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Local Police Enforcement, Public Information and Education Strategies to Foster More and Proper Use of Child Safety Seats by Toddlers:
Evaluation of a Demonstration Project

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7. Author(s)
Lawrence E. Decina, Michael G. Temple, Ph.D., and Heidi S. Dorer

8. Performing Organization Report No.

9. Performing Organization Name and Address
KETRON Division of The Bionetics Corporation
Great Valley Corporate Center
350 Technology Drive
Malvern, PA 19355

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16. Abstract

This project evaluated the effects of enforcing safety belt (SB)/child safety seat (CSS) laws and providing public information and education (PI&E) about the laws and use and proper use of CSSs--without external funding. Project goals focused on increasing occupant restraint (OR) usage for all infants and young children, especially for toddlers, aged 1 to 5 years; extending the use of CSS's to the back seat; fostering proper use of CSSs for all trips; and increasing community-wide OR use. An administrative audit of the project was also performed.

The project was implemented in two suburban communities of Philadelphia. A "do-nothing" town was chosen as a control. The project relied heavily on police as both enforcers and educators on use/proper use of CSSs. The percentage of OR enforcement contacts (citations and written warnings) given out in the two test communitities was 21 and 10 percent of the total moving (point) citations and 11 and 3 percent of the total citations during the intervention phase, respectively.

The use and proper use of restraints on over 5,800 young children and over 4,500 drivers were observed. Drivers of these children were also interviewed. Results in the two test communities showed an increase in toddler CSS use from a baseline of 71.8 percent and 60.9 percent to 78.8 percent and 71.4 percent, respectively; and proper use from a baseline of 67 percent and 57.5 percent to 72.8 percent and 69.3 percent, respectively. Infant seat use remained very high at all three sites (over 90%) before and after intervention. No changes were noted in the control site. Community belt use increased by 9 and 6 percentage points in the two test sites and decreased by 3 percentage points in the control site.

Results showed that routine police enforcement of SB and CSS laws combined with periodic "blitzes" and a comprehensive PI&E project can significantly improve SB and CSS use and increase proper use of CSSs. Effective OR enforcement projects require commitment, training, active enforcement (citations and written warnings), management monitoring, and comprehensive PI&E, with emphasis on enforcement activities. In addition, state and community support is needed to promote enforcement actions and education about proper CSS use.

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PREFACE

This project has evaluated the effects of both enforcing the occupant restraint laws in local communities of Pennsylvania and providing public information and education about these laws and about the use and proper use of child safety seats for toddlers.

The authors wish to thank many individuals and organizations for their time and effort. The authors would like first to express their appreciation to the Tredyffrin, Haverford, and Abington Township Police Departments for their cooperation and their willingness to participate in the project.

Thanks also go to the Pennsylvania Department of Transportation Center for Highway Safety and affiliated child passenger safety organizations, which assisted in project activities and helped acquire project material, supplies, and mini-grant funds. The organizations include: The Pennsylvania Chapter of the American Academy of Pediatrics; Traffic Injury Prevention Project, formerly PA Child Passenger Safety Project; Chester and Delaware County Comprehensive Highway Safety Project; Montgomery County Health Department; PennDOT District Corridor Safety Program; and PA Volunteers for Highway Safety. Keystone Safety Belt Network (Traffic Safety Now, Inc.) also assisted in many activities of the project, especially police training.

Thanks are also in order for all of the community groups that participated in the success of this project, including the day-care/preschool centers, schools, businesses, and shopping centers.

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EXECUTIVE SUMMARY

INTRODUCTION

Despite the fact that the national child safety seat (CSS) usage rate for children under the age of 5 has reached over 80 percent, unrestrained children still represent two-thirds of all crash fatalities in this age category (USDOT/NHTSA, 1990). In addition, many young children, especially toddlers (ages 1 to 5), are still riding in motor vehicles without properly installed or properly used CSSs (Ziegler, 1989). Since misuse of CSSs cuts the safety effectiveness against severe and fatal injuries by about half, the National Highway Traffic Safety Administration (NHTSA) has sponsored projects to promote use and proper use of CSS for these toddlers. NHTSA believes that the use of CSSs will decline unless child passenger safety laws receive strong enforcement. Experience with safety belt (SB) legislation in both the United States and foreign countries has indicated that enforcement, when combined with public education, is critical in keeping occupant restraint (OR) usage rates high.

BACKGROUND

Past studies have shown that proper CSS usage rates have remained much lower than general CSS usage rates. Cynecki and Goryl (1984) found only 35 percent proper use for about 1,000 safety seats observed in a 10-city study at fast-food restaurants. However, about 22 percent of the sample was based on misuse of CSSs with tether straps, which have now been discontinued.

From 1983 to 1988, NHTSA measured proper CSS use in conjunction with its nationwide observation studies. From observing CSS use in vehicles stopped in traffic and at curbside and from looking at seat installation in unoccupied cars in parking lots of shopping centers, NHTSA estimated the percentage of children who were fully protected. For 1988, the last year that observation data (over 1,000 young children) were collected, NHTSA estimated that 56 percent of children in cars were "fully" protected (Ziegler, 1989). This percentage represented an increase from 11 percent only 5 years earlier. However, the NHTSA data have drawbacks. The methodology used in computing fully protected usage rates assumed that the drivers of the parked vehicles with properly installed CSSs actually put their children in these seats and fastened the seats' harnesses correctly. Thus, the estimated proper use rate was probably higher than the true rate.

"Full protection" for young children is best defined in the American Academy of Pediatrics' (AAP's) recommendations for proper use, which includes criteria for selection of seat, direction of seat, harness/shield installation, SB routing and connection. Infants (up to 1 and/or under 20 pounds) are to be facing rearward in an infant or convertible seat. Toddlers (from age 1 to about age 5 and/or between 20 and 40 pounds) are to be facing forward in a convertible seat. Toddlers over 40 pounds and up to 70 pounds should be facing forward and placed in a booster seat.

Over the last 15 years, numerous research studies and demonstration projects have evaluated the effectiveness of interventions, activities, and projects that promote use and proper use of CSSs. These projects studied the effects of legislation (Hatfield et al., 1986; Heathington, Philpot, and Perry, 1982; Hletko, 1983; Perry et al., 1980; Wagenaar, 1984; and Williams and Wells, 1981), education (Chang et al., 1989; Hall and Council, 1979; Hletko et al., 1983; Reisinger et al., 1981; and Reisinger and Williams, 1978), and combined education and enforcement (Agent, 1983; Post, 1984; Post, 1986; and Prism, 1989) interventions. Using these studies, researchers have concluded that the most effective projects require long-term police commitment to enforcement, as well as

publicity about the enforcement and educational issues concerning the safety benefits and usage of ORs.

The goals of this study were to determine whether combining enforcement and education with the most current research recommendations for conducting effective community OR projects could significantly:

(1) Increase OR use for all infants and young children, especially those from age 1 to age 5, preferably with toddler or convertible seats (or at least SBs in the back seat, as required by Pennsylvania law, from age 1 to age 4).
(2) Extend the use of toddler or convertible safety seats to the minimum recommended standards (approximately 20 pounds to 40 pounds or up to age 5), in the back seat where, by law, only an SB is required.
(3) Foster "full protection" and proper use of appropriate CSSs for children age 1 to age 5 for all trips, including local, short-distance rides.

These projects would operate without external funding (i.e., Government, Federal, or State) and demonstrate to police and other community groups that child passenger safety projects can be successfully conducted within community resources.

Intervention goals for the local police enforcement effort would include:

- Training for selected trainers, using NHTSA's Occupant Protection, Usage, and Enforcement (OPUE) program.
- In-house OPUE training for all officers.
- Police SB policy.
- Active enforcement (written warnings and citations) of CSS and SB laws using routine and selective methods.
- Roll-call reminders.
- Active participation in education projects in the day-care centers, schools, and community.

Intervention goals for the two police departments' public information and education (PI&E) effort would include:

- Press conferences.
- Periodic press releases and local newspaper coverage.
- Community and school/day-care programs.
- Extensive distribution of material, especially at holidays and other special events.
- CSS inspection clinics.

The PI&E effort would promote the following messages:

- Increase CSS use overall.
- Extend CSS use by older toddlers.
- Foster "full protection" beyond state law minimums.
- Foster CSS uses for all trips, including short ones.

Besides these police efforts, community and state-affiliated county-wide highway safety groups would also participate in the program. Their efforts would include:

- Literature, brochures, posters, stickers, and other material distributed to the police (e.g., enforcement cards) for distribution at events.
- Literature at target audience locations (fast-food restaurants, day-care centers, libraries, retail stores) and events.
- Guidance for police press releases and events.
- CSS inspection clinics with the police.

RESEARCH AND DATA COLLECTION METHODOLOGIES

The evaluation design included a pretest, posttest control group. A comparison site was a special design feature used, instead of random assignment. The evaluation design was based on one intervention phase, an assessment of the interventions at two sites, and the use of a comparison (control) site. The statistical methodology involved computing differences in proportions, then determining the associated confidence intervals. The hypothesis for the evaluation design was that exposure to enforcement and PI&E interventions would increase the following:

- Use of restraints for all infants and toddlers.
- Use and proper use of CSSs by toddlers.
- Use of SBs by residents.
- Compliance with Pennsylvania's CSS law.
- Knowledge about Pennsylvania's CSS and SB laws and proper use of toddler seats.
- Perception about the police enforcing the OR laws.
- Self-reported proper use of CSSs.

An administrative evaluation effort was also conducted. Staff interviewed community police and other representatives to identify lessons learned in the success and failure of carrying out specific intervention activities.

The intended plan was to conduct observations of restraint use characteristics and ask drivers to answer questions about restraint use at every community shopping center at the two test sites plus the comparison site. However, the contractor was not granted permission to conduct observations and ask questions of property owners at every shopping center. A total of six observation sites (two per community) were selected for the data collection effort.

Use and proper use of child restraints were recorded by observing drivers who transported young children to community shopping centers. Field observers (working in teams of two) observed shoulder belt use of the drivers as they parked. When the driver came to a complete stop in a parking space, both field observers approached the vehicle; one field observer asked the driver some demographic and program queries while the other one observed the restraint system characteristics (position of child in restraint, presence of restraints, harness position, and crotch belt fastening). Once the driver and children left the vehicle, a field observer determined the SB routing on the CSS. Shoulder belt use data were also collected from the general public entering the shopping centers.

Observations were conducted during daylight hours, daily for 8 to 10 weeks during shopping center hours. Pre-intervention data were collected primarily from October to December 1990; and post-intervention data were collected primarily from October to December 1991.

Observers recorded time/date of observation, gender of driver, age of children, driver-reported weight of children, driver-reported trip behavior (time and distance from last stop), residency and zip code, position of children in vehicle, type of restraint (none, SB, CSS), full protection characteristics (CSS in proper position, harness in place, SB properly routed), driver restraint use, and type of vehicle.

Driver query information recorded included knowledge of Pennsylvania's OR laws, perception of OR enforcement in community, attitudes toward OR enforcement, self-reported proper CSS use behavior, and awareness of CSS issues in community.

Field personnel participated in extensive training. The process involved classroom instructions on use and proper use characteristics of all types of child restraints (presented by AAP staff), a review of data collection policies and procedures, a review of NHTSA's "Guidelines for Observing CSS Use" (Ziegler 1987), field observation practice in a parking lot, and a full day of practice at a shopping center with real subjects. Coordinators worked with field personnel to assure accuracy and reliability of data collected and to discuss problems and difficulties in the data collection process.

Other senior staff were involved with interviewing police and community representatives for the administrative evaluation.

SITES

Contract funding allocated to the evaluation effort accommodated two communities conducting the intervention projects and one community participating as a comparison site, which did **not** conduct any additional OR enforcement effort or any PI&E related to child passenger and occupant protection safety issues. The comparison site used in the study helped support statistical inference by representing what might have occurred in the test sites in the absence of the intervention program. If intervention sites showed statistically significant increases in CSS use and proper use, plus SB use, whereas the comparison site did not, stronger claims could be made about the effects of the interventions.

Candidate test communities were selected based on willingness of local police, community groups, and both local and regional state-affiliated highway safety groups supporting the goals of the project and agreeing to conduct intervention activities. The police had to believe in the importance of OR law enforcement and the benefits of promoting child passenger and occupant safety. In addition, they had to be willing to participate in the PI&E project and assist in documenting their involvement in the project. Community groups also had to believe in the importance of the OR enforcement project and want to participate in PI&E activities and data collection assignments. Support and assistance were also required from the local or regional Pennsylvania Department of Transportation (PennDOT) highway safety and child passenger safety groups. Site selection involved an extensive recruitment process involving letters to police departments, follow-up telephone calls, personal visits, and follow-up visits to best candidate police departments.

Tredyffrin Township (Chester County) and Haverford Township (Delaware County) were the communities selected for the intervention project. Abington Township (Montgomery County) was selected as the comparison site. All three communities are located in suburbs of Philadelphia, Pennsylvania. They are all midsize communities, ranging from about 30,000 to 55,000 in population. The 1987 per capita incomes of these communities fall within the middle range for all boroughs, cities, and townships in the Commonwealth (Pennsylvania State Data Center, 1990).

PROJECT ACTIVITIES

The project began with police instructors from both Tredyffrin and Haverford receiving 2½ days of training using NHTSA's OPUE program at the state police academy in Harrisburg in December 1990. State police and the Keystone Safety Belt Network (KSBN) of Traffic Safety Now, Inc. presented the program. The enforcement intervention activities (see Table 1) were in full swing by March 1991 and continued through the end of the year. The police in Tredyffrin and Haverford Townships conducted primarily routine enforcement, along with some selective enforcement efforts and publicized summer holiday safety campaigns. They made over 700 OR "contacts" (written warnings and citations) during the program. In Tredyffrin, 10.7 percent of the total citations and 20.9 percent of the total moving "point" citations were OR "contacts." In Haverford, 2.9 percent of the total citations and 9.9 percent of the total moving "point" citations were OR "contacts" (see Table 1). In Abington, the police did not conduct training and did not actively enforce the OR laws, as agreed for purposes of the study, before or during the project. From the pre-intervention to post-intervention period, the police gave out only two SB citations for over 8,000 total citations (0.03 percent of total citations). Thus, the comparison site basically had no OR enforcement effort.

Table 1. Police enforcement activities.

Activities	Tredyffrin	Haverford
OR Total "Contacts"	577	146
- SB Citations	184	9
- SB Written Warnings	351	121
- CSS Citations	36	5
- CSS Written Warnings	6	11
OR "Contacts" per Total Moving Violation Citations, %	20.9%	9.9%
OR "Contacts" per Total Citations, %	10.7%	2.9%
Enforcement Blitzes and Checkpoints	3	12

Both Tredyffrin and Haverford police departments actively participated in the PI&E component of the project. No activities were conducted in Abington before or during the project. Their efforts concentrated on educating the public and children through the use of press conferences, press releases, educational programs at day-care centers and schools, promotional events, displays and setups at shopping centers, and CSS inspection clinics. Table 2 lists the PI&E activities conducted as part of the intervention project in both test communities.

Table 2. Police and community PI&E activities.

Police Activities	Tredyffrin	Haverford
Articles Published (from press releases)	6	12
Elementary/Middle School Visits	5	11
Lecture Programs (business/community groups)	72 hours	16 hours
Exhibits/Display Booths (at events, sidewalk sales)	37 hours	30 hours
Educational Material Distributed		
Fact Sheets	7,000	7,000
Brochures	1,000	1,000
Promotional Items Distributed		
Teddy Bears	300	1,300
Pins	500	750
Stickers	5,000	5,000
"Vince & Larry": Buckle-Up Puppets Distributed	1,000	1,000
Media (TV) Announcements*	1	0
CSS Clinics	0	2
Project Purchases (through PennDOT mini-grants)	3 CSS Video equipment rental	Vince and Larry crash-test dummy costumes
Community Activities		
Educational Material Distributed (packets)	2,500	700
Display Racks in Department Stores, Libraries, Day-Care Centers	13	11

*Radio and television coverage was not used to avoid "intervention-contamination" in the comparison site. However, state and national media public service announcements were occasionally broadcast throughout the Philadelphia metropolitan area during the intervention period.

RESULTS AND ANALYSIS

Observations of 4,562 drivers with young passengers and 5,859 young children were analyzed during the pre-intervention and post-intervention periods. These individuals were residents of the test and comparison site townships and the surrounding townships. In both pre-and post-intervention periods, the majority of the drivers were under age 39 (over 85 percent), were female (over 85 percent), and traveled less than 10 minutes (about 72 percent) and drove less than 3 miles (about 64 percent) from their last stop to the shopping centers where they were observed. In addition, many drivers reported that they frequently visited these shopping centers. About 75 percent of the drivers, across sites and periods, visited the observed shopping center more than once a week. The majority were observed in passenger cars, station wagons, or minivans.

Observed restraint use by the general public significantly improved after the intervention programs in the two test communities. Tredyffrin and Haverford's SB usage among the general public (drivers without young passengers) significantly improved after the intervention periods, whereas the comparison site dropped. Observed restraint use of drivers (with young passengers) also

improved in the test site communities, but not significantly. However, both test sites improved more than the comparison site (Abington). Drivers (with young passengers) had a much higher rate of SB usage than the general public in all three communities both before and after the projects.

Observed CSS use for toddlers significantly improved after the intervention projects in both test site communities. CSS use in the comparison site actually went down from the baseline rate. Observed CSS use for infants was very high (above 97 percent) in all communities before and after the projects. Table 3 identifies CSS use rates for both toddlers and infants. Observed full protection for toddlers also showed significant improvement in both test sites. The comparison site levels dropped from the baseline. (See Table 4.) In addition, observed parent compliance with the CSS laws for toddlers in Pennsylvania improved after the intervention programs in both test sites; however, only Haverford showed significant improvement. (See Table 5.)

Table 3. Child safety seat use percentage for children under age 5, by community and survey period.

CSS Use	Community		Pre-intervention	Post-intervention	Percentage Point Difference
Toddlers (Ages 1 to 5)	Tredyffrin	% CSS use (Total N)	71.8 (703)	76.8 (637)	+5.0*
	Haverford	% CSS use (Total N)	60.9 (949)	71.4 (884)	+10.5*
	Abington †	% CSS use (Total N)	67.8 (743)	63.7 (433)	-4.1
Infants (Birth to age 1)	Tredyffrin	% CSS use (Total N)	97.8 (134)	99.0 (102)	+1.2
	Haverford	% CSS use (Total N)	98.1 (108)	99.3 (145)	+1.2
	Abington †	% CSS use (Total N)	99.1 (113)	97.6 (84)	-1.5

*Significant at 95% level of confidence.
†Comparison site.

Table 4. Percentage of "fully protected"‡ toddlers (ages 1 to 5), by community and survey period.

Community		Pre-intervention	Post-intervention	Percentage Point Difference
Tredyffrin	% fully protected (Total N)	67.0 (703)	72.8 (637)	+5.8*
Haverford	% fully protected (Total N)	57.5 (949)	69.3 (884)	+11.8*
Abington†	% fully protected (Total N)	63.4 (743)	59.1 (433)	–4.3

*Significant at 95% level of confidence.
†Comparison site.
‡AAP recommended guidelines.

Table 5. Percentage of toddlers restrained in compliance with CSS laws‡ of Pennsylvania.

Community		Pre-intervention	Post-intervention	Percentage Point Difference
Tredyffrin	% in compliance (Total N)	90.1 (574)	92.0 (526)	+1.9
Haverford	% in compliance (Total N)	80.1 (764)	90.0 (723)	+9.9*
Abington†	% in compliance (Total N)	86.2 (617)	85.8 (330)	–0.4

*Significant at 95% level of confidence.
†Comparison site.
‡Children from birth to age 1 in CSS; children ages 1 to 4 in CSS in front seat, but may be in SB in back seat; children ages 4 to 5 may be in an SB.

Drivers (with young passengers) showed change in responses on topics of knowledge of Pennsylvania's CSS law, perception of local enforcement of OR laws, and self-reported behavior on proper use of CSS. With the exception of knowledge of the CSS laws, significant improvements were found after project interventions. Specific knowledge about the age requirements for CSS use in the back seat, as specified in the law, showed little change in all test and comparison sites before and after project interventions. Drivers of young children in both test site communities showed significant improvement in perception of enforcement of the OR laws in these communities. Tredyffrin and Haverford drivers of young children improved in their "very likely" or "somewhat likely" perception of getting a CSS citation. Abington (comparison site) drivers did not improve in this area; in fact, their level of perception dropped. Similarly, Tredyffrin and Haverford drivers improved in their

"very likely" or "somewhat likely" perception of getting an SB citation. Again, Abington (comparison site) drivers' level of perception dropped. Drivers of young passengers in Tredyffrin improved significantly in responding that they "always" put their children in CSSs properly. Driver response in Haverford for the same question showed little change. In Abington (comparison site), the "always" responses of drivers dropped.

Analysis of data revealed that drivers with young passengers were primarily women doing routine grocery and other shopping chores. Travel patterns indicated that most of the drivers with young passengers lived near the shopping centers and represented community residents. Reported residence and zip code data confirmed that the observed sample represented community residents, who were more likely to be exposed to programs conducted throughout the intervention period.

Results of the study showed significant improvements in restraint use by the general public and improvements in restraint use by drivers with young children. National restraint usage rates improved only slightly, from 53 percent to 55 percent, between the spring and fall of 1991 (NHTSA, 1991), which was the period of the intervention projects. The restraint usage rates improved over 6 and 9 percentage points in the two test communities and went down 2 percentage points in the comparison site, indicating a strong probability of being influenced by the intervention. On the other hand, even though the restraint usage rate of drivers with young children improved, it was not a statistically significant improvement, their rates started much higher, and they probably could not significantly improve their usage level with current program resources. (Tredyffrin's baseline SB usage rate improved from about 85 percent to 88 percent and Haverford improved from about 71 percent to 79 percent.) The field workers found that drivers with young children had much higher restraint use (post-intervention—85 percent, 79 percent, and 64 percent [comparison site]) than drivers without children in their vehicles (post-intervention—57 percent, 50 percent, and 46 percent [comparison site]). This "parental" characteristic was also evident in the relationship between drivers restrained and their children restrained. When drivers were observed in restraints, 97 percent of the toddlers were found to be in either a CSS or SB. However, when drivers were not in restraints, only 69 percent of the toddlers were in either type of restraint.

Even though Tredyffrin had higher enforcement contact levels than Haverford, all of the press releases in both test communities mentioned the enforcement component and CSS laws; some articles mentioned counts on the numbers of tickets and warnings given for OR violations. Thus, press coverage on enforcement may have been instrumental in increasing perception of enforcement in these communities, maybe even more important than the enforcement activities themselves. In addition, driver response to "always" properly using a CSS improved in both test communities. However, only Tredyffrin drivers showed significant improvement to the "always use CSS" response. Again, increased perception of a ticket—whether drivers believe that the police are knowledgeable on proper use compared with use—and awareness from PI&E intervention activities may have had enough influence for drivers with young passengers to report that they always use a CSS properly. Even if drivers falsified their responses, knowing what the correct response should be (i.e., "always" properly use a CSS) implies that their awareness of the correct response comes from project exposure.

Haverford showed more improvements than Tredyffrin in the measures of SB use by drivers with young children, CSS use and proper use for toddlers, and restraint use for older children (ages 5 to 9—data not presented). However, baseline SB and CSS use rates were much lower (10 percentage points) in Haverford, suggesting that this community has a lot of room for improvement. In addition, even though both test communities provided enforcement and PI&E activities throughout the intervention period, the level of effort, the complexity, and the mix of activities in each community make it difficult to determine which intervention elements in each community most strongly

influenced behavior. Tredyffrin conducted a stronger enforcement effort with more staff training, higher police SB use (100 percent), and much higher numbers of written warnings and citations (3 times as many "contacts"). Its PI&E effort was active and was complete with kickoff events, press coverage, community display events, projects for the business and civic community, and even TV news coverage. However, Haverford's PI&E effort was more intensive. The community had more press coverage (twice as many newspaper articles) and a more comprehensive school/day-care education project, distributed more material at special events and during holidays, and even utilized outdoor signing at major roads in the township. Their enforcement effort was much lower, but they utilized more high-exposure, selective enforcement measures. They conducted training, but did not provide refresher training as Tredyffrin did, and their SB use was 87 percent. However, despite the different "mix" of enforcement and PI&E intervention activities in each community, significant improvements were evident in the key measures of CSS use and "full protection" rates among toddlers and SB use of the general public. Also, significant results were found in terms of driver perception of enforcement of the OR laws and driver acknowledgment of "always" using a CSS properly. Drivers with young children also improved in SB use and in their compliance with the OR laws of Pennsylvania.

The results suggest that CSS use and proper use, as well as OR use in communities improved through:

- Moderate and intense levels of OR enforcement (including written warnings as well as citations for both CSS and SB violations).
- A comprehensive PI&E program (including frequent press newspaper coverage).
- Public events (including CSS inspection clinics).
- An education program directed at schools and day-care centers and the civic and business community.

PROJECT ADMINISTRATIVE EVALUATION

An administrative evaluation looked at the project's management direction, activities, and unique characteristics. It was felt that police could have provided closer supervision and more enforcement of SB and CSS laws to reach an even higher level of community SB and CSS use and proper use. Police had little difficulty following most of the model OR enforcement policy guidelines. Police were convinced that the SB law had to be a primary offense for enforcement levels to increase. Police needed assistance in maintaining PI&E activity level, especially press releases and distribution of material. Police could not be expected to conduct CSS inspection clinics alone. CSS advocacy groups would need to take the lead in conducting these clinics. However, police presence was important. Police needed greater awareness of promotional material provided by State Transportation departments. States would have to pass stronger OR enforcement laws to gain credibility needed for motivating police to enforce these laws. Communities could assist police in many PI&E activities, especially writing press releases, distributing project material, and conducting SB and CSS usage surveys.

RECOMMENDATIONS

While the project results are promising, these communities still have room for improvement in CSS use (77 percent and 71 percent) and proper use (73 percent and 69 percent) among toddlers and, as suspected, throughout the nation. (Future research needs to address the current usage and proper

usage rates of CSS across the nation.) The SB use improved in these communities (58 percent and 50 percent) as well as throughout the state and nation. As of the fall of 1992, Pennsylvania's SB use average was 60 percent (PennDOT, 1992), and the national average by the end of December 1992 was 62 percent (Brownlee, 1993).

Future directions recommended for states seeking new ways to promote OR enforcement among community police departments include the following:

- Establish primary SB laws.
- Establish comprehensive OR enforcement curriculum in State police academy projects for new police recruits.
- Implement fine-only costs to secondary SB laws.
- Implement stronger "full protection" CSS laws.
- Print OR citation category on the standard traffic citation form.
- Recognize community OR projects that involve a strong enforcement component.
- Conduct in-person meetings with community police chiefs and traffic safety patrol supervisors to promote the State enforcement and OR usage goals.
- Continue statewide PI&E programs, using local and county-wide highway safety groups to assist local police with project components, especially the following:
  - Distributing educational material.
  - Conducting CSS inspection clinics.
  - Assisting in community safety events.
  - Monitoring project effectiveness.

For local police to successfully promote and increase use and proper use of CSS and other restraints in their communities, commitment must come from top command—an essential aspect in promoting project implementation. The project should include:

- Comprehensive training projects using established curriculum, SB policy with compliance measures, motivational techniques (such as roll-call reminders and enforcement cards) for enforcement, and an active OR enforcement and PI&E effort.
- Dedicated traffic enforcement units.
- Realistic OR enforcement goals that are within reach of community police resources.
- Selective and routine OR enforcement techniques that are used and integrated into normal police activities.
- PI&E programs that include:
  - Information on OR laws, including fines and cost.
  - Enforcement activity in the community.
  - Distribution of educational material on CSS use and proper use for infants, toddlers, and other children, as well as general SB protection for the entire community; including schools and day-care centers.
  - Periodic evaluation of program effectiveness and recognition of police effort.

Community groups interested in OR protection can work with police in developing and conducting projects. These groups can promote resident awareness, draft press releases, distribute information, and volunteer time for field surveys.

In the research presented in this paper and the research and demonstration projects conducted over the last decade, the evidence points to enforcement of the OR laws combined with a strong PI&E

effort for improving SB and CSS use. Questions remain concerning how much enforcement is required to increase CSS use and proper use as well as all other types of OR use.

- How much PI&E is required, and what is the appropriate mix of enforcement and PI&E? Since most misusers already know they are not properly restraining their young passengers, how should current PI&E be revised to correct errors more effectively? How should PI&E persuasively emphasize enforcement and its consequences?
- How long does the project need to continue, and is a constant level of "routine" intervention needed to keep OR usage up?
- What additional resources would it take to reach beyond nationally desired SB and CSS usage rates?

Other questions concern what levels of OR "contacts" are necessary to improve or maintain restraint and CSS usage levels.

- Is it 5 percent, 10 percent, or 20 percent of the total enforcement "contacts" in the community or jurisdiction?
- Should warnings be considered an acceptable substitute for citations, i.e. as effective in motivating desired changes in drivers' safety behavior?
- Do selective enforcement methods work better than routine patrol methods?
- Can community police be expected to set the same OR enforcement goals as State police?
- Can police be expected to determine misuse characteristics of CSSs?

In addition, another study should investigate and compare the relationship and effects of enforcement in states with secondary SB laws versus states with primary laws. The community police reported that the extra costs associated with the secondary citation, combined with the costs of the primary-violation conviction, inhibit them from ticketing, and thus they opt for warnings. The community police have also reported that states with a secondary law for SBs are sending a message that the law is not important enough for the states to make it a primary law. Thus, the local police claimed they were not sufficiently trained or motivated to treat the SB law as a high-priority enforcement objective.

1. INTRODUCTION

The National Highway Traffic Safety Administration (NHTSA) brings a strong commitment to increased use and proper use of child safety seats (CSSs) throughout the nation, because CSSs have an impressive record of saving lives and preventing fatalities. During the late 1980s and early 1990s, the national CSS use rate for infants[1] and toddlers[2] surpassed 80 percent. However, unrestrained children under age 5 still represented two-thirds of all crash fatalities (614) in that age category (NHTSA, 1990).

The most recent national estimate of young children fully protected[3] is only about 56 percent nationwide (Ziegler, 1989). Many young children, especially toddlers, are still riding in motor vehicles without properly installed or properly used CSSs. The most common misuses include seats improperly fastened into the seat of the car, children not occupying the seat of the car, children improperly fastened into the seats, and seats facing the wrong direction. Since misuse of CSSs cuts the safety effectiveness against severe and fatal injuries by about half, NHTSA sought out demonstration projects that would promote and increase proper CSS use for full protection of these young children, as well as promote CSS use in general.

NHTSA is convinced that the use of CSSs will decline unless child passenger safety laws receive strong enforcement. Experience with safety belt (SB) legislation in both the United States and foreign countries indicates that enforcement, when combined with publicity, is critical in keeping occupant restraint (OR) usage rates high. With these facts in mind, NHTSA has supported research to evaluate demonstration projects that have the long-term potential to improve CSS use and proper use (among a large proportion of drivers of young children, especially toddlers).

This project relied heavily on the police as enforcers and educators of CSS and SB laws and community players as educators on proper use of CSSs. The demonstration projects used the most current methods and trends in improving occupant protection for young children. Elements of the project included police enforcement, with ticketing and warnings on all OR laws (CSS and SB), combined with a public information and education (PI&E) project that stressed the enforcement component of the project, use and proper use of CSSs for all young children, and targeted child passenger safety messages geared to toddlers. In addition, general SB messages would be used for all community residents, especially parents with young children, since research supports the correlation between CSS use and driver SB use (Hletko, 1983; Wagenaar, 1988; Russell and Brackbill, 1992). The projects were conducted without the benefit of Federal government funding for police salaries, to demonstrate to police and other community groups that they can replicate these child passenger safety projects within their routine operations and own resources. It is hoped that they will encourage other police and community groups to participate in child passenger and SB projects.

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[1] Young children under 1 year of age and under 20 pounds.

[2] Young children between the age of 1 and 5 and between 20 and 40 pounds.

[3] NHTSA defined "full protection" in this 1989 study in which researchers observed children in moving vehicles. They counted the children facing the proper direction and harnessed in their safety seats and multiplied this number by the percentage of safety seats installed properly in vehicles observed in parking lots.

The specific project goals were:

(1) Increase OR use for all infants and young children, especially those from age 1 to age 5, preferably with toddler or convertible seats (or at least SBs in the back seat, as required by Pennsylvania law, from age 1 to age 4).

(2) Extend the use of toddler or convertible safety seats to the minimum recommended standards (approximately 20 pounds to 40 pounds or up to age 5), in the back seat where, by Pennsylvania law, only an SB is required.

(3) Foster "full protection" and proper use of appropriate CSSs for children age 1 to age 5 for all trips, including local, short-distance rides.

Evaluating the effects of demonstration project activities consisted of analyzing data collected during pre- and post-intervention phases from observations of the use and proper use of CSSs and SB's, and from responses to queries that interviewers asked drivers with young children. Another assignment was to conduct an administrative audit on police and community support.

To reach the objectives of this project, researchers performed the following tasks:

- Review existing literature and program.
- Plan demonstration project.
- Develop site support and implementation materials.
- Collect and analyze baseline (pre-intervention) data.
- Intervene.
- Collect and analyze pre- and post-intervention data.
- Conduct administrative audit and evaluation of intervention activities.
- Prepare final report, executive summary.

2. BACKGROUND

This chapter presents characteristics of child safety seats (CSSs), occupant restraint (OR) laws and national usage rates, child passenger safety projects nationwide and local, a brief review of research studies and demonstration projects related to the subject, and the implications of past research and demonstration projects used for the project approach and evaluation design effort of this project.

CSS CHARACTERISTICS

This section identifies the types of CSSs, their use and proper use, and the common misuses observed and reported.

Seat Types

The four general types of CSSs consist of infant, convertible, toddler,[4] and booster safety seats. The American Academy of Pediatrics (AAP) provides guidelines for the proper use of these seats. These guidelines revolve around the age and weight specifications of young children.

Infant safety seats are for children from birth to about 9 to 12 months or up to 20 pounds. The infant must be facing the rear of the car in a semi-reclining position. The seat is connected to the safety belt (SB), which comes across the front of the seat.

Convertible safety seats are for use from birth to about 40 pounds. The seat reclines and faces rearward in the infant position and holds infants up to 20 pounds. It converts to sit upright and face forward for the toddler position; it holds toddlers from 20 to 40 pounds. Seat conversion usually involves adjusting the shoulder straps and rerouting the vehicle SB. Manufacturers provide instructions for converting the seat.

Toddler safety seats are for children from approximately 20 to 40 pounds and up to about age 4 or 5. Toddlers face forward only. This type of seat is not commonly used anymore; its successor is the more conventional, convertible seat.

Booster safety seats provide forward-impact protection for children who have outgrown convertible or toddler seats. A booster seat arrangement can incorporate the adult lap and shoulder belt. If lap and shoulder belts are not available, the vehicle lap belt alone works in conjunction with a special safety harness or shield. Without the special harness or shield, a booster seat used with a lap belt does not provide adequate protection. Booster seats are for children between age 4 (40 pounds) and age 8 (60 to 70 pounds) or as long as the child will fit.

Figure 1 shows the four general types of CSSs.

[4] Toddler-only seats are no longer manufactured.

