus groups to explore the groups' behavior (action), and survey questionnaires to compile information relating to factors that affect compliance with existing policies. The research questions attempted to assess the level of awareness of seat belt laws and regulations, what factors influence the decision to use or not use belts, and which effective tactics have worked within other departments to enhance compliance. The survey instruments were distributed by hand (85 distributed, 85 collected) and by mail (86 mailed, 71 received from 60 respondents) and the results were compiled and examined to answer the research questions. The instruments asked demographic questions, assessed awareness of existing laws and rules, and surveyed participants about risk-taking behaviors in their personal life away from work. The results were then compared to determine whether there was any noticeable relationship between risk-taking behavior off duty and compliance with seat belt laws and rules, both on and off duty. The results showed that persons who reported no risky behaviors off of the job were twice as likely to wear their belts as are persons who reported three or more risky behaviors. The recommendations of this report are that a multi-faceted approach should be used to enhance compliance with existing policies, combining education, measurement, enforcement, and leadership to correct organizational problems.

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INTRODUCTION

Statement of the Problem

The problem that was addressed in this research report was the failure of fire department personnel to comply with the seat belt policy (1995) of the Akron Fire Department (AFD) which states that "all members will be seated and seat belts fastened where applicable when apparatus is in motion." Further, the AFD Rules and Regulations state that "all members shall…obey the laws of…the State of Ohio…" This policy is consistent with the City of Akron's regulation governing seat belt use in City-owned vehicles (2006) which reads, "State laws require that seat belts must be worn at all times." The State of Ohio's seat belt law "requires front-seat passengers of cars, vans...trucks…with seat belts installed to wear them when these vehicles are driven on public roadways." However, despite a preponderance of evidence and study after study demonstrating the benefits of seat belt use in motor vehicles, too many members of the department continued to ignore the department's policy.

Descriptive research was used to study this situation. While there was ample anecdotal and/or first-hand knowledge of just how 'things are' within the AFD, this study collected empirical evidence of the actions, behaviors and culture that existed within the department to establish a benchmark of where the department is. The intended impact of the study of non-compliance with the policy was to increase seat belt usage within the department in order to avoid a recurrence of the accidents that injure members. Another potential impact of this study could be stressing to employees the importance of following all safety rules and policies as a matter of principle. First-hand observation, exploration of attitudes and behaviors, focus groups, and questionnaires were the survey instruments used in the collection of data for this study.

Purpose of the Study

The purpose of this study was to identify and describe factors that may have contributed to non-compliance with the seat belt safety regulation of the AFD. Armed with the findings of this study, the factors that contribute to non- compliance may be addressed. The author shared the results of this study with the top administrators of the Department to demonstrate the need for and importance of strict enforcement of existing seat belt policies, or even the rewriting and/or restatement of the policy. These efforts were directed towards an increase in seat belt use by members. The ultimate goal would be 200% compliance – 100% compliance 100% of the time. It is anticipated that communicating the results of this study throughout the highest level of the Department have demonstrated to administrators the need to change factors and elements at every level within the Department, resulting in a more safety-conscious culture of the Department.

Research Questions

The following questions were answered by this descriptive research:

1. To what extent are members aware of the seat belt policy and what percent of members adhere to the policy(s) in effect?
2. Which risk-taking behaviors and/or activities do firefighters participate in within their private lives, away from the job?
3. What is the relationship between risk-taking activity away from the job and non-compliance with the seat belt policies in effect?
4. What other factors affect non-compliance with the seat belt policies?
5. What tactic, if any, has been effective in attaining seat belt use among fire fighters?

BACKGROUND AND SIGNIFICANCE

The City of Akron, Ohio, is located in the county of Summit in northeastern Ohio, approximately thirty miles south of the city of Cleveland. Akron is the largest city in Summit county, with a population of 217,074 (2000 census). Formed in 1839, the Akron Fire Department (AFD) today has an authorized total strength of 429 uniformed and support personnel (AFD Annual Report, 2004). The Department provides emergency services to those who live, work or visit in Akron and has written mutual aid agreements with several neighboring departments. Akron has thirteen fire stations that serve a population of about 217,000 spread out over approximately 54 square miles. On-duty staffing varies from day to day, but averages roughly 95 people per shift. Services provided by the department include fire suppression, EMS, rescue, Hazardous Materials response, water rescue and technical rescue (high angle, confined space, collapse, etc.). The AFD also has a pro-active Fire Prevention Bureau (code enforcement) and Public Education Section. Over the last three years, the AFD has responded to an average of 38,592 alarms per year (AFD Annual Reports, 2002, 2003, and 2004). The AFD fleet numbers more than one hundred vehicles and includes fire trucks, ambulances, command SUVs, staff cars, and support vehicles and equipment (pick-up trucks, vans, trailers, etc.).

Considering the number of alarms answered, the number of vehicles being driven, the population of the jurisdiction, and the amount of miles driven daily, the exposure to traffic situations is considerable. According to information contained within a database privately maintained by the AFD Maintenance Facility, in the last 10 years there have been approximately 260 accidents involving AFD equipment. Fortunately, these accidents did not cause any serious injuries or any fatalities to the involved parties.

Nationwide and internationally, seat belt non-use by members of the fire service has been frequently discussed and currently is being widely explored. Year-in and year-out, 'responding and returning' remains one of the most dangerous activities in which fire fighters engage (United States Fire Administration, 2006). The seat belt issue has been addressed by the USFA, the National Fire Protection Administration (NFPA), the International Association of Fire Chiefs (IAFC), the International Association of Fire Fighters (IAFF), and others. Still, according to the USFA (2006), a consistent number of fire fighters (about twenty five per year) continue to be injured and killed in vehicle crashes while not wearing seat belts.

The intended significance of this project is a heightened understanding of the behaviors and activities of fire fighters which can assist department administrators in formulating effective and meaningful policies regarding seat belt use. Research indicates that meaningful policies enhance compliance. Enhanced compliance can prevent accidents and injuries that have been experienced by members of the Akron Fire Department. Research also steers administrators toward developing meaningful and pertinent policies which are more likely to be adhered to and may be more easily enforced (Kaniss, 2006). Compliance with safety policies and procedures is essential to providing and safe work environment, and compliance with safety objectives can lead to the development of a more safety-oriented culture within the department. Tangible benefits of a heightened safety culture are not always obvious at first glance, but when every employee makes it their personal responsibility to operate, on a daily basis, in a safe and reasonable manner, then and only then is there hope to reduce preventable fire fighter injuries and deaths.

LITERATURE REVIEW

The United States Fire Administration (USFA) compiles and maintains statistics on fire fighter injuries and fatalities in this country. As in most years, the second leading cause of fatal injury for fire fighters in 2005 was vehicle crashes (USFA, 2006). The term cause of injury refers to the action, or lack of action, that directly results in the fatal injury. A fatal injury usually is the result of a chain of events, the first of which is recorded as the cause. According to the USFA, in 2005, 115 fire fighters died on duty and 25 of those deaths (21.8%) were the result of vehicle crashes. Of the 25, five were killed while wearing their seat belt, which suggests that seat belt non-use is not the only factor leading to fatalities.

