THE EFFECT OF POSITIVE REINFORCEMENT ON ADOLESCENT SEAT BELT USE

By

Kevin W. Kirby

A Research Paper

Submitted in Partial Fulfillment of the
Requirements for the
Masters of Education Degree
With a Major in

Education

Approved: 2 Semester Credits

_____
Investigation Advisor

The Graduate College
University of Wisconsin – Stout
December, 2002

The Graduate School
University of Wisconsin-Stout
Menomonie, WI 54751

ABSTRACT

Kirby Kevin W.

The Effect of Positive Reinforcement on Adolescent Seat Belt Use

Education Major Dr. Brian J. Finder December, 2002 55 pgs.

APA 5th Edition Format

Several different programs nationwide have attempted to increase seat belt use among young drivers. Programs producing increased seat belt use characteristically have strong student involvement, incentives, and educational components. Rhinelander High School Buckle Down was a student driven program designed to encourage high school seniors to wear their seat belts. A pre-observational survey discovered that thirty-four percent of the high school seniors that left the school parking lot for lunch were buckled up. Seniors were the target group because they were the only students eligible to leave campus during lunch periods. Using educational materials, assemblies, seat belt activities, and incentives, seat belt compliance was observed to be sixty-four percent four weeks after the conclusion of the program. Part of the success of the Rhinelander High School Buckle Down program was the high level of student activity. Two high school students shared the results and consequences of their personal crash, one student was wearing a seat belt

the other was not. Students were featured on posters wearing a seat belt, their reason for buckling up was quoted on the bottom of the poster. The Rhinelander High School Buckle Down Around was an activity first performed at a school dance. Teams of four students attempted to buckle and unbuckle themselves as quickly as possible in all four seats of the vehicle, this resembled a "Chinese Fire Drill" with seat belts. Community support for the Buckle Down program was tremendous, many businesses provided merchandise to be given away for weekly and monthly prizes. Students became eligible for prizes by being "cited" for wearing their seat belt. The program was a twenty-four hour, seven days a week program extending community wide. If a faculty or staff member saw a student wearing their seat belt anywhere a "citation" could be written. Of course, law enforcement within the city and county participated in writing "citations". This provided officers a great public relations opportunity to talk with teens and issue them a friendly "citation". Students were not penalized for not buckling up, it was recognized that the habit of buckling up needed to be reinforced. By rewarding the desired behavior, wearing a seat belt, it was believed that students would respond positively. In researching various states seat belt programs, the effect of primary and secondary enforcement was too great to be ignored. States with primary enforcement had at least a 10 percent increase in seat belt use rates as compared to states with secondary enforcement. The correlation of fines to seat belt compliance was also significant. The higher the fine, the greater the seat belt use among all age groups.

TABLE OF CONTENTS

CHAPTER 1

Research Problem and Objective

Introduction

Motor vehicle crashes in Wisconsin are still the number one killer of adolescents 16 to 19 years old (WDOT, 2001b). In order to make a positive impact on this grim statistic, the state of Wisconsin took a significant step forward in the area of traffic safety in September of 2000 when it passed the Graduated Drivers License (GDL) bill into law. This legislative effort was designed to give new drivers experience in a controlled learning environment. As the new driver gained experience and followed the rules governing traffic safety, additional privileges would be given. This effort has resulted in 15.7 percent fewer teen deaths and a decline of 6.9 percent in severe crashes for those teens under the GDL as reported in a draft received from the Wisconsin Department of Transportation (WDOT) titled "Wisconsin 16 &17 Year Old Drivers in Crashes By Crash Severity: Pre- and Post-GDL Experience" (WDOT, 2002b). The data compared the first nine months of the second GDL year to an average of three previous GDL years during the same time period.

According to statistics released by the WDOT for the year 2000, of the people who died in fatal crashes, 68.7 percent were not buckled up (WDOT, 2001a). Wisconsin has a law that requires all motorists and passengers to wear seat belts, but enforcement officers are allowed to issue citations for non-belt use only if a vehicle had been stopped for some other possible violation since seat belt violations are a secondary enforcement. One exception to the secondary enforcement aspect of the seat belt law is when a child seven years of age or younger appears to be riding without a seat belt. The fine for this

violation is $75.00. Regrettably, only 68.7 percent of Wisconsinites comply with the mandatory seat belt law (WDOT, 2002a).

In 1983, Wisconsin enacted a child restraint law. Under this legislation, even newborn infants cannot be released from a hospital without being restrained in an infant safety seat. Since birth, Wisconsin's youth ages sixteen - eighteen years old, by law have had to buckle up. A reasonable assumption could be made that these adolescents should be in the habit of wearing seatbelts. However, studies demonstrate that adolescent drivers do not buckle up as often as more experienced adult drivers (Shinar, 1993; Williams & Karpf, 1983). Sadly, recent surveys confirm that just more than half (54.9%) of the sixteen to twenty-five year old age group in Wisconsin, chose to buckle up in 2001 (WDOT, 2002b). Despite this progress, it seems apparent that the state of Wisconsin still needs to do more along the lines of promoting as well as enforcing seat belt use among young drivers.

In Wisconsin, for an adolescent to receive his/her driver's license before turning eighteen years of age, he/she would have to complete a driver education class. It is highly likely that the benefits of wearing a seat belt are addressed in the driver education class of both private and public schools. Adolescent drivers are overly represented in motor vehicle crashes (WDOT, 2001a). Unfortunately, teenagers are not only the group at highest risk for traffic fatalities and injuries, but also one of the groups with the lowest seat belt use rates (Williams, Wells & Lund, 1983; Womack, 1996; Winnicki, 1995). This puts them amongst others at the highest risk for traffic fatalities and injuries. When it comes to seat belt compliance, adolescents are at least 10 percent lower than that of the driving public (Preusser, Williams, & Lund, 1985). It has been estimated that crash

victims wearing a shoulder and lap harness are 45 to 60 percent less likely to suffer moderate or severe injury than are persons not wearing safety belts depending upon the vehicle driven (National Highway Traffic Safety Administration, 1997). Wearing a seatbelt properly will not guarantee one's safety in a crash, but it will offer the best odds for survival (Status Report, 2001).

Analyzing the year 2000 teen crashes nationwide, 66 percent of the youth age fifteen to nineteen, who died in a passenger vehicle, chose not to wear a seat belt (National Highway Traffic Safety Administration, 2002b). Given the fact that teenage drivers are most likely to be involved in a motor vehicle crash and the least likely to protect themselves by wearing a seatbelt, parents and traffic safety educators need to embrace innovative techniques and incentives in promoting seat belt use.

Based on random observations made by the researcher that appear to correlate with the statewide compliance rate of adolescent seat belt use, there appears to be a significant amount of non-compliance at Rhinelander High School as it relates to the use of seat belts among high school seniors.

Purpose of the Study

The purpose of this study was to identify the effect that a seat belt promotion program would have on seat belt use among seniors at Rhinelander High School.

Goals of the Study

The goals of this study were to:

1. Identify the extent that seniors enrolled at Rhinelander High School were using seat belts without any form of incentives while they were leaving the school grounds.

2. Identify the extent that seniors enrolled at Rhinelander High School used seat belts after a seat belt promotion program was instituted.

Background and Significance

The number of adolescent motor vehicle deaths is an issue not only in Wisconsin, but in other state as well. In the United States, the number of child injury deaths in general is more than double that of other leading nations. In the state of Kansas for example, from 1994 to 1999, 59 percent all the children who died in motor vehicle crashes, were not properly restrained. While there was a dramatic decrease in safety restraint use among fifteen to seventeen year olds during this period of time, an alarming 74 percent of teenagers who died in motor vehicle crashes were not restrained (Kansas Attorney General, 1999). Motor vehicle crashes nationwide are responsible for 32 percent of adolescent and young adult deaths, which in 1998, translated into 5,606 teenagers killed (Krause, B. 2001). The consequence of any crash is not just the financial loss; it can include personal injury or death and this cost can be devastating. The financial burden of not wearing seatbelts in the year 2000 exceeded $50 billion in health care costs, lost productivity, and other injury related expenses according to National Highway Traffic Safety Administration (NHTSA), Secretary Norman Y. Mineta. The failure of crash victims to wear seatbelts leads to an estimated 9,200 unnecessary fatalities and 143,000 needless injuries, costing society $26 billion (NHTSA, 2002a). Overall, nearly 75 percent of the costs of roadway crashes are paid by those not directly involved but through insurance premiums, taxes, and travel delay. It is understood that cars can have the propensity to be an extension of an individual's life and many drivers feel they have the right to control the inner space of their vehicle, but in the year 2000 those costs borne

by society rather than individual crash victims totaled $170 billion (NHTSA, 2002a). Consequently, one could reasonably take the stance that personal freedom is not an acceptable argument when innocent people are injured or killed.

Knowing the benefit of seat belt use, the Presidential Initiative for Increasing Seat Belt Use Nationwide recommends states enact strong legislation by adopting primary seat belt laws and closing the gaps in child passenger safety laws. The other strategies in the four-point plan include building public-private partnerships, embracing active, high-visibility enforcement, and conducting well-coordinated, effective public education (NHTSA, 2001e). National goals for seat belt use were established in April 1997. The objective for the year 2000 was to reach a goal of 85 percent seat belt compliance and by 2005 it is projected that the nation will be at 90 percent seat belt use rate (NHTSA, 2001e). Currently the nation is at 73 percent seat belt use rate with states ranging from 88.9 percent compliance in California to 47.7 percent in North Dakota (NHTSA, 2001d). Thus, in order to minimize the human and financial loss associated with a failure to wear seat belts, as well as to meet the national seat belt use goals, action needs to be taken to encourage individuals to wear their seat belt anytime and every time they travel in a motor vehicle.

Assumptions

1. It was assumed that during the data collection process, students leaving the school grounds during lunch period were in fact seniors.
2. It was assumed that students did not have forewarning of the specific times that the researcher was going to perform observations on their seat belt use.

Chapter Two

Review of Literature

Introduction

A review of literature pertaining to previous studies and a review of programs that various states have used across the nation in an effort to raise seat belt use among adolescents will be explored. This will help identify strategies that could be implemented on a state or local level to address the issue of non-compliance in seat belt use among adolescents.