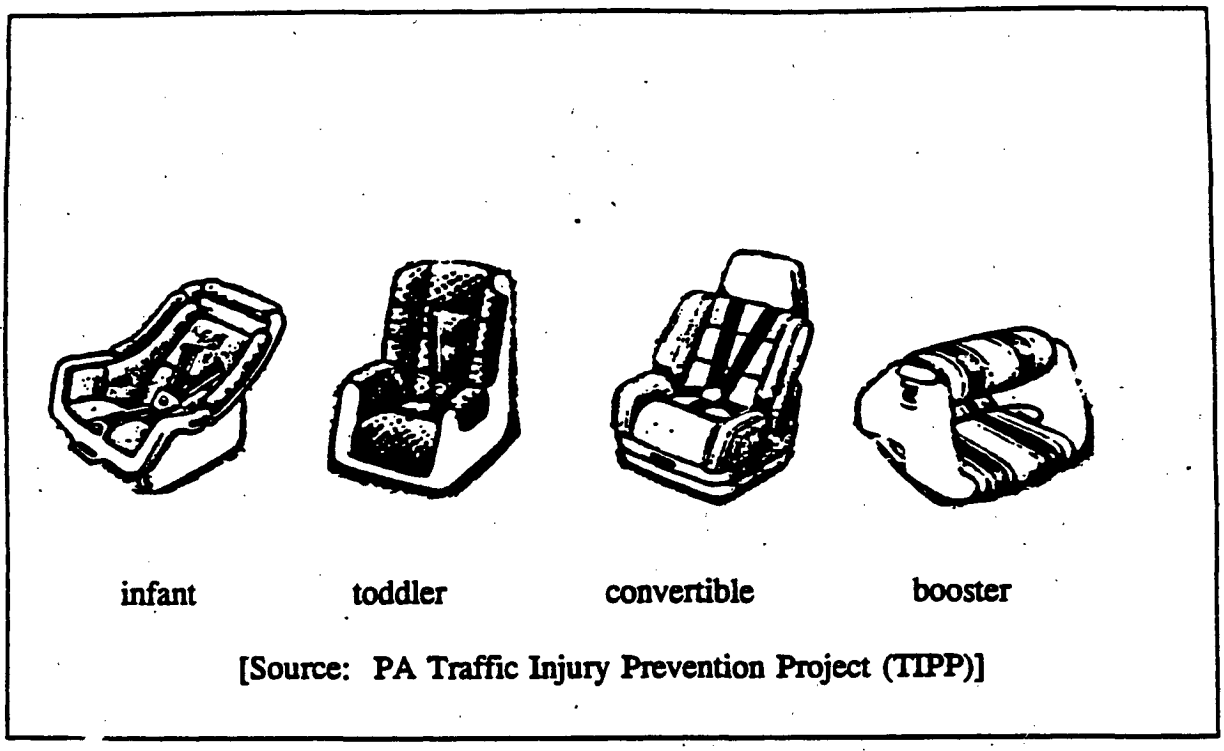

Figure 1. Types of child safety seats.

AAP provides an annual shopping guide listing manufacturers and models of CSSs that meet Federal Motor Vehicle Safety Standard 213. The guide also provides harness type and adjustment information, special notes, and price range.

Proper Use

AAP recommendations[5] for proper use of CSSs by seat type, seat direction, SB installation, and harness or shield are as follows:

- Seat Type
  Infant seats are for young children under 20 pounds. Convertible seats are suitable for both infants and toddlers up to 40 pounds. Booster seats are primarily for young children between 40 and 70 pounds.

- Seat Direction
  Infants who weigh under 20 pounds, generally less than age 1, and cannot sit up well should ride in either an infant car seat or a convertible car seat facing rearward. An infant car seat must always face backward, regardless of the child's weight. With this setup, the force from a crash falls across the infant's back and the neck cannot flex forward. Toddlers over 20 pounds should face forward.

[5] The AAP also provides recommendations for correct CSS use for premature infants, small infants, and young children with physical disabilities. These recommendations are not in this report.

- SB Installation

The way to route the vehicle SB through the car seat varies from model to model. Belt routes for infant seats are usually across the front of the child. Convertible car seats have different belt routes depending on whether they face forward or backward; booster seats should never use only a lap belt. Depending on the model, a booster seat may incorporate an auto lap and shoulder belt, and a harness supplied with an SB or a lap belt is secured across a shield that covers the child's body.

The SB should be tight. Testing the seat involves only pushing the car seat forward and backward. The seat should not move. If it does move, the seat needs to be pressed firmly into the auto seat cushion with the knee, then the belt tightened. If the belt has a windup reel, the webbing should feed back into the reel to take up the slack. For 3-point SB's, locking clips are the way to keep the web from slipping.

The buckle and latchplate of the belt should be on one side of the car seat, below the frame or toward the middle of the car seat, between the sides of the frame, allowing proper adjustment. If the buckle or latchplate lies just at the point where the belt must bend around the frame or through the slot of the seat, the belt will not tighten properly.

- Harness or Shield

This device holds the child in the car seat, and the vehicle belt holds the seat in the car. Both must be snugly attached to prevent injury. A belt that is routed across the top of a car seat will not by itself protect the child. The harness or shield, or both, should close securely around the baby on every trip.

The CSS restraining system must be adjustable (see Figure 2). The shoulder harness ① should go through the slots in the back of the seat, level with or just above the shoulders. The harness webbing ② must lie flat (not twisted) and straps should be snug. When adjusting or rethreading the harness, the webbing should double back through a single adjustor slide attached to the frame. The crotch strap ③ should be kept short. If a retainer strap ④ or plastic clip is available, it should be level with the child's armpits to keep the harness from slipping off the shoulders. Shields should fit close to the child's body and always accompany a harness.

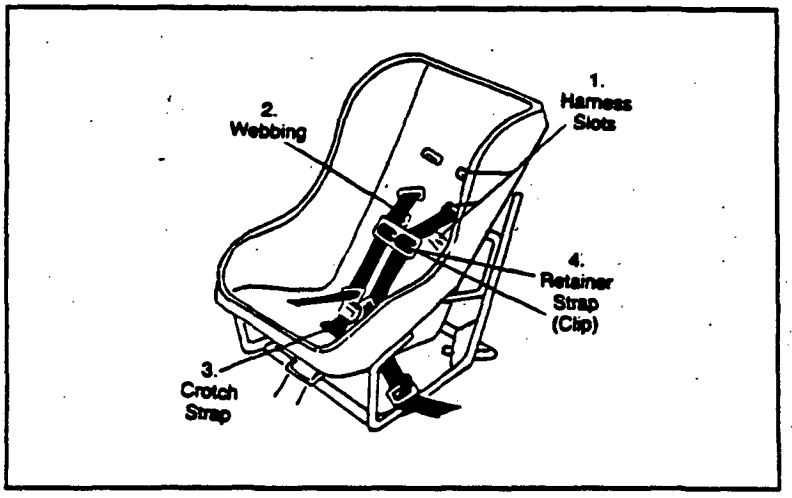

Figure 2. Harness, retainer, and crotch strap position of a convertible seat.

Common Misuse

Figure 3 shows common misuses of CSSs observed by researchers and educators and documented in the literature.

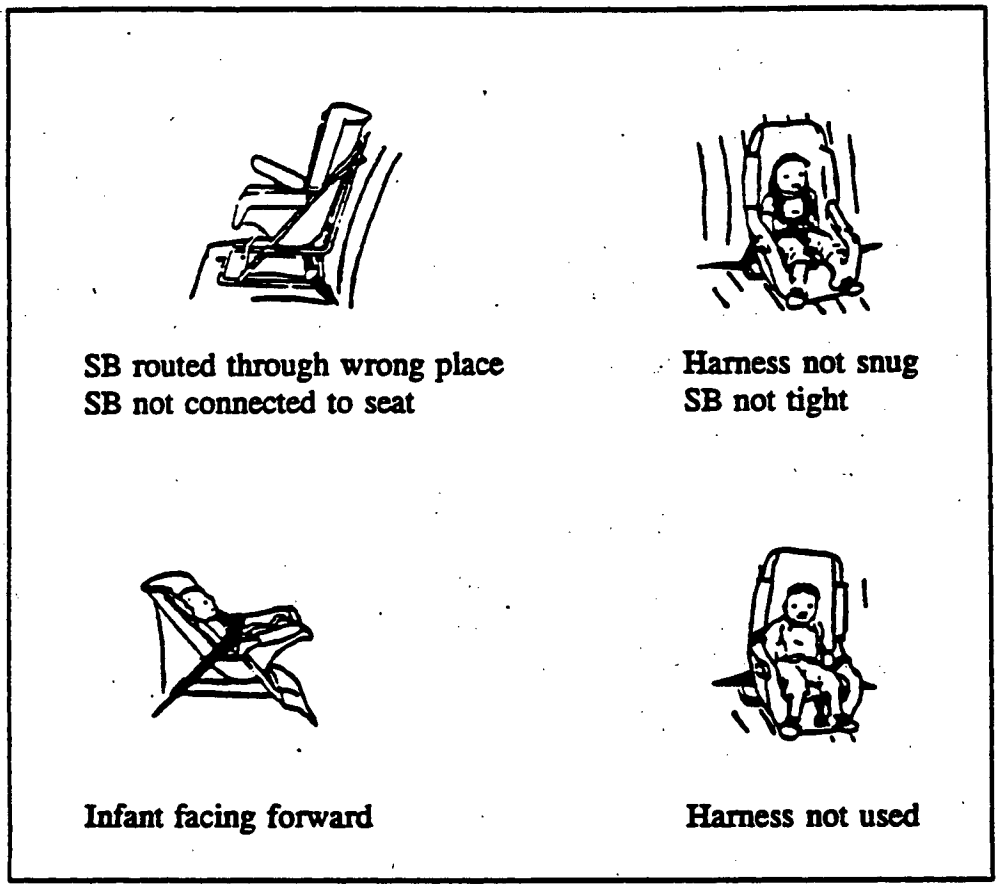

Figure 3. Common misuses of child safety seats.

Child Safety Seat Usage Rates

The National Highway Traffic Safety Administration (NHTSA) has sponsored child restraint observational studies as part of periodic observation studies of SB use and motorcycle helmet use in the 1980s. Observations focused on children (ages estimated by observers) in cars stopped at traffic signals that control traffic entering and leaving shopping centers in 19 U.S. cities. The three shopping centers selected in each city provided a mix of socioeconomic levels as well as sufficient traffic flow and good vantage points for conducting observations. Although the data collected were not statistically representative of all children in cars in the United States, it provided a reliable assessment of general trends in CSS use.

As of November 1991, NHTSA reported that infant seat use had reached 87 percent (n=893); toddler and booster seat use had reached 82 percent (n=5,569). These percentages were a dramatic increase from those reported a decade ago, when infant seat use and toddler seat use were only 40

percent and 19 percent, respectively. In the last few years ending in 1991, infant and toddler seat use has leveled off to around 80 to 85 percent, respectively.

In the early 1980s, NHTSA sponsored a study to determine incidence and factors associated with CSS misuse. The study group collected data on CSS use, misuse, and factors associated with specific types of misuse, in 10 cities across the country at a fast food restaurant. They found only 35 percent proper use for about 1,000 safety seats observed. However, about 22 percent of the sample showed misuse of CSSs with tether straps, which have now been discontinued. Moreover, the need for a tether strap has been functionally eliminated by manufacturers. In addition, they found that misuse of toddler seats did not appear to be related to the age of the child. However, misuse of the seats occurred more often when the driver was **not** belted (72 percent misuse) than when the driver was belted (51 percent misuse) (Cynecki and Goryl, 1984).

Currently, NHTSA does not report misuse characteristics of CSSs. However, from 1983 to 1988, measures of "proper" and "fully protected" use were attempted in conjunction with the nationwide (19-city) observation studies (Bowman and Rounds, 1989). From observing CSS use in vehicles stopped in traffic and at curbside and from looking at seat installation in unoccupied cars in parking lots of shopping centers, NHTSA (Ziegler, 1989) computed the estimated percentage of children who were probably fully protected. For 1988, the last year that data were computed, NHTSA estimated that 55.8 percent of children in cars were probably "fully" protected.[6] This percentage represented an increase from 11 percent only 5 years earlier. However, the NHTSA data have drawbacks. The methodology used in computing "fully protected" usage rates assumes that the drivers of the parked vehicles with "properly installed" CSSs actually put their children in these seats and fastened the harnesses. Thus, the estimated "fully protected" rate was probably lower than 56 percent. Nevertheless, this data provided NHTSA with a measure of the percentage of children who were "fully protected."

The most recently collected data on proper CSS use come from Michigan (Streff and Molnar, 1990). Data collected across the State in May 1990, on a sample of 253 children from birth to age 3 (estimated), showed that 78.4 percent were restrained in a CSS, with 60.5 percent "correctly restrained." ("Correctly restrained" was not defined in the report.)

Safety Belt (SB) Usage Rates

NHTSA has also collected SB usage rates in 19 cities across the nation for about a decade. The last survey showed that the overall SB usage rate nationwide was 51 percent. For cities with state SB laws, the usage rate was 55 percent; and for cities without state SB laws, the usage rate was 35 percent (NHTSA, November 1991). (Residents of states with SB laws show much higher compliance with SB use.)

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[6] This estimation is based on the following computation:

- a = children in CSSs (percentage based on cars containing children during observation): 83.5 percent
- b = children harnessed and facing proper direction in CSSs (percentages based on number of children observed in CSSs): 85.4 percent
- c = proper installation (percentage based on CSSs in unoccupied cars observed in parking lots): 78.2 percent
- d = b x c estimated overall proper CSS use: 66.8 percent
- a x d = estimated fully protected children in cars: 55.8 percent

LAWS AND PROGRAMS

This section examines the OR laws for child passengers and adults in the United States, then briefly identifies child passenger safety projects, across the nation and in Pennsylvania, the state where the demonstration project was conducted.

Occupant Restraint Laws

All 50 states have passed primary laws requiring children under specified ages to be restrained in infant carriers, special CSSs, or, sometimes, regular adult SBs (IIHS, 1991). These laws cover children of specified ages in virtually all kinds of motor vehicles. In 16 states, the laws cover only children traveling in vehicles registered in the state. The majority of the states declare the driver of the vehicle responsible for the child. Seven states hold only the parent, guardian, or owner of the vehicle responsible.

For infants under 1 year of age, CSSs are required (in the front or back seat) in 48 states. However, for toddlers age 1 to age 5, CSS requirements vary by age and seat position. In 1992, 40 States allowed children between age 1 and age 4 or 5 to wear adult SBs in the front, back, or both.

Fines for violating CSS laws vary across the states. However, 41 States have fines ranging from $10 to $50. The remainder of the states have fines ranging mainly from $75 to $100, but some as high as $500. Court and other state costs may be added to the fine, depending on the State. Waivers from paying fines and costs may be allowed in some States if the person fined provides proof of a CSS purchase.

Pennsylvania has a child passenger safety law (primary enforcement section 4581 A1 child restraints) (Figure 4) and a SB use law (secondary enforcement section 4581 A2 SB law). The child passenger safety law was initiated on November 1, 1983, and amended on November 23, 1987.

PRIMARY ENFORCEMENT SECTION 4581 A1 CHILD RESTRAINTS

1. All drivers transporting children from birth to age 4 are responsible to restrain those children in the appropriate restraint system.

2. Infants from birth to age 1 must be in an approved child safety seat. The seat may be in any seating position equipped with a seat belt in the vehicle. (However, for maximum protection, the back seat is preferable.)

3. Children from 1 to 4 may be in a child safety seat anywhere in the vehicle or in a seat belt in the back seat only.

4. Violators may be fined up to $25.00, plus $17.50 court costs, $30.00 CAT Fund and $10.00 EMS Fund. The fine may be waived by showing proof of purchase and possession of a child safety seat at the time of court appearance.

5. Violators may be stopped as a primary offense for noncompliance with the Child Passenger Protection Act.

6. Fines collected will be placed in a fund used to purchase child safety seats for car seat loaner programs.

7. Civil immunity for lenders of car seats has been granted. No person or organization who lends car seats shall be liable for any civil damages resulting from any acts or omission, except any act or omission intentionally designed to harm or any grossly negligent act or omission resulting in harm to another.

8. Hospitals are required to notify parents of the car seat law and also the location of car seat loan programs in the community.

9. An education program shall be conducted to insure maximum distribution of information about the law.

Figure 4. Pennsylvania child passenger safety law.

In 1991, SB use laws existed in 43 States. SB laws in most states cover front-seat occupants only. Only 9 states have primary enforcement laws (i.e., police may stop and ticket motorists solely for failure to use belts). In the remainder of states (34), including Pennsylvania, secondary enforcement laws are in place (i.e., police may not enforce the SB law in the absence of another primary offense). Figure 5 shows the Pennsylvania SB law.

SECONDARY ENFORCEMENT SECTION 4581 A2 SEAT BELT LAW

1. Each driver and front-seat passenger operating a passenger car, class I and II truck, or motor home in the State of Pennsylvania shall wear a properly adjusted and fastened safety belt.

2. The driver of a passenger automobile shall secure or cause to be secured with a safety belt any child over the age of four and under the age of 18 riding in the front seat.

3. Violators, if convicted of the primary offense for which the vehicle was stopped, are liable to pay a $10 fine for the seat belt violation.

4. Exceptions to the Law are made for (1) those with medical or psychological diagnoses that make them unable to wear a safety belt (written verification must be produced); (2) occupants of cars manufactured before July 1, 1966; (3) specific occupational designations.

   (Additional costs are $10 for Emergency Medical Services (EMS), $30 for catastrophic insurance (CAT), and $1.50 for judicial court program (JCP).

Figure 5. Pennsylvania safety belt law.

National Child Safety Seat Programs

CSS organizations grew out of grass-roots community groups in the 1960s and 1970s. These groups promoted public awareness of child passenger safety and lobbied for legislation protecting young children in moving vehicles. Today, many CSS organizations have sprung up across the United States. They have primarily been organized out of medical groups (e.g., AAP) and health groups (e.g., National Safe Kids, Inc. United Way/Red Cross), and State projects. Federal and State funding has supported a number of these organizations. These projects often provide extensive assistance in the area of child passenger and OR safety, including distribution of educational materials, car seat loaner programs, lectures/speaking engagements, CSS inspection clinics, and demonstrations, exhibits, and display booths.

The private business sector also provides CSS projects. Some insurance companies (such as Allstate) have begun to offer incentives for car owners who use CSSs and provide national TV coverage promoting CSS use. A few hospitals have begun to offer free car seats as a means of obtaining new obstetrics business. An automotive repair company and a CSS manufacturer conduct a "Safe Baby" program that provides CSSs at cost to the general public. A toy manufacturer puts CSS and SB messages into "crash dummies" toy products, and a retail store puts SB messages on its paper floor-mat protectors, which are a gift to customers who have used the auto repair department. Several car companies have even built in (optional) toddler restraints in the back center seat of certain vans and sedans.

Pennsylvania Child Safety Seat Programs

Under the direction of the Pennsylvania Department of Transportation's (PennDOT's) Center for Highway Safety, the Pennsylvania Chapter of AAP operates the Traffic Injury Prevention Project (TIPP). TIPP provides extensive public information and education (PI&E) programs on child passenger safety. In addition, the program group provides CSS inspection clinics and conducts lectures for all types of groups that request assistance on the topic. They also loan films, distribute literature and brochures to the public, and provide information on the CSS loaner projects spread extensively throughout the State.

In addition, PennDOT's Center for Highway Safety supports both local (county) and regional comprehensive highway safety projects. These community-based projects are another effort to reduce the number of crashes, injuries, and deaths by addressing highway safety issues such as occupant protection, driving under the influence (DUI) awareness, and pedestrian safety. The projects try to reach this goal through public awareness campaigns. Intervention strategies targeted five particular groups—schools, community and family, health care, law enforcement, and the workplace.

Free information, in the form of brochures, posters, and audiovisual materials, is available on all highway safety issues. The comprehensive highway safety coordinators are available to help plan and participate in events or to speak on any of these topics. In addition, through these groups, mini-grant funds are available for police departments and community groups to help defray costs of materials and programs on child passenger safety, occupant protection, and other highway safety topics. These grants usually range from $300 to $500.

At the time of the project, another prominent organization was the Keystone Safety Belt Network (KSBN). Founded by the Pennsylvania Chapter of the American College of Emergency Physicians, KSBN was supported by the automobile industry through Traffic Safety Now, Inc. KSBN provided PI&E on topics concerning occupant protection. It was a leader in lobbying to make the SB law primary and provided police departments throughout the Commonwealth with enforcement cards and instruction in NHTSA's Occupant Protection Usage and Enforcement (OPUE) workshops. KSBN coordinated many of its activities with PennDOT. (They are no longer in existence.)

RESEARCH STUDIES AND DEMONSTRATION PROJECTS

This section briefly reviews some of the research studies and demonstration projects that have evaluated the effectiveness of interventions, activities, and projects to promote use and proper use of CSSs.

Legislation Evaluation

Many research teams have evaluated the impact of legislation on the use and proper use of CSSs. For NHTSA, the University of Tennessee conducted one of the earliest efforts at evaluating the effectiveness of legislation on the use of CSSs (Perry et al., 1980; Heathington, Philpot, and Perry, 1982). Legislation passed in Tennessee in 1977 (effective January 1, 1978) requires children under 4 years of age who are traveling in motor vehicles to be restrained in these child-restraint devices. (Tennessee was the first State to pass such legislation.) An extensive PI&E project complemented the legislation. The researchers established two levels of PI&E projects in conjunction with the legislation. A basic State plan included the distribution of brochures and posters at hospitals, pediatric offices, and other places frequently visited by parents with small children. A comprehensive plan involved a mass-media approach and loaner projects. The researchers targeted five urban and

three nonurban areas in three distinct geographic divisions of Tennessee. Data collection included observations, personal interviews, self-administered questionnaires, and analysis of the accident and fatality rates for a 2-year period. Results showed a significant increase in CSS use after implementation of the law, a PI&E program promoting child passenger safety, and a law enforcement project. The Statewide estimated percentage of use went from a baseline of 9.2 percent to 13.6 percent for the basic State plan and 17.4 percent use for the comprehensive plan.

Rhode Island was the second State to require CSS use (in front seats of vehicles only). The Insurance Institute for Highway Safety (IIHS) evaluated the effects of the Rhode Island law through the same observational techniques followed in the Tennessee studies (Williams and Wells, 1981). However, IIHS evaluated proper (SB and harness system in place) use of the restraints, not just use. Evaluation of the effect of the law after 4 months showed an increase in the proportion of children properly restrained (from 22 percent to 35 percent) and an increase in proper CSS use for both the front and rear seats. The control group (Massachusetts) also showed an increase in proper child restraint use, but not at the significant levels observed in Rhode Island. IIHS concluded that the law appeared to have moderately increased the accident protection of children in motor vehicles; it also appeared to have increased the proportion of CSS use in rear seats despite the fact that the law does not require rear-seat restraints.

To evaluate the effects of a child restraint law, the Michigan Office of Highway Safety Planning sponsored a study of restraint use and occupant injuries in accidents in 1982 (Wagenaar, 1984). The study, performed by the University of Michigan's Transportation Research Institute, was designed to determine whether the child restraint law reduced the number of young children being injured in crashes. The study did not measure the rates of proper use of CSSs. In addition, the law allowed children between the ages of 1 and 4 to be restrained by an adult lap SB or CSS. (Lap-belt use by a child under age 4 would be defined as improper restraint use in most studies.) However, the researchers noted that restraint use increased as the child went from age 1 to age 3 (from 12 percent to 36 percent, respectively) and that the number of children injured in crashes decreased by 17 percent.

The Borgess Medical Center in Kalamazoo, Michigan also collected use and proper (position of seat only) use data on a sample of Michigan drivers with children (Hletko and Hletko, 1983). The researchers collected data on pre-law and post-law use and proper use at a pediatric center and a community parking lot and found a slight increase in infant seat use at the pediatric center after passage of the law. The increase of CSS use in the community parking lot was very significant. However, proper use showed only a minor increase. The researchers noted that the law can be effective in recruiting new CSS users as well as maintaining present CSS users, but enactment of the law does not ensure correct CSS use.

Observations of child restraint use in 12 Texas cities before and after child passenger safety legislation revealed that child restraint use increased significantly from pre-law to post-law (Hatfield et al., 1986). However, proper use rates did not increase, and the researchers concluded that education was the way to promote awareness of the safety issues for using CSSs and the importance of proper use.

Most of the research on the effects of legislation on the use and proper use of CSSs has found a short-term CSS use increase after child restraint legislation is passed. (Programs with education components integrated with the legislation have also increased CSS use.) However, proper CSS use rates do not seem to increase with just the passage of legislation.

Education Projects

A number of research projects have evaluated the effectiveness of education projects in promoting proper use of CSSs. These projects have focused primarily on infant seat use. Many have operated in conjunction with seat rental projects, and some have coincided with child restraint use legislation. The projects to increase infant seat use have utilized prenatal education instruction in a health maintenance organization (HMO) setting, interhospital CSS education projects, hospital postpartum projects, and pediatric counseling.

Studies conducted in the late 1970s concentrated on educational approaches aimed at increasing CSS use through in-hospital educational projects (for postpartum women). A study sponsored by the IIHS (Reisinger and Williams, 1978) evaluated the effectiveness of using five levels of education: literature, low-priced CSSs and delivery/demonstration, personal discussion with a "health educator," a free CSS with delivery demonstration, and a combination of these projects. The effects of these projects on the group were compared with the behavior of a comparison group that received no treatment. Results showed that all of these projects increased the extent of CSS use, but did not increase the proper use of these seats. The researchers suggested that educators encourage more active, voluntary cooperation of parents. They also suggested that manufacturers develop CSSs which would be less difficult to use properly.

IIHS-supported study examined the effect of a pediatrician's counseling on restraint use during the 1-, 2-, 4-, and 15-month well-child-care visits (Reisinger et al., 1981). At each age level, pediatricians counseled parents on the proper use of CSSs. They demonstrated proper use of these devices, showing how to route the SB and change seat positions. Observations took place as the parents entered the parking areas of the office for the well-child-care visits. Results showed that proper use of restraints in the experimental groups for all four age groups was at a higher rate than in a comparison group that received no special pediatric counseling on proper CSS use. The researchers concluded that pediatricians can be effective in increasing the protection of infants in cars. They recommended child passenger safety education for parents at each doctor visit to maintain proper and consistent levels of child passenger safety.

Another study conducted by the Borgess Medical Center in Kalamazoo, Michigan, examined the effect of a child restraint device education and rental project using postpartum medical office visits for CSS education (Hletko et al., 1983). Evaluation of project effectiveness focused on observations of CSS use by parents (educated during postpartum visits) who were returning to the Center for other reasons. Results of the study showed that the parents who received postpartum education and took advantage of CSS rental were more likely to restrain their infants correctly than those parents who received the same maternity-floor presentation but did not rent a CSS. The researchers suggested that parents get a review of correct CSS use at the 9-month child-care visit so as to reinforce correct CSS use for their child.

The University of North Carolina, Highway Safety Research Center (Hall and Council, 1979) also conducted a study using education by pediatricians. They conducted observational surveys of CSS use by parents who were educated by pediatricians, and they observed two control groups, parents not educated by pediatricians and the general public. For this educational campaign, pediatricians distributed posters, pamphlets, shopping guides of CSS models, and storybooks. The observational studies showed no significant differences in CSS use between those who received the educational program of the pediatricians and the two control groups. In addition, misuse rates had not changed.

Many evaluation studies of rental and loaner projects have been performed in conjunction with education. A number of these projects have also distributed CSSs. Some of these projects have not increased the proper use of CSSs. Reisinger and Williams (1978) have shown no increase in the persistent proper use of infant CSSs by parents given education and free CSSs versus parents given education only.

A recent documented evaluation did not report an increase in child restraint use after education projects. Chang et al. (1989) conducted a patient education project consisting of individual counseling by pediatricians, use of audiovisual materials and pamphlets, and (for newborn infants) a home visit by a child safety specialist. Parking lot observations on a sample of 1,425 families revealed over 60 percent CSS use in both intervention and comparison group children 1 to 4 years of age after the project. However, increases in the intervention groups were not significantly greater than increases in the comparison group. The results of the study did not show the anticipated results of an effective project. The researchers suggest that the intervention efforts were not substantive enough, the test groups were not exposed to all of the interventions, and usage rate for infant groups were already high in the intervention and comparison group.

Most of the demonstration projects on CSS use and proper use focus on parents with infants and very young toddlers. These projects, conducted by pediatric/health center groups, had the advantage of sample populations who routinely came back to the centers for well-child visits. Thus, it was fairly easy to observe changes in CSS use with the same sample groups since they returned for routine scheduled well-child visits. These studies showed improvement in CSS use, but not in proper use. The one documented evaluation from the late 1980s did not show CSS use improvement with a large sample of infants and toddlers.

Enforcement Projects

By the mid 1980s, CSS legislation was in effect in every state.

Post (1984 and 1986) reported on a project conducted by the Glendale (California) Police Department. Aggressive enforcement was combined with a comprehensive CSS education program and other community public awareness activities. Once the project was initiated, the community experienced a significant reduction in accidents resulting in injury or death to young children and infants. In addition, violations by local residents dropped 40 percent. Post concluded that the program had a significant impact on the thinking and habits of the residents.

A recent NHTSA-sponsored effort involved an evaluation of enforcement and PI&E projects designed to increase use and proper use of CSSs in nine communities across the nation. Police departments were given $5,000 incentive grants to conduct the following activities: officer training using NHTSA projects; a PI&E campaign; and occupant protection law enforcement. About 5,800 passenger vehicle observations of CSS use and proper use took place before and after grant activities in only three communities which actually issued citations. A 6 percentage-point increase in proper use was observed although overall CSS use rates did not increase. However, a factor to note is that enforcement of the CSS laws occurred only during selected periods and on overtime using mini-grant support funds. Enforcement of the CSS laws was not conducted during routine patrols (Prism, 1989).

More studies have evaluated the enforcement effects for violating SB laws than for violating solely child passenger protection laws (IIHS, 1985; Rood et al., 1987; Peltier, 1990; Mounce et al., 1990, Streff et al., 1992). These projects have shown that implementing SB enforcement projects with PI&E does increase SB use. In order to keep the SB use high, these communities must conduct periodic PI&E projects and continue enforcement to maintain the public's perception of enforcement and the need to use ORs.

From the encouraging results on many OR projects in which enforcement was a key intervention element, NHTSA developed enforcement guidelines for conducting child passenger protection projects (Smith and Moran, 1989). Key recommendations for more effective enforcement projects included the following components:

- Police department training on the benefits of using occupant protection and enforcing occupant protection laws.
- Police department policy requiring the use of SBs in police vehicles.
- Community support—including schools and local businesses.
- Integration of occupant protection enforcement into regular traffic safety enforcement.
- Active enforcement.
- Aggressive PI&E to create and increase awareness of the enforcement efforts and the benefits of occupant protection in the community.

Project Implications

A multiple-activity community intervention project was specifically devised for this project. The project centered around enforcement of the CSS and SB laws. Its underpinnings were project requirements, literature assessment (e.g., research studies, demonstration projects, and government recommendations), and current information on techniques for promoting occupant protection.

Police enforcement components deemed necessary included:

- NHTSA OPUE training of police instructors.
- In-house training by the OPUE trained instructors (for police who will be involved with OR enforcement).
- Adoption of SB policy for Police department employee and periodic checks on their SB use.
- Enforcement[7] of Pennsylvania's OR laws.
- Enforcement during routine and selective periods, including blitzes -- without external funding allocations.

[7] It was recommended that the police aim for the goal of 10 to 20 percent OR citations of the total or total "moving" (point) citations. (This percentage was based on recent enforcement levels reached in California.)

Police PI&E activities deemed necessary included:

- Press conferences, local newspaper coverage concerning enforcement, and other project activities.
- Periodic press releases from the police department emphasizing the enforcement project (tickets and warnings), proper use of CSSs, and other safety benefits of using child restraints and SBs.
- *Projects on the benefits of child passenger protection devices and ORs.* These projects included the distribution of literature, brochures, stickers, and other promotional items. Programs were conducted at schools and day-care centers, at community shopping centers, and at holiday or other special events.

Community and State support was also deemed necessary and included:

- Distributing literature at target audience locations (fast-food restaurants, day-care centers, libraries, retail stores).
- Providing literature, brochures, posters, stickers, and other material to the police (e.g., enforcement cards).
- Conducting CSS inspection clinics.

3. RESEARCH AND DATA COLLECTION METHODOLOGIES

This section identifies the research and data collection methodology used for evaluating the demonstration projects. The section on research methodology discusses the evaluation features and the statistical analysis plan; the section on data collection methodology addresses the tools, training procedures, and data collection techniques.

RESEARCH METHODOLOGY

The primary analysis issue addressed in this study was:

> ***When police enforce the occupant restraint (OR) laws and organize public information and education (PI&E) activities, what effect do they have on child safety seat (CSS) use and proper use as well as OR use in the community?***

Two secondary issues were also addressed as a way to explore the primary issue fully:

> ***What effect does the intervention project have on a driver's knowledge of the OR law, perception of OR enforcement, self-reported behavior, and awareness of CSS issues?***
>
> ***What level of police enforcement and PI&E activities is necessary to demonstrate a significant change in CSS use and proper use plus safety belt (SB) use in the community?***

To answer these questions, field staff collected data during pre- and post-intervention periods. In several shopping centers, they observed OR use (including CSS use and proper use) and asked drivers (with young children) to answer queries on OR laws, perception of OR enforcement, OR use behavior, and awareness of community OR programs.

Four categories of field data collected were: (1) site and driver-reported demographic information, (2) observed child and driver restraint use and proper use, (3) driver responses to queries, and (4) shoulder belt observations of the general public.

Site and driver-reported demographic information collected was as follows:

- Shopping center location and observation area.
- Weather condition of day, and date and time of observation.
- Vehicle type, license plate number.
- Driver's gender, age category.
- Driver's residence and postal zip code.
- Driver's travel behavior.
- Driver's knowledge of child passengers' ages and approximate weights.

Observed child and driver restraint use information collected was as follows:

- Driver's SB use.

- Restraint type (SB, CSS, and no restraint) use of all other occupants, by seat position.
- CSS type (infant, toddler, or convertible or booster).
- Proper and misuse level of CSS (seat position, SB connection, harness in place).

Drivers with young child passengers were asked brief questions on the following topics:

- Knowledge of CSS and SB laws in Pennsylvania.
- Perception of police enforcing CSS and SB laws.
- Self-reported behavior on proper use of CSSs.
- Self-reported behavior on frequency of driver SB use.
- Awareness of CSS issues.

A sample of the general public entering the shopping centers was also observed for SB use.

To answer the secondary issue relating to levels of enforcement and PI&E intervention, field staff collected information on police management activities (relating to the project), the level of OR training and enforcement activities, the level of PI&E activities, the court disposition of citations, and other components of the intervention project. Police, local/regional highway safety groups, and community residents also gathered this information, which was used for administrative evaluation and implications. The contractor also observed events to document project activities.

The evaluation design involved one intervention phase, an assessment of the interventions at two different sites, and the use of a comparison site. The following illustrates this multiple-site, multiple-activity design:

Observation Period	Intervention Site A	Intervention Site B	Comparison Site
Baseline	0	0	0
Intervention	X + Y	X + Z	0

Key

0: pre-project OR enforcement
X: PI&E
Y: law enforcement level 1
Z: law enforcement level 2

The original plan involved comparisons of different intervention levels of OR enforcement and consistent PI&E activities. However, it was not possible to preset or control levels of OR enforcement with the police or to control many of the community PI&E activities in either intervention site. In fact, both police departments were uncomfortable with setting expected levels of enforcement. NHTSA suggested setting OR citation goals at 10 to 20 percent of all citations or all moving ("point") citations. As the activities proceeded, the number of citations given by the two police departments was quite different (defined as level 1 and 2 in the design), and this difference was reflected in the project evaluation.

The hypothesis for the evaluation design was that exposure to the enforcement and PI&E intervention would increase the following:

- Use of child restraints and SBs for all infants and young children.
- Use and proper use of toddler seats.
- Compliance with Pennsylvania's CSS law.
- Knowledge about Pennsylvania's CSS law and proper use of toddler seats.
- Perception about the police enforcing the OR laws.
- Positive attitudes about CSS use and proper use.

The statistical analyses involved computing proportions and the difference in proportions and associated confidence intervals. Appendix A provides a description of sample size determination and statistical analysis methodology.

DATA COLLECTION METHODOLOGY

A data collection form (see Appendix B) was developed for gathering data on CSS use and proper use and SB use at community shopping centers. The data collection form included space for recording responses to the questions on the front of the form and space for recording observation data on the back of the form. Conducting the observations/queries required two data collectors. One data collector asked the questions, and the other conducted the observation. Observation data were recorded separately, and the data collector transcribed the results of the observation onto the back of the data collection form upon conclusion of the interaction with the driver.

Queries were numbered, and response codes were incorporated into the form so that the data collector could circle the response or write in information. Observation data were arranged in a tabular format by checking seat position in the row column and observation characteristics in the column categories. At the observation, the data collector would put a number code in the appropriate row and column space.

Forms

The pre-intervention form consisted of 19 queries on the front side and the observation data on the back (Appendix B-1). The form was constructed to allow mail-back of the query responses only. Drivers who wanted to respond in this manner would get postage.

The post-intervention form consisted of 28 queries, including all of the queries on the pre-intervention form (Appendix B-3). Additional queries related to specific intervention activities, which were determined after analysis of the pre-intervention data and progress of the intervention activities. Observation data (back side of form) did not change for the post-intervention period. The mail-back option was not part of this form, since only a small sample of the pre-intervention group used the mailing option. Both forms were pilot-tested in the field, during training sessions with the data collectors.