In 2004, The National Fallen Firefighters Foundation (NFFF), in cooperation with the USFA, hosted the Firefighter Life Safety Summit. The Foundation has established the objectives of reducing the fire fighter fatality rate by 25% within five years and by 50% within ten years (NFFA, 2004). Out of the Summit came the 16 Firefighter Life Safety Initiatives. While quite possibly regarded as radical today, the initiatives recognized that the fundamental truths concerning fire fighter fatalities have long been known. Fire fighters are being killed today the same way they have been killed for decades, or even longer. The majority of the effort during the Summit took place in discussion groups that focused on six specific domains, one of which was vehicle operations. The first Life Safety Initiative reads: "Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility."

At the 2005 Indianapolis Mini-Summit, the NFFF identified a change in the fire service safety culture as a key factor in reducing fire fighter fatalities and injuries (NFFF, 2005). At this

mini-conference it was reported that in many cases safety is considered an afterthought or an inconvenience.

What is culture, and what is meant by a cultural change? Before there can be a cultural change, first culture itself must be understood. Johnson and Gill (1993) define organizational culture as simply the manner in which groups and individuals combine to get things done. While discussing organizational cultures, they say that in addition to organizations having one large culture, there are also subcultures and countercultures within organizations. The subcultures are subsets of members that regularly interact with each other and who identify themselves as a distinct group sharing common problems. These subcultures hold the key to effecting a change of the larger culture. The group at the Summit that addressed the cultural issues stressed that it is the personal responsibility of every fire fighter to ensure their own safety. True enough, but while each individual is a free agent capable of making choices subjectively, each is also a member of a complex network of self-controlling humans. Johns (1983) says that the field of organizational behavior has several agreed-upon goals, chief among them being prediction, explanation and control. Prediction relates to the behavior of others and may be describes as the 'what'. Prediction is essential to the everyday requirements of interaction. The second goal is explanation – the 'why' of the events that occur in organizations. Another, newer, agreed-upon goal is control. As researchers learned more about the what and the why of organizational behavior, they came to realize that organizational behavior is susceptible to control. Johns also raises the issue of what he calls social rituals. He writes that social rituals develop to fit situations where the actions required to get a job done are in conflict with the official organizational policies. This point can be paraphrased into "You lie, and I'll swear to it."

Again in early 2006 the NFFF (2006) identified the wearing of seat belts as a top priority, based on the number of preventable deaths and serious injuries resulting from ejection from vehicles involved in collisions or falls from moving vehicles.

The USFA and the International Association of Fire Fighters (IAFF) have partnered to launch the USFA-IAFF Emergency Vehicle Safety Program. This program is an outgrowth of the partnership with several leading fire service organizations participating in the Emergency Vehicle Safety Initiative, a project developed to reduce the number of fire fighter fatalities while responding to or returning from emergencies. In a press release announcing this new program (2006) Charlie Dickinson, acting U.S. Fire Administrator said that this program discusses critical emergency vehicle safety issues, including seat belt use. IAFF President Harold Schaitberger added that every firefighter must take responsibility for his or her safety, as well as watch out for and stop unsafe actions. President Schaitberger further pointed out that fire fighters are much more likely to be killed in a traffic collision than in a structure fire or a terrorist attack, although he offered no data within the press release to back up this statement.

Funding provided by the Department of Homeland Security, Assistance to Firefighters Grant and Fireman's Fund Insurance Company has made possible the *Everyone Goes Home Firefighter Safety Initiatives*. On their web site (www.everyonegoeshome.com), Manning writes (2006) that negative behaviors, attitudes and systems are ingrained in many fire department cultures, and that success in reducing deaths and injuries is directly related to an organization's ability to change behaviors and attitudes – to change culture. He writes of good culture and bad culture, or more specifically, good behavior and bad behavior, good attitudes and bad attitudes. He writes that a culture, derived from personal and group attitudes and behaviors, develops in the day-to-day execution of the mission, and reminds us that culture is very different from tradition.

A thorough investigation of the attitudes, behaviors, and culture of an organization should offer some understanding of the impediments to effective compliance with departmental policies.

All businesses and organizations have a developed culture (Witte and Davis, 1996), and a change of the ingrained cultural values of these groups can be the most effective first step in changing accepted, practiced behaviors (Johnson & Gill, 1993). When problems are well understood, correctly identified and clearly defined, then real change can begin to take hold.

Rules and procedures exist for a reason - sometimes good and sometimes not so good. Johnson and Gill (1993) state that rules are the most pervasive form of organizational control and most large organizations use such normative means to regulate behavior (action). They write that a body of rules and procedures, backed up with the monitoring of behavior, and enforced by sanctions, ensures compliance and even pre-determines what members should do in most given circumstances. One problem with rules and procedures is that *people* craft them, and by their very nature people are not infallible. A group of rules and procedures, packaged with background and implementation details, constitutes what most people recognize as a policy. A very common problem with rules and policies is that they are often ignored, for a variety of reasons. Kaniss (2006) contends that the most common reasons for why rules are ignored are a) the people affected by the rule are unaware of it, b) the rule is too long and/or complicated, c) the wording is too vague and therefore subject to interpretation and, d) the policy does not include the measurements, reviews, and inspections required to assess compliance. He writes that generating policies that are likely to be ignored is a waste of time and effort. A good policy will be clear, concise and focused on the problem. It will attempt to eliminate any loopholes and clearly list any exceptions. It will be simple, clear, and as short as possible. A good policy will specify the consequences for non-compliance and the consequences need to be enforceable, lest the policy

become merely a guideline. Keep in mind that policies should only be created when there is a widespread or repeated behavior that causes a pattern of actions inconsistent with an organization's values. Fire organizations address safety as one of their core values, but all too often these core values seem to have lost their meaning. When a particular policy is essential to the safety and wellness of the members of an organization, then compliance with that policy is essential.

A better understanding of the impediments to seat belt policy compliance will benefit the future (potential) wearers as well as managers and senior administrators attempting to keep their personnel safe from preventable risk and harm. Some people believe that if an outcome is predictable, it is preventable. Can vehicular accidents be predicted? In one sense, no they can't. But the fact that vehicular accidents will happen is, more or less, accepted. With the acceptance that accidents will happen follows the realization that when they happen, there are certain elements of risk exposure sure to ensue. This is where the predictable versus preventable element comes into relevance in this situation. Predictably, accidents will happen, and when poor decisions are made prior to an accident, preventable exposure to risk enters the picture. Conversely, improved decision making prior to an accident helps to eliminate the post-accident exposure to risk.