Conditions Affecting Seat Belt Use

Factors that influence adolescents' seat belt decisions include but are not limited to demographic, socioeconomic, front seat vs. rear seat compliance, enforcement, parent involvement, and peer pressure (Shinar, 1993). As discovered in other studies, males reported more risky driving behaviors and more traffic violations than females (Hartos, Eitel, Haynie, & Simons-Morton, 2000). However, when confronted with the high accident rates for their age group, adolescents as a whole believe that it is unlikely they personally will be involved in or cause a crash (Arnett, 1990). According to Jessor, Turbin and Costa (1997), they concluded that failure to use seat belts does indeed fit into the constellation of risk taking behavior. Taking into account risky driving behavior and overconfidence, adolescents are probably more likely to be at fault in crashes when compared to more experienced drivers (Taris,1998). Young drivers, whose parents exercise little control over where their child drives or how many friends ride in the car with them, are seven times more likely to be involved in a car crash (Hartos, Eitel,

Haynie, & Simons-Morton, 2000). While crash data from the WDOT Division of Motor Vehicles Accident Database for the year 2000 aligns itself with the Hartos study, fatal crash statistics are not so equal as seventy-one of the ninety-nine teenage fatalities were males. Regardless, a concerted effort needs to be given to ensure that both genders recognize the inherent risks involved in operating a motor vehicle and have the ability to effectively manage that risk.

The association between seat belt use rate and demographic and socioeconomic variables was confirmed in a study completed by Shinar (1993). In this study, a cursory look at the 2001 State Shoulder Belt Use Survey shows North Dakota (47.7%), West Virginia (49.5%) and Mississippi (50.4%) still supporting the contention that a lower socioeconomic population equates to lower safety belt usage rates. Schootman, Fuortes, Zwerling, Albanese, and Watson (1993) completed a demographic study that utilized self-reported safety behaviors of adolescents. This study found that teen safety belt usage was more prevalent in the front seat (54 percent) than in the back seat (15 percent) of a car. It also revealed that students from rural schools were less likely to wear seat belts than students in urban areas (Schootman, et.al, 1993), as evidenced by the 2001 observational seat belt use survey in Wisconsin. This correlates with studies that indicate the Milwaukee area region possessed a seat belt usage rate of 72.1 percent while the Superior/Northern region had a compliance rate of 62.5 percent (WDOT, 2002a). Given the rate of seat belt compliance in rural areas, it could be surmised that the injury rate on rural roads would typically be much higher than on urban roads. A study completed for the NHTSA by Womack, Trout and Davies (1997) confirmed that lower seat belt use was found among occupants of pickup trucks and vans, older vehicles and individuals in the

back seat and for those who had been drinking alcohol. This fact may show evidence that judgment is one of the first areas to be affected by alcohol. However, there is hope, as with age comes wisdom, for an increase in seat belt use has been associated with increased age, especially for the female gender (Winnicki, 1995).

New York was the first state to enact legislation mandating seat belt use for front seat passengers. This historic seat belt legislation was enacted on January 1, 1985 (Preusser, Williams, & Lund, 1985). Preusser, Williams and Lund (1985) assessed the effect of New York's mandatory use law on teenager drivers and found that teens responded to the mandatory use law with a substantial increase in belt use. However, both before and after New York's enactment of the mandatory use law, safety belt use by teens was lower than that of older drivers in the community in which the study was conducted. Thus, teens established themselves as a population that required special attention if higher seat belt compliance was to be expected.

By 1995, several other states had followed New York's lead and passed mandatory use laws on seat belt safety. Using the Fatal Accident Reporting System (FARS) data to examine national fatalities and seat belt use, the NHTSA conducted a study to see how effective this legislation was. The results of this study confirmed many of the qualitative findings of earlier observational and telephone surveys. Primary enforcement was found to be the most important aspect of use laws in affecting belt use rates. As a primary law, enforcement officers can pull a vehicle over and write a citation for the unbelted driver or passenger. Also having a positive affect were high fees for non-compliance, the higher the fines equates to higher seat belt use. Winnicki conducted a study in 1995 entitled, Safety Belt Use Laws: Evaluation of Primary Enforcement and

Other Provisions. He compared states with primary and secondary enforcement to better understand the differences between them. He confirmed beyond any doubt that enactment of primary use laws was found to be the most important factor in affecting seat belt compliance. Any seat belt legislation, whether primary or secondary enforcement resulted in an increased seat belt use of 10 to 15 percent. In a presentation at the 2002 State of Wisconsin's Governors Conference on Traffic Safety, Alvin Bishop, Law Enforcement Liaison with the WDOT Bureau of Transportation Safety, confirmed the above findings. To analyze observational surveys nationwide, the NHTSA has developed criteria and guidelines to assist in the standardization of seat belt use data. The National Occupation Protection Use Survey (NOPUS) serves as an acceptable format for seat belt use rate information. The NHTSA offers participating states an incentive grants program provided that their estimates of safety belt use rates are accurate and representative. The survey criterion encompasses five areas.

1. Estimates must be obtained through a survey using actual observation of occupant shoulder belt use in vehicles on roadways.
2. Survey must be probability based. Statistical procedures must be employed to select sites at which observation of shoulder belt use is made.
3. Observations must be of all occupants and all passenger motor vehicles must be observed. Observational sites must be in the largest geographic areas in the state containing at least 85 percent of the state's population. In addition, observations must be conducted during daylight hours on all days of the week.
4. Survey must be designed to produce an overall estimate of shoulder belt use with a relative precision of +/- 5 percent.

5. Survey design and results must be properly documented for evaluation of results by NHTSA.

Given these guidelines and each state's subsequent reporting of restraint use data, the June 2000 NOPUS showed that the average seat belt use rate in primary law states is 77 percent. In states that enforce seat belt violations as a secondary law, the average seat belt use rate is only 64 percent, a 13-percentage point difference (NHTSA, 2001c).

While surveying motor vehicle occupants for safety belt usage in 1995, the NHTSA discovered a major difference in motivation for wearing seat belts between teens and older drivers to be a fear of sanctions. Teens were more inclined than others to say they wear seat belts to avoid a citation. Additionally, higher seat belt usage rates are associated with increased fines for not buckling up. In analyzing the effect of various provisions of seat belt use laws, a 1995 NHTSA study found that for every one dollar in fine level, states tend to gain about 0.08 percent higher seat belt use. That is, a state with a twenty-dollar fine would tend to have a seat belt use rate that is 8 percent higher than a state with a ten-dollar fine (NHTSA, 2001e). California has a seat belt fine of $100 for occupants that do not buckle up and their seat belt compliance rate is 92 percent. Thus, it stands to reason if a state wants to increase seat belt compliance, they should make the fine more substantial.

There are teens that wear seat belts on a regular basis, those that do, buckle up out of habit. Most of the teens that wear seat belts are convinced of the safety benefit of wearing a seat belt. Some have used seat belts since an early age

or began wearing them in conjunction with learning to drive. Others have been convinced by a first-hand accident or the experience of someone close to them. Habitual seat belt wearers often credit their parents for establishing the practice of using seat belts (NHTSA, 1997). Conversely, when the driver is unbuckled, passengers including children are generally unbuckled as well (Status Report, 2002).

It seems intuitive that parents are generally very protective of their children. It is not unusual for them to go to great lengths to ensure their children are emotionally and physically safe. However, the Insurance Institute for Highway Safety conducted a survey at twelve high schools in Connecticut and Massachusetts that failed to support this contention. In the morning, adults were observed dropping off teenagers at school in which nearly half (46 percent) of such teens weren't using seat belts. In addition, one half of the unbelted teens were riding with an adult who was buckled up. Only 8 percent of the time was the opposite true, teens buckled up in vehicles in which the adult drivers weren't using seat belts (Status Report, 2002). One can only hope that parents have not given up on their ability to instill positive seat belt habits for they must be aware of the risks involved in choosing not to make sure all passengers are buckled up.

As reported earlier, the Presidential Initiative for Increasing Seat Belt Use Nationwide wanted the nation to be at an 85 percent use rate by the year 2000. In 2001, falling well below the stated goal, compliance nationally was at 71 percent and Wisconsin's disappointing contribution was 64 percent. As an effort to help states get tougher with their seat belt laws, the federal government developed a

"Click it or Ticket" program. Governor Hunt from North Carolina launched this seat belt campaign in 1993. Before the campaign began, about 65 percent of North Carolinians buckled up and after three weeks of this program, seat belt compliance was up to 80 percent (NHTSA, 2001b). Unlike North Carolina, one of the seventeen states to have a primary seat belt law, Wisconsin modified the Click It or Ticket program to a "Click it Why Risk It?" as this state can write seat belt citations only after stopping the motorist for a different violation. The Click It Why Risk It program provides grant money for sheriff deputies to work overtime to help enforce seat belt laws. While such a grant would seem well worth pursuing, on March 2, 2002, for the second time in two weeks, the Waukesha County Board rejected applying for the $7,500 grant by one vote. After a heated debate on whether this grant represented a chance to improve traffic safety or an invitation to government excess and intrusion, opponents of the grant argued that the grant would be used to rack up needless overtime costs and harass motorists for seat belt violations that would not otherwise result in traffic stops (Williams, S., 2002). This researcher has to wonder how informed these public servants are, since the start of North Carolina's Click It or Ticket program has reduced fatal and serious traffic crashes have been reduced by 14 percent, which resulted in a savings of $135 million in health care related costs. In addition to that savings, the state's auto insurers asked for approval of premiums totaling $33 million less than they would have if the Click It or Ticket had not been instituted (NHTSA, 2001b). North Carolina had to approach traffic safety as a public health issue in order to pass effective seat belt legislation as

they had legislators too weak to protect the children in their state. Legislators hid behind the argument that "we don't need government telling parents how to transport their children" (NHTSA, 2001b). Thus far, Wisconsin's legislators and governor have avoided acting on primary seat belt legislation. Wisconsin needs a governor to supply the leadership and wisdom to support and promote primary seat belt legislation.