In addition, a third form was used to collect shoulder belt use of the general public (i.e., drivers of vehicles entering shopping centers). This form consisted of four columns: observation number, vehicle license number, driver gender, and shoulder belt use (1-Yes or 2-No). The form also included location, date, and time of observation. The structure of the form made data collection in the field swift, accurate, and easy to enter.

Data Collector Training

Prior to the training sessions of data collectors, contractor staff attended a CSS seminar presented by the American Academy of Pediatrics (AAP) and sponsored by the regional highway safety projects. This seminar covered different types of seats, CSS compatibility, rear seat lap belts, older CSSs, use of locking clips, booster seat controversy, new products and accessories, and main misuses—seat direction, size of child in CSS, threading an SB, and harness slack. In addition, staff worked with the Traffic Injury Prevention Project (TIPP) in preparing the training session and developing the training material.

The training process involved (1) distributing the training kit to the data collectors and field supervisors prior to training; (2) conducting an in-house "classroom-style" training session which involved an explanation of the project, instruction on types of CSSs and misuse patterns, and instruction on data collection techniques and methods of obtaining the data; (3) conducting a pilot test of the data collection forms and techniques; and (4) providing field instruction on the daily data collection routine.

The training kit included a procedures manual on the purpose of the project, data elements, instructions for data collection, and scheduling of field work; NHTSA's "Guidelines for Observing Child Safety Seat Use" (Ziegler, 1987); and various CSS and SB brochures. Data collectors, selected with assistance from the police and community residents, were told to familiarize themselves with this material before the in-house training session.

The classroom session included a discussion (given by the contractor and a member of TIPP) on the following topics:

- Background and purpose of the project and data collection effort.
- Descriptions of CSS use and misuse characteristics. A member of TIPP demonstrated the proper use and misuses of CSSs. A selection of CSSs and infant, toddler, and booster seat props were on hand to demonstrate misuse and proper use features.
- Use of the data collection form.
- Procedures on making observations, asking drivers questions, and recording the data.
- Logistics of performing the clerical chores, checking with field supervisors, verifying and tallying the daily data records, and other tasks.

Upon completion of the classroom training, data collectors went to a parking lot at the office and saw a demonstration of techniques for observing and approaching drivers who are about to park. Once the data collectors seemed comfortable with the process, they were given on-site training.

Each data collector received 4 to 6 hours of on-site training by the field supervisors. During the on-site training period, the field supervisors monitored the performance of the data collectors. The field supervisors examined the personality and interaction techniques of the data collectors, then used these observations to determine the best roles for each field worker.

Observation Procedures

Shopping centers[8] selected for the study and specific vantage points for conducting the observations were identified. Choices were based on safety of field workers, traffic flow, and areas in the shopping center that would have the highest probability of attracting the sample population (e.g., grocery stores). The ideal vantage points were those where field workers (observers) could see vehicles with child passengers entering a parking lot and had time to approach the vehicle before the driver had parked, turned off the car, and unfastened the children from restraints. Four to six data collectors went to each shopping center, working in two-person teams. The field supervisors went from shopping center to shopping center, assisting in spotting and observations. Field workers wore a photo identification badge with the contractor's address, and they carried a clipboard with a "Community Project" sign on the back. In addition, each field worker carried permission letters from the shopping center owners and the police departments.

The following procedures were used in collecting observation and query data from a driver (with young child passengers):

- Select "target" vehicle entering the shopping center.
- Approach passenger vehicle.
- Identify yourself, briefly explain project to the driver, and request permission to ask questions.
- Ask questions and record responses. (Observer Two, look through the back left-side window seat and record the position of children, restraint use and type of restraint, harness position and direction of CSSs, and restraint use of driver.)
- Thank driver. Give driver a "Thank you" sticker.
- Record additional information after driver and children have left their vehicle (SB fastened to CSS, license plate number, and type of vehicle).
- Merge data from Observer Two onto one form and verify accuracy.
- Move into position to wait for next driver with young children.

Supervisors performed managerial duties in the field. They were responsible for supplying the field workers with coding forms, overseeing the techniques used by field workers, collecting the forms, and verifying the completeness of the data.

Observations of shoulder belt use of the general driving public were conducted at entrances to the community shopping centers. Observers stood on the corners near the entrances and observed the driver observations of every fifth vehicle driver that went into the shopping center. Observations were conducted throughout the whole week, including weekends. (In general, drivers with young children were a very small percentage of all observed motorists.)

Field data were computerized at the contractor's office. Verification programs ensured that data were accurately transcribed.

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[8] Only two of the four community shopping centers in Tredyffrin were used because one did not give permission and the other did not represent a local "community" shopping center. Both Haverford Township shopping centers were used. Three out of four of Abington's shopping centers were used. The shopping center not used was ruled out because it was not a neighborhood community center.

4. SITES

This chapter first presents the criteria used to identify test and comparison sites that would best fit the expected intervention and evaluation needs of the selected project. The next section reviews the process of narrowing this group, and the final selection describes the three townships selected.

SELECTION CRITERIA PROCESS

Candidate community sites had to meet similar criteria, including:

(1) Police and community support.
(2) Socioeconomic and community profile characteristics.
(3) Logistical requirements.

Police and Community Support

The candidate community sites had to have police, community groups, and both local and regional comprehensive highway safety groups supporting the goals of the project and agreeing to conduct intervention activities. First, the police had to believe in the importance of occupant restraint (OR) law enforcement and the safety benefits of promoting child passenger and occupant safety in motor vehicles. In addition, they had to be willing to participate in the public information and education (PI&E) program and assist in documenting their involvement in the program.

Community groups had to believe in the importance of the OR enforcement project and want to participate in PI&E activities and data collection assignments.

Support and assistance were also required from the local or regional Pennsylvania Department of Transportation (PennDOT)-affiliated comprehensive highway safety and child passenger safety groups. These groups had to be part of the project because they could provide most of the resource and promotional material for the PI&E activities, organize occupant protection and child passenger safety education programs, conduct child safety seat (CSS) inspection clinics, and assist in other project-related intervention activities.

Socioeconomic and Community Profile Characteristics

Sites had to have similar socioeconomic and demographic characteristics, populations, and residential and commercial profiles in order to support the research design and sample size requirements for the data collection and evaluation effort.

Communities selected for socioeconomic criteria had a per capita income within the mid-range for all communities (boroughs, cities, or townships) in Pennsylvania because communities at this socioeconomic level were likely to represent the typical community nationwide. In addition, communities needed at least 1,000 toddlers to meet statistical sample size requirements for the data collection effort. The Pennsylvania Department of Education estimated that about 3 to 5 percent of the population is below age 5 in urban-suburban communities of Pennsylvania. To support the toddler sample size, candidate communities needed a population of at least 25,000. About 30 communities in Pennsylvania met the mid-range per capita income and population requirements.

In addition, the candidate sites should be predominantly residential and have community shopping centers that local residents with young children would frequently visit.

Logistical Requirements

Candidate sites selected needed to be within a reasonable travel distance from the contractor's office so that staff could efficiently monitor the demonstration projects and data collection activities at the shopping centers.

In addition, the shopping centers had to be community neighborhood style, frequented mostly by local residents. Shopping center proprietors had to be cooperative about permitting data collection activities; and the physical layout (limited exit and entrance locations, good vantage points for observations) had to accommodate efficient and accurate data collection.

SELECTION OF CANDIDATE SITES

The key challenge of the project was expected to be finding police departments willing to enforce OR laws and participate in project activities without funding assistance. The recruitment process involved sending letters to police departments in Pennsylvania, making follow-up phone calls, interviewing likely candidates, and conducting in-person interviews with selected candidates. The researchers expected little difficulty in finding candidate sites that met the other requirements of population, an appropriate shopping center layout, proprietor cooperation, or reasonable distance from the contractor's office.

Procedures used to identify candidate sites and select the most appropriate communities included the following:

(1) A list of Pennsylvania boroughs, townships, cities, and counties that met the requirements of more than 25,000 people and mid-range per capita income was identified from U.S. Department of Commerce, Bureau of the Census, Pennsylvania State Data Center Reports, 1990.

(2) A list of police departments was compiled from the communities that met the population and per capita income criteria and from the list of borough and township police departments suggested by the State-affiliated highway safety groups. These police departments received letters asking whether they would be interested in participating in the project. Since many police departments did not respond to the request, the researchers telephoned them. Most police departments were not interested; reasons stated ranged from lack of manpower to no interest in actively enforcing the OR laws. A list of the police departments interested in the project was developed, and an interview was scheduled to discuss the project in more detail. From these interviews, the researchers found 12 police departments that wanted to become either the intervention or comparison site. The departments interested in being intervention sites agreed to conduct some level of OR enforcement and training, participate in education activities, and assist in the documentation process.

(3) Local and regional highway safety groups conducted projects in these areas, so they were asked whether they would want to participate in the project. As expected, all were eager to assist.

(4) Shopping centers covered by the 12 candidate police departments were visited to determine whether each place met all of the physical characteristics for conducting observations and collecting data. In addition, shopping center proprietors were asked to grant permission to conduct field observations.

(5) Community location in relation to the contractor's office was the final factor.

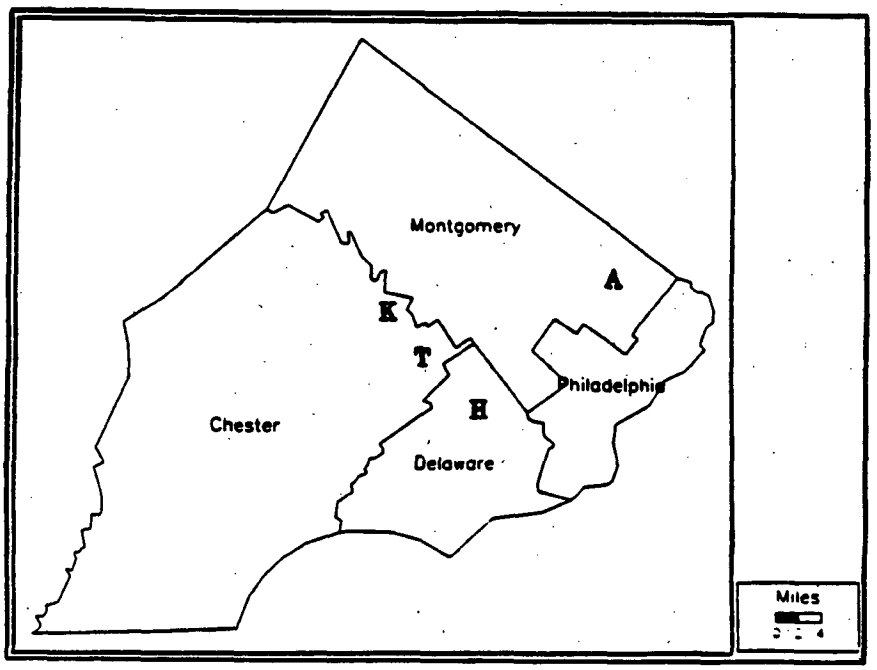
After an intensive recruitment effort requiring many hours of phone calls and personal interviews with several police departments, three candidate police departments willing to participate in all intervention activities were chosen. Many of the police departments were unwilling to enforce the OR laws and use in-house manpower to conduct other intervention activities. From other information gathered in the selection criteria process, three community sites met all of the selection criteria: Tredyffrin Township (Chester County), Haverford Township (Delaware County), and Abington Township (Montgomery County). Tredyffrin Township and Haverford Township became the test sites, and Abington Township emerged as the comparison site.

COMMUNITY PROFILES

This section of the chapter describes the socioeconomic and demographic characteristics of the selected communities. Also described are their specific police departments, local and regional comprehensive highway safety groups, and other local community organizations and businesses.

Socioeconomic and Demographic Characteristics

The three townships are located in the western suburbs of Philadelphia and along regional highway corridors and mass transportation networks. Figure 6 shows the location of these communities and the contractor's office.



Key A: Abington; T: Tredyffrin; H: Haverford; K: contractor's office

Figure 6. Participating communities.

Table 1 compares the socioeconomic and demographic characteristics of the selected communities.

Table 1. Socioeconomic and demographic characteristics of communities selected.

	Tredyffrin	Haverford	Abington
Area (sq mi)	19.9	9.9	15.4
Population*	28,028	49,848	56,322
Toddlers (age 1-5)†	1,300	3,000	4,100
Per Capita Income ($)‡	34,078	20,566	23,617

*U.S. Census Bureau (1990).
†Pennsylvania Department of Education (1990).
‡Pennsylvania State Data Center (1992).

Police

In Tredyffrin, the police department was the first of only three in the State accredited by the International Association of Chiefs of Police (IACP). About 50 policemen were on the force. The department is under the direction of the Superintendent of Police, who oversees 2 lieutenants, 6 investigators or detectives, 6 sergeants, a crime prevention and community relations officer, and 31 other officers. Approximately eight officers per shift are assigned to routine field patrol covering 20 square miles; two officers are generally assigned to traffic law enforcement. All officers receive advanced training, and all are trained in cardiopulmonary resuscitation (CPR) and advanced first-aid techniques. In-service training days occur twice a month, and officers frequently receive additional training at police schools. Officers also get daily reminders and messages at each shift's roll call and through a computer message screen, which each officer logs into at the start of a shift. Highway safety and crime prevention projects for the community, business groups, and the schools take place during the year; the community relations officer is in charge of these projects. He goes to the elementary schools and delivers an "Officer Bill"-type project each year. The police also set up safety information booths and give demonstrations at shopping centers and special events a few times a year.

Prior to the intervention project, the department conducted safety belt (SB) projects in the community and in schools. Internally it had already established an SB policy for officers and routinely reminded them to wear their SBs. They had received the Keystone Safety Belt Network's (KSBN's) Silver Buckle Award in 1990 for its PI&E projects about OR.

The officers had received no comprehensive OR training prior to the project and during the prior year they had given only 4 citations for OR law violations of the approximately 1,000 total written citations.

In Haverford, the police department had about 75 officers, under the direction of the Chief. The force includes 4 lieutenants, 8 investigators, 12 sergeants, and 50 officers. In addition, the department has a highway safety unit team of four officers. About ten officers per shift are assigned to routine patrol covering 10 square miles. The officers receive in-service and advanced training at police schools. In 1990, police took advanced training on firearms, DUI (driving under the influence)

testing, mental health, and special response (to handle civil disturbances, hostage situations, and barricaded armed subjects).

Similar to Tredyffrin's police department, safety education projects take place in all the schools. The police also present an "Officer Bill"-type project to preschool and kindergarten children. The police provide safety education projects in the community throughout the year, at special events and at shopping centers.

No comprehensive OR projects were conducted prior to the intervention project. Only a few SB citations for OR law violations had been given before the project. No in-service training about ORs had been conducted and no SB policy for police had been developed. In addition, 3 months prior to the intervention project, the department had begun participating in a corridor blitz project for PennDOT, which involved 1 day a month, selective speed enforcement conducted on one of the highly traveled State highways in the township.

In Abington, the police department had about 90 officers directed by the Chief. The police conduct an open-house project once a year and have a community response unit to assist the community in safety activities and to handle emergencies, disasters, and crowd control.

Prior to the intervention project, the department was not active in conducting CSS or SB projects. In 1990 the police had given only 8 SB citations of the 10,611 total citations issued. The department had neither an active SB project nor an internal SB policy prior to the project. At the time of site selection, the department agreed to be the comparison site, so it would not introduce an OR enforcement or PI&E project until after the post-intervention data collection phase.

Local and Regional Support

Each community has a State-affiliated, county comprehensive highway safety group which conducts highway safety projects. The highway safety group provides resource and education material to community groups. The Tredyffrin and Haverford police departments requested material from the Chester and Delaware County comprehensive highway safety groups, respectively, prior to the intervention phase period. In addition, these county groups had periodically given general highway safety projects to school groups before the intervention phase period. In both Haverford and Tredyffrin, the police told the township board that their forces would be participating in an enforcement project that would benefit the community. Township commissions approved the projects.

In Tredyffrin and Haverford, the local newspapers have a good relationship with the police departments and have historically cooperated with them by publishing all press releases that the police submit. In addition, the shopping centers and other businesses in these townships have supported earlier highway safety activities conducted by the police.

In Tredyffrin and Abington, the local court judges were known for being supportive of child passenger safety laws. The Haverford judges had been indifferent to this law.

5. PROJECT ACTIVITIES

This chapter covers the intervention activities conducted by the police, local and regional highway safety groups, and community (e.g., businesses, organizations, fast-food restaurants, libraries, schools, and day-care centers) in Tredyffrin and Haverford.

Police activities included:

- Managerial directives, training, and policy decisions.
- Enforcement.
- Public information and education (PI&E) efforts.

State, regional, local highway safety group activities included:

- Consultative or advisory role.
- Resource material and distribution.
- Public events.
- State Grant support and recognition of effort.

Community activities included:

- Cooperation in use of facilities.
- Newspaper coverage.
- Distribution of educational materials.
- Other miscellaneous support.

In addition, this chapter describes those involved in promoting and facilitating the intervention projects: the contractor, the Pennsylvania Department of Transportation (PennDOT), and the National Highway Traffic Safety Administration (NHTSA).

POLICE

The police were asked to commit to specific intervention activities relating to enforcement of the occupant restraint (OR) laws and to PI&E activities relating to the enforcement campaign. Goals (for enforcement activities) specified for each police department covered directives from the top, training, safety belt (SB) policy and staff compliance, efforts to motivate enforcement, and enforcement levels. Goals specified for PI&E activities focused on (1) conducting community projects, (2) distributing educational material emphasizing OR enforcement effort and proper child safety seat (CSS) use, and (3) conducting CSS inspection clinics.

Managerial Directives and Policy Decisions

Commitment, SB policy, training, motivation, and record-keeping elements of the demonstration project are discussed.

Management Commitment. The Chiefs of Police from both departments expressed their commitment to the enforcement and PI&E activities of the demonstration project. However, neither police department would commit to specific enforcement levels or number of programs. In addition, they felt that Pennsylvania's secondary enforcement law for SB violations made it even more difficult to agree to a "goal" level.

In Tredyffrin, the Superintendent of Police delegated enforcement responsibility to a lieutenant and his patrol unit supervisors, but delegated PI&E activities to the community relations officer. In Haverford, the Chief of Police delegated enforcement and PI&E activities to the lieutenant in command of the patrol division and highway safety unit. In Abington, the comparison site, the community relations officer was assigned to just gain permission for observation and inquiry data collection in the community shopping centers and report enforcement data.

Both (intervention site) police departments agreed to enforce the OR laws, but stressed that a citation or written warning (OR "contacts") would be given at the discretion of the officer. The chiefs of both departments gave an initial staff-wide directive for project participation. However, the lieutenants in command of the patrol division gave enforcement directives. The patrol supervisors in Tredyffrin agreed that they would attempt to reach the goal of 5 to 10 percent OR contacts for all citations given. Haverford would not commit to an enforcement "contact" goal. However, both police departments did agree to commit to incorporating SB policies and compliance check, OR enforcement instruction and training, motivation techniques for enforcement, and record-keeping of enforcement and PI&E activities conducted by the department. (Abington agreed not to promote enforcement of the OR laws.)

SB Policy and Compliance. In Tredyffrin, SB policy (see Appendix C-1) was implemented 2 years before the project was initiated. The policy is similar to the model policy recommended by the International Association of Chiefs of Police (IACP), with minor exceptions relating to availability of police vehicles with operable SBs, nonrestraint of combative prisoners, and situations where officer survival outweighs benefits of restraint use. It was reported that officers were reminded to wear their SBs, and negligence or noncompliance with the SB policy could result in corrective or disciplinary action. During the intervention, observations of SB use among the patrol officers were conducted during shift changes, and 100 percent compliance was observed.

In Haverford, the SB policy (see Appendix C-2) was developed at the start of the intervention period. Like Tredyffrin, the policy is very similar to the IACP model policy, with a minor exception relating to not using a restraint on a combative prisoner. During the intervention, observations of SB use among the patrol officers were conducted during shift changes, and 87 percent compliance was observed.

In Abington, even though the department agreed not to conduct any OR program, a general order (see Appendix C-3) about wearing SBs was initiated during the intervention period. The order did not follow IACP recommendations. After the post-intervention data collection phase, observations of police SB use were conducted and over 80 percent SB use was observed.

Training. Both Tredyffrin and Haverford police departments sent a certified[9] officer to the NHTSA Occupant Protection Usage and Enforcement (OPUE) workshop for 3 days in Hershey, PA (Haverford also sent another non-certified officer). This workshop took place 2 months prior to the intervention period. The Keystone Safety Belt Network (KSBN) and the Pennsylvania Police Academy provided instructors who were well rehearsed on the NHTSA OPUE workshop and had conducted these workshops in the past. The curriculum covered police officers' values and perceptions of SB benefits and concerns, driving risks, vehicle safety design, consequences of crash impact and crash types, dynamics of noncrash injuries, children in crashes, OR benefits, manual and automatic SBs, air bags, child restraint types, OR laws and enforcement methods.

In Tredyffrin, the certified officer presented the OPUE training course (January and February 1991) for all patrol officers (31) during two in-service periods prior to the intervention project and three in-service refresher training projects two-thirds through the intervention project (October and November 1991). In addition, participants watched several segments of the NHTSA Operation Buckle Down Roll Call video at two of the three in-service refresher training sessions.

In Haverford, the certified officer trained the highway safety staff (three officers) in January 1991. However, the remaining staff(about 30) received training 3 months into the intervention period (July 1991). The certified officer presented 12 sessions of the OPUE training course to four to six patrol officers (each session) for a total of approximately 55 patrol officers. In addition, the officers watched NHTSA's Operation Buckle Down Roll Call video segment, "The Impact of Crashes on Officers."

In both departments, the training included an OPUE instruction workbook, and the instructor showed the videos which came with the course. At the end of the initial training sessions, each officer received a laminated vehicle code safety violation card with concise information on the child passenger law, SB use laws, and speeding fine scale (see Appendix D). These cards were provided by the KSBN. (Abington did not conduct OPUE training.)

Motivation Techniques. In addition to being given vehicle code safety violation cards, police in both departments received periodic reminders of the OR enforcement effort at roll call. In Tredyffrin, in-service refresher training and E-mail messages were reminders. Each officer checks for computer messages before going out on patrol. (Appendix E includes a sample of E-mail messages.) Both departments also had an "Is Your Seat Belt Fastened?—Chester (or Delaware) County Clicks" sign posted outside the exit of the police stations. (Abington did not conduct these activities.)

Record-Keeping Activities. Both police departments kept track of the enforcement activities throughout the pre-intervention, intervention, and post-intervention periods. In Tredyffrin and Haverford, personnel entered and stored citations and written warnings on computer files. The data were readily accessible on request. (Abington also provided OR and total citation data manually, on request.)

[9] The Municipal Police Officers' Education and Training Commission, Harrisburg, PA, has certified these officers to teach the Pennsylvania Vehicle Code.

Enforcement Activities

During pre-intervention meetings, each police department was given guidance on a suggested level of OR enforcement (i.e., 10 to 20 percent of the total or total "moving" [point] citations). The police departments expressed resistance to enforcement goals or quotas. They made it clear that the decision to give a citation or warning would be at the discretion of the patrol officers. This policy was formalized in Haverford's Chief of Police directive (see Appendix F).

At the time of the intervention period, both police departments were also participating in selective enforcement projects. Tredyffrin was doing an occasional DUI (driving under the influence) sobriety checkpoint, and Haverford was participating in a Highway Safety Corridor Enforcement Blitz project for PennDOT, on a monthly basis. Both departments agreed to integrate OR enforcement into these selective enforcement projects. Haverford also initiated selective OR enforcement at the community shopping centers.

In Tredyffrin, the police conducted OR enforcement activities on routine patrol and at DUI sobriety checkpoints. On a routine day, Tredyffrin usually had eight patrol units on the day shift. Of the eight, only two were dedicated to traffic enforcement. The other patrol units primarily responded to civil disturbances; only about 25 percent of their time was available to conduct traffic enforcement. Initially, the department was intent on giving out only citations for the CSS and SB laws. However, 3 months into the project, the court administrators notified the police that they were not including the appropriate surcharges—catastrophic insurance (CAT) fund ($30) and the Emergency Medical Services (EMS) fund ($10)—with the $10 fine for SB violations. In an effort to keep up the level of OR enforcement "contacts," the department suggested that when patrolmen were reluctant to give the SB citation because of the additional costs, they could at least give a written warning. PennDOT's "Police Warning Notice" (MV-433A) was the document used for warnings (see Appendix G-1). PennDOT's standard violation form was used for citations.

In Haverford, the police conducted OR enforcement activities (primarily warnings) on routine patrol, at selective locations (e.g., the exit of a community shopping center), and during the PennDOT Highway Safety Corridor Enforcement Blitzes. Haverford usually had 10 patrol units. None were dedicated to traffic enforcement. The highway safety supervisor wanted to begin the project primarily with a warning effort using a department-developed warning notice (see Appendix G-2). PennDOT's standard violation form was used for citations.

In Abington, as they had been requested, the police did not actively enforce the OR laws. From the pre-intervention to post-intervention period, the police gave out only 2 SB citations from over 8,000 total citations.

Enforcement Levels. In Tredyffrin, the enforcement campaign started in March 1991. The enforcement campaign included warnings for both OR laws by July 1991. Enforcement steadied off in the summer and never reached 10 percent of the total citations or total moving ("point") citations. The police felt that manpower shortages due to vacations and retirements contributed to this situation. (Total citations were also down in this period.) Concern with this low OR level prompted NHTSA to meet with the police to promote a higher OR enforcement level. In the fall, the enforcement effort dramatically improved and the police maintained a high level of OR contacts through the remainder of the intervention period.

Figures 7a, 7b, and 7c show the characteristics of the police department's OR enforcement effort from spring to fall 1991:

- Figure 7a shows the OR contacts (defined as the total number of SB and CSS citations and warnings), total citations given, and total point (moving or hazardous) violation citations given during the enforcement period. (Training periods and NHTSA meeting with police are also on the chart.)

- Figure 7b shows the percentage of OR contacts, by total number of citations and total number of point violation citations.

- Figure 7c shows the types of OR enforcement contacts given during the period of study.

Police training and the mid-intervention NHTSA/contractor meeting with police are also on the charts.

Approximately 50 percent of the SB citations were associated with a moving ("point") violation; and 83 percent of the primary violations were for speeding. Only four of the CSS citations were associated with an SB citation.

The disposition status of OR violation citations in the court docket book (March to December 1991) was as follows:

SB Violations			CSS Violations		
SB citations	190		CSS citations	12	
Cases pending	47		Cases pending	1	
Cases closed	143		Cases closed	11	
Guilty pleas	132	(92%)	Guilty pleas	11	(100%)
Not guilty pleas	5		Not guilty pleas	0	
Withdrawn	6		Withdrawn	0	

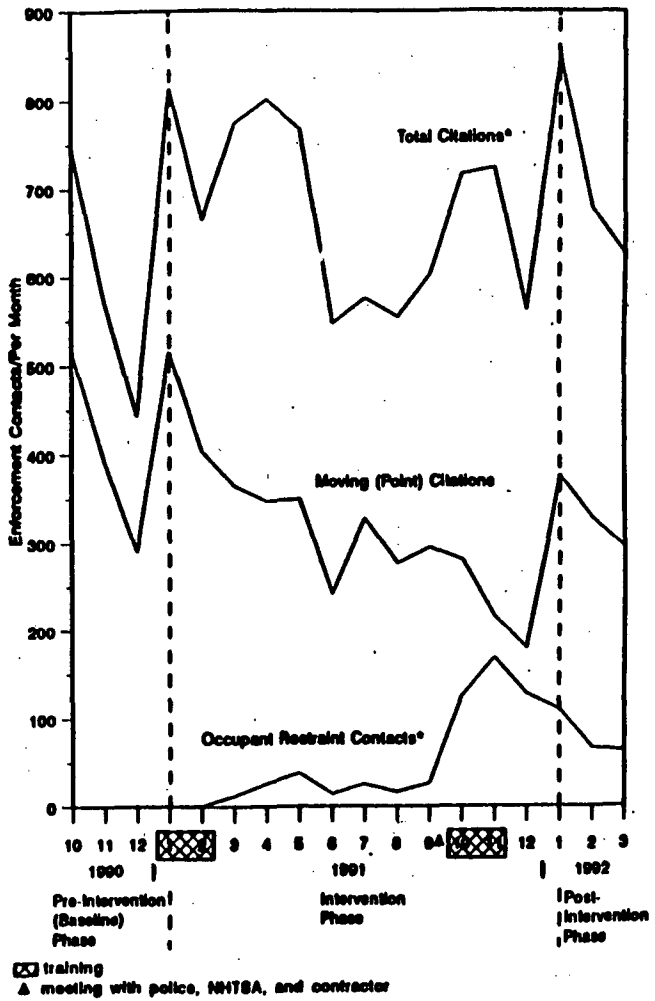


Figure 7a. **Total occupant restraint "contacts," citations, and moving citations in Tredyffrin.**

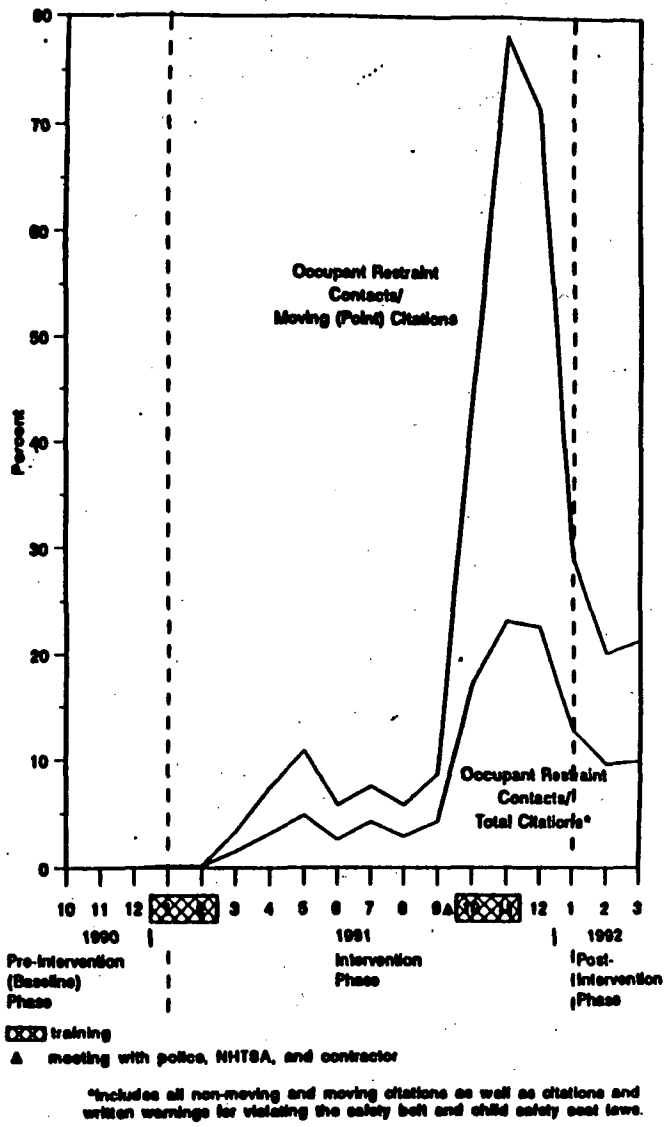


Figure 7b. **Percentage of occupant restraint "contacts" to total citations and to moving ("point") citations in Tredyffrin.**

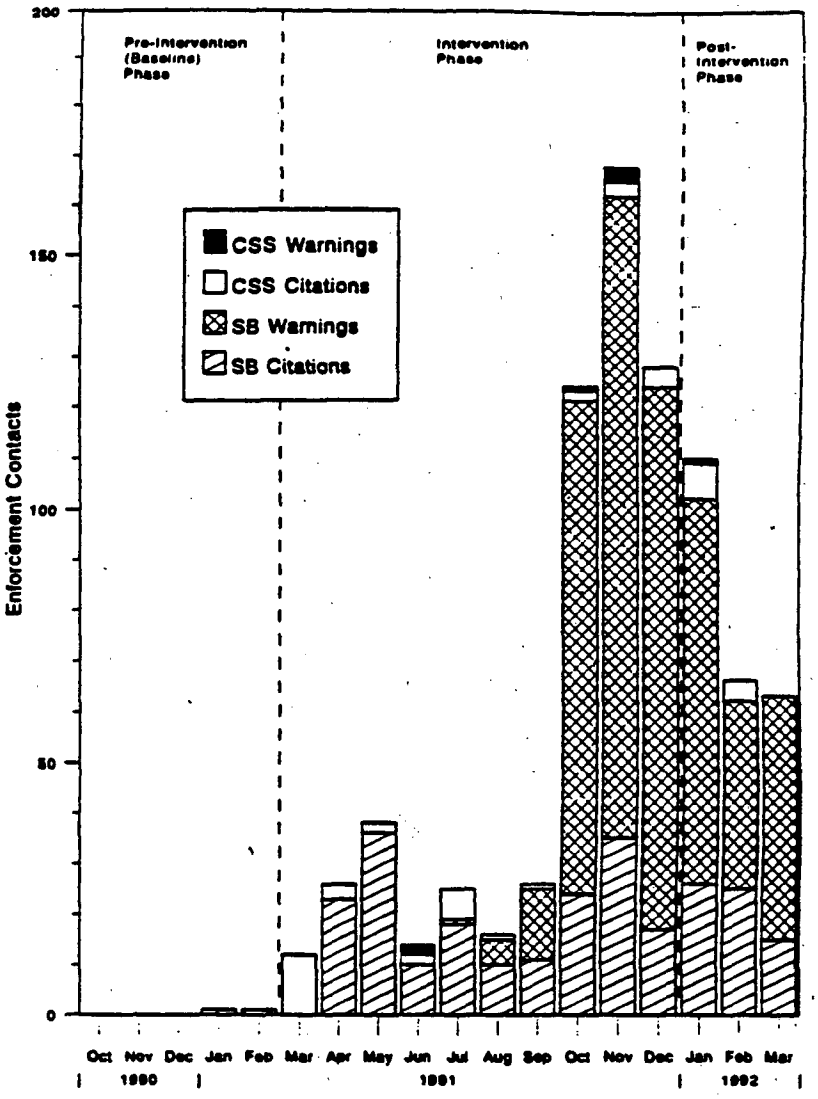


Figure 7c. Occupant restraint "contacts" in Tredyffrin.

In Haverford, the enforcement campaign did not really get started until after the training of the patrol squads in July 1991. Some members of the highway safety unit had been giving some OR warnings and citations earlier in the year as well as during the monthly (4-hour) enforcement blitz efforts throughout the intervention year. The enforcement blitzes were part of a cooperative effort between Haverford and PennDOT to pursue a comprehensive safety initiative at a township highway that had a high accident rate. PennDOT, through NHTSA 402 funding, provided staff time and funds to purchase traffic enforcement equipment (such as speed timing devices). During the intervention phase, enforcement blitzes ran once a month for 4 hours, usually 10 a.m. to 2 p.m. on a weekday. On average, patrol officers gave 30 speeding citations and 5 OR warnings per blitz. They also gave verbal warnings for SB violations and distributed PI&E material. Figures 8a, 8b, and 8c show the characteristics of Haverford's OR enforcement effort from spring to fall 1991. Figure 8a shows the OR contacts, total citations given, and total point violation citations given during the enforcement period. Figure 8b shows the percentage of OR contacts, by total number of citations and total number of point violation citations. Figure 8c shows the types of OR enforcement contacts during the period of study. (Training and the mid-intervention NHTSA/contractor meeting with police are also on the charts.)