Problems that are not well defined or understood are the most difficult to solve. A department can not and should not be satisfied with artificial compliance, a situation where personnel wear their seat belt only when they believe Big Brother is watching. According to Leavitt (1964), most approaches today aimed at changing organizational behavior are people-oriented and have, historically, moved though two distinct phases. One of the phases was essentially manipulative and asked the seductive question, "How can we get people to do what

we want them to do?" While examining organizational behavior, he came to realize that communication is vital – something to be maximized to effect change. The more channels the better, the less filtering the better, the more feedback the better. Training and education can enhance compliance. However, a cultural mind-set that that truly embraces a safer working environment, where each employee is concerned with their own safety as well as everybody else's, should be the ultimate goal.

When reasonable, sensible policies are enacted, monitored, enforced with sanctions, and supported by free and open communication up and down the chain of command, common sense seems to dictate that compliance will ensue.

People riding in vehicles either wear their seat belt or they don't. When people choose (consciously or unconsciously) to wear their belt, some decision has been made. Similarly, when they choose (consciously or unconsciously) to not wear a seat belt, again, some decision has been made by the individual. The following portion begins to delve into why people make the decisions they do, and what plays into that decision making process.

Witte & Davis (1996) contend that small groups (two to a dozen or so) are the primary agents performing many of the tasks within organizations and that they can play a major role in promoting subsequent acceptance of their actions. One of the basic assumptions made in their Group Situation Theory (GST) is that being in a group means being under the influence of others. Two types of influence they mention are informational influence (influence to accept information from another as evidence about reality) and normative influence (influence to conform to the positive expectations of another). The combination of these two components leads to individual choice behavior in group situations. They write that individuals are induced by uniformity or conformity - pressured to relate their own judgment to other's judgments. This

helps to explain why individuals make choices relative to their own safety according to the choices made by the group, and not by their own sound reality. Individuals know that they are safer when they wear their seat belt, but when others in the group don't wear their seat belt they won't either. At the same time, when the group promotes sound safety values (wearing their seat belts) others in the group feel compelled to follow the lead of the group.

However, when considered from an organizational perspective, Leavitt (1964) says the decision-making variable becomes a problem in achieving committed agreement. The focus within organizations is upon the issues of group pressure, cohesiveness, and conformity. Leavitt asserts that within groups, increased cohesiveness leads to increased commitment, and the more supportive the group the freer the individual is to express their individuality. He says the individual becomes free to make the right choice, unfettered by peer pressure.

Unfortunately, the body of empirical research addressing the engineering of group risky decision-making has been sparse and largely limited to judgmental forecasting of environments (Yates, 1992). Yates contends that the best known research in the field has been conducted by Irving Janis. Janis (1982) coined the term "groupthink" as a quick and easy way to refer to a mode of thinking that people engage in when they are deeply involved in a cohesive in-group. Janis used the term groupthink in the same way George Orwell used words such as "doublethink" and "crimethink" in the newspeak vocabulary from his novel *1984*. Specifically, groupthink occurs when the group members' striving for unanimity overrides their motivation to realistically assess alternative courses of action, leading to a deterioration of mental efficiency, reality testing, and moral judgment. Janis says that at least seven major defects in decision-making contribute to poor decisions being made. The seven defects are as follows. First, only a few options (usually two) are considered. Second, the objectives to be fulfilled, and the values

implicated by the choice, are not surveyed. Third, the group fails to reexamine the initial course of action and ignores non-obvious risks and drawbacks. Fourth, the members spend little or no time discussing alternatives perceived as undesirable. Fifth, the members make little or no attempt to get experts' information relative to the potential losses or gains from their selected course of action. Sixth, the group shows a selective bias toward factual information and relevant judgments from experts when the facts and judgments do not support the group's preferred action. Seventh, the group spends little time considering the effect that common accidents will have upon the chosen course of action. Groupthink is conducive to errors in decision-making, and these errors will increase the likelihood of an unsatisfactory outcome. It should be noted that groupthink does not automatically lead to poor outcomes, and not all poor outcomes are the result of groupthink. In his earlier work concerning groupthink, Janis (1972) offers some strategies to avoiding falling victim to group processes at work within organizations. And according to Yates (1992), long-term groups (as opposed to ad hoc groups) tend to be more prone to biases (e.g. groupthink). Although there have been some corrective engineering efforts undertaken to combat these biases, the approaches have not yet been thoroughly evaluated by systematic empirical study. Nonetheless, early available results have not been encouraging.

Klein (1999) studied decision making extensively, especially as applied to military and fire ground commanders. His work has revealed a type of decision making he calls the Recognition-Primed Decision model (RPD). This refers to a situation where, when confronted with a problem, decision-makers recognize a situation as typical and familiar then proceed to take action. In the RPD model, rather than consider many options and the possible outcome(s) of the options, a person sorts through their mind until they recall a similar situation and the decision(s) that were then made to solve that particular problem. The chosen plan of action is

followed until the problem is solved or the plan of action is proven unworkable for the particular event, at which time the process begins anew. He says this process occurs within seconds, and is the result of many life experiences forming a card catalogue of slides in the mind of the person making the decision. The recognition of a typical situation leads to a course of action recognized as likely to succeed. While it is understood that each and every fire fighter making a decision to comply, or not comply, with a safety policy is not necessarily thinking like a field general or a fire ground commander, they are nonetheless making a decision, consciously or otherwise. Klein also says that when bad decisions are made repeatedly without negative consequences, the decision-maker is yet forming their own card catalogue of slides in their mind to draw upon. The conclusion follows that a poor decision made to not wear a seat belt, repeated many times without negative consequences, would reinforce to the decision-maker that the decision is not really such a bad idea after all. Furthermore, while an individual can make bad decisions repeatedly without suffering negative consequences, this is no way to manage acceptable risk.

Yates (1992) writes that whenever the subject of risk arises, invariably two questions ensue – what is risk and how much risk is acceptable? He says that risk is an inherently subjective construct particular to the person concerned, just the same as are the significance of any loss and the chance of it occurring. In discussing risk appraisal, he has identified the four basic elements of the appraisal. The four elements are the existence of risk, the identity of the risk, the loss likelihood, and the significance of any potential loss caused by the risk. The loss likelihood is clearly a critical element of risk appraisal and it is assessed by the individual in many various ways including relative frequency, rules of thumb, and a personal mental model of any given situation, value biases, and personal role biases. Yates describes risk as a physical sensation, with some individuals having a ‘sensation seeking trait’. He mentions the Minnesota

Multi-phasic Personality Inventory (MMPI) and says that the MMPI has found a strong correlation between high sensation seeking traits and young males. He says that numerous demographic and behavioral correlates of risk taking in different situations have been obtained, and that measures of risk often correlate with age, gender, occupation, cultural backgrounds and personality traits.

Generally speaking, who doesn't wear their seat belt? According to research by Wilson (1990), non-users are younger, more likely male (by a factor of three) and unmarried, consume more alcohol, and are higher sensation seekers. The potential significance of these findings is that according to Shannon (2003), twenty five percent of fire fighters are under thirty years of age and according to McCoy (2006), only two percent of fire fighters are female. And what is a sensation seeker? Zuckerman (1979) defines a sensation seeking trait as defined by the need for varied, novel, and complex sensations and experiences and the willingness to take risks for the sake of such experiences. Kogan & Wallach (1964) say that males exhibit greater confidence of judgment than females and that males are more extreme in their judgments than are females. Further, they say that young men are significantly higher in confidence than are old men while the confidence levels in young women versus old women do not differ.