As previously cited in the studies above, adolescents have a lower seat belt rate compared to adults. In addition, the technical report entitled, Characteristics and Condition of Teenager Safety Belt Use (Womack, Trout & Davies 1997) states the following:

> The "false consensus effect" is an egocentric bias in interpreting social phenomena wherein behavioral choices and judgments are seen as relatively common and appropriate to the circumstances (i.e., "everybody does it"). Adolescents may be particularly prone to egocentric attribution (Arnett, 1990; Dolcini et al., 1989 Enright, Shukla, & Lapsly, 1980). The notion of adolescent egocentrism also includes the failure to differentiate between ideas that are unique to the individual and those that are more universally accepted. Such biases serve to exaggerate feelings of personal uniqueness, often leading adolescents to think that they are exempt from danger (Dolcini et al., 1989). Arnett (1990) has argued that adolescents underestimate the probability that calamity will result from their risky behavior, thereby distorting the probability of a crash in their favor. This form of cognitive misjudgment has been cited as an explanation for the

> sense of immortality and invulnerability to harm often ascribed to the adolescent (Dolcini et al., 1989; Weinstein, 1980).

The above theories encompass a variety of reasons that may explain the lack of seat belt use by teens. The feeling of invulnerability seems to be the most prevalent reason along with apathy or forgetfulness as other possible explanations.

Seat Belt Programs

A variety of state-oriented programs demonstrate what some states have designed to increase rates of seat belt use among their adolescents. A proactive approach New Mexico embraced could serve as a model for other states that experience unacceptable levels of motor vehicle deaths. In 1991, New Mexico had the highest motor vehicle death rate in the country (Bross, M., Brill, T., Spellicy, M., 1994). While it is unknown from the above source what statistic this motor vehicle death rate is based upon, New Mexico's 1993 crash fatality rate was 26.7 per 100,000 populations, which is nearly twice the national crash fatality rate (NHTSA, 1996). In order to combat New Mexico's grim statistics, Operation Driving While Intoxicated (ODWI) and Operation Buckle Down (OBD) were initiated in December of 1993. The purpose of ODWI was to increase the perception in New Mexico that the consequences of DWI will be swift, certain, and severe. The ODWI program consists of using statewide sobriety checkpoints and saturation patrols in conjunction with publicity regarding increases in enforcement of the state's anti-drunk driving laws. The OBD program consists of public education and enforcement for the state's primary seat belt law. New Mexico is one of seventeen states that have primary enforcement for its seat belt use law.

By 1996, three years after implementing the OBD and ODWI programs, New Mexico had achieved the second highest rate (85 percent) of seat belt use in the country. The state of New Mexico conducts on an annual basis a series of statewide seat belt observational studies. Results of these surveys are published under, "Driving in New Mexico, A Survey of Knowledge and Activities." The latest survey, conducted in July of 2000, reported a 92.6 percent regular use of seat belts (self-report) and strong support (87 percent) for the state's primary occupant restraint laws (New Mexico Highway and Transportation Department, 2000). Thus, through initiating a two-prong attack (OWDI & OBD) to combat their state's fatality rates, New Mexico achieved a reduction in alcohol related fatalities (59 percent in 1993 to 48 percent in 2000) and succeeded in raising the seat belt use rate to 86.6 percent.

In 1999, the state of Kentucky was experiencing a seat belt compliance rate of 54 percent with secondary enforcement of seat belt laws. Of the five high schools in Lexington, Kentucky, Lafayette High School had a seat belt compliance rate of 41 percent (Health Promotion of Seat Belt Use Among Adolescents, 1999). In an effort to increase seat belt use rates at the local high schools, the city of Lexington promoted the seat belt project, "Battle of the Belts 99". Four of its five high schools participated, while the fifth school served as the control group.

The goal of "Battle of the Belts 99" was to promote seat belt awareness among high school students and ultimately result in increased seat belt use. During the six-week project, students received information on seat belt use through formal education, in lunchroom activities, and a seat belt trivia contest. The school nurse directed this project as he/she has a major role in the prevention of accidents and injuries. Two types of

persuasive communication, authoritative and fear arousal were used. The formal education was presented to the students during their health class. Each student was given a packet including a crash scene photograph, case study, seat belt contract, informational brochures, and a buckle-up bracelet. A slide presentation and a Power Point demonstration illustrated data and depicted crash scenes from Fayette County. At the end of the educational portion, the students were asked to sign a contract to promise they would wear their seat belt every day for the next month. Contract signing was a strategy aimed at promoting a collaborative working relationship between the adolescent and nurse.

Many devices were used in Lexington to motivate student participation during "Battle of the Belts 99". Students who chose to participate in the lunch period games received a ticket that offered them the chance to win a prize at the end of the program. To reinforce seat belt use, incentives including a key chain, can of Coke, or a buckle-up Weepul (small yarn pom-pom approximately one-inch in size glued to a ribbon stamped with a buckle up message) were passed out in the parking lot as students were leaving at the end of the day. As a subtle hint, Dum-Dum suckers were given to those students who were not compliant with seat belt use. As a result of "Battle of the Belts 99", all four Lexington high schools showed improvement in post-observational seat belt counts as compared to pre-observational seat belt counts. In its post program compliance survey Lafayette High School showed the greatest increase (17.5 percent) with a 72.4 percent overall student seat belt use (Health Promotion of Seat Belt Use Among Adolescents, 1999). Thus, for the four weeks the program was in effect, seat belt use rates did increase.

Questions still exist regarding the "Battle of the Belts 99" program. Without knowing any compliance rates four weeks after the program's completion, the habit of buckling up may not have been established. It is also interesting to note that in the "Background and Significance" section of this study it is reported that in 1997, Lafayette High School had a seat belt compliance rate of 41 percent. Two years later, on September 14, 1999, seat belt use rates of Lafayette High School students was observed to be 54.9 percent, almost 15 percent more students buckling up than two years earlier. Upon completing "Battle of the Belts 99", post-counts performed on October 12, 1999 revealed 72.4 percent of the students at Lafayette High School wore seat belts.

In 1998, Michigan's Office of Highway Safety Planning made the decision to improve the seat belt use among males aged sixteen to twenty-two. Traditionally, this age group has the lowest seat belt compliance. The Michigan Office of Highway Safety Planning worked with one of Michigan's largest advertising agencies, Campbell-Ewald, to develop a media campaign as a public service project. In conjunction with the American Automobile Association and Michigan Health and Traffic officials, the "Get Maimed" campaign consisted of billboards and radio public service announcements featuring slogans such as 'Look Mom, Only 432 Stitches" and "Windshields Clear Up Acne Fast." This and other initiatives are considered to have been significant contributors to the state's 70 percent seat belt use rate (Krause, B., 2001). Consequently, it appears that witty, humorous, thought provoking advertisements are more effective in convincing motorists to wear seat belts as opposed to reminders that "It's the Law" or other conventional slogans.

It is reasonable to expect that most people are cognizant of seat belts' propensity to reduce injury and death in motor vehicle crashes, however, data from 1998 indicates that teenage compliance of seat belt laws in Illinois was about half that of the statewide average, according to the Illinois State Police (NHTSA, 2000a). Statewide compliance for the general driving population was 65.9 percent while the rate for teenagers in 1998 was observed to be about 33 percent. According to the Traffic Safety Digest from the NHTSA, teenage drivers in Illinois were three times more likely to be involved in a motor vehicle crash as compared to adult drivers. Thus, the poor rate of teen seat belt use combined with the increased likelihood of a crash, accented the need for innovative programming. In order to minimize the potential for teen injuries and or fatalities in vehicles, the Illinois State Police District 10 developed and sponsored a seat belt program called "Operation Cool" in 1996. Its purpose was to decrease traffic crash injuries and fatalities among teenagers in sixty Illinois high schools (NHTSA, 2000a). While the program is customized to each community and student body, the goals of "Operation Cool" were to:

- Establish local partnerships among police, high schools, businesses and civic groups, in order to coordinate the program and develop cash and in-kind donations.
- Provide tangible incentives to teenagers to buckle up every time they travel in a motor vehicle.
- Increase seat belt use among teenagers in participating schools to at least 70 percent.

- Decrease the number of teen fatalities related to motor vehicle crashes (NHTSA, 2000a).

While each program was tailored to the local community, associated activities usually included:

- Training and instruction in seat belt safety conducted for all student participants by school resource officers or state troopers
- A signed student contract agreeing to buckle up in exchange for a chance to win prizes; students violating any part of the contract are ineligible to win prizes
- Periodic compliance checks conducted by local and state police officers as well as school administrators and community volunteers
- Awards provided after each compliance check; and belted survivors of car crashes and student volunteers may compete for state-level prizes
- A public ceremony recognizing schools reaching the 70 percent objective at year's end and cash prizes awarded to schools with the highest seat belt use rate (NHTSA, 2000a).

Within two years of Operation Cool's inception, 126 schools and over 300 businesses in Illinois chose to participate in the program. Seat belt use typically jumped up to 55 to 70 percent, but climbed to 90 percent or more in many schools (NHTSA, 2000a). As a result of the positive impact Operation Cool made on teen seat belt compliance, the program has expanded statewide.

Sometimes being second is a commendable accomplishment, except when the category is motor vehicle death rate in the country. The state of Mississippi found itself with this unwanted honor in 1991 (Bross, Brill and Spellicy, 1994), as determined by the

fatality rate per 100 million vehicle miles traveled (NHTSA, 2001a). It should come as no surprise that in 1990; observed seat belt use in Mississippi was 21.81 percent (Bross, Brill and Spellicy, 1994).

In an effort to improve Mississippi's seat belt use rate, Bross, Brill and Spellicy (1994) conducted a prospective study to design an effective seat belt education program for high school students. Three private high schools of compatible size agreed to participate in this study, each offered drivers education in their curriculum and were randomly assigned their study group. While the control school students did not receive any additional seat belt information during the study, the presentations school received a 30-minute educational program on how and why seat belts should be worn. The third school was the presentation/incentive group, students received the same presentation and inexpensive prizes during the fourteen-weeks of the program.

To establish a baseline, observational seat belt studies were taken at the three Mississippi private schools on the same morning, one week prior to the start of the program. All observers either had prior experience recording seat belt use data or a study team member prior to the observation period trained them. Observers were located in a strategic location, thus enabling them to record gender and seat belt status of those vehicles driven by teens entering the school parking lot. Seat belt data was not collected from vehicles driven by an adult.