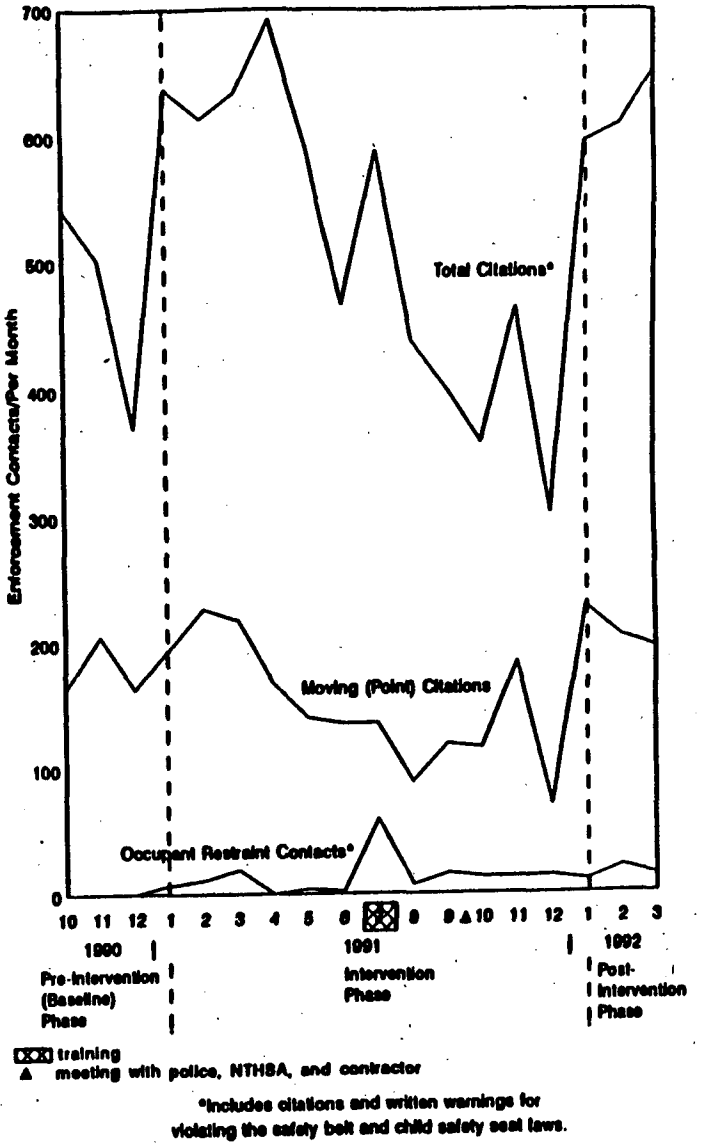


Figure 8a. **Total occupant restraint "contacts," citations, and moving citations in Haverford.**

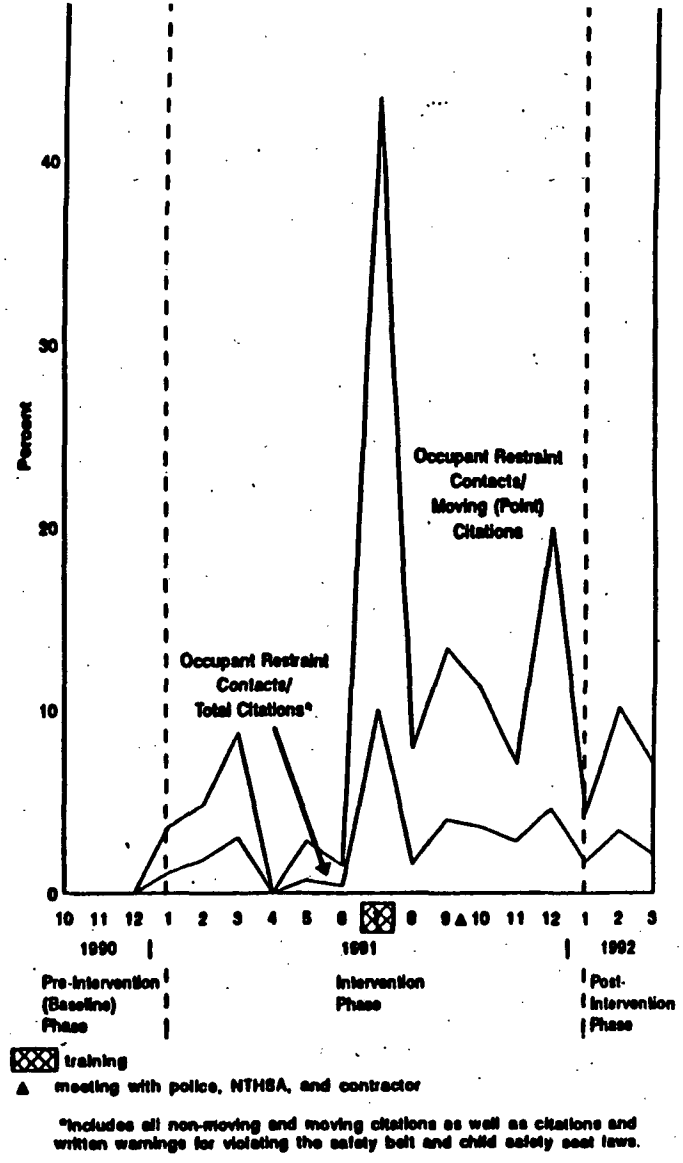


Figure 8b. **Percentage of occupant restraint "contacts" to total citations and to moving "point" citations in Haverford.**

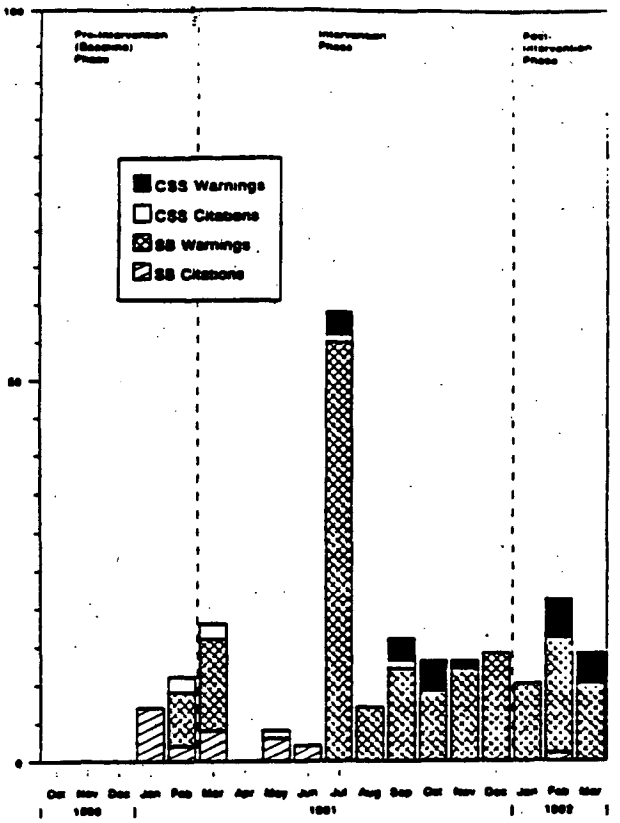


Figure 8c. Occupant restraint "contacts" in Haverford.

Table 2 summarizes the enforcement activities by both police departments during the intervention period.

Table 2. Enforcement activities by police.

Activities	Tredyffrin	Haverford
OR Total "Contacts"*	577	146
- SB Citations	184	9
- SB Warnings	351	121
- CSS Citations	36	5
- CSS Warnings	6	11
OR "Contacts" and Total Moving ("Point") Violation Citations, %	20.9%	9.9%
OR "Contacts" and Total Citations, %	10.7%	2.9%
Enforcement Blitzes and Checkpoints†	3	12

*Note: Tredyffrin's enforcement effort was 62% written warnings.
Haverford's enforcement effort was 90% written warnings.

†Blitzes and checkpoints averaged 4 hours per event. Tredyffrin's DUI Sobriety Checkpoints activity involved 8 to 10 officers for each event. Haverford's enforcement blitzes involved 3 or 4 officers for each event.

PI&E Activities

Both police departments actively participated in the PI&E component of the project. Their efforts concentrated on education related to the enforcement effort, as well as providing general promotional material on the benefits of SB and CSS use and proper use.

Both police departments had access to a selection of educational brochures, fact sheets, posters, stickers, and other supplies to use in the PI&E effort. This material covered a description of the enforcement effort of the police department, proper use issues about CSSs, hints for restraining toddlers, age and weight guidelines for seat type, and descriptions of the OR laws. Some of the material given to the police was developed during the project because material on enforcement issues and toddler-specific child restraint issues was not available. Other material was obtained free from PennDOT and its Local and Regional Comprehensive Highway Safety Projects, the Traffic Injury Prevention Project (TIPP), the American Academy of Pediatrics (AAP), and the KSBN. One brochure was purchased through AAP, because it was the most comprehensive information available on tips for restraining toddlers of various ages (9 to 23 months, 24 to 36 months, and preschoolers). Table 3 lists educational material, by topic issue, used by both police departments. (Appendix H provides a copy of the project's original and available material.) Educational material was given out at kickoff events, special events, selective enforcement, and during school or day-care projects.

In Tredyffrin, the police gave out about 2,500 units of each of the brochures and fact sheets. Over 200 "We Can't Bear to Be Without You: Buckle-Up!" teddy bears and over 100 "We Love You: Buckle Up" koala bears were distributed at many of the special event projects. Officers on patrol distributed the "Officers Love Kids Too" cards (see Appendix H-4), "Buckle Baby Right" (see Appendix H-9) and "Do Safety Belts Really Work?..." (see Appendix H-18) brochures, and enforcement fact sheets. They also gave out these cards and fact sheets when they gave OR citations and warnings.

In Haverford, the police gave out approximately 2,500 units of each of the brochures and fact sheets. Over 500 "Buckle Baby Right," 500 "We Can't Bear to Be Without You: Buckle-Up!" teddy bears, and 300 "We Love You: Buckle Up" koala bears were distributed at many of the special event projects (Pennsylvania Child Passenger Safety Week and 4th of July projects), during "Officer Bill" programs in the elementary schools and day-care centers, and during routine patrol stops. The bears were primarily used as positive reinforcement for toddlers already properly restrained. Flyers were also distributed around the township to advertise the safety events. The "Officers Love Kids Too" Cards (see Appendix H-4) were given out on patrol at the end of the year.

Kickoff Events

In Tredyffrin, even though OR enforcement training for the officers and enforcement of CSS and SB law violations had been started, the official kickoff effort began with a press conference on May 17, 1991, in conjunction with Pennsylvania Child Passenger Safety Week (May 12 to 18). Area newspaper reporters attended the event, which was held at the police station. Demonstrations of proper child restraint use were given, and photos were taken. Police explained the purpose of the project to the media, detailed the enforcement effort underway, and described activities that would be conducted for the remainder of the year. A description of the event appeared in the community newspaper (see Appendix I-1). The regional PennDOT office also sent out a press release covering the importance of child restraints and making the public aware of the State's child passenger safety week and the upcoming National Buckle-Up Week (May 20 to 27). (Seven other articles appeared in

Table 3. PI&E material used by police in project.

Enforcement/Law

- * "Tredyffrin Township Police Child Safety Seat and Safety Belt Enforcement Program" (fact sheet) (Appendix H-1)
- * "Haverford Township Police Child Safety Seat and Safety Belt Enforcement Program" (fact sheet) (Appendix H-2)
- "Summary of Child Passenger Protection Act" (fact sheet) (Appendix H-3)
- * "Officers Love Kids Too" (card with photo of Tredyffrin police officer and his family) (Appendix H-4)
- * "Officers Love Kids Too" (card with photo of Haverford police officer and his nephew) (Appendix H-4)
- "Summer Bummer—Buckle Up Avoid the Summertime Blues" (poster) (Appendix H-5)

Child Restraint Issues for Toddlers

- * "Tips for Restraining 2 to 4 Year Olds in Your Car" (fact sheet) (Appendix H-6)
- * "Children and Car Safety: Making Friends with a Safety Seat" (brochure) (Appendix H-7)

Proper Use of Child Safety Seats

- "Buckle Baby Right" (brochure) (Appendix H-9)
- "Correct Use of Child Safety Seats—Are You Making These Mistakes?"/"What Can I Do to Keep My Child Happy in the Car Seat?" (fact sheet) (Appendix H-6)
- "The One-Minute Safety Check-Up" (fact sheet) (Appendix H-13)
- "1991 Shopping Guide to Car Seats/Size and Weight Guide for Child Safety Seats" (fact sheet) (Appendix H-14)
- "What Is a Locking Clip? Do I Need One in My Car?" (fact sheet) (Appendix H-16)

Safety Belts and Passive Restraints

- "Do Safety Belts Really Work?..." (brochure) (Appendix H-18)
- "Vince and Larry on Belts and Bags" (brochure) (Appendix H-22)
- "The holidays would not be the same without you. Please buckle up and don't drink and drive." (holiday card) (Appendix H-26)

Miscellaneous Items

- "We Can't Bear to Be Without You: Buckle-Up!" (CSS stickers, posters, litter bags, and teddy bears)
- "We Love You: Buckle Up" (teddy bears and koala bears)
- "Buckle Baby Right!" (CSS sticker) (Appendix H-27)
- "Buckle Up, Pennsylvania—It's Your Life...It's Our Law" (SB sticker) (Appendix H-27)
- "Buckle That Belt" (Vince and Larry hand puppet) (Appendix H-28)
- "We Can't "Bear" to Be Without You: Buckle-Up!" (CSS poster)
- "Drive Smart" (stickers [Appendix H-27], litter bags, and brochures)
- "Say Yes to Seat Belts" (litter bag)
- "Save Your Ugly Face! Buckle Up" (pin)

*Project-developed material.

regional papers throughout Chester County covering the topic of child passenger safety and the week that would spotlight this issue.)

In Haverford, the first official event began with a display booth set up with CSS and SB literature at a shopping center on March 9. The police answered questions and distributed material to the public and parents with young children. Vince and Larry (Crash Test Dummies) distributed material. An article in the local newspaper covered the scope of the project. During Pennsylvania Child Passenger Week (May 12 to 18), the police presented the scope of the project at a weekly press conference with local newspapers and held a traffic safety day (May 18, Saturday) fair at the station, complete with a bike rodeo and display booths with CSS and SB literature. CSSs were on display. Vince and Larry again distributed material. Area newspaper reporters covered the events. In addition, all ranking officers and two township commissioners attended. Photos were taken, and a photo session featured police with young children in CSSs. (One of the photos was chosen for the "Officer Love Kids Too" card, which was later sent to PennDOT for printing.)

Programs and Special Events

In Tredyffrin, the community relations officer and other patrol officers conducted project activities throughout the intervention period—at shopping centers, community meetings, corporations and businesses, and checkpoints. Project activities were conducted on the following dates in 1991:

May 5	Presentation on project to community radio emergency team at the township library (100 members).
May 17	Press conference about project at the police station.
May 24	DUI Checkpoint; includes SB check at State routes 202 and 252.
June 20 to 22	Display table at sidewalk sale and distribution of project literature at township shopping center (Approximately 1,500 residents and young children received literature at the booth.)
August 19 and 21	Presentations about OR issues to community business groups (300 employees at 2 locations).
August 30	DUI Checkpoint; includes SB check at State routes 202 and 252.
September 12 to 14	Display table at sidewalk sale and distribution of project literature at township shopping center (Approximately 1,750 residents received literature at the booth.)
Mid-September to Mid-December	Highway safety (including OR issues) and crime prevention programs given to the 20 organizations and businesses. Approximately 1,550 township residents were in attendance at these programs. In addition, the "Officer Friendly" school program, which includes a segment on SBs, was given to elementary and parochial grade, middle, and high schools, and to the military academy in the township (approximately 1,000 children).
December 19	SB check and distribution of holiday safety reminder cards ("Please buckle up and don't drink and drive") at Lancaster Pike and Old Eagle School Road. (Approximately 500 residents and young children received material.)

In Haverford, the highway safety unit officers and other patrol officers conducted project activities throughout the intervention period at shopping centers, playgrounds, firehouses, holiday parades, and enforcement checkpoints. Project activities were conducted on the following dates in 1991:

March 9	Display table with Vince and Larry and distribution of project literature at a shopping center. (Approximately 500 residents received material.)
April 8 to 11, 17 to 19	The "Officer Bill" project; which includes a segment on SBs, was given to all the elementary and parochial grade schools in the township (4,000 children).
May 12	Press conference, which covered Pennsylvania Child Passenger Safety Week and scope of project, took place at the police station.
May 18	Traffic Safety Day and Bike Rodeo—display table, distribution of OR literature, Vince and Larry appearance co-sponsored by TIPP, Bike Line, Haverford Community Hospital Paramedic Department, and Havertown Optimist Club. Conducted at parking lot at police station. (Approximately 500 residents and young children received material.)
June 27	"Have a Safe Summer—Buckle Up—You and Your Children" outdoor message on middle-school message board for entire summer.
July 4	The police joined with Vince and Larry to distribute CSS and SB material at four playgrounds offering 4th of July activities. Teddy bears given out had the "We Can't Bear to Be Without You: Buckle Up!" message on their sweaters. Co-sponsored by the local fire departments in the township. (Approximately 4,000 residents and young children received material.)
July 12, 18, 22	CSS and SB checkpoints at a shopping center. Police handed out warnings to drivers and young children not in restraints.
July 13	Promotional Photo Session with Chief and special unit staff in front of middle-school message board sign with SB message. Press invited.
August 30	Promotional photo session with ranking officers, township commissioners, Vince and Larry, and toddlers. "Avoid the Summertime Blues—Buckle Up" banner was held up. Press attended; and coverage in the local newspapers promoted use of the sign on one of the major highways and enforcement of the OR laws.
August 30	"Avoid the Summertime Blues—Buckle Up" banner hung above the entrance to the township on Route 3 by PennDOT. Banner was left in place until September 3.
October 11	Fire Prevention Week Open House—Police, Vince, and Larry distributed CSS and SB literature at open houses at the fire stations. "We Love You: Buckle Up" koala bears were distributed. (Event reached approximately 7,000 township residents.)

November 11 to 15 — The police department also conducted "Officer Bill" programs at three day-care and preschool centers. "We Love You: Buckle Up" koala bears were given out. (Event reached approximately 300 young children.)

December 7 — CSS Check Clinic. Police and TIPP conducted a CSS check clinic at two shopping centers for 2 hours at each location. Vince and Larry distributed OR literature. TIPP gave the public hands-on instruction in the proper way of restraining their toddlers and infants. (Event reached approximately 1,000 residents and young children.)

Media Exposure

In Tredyffrin, throughout the intervention period, press releases to the local newspapers promoted the project and the enforcement effort. The police sent out press releases approximately once a month. Six of the eight press releases were published. Appendix I includes the published articles, which are as follows:

May 23 — "In Tredyffrin, buckle up or else," Suburban and Wayne Times (see Appendix I-1).

August [illegible] — "Tredyffrin calls for seat belt safety," Suburban and Wayne Times (see Appendix I-2).

September 25 — "Tredyffrin's push on seat belt law increases usage," Times Herald Norristown (see Appendix I-3).

September 26 — "Better buckle up in Tredyffrin!" Suburban and Wayne Times (see Appendix I-4).

November 13 — "Over 150 are ticketed for seat belt violations," Daily/Sunday Local News West Chester (see Appendix I-5).

November 14 — "Seat belt safety...sweeps through Tredyffrin Township," Suburban and Wayne Times (see Appendix I-6).

Coverage on television included a 30-second piece on Channel 6 (ABC affiliate) at 6 p.m. on September 27 (822,000 viewing audience). The television station news reporter interviewed staff and went out on patrol with the police. The news story covered the enforcement effort and identified literature being handed out by the police. (Note: The radio and television media were not promoted on the project to reduce intervention media exposure in the comparison site [in the same media area, Greater Delaware Valley].) Other radio and television media advertising reached the communities. Throughout the intervention period, public service announcements carried Vince and Larry "buckle-up" messages, which were heard on several radio stations and late night television, including cable stations. In addition, PennDOT released news stories concerning summer holiday enforcement efforts; these stories were broadcast on several radio stations.

In Haverford, monthly press releases to the local newspapers promoted the project. Twelve of the fourteen articles submitted were published, as follows:

March 13 — "Police spreading the message of automobile safety," News of Delaware County (Haverford Edition) (see Appendix I-7).

May 15	"Enforcement planned for child safety, seat belt laws," News of Delaware County (Haverford Edition) (see Appendix I-8).
May 15	"98 percent of infants: safety seats being used in Haverford," Haverford Press (see Appendix I-9).
July 31	"Summer safety reminder," News of Delaware County (Appendix I-10).
August 7	"Have a safe summer—buckle up–you and your children," Haverford Press (see Appendix I-11).
September 4	"Get the message?" News of Delaware County (Haverford Edition) (see Appendix I-12).
September 4	"Beware on West Chester Pike," Haverford Press (see Appendix I-13).
October 2	"Study: Seat belt usage up in township," News of Delaware County (Haverford Edition) (see Appendix I-14).
October 13	"Study: seat belt usage up in Haverford Township," News of Delaware County (Haverford Edition) (see Appendix I-15).
October 13	"Study: seat belt usage up in Haverford Township," Main Line Sunday (see Appendix I-16).
October 16	"Safety lauded," News of Delaware County (Haverford Edition) (see Appendix I-17).
December 4	"Child seats checked," News of Delaware County (Haverford Edition) (see Appendix I-18).
December 23	"Safety belt check held in Haverford," News of Delaware County (Haverford Edition) (see Appendix I-19).

Table 4 identifies the PI&E activities conducted by both police departments during the intervention program.

Other CR Activities (NHTSA Summer 1991 Safety Belt Promotion Campaigns)

Both police departments received campaign material (from NHTSA) so that they could incorporate elements of "Avoid the Summertime Blues" and "Operation Buckle Down" into the project. For the most part, elements relating to police training, roll-call videos, SB enforcement, and press releases were incorporated into the project.

In Haverford, the Highway Safety Team conducted SB checks prior to the Labor Day enforcement blitz effort. Observations at four locations showed an average SB use rate of 58 percent. In addition, the "Avoid the Summertime Blues/Buckle Up" banner was displayed over one of the main roadways in the township during the Labor Day weekend.

Table 4. PI&E activities by police.

Activities	Tredyffrin	Haverford
Articles Published (from Press Releases)	6	12
Elementary/School Visits (grades K-8)	5	11
Lecture Programs (business/community groups)	72 hours	16 hours
Exhibits/Display Booths (at events, sidewalk sales)	37 hours	30 hours
Educational Material Distributed		
Fact Sheets	7,000	7,000
Brochures	1,000	1,000
Promotional Items Distributed		
Bears	300	1,300
Pins	500	750
Stickers	5,000	5,000
Vince & Larry: Buckle-Up Puppets	1,000	1,000
Media (TV) Announcements	1	0
CSS Clinics	0	2
Project Item Purchases (through grant)	3 child safety seats ($225) Video equipment rental ($200)	Vince and Larry crash-test dummy costumes ($1,400)

STATE-SUPPORTED REGIONAL AND LOCAL HIGHWAY SAFETY GROUPS

Many of PennDOT's highway safety groups assisted on the project, including PA TIPP and its regional offices, five of the County Comprehensive Highway Safety Project groups, Corridor Program Coordinator, the director of the Pennsylvania Volunteers for Highway Safety Project, and the project staff at the Center for Highway Safety (PennDOT).

These groups assisted in many areas: consultation at planning meetings; advice on many of the planning, data collecting, and intervention activities; recruitment and training of data collectors; training of police officers on use and proper-use characteristics of CSSs, appearances and assistance at project events and activities; presentations at day-care and preschool centers; conducting of CSS check clinics; providing of press releases for the police, assistance in developing customized material for the project; guidance in grant applications for mini-grant funding and State highway safety awards; offers of educational material and giveaways; gathering of information and statistics necessary for deciding what directions to take on the project; printing of "Officers Love Kids Too" cards; securing of mini-grant funds to purchase costumes, CSSs, and video rental equipment.

TIPP and the two county comprehensive highway groups provided the most support and assistance to the demonstration project in both communities. TIPP conducted the following activities in both townships:

- Consulted at the planning meeting.
- Provided training to data collectors.
- Provided SB and CSS literature and promotional items to the department.
- During Pennsylvania Child Passenger Safety Week, sent out press releases to all of the area newspapers promoting the CSS use issues.
- Assisted the Haverford police in conducting a CSS clinic at two shopping centers.

In Tredyffrin, the Chester County Comprehensive Highway Safety Project conducted the following activities:

- Consulted and provided guidance on activities at the planning meeting.
- Conducted SB programs at three day-care centers in the township.
- Processed PennDOT mini-grant application for CSSs and video equipment rental, then provided the funds.
- Posted "Is Your Seat Belt Fastened? Chester County Clicks" signs in the township.
- Distributed "Chester County Loves Kids Too" cards (see Appendix J).
- Conducted promotional session with Chester County area police at mall near the township, with Big Teddy promoting PA Child Passenger Safety Week.
- Provided SB brochures, "We Love You" koala bears, and holiday greeting cards with SB message, for the police to use in the project.

In Haverford, Delaware County Highway Safety Project conducted the following activities:

- Consulted and provided guidance on activities at the planning meeting.
- Gave SB presentations to three of the day-care centers in the township.
- Provided SB brochures, "We Love You" koala bears, and holiday greeting cards with SB messages for the police to use in the project.
- Posted "Is Your Seat Belt Fastened? Delaware County Clicks" signs in the township.
- Published "Kids Click into County's Seat Belt Safety Project" (News of Delaware County, November 20, 1991).

Other State highway safety groups also participated in some of the PI&E activities. The Pennsylvania Volunteer for Highway Safety provided Haverford with assistance in the application and processing for mini-grant funds to purchase the Vince and Larry Crash Test Dummy outfits. The coordinator for PennDOT's Corridor Safety Project also assisted and integrated PI&E activities with Haverford.

Press releases were periodically submitted to the area newspapers, which also covered the objectives of the police enforcement blitzes and enforcement of speeding and OR violations. These press releases were submitted during National Safety Belt Week ("Buckle Up. Just reach over, click, and you're all set. It's easy. It's your life. It's the law," Haverford Press, May 15, 1991) and on summer holiday weekends.

The PennDOT corridor coordinator was also instrumental in getting a PennDOT maintenance crew to hang the "Avoid the Summertime Blues" banner over the corridor highway used in the enforcement blitz program.

PRIVATE SUPPORT

The Keystone Safety Belt Network (Traffic Safety Now, Inc.) also provided support and assistance to both communities on the project, as follows:

- Consulted and provided guidance on activities at the planning meetings.
- Assisted in coordinating the scheduling and conducting the NHTSA OPUE training for both department's police officer instructors.
- Provided OR enforcement cards to both police departments (see Appendix D).
- Supplied Vince and Larry buckle-up puppets to the police departments (see Appendix H-28).

COMMUNITY GROUPS

In both communities, township officials, local businesses, libraries, schools, courts and community groups provided assistance and support for the project. Assistance came in many ways: distributing educational material; providing facilities to conduct programs; placing posters and material display racks in front of checkout counters, store-front display windows, and school message boards; putting articles in township newsletters; providing assistance at display tables; granting permission to conduct projects at shopping centers; distributing material at drive-in window booths; and distributing material at day-care centers, libraries, and stores.

In Tredyffrin, the Chester County district court staff was very cooperative in allowing access to the court docket book to check disposition of SB and CSS citations. The judge was also an advocate for child passenger safety. He even had a "Judges Love Kids, Too?" card (see Appendix J) available at the courthouse.

In Tredyffrin, specific community assistance included:

- Publication of "Child Safety Seat Study" article in Tredyffrin Townwatch Association's Townwatcher.
- Distribution of CSS literature and Vince and Larry puppets (500 packets) at McDonald's at the drive-in window.
- Distribution of CSS literature (2,500 packets) at the township's two libraries, nine day-care centers, and YMCA.
- Permission by proprietors to conduct safety display booths at sidewalk sales at two shopping centers.
- Permission by proprietors to conduct observation studies at shopping centers.
- Permission by courts to look through court docket book.
- Collection of observation and query data at shopping centers.

In Haverford, specific community assistance included:

- Distribution of CSS literature (700 packets) at four day-care centers, one elementary school, the one township library, three fast-food restaurants, and two retail merchandise stores (which also got packets to distribute and use for their display rack).
- Permission by proprietors to set up safety display booths and conduct CSS clinics at shopping centers.
- Permission by proprietors to conduct observation studies at shopping centers.
- Permission by courts to look through court docket book.
- Collection of observation and query data at shopping centers.

Table 5 identifies PI&E material distributed in the communities.

Table 5. PI&E literature distribution, by community.

Activities	Tredyffrin	Haverford
"Packets" handed out	2,500	700
Display racks provided to stores, libraries, day-care centers (posters displayed)	13	11

OTHER SUPPORT

In addition to police, State, and community support, other groups contributed to the project's intervention activities and evaluation process.

Contractor. The principal investigator and staff were responsible for negotiating with police departments on model OR policy guidelines, training, and enforcement and PI&E activities to conduct. In addition, staff prepared press releases, visited police to review project goals and activities, delivered literature and other promotional material to each police department to use in the programs, assisted in arrangement of photo opportunities, and attended special events to observe the project activities and get an attendance count. The staff also supervised data collection activities. Community residents collected the data. The contractor also helped police get mini-grants, OPUE training, and state recognition awards.

State. The local and regional highway safety groups were given permission to participate in the project by PennDOT's Center for Highway Safety, which also provided support. They supplied almost unlimited copies of CSS and SB educational material, assisted with demographic and other information needs, helped get mini-grant funding to purchase promotional items (NHTSA 402 funds), and worked to increase project recognition. During the project, both police departments received PennDOT's Silver Buckle Awards, NHTSA's 70 Plus Award, Safety Education awards, and 1992 Buckle Up America special judge awards.

NHTSA. Special assistance from the NHTSA technical manager (other than normal project management duties) came in the form of arranging two visits to the police departments to discuss project objectives, promoting and emphasizing the enforcement component of the project, and helping the parties reach mutual agreement on what would be expected from the police departments. In addition, NHTSA's Office of Police Traffic Services provided project material, including much of the material for "Operation Buckle Down" and "Avoid the Summertime Blues—Buckle Up Project," offered background information to support the direction of the project, and gathered training material for the police. They were instrumental in coordinating the training for instructors' certification at the NHTSA OPUE workshop in Hershey, PA. They also provided 150 NHTSA OPUE Participation Manuals for police to use in the in-house training sessions. Midway through the project, a police representative of NHTSA's Police Traffic Services Division joined NHTSA's technical project manager and the principal investigator on a visit to both police departments to promote a higher level of OR enforcement.

6. RESULTS AND ANALYSIS

This chapter presents the characteristics of the target population group observed and queried. Beyond the demographic characteristics of the sample are the observation data on occupant restraint (OR) use of drivers, restraint use and proper restraint use for young children, and driver responses to queries on knowledge of OR laws, perception of enforcement in the community, attitudes about enforcement, self-reporting behavior characteristics, and awareness of child safety seat (CSS) issues.

Analysis of the data is an important aspect. The tables and figures show statistically significant differences between test sites and comparison site in pre- and post-intervention phase data—differences that probably reflect the impact of the intervention. An interpretation of the findings appears in the last section of the chapter.

CHARACTERISTICS OF SAMPLE

A total of 5,567 drivers with young children were observed in the pre- and post-intervention data collection phases. However, results and analysis of the data included only drivers with young children who were residents of Tredyffrin, Haverford, Abington, or surrounding townships,[10] that is, 4,562 drivers (with young children passengers in the vehicle—82 percent of total observations) and 5,859 young children (1.3 children per driver). Approximately 50 percent of the sample analyzed were township residents. Appendices K-1 and K-2 show the number of drivers (with young children) and young children observed, by township and data collection phase.

In both pre-and post-intervention phases, over 85 percent of the drivers were under age 39 years (see Appendix K-3), over 85 percent were female, about 72 percent traveled less than 10 minutes (see Appendix K-4), and about 64 percent drove less than 3 miles from their last stop to the shopping centers where they were observed (see Appendix K-5). In addition, many drivers reported that they frequently visited the shopping centers. About 75 percent of the drivers, across sites and phases, visited the shopping center more than once a week (see Appendix K-6). The majority of drivers were observed in passenger cars, station wagons, or minivans (see Appendix K-7).

OBSERVATION DATA

Data collected included shoulder belt use of drivers (with young child passenger) and of drivers using shopping centers, CSS use, type of CSS, and proper use characteristics[11] of CSSs. The drivers provided age and weight estimates of the children. Compliance with Pennsylvania's OR laws was determined from observation of shoulder belt and CSS use and proper use, seat position, and driver-reported age estimates. A comparison of pre-intervention (October to December 1990) and post-intervention (October to December 1991) data is part of the results and analysis.

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[10] Driver-reported residence zip code information was used to verify reported township and surrounding township residency status.

[11] Defined in this study as proper seat and harness attachment/position, and proper attachment of vehicle seat belt (SB) to child restraint.

Shoulder Belt Use by Drivers

For drivers (with young child passengers), in all sites, test and comparison, pre- and post-intervention drivers with young children were much more likely to be in SBs than the general driving public (see Table 6). In addition, shoulder belt use improved 3.5 and 8.7 percentage points in Tredyffrin and Haverford, respectively, from the pre- to the post-intervention phases. The results were not statistically significant[12] when each site's data were compared with data from the comparison site, which also showed an improvement in shoulder belt use (2.6 percentage points). (Drivers in Tredyffrin were 13.9 percentage points higher for shoulder belt use than drivers in Haverford during the pre-intervention phase.)

Table 6. Change in safety belt use of drivers with children and the general public.

Restraint Use Type	Site	Pre-intervention	Post-intervention	Percentage Point Difference
SB use by drivers with young children	T	84.6% (629)	88.1% (614)	+3.5
	H	70.7% (795)	79.4% (856)	+8.7
	A	61.1% (725)	63.7% (446)	+2.6
SB use by drivers from the general public	T	47.9% (571)	57.0% (625)	+9.1*
	H	43.7% (606)	50.0% (925)	+6.3*
	A	48.6% (751)	46.0% (625)	-2.6

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the characteristic.
(NNN) is the number of observations or respondents.
*Significant at 95% level of confidence.

Shoulder belt use by drivers in the general public[13] improved in both intervention communities as well. In Tredyffrin and Haverford, SB use significantly improved, 9.1 and 6.3 percentage points to 57 and 50 percent. The comparison site (Abington) showed a decrease of 2.6 percentage points across phases. Shoulder belt use by the general public was about 20 to 35 percentage points lower than shoulder belt use by drivers with young children, across all sites and phases. Table 7 shows shoulder belt use across the nation and State during the data collection phases, as a comparison.

[12] 95 percent level of confidence was used for statistical significance.

[13] Observers did not interact with these drivers to determine residency status.

Table 7. Comparative driver shoulder belt use in nation and Pennsylvania (percentage observed).

Data Collection Phase	States with SB Laws*	Pennsylvania†			
		State Average	Chester County	Delaware County	Montgomery County
Pre-intervention	54	53	64	54	56
Post-intervention	55	60	65	60	59

*NHTSA, "Occupant Protection Trends in 19 Cities" (October 1990 and November 1991).
†PennDOT Center for Highway Safety, Seat Belt Observation Surveys, Fall 1992.
(Note—Tredyffrin, Haverford, and Abington are in Chester, Delaware, and Montgomery Counties, respectively.)

Restraint Use for Young Children

The differences between pre-intervention and post-intervention phase restraint use (child restraint, shoulder and/or lap belt, or no restraint) are presented. Observations were of young children; age and weight estimates were reported by the drivers. From these data characteristics, compliance with the State child passenger safety law could be determined. Results include the type of child restraint used, as well as proper use characteristics (seat position, harness position, and SB buckled to CSS), to determine whether children being transported are "fully protected."

CSS Use (All Toddlers). For young children (toddlers) between age 1 and 5, the increased use of CSSs instead of SBs or no restraint significantly improved in both test sites, but not in the comparison site. CSS use increased 5 percentage points to 76.8 percent in Tredyffrin and increased 10.5 percentage points to 71.4 percent in Haverford. (CSS use in Tredyffrin started out 11 percentage points higher than in Haverford during pre-intervention.) CSS use in the comparison site (Abington) decreased 4.1 percentage points to 63.7 percent. Figure 9 shows the difference between pre- and post-intervention phases in terms of CSS use for all toddlers.

CSS Use (Various Age/Weight Categories). This section provides results for all young children (infants and toddlers), by age (0 to 1, 1 to 3, and 3 to 5) and by weight (less than 20 pounds and 20 to 40 pounds).

For infants between birth and age 1 and under 20 pounds,[14] CSS use was very high (over 95 percent CSS use observed across all three sites in the pre- and post-intervention phases) compared with SBs or no restraint. Slight CSS use increases occurred in both test sites after the intervention. Table 8 lists percentages.

[14] American Academy of Pediatrics (AAP) defines infants as children under age 1 or under 20 pounds.