Tulloch & Lupton (2003) define risk as involving a weighing-up of whether or not to take an action, and write that there is a conscious or unconscious decision that occurs regarding what is risk and how much are individuals prepared to take. In echoing Kogan & Wallach, they write that men, particularly younger men, express more confidence in being able to control risk in their lives. They say that risk pervades everyday life, and that risk is dangerous but also exciting. According to them, voluntary risk taking is a form of release that provides an adrenalin rush and a sense of heightened living. However, they say that risk knowledge is historical and local – what

was risky yesterday may not be perceived as risky today. Risk knowledges are constantly contested and subject to dispute, and have increasingly become the domain of experts.

According to the Transportation Research Board (TRB) of the National Academies (2003), approximately one-fourth of U.S. drivers and front seat passengers are still observed to be not buckled up. They say that many of these people are considered "part-time users", for who seat belt use is situational – during bad weather, on long trips or high-speed roads. They also say that only about 4 percent of drivers are hard-core nonusers. However, they report that 60 percent of drivers in severe crashes were not wearing seat belts. The TRB report did not define what they considered 'severe crashes'.

The findings from the Literature Review influenced the design of the study. The understanding of risk and the factors that relate to risk-taking behavior contributed to the focus on exploring of these elements. A greater understanding of how individuals act and interact within groups, combined with the influence of the individual upon the group, was the basis for seeking a relationship between risk-taking behavior and compliance with safety policies. While it is accurate to say it is the personal responsibility of each fire fighter to ensure their own safety, the safety of everybody within the organization rests with the individuals at the top of the organization. The senior administration must develop and promote clear, concise rules and policies, monitor employee's behavior, and enforce the rules and policies with sanctions to ensure compliance. This is why this study attempted to identify tactics which had proved in the past to be effective in achieving compliance with safety policies. An understanding of how individuals interact with each other and how that interaction influences each of them is extremely beneficial when one attempts to control other's behavior.

PROCEDURES

Descriptive research was the method used for this project. The procedures included first hand observation, interviews with focus groups, and survey questionnaires.

First hand observation was be used to determine where the AFD stands in terms of current seat belt use. The author personally visited various fire stations on various days and various shifts. The author observed fire department vehicles responding to and returning from emergency and non-emergency trips and noted how many crew members were in compliance with the seat belt policy. The author visited five different stations on each of the three shifts and observed twenty two separate responses, seventeen of them emergency responses. This sampling helped determine the current level seat belt usage.

The author conducted three interviews with focus groups within the AFD to determine what are the existing attitudes and behaviors of firefighters regarding seat belt use and risk taking behavior. While the results of these focus group discussions should not be considered scientific, they may provide some insight on attitudes towards compliance with safety regulations. The author conducted one interview with a group of approximately ten line firefighters. Also, there was a singular discussion with the Safety Committee of the Department (eleven members plus this author) and a singular interview with a group of eight line and staff supervisors. Each of the participants within the focus groups was asked to complete a questionnaire (see Appendix 1.) at the end of the discussion.

Survey questionnaires were developed and designed for ease of reading and responding. They were distributed by hand and by mail. The questionnaires attempted to determine from the respondents their level of awareness and compliance regarding seat belt policies. They also asked questions regarding personal risk taking behaviors, and asked about the personal motivating

factors that may impact the decision making process. Demographic information was also requested in the survey. Surveys were distributed within the author's department locally and also sent to other individuals and departments in Ohio and across the country (see Appendix 4.). A total of eighty six were mailed, and sixty addressees responded (seventy one questionnaires were received because one addressee photocopied the survey instrument, distributed copies within his department and returned a total of twelve questionnaires). Eighty five questionnaires were distributed by hand and collected upon completion. This resulted in a total of 156 questionnaires received by the author for analysis. The survey responses were compiled and analyzed to assist in answering this project's research questions. Overall awareness and compliance was examined, as were the reasons given regarding non-compliance. Further analysis attempted to determine whether or not there is a relationship between the risk taking behaviors of individuals and compliance with safety (seat belt) policies, and if there are other factors (e.g., engineering obstacles, age, gender, department size, etc.) affecting compliance with seat belt policies.

Definition of Terms

Line Fire Fighter. For the purpose of this survey, a line fire fighter is considered to be an individual (non-officer) assigned to a line position.

Line Supervisor. For the purpose of this survey, a line supervisor is considered to be an officer (lieutenant or higher rank) assigned to a line position.

Staff Supervisor. For the purpose of this survey, a staff supervisor is considered to be an officer (lieutenant or higher rank) assigned to a staff position.

Line position. For the purpose of this survey, a line position is one where the primary daily responsibility is responding to and mitigating emergency and non-emergency incidents.

Staff position. For the purpose of this survey, a staff position is one where the primary daily responsibility is to support the efforts of the line personnel.

Limitations of the Study

The limitations of this study include consideration of the possibility that not all respondents answered all questions honestly and openly. Also, not all respondents necessarily had the knowledge or available information to accurately respond, regardless of any desire to be truthful. An admission of violation of the law (or departmental rules) could be a difficult one for some individuals. Likewise, admitting that one takes unnecessary risks may be distasteful for some. A further limitation of the study would be the influence exerted upon respondents when they were personally handed a research instrument and asked to complete it while the author waited for its return. When results are reported as percentages, the totals may not always total 100%, due to rounding up or down to the nearest whole number. One question asked the respondent to make an estimated guess, in and of itself a limitation. There are thirty responses that were obtained from a group attending a risk management seminar. The mere attendance at this seminar would seem to display, at the least, a heightened awareness of risk. Further, only four of these respondents described themselves a something other than a supervisor. When examining these responses as a separate group, the responses may appear to be biased. However, examined within the total they would seem to balance out results due to the number of non-supervisors represented in the study. The questionnaire contains four questions that asked for a comment or free-form reply, and some of these responses of were grouped together to indicate trends or general ideas. Also, one question asked for (potentially) multiple responses (all, some or none) and may not be as quantifiable as some of the others.

RESULTS

The following section reveals the results of the information collected, including an explanation of actions taken or planned. To describe any of the information as interesting, insightful or productive would depend upon the perspective of the reader. All hard data presented are based upon 156 responses, the total number of research instruments available to the author.

The demographics of the respondents are as follow. All of the respondents except one were male. The majority of the respondents could be described as mature in age. The largest group was in their forties, followed by those in their fifties. Only three percent reported being less than thirty years old. Describing their position within their organization, the respondents were divided almost equally as one-third each firefighters (non-supervisors), company commanders, and chief officers or commanders. A few were either civilian employees or retired. The size of the departments surveyed ranged from small to large, with a majority of the responses from large (300+ members) departments.