The educational phase of the Mississippi study was designed to elicit fear of automobile crashes and promote seat belt use. This phase consisted of a medical student conducting a thirty-minute program that featured a policeman who described crash site experiences; a football player who drew comparisons to crash dynamics, and a paraplegic

woman that related the nature of her crash and the lifestyle changes she has had to endure. The incentive program school received fifty prizes that were to be randomly awarded over a fourteen- week period of time. Prizes included, pizza coupons, compact discs, tee shirts, and movie passes.

Observational surveys at the three private schools in Mississippi five weeks after the completion of the program showed the presentation/incentive group doubling its seat belt use rate. In the control school, male compliance rates did not change, however, the female rate did increase slightly. In the presentation-only group, no significant increase in seat belt use was recorded (Bross, Brill, and Spellicy, 1994). Thus, it would be reasonable to conclude that a high fear message delivered alone has very little impact in getting non-seat belt wearers to buckle up. However, a high fear message coupled with randomly distributed incentives for wearing seat belts is more effective in promoting seat belt compliance.

In the wake of a tragic car crash that took the life of a high school student in Frederic, Wisconsin, the Future Homemakers of America chapter at Frederic High School decided to implement a seat belt education program as a service project. High school students conducted observational surveys at the high school and at a major intersection in the community. Seat belt use for students was 43 percent and community use was a found to be 37 percent (NHTSA, n.d.). The Future Homemakers of America chapter developed a brochure containing the results of the seat belt survey as well as other seat belt information. This brochure and other seat belt information were distributed throughout the Frederic School District and community, including putting brochures in grocery bags at the local supermarket. Students worked with community organizations to

develop two displays at the local bank on seat belt use, created buckle up flyers, which were placed on the windshields of cars in the downtown area, and talked to senior citizens about the importance of wearing a seat belt. The local press and television media, school system and other organizations were all instrumental in promoting the use of seat belts. Coloring contests focusing on seat belt use were held for grades one through five at the elementary school in Frederic. A Polk county judge and several state police officers shared their experiences with students of driving age, telling them how individuals' choice to use or not to use a seat belt has affected them. Thereafter, Frederic High School students created lesson plans on traffic safety for kindergarten through eighth grade classes. Articles and editorials written by students on seat belt use appeared in the local newspaper and school publications. Public service announcements were written, recorded, and distributed to local radio stations. February was declared "Wear Your Seat Belt" month by the community of Frederic. Students at Frederic High School had hoped to increase seat belt use of the community and students by 20 percent. A follow-up observational survey demonstrated a 37 percent increase in seat belt use among students and a 33 percent increase in the community overall (Kluger, 1998). While it is unfortunate that a high school student had to die before students and adults realized the importance of wearing seat belts, the impact of community-wide efforts will hopefully result in the habit of buckling up.

Teenagers in Wisconsin are not much different than teens in other states when it comes to seat belt use. While Wisconsin statistics reflect overall seat belt use rates at 68.7 percent, nationwide observational studies reflect teen use is 10 to 15 percent less than that of the general driving public (WDOT, 2002a).

"Operation Teen Buckle Down" was a program piloted at D.C. Everest High School, Schofield, Wisconsin and Nekoosa High School, Nekoosa, Wisconsin, in 1998 to raise awareness and compliance of seat belt use. Using Illinois' "Operation Cool" as a guide, "Operation Teen Buckle Down" incorporated the elements of incentives, education, and positive enforcement of seat belt use over an extended time to foster the habit of buckling up every time a student rode in a motor vehicle.

Partnerships created between businesses, local law enforcement agencies, and high school students enhanced the community involvement and commitment to Operation Teen Buckle Down in Schofield and Nekoosa. Businesses donated many of the prizes awarded, law enforcement officers provided training and seat belt educational programs, while students bore the responsibility of planning and implementing Operation Teen Buckle Down. Students were involved from the beginning of the program through the end; they offered ideas for prizes, solicited prizes from local businesses, decided what activities to promote, and managed the logistics of reaching as many students as possible. Prior to the start of Operation Teen Buckle Down, a law enforcement officer conducted an observational survey of students entering the school parking lot to obtain base-line seat belt use data. Observations were made from an unmarked police car or from the officer's personal vehicle. Near the end of the school year, a post-program survey was conducted in the same manner.

Police officers in Schofield and Nekoosa were made aware of the Operation Teen Buckle Down program and any contact they had with teenagers found wearing a seat belt, resulted in the issuance of a "reward ticket." This ticket recognized the student for choosing to "buckle down" and potentially rewarded them through eligibility for prize

drawings. D.C. Everest High School increased seat belt use among its students from 42 percent to 70 percent, while Nekoosa High School raised seat belt compliance from 24 percent to 70 percent (WDOT, 1999). Operation Teen Buckle Down, therefore, indicates that student involvement along with a strong partnership among police, school officials, and the community, equals success. The planning, procedures, and lessons learned from this pilot are documented in the Operation Teen Buckle Down Notebook, which can be obtained from the Wisconsin Bureau of Transportation Safety.

Summary

Trends and tendencies of teenagers' unwillingness to buckle up can be explained by several different reasons; where they live, gender, the influence of their parents and peers, as well as the probability of citation for noncompliance. When analyzing the success of seat belt programs offered throughout the nation, some common threads exist; educational programs need to be age appropriate and appeal to students' sense of emotion and logic, and speakers whose lives have changed due to the decision to wear or not wear a seat belt can have a positive affect on students, especially if prizes and intermittent incentives are given to those who buckle up. To foster a sense of ownership, students need to be empowered in the administration, planning, and implementation of the seat belt program. The length of time a program encompasses is another important consideration. Programs that last six months or more run the risk of boring their target audience, conversely programs that span four to five weeks need to assess if enough time was given to create or enforce a habit. It appears that ten to twelve weeks would be the minimum length of a buckle down program to affect a habit.

Chapter 3

Population

Rhinelander High School Seniors were the population studied for seat belt compliance. This group was chosen because they are the only students allowed to leave school grounds for lunch, which provided for a more accurate observational survey.

Purpose

The purpose of this study was to identify the outcomes of a seat belt program on the seniors at Rhinelander High School (RHS). The goal of RHS Buckle Down was to raise awareness and the rate of seat belt use of RHS seniors. This would be measured through an observational survey.

Methodology

Prior to the implementation of the seat belt program, an observational survey of RHS seniors leaving the school parking lot for lunch was conducted. This survey revealed that seat belt compliance of RHS seniors observed leaving the school parking lot was only 34 percent.

RHS Students Against Destructive Decisions (SADD) decided that a seat belt campaign was needed to encourage seniors and the rest of the student body to buckle up. Student leaders in the SADD program chose to use the "Operation Teen Buckle Down" program piloted by Nekoosa High School, Nekoosa, Wisconsin and D.C. Everest High School, Schofield, Wisconsin, as a template for the RHS campaign. Components of this program included the following: student design and implementation of a buckle down program, educational information, activities, and prize incentives. Student involvement

was an essential key to a successful "Teen Buckle Down" program as determined by the evaluations of previously mentioned pilot schools.

The initial objective for the SADD students was to choose a name for the seat belt program. After a brief discussion, the name "RHS Buckle Down" was selected. Educational opportunities, activities, incentives and prizes were main components to this program. Through committee work, programs and duties were developed and assigned.

Because SADD students wanted to involve as many of their peers as possible in this project, the role of students would always be addressed to ensure student participation and direction. It was believed that varied responsibilities by many different student groups would lead to increased student ownership of the RHS Buckle Down program. Hence, strong student support and ownership would lead to greater success in accomplishing program outcomes.

A steering committee for the RHS Buckle Down program was organized with invitations extended to the following groups: RHS students, RHS administration, the Rhinelander Police Department, and the RHS police liaison officer who also represented the Oneida County Sheriff's Department. The objectives for the first steering committee meeting was to determine:

1. The depth of administrative support for the RHS Buckle Down program.
2. The commitment level of local law enforcement to issue "citations".

The initial meeting was very helpful in gaining the support and encouragement of law enforcement officers as well as from the high school administration. Obtaining high school administrative support was a relatively easy task. RHS SADD students had

statistics to demonstrate a problem existed, ideas for a positive program designed to address the issue, and the enthusiasm to embrace this project.

The steering committee agreed that the rate of seat belt compliance (32%) for Rhinelander High School seniors was unacceptable. In the last two years, RHS lost five students due to car crashes. Knowing the teen crash rate and the risks associated with operating and riding in a motor vehicle, the steering committee united to combat the problem. The committee embraced the positive aspects of the program asserting that punishing students would be counterproductive. This program would not be a punitive program, rather an opportunity to help those students that weren't in the habit of buckling up to develop the habit. One positive element was to reward those students who were doing the right thing. It was believed the educational information and seat belt activities coupled with the positive recognition would increase student compliance in wearing a seat belt.

Results of the first RHS Buckle Down steering committee meeting included the idea of developing 28"x 22" posters of students wearing a seat belt, attaching these posters in many highly visible locations at the high school, development of specific information written on the "citation", and an agreement that the program needed to run at least ten weeks to produce the desired habit of wearing a seat belt. Law enforcement representatives from the City of Rhinelander and from the Oneida County Sheriffs office pledged their support for the program and expressed a willingness to encourage their officers to write citations. This meeting exemplified an exciting feature of the program; students, administration, and law enforcement officers working together in a successful effort to help make driving safer.

Committee members determined that the program would consist of at least three educational opportunities (two all-school assemblies and a dance), visual reminders (banners promoting "RHS Buckle Down" and posters), and prizes awarded to those names drawn from the "belted barrel" (see Appendix B). Prizes would be awarded weekly and monthly throughout the duration of the program.

Once the Rhinelander High School's administrative support for the seat belt promotion program was achieved, custodians, parking lot monitors, support staff, and teachers were asked to participate at many different levels. For example, any adult associated with the high school could issue student's a "citation" for wearing his/her seat belt. Librarians and computer technicians also assisted in the creation of buckle down posters. Custodians made the "belted barrel", the fashion merchandise class created a window display featuring the consequences of not buckling up, and the welding class made the stands that supported the "Buckle Up" signs at the end of the driveways. From an administrative support standpoint, the high school principal approached the school board to gain approval in soliciting donations from the community for "RHS Buckle Down".