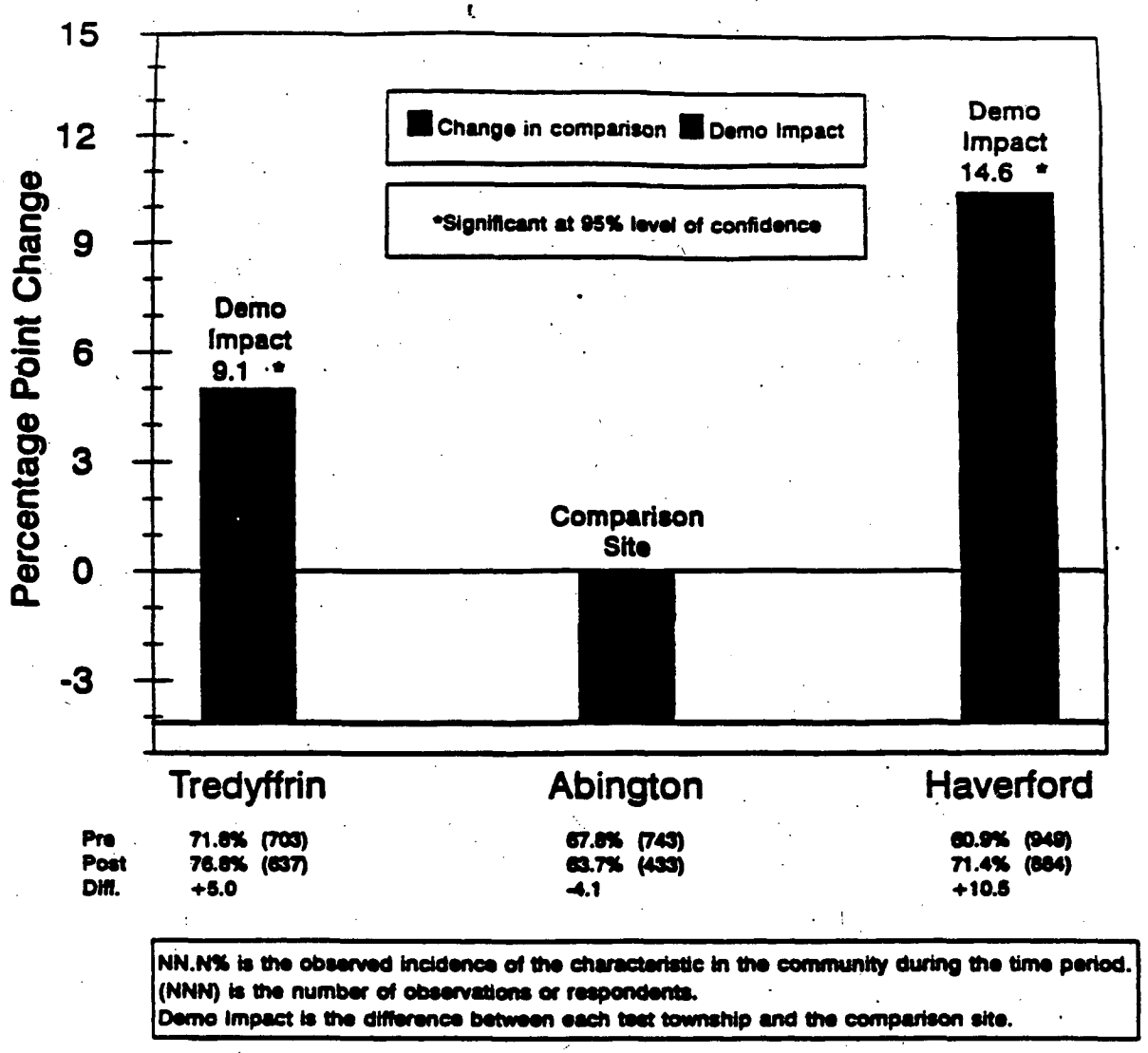

Figure 9. Percentage point change of child safety seat use by toddlers (ages 1 to 5), before and after Intervention, by site.

For young toddlers, between age 1 to 3, CSS use was relatively high (between 85 and 95 percent) in both pre- and post-intervention phases across all sites. The use of CSSs compared with SB's or no restraints improved 3.6 percentage points and 7.4 percentage points in Tredyffrin and Haverford, respectively. (CSS use in Tredyffrin was over 6 percentage points higher than in Haverford during the pre-intervention phase.) When comparing these improvements in child restraint use with Abington's slight improvement (1.8 percentage points), the impact of the intervention was not statistically significant.

For older toddlers, between ages 3 to 5, CSS use was much lower (40 to 50 percentage points across all sites and pre- and post-intervention phases) than for younger toddlers (ages 1 to 3). CSS use improved 8.8 percentage points and 8.9 percentage points in Tredyffrin and Haverford, respectively. (CSS use in Tredyffrin was about 10 percentage points higher than in Haverford during the pre-intervention phase.) Even though child restraint use showed no improvement in the comparison site (Abington), the impact of the intervention was not statistically significant (at the 95 percent level of confidence) perhaps due to the small sample sizes in the intervention site subgroups. Table 9 presents the CSS use results for young and older toddlers.

Table 8. Percentage of Child Safety Seat use by infants, by age and weight, before and after interventions, by site.

Infant Characteristic	Site	Pre-intervention	Post-intervention	Percentage Point Difference
Ages birth up to 1	T	97.8% (134)	99.0% (102)	+1.2
	H	98.1% (108)	99.3% (145)	+1.2
	A	99.1% (113)	97.6% (84)	-1.5
Less than 20 pounds	T	98.6% (141)	99.0% (105)	+0.4
	H	95.1% (122)	99.2% (131)	+4.1
	A	97.9% (96)	98.3% (60)	+0.4

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the characteristic.
(NNN) is the number of observations or respondents.

Table 9. Percentage Child Safety Seat use by young and older toddler age groups, before and after interventions, by site.

Toddler Age Group	Site	Pre-intervention	Post-intervention	Percentage Point Difference
Young toddlers (ages 1 to 3)	T	91.4% (432)	95.0% (382)	+3.6
	H	85.4% (526)	92.8% (529)	+7.4
	A	88.7% (433)	90.5% (210)	+1.8
Older toddlers (ages 3 to 5)	T	40.6% (271)	49.4% (255)	+8.8
	H	30.5% (423)	39.4% (355)	+8.9
	A	38.7% (310)	38.6% (223)	-0.1

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the characteristic.
(NNN) is the number of observations or respondents.

Drivers were asked to estimate weight of children, as well as to report age. (According to the AAP, recommendations for forward facing, toddler, or convertible CSSs are based not only on age [1 to 4 or 5], but also on weight [20 to 40 pounds]. For this reason, data for these children were tabulated by driver-reported weight estimates.)

The results on CSS use for toddlers weighing between 20 and 40 pounds showed increases like those in the age category for toddlers from both test sites. Significant improvement was found only in Haverford when toddler CSS use was analyzed based on a weight definition. Table 10 compares CSS use by AAP recommended weight requirements for toddlers in CSSs.

Table 10. Percentage of Child Safety Seat use by toddlers (20 to 40 pounds), before and after interventions, by site.

Toddler Weight Group	Site	Pre-intervention	Post-intervention	Percentage Point Difference
Toddlers (20 to 40 pounds)	T	78.1% (607)	80.6% (582)	+2.5
	H	62.3% (904)	73.1% (860)	+10.8*
	A	69.1% (732)	68.2% (421)	-0.9

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the characteristic.
(NNN) is the number of observations or respondents.
*Significant at 95% level of confidence.

Lack of any restraint use, whether CSS or SB, was also observed and recorded in the data collection effort. For all toddlers (ages 1 to 5), statistically significant improvement was found in Haverford when compared with the comparison site. There was an almost 10 percentage-point decrease in unrestrained toddlers in Haverford. Tredyffrin showed a slight improvement (0.7 percentage-point decrease in unrestrained toddlers); however, both sites had similar rates for nonuse of restraints (only 1.5 percentage-point difference) by the post-intervention period.

According to the AAP, recommendations for booster CSSs are based not only on age (over 4 or 5 to 7 or 8), but also on weight (40 to 70 pounds). For this reason, data for these children were tabulated by driver-reported weight estimates. Observations involved young children (primarily between age 5 and 9 and primarily over 40 pounds) in the vehicle. For these older children, Haverford showed significant improvement in relation to the comparison site. There was an almost 30 percentage-point decrease in unrestrained children in Haverford. Tredyffrin showed a small improvement (0.7 percentage-point decrease in nonuse of restraints); however, both sites showed only a 3.2 percentage-point difference in nonrestraints by the post-intervention period. For children over 40 pounds,[15] Haverford showed statistically significant improvement when contrasted with the comparison site. There was a 25.8 percentage-point decrease in unrestrained children from pre- to post-intervention. Tredyffrin showed a slight decrease, 0.3 percentage point. However, there was a 30 percentage-point decrease in nonuse of restraints (i.e., 30 percentage-point change from no restraint to some type of OR) for Haverford in the pre-intervention period.

Table 11 presents the nonuse of restraints for all toddlers (ages 1 to 5) and older children (ages 5 to 9 and over 40 pounds).

Compliance with OR Laws of Pennsylvania

The Commonwealth's OR laws apply to children from birth to age 4. The law provides no weight requirements. From observing restraint use and seat position in the vehicle and by knowing the age of these children, a "compliance" rate was determined for the law.

[15] During the pre-intervention data collection phase, less than 5 percent of children over 40 pounds were less than age 5.

Table 11. Percentage of nonuse of restraints (safety belts or child safety seats) by toddlers and older children, before and after intervention by sites.

Age/Weight Characteristics	Site	Pre-intervention	Post-intervention	Percentage Point Difference
Toddlers (Ages 1 to 5)	T	6.0% (703)	5.3% (637)	-0.7
	H	16.3% (949)	6.8% (884)	-9.5*
	A	11.6% (743)	13.4% (433)	+1.8
Older children (Ages 5 and 9)	T	17.5% (114)	16.8% (137)	-0.7
	H	50.3% (183)	20.0% (175)	-30.3*
	A	44.0% (209)	47.4% (137)	+3.4
Older children (Over 40 pounds)	T	14.4% (188)	14.7% (190)	+0.3
	H	44.5% (211)	18.7% (214)	-25.8*
	A	36.6% (224)	38.7% (173)	+2.1

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the characteristic.
(NNN) is the number of observations or respondents.
*Significant at 95% level of confidence.

For the most part, most drivers (lowest compliance rate in pre- and post-intervention periods was 80 percent in Haverford) with young children complied with Pennsylvania's OR laws. However, the CSS laws in the state are weak. Drivers can comply with the law even with toddlers (ages 1 to 4) restrained by a SB only in the back seats. (The AAP does not feel this is adequate "full protection." Project objectives were to promote full protection for toddlers, including proper CSS use even in the back seat. This "full protection" rate observed is reported next.)

Nevertheless, significant improvement (9.9 percentage points) in compliance with the law for toddlers (ages 1 to 4) was found in Haverford in contrast with the comparison site. Tredyffrin had a slight improvement, 1.9 percentage points. However, Tredyffrin's compliance with the law was 10 percentage points better than Haverford's in the pre-intervention phase. The comparison site, Abington, showed a slight decrease in compliance, 0.4 percentage point. Figure 10 shows the impact of the intervention on driver compliance with Pennsylvania's OR laws.

"Fully Protected" Young Children

A "fully protected" measure was computed from observation data collected on child restraint use and project-defined proper use (i.e., appropriate direction of CSS, harness down in place and attached to seat, CSS buckled to vehicle SB), seat position, and reported age of toddlers.

All Toddlers (Ages 1 to 5). Significant improvements of "full protection" occurred in both test sites in contrast to the comparison site. Tredyffrin and Haverford improved 5.8 and 11.8 percentage points, respectively, after the intervention. In contrast to the comparison site, the impact was even greater, 10.1 and 16.1 percentage points in Tredyffrin and Haverford, respectively. Figure 11 shows the impact of the intervention for "fully protected" toddlers.

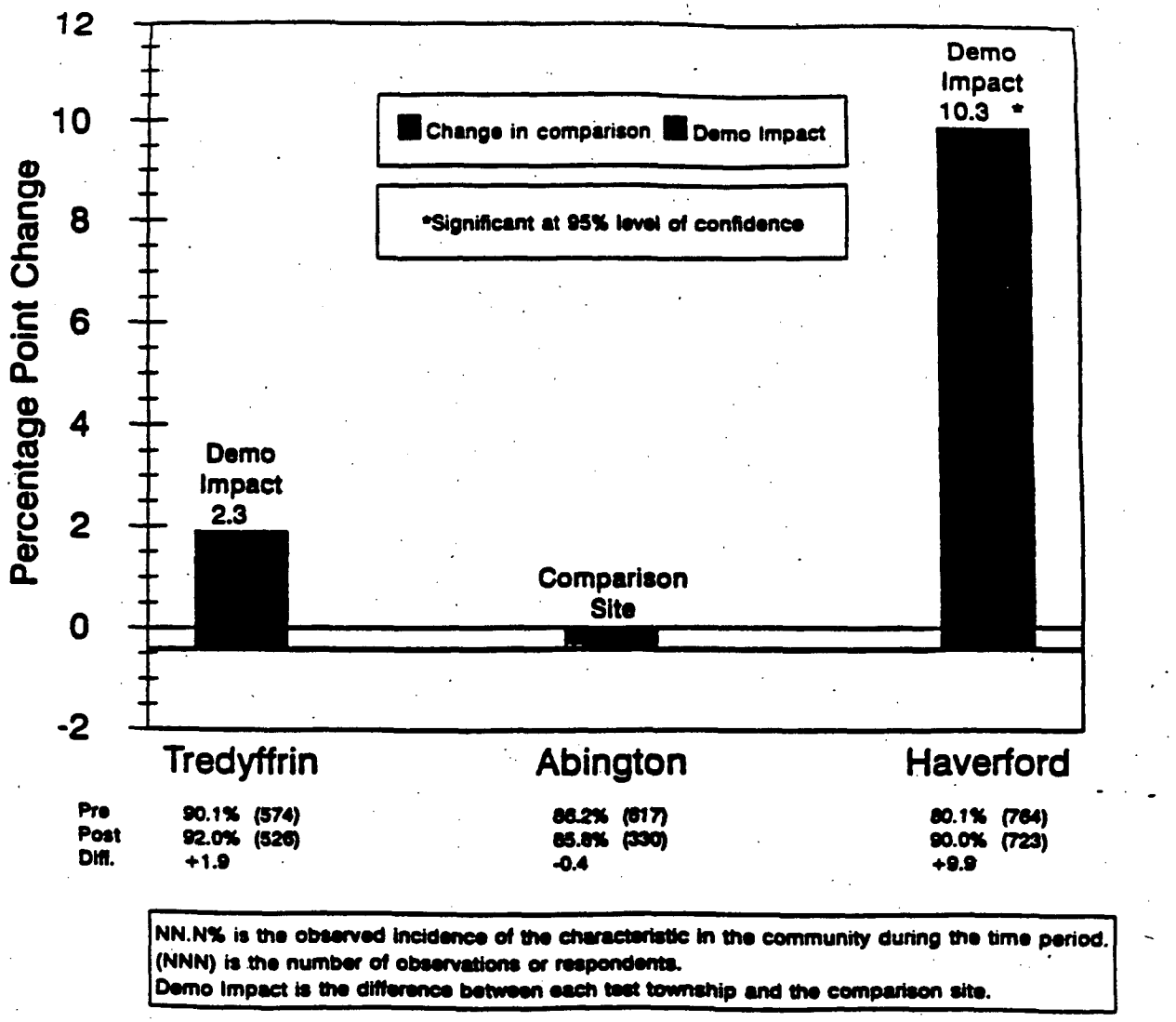

Figure 10. Percentage point change of driver compliance with occupant restraint laws of Pennsylvania for toddlers (ages 1 to 4), before and after intervention, by site.

Toddler Age (1 to 3, 3 to 5) and Weight (20 to 40 pounds) Categories. For young toddlers (ages 1 to 3) and older toddlers (ages 3 to 5), the "fully protected" measures improved for both test sites from pre- to post-intervention phases. Table 12 shows the percentage impact of the intervention for "fully protected" young toddlers (ages 1 to 3), older toddlers (ages 3 to 5), and toddlers between 20 and 40 pounds. For young toddlers, "fully protected," rates during pre- and post-intervention phases were all above 82 percent. Tredyffrin and Haverford improved 5.3 percentage points and 8.6 percentage points, respectively, from pre- to post-intervention phase. However, when compared with Abington (comparison site), only Haverford's improvement was significant. Both test sites showed 90 percent of the young toddlers "fully protected" after the intervention. For older toddlers, the "fully protected" rates were much lower (about 50 percentage points) than for the younger toddlers during the pre-intervention and post-intervention periods. This is probably related to the fact that many of the children ages 3 to 5 were wearing SBs and thus were not really "fully protected." Tredyffrin and Haverford improved 4.6 and 10.5 percentage points, respectively, from pre- to post-intervention phase. However, these improvements were not statistically significant when compared with those of Abington.

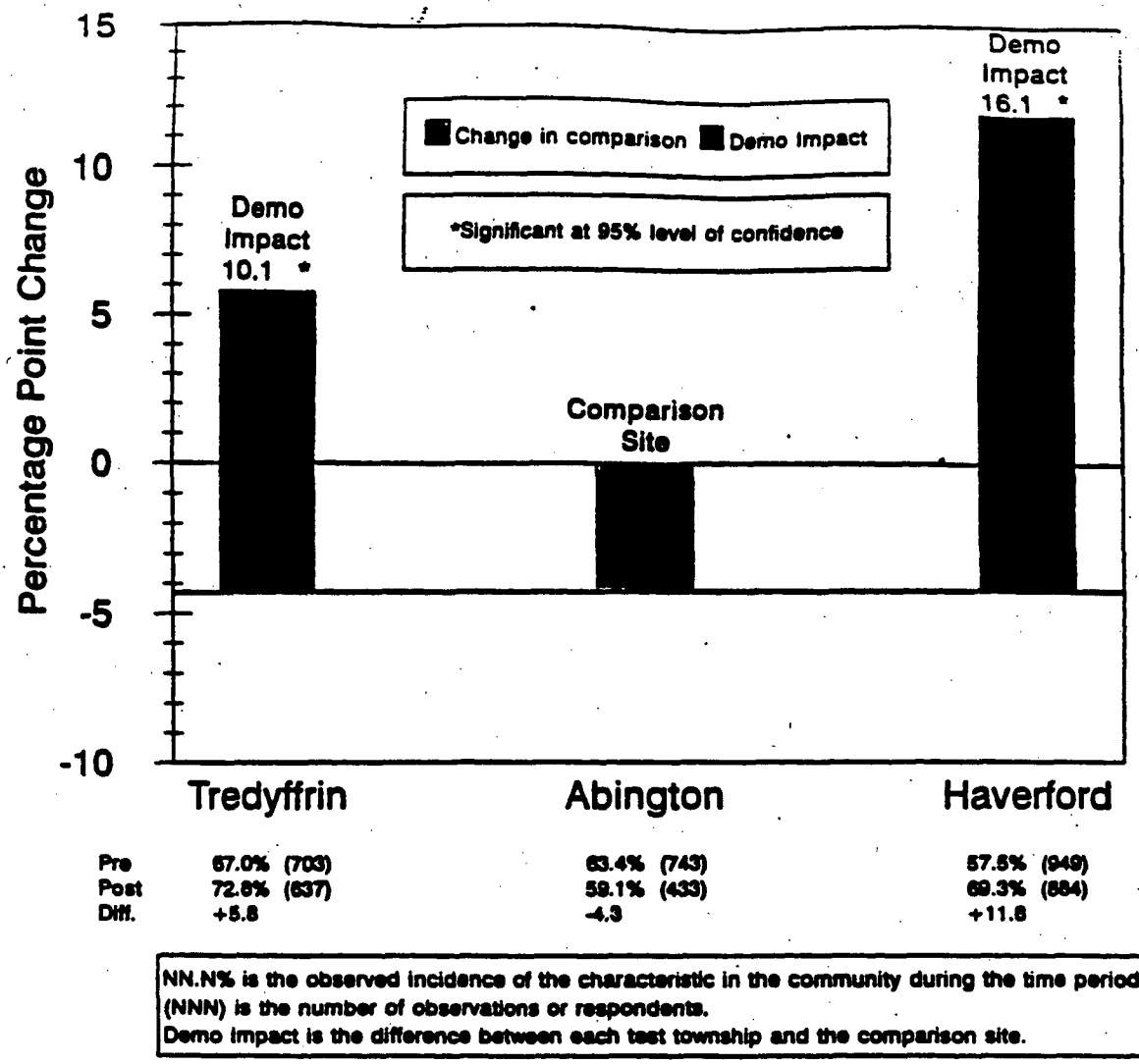

Figure 11. Percentage point change of "fully protected" toddlers (ages 1 to 5), before and after intervention, by site.

Table 12. Change in "fully protected" rates of toddlers, by age and weight, before and after intervention, by site.

Age/Weight Category	Site	Pre-intervention	Post-intervention	Percentage Point Difference
Young toddlers (Ages 1 to 3)	T	86.1% (432)	91.4% (382)	+5.3
	H	82.1% (526)	90.7% (529)	+8.6*
	A	85.0% (433)	86.2% (210)	+1.2
Older toddlers (Ages 3 to 5)	T	36.5% (271)	45.1% (255)	+8.6
	H	27.0% (423)	37.5% (355)	+10.5
	A	33.2% (310)	33.6% (223)	+0.4
Toddlers (20 to 40 pounds)	T	73.1% (607)	76.8% (582)	+3.7
	H	59.1% (904)	70.9% (860)	+11.8*
	A	65.4% (732)	64.1% (421)	-1.3

For toddlers between 20 and 40 pounds, both test sites improved on their "fully protected" measure. Haverford's improvement (11.8 percentage points) was significant. Similar to other CSS use characteristics, Tredyffrin had a higher pre-intervention level, in this case, 14 percentage points.

Comparison of Driver SB Use and Toddler Restraint Use

A clear, direct relationship emerged from an analysis of driver belt use and restraint use by toddlers. As Figure 12 shows, belted drivers were much more likely to have restrained toddler passengers than were unbelted drivers. This positive relationship appeared across all sites and between intervention periods. When drivers were observed wearing shoulder belts, 73 percent of their child passengers ages 1 to 5 were in a CSS, 24 percent were belted, and only 3 percent were not in any restraint. When drivers were not wearing belts, only 53 percent of those ages 1 to 5 were in a CSS, 16 percent were belted, and 31 percent were not in any restraint. This finding is consistent with other studies (Cynecki and Goryl, 1984).

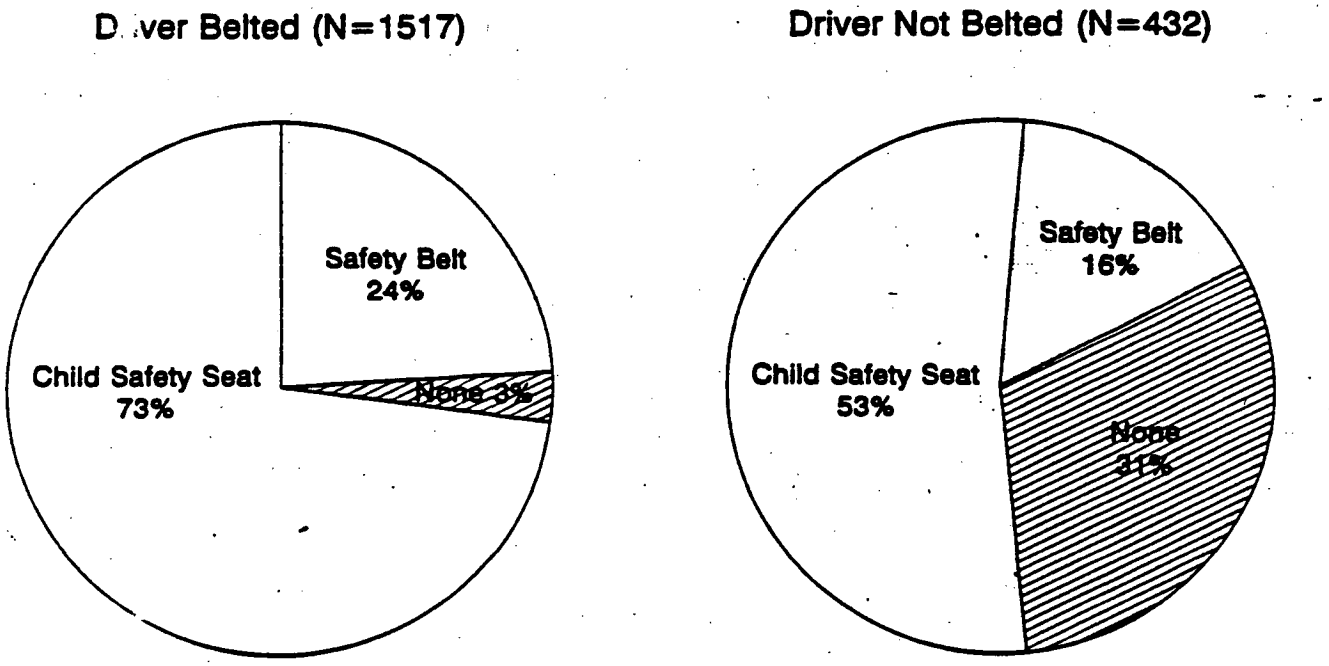

Figure 12. Driver shoulder belt use versus toddler restraint use. (Post-intervention data from all 3 sites)

QUERY RESPONSE DATA

Drivers with child passengers were queried on their knowledge of the OR laws in Pennsylvania, perception of community OR enforcement, attitudes about OR enforcement, self-reported proper CSS use behavior, and awareness of CSS issues. This section describes the levels and differences in driver responses to these queries during the pre- and post-intervention phase of data collection.

Knowledge of OR Laws

Drivers were asked about their knowledge of Pennsylvania's CSS and SB laws. CSS law queries related to (1) maximum age requirement for a child to be in a CSS in the front seat, and (2) back-seat restraint requirements for children up to age 4. Results showed only about half of the drivers (across sites and before and after intervention) knew the required age for a child to be in a CSS in the front seat. Results were much higher (about 90 percent) on drivers knowledge (across sites and before and after intervention) of the back-seat restraint requirements. (Maybe the "yes-no" type of response caused such a high rate.) No significant differences were found for response changes from before to after the intervention. Drivers did seem to be aware of the SB law in the Commonwealth. Over 90 percent of the drivers in the test and comparison sites (pre- and post-phases) knew that there was a law. Differences across site and phases were very small. Table 13 presents the results of this query.

Tabl 13. Change in driver-reported knowledge of occupant restraint laws in Pennsylvania, before and after intervention, by site (percentage).

Up to what age does Pennsylvania's law require a child to be in a child safety seat when riding with you (the driver) in the front of a car?
4[1] years old

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	58.6% (459)	57.6% (523)	-1.0
H	55.3% (477)	57.9% (700)	+2.6
A	46.8% (485)	48.1% (366)	+1.3

Could you get a ticket if a child between the ages of 1 and 4 is in the back seat of your car and is not in a child safety seat and is not using a seat belt?
[1] Yes[1] [2] No

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	94.1% (581)	94.3% (599)	+0.2
H	95.2% (588)	93.5% (799)	-1.7
A	94.9% (570)	92.3% (429)	-2.6

Is it possible for you to get a ticket for not wearing a seat belt when you drive? [1] Yes[1] [2] No

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	92.6% (591)	93.6% (606)	+1.0
H	93.6% (594)	93.2% (776)	-0.4
A	90.6% (576)	90.0% (431)	-0.6

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the response.
(NNN) is the number of observations or respondents.
[1]Correct response.

Perception of Enforcement

Drivers with young children were asked how they perceived the probability of getting a ticket in their community for violating the CSS or SB laws. (See Table 14.) Five categories of responses were suggested to drivers. Data were reported by comparing the "likely" responses (very likely, somewhat likely) with the "occasionally" or "unlikely" responses (somewhat unlikely, very unlikely responses). Drivers (based on responses) showed increased perception (very likely, somewhat likely) on enforcement of the CSS and SB law in both test communities. In addition, when contrasted with the comparison site, drivers at both test sites showed a significant increase in difference in perception on enforcement of the CSS law.

Table 14. Change in driver-reported perception of enforcement of occupant restraint laws, before and after intervention, by site.

CSS Law

How likely is it to get a ticket in your community for violating Pennsylvania's Child Safety Seat Law?

1' Very Likely 2] Somewhat Likely 3] Occasionally 4] Somewhat Unlikely 5] Very Unlikely

"Very Likely-Somewhat Likely" Responses

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	25.1% (585)	32.2% (605)	+7.1*
H	27.0% (570)	32.3% (777)	+5.3*
A	29.4% (537)	25.3% (391)	-4.1

SB Law

How likely is it to get a ticket in your community for violating Pennsylvania's Seat Belt Law?

1] Very Likely 2] Somewhat Likely 3] Occasionally 4] Somewhat Unlikely 5] Very Unlikely

"Very Likely-Somewhat Likely" Responses

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	23.5% (585)	30.2% (609)	+6.7*
H	24.2% (567)	30.1% (774)	+5.9*
A	25.5% (556)	23.3% (399)	-2.2

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the response.
(NNN) is the number of observations or respondents.
*Significant at 95% level of confidence.

Attitude on OR Enforcement

Drivers with young children were asked if they favored having the police enforce Pennsylvania's CSS and SB laws. (See Table 15.) Responses showed that over 90 percent of these drivers favor these laws. The test and comparison sites showed no significant response differences from before to after the intervention.

Table 15. Change in driver-reported attitude on enforcement of occupant restraint laws, before and after intervention, by site.

CSS Law

How do you feel about the police enforcing Pennsylvania's Child Safety Seat Law?

Strongly in Favor [1]	Somewhat in Favor [2]	Undecided or Not Interested [3]	Somewhat Opposed [4]	Strongly Opposed [5]

"Strongly in Favor—Somewhat in Favor" Responses

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	95.4% (611)	97.2% (573)	+1.8
H	97.2% (606)	98.5% (751)	+1.3
A	95.6% (603)	97.0% (410)	+1.4

SB Law

How do you feel about the police enforcing Pennsylvania's Seat Belt Law?

Strongly in Favor [1]	Somewhat in Favor [2]	Undecided or Not Interested [3]	Somewhat Opposed [4]	Strongly Opposed [5]

"Strongly in Favor-Somewhat in Favor" Responses

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	91.8% (610)	93.7% (570)	+1.9
H	93.1% (605)	96.1% (744)	+3.0
A	88.5% (601)	91.7% (410)	+3.2

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the response.
(NNN) is the number of observations or respondents.

Self-Reported Behavior on Proper CSS Use

Drivers were asked how often they put their children in CSSs properly. It seems that many drivers are already aware of the importance of "always" having young children properly installed in CSSs, but they still may not act on their knowledge. When contrasted with the comparison sites, both test sites showed statistically significant improvements in drivers responding "always," which should be the only "appropriate" response. Table 16 presents the responses to behavior and usage of CSSs.

Table 16. Change in driver-reported behavior on proper child safety seat use before and after intervention, by site.

Very few people know the proper way to install child safety seats, and few people properly secure their children in these seats all the time. How often are child safety seats properly installed and used in your car?

Always [1]	Frequently [2]	Sometimes [3]	Infrequently [4]	Never [5]

"Always" Response

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	73.2% (549)	80.9% (540)	+7.7*
H	88.8% (563)	89.4% (695)	+0.6*
A	86% (601)	72.9% (388)	-13.1

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the response.
(NNN) is the number of observations or respondents.
*Significant at 95% level of confidence.

Awareness of CSS Issues

Drivers were asked whether they had been informed of CSS issues in the last few months (yes or no). Significant differences were found in Haverford Township when contrasted with the comparison group. (See Table 17.) In addition to responding "Yes" or "No" about whether they have seen or heard anything about CSSs, drivers were also asked where they saw or heard it. Only 249 drivers reported where they found out about CSS issues. The following categories of response were identified: (1) project activities—30%, (2) magazines or books—24%, (3) doctors' offices—26%, and (4) miscellaneous—20%.

Table 17. Change in driver-reported awareness of child safety seat issues, before and after intervention, by site.

(Yes-Response)

Site	Pre-intervention	Post-intervention	Percentage Point Difference
T	52.8% (606)	50.0% (544)	-2.8
H	43.6% (594)	56.4% (768)	+12.8*
A	47.4% (601)	46.2% (400)	-1.2

T—Tredyffrin H—Haverford A—Abington (comparison site)
NN.N% is the percentage of the observed incidence of the response.
(NNN) is the number of observations or respondents.
*Significant at 95% level of confidence.

Only 779 out of 1,712 drivers responded to what they remembered about the CSS messages. Responses matched the following categories: (1) messages used in program—47%, (2) general safety benefit—27%, (3) the 1991 "Florida case"[16]—9%, and (4) other legal issues—19%.

INTERPRETATION OF FINDINGS

This section presents an interpretation of the findings, as well as unique situations that may have influenced results. The following is covered: data collection methods and sampling technique, characteristics of sample population, observation data, query response data, and summary.

Data Collection Methods and Sampling Techniques

Observations and query responses were collected in community shopping centers at the test (Tredyffrin and Haverford) and comparison (Abington) sites. The goal was to collect data on every target driver and child passenger. However, because of the constraints imposed by the physical characteristics of the shopping center, the traffic flow into the parking area, project costs, the number of data collectors at each site, daylight hours, and some driver reluctance to interact, not every target driver who visited the shopping centers with young child passengers was observed or queried.

Repeat observations were made of some drivers (approximately 5 to 8 percent of the drivers in the three townships); however, these drivers were queried only the first time.

[16] Parents were convicted of manslaughter for not having their child in a CSS. Unrestrained child died when thrown from the car during an accident.

Data were collected not only from township residents but also from surrounding township residents. The rationale was that police enforcement and public intervention and education (PI&E) projects spilled over into the surrounding communities; and local newspaper coverage, school projects, special events, and shopping activities reached audiences beyond the township boundaries. In addition, contract resources were not available to spend the time that it would take to collect information on only township residents.

Characteristics of Sample Population

As planned and implemented, the sample of drivers and their child passengers reached appropriate numbers in both the pre- and post-intervention phases to support statistically reasonable assumptions that the program was probably the reason for the increase in OR use and proper use of child restraints, as well as for the increase in drivers' perception of local police enforcement, self-reported proper CSS use behavior, and awareness of CSS issues.

Most of the drivers with child passengers, across test and comparison communities and during pre- and post-intervention phases, were women ages 30 to 39. These drivers were primarily mothers doing routine grocery and other shopping chores with their young children. Travel patterns to the shopping centers were also consistent across communities and phases. As aforementioned, most of the drivers traveled less than 10 minutes, were less than 3 miles from their last stop, and frequented the shopping centers more than once a week. Thus, most of the drivers probably lived near the community shopping centers, a characteristic that was sought in the sampling plan.

Observation Data Interpretation

The results of the analysis showed increases in SB use by both drivers with child passengers and general public (driver without child passenger), as well as increased CSS use and proper use among toddlers after the intervention program in both test sites. In addition, significant results were noted for SB use by the public and between key CSS use and proper use observation and query response measures in at least one site and, in some cases, both sites. The intervention projects showed an effect. The comparison site showed no significant improvement in any measure.

Restraint use by drivers with young children did improve in all sites after the intervention period. Results were not statistically significant and could simply reflect the national trend. However, statistically significant differences in shoulder belt use were noted for general public drivers at the test sites. In Tredyffrin and Haverford, drivers significantly improved (over 9 and 6 percentage points, respectively) from the pre- to post-intervention phase, whereas in Abington, the usage rate dropped by almost 3 percentage points. Differences in SB usage rate improvements in the test sites were greater than increases in the national shoulder belt usage rates for cities with SB laws. National shoulder belt usage rates slightly improved, from 54 percent to 55 percent, between the spring and fall of 1991 according to the National Highway Traffic Safety Administration (NHTSA), November 1991. In all likelihood, the intervention programs also increased SB use in the community.

For OR use by drivers with child passengers and the general public, SB use was much higher for drivers with young children than for the general public across all three sites and for both pre- and post-intervention phases. Drivers were more likely to wear SBs when children were in the vehicle. Results also showed that when drivers were belted, 97 percent of the toddlers were restrained (CSS—73 percent or SB—24 percent); and when drivers were not belted, only 69 percent of the toddlers were restrained (CSS or SB). (Data from Mississippi in 1991 showed the same figure for CSS use, 73 percent when the driver was belted [IACP, 1993].)

One of the main objectives of the intervention projects was to improve the use of CSSs for all toddlers (ages 1 to 5). The statistically significant improvements in both test sites (when compared with the control site) bring reasonable probability to the conclusion that both intervention projects increased the community CSS use.