All respondents were aware of their state having a seat belt law (of the fifty United States, only New Hampshire has no seat belt law). When asked about seat belt use when off duty, almost ninety percent reported wearing their seat belt all or most of the time. Nobody responded that they never use their seat belt while off duty. Research question 1 asked: “To what extent are members aware of the seat belt policy and what percent of members adhere to the policy(s) in effect?” Ninety percent of respondents said their department has a seat belt rule or policy, seven percent said they do not, and three percent didn’t know (all that didn’t know were from the same department). When asked about seat belt use when on duty, 54% said they wear their belt all of the time and 72% reported wearing their belt all or most of the time. Almost one in five (19.9%) reported that they never or seldom wore their belts. Also, the questionnaire asked each

respondent to estimate the level of usage on duty within their own department. Only twelve percent estimated that their members always wore their belt, while 54% of the respondents claimed to always wear their belt. Only one percent estimated that their members never wore their belt but 7% of the respondents admitted to never wearing it. Figure 1 shows the relationship between off duty and on duty use for all respondents.

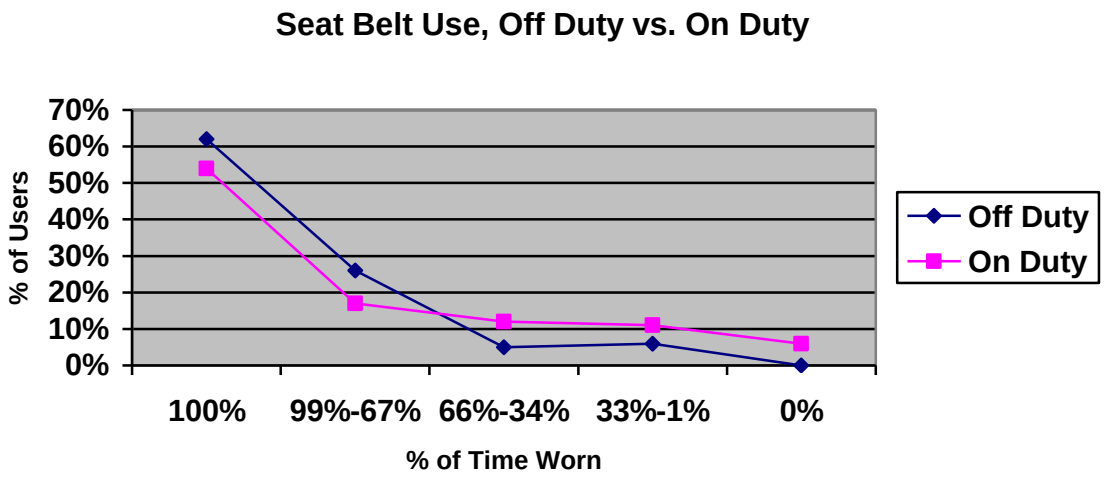

Figure 1

Comparison of seat belt use off duty vs. on duty, as reported by all respondents.

Respondents were asked about risk-taking behaviors in their lives away from the job. Research question 2 asked: "Which risk-taking behaviors and/or activities do firefighters participate in within their private lives, away from the job?" Two of the identified risky behaviors respondents were asked about were tobacco and alcohol use. When these lifestyle behaviors were combined they formed the largest percentage (48%) of the affirmative answers. Respondents who reported no risk-taking behaviors comprised the second largest group (23%). Water sports (skiing, white water activities, snorkeling, etc.) were next (16%), followed by riding

motorcycles (12%), then body contact sports (11%) and gambling (2%). Only one individual admitted to using recreational drugs.

Research question 3 asked: "What is the relationship between risk-taking activity away from the job and non-compliance with the seat belt policies in effect?" Of the thirty six respondents that claimed to participate in none of the risky behaviors identified in the research instrument, 86% said they wear their belts all of the time when off duty and the rest of this group (14%) said they wear their belts most of the time when off duty. However, when this same group responded to the question concerning on-duty use of seat belts, 64% claimed they always wear their belts while 19% said they wear their belts most of the time. Only 10% of this group said they never wear their belt on duty. Figure 2 shows the relationship between off duty and on duty use for respondents that report no risk-taking behaviors.

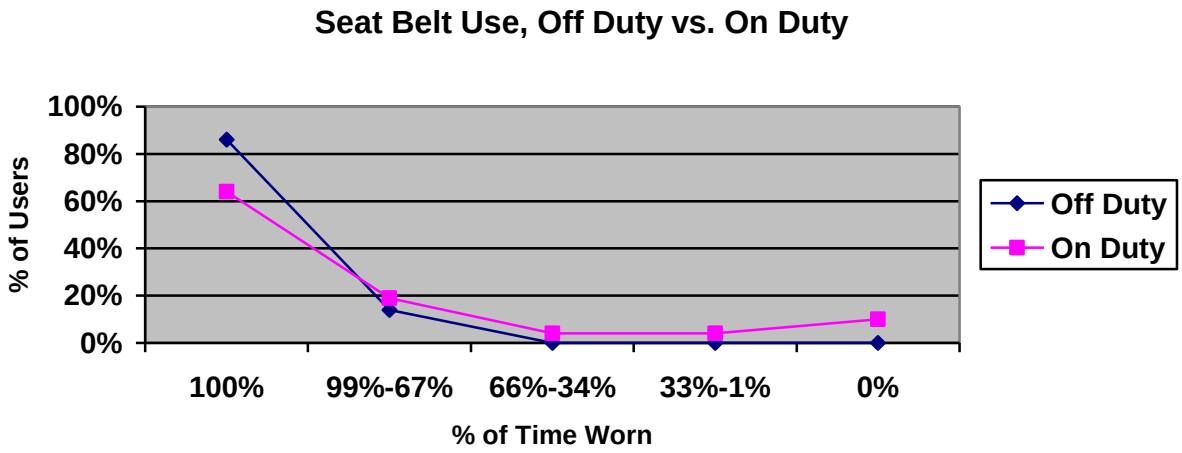

Figure 2

Comparison of seat belt use off duty vs. on duty, by respondents who reported no risk-taking behaviors.

There were forty one respondents who admitted to participating in three or more of the risky behaviors identified in the research instrument. In response to the question concerning off

duty seat belt use, only 43% of this group said they always wear their belts while approximately three out of four (77%) claim to wear their belt most of the time. When this group was asked about on duty seat belt use, approximately one in three (34%) said they always wore their belt and approximately one in three (29%) said they seldom or never wore their belt.