Before implementing the RHS Buckle Down program, several tasks needed to be completed.

- Citations needed to be designed and approved by the principal. These citations then needed to be printed and delivered to local law enforcement agencies.
- A prize committee was needed to secure incentives for the program.
- A publicity committee was established to create program visibility through the use of posters, banners and local media.

- A rules committee was developed to establish program and prize guidelines (i.e. could a person win more than once or were SADD members eligible for drawings).
- The activities committee was entrusted to plan dances and educational assemblies.

Committee membership consisted of student volunteers from RHS SADD chapter as well as any other interested student.

RHS CARES

As the planning and organizing progressed, it was recognized that the school's parking lot exits exhibited no reminder for students to buckle up. After a telephone conversation with the Oneida County Highway Commissioner, signs with the message: "Don't Get Caught Without Them. Buckle Up. It's Our Law" were ordered and given to the high school. Staying with the framework of an informative, positive program, police liaison officer Phil Schmidt suggested that the words "It's our Law" be replace with "RHS CARES". A local business, Press Express, was asked to make that modification to the signs. The signs arrived when the ground was frozen, thus a temporary sign holder was needed. Remembering the goal of having student involvement in the RHS Buckle Down program, three students from the Welding class welded, drilled, and painted three temporary sign stands.

Another example of student involvement in the seat belt promotion program was the participation of the Interior Design class at RHS. The Interior Design class competed against themselves in designing a window display that reflected the message of the RHS Buckle Down program. The SADD advisor gave the Interior Design class an overview of the program a week before the start of the program. With that insight into the

program, five groups of students competed to design the most influential message as voted on within their class. The winning group then had to transfer their concept from paper to the glass display case where it was featured for two weeks.

The "RHS Buckle Down" citations (2500 of such) were printed at the high school on three page carbonless paper for a cost of sixteen dollars. The carbonless paper was donated to the Rhinelander High School Print Shop and the discount was passed on to the RHS Buckle Down program (see Appendix A). The original citation was given to the student, the yellow copy went into the "belted barrel," and the pink copy was kept separate as a backup. A great deal of discussion went into the word "citation". Some students were concerned about the negative connotation associated with this word and offered other suggestions such as tickets, receipt, and slip. Ultimately, the term "citation" was approved by the SADD membership.

As the SADD advisor, this researcher called the three local car dealerships to briefly explain the purpose of the RHS Buckle Down program and ask if they would be open to a visit from a member of the prize committee. D.C. Everest High School was able to offer their grand prizewinner a new car lease for six months at no cost. No car dealerships in the area offered a car for a grand prize, but Bergstrom Ford was very generous donating six oil change certificates, three fleece-leather trimmed F150/Harley Davidson jackets and one ticket for a "puck shot" (from the far Blue Line, randomly drawn contestants have the opportunity to shoot for an opening two inches larger than the puck in which the prize for this is a free Ford F-150 Pickup Truck.) at the last RHS Hockey game of the season. Other merchants donated NASCAR t-shirts and hats, pizzas, C.D.'s, gift certificates, movie passes, and fast food certificates. The support of the

community for the RHS Buckle Down program was overwhelming. As prizes were collected, the rules committee determined that two prizes would be given away each week (approximate value of twenty dollars), one monthly prize (approximate value of eighty dollars), and a grand prize of $500 cash. As citations were written, they were deposited into a "belted barrel" (see Appendix B) that was kept in the main lobby trophy case at school. Along side the "belted barrel" was a poster thanking and identifying the businesses for donating prizes, a second poster listed the names of students who won the weekly and monthly drawings. Prizewinners were drawn from the "belted barrel" each Friday or the last day of the school week.

The support from the fast food restaurants was so great that food coupons were given away on two separate mornings before school to all vehicle occupants driving through the student parking lot wearing a seat belt. For visibility and safety sake, SADD students wore the highway safety vests on loan from the Oneida County Highway Department while handing out the coupons. This activity served as a method to offer both an incentive for students to buckle up and positive visibility for the RHS Buckle Down program.

In order to promote the seat belt program throughout the school as well as the Rhinelander community, the soft drink vendors for RHS, Coke and Pepsi, responded to the banner request by donating six banners. Three banners were hung on the tennis court fence along side the student parking lot. One banner was placed in the main entry of the high school and another was hung in the cafeteria. The last banner was used as a table skirt for dances and other "RHS Buckle Down" activities. Another visual reminder for the RHS Buckle Down program was the wall space under the banner in the cafeteria. The

student's copy of the citation was normally given immediately and directly to the student. In cases when it was impossible to directly give the student the citation (i.e. student driving in car or traveling in the opposite direction), the citations were posted on the wall and grouped alphabetically under the banner. This became a gathering spot for students to go and see if they or one of their friends received a citation.

Students who were spotted wearing their seat belt in the high school parking lot were asked if a picture could be taken of them in their car. If the student was receptive to the request, a digital camera photograph was taken and they were verbally asked to complete the sentence, "I buckle up because…" The RHS BUCKLE DOWN picture permission slip was given to the student and they had two days to return the completed permission slip or the photo was erased.

The students' photographs were then made into 22"x28" posters and hung in highly visible locations at school. The advantage of using digital photography was the ability to edit or perfect the image prior to it being printed. When the photo came out of the color printer, the nine sheets of paper that created the poster were pieced together, glued, trimmed and laminated. This labor intensive process took about fifteen to twenty minutes per poster; fifty-six posters were made this way (see Appendix C). To complement the fifty-six posters, three smaller 8 ½" x 11" color prints were also made of each digital photograph. A total of two hundred and thirty posters, prints, and banners were hung up the evening before the program commenced for maximum visual impact and reinforcement of the message to "Buckle Down".

After reviewing regulations previously created by the other pilot programs in Nekoosa and D.C. Everest high schools the Rules Committee at Rhinelander High School developed the following list:

- SADD students will be eligible for all drawings and prizes.
- Students may be cited an unlimited amount of times.
- The citations drawn for the weekly prizes will be set-aside until the monthly drawing. Citations for that month will go back into the belted barrel and the monthly winner will be drawn.
- At the end of each month, all citations will be removed until the grand prize drawing.
- Prizes must be picked up before the following week's drawing.

The publicity committee recruited eight youths from the general student body to create public service announcements (PSA) that were delivered on a weekly basis over the school's loudspeaker system. These individuals were personally invited to participate based on their creative "out of the box thinking", leadership, and ability to persuade their peers. Two pizza meetings were held to develop all of the PSA's for the program. Not all of the subcommittee's ideas made it past the scrutiny of the high school principal, but those that did were then well received by the student body.

The activity committee had the ultimate challenge of getting students excited about and engaged in the Buckle Down program for its ten-week duration. The first educational program consisted of a ten-minute introduction of the "Buckle Down" program during a student assembly in the auditorium. At the activity committee's urging, this researcher and Officer Phil Schmidt, school liaison officer, gave the students an

overview of the program. Students were very interested in how they were going to be "cited." Students were assured that an officer would not "pull them over" to give them a Buckle Down citation. Officers might approach students in a parking lot downtown or if they were observed getting ready to park their vehicle, an officer might follow and park behind them. Officer Schmidt closed his remarks with this statement: "If I could personally walk each one of you to your car and buckle you up, I would. Folks, it is that important. Please do it. Not for me, but for yourself."

Two RHS student volunteers delivered the second educational program, four weeks into the RHS Buckle Down program during the regularly scheduled Quarterly Awards and Recognition program. A twenty-minute time slot was utilized to promote the RHS Buckle Down message. The two students told how seat belt usage/nonuse affected them in their car crashes.

The first young lady to deliver the educational component of the seat belt promotion program spoke of how she lost control of her pickup truck and was ejected through the front windshield. Injuries sustained in the crash included a pelvis broken in three places, a broken leg, a wrist with multiple fractures, and more. This crash could have been a fatality but she was very fortunate to have a Flight For Life helicopter in the area; they landed three minutes after receiving the call. A Power Point presentation was shown to the assembly of her truck after the crash, her body while in the recovery room, and the x-ray of her pelvis and the placement of its pins. Unfortunately, she could not tell the students about the crash because she doesn't know what happened after losing control of the truck. She remembers racing her boyfriend to the truck after shopping at Wal-Mart, because the first one to the truck got to drive. Her other memories include driving

through town and out on Highway 8 for about three miles before losing control of her truck. When asked why she had not buckled up, she replied, “I was in too big of a hurry to get going and just forgot”.

When the second presenter of the seat belt promotion program recalled her story, she knew all the details of the crash. It had been raining hard for the last several minutes. She was going around a gentle bend at thirty miles per hour and the road was wet. The vehicle started hydroplaning and she lost control of her Geo Tracker. She stated, “When the world stopped moving, I realized that the Tracker was upside down in the ditch.” The earlier decision to buckle up came as a result of her boyfriend’s insistence. He always made her wear it, so it had become a habit. She admitted that prior to going out with her boyfriend, she rarely wore her seat belt. While getting ready to leave the crash site, she remembered her boyfriend’s leather jacket in the back seat and reaching through the broken window to retrieve it, cut her arm on some broken glass. This cut was the only injury she sustained.

The final educational experience of the RHS Buckle Down program planned was a dance. After the first month of school, dances do not draw very well at RHS and the dance committee needed to keep costs at a minimum. With this in mind, SADD members volunteered to be the D-J’s and somehow music, a sound system, and lights found their way into the cafeteria. During the dance, activities with fatal vision goggles were entertaining students in the commons. Dribbling a basketball around eight cones in a serpentine manner, tossing a Koosh ball into a garbage can, and putting a golf ball into a cup were challenges students attempted while wearing the goggles.

Premiering that night was the "RHS BUCKLE DOWN AROUND!" (see Appendix D). Teams of four were formed with the objective of moving from seat to seat buckling and unbuckling as quickly as possible, similar to a Chinese fire drill but using seat belts. The rules for this game were as follows:

1. All contestants are seated, buckled up and hands are touching their heads.
2. On GO, unbuckle and proceed as quickly as possible to the next seat.
3. After buckling up, contestants must touch their heads with both hands to ensure, the seat belt has been buckled. Then unbuckle, and go to the next seat, until returning to the original seat.
4. Do not jump over the car seat from front to back or visa versa.
5. Do not slide over the hood or trunk of the car.
6. DO NOT SHUT THE DOORS.
7. Time will end when contestants have returned to the seat they started in, are buckled up, and have their hands on their heads.