Significant improvements were found in many CSS use and proper use measures in both sites. Haverford showed more improvements than Tredyffrin in the measures of restraint use by drivers with child passengers, CSS use and proper use for toddlers, and restraint use for older children. However, the pre-intervention restraint and child restraint use levels were much lower in Haverford, which suggests that this township has more "room for improvement."

Despite many similar intervention activities at each test site, there were also many differences. Tredyffrin offered higher levels of enforcement activities, more staff training, and more PI&E to the businesses and the community. However, Haverford conducted more press coverage, more community projects based around young children and teenagers, and hosted a CSS inspection clinic. The fact is that CSS use and proper use in both test sites improved (for some measures, significantly, based on comparison site data) despite different levels of enforcement and PI&E activities. Thus, interpreting the results of the data analysis was a complex process, but it did show that the intervention projects in both communities probably increased CSS use and proper use. Some of the key findings of the observation data and query responses are discussed next.

Since CSS use improved with the overall toddler group, the young (ages 1 to 3) and older (ages 3 to 5) toddler groups were also expected to improve; and they did. However, results were not statistically significant. As was expected, CSS use by older toddlers (ages 3 to 5) was much lower (pre- and post-intervention) than CSS use by the younger toddler group. Many older toddlers were in SBs. Haverford experienced a significant improvement (30 percentage points) in the number of young children (between ages 5 and 9 and over 40 pounds) wearing SBs. Haverford's project, which had more emphasis on PI&E activities than enforcement, probably reached all the township children in the schools and day-care centers. This approach may well have been responsible for the significant improvement in restraint use.

Another objective of the intervention project was to improve Tredyffrin's compliance with Pennsylvania's child passenger safety law, which allows belt use for children ages 1 to 4. This weakness was one of the reasons for focusing intervention on increasing "full protection" for toddlers (up to age 5), not only in the front seat but in the back seat as well. For toddlers in the age group identified in the law (ages 1 to 4), both test sites showed compliance rate improvements after the intervention project. Haverford's improvement was significant (90 percent compliance), and close to Tredyffrin's post-intervention level (92 percent). Tredyffrin's compliance with the laws was high before the project, so the enforcement conducted may not have been able to improve compliance beyond this level. Again, Haverford's approach may have been responsible for improved compliance with the CSS law.

Another objective of the intervention project was to improve the rate of "fully protected" toddlers in vehicles. For toddlers between ages 1 and 5, results showed significant improvements (12 to 13 percentage points) in the "fully protected" number of toddlers in both test sites after the intervention phase. Observation data revealed that in Tredyffrin and Haverford, 73 and 69 percent, respectively, of all toddlers observed were "fully protected," after the intervention. The combination of activities in each community was likely to have been responsible for these increases.

Query Data Interpretation

Other project objectives were to determine whether the intervention projects had an effect on drivers of child passengers in terms of their knowledge of Pennsylvania's OR laws, perception of enforcement of these laws, attitudes about enforcement, self-reported behavior concerning proper child restraint use, and awareness of CSS issues.

Drivers' knowledge of the OR laws of Pennsylvania after the intervention project had changed very little. Over 90 percent of the drivers across sites and intervention phases acknowledged that they knew about the CSS and SB laws in the State. However, only about 50 percent of the sample across sites and intervention phases knew the age cutoff for children in the front seat to be in a CSS. Project material covered the law in details, but drivers probably skimmed the material. "Full protection" rates might increase if parents were better educated on the details of the CSS laws and the laws provided full protection in the front and back seats.

Drivers had increased perception about the local police enforcing the OR laws. Many more drivers at both test sites responded "very likely" or "somewhat likely" as the likelihood of getting a ticket in the community for violating the CSS or SB laws. Even though Tredyffrin had higher enforcement contact levels than Haverford, all of the press releases in both test communities mentioned the enforcement component and CSS laws; some mentioned counts on the numbers of tickets ar ! warnings given for OR violations. Thus, press coverage on enforcement may have been instrumental in increasing perception of enforcement in these communities, maybe even more important than the enforcement activities themselves.

Most of the queried drivers (88 to 99 percent) across all of the sites and during both phases were in favor ("strongly" or "somewhat") of the police enforcing the OR laws. The restraint use rate for these drivers was already about 20 to 30 percent higher than that of the general public (50 percent). Drivers who already comply with the law are probably more likely to respond favorably to OR enforcement.

Also of interest was finding out if the intervention projects changed the way drivers responded to how often they have their children in properly secured CSSs. After being made aware of the safety benefits of OR's, a driver would be expected to respond "always" to the OR question. Both test sites showed significant increases for the "always" response. It is not of critical concern that drivers might falsify their responses. If drivers are now aware of the need for always using child restraints, contact with one or more of the intervention activities may have educated them about this critically important concept and behavior.

Another measure of project effectiveness is knowing whether drivers were aware of CSS issues recently seen, read, or heard. The question was slightly misleading because the drivers asked may have been aware of CSS issues from information other than that developed through the intervention projects. However, the number of drivers who responded "yes" to seeing, hearing, or reading something about CSSs increased significantly in Haverford, but not in Tredyffrin. The higher level of press coverage in Haverford may have been the responsible factor.

Summary

Each test site demonstrated different levels of OR enforcement "contacts" and PI&E activities. (Tredyffrin had three times as many "contacts" and 10 times as many citations as Haverford. Haverford had twice as many newspaper articles, more public advertising (billboards, banners), and

more public events than Tredyffrin. Haverford also held a CSS clinic and conducted a very comprehensive school/day-care education project). However, despite the different "mix" in each community, significant improvements were evident in the key measures of CSS use and "full protection" rates among toddlers and SB use of the general public. Also, significant results were found in the perception of enforcement of the OR laws and drivers acknowledging that they always use CSSs properly. Improvements also were noted with drivers' (with young children) SB use rate and their compliance with Pennsylvania's OR laws.

The results suggest that moderate and more intense levels of OR enforcement (which includes warnings) combined with a comprehensive PI&E project that includes frequent press (newspaper) coverage and public events (including CSS inspection clinics), projects for schools, day-care centers, and the civic and business community can improve and promote local CSS use, proper use, and OR belt use.

7. PROJECT ADMINISTRATIVE EVALUATION

An administrative evaluation of the demonstration project looked at management direction, activities, and unique characteristics. Many "players" were involved, including local police, State-supported groups, community groups, and businesses. Understanding their roles, their decisions, and the way that these decisions affected the results provides direction for police and other community organizations trying to promote and increase use and proper use of child safety seats (CSSs) and all occupant restraint (OR) use in communities.

The primary "players" were the police. The evaluation addresses the key elements that provided direction and motivation for police in enforcement and public information and education (PI&E) activities, including:

- Project management, leadership, and supervision.
- Model policies.
- Training.
- Enforcement.
- PI&E activities, publicity, and other events.

The State and community also played a significant role in the project. Activities by the State-supported and private local and regional CSS or safety belt (SB) highway safety groups were instrumental in the success of the demonstration project. The evaluation examines the role of these groups and the ways that their efforts supplemented police activities. The community (e.g., local businesses, schools, libraries, department stores, and fast-food restaurants) also cooperated and assisted in PI&E activities. The value of the community role is also examined.

The contractor and the National Highway Traffic Safety Administration (NHTSA) monitored the project and regularly interacted with the police, local and regional highway safety groups, and the community. Their role is evaluated.

The last section of the chapter briefly discusses general project issues, such as the elements of the demonstration project (e.g., level of police enforcement and policy decisions) and data collection effort (e.g., target group characteristics, sampling, and field observations) that could not be controlled by increased monitoring and project directives.

POLICE

The Tredyffrin and Haverford police departments may not have initially realized the level of commitment required to conduct an effective OR enforcement and PI&E program. However, both police departments clearly stated that they were willing to conduct the program if the effort would not hinder the level of support services normally given in their communities. This provision was accepted since one objective of this project was to show that an effective OR enforcement and PI&E project could be conducted in conjunction with routine operations and without "outside" funding for police salaries. It was suggested that OR enforcement "contacts" reach at least 10 to 20 percent of the police department's total number of citations. Neither department officially agreed to reach this level. Both departments emphasized that ticketing quotas were illegal in Pennsylvania. However, they stated that they would try to meet all of the project objectives, i.e., instituting employee directives and SB policy, training, and OR law enforcement as well as participating in PI&E activities.

Management, Leadership, and Supervision

In Tredyffrin, two superintendents were involved with the project. At the start of the project, the Superintendent delegated all project activities to the Community Relations Officer and the patrol sergeants responsible for traffic enforcement. For the most part, these officers were given autonomous control. During the first half of the project, the Superintendent played only a peripheral role rather than closely monitoring the project activities. This approach may have hindered reaching the expected level of OR enforcement in the first half of the project. However, the patrol sergeants blamed manpower shortages (e.g., summer vacations, retirements) and the officers' perception of unduly high costs associated with the secondary citation of the SB violation.

Midway through the project, the Superintendent retired and was replaced by the captain, who had over 20 years of experience at Tredyffrin. The captain was very familiar with the project and strongly advocated the safety benefits of occupant protection. When NHTSA and contractor staff visited, bringing along a police lieutenant (from a jurisdiction with high levels of OR enforcement), the need for more OR enforcement was stressed. The captain (now Superintendent) agreed that OR enforcement was important and immediately intensified the enforcement activity. The new Superintendent assigned a lieutenant to oversee the effort. The lieutenant reinforced OR enforcement directives, conducted and assisted in refresher training, and took time during roll calls to remind the patrol sergeants and patrolmen that they must enforce the OR laws and wear SBs.

A dramatic increase in OR "contacts" occurred. The Superintendent and lieutenant appeared to be working together to assure officer commitment. They frequently checked with staff about activities associated with the enforcement and PI&E projects. The records' staff of the department had to give the Chief and lieutenant monthly updates of OR enforcement "contacts." This strong commitment from the Superintendent and regular feedback between the lieutenant and the officers conducting the OR activities was instrumental in improving OR enforcement and maintaining PI&E activities.

In Haverford, the Chief delegated the project activities to the lieutenant in command of the patrol division and highway safety unit. Under the lieutenant's command, enforcement directives were issued to the patrol staff. In addition, PI&E activities were delegated to the highway safety unit's senior officer, whose regular duties already included community relations activities, training, special projects, and routine traffic patrol. This officer was also the Occupant Protection, Usage, and Enforcement (OPUE) instructor. Even though the Chief felt strongly about occupant protection, especially after he was involved in a serious car accident at the beginning of the project, he did not follow the progress of the project closely enough to monitor or note the low level of OR enforcement, and he did not keep track of other activities. He primarily relied on the lieutenant to manage the program.

When NHTSA and contractor staff as well as the aforementioned police lieutenant held a mid-project meeting with the Haverford police department to promote greater OR enforcement, the Chief and lieutenant acknowledged that more OR enforcement would increase the probability of project success, but did not commit to the OR enforcement levels suggested. They cited the secondary enforcement aspect of the law (which is discussed later in this chapter) and the manpower shortage. Although this shortage would reduce the number of citations if all patrol officers were committed to OR enforcement, the citations would still have been regularly issued—and they were not.

The contrast in project management styles between and within the two police departments demonstrated what style was effective in promoting OR enforcement. The top-ranking officers needed to show frequent and strong interest in and commitment to enforcement of the OR law. A "hands-on" style of senior management, which regularly monitored the enforcement, assisted on training and roll-call reminders, and personally recognized a good enforcement effort was needed to promote active OR enforcement.

Model Policy Guidelines

NHTSA and contractor staff suggested to the police that a successful OR enforcement and PI&E project would depend on following elements of the model enforcement policies being promoted by the International Association of Chiefs of Police (IACP), NHTSA, and the California Safety Belt Task Force (CSBTF). The IACP/NHTSA model enforcement project for occupant protection encompasses a set of broad activities for police, including:

- SB use by police.
- Training, which covers OR safety benefits and the need for enforcement.
- Guidelines for OR enforcement.
- OR enforcement programs and strategies.
- Comprehensive PI&E projects, which cover enforcement activities.
- Reward projects for officers.
- Reward projects for motorists complying with OR laws.

The CSBTF model enforcement project is very similar to the IACP/NHTSA model in stressing patrolmen training, SB use by police, and enforcement goals. However, the CSBTF model also provides guidelines for incorporating more specific elements into OR enforcement projects and strategies (SB citation considered a hazardous citation, citation information card, and citation number printed on the citation form) along with PI&E programs (public information and SB usage emphasized in crash reporting).

Both Tredyffrin and Haverford police found it relatively easy to follow most elements of the IACP/NHTSA model project, including training, SB use recommendations, enforcement projects and strategies, and PI&E (internal and community) activities. In the CSBTF model, the police were readily able to follow suggestions about the citation information card, the public information card, and the report on SB usage at crash scenes. Both police departments thought adding a category for OR citation on the standard traffic citation form would help reinforce the project. However, forms could not be developed in time for the intervention projects. Haverford developed its own OR warning form, as a way to remind the patrol officers to make OR "contacts." Neither department followed the policy decision to promote the enforcement effort by marking SB violation citations as "hazardous." They stated that it was up to Pennsylvania Department of Transportation to change the law and make the SB violation primary.

The next topic headings represent the areas chosen for evaluating the effectiveness of the key model elements: SB use policy for police, police training, enforcement, and PI&E activities.

SB Use Policy. Both departments followed the statement, purpose, and procedures of the model SB use policies required for police department employees, with the exception of IACP/NHTSA's guidelines that call for restraint of all prisoners. Both departments put an exemption in their policies and let officers decide whether to use SBs on a person under arrest, especially if the person is violent or combative and places the safety of the officer in peril.

Officers were given department SB use policies during training and frequently reminded about the policy's intent during subsequent roll calls. The policies set the groundwork for police employees, reinforcing the notion that officers are community role models and must set an example by wearing belts themselves if they are going to enforce the OR laws. The police chiefs were very receptive to this reason for having a department SB policy. Observations on four occasions found that compliance with the policy was 100 percent in Tredyffrin and 87 percent in Haverford. The majority of the officers seemed to accept the policies and follow them. Specific sanctions for officers not following policy were never clearly identified. Tredyffrin mentioned giving suspensions. The police probably handle each incident on a case-by-case basis.

Training. Both police departments participated in a state-organized and taught NHTSA OPUE training project and conducted in-house training using the NHTSA OPUE curriculum. Three certified police instructors attended a 2 1/2 day NHTSA OPUE training course prior to the intervention projects.

NHTSA/OPUE Workshop. The three instructors from Tredyffrin and Haverford provided their opinions on the NHTSA OPUE training project. On a positive note, the officers stated that the workshop thoroughly explained the unique features of Pennsylvania's SB and CSS laws, especially the secondary enforcement aspect of the SB law and the fact that children (age 1 to 4) may legally be restrained with an SB in the back seat. They thought that the workshop provided the basic information and instruction necessary for training their staff, and they agreed that the companion videotapes were excellent. On the negative side, the instructors wanted more detection techniques for identifying violators of the OR laws, more time to practice the instruction exercises, more training on how to instruct fellow officers, more coverage on the costs associated with a secondary violation, and more coverage on CSS types, identification of the Federally approved seats, and more specific issues, such as appropriate ages for each type of seat. Their criticisms of the training might explain some of the resistance to higher levels of SB ticketing.

In-House Training. The training conducted at each police department was evaluated by questioning the training officers and observing a training session. The evaluation covers content of the training material, scheduling, and effects of the training on enforcement activities.

Both departments' instructors followed the NHTSA OPUE training course content and material. Accompanying each chapter of the Participant Manual were related video segments. Instructors stated that the most important aspect of the training involved educating the officers on how to look for SB and CSS violations (e.g., position of the SBs and CSS harness not over child's head). Since both departments were not regularly enforcing the OR laws, the instructors felt that the patrolmen needed this guidance. Instructors expressed more willingness to conduct the training, given the proper resources and tools. The instructors felt that training the officers and having an adequate supply of instructional materials, education aids (e.g., audiovisual slides, videotapes), and handouts (e.g., the Participant Manual) facilitated and helped deliver a more effective training program. They strongly believed that the training reinforced policy directives and other "motivational" information provided to the officers. For instance, in Tredyffrin, officers learned during training that baseline results showed the majority of the community in favor of the OR laws.

Throughout each year, both departments conducted frequent training sessions (in-house and at the police training sites) on all aspects of police work, including enforcement techniques and specific community problems. By the beginning of the project, the police departments had prescheduled other training sessions and thus could not accommodate OR enforcement training immediately. Fortunately, Tredyffrin was able to fit in the OPUE training within 2 months after the instructor had gone to the

workshop. Haverford had already committed to other training, firearms practice, vacation, and community programs, so they were unable to schedule OR training for most patrol officers until a few months after PI&E activities.

Once training was scheduled and conducted, the patrol staff was given the order to implement OR enforcement "contacts" (written warnings and citations). Increases in OR enforcement "contacts" appeared in the month following Tredyffrin's training (March 1991) and the month during Haverford's training (July 1991). This result was anticipated, even expected. In Tredyffrin, training did not adequately address the ticket-cost issue. The patrol officers initially gave mostly citations; but after 2 months, the court administrators informed the department that the officers charged only the $10 fine—not the additional $41.50 in State costs—for SB violators. This cost issue affected the direction of the enforcement project in that officers were more reluctant to give SB citations than written SB warnings. By the summer, OR enforcement "contacts" had dropped. Many reasons were cited (as explained later in this chapter).

By early fall, with a new stronger executive direction, the officers received additional refresher training; and OR enforcement "contacts" increased dramatically. Refresher training was apparently instrumental in improving OR enforcement "contacts." Even though many "contacts" were written warnings (probably due to directives integrated into training), by the end of refresher training, the level of OR "contacts" exceeded 20 percent of total citations. In Haverford, the training program emphasized that the choice between a citation and a written warning would be at the discretion of the officer. There was no push for citations. The direction from the top leaned toward warnings, with the department even implementing a customized warning form. With this form in place, the OR enforcement effort was expected to be predominantly warnings, and it was. Nevertheless, OR enforcement "contacts" did dramatically increase immediately after training. The instructor conceded that refresher training should have been conducted from the middle to the end of the project to improve the "contacts" level, which had dropped. In Haverford's situation, the training schedule had to be determined almost 6 months in advance of project start-up, because of unforeseen training and schedule commitments that had appeared in the interim.

Enforcement

Both police departments acknowledged that enforcing SB and CSS laws would increase CSS use (and proper use) and general occupant protection. Issues affecting the enforcement effort by both departments are evaluated here; they include the effects of the State law, enforcement methods, OR "contacts" (citation vs. warning), and motivation techniques.

State Laws. The police expressed several concerns or problems with enforcement and ability to write a high level of tickets on Pennsylvania's primary CSS law. First, only limited opportunities are available to cite violators since drivers with young children usually drive during the day—often only between 9 a.m. and 4 p.m. Second, the police were able to identify only gross misuse, such as a toddler standing up in a seat. It was highly unlikely that CSS misuses obstructed from view would be noticed during routine patrol. Third, the law is vague in guidance on the proper methods of restraining children in CSSs. The law mentions that drivers need to put children in "appropriate restraint systems" (infant or toddler/convertible seat?), an "approved CSS" (Federal standards?), and "seat in any seating position equipped with an SB in the vehicle" (driver will attach CSS to SB?). The law does not mention the harness being in place or the child facing the proper direction, nor does it offer that the CSS needs to be attached to the vehicle's SB with correct routing. Thus, the law does not really provide enough guidance for proper use of CSSs in addition to no clearly established guidelines for enforcing the law. Finally, the weak structure of the law, which allows children (ages

1 to 4) to be restrained by an SB in the back seat is not conducive to detecting CSS law violators. If the law required children (ages 1 to 4) to be in a CSS in the back seat, officers on routine patrol would be more likely to detect young children (birth to age 4) not restrained in CSSs.

From the beginning of the project, the police expressed concern that the secondary enforcement status of Pennsylvania's SB law would inhibit its enforcement. Numerous discussions that the contractor and NHTSA officials held with both police departments emphasized that secondary SB laws are enforceable and effective, by citing California and Maryland State police activities. Nonetheless, the departments were convinced that the secondary nature of the law made it weak, and this belief would be a factor in reaching suggested project enforcement levels (20 percent of all citations). The police felt that two factors inhibited higher enforcement levels during the project: (1) the secondary law and (2) the additional costs associated with the secondary law. First, the ranking officers felt that a primary SB law should be established. The law inhibits high levels of SB ticketing due to the need to stop the driver for a primary violation, first. This situation reduces the opportunities to cite a large number of violators for the SB law, especially in a community setting as opposed to turnpikes or interstate roads. The message relayed to the officers from their superiors stressed the importance of enforcing the laws for the community's benefit. The superiors stated that the State diminishes the SB law's importance by (1) making it a secondary law, (2) making the actual fine ($10) too low, and (3) not making it a moving violation. For all three reasons, their officers have mixed feelings about enforcing the SB law. The superiors need to convince the officers of the importance of enforcing the SB law for their community's safety benefit, despite the State's "message." In addition, the superiors strongly felt that the additional costs ($40) associated with the SB citation fine inhibited higher enforcement levels. Many patrol officers were reluctant to issue SB citations because of the extra costs associated with the fine, especially after they had given a motorist a citation for a primary violation with its own fine and costs.

One of the departments firmly stated that the total cost associated with an SB citation was a major reason why patrolman gave out more warnings than citations. One patrol sergeant stated that his officers did not like to include the extra citation (about $50) while giving the motorist a primary citation costing about $85 to $150. He added that more citations would have been written if there were not additional costs associated with the fine. The extra cost attached to an SB citation was a sensitive issue with both police departments. One patrol sergeant suggested that the police might enforce the law with all the extra charges if the additional money went to a law enforcement fund instead of emergency medical service (EMS), insurance, and court funds, which do not directly affect them.

Enforcement Techniques. Both police departments utilized routine patrol and selective enforcement during the project. On routine patrol, both departments used only 5 to 10 patrol vehicles on the road (and only 1 or 2 specifically assigned to traffic enforcement) on each shift. This relatively small number of patrol units does reduce the opportunity to enforce the OR laws, since many patrol officers are involved with community calls that take them away from the traffic environment. In small communities, OR enforcement using only routine patrols may not be enough. Dedicated traffic patrol units and selective enforcement are probably needed to increase OR law ticketing.

Both departments believed that selective enforcement was also needed to complement routine patrol efforts. With each department already participating in selective enforcement, it was easy for them to integrate OR enforcement into their current selective enforcement project, to reduce speeding and DUI violators in their community. Selective enforcement efforts focus on specific violations. If

OR enforcement is a part of this focus, use of manpower resources is more efficient and the intensity of the OR enforcement activity expands.

Type of Enforcement "Contact". Written warnings for SB and CSS violators played a major part of both departments' OR enforcement effort. In fact, over 60 percent and 90 percent of all OR enforcement "contacts" were written warnings in Tredyffrin and Haverford, respectively. Stronger directives from the top command might have increased the ratio of citations to warnings. However, top command offered many reasons why the directives did not emphasize citations over warnings—or enforcement goals, for that matter. For Tredyffrin, it was very important that officers had complete discretion as to the type of OR enforcement "contact" they gave. In Haverford, the police wanted to start the project with a warning period, which probably motivated officers to give out more warnings. (As evident in the results, Haverford never really moved into a citation phase on the project.) Both departments were also very firm about not asking the officers to reach particular enforcement goals. They cited legal and practical issues. Local courts have declared enforcement "quotas" illegal. From a practical issue, the police kept mentioning that they did not want to "persecute" motorists with multiple citations or to write tickets for the sake of ticketing.

The intent of the warning system (to compensate for officer reluctance to give citations) was never fully implemented during the intervention period. Both departments envisioned a system of giving a motorist a citation on the second SB warning. However, police never formally adopted protocols to computerize or check the warning files. It would have been interesting to evaluate the effectiveness of this method. Maybe the ratio of SB citations to SB warnings would have been higher. The intervention period would probably have to feature more aggressive warnings and be longer (2 to 3 years) to assess the effectiveness of this method.

Motivation Techniques. Training, roll-call reminders, computer mail messages, citation information cards, and easy-to-use customized warning-notice pads were used to promote the enforcement effort of the project. During roll call, patrol commanders were easily able to give verbal reminders about the enforcement effort to their officers and use the video segments from NHTSA's 1991 "Operation Buckle Down Roll Call" program. The videos provided good promotion of OR enforcement without the reminder coming directly from the patrol commanders all the time. Tredyffrin also used a computer (E-Mail) message system to remind patrol officers to enforce the OR laws. Each officer started a shift at the station checking for messages on a computer. This was a quick and effective way to reach every patrol officer regardless of shift.

Both departments also used the citation information cards (developed by Keystone Safety Belt Network [KSBN]) which were given out at training. Most officers put these cards under the visors of their patrol cars or in the briefcases they carried on patrol. The patrol commanders were in favor of the card system because it provided them with easy access to information needed to write up an OR citation. How often each officer referred to the card was not documented. Nevertheless, both departments certainly wanted the cards and received enough for all the police and new recruits throughout the project year.

Another motivation technique was the customized OR warning notice pad printed in Haverford. Each officer received a pad to carry on patrol, with the intent that warnings could easily be written for both SB and CSS violators. With the warning pad in place, a higher level of warning was anticipated, but never achieved. Certainly, if officers had more commitment to conduct even these warnings, the warning pads would facilitate OR warning "contacts."

Project and Events

Both police departments participated in many PI&E activities throughout the course of the project. Both departments found it easy to conduct these activities since they were able to integrate CSS and SB issues into their regular community safety programs. (Since both departments had very active highway safety programs, they were probably receptive to participating in this project in the first place, as well as to conducting programs specific to CSS use and proper use educational objectives.) Both departments had a good relationship with the community businesses, civic organizations, libraries, and schools; and this partnership facilitated obtaining the use of sites for projects, advertising, and other project-related activities (e.g., distributing literature and obtaining sites for CSS inspection clinics).

Both departments were easily able to conduct press conferences, and then provide press releases and newspaper coverage, information booths at health and safety fairs and at sidewalk sale events, distribution of educational material at events and programs, programs at schools, day-care centers, community centers, and businesses.[17] They were accustomed to using these PI&E activities for other community relations and safety programs. Both police departments received assistance from local and regional highway safety groups in the form of education and promotional material, press releases, lectures at school/day-care programs, and CSS inspection clinics on proper use. Without their external assistance, newspaper coverage and the number of program activities would probably have been less frequent, since the police tend to schedule many of their regular activities during the spring and fall (probably when manpower is at its peak), leaving inactive stretches of time over the summer and winter. To increase the probability of public awareness of enforcement and higher OR use and proper use, it was important to conduct activities and provide press coverage fairly regularly—at least once a month.

The police were quite willing to review, revise, and submit ready-made press releases to the local newspapers. They were not eager to write the original releases themselves, but gladly received press releases from contractor, NHTSA, and PennDOT. However, they were eager to participate in media photo sessions, which did seem to increase the probability of newspaper coverage. During the course of the project, local newspapers printed over 80 percent of the press releases that the police gave them. It is not surprising that many State and Federal OR programs contain press kits and sample press releases to use for "Child Passenger Safety" or "Buckle Up America" weeks, knowing that the police have a higher probability of submitting press releases when given a draft copy. Also, the press probably prints more press releases given to them by police than by other safety groups.

Both police departments also incorporated elements of NHTSA's 1991 "Avoid the Summertime Blues" program and the 1991/1992 "Operation Buckle Down" program. The police were willing to incorporate selected elements of these national campaign activities into the project. They might have incorporated more of the elements if program packets had been provided earlier (6-month lead time).

The police departments are pro-active about highway safety programs and thus receptive to integrating OR programs into their regular PI&E activities. Departments with these programs in place usually have a seasonal schedule when they do school and community programs, holiday events, sidewalk sales, and health and safety fairs. In addition, businesses and schools schedule these

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[17] For the most part, regional TV coverage was not used in the project because of its potential influence on the comparison site. All of the sites were located within the greater metropolitan Philadelphia broadcasting area.

programs at the same time every year. If a department has a regular community program already in place, then additional manpower is probably not an issue for integrating an OR program. However, it may be unrealistic to expect the police to conduct an intense PI&E OR effort without some State, or local and regional, highway safety groups' support (such as assisting in programs and providing press releases) and resources (e.g., providing them with primarily educational material and promotional items).

STATE AND COMMUNITY INVOLVEMENT

State Resources

Of great importance to the police was the availability of the State's educational materials (e.g., CSS brochures and posters) and promotional items (e.g., "Buckle Baby Right" stickers and "We Love You: Buckle Up" teddy bears). The police thrived on this material, distributing it during presentations. For the most part, both police departments were already aware of the resource material available from the State. As part of their ongoing community responsibilities, the regional comprehensive highway safety groups had made efforts to inform both police departments of available PI&E material to use in their highway safety projects. When the project started, the regional groups, who were eager to cooperate, provided an almost unlimited supply of the State's CSS and SB educati nal and promotional material.

Community Resources

Throughout the project, community groups were willing to help the police by participating in the project when asked. The police did not expect them to take a more active role, and the project did not determine how involved these groups could have become, given their own limited time, resources, and agendas. The project was not able to find community volunteer groups willing to take the lead in the community PI&E effort. The police primarily conducted all of the PI&E activities and called on community groups for their assistance as needed. The project demonstrated that the police needed some state/community asistance to conduct the PI&E component of the OR enforcement project and took advantage of community assistance.

The contractor's discussions with ranking officers from both police departments brought out that support from local government officials and judges was important, but these officers did not feel that it was a critical issue. Both department chiefs were given full decision-making authority in terms of enforcement methods for the benefit of the community.

To gain support for the project, the Chief and Superintendent of each department presented the scope of the project to the commissioners at township board meetings. They described the safety benefits for the community, and the project was accepted by the commissioners. Discussions with the police affirm that the commissioners have very rarely, if ever, refused to support police projects focused on protecting the health and welfare of residents.

In the beginning of the project, the police did not actively pursue efforts to gain support from the judges. In Tredyffrin, the judge was already active in the area of occupant protection and had previously participated in many promotional events supporting OR protection. In fact, he was one of the first judges in the State to initiate the passing of Pennsylvania's CSS enforcement law in the early 1980's. With this fact in mind, the police did not feel the need to confer with him at the start of the project. Examining the disposition of OR citations, the police learned that less than 10 percent of the

citations were dismissed. Thus, it appeared that the court was not visibly opposed to the enforcement effort. (In many cases, violators paid the SB fine and still pleaded not guilty to the primary offense. These motorists apparently do not know that the OR law dismisses the SB violation if the motorist is not guilty of the primary offense.) In Haverford, the command officers felt that it was unnecessary to seek support from the judges. They felt that their job was to enforce the law and write citations, regardless of the position of the judges. Because of the limited number of citations written, the project was not able to demonstrate the effect of this police position in the courts.

CONTRACT SUPPORT

The contractor monitored, evaluated, and provided technical assistance to the police in the demonstration project. Assistance, especially for PI&E activities, was given throughout the course of the project—when the contractor perceived that the public needed more exposure to the project. NHTSA's project manager and offices of Police Traffic Services and Traffic Safety Programs also provided technical assistance in the areas of training, site selection, field surveys, scheduling, PI&E messages, distribution of promotional campaign material, and meetings with police to promote the enforcement aspects of the project. It was strongly felt by the contractor that the police would not have reached the level of intensity with PI&E activities or enforcement without regular persistence by a project "facilitator."

Midway through the project, the NHTSA project manager and a law enforcement officer on loan from NHTSA's Police Traffic Services visited the police to promote the project and motivate both police departments to increase their level of ticketing. The meeting may have had an almost immediate effect on at least one of the departments. OR citations and warnings improved dramatically. In the month following the meeting, OR enforcement "contacts" rose to over 20 percent of all citations and over 70 percent of all "moving" citations. In addition, this level was maintained throughout the remainder of the intervention period. Using experienced law officers to promote OR enforcement to other police departments might be one of the strongest influences in getting community police department commitment to conduct OR enforcement programs.

GENERAL PROJECT ISSUES

This section discusses uncontrollable elements of the intervention activities and data collection effort that might have reduced the desired intensity level of the project, possible effectiveness of CSS use/proper use and driver SB use, as well as the optimum conditions for conducting observations and driver interviews.

Intervention Activities

The relatively high level of enforcement anticipated for the project was not reached, despite efforts by the contractor and NHTSA to give clear direction about project objectives, provide instruction and training resources, and recommend levels of OR enforcement for changing CSS use and proper use and SB use. Several uncontrollable reasons for not reaching the level of enforcement sought were (1) aspects of police management, (2) weak state OR laws/statewide activity, (3) level of training, and (4) exposure in the community.

Management styles of police departments are different, so it was difficult to ascertain how well OR enforcement objectives would be carried out. Based on project results, strong commitment from the top command appears necessary, including regular directives and monitoring enforcement activities, in order to maintain expected OR enforcement levels. Top command also gave the patrol officers total discretion in deciding whether to write warnings or citations for OR violators. If officers were already reluctant to give OR citations (despite training messages on the importance of OR enforcement), the directive that gave them a choice may have influenced them to opt for warnings more often than citations, which was the case. In addition, both police departments felt strongly that all OR enforcement "contacts" (whether warnings or citations) relayed a message to the community: The police believe that OR use is important. This philosophy prevailed in both departments. Finally, an unexpected change in leadership also occurred in one of the departments. The retiring Superintendent was probably so busy with other issues during the transitional period that the OR project was not his top priority. As shown by the results, the new command was much more committed to OR enforcement.

The weak OR laws also contributed to a lower than expected level of OR enforcement. The contractor was unaware of how secondary enforcement or the additional costs associated with it would affect enforcement. In addition, without any other strong police OR enforcement activities occurring statewide, no case studies could be followed. Many officers expressed reluctance to give SB citations because of the extra costs associated with the fine. One of the command officers cited this factor as the key reason why police gave more SB warnings than citations.

Training sessions may not have provided enough emphasis on giving out citations. This situation was not anticipated. Training instructors probably included discussions on the option of warnings because top command gave them directives. A stronger emphasis on citations was needed.

In the area of exposure, the community police may not have had the opportunity to write a lot of OR citations. As observed during the project, among the police on routine patrol, only a few patrols are assigned to traffic enforcement. This situation certainly reduces the opportunities for writing a lot of OR citations. Comparing local community police OR enforcement expectations with the results achieved by State police does not work because State police are devoting more time to traffic enforcement and are not really influenced by the community.

Site Selection

Selecting communities for the project was a difficult task, with all types of uncertainties. Project success depended on police and community willingness to participate and commit to many intervention activities without the promise of financial assistance. The contractor had to request this commitment even though neither the contractor nor the police could know what would occur during the course of the project, for example, manpower shortages and other unexpected reductions in resources, which could affect OR project activities. The effort had to be supported by local community resources and cooperative shopping centers (for observation sites). There was no way to know CSS and SB use before baseline, yet finding three sites with similar OR compliance levels was highly desirable. Proximity to the contractor was also important because frequent visits would be essential.

Target Group Characteristics

Changes in CSS use and proper use plus OR use were likely to have been associated with the intervention project, not with extraneous variables related to nonlocal population groups or socioeconomic differences. The project carefully documented similar characteristics (e.g., driver residency, trip behavior) of the target population observed in the shopping centers, across sites and intervention phases, and the sociodemographic characteristics of all three communities.

The chance of observing a target vehicle in a shopping center was always random. Because the sites were community shopping centers and not big malls, the probability of local shoppers was anticipated to be high, and it was. Not being able to observe every target driver and child passenger at the shopping center probably did not influence the study results. Observations were not conducted at night, and contract funding limited "blanketing" the shopping centers with data collectors in an effort to observe every target vehicle.

Post-Intervention Activities

Since the end of the project, OR enforcement and PI&E activities have continued, and even increased, in both communities. The police department in the comparison site (Abington) has also started an OR enforcement project. Their effort involves giving first-time violators the chance to pay the fine or go to a highway safety class. In Tredyffrin, OR enforcement "contacts" alone almost doubled the entire number of "contacts" during the intervention period. In addition, the police have implemented a traffic safety unit (with specially marked patrol vehicles) which conducts traffic enforcement only. PennDOT and NHTSA have recognized its efforts, and the department has received NHTSA's 70% Plus Honor Roll Award, two enforcement awards from PennDOT, and NHTSA's "Buckle Up America" enforcement award, which was presented at the 1992 Governor's Highway Safety Conference. In Haverford, the police have continued with CSS PI&E efforts. They have stopped cars, passed out buckle-up bears to toddlers in CSSs, given warnings to drivers violating the OR law, and published local newspaper articles concerning the effort. In addition, the police have been very active in promoting CSS use through area libraries and day-care centers, where they have conducted numerous programs. The police department has received NHTSA's 70% Plus Honor Roll Award and accepted two OR education awards at the 1992 Governor's Highway Safety Conference.