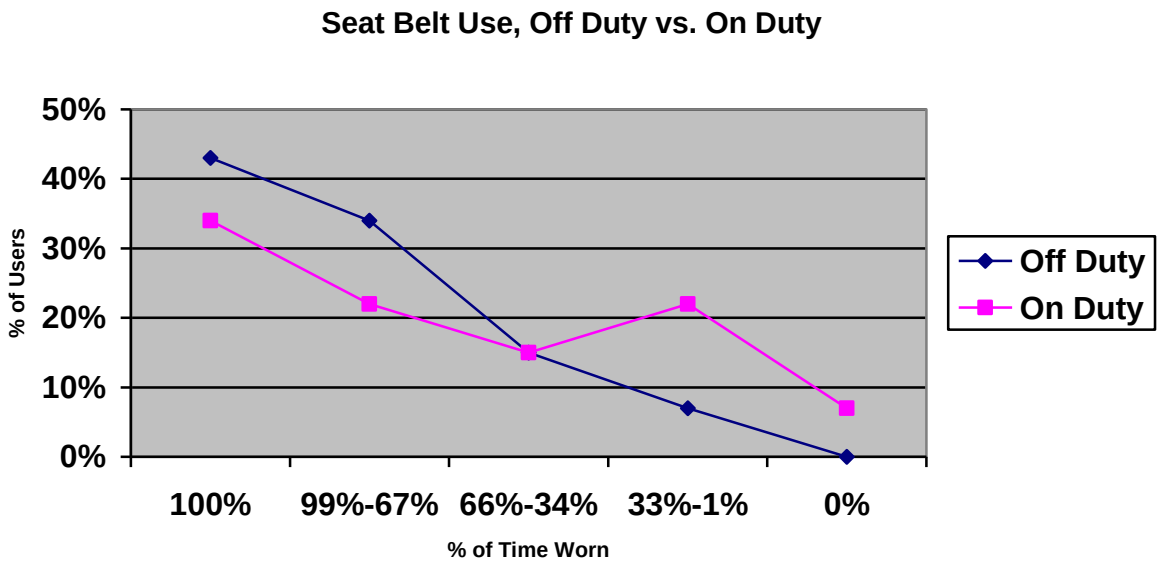

Figure 3

Comparison of seat belt use off duty vs. on duty, by respondents who reported risk-taking behaviors.

Research question 4 asked: "What other factors affect non-compliance with the seat belt policies?" When asked why they didn't wear their seat belt when off duty, the most common reasons given were haste (21%), followed by perception of low risk (7%), inconvenience (7%), and forgetfulness (7%) or the lack of habit. Asking the same question relative to on-duty non-use, 71 (45%) reported not using their belts at one time or another. Multiple reasons were given by many respondents and the frequency of excuses centered on inconvenience (32 times), haste (24 times) the presence of turnout gear and/or SCBAs (15 times), ergonomics - a lack of space and engineering obstacles (11 times), and old habit/no habit (8 times). Candidly, there were one

‘disgruntled’, one ‘apathy’, and one ‘stupid’. One respondent wrote, “Non-enforcement equals non-compliance.” When asked for opinions on why others within their department didn’t use belts, the most common replies were indifference, inconvenience, forgot, and culture (the respondent did not explain what they meant by culture). Also mentioned less frequently were responses such as lack of leadership, haste, wearing protective gear, and risk acceptance. One hard-core non-user admitted to habitual non-use on and off the job, placing that comment at odds with the responses to the survey instrument. Research question 5 asked about effective tactics to gain compliance with seat belt policies. The responses indicated that the most effective tactic mentioned repeatedly was discipline and/or enforcement, followed by the presence of a policy, and closely behind was mentioned leadership. Three times there was mention of a tragic incident, and only twice was education cited as an effective technique to attain compliance.

DISCUSSION

The literature review for this study reinforced what has been known for years – firefighters are being killed today the same way they have been killed for decades. Far too many are being killed in vehicle crashes and falls from vehicles, and far too many of those are not taking advantage of provided safety equipment, specifically seat belts. The USFA has identified vehicle crashes as the second-leading cause of fatal injuries for firefighters (USFA, 2006), and approximately 80% of firefighters killed in crashes are unbelted. The first Life Safety Initiative that came out of the Firefighter Life Safety Summit (NFFA/USFA, 2004) reads: "Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility."

The respondents to this study clearly displayed awareness of seat belt laws within their own state and compliance with the law when off duty. This makes it appear that they are aware of the importance and significance of seat belt use off duty. The level of on duty use drops dramatically when compared against the use of seat belts while off duty. This leads to the conclusion that something else must come into play in their decision making process. When they discussed organizational culture, Johnson & Gill (1993) spoke of subcultures and countercultures within organizations. The amount and types of enforcement and discipline that exist are examples where these elements appear. Likewise, the lack of leadership, coupled with peer pressure, demonstrates the influence of the sub- and countercultures upon the group as a whole. Johns' study (1983) of organizational behavior spoke of the social rituals that develop within organizations, and identifying peer pressure and a lack of leadership as factors affecting compliance are examples of his position. In their discussion of rules, Johnson & Gill said that rules are the most pervasive form of organizational control, and that policies must be backed up

by the monitoring of behavior enforced by sanctions. The responses indicate that one of the main reasons that people do wear their belt is a fear of the consequences if they don't. Kaniss (2006) contends that one of the most common reasons why rules are ignored is because people are not aware of them. Education, cited as an effective tactic employed by more than one department, addresses this factor. There were some respondents that didn't know whether or not their department had a seat belt rule and again, education and communication are essential to effectively addressing these factors. Kaniss says that good policies will specify consequences for non-compliance and that the consequences need to be enforceable. This is where leadership, discipline, and education (or the absence thereof) has an effect.

The Group Situational Theory (GST) of Witte & Davis (1996) helps explain why indifference, forgetfulness and apathy were common excuses for not wearing seat belts. Irving Janis (1982) introduced the 'groupthink' element within this project and an examination of the excuses for non-compliance demonstrates, in one or more cases, each of the seven essential elements of his groupthink theory. Yates' position (1992) that long-term groups are more prone to bias than ad hoc groups seems to be supported by the responses. Klein (1999), in his Recognition-Primed Decision (RPD) model, helps one understand why there were so many excuses along the lines of indifference, lack of habit, and forgetfulness. Further, while previously committed unsafe acts did not result in negative consequences and may have created slides in the mind of the decision maker, this is no justification to continue the unsafe acts. It is this portion of Klein's RPD model that we see when excuses such as indifference, lack of habit, apathy, etc., are given as the reasons for non-compliance. Tulloch & Lipton (2003) defined risk as a weighing up of whether or not to take action, and they said risk is local, historical, and personal. This helps promote understanding of excuses such as perceived low risk and inconvenience.

The respondents to the survey instruments were almost universally aware of existing seat belt laws (100%) and policies (91%). A much higher percentage of the respondents reported wearing their belts, and wearing them more frequently, off duty as opposed to on duty. Most of the respondents (76%) were over forty years old and with only one exception they were all male. The most interesting data revealed by this project was that firefighters who report no risky behaviors in their life away from the job (23%) are almost twice as likely to wear their belt, both on duty and off duty, as firefighters who reported three or more risky behaviors in their private lives. This two-to-one factor existed at both ends of the usage spectrum. The non-risk takers reported always wearing their belt off duty 86% of the time vs. 43% reported off duty use by risk takers. When on duty use is examined, the non-risk takers reported always wearing their belt 63% of the time vs. 34% reported use by the risk takers. Further, 14% of the non-risk taking group reported never or only seldom wearing a belt on duty while 29% of the risk takers said they never or seldom wore theirs. These findings were not surprising. The literature review revealed factors relating to risk, risk assessment, and decision making that wore borne out by the results of the research instrument. The excuses given for not wearing seat belts were many and varied, but none seem insurmountable and only a few were based on logic or reason to the author could understand.