The driver's education car was used for the RHS Buckle Down Around. Care and safety was taken into account as the front seat was centered, steering wheel tilted to the highest position, arm rests placed in the up position, and the floor mats were pulled out. The car was parked under the lighted overhang in the front of the school for good visibility, as it was dark and snowing. The level of enthusiasm for this game was evident by the number of attempts teams made (six to eight) in order to beat their own record. The best time recorded that evening was 32.4 seconds. The students had so much fun with the RHS Buckle Down Around that it was decided competitions would be held the following week during all three-lunch shifts. The goal was to regenerate student

enthusiasm for the Buckle Down program. Students also learned that it didn't take much time to buckle up when getting into the car, dismissing one of the excuses for not buckling up.

The following schedule shows how the week's activities were planned:

Monday & Tuesday: team sign up for RHS Buckle Down Around during lunch shifts

Wednesday: poster making, competition brackets were completed

Thursday: teams competition

Friday: final team competition

On Friday, the quickest teams of the three lunch shifts were invited to battle it out head to head after school. Each team had two attempts to establish the winning time. The best time recorded on Friday afternoon was 27.4 seconds. Prizes were given to all of the finalists.

The last activity of the Buckle Down program took place toward the end of the school year when it was discovered that the remaining grant money needed to be spent. To help students solidify their habit of buckling up, a search began for a visual reminder. The reminder would have to be visible from the driver's seat in order to remind occupants to wear their seat belts. The Red Ribbon Week catalogs have Weepuls, small yarn pom poms approximately 1" in size, glued to a ribbon stamped with an anti-drug message, for the cost of $.79 each. The SADD organization didn't have $790.00 so the group made its own "Buckle Buddy" (see Appendix D). Students used 1x1/8" wooden hearts for the feet, ($1.98 pkg. of 28), a 1" pom pom for the body, ($2.98 pkg. of 100), 8mm plastic eyes for the eyes, ($2.69 pkg. of 280), and stickpins with colored heads for

the antennas ($2.35 pkg. of 240). To hold the ½" message tape (15.99 per roll), 5/8" Ribbon (.74 per yd.) was used. Each Weepul had double-sided adhesive tape on its feet so it could be stuck to the dashboard of a car. The final cost for the "Buckle Buddies," totaled $510.00.

Making the "Buckle Buddies" proved to be very labor intensive. Yet, pre-assembling some of the "Buckle Buddy" pieces made the task easier. The eyes had to be glued to the pom poms. The ½ " message tape was centered on top of the 5/8" ribbon (enhancing the buckle down message) then cut into 3 ½"strips. Attaching the double-sided tape to the wooden hearts prior to the assembly process proved helpful as well. After these parts had been prepared, the assembly progressed fairly quickly in this order:

1. Dab glue on the heart, then put the ribbon on the heart.
2. Drop of glue on the ribbon, put the pom pom on the ribbon.
3. Put glue on the ends of the stick pins and arrange appropriately on top of the pom pom.

This activity kept many idle hands busy in study hall with student volunteers working independently after being instructed. Adult volunteers within the community were also enlisted to help through personal invitation by the SADD advisor.

Data Collection

This researcher, the only observer collecting seat belt data, was able to position himself in a car to observe two of the three exits to the school parking lot. This researcher's prior experience in observational surveys of seat belt use was limited to verbal instruction from Lt. Dave Allen, Rhinelander Police Department and two hours of observation. While collecting data, the status of the front seat occupants was the primary

focus. If there was any question as to the buckled status of a vehicle occupant, regardless of seat location, the individual was not recorded.

The decision to record students as they were leaving for lunch was based on the following assumptions: first, students would be in a hurry to get to the restaurant of their choice given they only have a thirty-five minute lunch period; and second, since only seniors are allowed to leave for lunch, this would be an opportune time to observe the targeted population group. The Wisconsin Department of Transportation, Office of Traffic Safety, BLITZ, Seat Belt Field Survey, Form A was utilized for recording observations of all three-lunch shifts (see Appendix F).

Method of Analysis

The method of analysis was to count all of the students observed leaving the school parking lot for lunch in motor vehicles. A tally was kept of all the students identified as wearing a seat belt. The number of students wearing a seat belt was compared to the total number of students observed leaving the parking lot. This would be calculated to provide the percentage of seat belt compliance.

Chapter 4

Results and Discussion

Results

The purpose of this study was to identify the effect that a seat belt promotion program would have on increasing seat belt use among seniors at Rhinelander High School. The pre-program observational survey resulted in the following data: sixty-four vehicles transporting ninety-six students had thirty-three students buckled up for a compliance rate of 34 percent. A determination could not be made with one driver regarding the status of his/her seat belt use, thus, nothing was recorded for that driver.

The post- program observational survey was conducted four weeks after the conclusion of the RHS Buckle Down program. The post-program observational survey identified the following data: twenty-seven vehicles transporting thirty-nine students had twenty-five students buckled up for a compliance rate of 64 percent. Once again, a determination could not be made with one driver on the status of his/her seat belt use so nothing was recorded for that driver. The post-program observational survey reported a 30 percent increase in seat belt usage. Data was collected and computed in the same manner for the post-program observational survey as it was for the pre-program observational survey.

Discussion

The RHS Buckle Down Program utilized a multi-faceted strategy in its delivery which included student involvement, prize incentives, and educational programs. Five weeks after the conclusion of the program, seat belt compliance among high school

seniors was 30 percent higher than the pre-program observational survey. These results are consistent when compared to similarly run programs such as Operation Teen Buckle Down in Wisconsin and Operation Cool in Illinois. Programs that neglected to incorporate this three-prong approach as evidenced by Bross, Brill, and Spellicy's study in Mississippi, experienced little or no gain in seat belt compliance rates.

In comparison to the three-prong approach that Rhinelander High School utilized to promote vehicle occupant restraint use, the Future Homemakers of America (FHA) students in Frederic Wisconsin, instituted a seat belt program that focused on education and awareness activities. As a result of their efforts FHA students witnessed a 37 percent rise in seat belt use among students and 33 percent increase in compliance within the general community. Although the focus on education and seat belt awareness posses similarities with the Mississippi study, the likeness ends there. This is due to the fact that the community of Frederic was deeply saddened by the senseless death of a teenage boy that could have been avoided if he was wearing a seat belt. This program was spearheaded by a group of students, not a trio of researchers.

Schools varied in their approach to solving the seat belt compliance rates for students; some took a positive approach, others a negative. Lexington, Kentucky's "Battle of the Belts 99" program appealed to the students' school spirit to foster higher seat belt compliance rates by having its high schools compete against each other. This could be a very useful tool in encouraging students to buckle up, especially if there are multiple high schools in the community. The "Battle of the Belts" provided incentives for students to wear their seat belt throughout the duration of the program. The largest flaw with this program is that it was not student-driven. If it was the students' idea to compete

against each other, with a collaborative committee setting the goals and parameters, the author of this research believes the results would have been more impressive. Lexington utilized contracts to have students promise to wear a seat belt every time they rode in a car for the four-week duration of its program. The number of contracts returned gave the program administrators an idea of how many students received the seat belt message. Operation Cool, in the state of Illinois also used contracts as a binding agreement to wear seat belts; those students that violated the terms of the agreement were not eligible to receive awards or prizes. RHS Buckle Down chose not to use a contractual agreement because the students wanted the program to maintain a positive not punitive outlook.

Another difference in program execution was the length of time programs ran. The program at RHS lasted ten weeks while Wisconsin's D.C. Everest and Nekoosa's' Operation Teen Buckle Down and Illinois' Operation Cool programs ran for duration of the school year. The shortest program was Lexington's four-week program. The length of the seat belt program is crucial in establishing seat belt use as a habit. The program has to be long enough to anchor the habit but not so long that students become bored with the information. Financial resources might have an impact on the length of the seat belt program; Nekoosa had $7,500.00 to use and D. C. Everest had an operating budget of over $8,000.00, not including the grand prize. In contrast, Rhinelander's budget for the seat belt program was $1,500.00.

A further difference of the Buckle Down programs in Wisconsin to other programs was that the observational post survey that was conducted five weeks after the conclusion of the program compared to Lexington Kentucky's Battle of the Belts which conducted observations at the conclusion of the program. Mississippi conducted

observations at both three and five months after the end of the program. Observational surveys completed at the conclusion of the program will provide data that shows the impact of the program, however, if a modification in behavior is desired, it would seem most appropriate to measure such four to five weeks after the formal program and incentives have stopped. Studies completed several months or more after the program concludes run the risk of having extraneous factors affect the outcome.

From a data collection and analysis standpoint, it should be noted that Mississippi broke down its seat belt use results by gender. Rhinelander's program did not differentiate gender, nor did Illinois, Nekoosa and D.C. Everest. While this would have been interesting data, the rate of compliance among high school students is so poor that seat belt programs need to cross gender lines and appeal to the general student body.

The effectiveness of seat belt programs seems to be dependent upon individual ownership. Programs in Lexington and in Mississippi were initiated without student input therefore, student ownership and compliance suffered. Lexington's program utilized a school nurse and the Safe Kids coalition for program implementation while Mississippi engaged a medical student to provide the educational component of the program. In Illinois, while law enforcement officers conduct the educational programs, they make a point to partner with student groups. Wisconsin's D.C. Everest and Nekoosa High Schools stressed the importance of active student involvement to the success of their seat belt programs and consequently Rhinelander High School SADD members heeded this advice and made sure students took an active role in the Buckle Down program.

Chapter 5

Conclusions & Recommendations

Conclusions

Seat belt programs that incorporate educational opportunities, strong student involvement, along with an incentive program for those students who wear seat belts, will be successful in their efforts to increase seat belt compliance. This model has proven itself effective in schools throughout the country. The 30 percent increase in seat belt compliance among Rhinelander High School seniors due to the RHS Buckle Down program resulted in a use rate of 64 percent. However, a goal of 90 percent or more is obtainable as seen in several Illinois schools.