Pennsylvania strengthened its CSS law in October 1993. The law requires children from birth to age 4 to be in a CSS always, whether they are in the front or back seat. The law also makes all drivers, including non state residents, responsible for all vehicle occupants under the age of 18.

8. RECOMMENDATIONS

This chapter presents recommendations for State agencies, community-based police departments, and other community groups (e.g., civic, school, business) interested in promoting public compliance with occupant restraint (OR) laws requiring child safety seat (CSS) use, full protection for young children, and safety belt (SB) use. The recommendations are also aimed at promoting OR enforcement and public information and education (PI&E) about enforcement efforts and CSS issues. The basis for these recommendations is the observed effectiveness of several intervention elements used by the police, State-supported highway safety groups, and the community during the demonstration project. Other recommendations emerged from consultations with other police officials, government agencies, nonproject-related private and State-supported highway safety groups, and researchers.

STATE AND STATE-SUPPORTED HIGHWAY SAFETY GROUPS (LOCAL AND REGIONAL)

As the demonstration project showed, State agencies and State-supported highway safety groups can play a significant role in supporting OR enforcement projects at the community level. Their guidance and assistance encourage and motivate the local police not only to see the value of OR enforcement projects but also to realize that these projects can be easily conducted within the resources of the department and community. State groups can assist the police in at least the following ways: consultation, participation, funding support, evaluation, and recognition. Before contacting community police, State agencies should be knowledgeable about OR use rates and accident data in the community, as well as State OR laws and their shortcomings, be aware of and be able to coordinate Federal or State-operated OR training workshops in their State, be aware of State associations (of police and judges, for example) that can assist and cooperate in OR projects, and be able to provide PI&E material and toll-free hotline numbers.

Consultation

To promote OR enforcement projects, State and law enforcement officials should start by visits with local police departments. The Chief and ranking officers responsible for traffic enforcement should attend. At a minimum, the meeting should cover commitment, model projects, enforcement and PI&E strategies, assistance, and project evaluation.

Commitment. At the beginning of the meeting, officials must emphasize that the key to an OR enforcement effort (as in other traffic law enforcement efforts) is an ongoing commitment by the Chief and top ranking officers. The police must believe in the safety benefits of ORs and must agree to enforce the OR laws. Their commitment manifests itself by delivering internal directives or memos to the officers, establishing and implementing recommended model OR enforcement project guidelines, incorporating extensive OR training into the officers' overall training project, conducting periodic reminders, evaluating the enforcement effort and its safety consequences, and recognizing enforcement, compliance, and safety achievements by the department.

Model Internal Programs. The State groups should encourage adoption of model OR enforcement policy guidelines developed by well-recognized law enforcement associations. These guidelines can help to direct the activities and policies that make OR enforcement successful in the community. At a minimum, the model policy should include guidelines for directives, in-house SB policies and compliance checks, training, establishment and implementation of OR enforcement goals

and strategies, enforcement reminders and tools to encourage enforcement, an active PI&E program plan that publicizes enforcement, periodic evaluation of the OR enforcement effort, public perceptions, OR compliance, and safety consequences.

Enforcement/PI&E Strategies. The meeting should focus on determining realistic OR enforcement goals for the police department. The State groups should back up these suggestions with documented case studies of successful OR enforcement and safety efforts in communities similar to the ones in the project. The case studies need to demonstrate that similar communities have reached OR enforcement goals and safety benefits. Descriptive information should include socioeconomic and demographic characteristics of a community and its traffic patterns, size of patrol and dedicated traffic enforcement units, and level of effort and enforcement techniques. The results of the demonstration project certainly suggest that community-based police departments can achieve OR enforcement "contact" (citations and warnings) levels above 10 percent of all citations given, with department staff resources (i.e., no overtime hours).

Technical Assistance. The police need increased awareness of the support and resources available to them at State, regional, and local levels. Available State-provided services might include police trainers, speakers, PI&E resource material, mini-grants and application assistance, and CSS inspection clinics.

Ev luation. Periodic evaluation of the OR enforcement effort should also be available to the police. The evaluations of citation levels, convictions, public opinion, compliance levels, and safety benefits give the police more motivation to conduct the OR enforcement project. From conversations during the demonstration project, investigators learned that the police were very interested in the evaluation. They reported that they rarely learn about the effectiveness of their projects.

State Participation

State and State-supported (local and regional) highway safety groups can actively promote OR enforcement projects by local police. For example, they might help with program development, resource gathering, preparation of press releases, and distribution of education and other resource material; participate in PI&E activities and special community events; and assist in project evaluation measures.

Program Development. Police need guidance on the suggested level of OR enforcement, press coverage, and community outreach effort (necessary to maintain awareness in the community), as well as the frequency of project activities to be conducted during the project. The State groups can help police learn how routine and selective OR enforcement projects and PI&E activities can be integrated into their current traffic enforcement and community safety projects. State officials should allow 6 to 12 months for OR enforcement and PI&E projects to become fully integrated into routine police department projects.

Resources. If police are willing to be involved in OR projects, they will probably be eager to distribute press releases, literature, brochures, and other free promotional items. On their own, the police would probably write only a few original press releases. To increase the probability of media exposure for any OR enforcement effort, State officials should provide a series of prepared press releases, even tie in coverage about seasonal and national or State OR projects, which is currently done in some states during Child Passenger Safety Week and national "Buckle Up for Safety" Week. The police are willing to edit the copy to localize it, match it with their policies, and report their enforcement and safety achievements.

The police like to complement enforcement programs with educational material, which they can distribute at schools and day-care centers, display or exhibit booths at safety fairs, and other special events. The State can help by informing the police about available resources, the locations of supplies, and expected delivery time. Some States offer toll-free telephone lines to order supplies.

The State can also inform the police, in advance, about special promotional items relating to "National Child Passenger Safety" or "Buckle-Up America" weeks and holiday seasons. Police need to receive advance notice (6 months) of these events so that they can integrate this material into their OR program and the State's OR activities at these times.

Activities

States need to make police departments aware of opportunities to participate in applying for national and State recognition awards related to OR safety programs and enforcement efforts. . Local and regional State-supported groups should also assist their police departments in PI&E activities. Activities that primarily deal with child passenger protection might involve child passenger safety experts from State-supported highway safety groups in conducting CSS inspection clinics and responding to specific parental concerns. The police cannot be expected to know the specific details on CSS models and the fine elements of all the proper use measures. The presence of CSS experts at these police-sponsored events provides support that also motivates the police.

Funding Support

States should help the police to compete for the State Highway Safety Office's available funds. They can use this funding for PI&E materials, televisions and VCRs (to show educational videos at public events), and display props (e.g., CSSs) to promote the OR effort. States should help strengthen competitive applications for limited funds and encourage the routine enforcement of OR without extra manpower funding.

Evaluation

The States are unlikely to have adequate resources for full-scale evaluation of OR enforcement efforts at the community level. However, when States conduct SB observations, they should provide the police with available data from their communities or nearby areas of the county. This information can give the police some idea of the current OR use trend in their communities and can provide target compliance levels or ongoing ways to measure the local project's success. States could also offer police and interested local groups the training to conduct and evaluate their own surveys of OR use and community attitudes, awareness, and knowledge.

The States should periodically contact police departments to monitor the progress and status of the OR enforcement effort. This contact can be as simple as a telephone call or letter requesting the number of OR enforcement citations and warnings over a determined time period. This monitoring not only gives the State a better idea of OR enforcement levels around the State, but also promotes OR enforcement by periodically reinforcing its importance at the community level.

Recognition

States need to make police departments aware of opportunities to participate in applying for national and State recognition awards related to OR safety programs and enforcement efforts. The police take these awards seriously and can use them to motivate future efforts in the OR enforcement area.

Future State Directions

At the State level, numerous ways are available to improve OR enforcement efforts and benefit local police, for example:

- Implement stronger SB enforcement programs.
  The probability of a child being properly restrained is much higher when the parents/drivers are in SBs.
- Establish primary SB laws.
  Police appear more willing to enforce SB laws when they are primary. However, until State primary SB law is passed, states can improve SB enforcement training; make ticketing a prerequisite for grant funding on corridor safety projects, blitz projects, and other selective enforcement programs; and encourage local jurisdictions to enforce SB laws under municipal ordinance.
- Establish stronger fines for SB and CSS laws.
  If the fines are higher, the police and drivers will perceive the OR violation as a more serious offense. States with secondary SB laws need to implement fine-only costs. In the project, the police were reluctant to enforce the secondary SB law because of the additional state costs (catastrophic auto insurance [CAT] fund, emergency medical service [EMS], and judicial computer program funds).
- Encourage secondary enforcement for all vehicle stops, not just for moving violations.
  This promotes higher levels of OR enforcement.
- Identify and publicize positive enforcement examples and techniques from other States or in-State jurisdictions.
  These examples can be given to police as examples of what can be done in similar communities without external funding resources.
- Print the OR law citation number on the standard traffic citation form.
  Develop ticket-processing procedures that allow OR citation using the same ticket form as the non-OR citation. Police are more apt to enforce OR laws if the citation codes are printed on the ticket form for easy checkoff.
- Implement stronger occupant protection laws for toddlers.
  Full protection for children under age 4 (or under 40 pounds) can only become a reality through a properly written CSS law, which covers full protection for children. Many States have weak CSS laws (e.g., toddlers may be restrained in SBs in rear seats).
- Raise the standards for recognition of OR enforcement efforts.
  Awards for OR enforcement efforts should acknowledge police who have reached or surpassed recommended levels of enforcement citations. Programs of PI&E activities or warnings should receive awards only if they achieved very high compliance or safety benefits.
- Inform the public about OR enforcement programs, proper use, and "full protection."
  The general public should become aware of the provisions of SB and CSS laws (including costs), OR enforcement efforts in the community, proper SB and CSS use, and "full protection" that exceeds State laws.

POLICE

Local police departments must integrate management and patrol officer commitment, training and motivational techniques, enforcement and PI&E strategies, evaluation and recognition, and long-term program planning, in order to have successful OR projects in their communities.

Commitment by Management and Officers

Commitment from top-ranking police officials and officers is essential. The police must be willing to undertake and sustain an enforcement and PI&E effort that goes beyond a one-time event. Model OR program elements should be followed. This commitment sends a clear message to the patrol officers about the seriousness and intent of the OR enforcement.

Training and Motivational Techniques

Many police enforce the OR laws infrequently and know few effective ways of detecting or dealing with violators. Thus, police who do not regularly enforce OR laws need training in this area. One of the first steps in planning for an OR enforcement effort is to set up the training schedule. The police have a regular training agenda that oftentimes is already in place, sometimes 3 to 6 months in advance. In the planning of OR enforcement projects, training should be one of the first elements established and scheduled. NHTSA's Occupant Protection Usage and Enforcement (OPUE) training curriculum should be used for instructing police trainers on how to conduct training for the patrol officers. The curriculum provides all of the necessary training program materials. (Curriculum is described in Chapter 7.) Local/regional CSS experts should be involved in training to enhance child passenger safety issues covered. Initial training sessions should take 4 hours, and refresher training for all officers should be required 1 month after the initial training (2-hour session) and then once or twice a ear (1- to 2-hour session). Refresher sessions should be given in periods of lower-than-expected levels of enforcement.

Police departments should use motivational techniques to promote and maintain a high level of OR enforcement among the patrol officers. These techniques can be as simple as periodic (once-a-month) roll-call reminders, memos and messages put in staff mail bins or on computer E-mail systems, videotape segments of case studies or demonstration of enforcement techniques, and use of police citation information cards (simple instructions for the officer who is writing up an OR violation).

Enforcement Strategies, with Public Information and Education

An OR enforcement program should follow a multiple-strategy plan that implements several enforcement techniques (e.g., routine and selective checkpoints) and PI&E activities (e.g., newspaper coverage, safety-fair displays, school and day-care presentations, and CSS inspection clinics).

Enforcement. Despite the possibility that citation quotas are illegal, top command officers should provide directives suggesting reasonable goal levels. For community-based police, OR enforcement citations should make up at least 10 to 20 percent of all traffic citations given out during a period, if the police expect to increase CSS and SB use in the community.

The enforcement effort should involve more than routine patrol stops. Selective enforcement and periodic checkpoints should also be part of the program and should occur on a regular basis—at least once or twice a month, around holiday weekend periods (especially the summer holidays of Memorial Day, Fourth of July, and Labor Day), and during the first week of the new school year in September. Selective techniques usually center around enforcement of a specific violation, such as speeding and other hazardous moving violations on high-accident roadways. Incorporating OR enforcement in the "enforcement blitz" effort should require only minimal additional time. Checkpoints just to detect CSS and SB violators are also highly important. As the project demonstrated, checkpoints can be placed near exits of shopping centers. Violators of OR laws can be stopped as they are leaving the shopping center.

Enforcement efforts that include written warning activities need to identify and cite the second-time violators (i.e., those given a prior warning). Some police departments have traffic citation and written warning records on computer file. Patrol officers can be given a printout (names, license numbers, and dates of warning) that can be carried with them in the field, or they could call the computer file clerk at the station and check whether the violator was given a previous warning.

PI&E Strategies. OR enforcement activity should be complemented by strong PI&E to promote awareness of the OR enforcement effort, not just the benefits of OR. Media events and press releases should take place regularly throughout the year and possibly coincide with school programs and holiday events, health and community fair schedules, national and state Child Passenger Safety and Buckle-Up Weeks, and selective enforcement efforts. Police departments need to schedule special activities at least 3 to 6 months in advance, allowing enough time to develop presentations and other activities, acquire material and promotional items, adjust staff schedules, and prepare the media for upcoming events.

Media coverage of OR enforcement activities is vital to the success of the project. The police need to keep newspaper, radio, and TV reporters informed about events that they will be conducting and invite these reporters to attend. The media is usually very interested in any special enforcement effort. Police should meet with editors and producers to discuss each effort and ongoing program and to stress the importance of the enforcement effort and overall program. Press releases and articles about pr gram activities should be submitted, with photographs, to the newspapers at least once a month—before, during, and after short-term initiatives. Periodically, articles should appear about unrestrained crash victims; interviews with their affected families or testimonials by restrained drivers, police, paramedics, and others should also be considered.

Police need to use available resources to make the PI&E effort effective. An abundance of PI&E material on CSSs and occupant protection is geared for audiences of all types (mothers with young children, pregnant women, teenagers, adults, senior citizens, and others). This material is available through Federal, State, and local sources, and for the most part is free. The police should take advantage of this material for presentations (such as those at schools and day-care centers) and display-booth activities (such as those at health fairs). Material should also be given to drivers who are stopped for traffic violations, especially violators of the OR laws. On occasion, the police should also give educational and promotional items (such as "Buckle Up" teddy bears) to motorists and children who are properly restrained, as positive reinforcement. A public information card, such as the "Officers Love Kids Too" card described earlier, is a good example of an item that can be easily handed out to drivers during routine traffic enforcement activities in the community. The police should also develop their own PI&E materials for emphasizing the current enforcement effort. This material should emphasize the State OR laws, reasons for the laws, costs involved with ticketing, and ongoing enforcement activities.

The police should also be aware of and use organizations that serve the target audience groups. For instance, local chapters of the American Academy of Pediatrics (AAP) exist in practically every State, provide PI&E material appropriate for drivers of young children, and assist in project activities, such as CSS "proper-use" inspection clinics. Their services are usually free, and staff are eager to help the police conduct activities which focus on their common goals, that is, the safety and well-being of all children.

Child passenger safety program material should include the following elements: safety benefits of properly restraining young children and all occupants in vehicles, identification of CSS types, approximate age and weight requirements for each type of child restraint and safety seat, common

misuse characteristics, proper use characteristics, numerous suggestions on keeping toddlers restrained, child passenger and occupant protection laws and their associated fines and costs, enforcement efforts in the local community, and telephone numbers for obtaining additional information.

Program material comes in all forms, shapes, and sizes—from fact sheets and brochures to posters, stickers, pins, coloring books, teddy bears with "buckle-up" messages, bumper stickers, and other promotional items. All of this material should be utilized in spreading the message of CSS use and proper use. Police should allocate adequate storage space for material and keep at least a 6-month supply of material available. Once school and day-care centers are aware that the police conduct child passenger safety presentations, they will request presentations from the police.

Evaluation of Enforcement and Recognition

Despite limited resources to conduct comprehensive evaluations, most community-based police departments can participate in select evaluation measures. For instance, two or three patrolmen can conduct SB and CSS use surveys in about 1 hour during routine patrol. Observations of 100 drivers per site could take place at key locations (representative of community-traveled roads) every few months during the same time of day and day of the week. OR use records could also be made during selective enforcement programs. From these observations, the police can get a general idea of the impact of the program.

In addition, police departments should ensure that OR enforcement "contacts" come from more than just a few of the officers. Top command needs to make certain that all patrol officers are involved with the OR enforcement effort, as this practice will promote more OR enforcement.

Police department supervisors should also recognize patrol officers who regularly enforce the OR laws, especially by giving citations and taking steps to foster proper SB and CSS use. In-house and public recognition (such as in local newspapers) should be considered. Positive reinforcement for good effort motivates employees to maintain good performance.

Long-Term Program Planning

Long-term plans should start once OR enforcement has been integrated into the routine patrol duties; in this way, an expected level of OR enforcement "contacts" can continue. The plan should include a schedule for the following: training periods (refresher and new-hire sessions), periodic and seasonal selective enforcement events, press coverage to coincide with enforcement events, annually scheduled school and day-care as well as community and business programs, plus PI&E activities at community holiday and safety events.

COMMUNITY

Community groups interested in OR protection can work with police in developing and conducting program activities. Initially, community groups might conduct OR surveys, lend support for SB and CSS law enforcement, and secure community officials' endorsements. These groups can promote resident awareness by disseminating information about the OR laws, drafting press releases and articles about project activities, and even photographing events. Information and related PI&E activities should be routed through and reviewed by the police, who contact the media and submit cleared material to newspapers and broadcasters.

Other ways in which community groups and businesses can assist the police include providing free advertisements in the media and on billboards and message boards, donating giveaway prizes and CSSs for highway safety events, volunteering time for field surveys, assisting the police at special events, and permitting OR activities in commercial or organization parking lots.

In addition, community safety volunteers and advocates need to take a leadership role in police OR projects to facilitate PI&E activities and promote the need for active enforcement activities. It is unrealistic to expect every community-based police department to be able or willing to manage all of the project elements along with their other police commitments.

FUTURE RESEARCH/PROGRAM DIRECTION

Following many of the officially recommended guidelines for "effective" OR enforcement programs has contributed to the overall effort. Combinations of enforcement and PI&E activities were successful in increasing restraint use for toddlers and overall community SB use. However, because different levels of enforcement "contacts" (citations and warnings) and PI&E activities were implemented by each test community, it was difficult to assess which community's program was more "successful." Future demonstration programs should be directed toward determining which combinations are most effective for enforcement and PI&E activities.

Other research should be directed toward comparing the differences in OR enforcement program effort among community-based police from States which have primary versus secondary SB laws and states with strong CSS laws (i.e., they require full protection for toddlers in front and back seats of vehicle) versus states with weak CSS laws (i.e., toddlers can wear SBs in the back seats of vehicles). Police initiating OR enforcement programs in states with secondary SB enforcement laws may be more inclined to incorporate warnings in their programs. A future study could seek to better understand the long-term effectiveness of incorporating written warnings into an OR program (beyond initial implementation). Another study could evaluate effects of warnings-only versus citations-only OR enforcement programs.

Future programs need to consider what level of effort can realistically be expected from community-based police departments who are willing to conduct OR enforcement programs that integrate recommended high levels of PI&E activities. Can police be expected to submit frequent press releases and schedule frequent CSS clinics and other education programs without outside assistance and direction? The answer to this question and others may be linked to socioeconomic characteristics of the communities. Studies can compare community-based police OR enforcement rates with community characteristics (e.g., population, traffic patterns, OR laws, income, number of young children, residential-commercial makeup, traffic enforcement activity). The level of police effort devoted to OR enforcement programs may be associated with one or more of these community characteristics.

More research also needs to concentrate on the motivational aspects that affect police willingness to enforce OR laws. What are the underlying factors that are inhibiting community-based police departments from conducting strong OR enforcement programs? Are they related to characteristics of the laws, management structure, daily duties, training scheduling, aspects of routine enforcement, nature of detecting OR violators, or community influence? Even CSS law enforcement techniques need to be better understood. Can police be expected to enforce CSS laws beyond gross misuse detection (e.g., child not in a car seat)? Many CSS experts can cite more than a dozen misuse characteristics; however, is it reasonable to expect the police to detect and enforce the law on all types of misuse of which may not really harm child in some crash types.

National CSS usage data needs to be collected periodically. Identifying yearly trends, as well as comparing CSS usage (and proper usage) rates—between regions or states which have primary and secondary SB laws, as well as between states which have strong and weak CSS laws—may provide insight on how legal provisions affect enforcement and CSS usage/proper usage.

Surveys should also be conducted to identify the public's knowledge about its CSS and SB laws. From results of the project, it was learned that most violators of the SB law were unaware that they did not have to pay the fine until the primary offense was pleaded guilty. Also many parents or drivers were probably not aware of all the subtleties of the CSS law (e.g., age requirements and reduced fine with proof of car seat purchase). Survey results could show how well states are promoting OR use and enforcement efforts.

Other surveys or programs can investigate how older toddler (ages 3 to 5) passenger protection rates can be improved. Despite improvement (10 percent increase) in CSS use among older toddlers (ages 3 to 5) after the intervention programs, usage rate was still only 40 to 50 percent. How can these rates be elevated to the rates for infants and young toddlers (70 to 90 percent)? Can groups develop and evaluate better educational material and programs that deal with promoting full protection for older toddlers (ages 3 to 5)? This issue may be beyond the boundaries of enforcement efforts.

Finally, additional analysis is required on the data collected in this project. Further analysis needs to be conducted to determine the relationships of driver's SB usage behavior, demographic/travel characteristics, and responses to knowledge, perception of law, attitude, self-reported OR behavior, and awareness versus CSS misuse characteristics, as well as the relationship of CSS use and misuse with vehicle seat position, type of vehicle, age, weight, number of child passengers with CSS misuse and non-use and other CSS use characteristics (type of seat).

Answering these research questions can help provide NHTSA with the information and knowledge they need to promote more effective and worthwhile CSS programs that will reduce the unnecessary deaths and injuries of young children due to improper CSS use or lack of CSSs in general.

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APPENDIX A

SAMPLING AND STATISTICAL METHODOLOGY

The statistical analysis in the project involved computation of the proportion, the difference in proportions, and the associated confidence intervals. Accordingly, the following applications were considered in selecting an appropriate sample size:

	Application	Statistic
1.	Estimate the proportion during an observation period at an evaluation site.	P_1
2.	Estimate the difference in proportions between two observation periods at an evaluation site (e.g., 2 represents a post-intervention period and 1 represents a pre-intervention period).	$\Delta_1=P_2-P_1$
3.	Estimate the impact of an intervention as a double difference between two observation periods and between the intervention and comparison sites (e.g., T represents observations at the intervention site, and C represents observations at the comparison site).	$\Delta_2=(P_{2T}-P_{1T})-(P_{2C}-P_{1C})$

If the sample size in an observation period at a site is n, the corresponding standard error of the statistics is as follows:

Statistics	Standard Error
P_1	$\sqrt{\frac{(P_1Q_1)}{n}}$
$\Delta_1=P_2-P_1$	$\sqrt{\frac{(P_1Q_1)}{n}+\frac{(P_2Q_2)}{n}}$
$\Delta_1=(P_{2T}-P_{1T})-(P_{2C}-P_{1C})$	$\sqrt{\frac{(P_{2T}Q_{2T})}{n}+\frac{(P_{1T}Q_{1T})}{n}+\frac{(P_{2C}Q_{2C})}{n}+\frac{P_{1C}Q_{1C})}{n}}$

In this table, Q equals 1-P with corresponding subscripts.

A 95 percent confidence interval about the statistic centers on the value of the statistic and extends from 2 standard errors below to 2 standard errors above the value. In order to assess the effect of sample size on the width of the confidence interval, the researchers made assumptions about the values of the P's and Δ's and computed tables of confidence intervals of the sample statistics for various values of P and n.

Based on a review of the literature, expert opinion, and current use and proper use rates for CSSs, it was expected that the interventions would change the current levels of use. Ziegler (1989) estimated that 55.8 percent of the children in cars were fully protected. Prism (1989) identified a 6 percentage-point increase in correct use of CSSs after an enforcement and education program. Reisinger et al. (1981) identified a 6 percentage-point increase in correct use rates among toddlers after education and counseling session interventions. These figures indicated the baseline and intervention impact percentages to expect in the evaluation and, hence, the sample sizes to be used in the evaluation.

For the statistic P, a sample size of 300 was deemed adequate. For the estimate of intervention impact (i.e., statistic Δ_1 or Δ_2), the staff hoped to avoid a situation in which the confidence interval contained the value 0. If the situation occurs, 0 cannot be ruled out as a possible value with a reasonable level of confidence (i.e., 95 percent confidence). Therefore, for the statistic Δ_1, a sample size of 500 was deemed generally adequate for an impact that was expected to be 0.06 or larger. For the statistic Δ_2, a sample size of 500 was adequate only for impacts expected to be larger than 0.08.

If the number of required observations at a site was large compared to the number of drivers of young children available at the site, repeated observations of some drivers would be likely. The P was the estimated probability that a driver of young children was using and properly using a CSS on a trip. Thus, the analysis of confidence intervals and sample sizes presented previously would apply even when some drivers were observed more than once.

In addition, it was expected that the probability of using and properly using a CSS would vary in terms of the characteristics of the driver or child (e.g., age of driver or age of child). Thus, two options for analysis would be available:

1. The observed sample could be partitioned into categories based on their characteristics, then comparisons made between categories.
2. A multivariate model could be estimated using the entire sample to predict the probability of use and proper use as a function of characteristics.

The first analysis option was chosen because it provided a much simpler approach for determining significant differences of variables across test and comparison sites. The second analysis option was not feasible because it involved analyzing a voluminous number of comparisons, and it was uncertain whether the level of effort would be valuable in terms of time and resources expended on additional results.

APPENDIX B

DATA COLLECTION FORMS

Child Safety Seat
Data Collection Form

Date ____ / ____ / ____
MM DD YY

Time ____ : ____ AM PM
HH MM

☐-☐-☐-☐-☐

First Observer _____ Second Observer _____

Precipitation (1) Dry (2) Wet (3) Other _____ Temperature (Estimate) ____ ° F

Hello, we are doing a community project. May we ask you several questions that will only take a few minutes?

1. WHAT AREA DO YOU LIVE IN? _____

2. WHAT TOWNSHIP DO YOU LIVE IN? (1) Tredyffrin (2) Haverford (3) Abington (4) Other _____

3. WHAT IS YOUR HOME'S ZIP CODE ☐☐☐☐☐

---------- PLEASE DETACH HERE ----------

The Community, the County Comprehensive Highway Safety Project, and the Traffic Injury Prevention Project are cooperating on this project. Please help by filling out this form and mailing it to us. Your answers will be held in confidence. Your name and address are optional. Those who provide a full address will be eligible for a prize drawing of $100.

☐-☐-☐-☐-☐-☐☐☐

We would like to ask you some questions that relate to the trip you made when we gave you this form. Please circle, check, or write in your response. Questions 6a, 6b, and 6c refer to the place where you received the form.

4. WHAT IS YOUR AGE CATEGORY? (1) Less than 30 (2) 30 to 39 (3) 40 and over

5. WHAT IS(ARE) YOUR CHILD(REN)'S AGE(S) 10 YEARS OLD AND UNDER) AND WEIGHT ESTIMATE(S) BY SEAT POSITION IN THE CAR?

SEAT POSITION	AGE	WEIGHT CATEGORY (*)
Other	___	(1) (2) (3)
Back Left	___	(1) (2) (3)

SEAT POSITION	AGE	WEIGHT CATEGORY (*)
Front Middle	___	(1) (2) (3)
Back Middle	___	(1) (2) (3)

SEAT POSITION	AGE	WEIGHT CATEGORY (*)
Front Right	___	(1) (2) (3)
Back Right	___	(1) (2) (3)

* Weight Categories:
(1) Under 20 lbs
(2) 20-40 lbs
(3) Over 40 lbs

6a. HOW LONG DID IT TAKE TO GET TO THIS PLACE (WHERE YOU RECEIVED THE FORM) FROM YOUR LAST STOP? _____ minutes

6b. ... WHAT WAS THE DISTANCE FROM YOUR LAST STOP? _____ mile(s)

6c. ... HOW OFTEN DO YOU VISIT THIS PLACE EACH WEEK? _____ number of times

7. UP TO WHAT AGE DOES PENNSYLVANIA'S LAW REQUIRE A CHILD TO BE IN A CHILD SAFETY SEAT WHEN RIDING WITH YOU (THE DRIVER) IN THE FRONT SEAT OF A CAR? _____ years old

8. COULD YOU GET A TICKET IF A CHILD BETWEEN THE AGES OF 1 AND 4 IS IN THE BACK SEAT OF YOUR CAR AND IS NOT IN A CHILD SAFETY SEAT AND IS NOT USING A SEAT BELT? (1) Yes (2) No

9. IS IT POSSIBLE FOR YOU TO GET A TICKET FOR NOT WEARING A SEAT BELT WHEN YOU DRIVE? (1) Yes (2) No

	Very Likely	Somewhat Likely	Occasionally	Somewhat Unlikely	Very Unlikely
10. HOW LIKELY IS IT TO GET A TICKET IN YOUR COMMUNITY FOR VIOLATING PENNSYLVANIA'S CHILD SAFETY SEAT LAW?	(1)	(2)	(3)	(4)	(5)
11. HOW LIKELY IS IT TO GET A TICKET IN YOUR COMMUNITY FOR VIOLATING PENNSYLVANIA'S SEAT BELT LAW?	(1)	(2)	(3)	(4)	(5)

	Strongly in Favor	Somewhat in Favor	Undecided or Not Interested	Somewhat Opposed	Strongly Opposed
12. HOW DO YOU FEEL ABOUT THE POLICE ENFORCING PENNSYLVANIA'S CHILD SAFETY SEAT LAW?	(1)	(2)	(3)	(4)	(5)
13. HOW DO YOU FEEL ABOUT THE POLICE ENFORCING PENNSYLVANIA'S SEAT BELT LAW?	(1)	(2)	(3)	(4)	(5)

	Always	Frequently	Sometimes	Infrequently	Never
14. VERY FEW PEOPLE KNOW THE PROPER WAY TO INSTALL CHILD SAFETY SEATS AND FEW PEOPLE PROPERLY SECURE THEIR CHILDREN IN THESE SEATS ALL THE TIME. HOW OFTEN ARE CHILD SAFETY SEATS PROPERLY INSTALLED AND USED IN YOUR CAR?	(1)	(2)	(3)	(4)	(5)

15a. IN THE PAST FEW MONTHS, HAVE YOU SEEN, HEARD, OR READ ANYTHING ABOUT ISSUES ON CHILD SAFETY SEATS? (1) Yes (2) No

15b. IF YES TO QUESTION 15a, WHERE DID YOU SEE OR HEAR IT? (Circle more than one response if applicable.)
(1) TV
(2) Radio
(3) Newspaper/Magazine
(4) Brochure/Factsheet
(5) Billboard
(6) Lecture/Talk
(7) Police
(8) Other _____

15c. IF YES TO QUESTION 15a, WHAT DO YOU REMEMBER ABOUT THE MESSAGE? _____

_____

*** Thank you for participating in our survey. Your responses will help us serve your community better. ***

LICENSE ___ ___ ___ ___ ___ ___   DRIVER GENDER ___ Male   ___ Female

TYPE OF VEHICLE

(1) Passenger Car (2) Station Wagon (3) Mini-van (4) Van (5) Pickup (6) Jeep-Type (i.e., Bronco) (7) Other ___________

SEAT POS.	CHILD AGE?	CHILD WEIGHT?	RESTRAINT USE	TYPE OF CSS		
				INFANT	TODDLER/CONVERTIBLE	BOOSTER
		(1) under 20 lbs (2) 20-40 lbs (3) over 40 lbs	(1) Shoulder (2) Lap (3) Shoulder & Lap (4) Child Safety Seat (5) None (7) Can't See Lap	(1) Rear Facing (2) Forward Facing (3) Harness (4) No Harness (5) Belt Connected (6) Belt Not Connected (8) Unused Seat	(1) Rear Facing (2) Forward Facing (3) Harness (4) No Harness (5) Belt Connected (6) Belt Not Connected (7) Can't See Belt (8) Unused Seat	(3) Harness/Shield (4) No Harness/Shield (5) Belt Connected (6) Belt Not Connected (7) Can't See Belt (8) Unused Seat
DRIVE						
FRMID						
FRRGT						
BKLFT						
BKMID						
BKRGT						

.... PLEASE DETACH HERE ....

>>> Please fold form in half, staple together, and mail back as soon as possible. <<<

.... PLEASE FOLD HERE ....

____

____

____

Please supply full address to be eligible for prize drawing

Place Stamp Here

Attn: Community Project
KETRON, Inc.
Great Valley Corporate Center
350 Technology Drive
Malvern, Pennsylvania 19355-1315

Child Safety Seat
Data Collection Form.

2

Date ___ / ___ / ___ (MM / DD / YY)

Time ___ : ___ AM PM (HH : MM)

Interviewer ___ ___ ___ Observer ___ ___ ___ Shopping Center [1] Clover [2] Ranoo

Hello, we are doing a community safety project. The Township, the County Comprehensive Highway Safety Project, and the Pa. Assoc. of Ped.'s Traffic Inj. Prev. Proj. are cooperating on this project. May we ask you some questions that will only take a few min.?