The process used to analyze the data was to compile all of the responses and compare the responses, or groups of responses, against each other to draw the conclusions to the answers the author was seeking. Some questions were yes-no questions and were not compared against anything else, while other questions examined the relationship between a group that responded a particular way against some other variable or question. Some questions sought information or comments in an attempt to identify trends and examine the decision making process.

The author of this report thinks that achieving compliance with the seat belt policy that currently exists within his department will require a multi-faceted approach. As related by the responses to the survey instrument, there are several issues that prevent more complete compliance with the policy – awareness, education, measurement, enforcement and sanctions being among them. Other impediments to compliance are the lack of ease of using one's belt, and engineering obstacles (lack of space in the seating areas, belts too short, etc.). The policy will have to be clearly explained to the members of the department. Although not frequently identified as an element of gaining compliance, education was stressed by the findings of the literature review. The policy will need to be revised to include the means to measure compliance and ensure enforcement. The policy will have to list the specific penalties for non-compliance, to heighten the member's perception of the potential loss related to non-compliance. The perception of potential loss was another key factor uncovered during the literature review. Supervisors, at every level, must take a leadership role in measuring compliance and enforcing the policy. Change can be slow to take hold, but when all members take the personal responsibility to comply with all aspects of the policy, the habit will become ingrained and accepted. Many practices which we take for granted today were quite likely not well-received when they were first implemented. Traditional behaviors such as riding on the tailboards of apparatus or breathing smoke to display one's toughness are (almost entirely, the author hopes and presumes) a thing of the past. Riding in fire apparatus without wearing seat belts should also become a tradition that we will one day see, in retrospect, as inherently dangerous and unnecessarily risky.

Pleasantly, but not surprisingly, the survey instrument generated a lot of interest. The author received phone calls and e-mails and was frequently quizzed about the project and the results of the survey. One recipient of the survey took it upon himself to duplicate the instrument

and distribute it to twelve members of his department for completion, the returned all twelve surveys in one envelope. Other respondents attached to their survey notes of encouragement.

Armed with this knowledge this author began his own seat belt crusade within the department, using a combination of the effective techniques identified. The department has an existing seat belt policy, as does the city and the state. However, the department is inadequate in the discipline and enforcement areas, and has been lacking in the leadership arena. The previous chief did not, and current chief has not yet, embraced the importance of seat belt use. The department's Safety Committee asked the chief to adopt and state a zero-tolerance position on seat belt use, and he did. The chief has been supportive of this author's combined efforts, including interviews with focus groups, the taking of a leadership role in advocating seat belt use, and efforts at educating members about the policy and potential consequences for non-compliance. The potential consequences are meant to include the possibility of injury or death and a seemingly more possible consequence, disciplinary action.

The implications for this organization, or any other, seem obvious to the author. A heightened safety culture where all individuals are truly concerned with the safety of each other is an ideal worth fighting for. The fire service talks of taking care of their own and looking out for their brother and sister firefighters. It is time to stop merely talking the talk and to start walking the walk. The lack of seat belt use among members of the fire service is frequently discussed in this day and age, and an organization that is truly concerned with the safety and well-being of its membership will take the necessary steps to help ensure that a preventable tragedy does not befall them.

RECOMMENDATIONS

In order to solve the issue of non-compliance with the seat belt policy of the Akron Fire department, there are several steps that this author thinks must occur. It is recommended that the following actions be taken in stages.

1. Management should ensure that each and every member is aware of the departmental policy and how it dovetails with the city of Akron's policy and complies with the seat belt law of the State of Ohio. Kaniss (2006) stated that one of the main reasons that rules are ignored is that the individuals covered by the rule are unaware of the rule. The research instruments indicated that there was a small percentage of the author's own department who either were unaware of the seat belt policy or (mistakenly) believed that there was no policy. At the same time that members are being informed of the policy they can be shown the personal consequences of failing to wear seat belts, as well as be instructed in what the penalties will be for failure to comply with the seat belt policy. This instruction must include every member of the department.

2. Supervisors should be instructed in the methods of progressive discipline so that they may properly show leadership, control, and organizational sensitivity.

3. Supervisors need to set a good example and show that they are concerned with the well-being of their co-workers, even if/when it means taking a stand that may be unpopular with the rank and file. It means doing the right thing for the right reasons, even when there is resistance from others.

4. The department must undertake an inspection of the equipment to identify physical shortcomings, and then take the necessary steps to remedy these problems.

5. The department needs to stress to all drivers and supervisors that this is an issue which must be dealt with in a clear and consistent manner. Failure to comply will not be tolerated without negative, punitive consequences.

6. Senior management must display a commitment and willingness to achieving full compliance, despite initial resistance or the up-front expense of ensuring that all equipment is present and functioning properly. Leadership includes telling subordinates what needs to be done and giving them the proper tools and equipment with which to accomplish the task at hand. These actions are supported every step of the way through the process by information gathered during the literature review and the data collection stage.

7. Fire apparatus manufacturers need to be part of the solution. Fire trucks are big vehicles jammed full of equipment and accessories. However, these results show that ergonomics, especially when personal protective equipment (PPE) is being used, is a significant factor. If you want firefighters to wear their seat belts, make them easy to use and hard to ignore.

The blueprint outlined in the previous paragraph can assist other organizations in achieving compliance with their own seat belt issues, or for other organizational difficulties. First identify the organizational problem, conduct research to uncover the obstacles to compliance with the organizational policy, and then set about removing the obstacles. Combine research, education, measurement, enforcement, and leadership to address any particular issue.