It also appears that a key factor in seat belt compliance is whether or not the state has a primary or secondary seat belt law. Because states with primary enforcement coupled with significant fines report higher compliance rates for seat belt use, legislative efforts need to be intensified in the state of Wisconsin to elevate the state's secondary enforcement of seat belt violations to a primary enforcement violation. By doing this, seat belt compliance would increase a minimum of 10 percent, potentially saving several lives and thousands of dollars in property damage and health care costs. Some states have added a seat belt violation provision to the penalty point system. The needless injuries, fatalities and costs to society necessitate the passage of this legislation.

It appears that educational messages delivered to students by students are the most effective method to motivate students. When programs utilize students in all aspects of planning, and implementation, greater ownership and success can be seen.

It is unclear what the "best practice" would be regarding the duration of a program. It appears that four weeks is too short and conversely, six months too long. If a program is too short, the impact for students may not be as great or long lasting. If the program length is too long, students appear to lose interest and negate the program's effectiveness.

The educational assemblies, activities and public service announcements appealed to the students' sense of emotion and logic at RHS. It appears that the level of student involvement (peer driven) in RHS's program engaged many sectors and groups within the school. This level of student involvement compared to other seat belt usage programs appears to have been greater.

Recommendations

This researcher makes the following recommendations to improving the Buckle Down program:

- Start the Buckle Down program earlier in the school year.

Reason: Gives seniors who plan on early graduation the opportunity to participate in all aspects of the program.

- Stress the importance of law enforcement officers in writing citations.

Reason: Provides positive public relations with the students.

- Involve students in writing seat belt citations.

Reason: Completes the concept of student involvement, which might lead to greater ownership.

- Maintain an aggressive publicity/media campaign.

Reason: Increases visibility and maintains high profile for the seat belt program.

Bibliography

Arnett, J. (1990). Drunk driving, sensation seeking and egocentrism among adolescents. *Personality and Individual Differences*, 11(6), 541-546.

Bross, M.H., Brill, T.M., Spellicy, M.J., (1994). A Comparison of Teenage Safety Belt Education Programs. *The Chronicle of ADTSEA.* Vol. 42, No.2, Spring Issue 1994. Retrieved June 10, 2002 from www.adtsea.iup….icle/spring_94/a_comparision_of.htm

Hartos, J., Eitel, P., Haynie, D., & Simons-Morton, B. (2000). Can I Take the Car? Relations Among Parenting Practices and Adolescent Problem Driving Practices. *Journal of Adolescent Research*, 15(3), 352-367.

Health Promotion of Seat Belt Use Among Adolescents, (1999). Retrieved July 28, 2002 from http://www,uky.edu/~mwimmer/nur842/seatbelt/.html

Jessor, R., Turbin, M.S., & Costa, F. (1997). Predicting developmental change in risky driving: The transition to young adulthood. *Applied Developmental Science*, 1 4-16.

Kansas Attorney General. (1999). Kansas State Child Death Review Board 1999 Data. p.14. Retrieved August 8, 2002 from www.state.ks.us/public/ksag/contents/scdrb/main.htm

Kluger, M.D., (1998, August 11). Motor Vehicle Crashes, Children and Public Prevention Efforts in Connecticut, *Connecticut Voices for Children, Health Policy Intern*. Retrieved August 8, 2002 from http://info.med.yale.edu/childstdy/Ctvoices/kidlink/kidslink2/ccare/texts/9808-03html

Krause, B., (2001). State Child Traffic Safety Practices. *StateLine.*p1. Retrieved August 12, 2002 from www.nga.org/seatbelt/child

National Highway Traffic Safety Administration (2001a, December). A compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System. *Traffic Safety Facts 2000* p.178.

National Highway Traffic Safety Administration, (2001b). Click It or Ticket in North Carolina: A Case Study of a Successful Campaign to Raise the Seat Belt Use Rate pp 1-11. Retrieved August 11, 2002 from www.nhtsa.dot.gov/buckleplan/cases/NorthCarolina

National Highway Traffic Safety Administration (2002a, May 9). Economic Impact of U.S. Motor Vehicle Crashes Reaches $230.6 billion, New NHTSA Study Shows. *News*. Retrieved June 13, 2002 from www.nhtsa.dot.gov/announcements/pr38-02.htm

National Highway Traffic Safety Administration, (2002b, April). Graduated Driver Licensing. *State Legislative Fact Sheet.* p1. Retrieved August 10, 2002 from www.nhtsa.dot.gov/people/injury/newdriver

National Highway Traffic Safety Administration, (2000a, Winter). Illinois Operation Cool. *Traffic Safety Digest.* Retrieved August 8, 2002 from www.nhtsa.dot.gov/people/outreach/safedige/winter2000

National Highway Traffic Safety Administration. (2001c, May 25). NHTSA Reports Major Gain in Seat Belt Use in States With New Primary Belt Laws. *News.* p1. Retrieved August 5, 2002 from www.nhtsa.dot.gov/affairs/nhtsa2901.htm

National Highway Traffic Safety Administration (1996, Winter) Operation DWI/OBD Evaluation Project New Mexico. *Traffic Safety Digest.* Retrieved August 12, 2002 from www.nhtsa.dot.gov/people/outreach/safedige/winter1996

National Highway Traffic Safety Administration (1997). Presidential Initiative for Increasing Seat Belt use Nationwide. America's Experience with Seat Belt and Child Seat Use. p1. Retrieved August 13, 2002 from www.nhtsa.dot.gov/ags/presbelt/america_seatbelt.html

National Highway Traffic Safety Administration (2001d, May). 1998-2000 State Shoulder Belt Use Survey Results. *Research Note.* Retrieved August 8, 2002 from www.nhtsa.dot.gov/people/ncsa.

National Highway Traffic Safety Administration, (2001e, January). Strengthening Seat Belt Use Laws – Increase Belt Use, Decrease Fatalities and Injuries. *State Legislative Fact Sheets.* pp2-4. Retrieved June 11, 2002 from www.nhtsa.dot.gov/outreach/stateleg/seatbeltuse.htm

National Highway Traffic Safety Administration (n.d.). Success Stories Youth Prevention Programs p3. Retrieved September 10, 2002 from www.nhtsa.dot.gov/people/outreach/safesober/pub/ssyppr.pdf

New Mexico Highway and Transportation Department Traffic Safety Bureau, (October 2000).. Public Survey Regarding Use of Occupant Restraints and Drunk Driving. *The New Mexico 2000.* p2. Retrieved August 12, 2002 from www.dgr.unm.edu/tsb/Pubs/final2000s/Breport.pdf

Preusser, D., Williams. A., & Lund, A. (1985). Parental role in teenage driving, restriction of frequency of friends in the car, weekday and weekend driving . curfews, parental control. *Journal of Youth and Adolescence*, 14, pp.73-84.

Schootman, M., Fuortes, L., Zwerling, C., Albanese, M., & Watson, C.(1993). Safety behavior among Iowa junior high and high school students. *American Journal of Public Health*, 83,(11), pp. 1628-1630.

Shinar, D. (1993). Demographic and socioeconomic correlates of safety belt use. *Accident Analysis and Prevention*, 27(7), 695-702.

Status Report (2001). Bandwagon moving fast. *Insurance Institute for Highway Safety* 34(10) December 4, 1999. pp. 1-4.

Status Report (2002). What's Wrong with this Picture? *Insurance Institute for Highway Safety*. 37(6) June 8, 2002. p.2.

Taris, T.W., (1998). Student's Subjective Appraisals of Driving Behavior, *Journal of Social Psychology.* 138 (4) p. 512.

Williams, A., & Karpf, R. (1983). Deaths of teenagers as passengers in motor vehicles. *Accident Analysis and Prevention*, 15(1), pp.49-54.

Williams, A., Wells, J., & Lund,A. (1983). Voluntary seat belt use among high school students, *Accident Analysis and Prevention*, 15(2), pp.161-165.

Williams, S.,(2002). Grant for seat belt patrol fails again. *JSOnline,* (March 12, 2002). Retrieved June 13, 2002 from www.jsonline.com.news/wauk/mar02/26916.asp

Wisconsin Department of Transportation, (2002a, Spring). More than 30% still not getting seat belt message in Wisconsin. *The WisDot Connector.* 5(1), p1.

Wisconsin Department of Transportation (1999). Operation Teen Buckle down Notebook pp2-18.

Wisconsin Department of Transportation, (2001a). 2000 Wisconsin Traffic Crash Facts. p. 48.

Wisconsin Department of Transportation, (2001b, September). Wisconsin Crash Facts on the 16–19 Year Old Age Group. p1. Retrieved on August 8, 2002 from www.dot.state.wi.us/dtim/bts/pdf/teenfacts.pdf

Wisconsin Department of Transportation, (2002b, August). Wisconsin 16 and 17 Year Old Drivers in Crashes By Crash Severity: Pre- and Post- GDL. Retrieved August 21, 2002 from www.dot.state.wi.us/wi.teens/opagdl.doc