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APPENDIX 1 – RESEARCH QUESTIONAIRE

1. Does your **state** have a seat belt law? □Yes □ No □ Don't know

2. What percentage of the time do you estimate you wear your seat belt when <u>off duty</u>?

□ 100% (always)

□ 99% - 67% □ 66% - 34% □ 33% - 1%

□ 0% (never)

3. If you answered anything other than "100%" of the time, what is your primary reason for not wearing your seat belt (e.g. inconvenience, indifference, haste, etc.)? _____

4. Does your **department** have a seat belt policy? □Yes □ No □ Don't know

5. What percentage of the time do you estimate you wear your seat belt when <u>on duty</u>?

□ 100% (always)

□ 99% - 67% □ 66% - 34% □ 33% - 1%

□ 0% (never)

6. If you answered anything other than "100%" of the time, what is your primary reason for not wearing your seat belt (e.g. inconvenience, indifference, haste, etc.)? _____

7. What percentage of the time do you estimate members of your department wear their seat belt when <u>on duty</u>?

□ 100% (always)

□ 99% - 67% □ 66% - 34% □ 33% - 1%

□ 0% (never)

8. If you answered anything other than "100%" of the time, what do you believe is their primary reason for not wearing a seat belt (e.g. inconvenience, indifference, haste, etc.)? _____

9. Within your department, what has been the single most effective tactic employed to ensure that members wear their seat belts? _____

_____

10. Which of the following activities do you engage in (please mark all that apply)?

□ tobacco use □ alcohol use □ recreational drug use □ gambling

□ motorcycle riding □ body-contact sports □ hang gliding

□ rock climbing □ sky diving □snow/water skiing □SCUBA diving

□ none of the above

11. What is your gender? □ Male □ Female

12. What is your age? less than 30 y/o□ 30-39 y/o 40-49 y/o 50 + y/o

13. How many members are there within your department?

□ less than 75 76-150 151-225 226-300 301 or more

14. What is your position within your department (mark one best answer)?

□ firefighter/medic □ company commander □ battalion commander

□ shift commander □ staff officer

15. What is the population size served by your department?

All respondents have my personal assurance of complete anonymity.

Respondent who wish to receive a copy of the completed report by e-mail should include their e-mail address in the following space. _____

APPENDIX 2 – QUESTIONNAIRE COVER LETTER

Dear Colleague.

My name is Brent Combs and I am a District Chief with the Akron (OH) Fire Department. I am also a student in the Ohio Fire Chiefs' Association Fire Executive Program.

As part of this program, I must complete an applied research project. My research topic is *Factors That Influence Firefighters Non-Compliance with the Akron Fire Department Seat Belt Policy*. As such, I am looking at seat belt use in my department and others, and at seat belt use by firefighters as a group.

Attached is a survey instrument that I ask you complete in order to help me with my research. I assure you that completing the survey will be quick and easy and that all respondents will enjoy anonymity. I am interested in finding out how my department stacks up against other fire departments as related to seat belt use, and which factors affect the individuals' decision to use (or not use) seat belts.

This research will help my department develop a meaningful and effective seat belt policy. It also may serve as insight to other fire departments facing a similar challenge. Please choose to be part of this research.

Thank you for your time and the completion of the survey.

Sincerely,

Brent Combs
District Chief
Akron, Ohio Fire Department

APPENDIX 3 – FOCUS GROUPS DISCUSSIONS

During December 2006 and January-February 2007, this author observed Akron Fire Department apparatus coming and going, in both an emergency and non-emergency mode. The purpose of this first-hand observation was to establish a benchmark to measure compliance with the seat belt policy within the department. On fifteen different occasions during this ten week span, the author observed fire pumper trucks, ladder trucks, ambulances, SUV response vehicles (single occupant), Fire Maintenance pickup trucks, and stock vans. The only members that were seen wearing their seat belts were Battalion Commanders (BCs) who drive Ford Expeditions. The author theorized that this was due to the fact that driving the Expeditions was more similar to driving their own privately-owned vehicles, where persons polled indicated a higher percentage of seat belt use. However, this does not explain why the occupants of the vans and pickup trucks were not in compliance with the policy. Also, members in the discussion groups indicated that they (misguidedly) perceived a lower potential for personal loss when riding in large fire apparatus, which would certainly explain why there were no members observed wearing their belts in these types of vehicles.

The author conducted discussions with three different focus groups following the completion of the first-hand observation study. The first group was the Fire Department safety Committee. All members stated that they were aware of the departmental policy on seat belts and that they were also aware that members riding in fire apparatus did not comply with the seat belt policy. The discussion centered on why members did not wear their belt and what could be done to make them buckle up. The typical responses were that the belts were difficult to put on and take off while wearing personal protective equipment (PPE – turnout clothing, breathing equipment, etc.), personnel were thought to be too busy en route to emergencies, and that

personnel simply were not in the habit of wearing their belts on fire trucks. This discussion did nothing to explain why members would not wear their belts when riding in the trucks in a non-emergency mode. The group reached a consensus opinion that education and enforcement were likely the best strategies to promote increased compliance with the seat belt policy. Amazingly, one member of the Safety Committee asked out loud, "Who wants to be the bad guy that forces the rank and file to buckle up?" The author's response was to ask why it wasn't seen as being the *good guy* for making them buckle up.

The second group was all staff and/or command officers, not necessarily members of the Safety Committee. This group contended that they always wore their seat belts and further that they were aware that members riding in fire apparatus did not wear their belts. The general opinion was that enforcement of the seat belt policy was absent, and that enforcing the policy would be, or make them, unpopular. There was skepticism that compliance could be achieved. One BC confirmed, in his particular case, the author's theory as to why BCs were the only members witnessed as being buckled up.

The third group was comprised of three line firefighting companies, staffing an engine (pumper), a ladder and an ambulance. This group included two lieutenants and eight firefighter/medics. This group stated that they were aware of the policy but that they did not wear their seat belt while on duty, with a few exceptions when they happened to be assigned to the ambulance. They all claimed, for the most part, to wear their seat belts off duty in their privately-owned vehicles. A telling comment was that one individual said that he only started wearing his belt after he had children, and felt that he had to set a good example for the children because he insisted they wear them. As a whole, this group admitted seeing the wisdom of wearing seat belts in fire apparatus, but had an entire litany of excuses for why they didn't comply with the policy.

The author asked them that if each excuse were resolved today, would they come up with a new one tomorrow. They responded that this was quite likely the case. A lieutenant stated rather testily that he was not a babysitter and that there was only so much he could do to enforce the rules, being unable to be everywhere at all times. The other lieutenant explained that when on an emergency response he was too busy, working the siren, talking on the radio, donning SCBA, etc., to put on his seat belt. When asked if he wore his belt 100% of the time when riding the apparatus but not on an emergency run, his embarrassed response was, "Well,…"

The author led the discussions in each group. The discussions were open forum and frank comments were heard at each session. Generally, everybody agreed that seat belts were an important issue, that compliance and enforcement was weak or non-existent, and that achieving a high level of compliance would be a daunting challenge.

APPENDIX 4 – DEMOGRAPHICS

The demographics of the respondents are as follows.

All but one (155/156) were male. Only five (3%) were under age thirty and 118 (76%) were over age forty, the other 21% being in their thirties.

As for rank within their respective departments, 44 (28%) were firefighters, 58 (37%) were company officers, 17 (11%) were battalion level officers, 34 (22%) were chief of departments, and three respondents (2%) were not affiliated with a fire service.

The author did not collect the name of their department from the respondents, but the size of their department was asked. The largest group of respondents was from larger departments, with 70 (45%) coming from departments of more than 300 members, including 46 (29%) from the author's own department. At the other end of the spectrum, there were 45 respondents (28%) from departments having less than 75 members. The remainder was more-or-less evenly distributed between these two extremes.

As could be expected, the size of the departments was related to the population base served. Nine respondents (6%) were from cities of more than 500,000 people, 55 (35%) were from districts of less than 100,000 people.