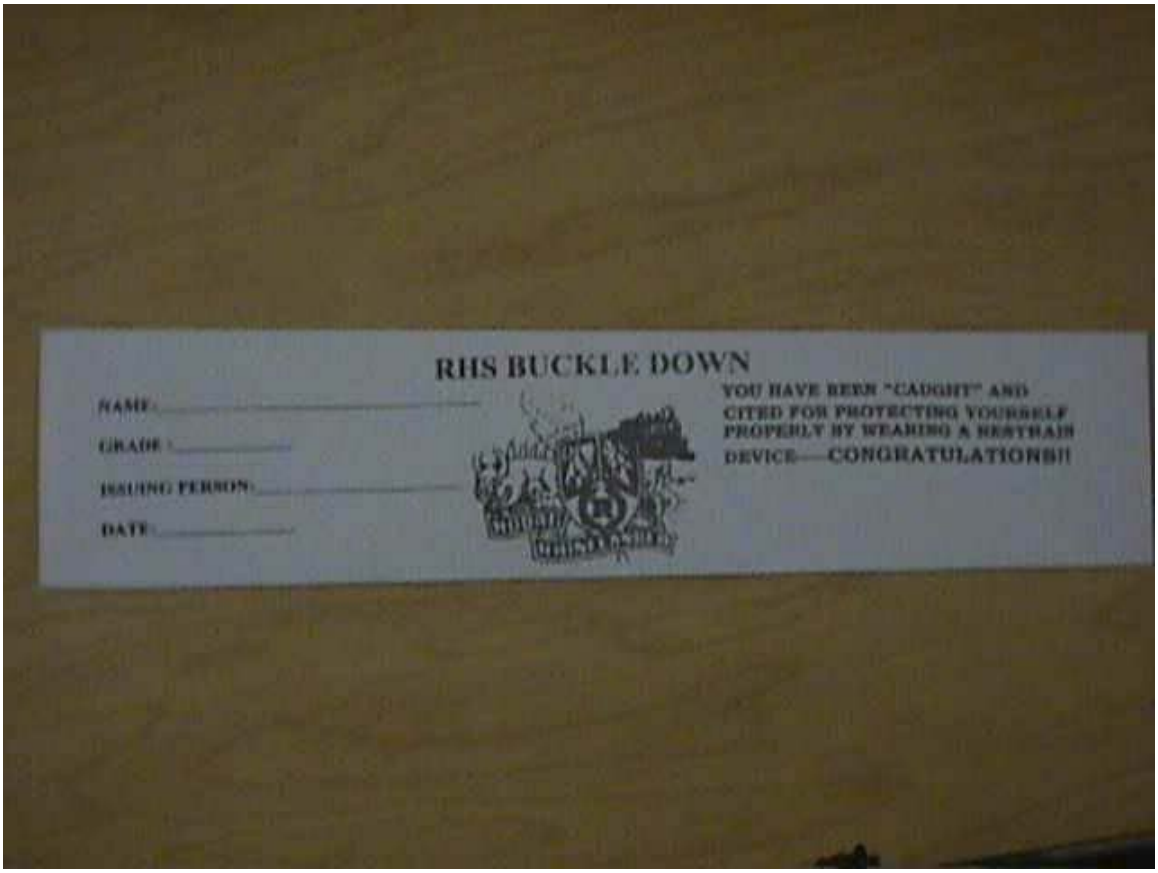
Winnicki, J. (1995). Safety belt use laws: evaluation of primary enforcement and other provisions. Final Report. Washington, DC: National Highway Traffic Safety Administration.

Womack, K., (1996). 1996 Survey of Front Seat Occupant Restraint Use in Eighteen Texas Cities. College Station, TX: Texas Transportation Institute.

Womack, K.N., Trout, N.H., Davies, B.J. (1997, July). Characteristics and conditions of Teenage Safety Belt Use. *NHTSA Technical Report,* p1-8.

Appendix

A

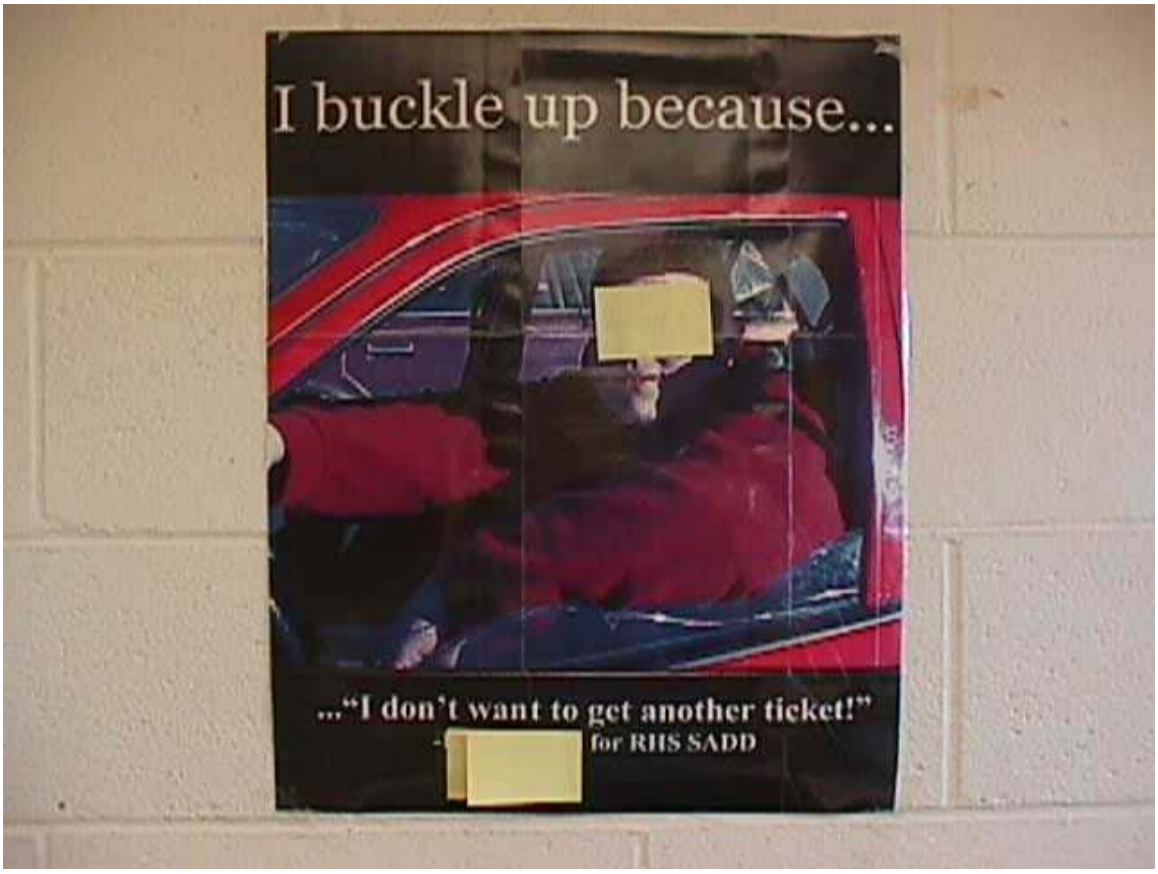

RHS BUCKLE DOWN
NAME:
GRADE:
ISSUING PERSON:
DATE:
YOU HAVE BEEN "CAUGHT" AND CITED FOR PROTECTING YOURSELF PROPERLY BY WEARING A RESTRAIN DEVICE----CONGRATULATIONS!!

Appendix

B

Appendix

C


I buckle up because...
...“I don’t want to get another ticket!”
for RHS SADD

Appendix

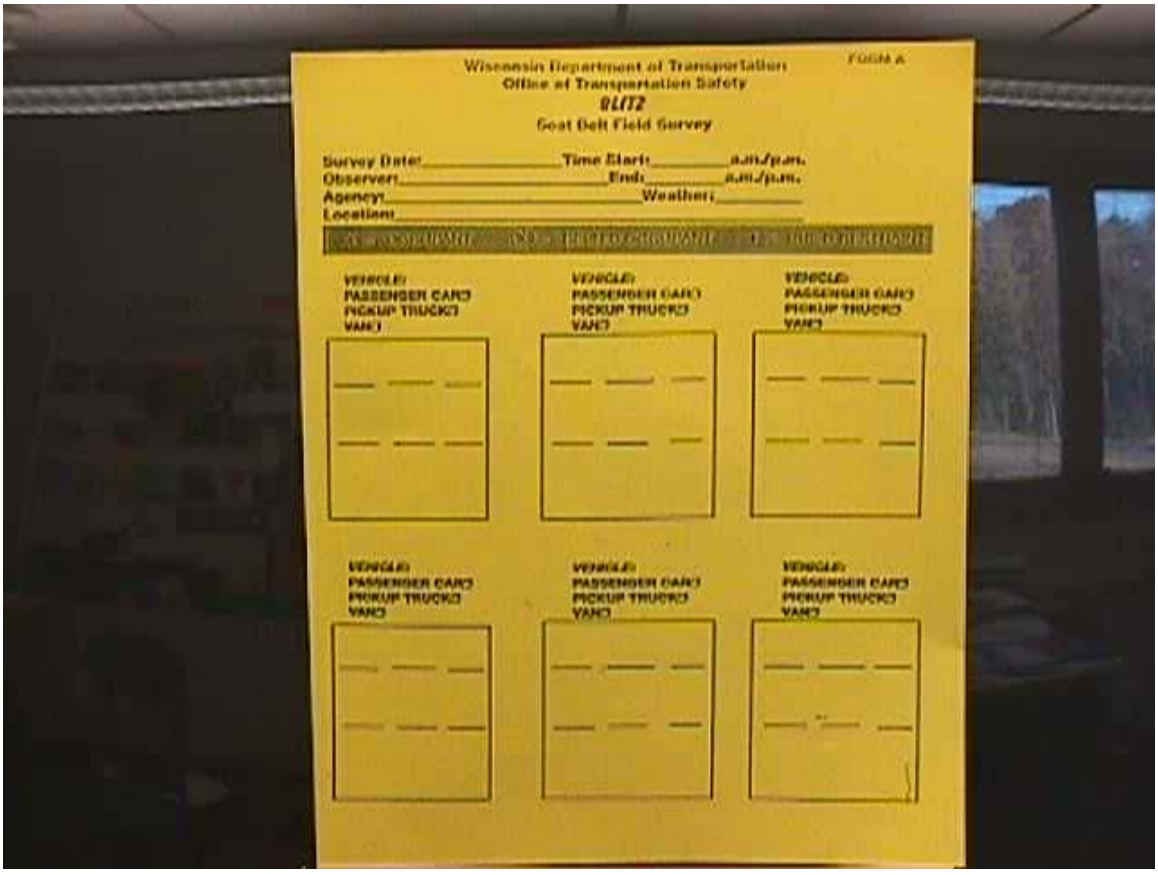
D

Appendix

E

Appendix

F


Wisconsin Department of Transportation
Office of Transportation Safety
BLITZ
Seat Belt Field Survey
FORM A
Survey Date:
Time Start:
a.m./p.m.
Observer:
End:
a.m./p.m.
Agency:
Weather:
Location:
VEHICLE:
PASSENGER CAR?
PICKUP TRUCK?
VAN?