1. What town do you live in? _____ 3. What is your home's zip code? ___ ___ ___ ___ ___

2. What township do you live in? [1] Tredyffrin [2] Haverford [3] Abington [4] Other _____

4. What is your age category? [1] Less than 30 [2] 30 to 39 [3] 40 and over

5. What is(are) your child(ren)'s age(s) (6 years old and under) and weight estimate(s) by seat position in the car?

Seat Position	Age	Weight Category (*)
Other	___	[1] [2] [3]
Seat Left	___	[1] [2] [3]
Van Left	___	[1] [2] [3]

Seat Position	Age	Weight Category (*)
Front Middle	___	[1] [2] [3]
Seat Middle	___	[1] [2] [3]
Van Middle	___	[1] [2] [3]

Seat Position	Age	Weight Category (*)
Front Right	___	[1] [2] [3]
Seat Right	___	[1] [2] [3]
Van Right	___	[1] [2] [3]

* Weight Categories:
[1] Under 20 lbs
[2] 20-40 lbs
[3] Over 40 lbs

16. In the last month, have you ever been asked questions about seat belts or child safety seats in this or other township shopping centers? [2] No (ask all questions) [1] Yes (skip to Q10, Q11, Q17a, Q17b)

7. Up to what age does Pennsylvania's Law require a child to be in a child safety seat when riding in the FRONT SEAT of a car? ___ years old

8. Could you get a ticket if a child between the ages of 1 AND 4 is in the BACK SEAT of your car and is not in a child safety seat or not using a seat belt? [1] Yes [2] No

9. Is it possible for you to get a ticket for not wearing a seat belt when you drive? [1] Yes [2] No

---

	Very Likely	Somewhat Likely	Occasionally	Somewhat Unlikely	Very Unlikely
10. How likely is it to get a ticket in your community for violating Pennsylvania's CHILD SAFETY SEAT Law?	[1]	[2]	[3]	[4]	[5]
11. How likely is it to get a ticket in your community for violating Pennsylvania's SEAT BELT Law?	[1]	[2]	[3]	[4]	[5]

17a. Since spring of this year, do you know anyone who the police ticketed or warned . . . for violating the SEAT BELT law? (circle all that apply)

	Ticket	Written Warning	Verbal Warning
1. nobody (skip to 17b)	----not applicable----		
2. yourself	[a]	[b]	[c]
3. somebody else	[a]	[b]	[c]
4. more than 1 person	[a]	[b]	[c]

17b. . . . for violating the CHILD SAFETY SEAT law? (circle all that apply)

	Ticket	Written Warning	Verbal Warning
1. nobody (skip to 12)	----not applicable----		
2. yourself	[a]	[b]	[c]
3. somebody else	[a]	[b]	[c]
4. more than 1 person	[a]	[b]	[c]

	Strongly in Favor	Somewhat in Favor	Undecided or Not Interested	Somewhat Opposed	Strongly Opposed
12. How do you feel about the police enforcing Pennsylvania's CHILD SAFETY SEAT Law?	[1]	[2]	[3]	[4]	[5]
13. How do you feel about the police enforcing Pennsylvania's SEAT BELT Law?	[1]	[2]	[3]	[4]	[5]

	Always	Frequently	Sometimes	Infrequently	Never
14. Very few people know the PROPER WAY to install child safety seats and few people PROPERLY secure their children in these seats all the time. How often are child safety seats PROPERLY installed and used in this car?	[1]	[2]	[3]	[4]	[5]

18a. Compared to spring of this year, how often do you now use your seat belt? (circle one)
(a) less often (b) about the same (c) more often

18b. [IF MORE OFTEN (c)] Why? (circle all that apply)
[a] now driving a car with automatic belts
[b] got a ticket or warning for not using belts
[c] heard the police are enforcing the seat belt law
[d] learned about safety benefits of using belts
[e] knew someone else that got a ticket/warning for not using belts
[f] other _____

19a. Do you transport children between the ages of 1 and 5? [1] Yes [2] No (skip to Q19a)

19b. [IF YES] Since spring of this year have you extended the protection of these children by using them use a seat belt, or by switching from a seat belt to a child safety seat, or by keeping them in child safety seats to at least 4 yrs old or 40 lbs? [1] Yes [2] No (skip to Q19a)

19c. [IF YES] What caused you to change your behavior? (circle all that apply)
[a] improved CSS or easier installation in car
[b] got a ticket or warning for not using a CSS
[c] got a ticket or warning for not wearing a SB
[d] heard the police are enforcing the SB Law
[e] heard the police are enforcing the CSS Law
[f] learned about safety benefits of using CSS's
[g] knew someone else that got a ticket or warning for not using CSS's
[h] knew someone else that got a ticket or warning for not using SB's
[i] parental example
[j] Other _____

19d. Since spring of this year, have you seen, heard, or read anything on issues about CHILD SAFETY SEATS? [1] Yes [2] No

19e1. Since spring of this year, have you seen, heard, or read anything about SEAT BELT or CHILD SAFE[illegible] SEAT LAW AWARENESS PROGRAMS? [1] Yes [2] No

19e2. [IF YES to Q19e1] Where did you learn about it? (circle all that apply)

[1]	Police Ticket/Warning	[6]	Radio
[2]	Police Education Program	[7]	Literature (Brochure/Factsheet)
[3]	Community Newspaper	[8]	Employer Told (Not Police)
[4]	Philadelphia Inquirer	[9]	Billboard
[5]	TV	[10]	Other _____

19e. [IF YES TO Q19a OR Q19d1] What do you remember about the messages? _____

20a. Approximately how long did it take to get to this place from your last stop (in minutes)? ___ minutes

20b. . . . what was the distance from your last stop (in miles)? ___ miles THANK PARTICIPANT!

20c. . . . how often do you visit this place each week? ___ time(s)

APPENDIX C

SAFETY BELT POLICIES OF POLICE

TREDYFFRIN TOWNSHIP POLICE DEPARTMENT
[illegible] LANCASTER ROAD • BERWYN, PENNSYLVANIA 19312

POLICY 2-08

USE OF SAFETY RESTRAINT DEVICES

Thomas H. Zamarf
Superintendent of Police

2/1/88
Date in Effect

I. POLICY

Scope and Goals

There is increasing evidence that patrol officers today face an ever increasing risk of suffering injury or death due to on-duty involvement in motor vehicle accidents.

Tredyffrin Township Police Department will strive to reduce severity of injuries and hopefully eliminate fatalities for all occupants of Police Department vehicles through the required use of safety restraint devices in patrol vehicles provided by the manufacturer and maintained by the Department.

II. PURPOSE

The implementation of mandatory safety restraint usage will better enable police personnel to be more prepared to maintain control of the patrol unit during collision sequences, unexpected evasive maneuvers, emergency responses, pursuit driving and everyday driving conditions.

Mandatory compliance with this policy will reduce the incidence of injuries sustained in traffic accidents and lessen the severity of injuries which are sustained. Compliance will also serve as an excellent example to the motoring public and general population.

III. PROCEDURES

All police personnel will use safety restraint devices upon occupying department vehicles.

All police personnel driving police vehicles will insure that all occupants (including prisoners) being transported, utilize safety restraint devices provided and/or made available, if available.

Exceptions

1. A member of the Department may drive or occupy a police vehicle without the availability of a functional safety restraint system as long as there is no other replacement unit available in the Department fleet which has a functional safety restraint system.

2. Officers or personnel producing written explanations from a physician, indicating the employee's medical inability (or physical) to utilize safety restraint devices will be exempt from this policy.

3. An exemption from this policy can also be granted if the prisoner(s) to be transported is/are violent, combative, or otherwise would be hazardous to seatbelt in the car.

Employee's status will be periodically reviewed by the Department.

Under certain circumstances where the use of safety restraint devices and the police function and/or officer survival may not be compatible.

Exemptions to this policy shall be granted in situations in which the officer believes the efficient culmination of the police function and/or officer survival through a potentially high risk situation outweigh the benefits of the safety restraint device.

HAVERFORD TOWNSHIP POLICE DEPARTMENT

PROCEDURAL DIRECTIVE #30

SUBJECT: SAFETY BELT USE POLICY

I. PURPOSE

To establish a policy to assure maximum operator and passenger safety, thus minimizing the possibility of death or injury as a result of motor vehicle crashes. This policy will apply to all personnel operating or riding in Department vehicles

Research clearly indicates that the use of safety belts has a significant effect in reducing the number of deaths and the severity of injuries resulting from traffic crashes. A law enforcement officer's chance of being involved in a motor vehicle crash is approximately two to ten times greater than that of the general public. The use of safety restraints reduces this risk to death and serious injury and assists officers in maintaining proper control of their vehicles in emergency high-speed operations.

II. POLICY

To assure the safety of all personnel, safety belts will be worn by drivers and passengers in all vehicles owned, leased or rented by the department at all times. This also applies to the operation of privately owned or other vehicles if used on-duty.

III. PROCEDURES

A. Department personnel will use the safety belts installed by the vehicle manufacturer properly adjusted and securely fastened when operating or riding in any vehicle so equipped if used while on-duty.

B. Lap belts will be properly secured in those vehicles equipped with automatic safety belt systems that require the lap portion of the belt be manually secured.

C. The driver of the vehicle is responsible for insuring compliance by all occupants of the vehicle they are operating. Approved child safety restraints shall be used for all children of age, size, or weight for which such restraints are prescribed by law.

D. No person will operate a Departmental vehicle in which any safety belt in the drivers seating position is inoperable. No person will be transported in a seating position in which the safety restraint is inoperable.

E. No person will modify, remove, deactivate or otherwise tamper with the vehicle safety belts except for vehicle maintenance and repair and not without the express authorization of the Chief of Police.

F. Personnel who discover an inoperable restraint system shall report the defect to the appropriate supervisor. Prompt action will be taken to replace or repair the system.

G. Any person(s) under arrest and being transported in Department vehicle(s) are required to be secured in the vehicle by a safety belt in all seating positions for which safety belts are provided by the vehicle manufacturer. Caution: Prisoners that are handcuffed in front have the ability to release the handcuffs using the safety restraints latch plate.

H. An officer operating in an undercover capacity may be exempt ONLY if the officer believes the use of the safety belt will compromise their identity.

I. When arriving at an emergency call or making a vehicle traffic stop, the operator may remove the safety restraint just prior to stopping for quick exit. Caution should be exercised to insure that during the traffic stop the violator is in fact going to stop.

J. An exemption from this policy can also be granted if the prisoner(s) to be transported is/are violent, combative, or otherwise would be hazardous to seatbelt in the car.

IV. DRIVER AND/OR PASSENGER NEGLIGENCE

If negligence or noncompliance with the requirements of this order is displayed, appropriate corrective or disciplinary action will be initiated as prescribed by Department policies.

BY ORDER OF THE CHIEF OF POLICE

ABINGTON TOWNSHIP POLICE DEPARTMENT

GENERAL ORDER NO. 91-03

TO: All Members of the Department

FROM: William J. Kelly, Chief of Police

DATE: May 14, 1991

SUBJECT: Wearing of Seat Belts

Background

As you all know, police officers are often involved in dangerous motor vehicle accidents. Locally and nationwide, officers receive serious, even fatal injuries from on-duty auto accidents; but we have also seen that in many, many cases, seat belts have saved officers' lives or minimized their injuries. In fact, the evidence favoring seat belt usage is so compelling that Pennsylvania, like most other states, has made the required usage of seat belts a State law.

Therefore, to increase officer safety and to comply with the laws which we are sworn to enforce, the following Order is being put into effect.

Order

Effective June 1, 1991, all Abington Police Department employees will be required to wear seat belts whenever operating a Township vehicle. Violation of this Order will constitute disobeying an Official Departmental Order and may be disciplined accordingly.

Any officer requesting waiver of this Order due to medical condition, etc., must do so, in writing, prior to the effective date of this Order. Also, any "equipment problems" which prevent compliance with this Order should be addressed through Vehicle Maintenance Supt. Tom Falbo or Lt. Hasson prior to the Order's effective date.

Conclusion

I know that compliance with this Order will be difficult, at first, for many of us. However, since this Order will protect the safety of our officers and will insure our compliance with State law, I expect every member of the Department to demonstrate the professionalism and self-discipline to obey this Order.

By order of:

William J. Kelly

William J. Kelly
Chief of Police

WJK/ml

APPENDIX D

CITATION INFORMATION CARD

SPEEDING FINE SCALE

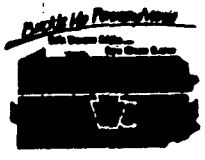
PaVC - Sec. 3362 Maximum Speed Limit

Subsection
A-1 35 mph in Urban District
A-2 55 mph in any other location
A-3 Any other maximum speed limit established

25 mph Zone		35 mph Zone		40 mph Zone		45 mph Zone		55 mph Zone	
mph	Fine	mph	Fine	mph	Fine	mph	Fine	mph	Fine
35	$45	45	$45	50	$45	55	$45	65	$45
36	$47	46	$47	51	$47	56	$47	66	$47
37	$49	47	$49	52	$49	57	$49	67	$49
38	$51	48	$51	53	$51	58	$51	68	$51
39	$53	49	$53	54	$53	59	$53	69	$53
40	$55	50	$55	55	$55	60	$55	70	$55
41	$57	51	$57	56	$57	61	$57	71	$57
42	$59	52	$59	57	$59	62	$59	72	$59
43	$61	53	$61	58	$61	63	$61	73	$61
44	$63	54	$63	59	$63	64	$63	74	$63
45	$65	55	$65	60	$65	65	$65	75	$65
46	$67	56	$67	61	$67	66	$67	76	$67
47	$69	57	$69	62	$69	67	$69	77	$69
48	$71	58	$71	63	$71	68	$71	78	$71
49	$73	59	$73	64	$73	69	$73	79	$73
50	$75	60	$75	65	$75	70	$75	80	$75
51	$77	61	$77	66	$77	71	$77	81	$77
52	$79	62	$79	67	$79	72	$79	82	$79
53	$81	63	$81	68	$81	73	$81	83	$81
54	$83	64	$83	69	$83	74	$83	84	$83
55	$85	65	$85	70	$85	75	$85	85	$85
56	$87	66	$87	71	$87	76	$87	86	$87
57	$89	67	$89	72	$89	77	$89	87	$89
58	$91	68	$91	73	$91	78	$91	88	$91
59	$93	69	$93	74	$93	79	$93	89	$93
60	$95	70	$95	75	$95	80	$95	90	$95

PaVC - Sec. 6508 Surcharge (CAT)

ALL Sec. except parking	$ 30.00	EMS	$10.00
Sec. 3308 (a) (1), 3745	$ 40.00	COSTS	$17.50
Sec. 3345	$ 50.00	JCP	$ 1.50
Sec. 4902	$150.00		
Chpt. 49, Sub Chpt. C & E	$150.00		
Sec. 3362 (1 - 15 over)	$ 30.00		
Sec. 3362 (16 - 25 over)	$ 40.00		
Sec. 3362 (26 + over)	$ 50.00		
Sec. 3731 (1st offense)	$ 50.00		
Sec. 3731 (2nd offense)	$100.00		
Sec. 3731 (3rd offense)	$200.00		
Sec. 3731 (4th offense)	$300.00		



D-1

PENNSYLVANIA
VEHICLE CODE SAFETY VIOLATIONS

CHILD PASSENGER SAFETY LAW

PRIMARY ENFORCEMENT SECTION 4581 A1 CHILD RESTRAINTS

All drivers are responsible to secure children from birth to age four in the appropriate restraint.

- Children from birth to age 1 must be in an approved car seat.
- Children from 1 to 4 should be in an approved car seat but legally can wear a safety belt in the back seat *only*.
- Children from birth to 4 can ride in the front seat of the car *only* if they are in an approved car seat.

FINE: $25.00 plus court costs or proof of car seat purchase.

SAFETY BELT USE LAW

SECONDARY ENFORCEMENT SECTION 4581 A2 SEAT BELT LAW

- Driver and all front seat passengers must be restrained.
- Drivers are responsible for themselves and for each passenger under age 18 riding in the front seat.
- Exemptions include carriers of medical or psychological excuses signed by a physician, rural letter carriers, deliverers of goods or service vehicle operators driving at speeds less than 15 mph and making frequent stops, drivers of automobiles manufactured before July 1, 1966.

FINE: $10.00 if convicted of primary offense.

Pa VC - Sec. 3326 Construction Areas

Fines double for violation of the following

sections if violated in construction areas:

3102	3302	3306	3323	3702
3111	3303	3307	3326	3714
3112	3304	3309	3361	3715
3114	3305	3310	3362	3731

INFORMATION: 1-800-CAR-BELT

PRINTED BY KEYSTONE SAFETY BELT NETWORK, INC., 717-236-8180

APPENDIX E

E-MAIL MESSAGE ENFORCEMENT REMINDERS

From lanyon Tue Apr 30 11:23:27 1991
Subject: SEAT BELT ENFORCEMENT
Date: Tue Apr 30 11:23:23 1991

APP. 2 MONTHS AGO, THIS DEPT. INSTITUTED A SEATBELT ENFORCEMENT PROGRAM. DURING THIS TIME PERIOD, 61 CITATIONS HAVE BEEN ISSUED. 1990 STATEWIDE STATISTICS HAVE REFLECTED A DECLINE IN TRAFFIC FATALITIES, IN PART DUE TO INCREASED DUI ENFORCEMENT AND SEATBELT USAGE. I BELIEVE THAT THIS DEPT. CAN CAN INCREASE THE ENFORCEMENT AND THERE BY REDUCE INJURIES AND DEATHS. PLEASE REVIEW SECTION 4581 AND ISSUE CITATIONS UNDER SUBSECTION A AND B WHENEVER POSSIBLE. PLEASE INDICATE UNDER REMARKS THE ORIGINAL VIOLATION FOR WHICH THE DRIVER WAS STOPPED AND CITED. THIS IS ONE INCIDENT WHERE YOU CAN MAKE THE DIFFERENCE.

SGT. LANYON

From lanyon Thu May 16 08:47:52 1991
To: all
Subject: OPERATION BUCKLE DOWN AND BUCKLE UP AMERICA WEEK
Cc: lanyon
Date: Thu May 16 08:47:48 1991

THIS DEPT. HAS COMMITTED IT'S PARTICIPATION TO THIS PROJECT DURING THE WEEK OF MAY 20 - 27. WE HAVE RECEIVED 100 BEARS AND CERTIFICATES WHICH ARE TO BE GIVEN TO CHILDREN AND MOTORIST WHO ARE OBSERVED USING CHILD RESTRAINT DEVICES AND SEATBELTS. THESE BEARS AND CERTIFICATES WILL BE PLACED IN
THE SQUAD ROOM.

ALL SGTS. AND SHIFT SUPERVISORS ARE TO SEE THAT EACH OFFICER RECEIVES APP. 3 - 5 BEARS AND CERTIFICATES AND THAT THEY ISSUE THEM. THE TRAFFIC SQUAD WILL
ALSO BE RESPONSIBLE FOR ISSUING THESE ITEMS. SGTS. AND SUPERVISORS WILL SUBMIT A LIST, INCLUDING NAMES AND REGISTRATION NUMBERS OF THOSE PEOPLE WHO RECEIVED THE BEARS.

THIS PROJECT WILL ONLY WORK IF WE RECEIVE 100% COOPERATION FROM THE ENTIRE PATROL DIVISION. IT MAY PROVE AN EXCELLANT OPPROTUNITY TO WIN A FEW FRIENDS FOR THE DEPT. AND IMPROVE THE IMAGE OF POLICE OFFICERS IN GENERAL.

THANK YOU IN ADVANCE FOR YOUR COOPERATION
SGT LANYON

From lanyon Mon Jun 10 14:27:23 1991
To: all
Subject: CITATIONS FOR SEATBELTS
Cc: lanyon
Date: Mon Jun 10 14:27:20 1991

WHEN CITING SECTION 4581 (A)(2) YOU MUST INCLUDE THE $10 FINE, $10 EMS AND $30 CAT FUND. EFFECTIVE IMMEDIATELY, AS PER JUDGE AULTS ORDER, CITATIONS NOT CONTAINING THIS INFO WILL BE RETURNED.

I HAVE REVIEWED OUR STATS AND IT APPEARS THAT WE HAVE MADE A LOT OF PROGRESS IN THE AREA OF SEATBELT ENFORCEMENT, (38 IN MAY) PLEASE IF YOU HAVE BEEN ENFORCING IT, KEEP UP THE GOOD WORK AND IF YOU HAVEN'T, LETSGET WITH THE PROGRAM. THEY DO SAVE LIVES AND THATS WHAT WE'RE ALL ABOUT.

SGT LANYON

From carbo Wed Aug 14 11:40:51 1991
To: all
Subject: Seatbelt Enforcement
Cc: carbo
Date: Wed Aug 14 11:40:48 1991

This date I had a conversation with Mr.Larry DeCina who is the representative for the NTSA sponsored Seatbel Enforcement Program. He reported that there were 16 citations issued for the month of July. I am aware of the fact that many officers are reluctant to issue multiple violations. He informed me that we will receive just as much credit for a written warning. I encourage you to write these warnings. We have agreed to participate in the program and it is the responsibility of all of us to do our best to improve the safety of the motoring public.

Respectfully:
J.A.Carbo,Jr. Sgt
Lts.Office

From lanyon Fri Oct 11 11:29:11 1991
To: all
Subject: SEATBELT VIOLATIONS
Date: Fri Oct 11 11:29:08 1991

IF YOU CHARGE A SEATBELT VIOLATION ON A CRIMINAL COMPLAINT, (DUI, H&R ETC.) PLEASE SEND AN E MAIL MESSAGE TO JIM BOYLE SO THAT HE IS SURE TO CATCH IT. PRESENTLY, MANY OF THESE VIOLATIONS ARE NOT GOING INTO THE MONTHLY STATS.
THANK YOU

LT LANYON

From dintino Thu Oct 31 07:28:43 1991
To: all
Subject: SEAT BELT ENFORCEMENT
Date: Thu Oct 31 07:28:42 1991

Remember to enforce the SEAT BELT LAW.

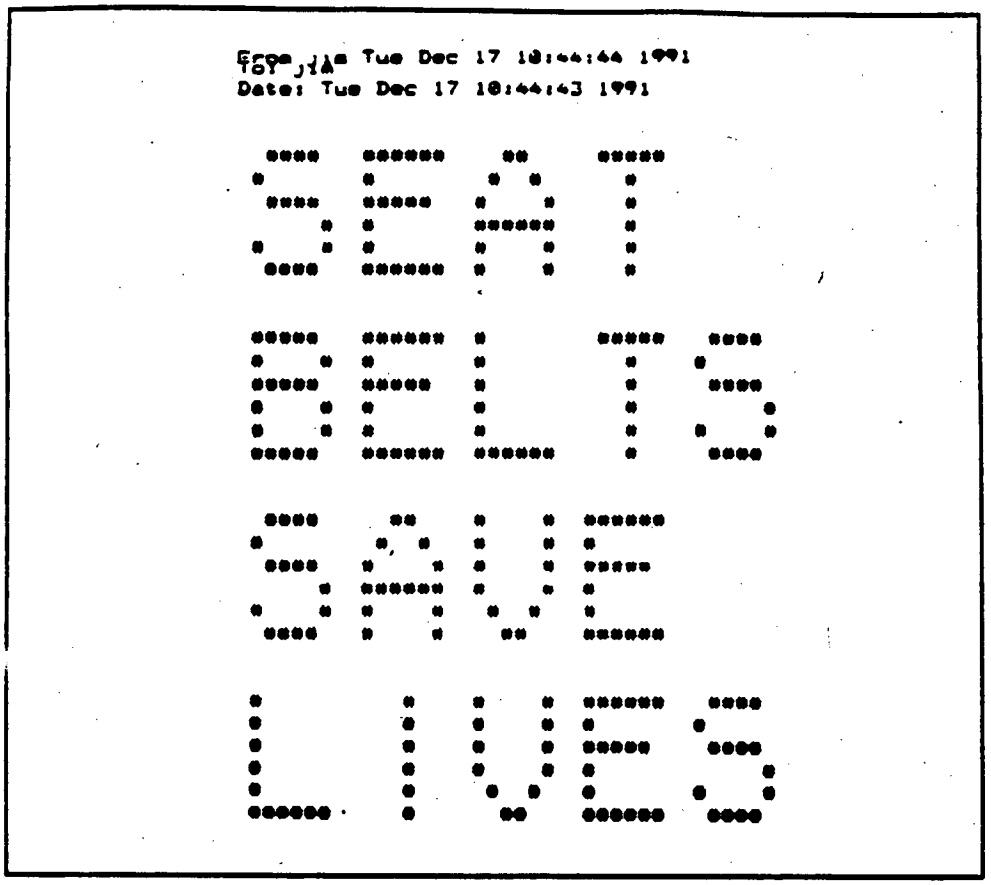
SEAT BELTS save lives.

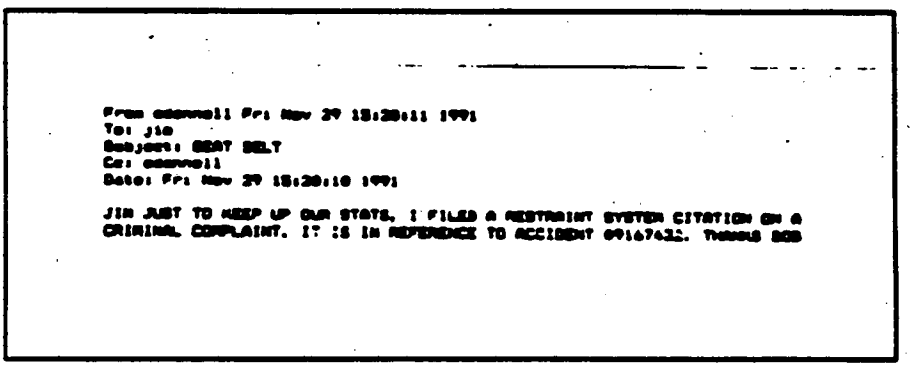
We have a duty to enforce the laws.

Thank you.

Respectfully,

Sergeant Stephen Dintino


From jim Tue Dec 17 10:44:44 1991
To: jim
Date: Tue Dec 17 10:44:43 1991


From oconnell Fri Nov 29 15:20:11 1991
To: jim
Subject: SEAT BELT
Cc: oconnell
Date: Fri Nov 29 15:20:10 1991
JIM JUST TO KEEP UP OUR STATS, I FILED A RESTRAINT SYSTEM CITATION ON A
CRIMINAL COMPLAINT. IT IS IN REFERENCE TO ACCIDENT 09167432. THANKS BOB

APPENDIX F

DIRECTIVES FROM CHIEF OF POLICE

MEMORANDUM

DATE: 11 July 1991

TO: ALL PERSONNEL

FROM: CHIEF HOWARD WALTON

SUBJECT: CHILD SAFETY SEAT AND SEAT BELT ENFORCEMENT PROGRAM.

The Department is participating in a special program from the National Highway Traffic and Safety Administration in conjunction with Kentron Inc for child safety seat and seat belt usage.

All Officers are to be concerned with safety seat and seat belt violations during their normal patrol and routine traffic stops.

Officers have the option to issue traffic citations or departmental warning cards when they observe a violation. We have had a new type of warning card printed for just seat belt and child safety seat violations. This card is very brief on the needed information but will enable us to keep track of the different contacts for this type of violation. When issuing this card officers should give the operator the top sheet and turn the hard copy into records.

It is the department's policy to strongly enforce the above regulations either with citations or the warning cards. Officers should also give the operator the two informational reports concerning seat belts and child safety seats.

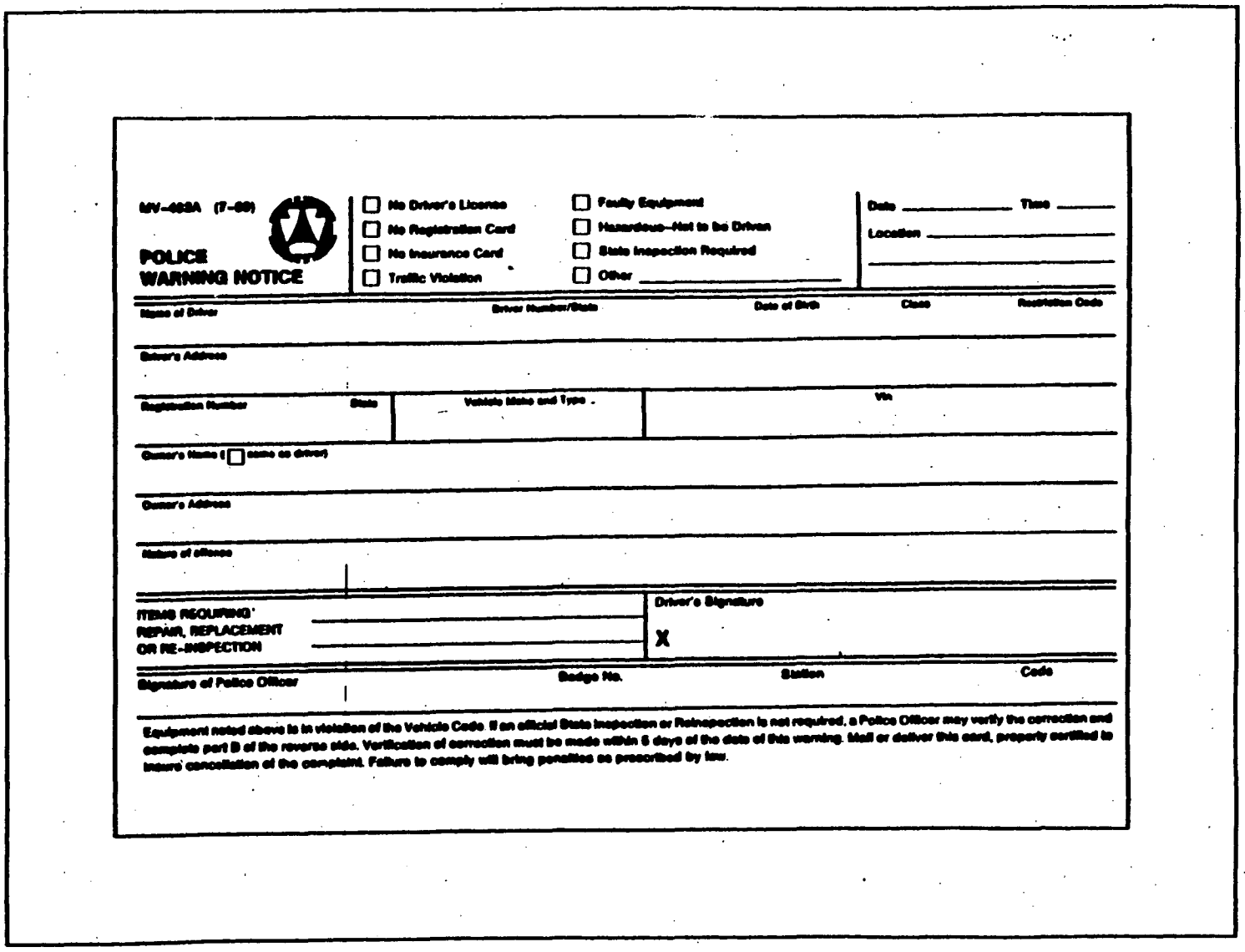
All Officers should contact Sergeant Hoover or the Highway Safety Officer on duty for their issue of warning cards and informational sheets. The program will also be outlined for all officers at this time.

Howard Walton

Chief Howard Walton

APPENDIX G

POLICE WARNING NOTICES FOR OCCUPANT RESTRAINT VIOLATIONS



MV-468A (7-00)

POLICE WARNING NOTICE

- ☐ No Driver's License
- ☐ No Registration Card
- ☐ No Insurance Card
- ☐ Traffic Violation
- ☐ Faulty Equipment
- ☐ Hazardous--Not to be Driven
- ☐ State Inspection Required
- ☐ Other _____

Date _____ Time _____

Location _____

Name of Driver | Driver Number/State | Date of Birth | Class | Restriction Code

Driver's Address

Registration Number | State | Vehicle Make and Type | VIN

Owner's Name (☐ same as driver)

Owner's Address

Nature of offense

ITEMS REQUIRING REPAIR, REPLACEMENT OR RE-INSPECTION

Driver's Signature

X

Signature of Police Officer | Badge No. | Station | Code

Equipment noted above is in violation of the Vehicle Code. If an official State Inspection or Reinspection is not required, a Police Officer may verify the correction and complete part B of the reverse side. Verification of correction must be made within 5 days of the date of this warning. Mail or deliver this card, properly certified to insure cancellation of the complaint. Failure to comply will bring penalties as prescribed by law.

HAVERFORD TOWNSHIP POLICE DEPARTMENT
RESTRAINT SYSTEM WARNING NOTICE

NAME OF DRIVER _____ DLN _____

REGISTRATION _____ STATE _____ MAKE _____

TITLE 75 — PENNSYLVANIA MOTOR VEHICLE CODE

☐ 4581 a 1 CHILD UNDER THE AGE OF FOUR (4) YEARS ANYWHERE IN THE VEHICLE SHALL BE FASTENED SECURELY IN A CHILD PASSENGER RESTRAINT SYSTEM.

☐ 4581 a 2 DRIVER AND FRONT SEAT OCCUPANT OF A VEHICLE SHALL WEAR A PROPERLY ADJUSTED AND FASTENED SAFETY SEAT BELT SYSTEM.

VIOLATIONS OF THESE SECTIONS CAN RESULT IN A CITATION WITH FINES AND COSTS TOTALING $66.50.

OFFICER NAME _____ BADGE _____ ERN _____ DATE _____

APPENDIX H

PUBLIC INFORMATION & EDUCATION MATERIAL USED IN PROJECT

TREDYFFRIN TOWNSHIP POLICE CHILD SAFETY SEAT AND SAFETY BELT ENFORCEMENT PROGRAM

- The Tredyffrin Township Police Department has begun an ongoing enforcement effort of two Pennsylvania traffic laws:

  (1) The Child Passenger Safety Law requires all drivers are responsible to secure children from birth to age 4 in the appropriate restraint

  - Children from birth to age 1 must be in an approved car seat.
  - Children from 1 to 4 should be in an approved car seat but legally can wear a lap belt in the back seat only.
  - Children from birth to 4 can ride in the front seat of the car only if they are in an approved car seat.

  (2) The Safety Belt Law requires that drivers and all front seat passengers must be restrained. Drivers are responsible for themselves and for each passenger under age 18 riding in the front seat.

- Recent community observation and survey studies revealed:

  - Only 48% of all drivers were buckled.
  - Fifteen percent (15%) of drivers carrying children were <u>not</u> buckled up.
  - The percentage of young children restrained in child safety seats dropped dramatically after one year of age. Only 41% of toddlers, ages 3 to 4, were observed in child safety seats.
  - About 25% of surveyed drivers revealed that they do <u>not always</u> properly restrain their young child passengers.
  - Only 9% of the drivers thought it was likely that the police would ticket them for child safety seat or safety belt violations.
  - Over 80% of the drivers were <u>strongly in favor</u> of the police enforcing these laws.

- Nationwide studies have shown that 75% of serious and fatal traffic injuries occur less than 25 miles from the home.

- The Tredyffrin Police are committed to enforcing these occupant restraint laws, promoting child restraint use on all trips, and educating community residents on the safety benefits of properly using child safety seats and safety belts.

- Remember, a full child safety seat provides maximum protection for your children up to 4 years of age or at 40 pounds or 40 inches tall. When your toddler outgrows a toddler seat, use a booster seat that can be secured with a lap-shoulder belt combination, until your child reaches 60 pounds.

For more information on available materials, films, speaker's network, curriculum, etc. - which are free to Pennsylvania citizens - call or write:

PA Chapter - American Academy of Pediatrics
PA Traffic Injury Prevention Project
610 Old Lancaster Road #220
Bryn Mawr, PA 19010
1-800-CARBELT

HAVERFORD TOWNSHIP POLICE CHILD SAFETY SEAT AND SAFETY BELT ENFORCEMENT PROGRAM

- The Haverford Township Police Department has begun an ongoing enforcement effort of two Pennsylvania traffic laws:

  (1) The Child Passenger Safety Law requires all drivers are responsible to secure children from birth to age 4 in the appropriate restraint

  - Children from birth to age 1 must be in an approved car seat.
  - Children from 1 to 4 should be in an approved car seat but legally can wear a lap belt in the back seat only.
  - Children from birth to 4 can ride in the front seat of the car only if they are in an approved car seat.

  (2) The Safety Belt Law requires that drivers and all front seat passengers must be restrained. Drivers are responsible for themselves and for each passenger under age 18 riding in the front seat.

- Recent community observation and survey studies revealed:

  - Only 44% of all drivers were buckled.
  - Twenty-nine percent (29%) of drivers carrying children were <u>not</u> buckled up.
  - The percentage of young children restrained in child safety seats dropped dramatically after one year of age. Only 41% of toddlers, ages 3 to 4, were observed in child safety seats.
  - About 25% of surveyed drivers revealed that they do <u>not always</u> properly restrain their young child passengers.
  - Only 9% of the drivers thought it was likely that the police would ticket them for child safety seat or safety belt violations.
  - Over 80% of the drivers were <u>strongly in favor</u> of the police enforcing these laws.

- Nationwide studies have shown that 75% of serious and fatal traffic injuries occur less than 25 miles from the home.

- The Haverford Police are committed to enforcing these occupant restraint laws, promoting child restraint use on all trips, and educating community residents on the safety benefits of properly using child safety seats and safety belts.

- Remember, a full child safety seat provides maximum protection for your children up to 4 years of age or at 40 pounds or 40 inches tall. When your toddler outgrows a toddler seat, use a booster seat that can be secured with a lap-shoulder belt combination, until your child reaches 60 pounds.

For more information on available materials, films, speaker's network, curriculum, etc. - which are free to Pennsylvania citizens - call or write:

PA Chapter - American Academy of Pediatrics
PA Traffic Injury Prevention Project
610 Old Lancaster Road #220
Bryn Mawr, PA 19010
1-800-CARBELT

SUMMARY OF CHILD PASSENGER PROTECTION ACT

1. All drivers transporting children from birth to age 4 are responsible to restrain those children in the appropriate restraint system.

2. Infants from birth to age 1 must be in an approved child safety seat. The seat may be in any seating position equipped with a seat belt in the vehicle. (However, for maximum protection, the back seat is preferable.)

3. Children from 1 to 4 may be in a child safety seat anywhere in the vehicle or in a seat belt in the back seat only.

4. Violators may be fined up to $25.00, plus $17.50 court costs, $30.00 CAT Fund and $10.00 EMS Fund. The fine may be waived by showing proof of purchase and possession of a child safety seat at the time of court appearance.

5. Violators may be stopped as a primary offense for non-compliance of the Child Passenger Protection Act.

6. Fines collected will be placed in a fund used to purchase child safety seats for car seat loaner programs.

7. Civil immunity for lenders of car seats has been granted. No person or organization who lends car seats shall be liable for any civil damages resulting from any acts or omission, except any act or omission intentionally designed to harm or any grossly negligent act or omission resulting in harm to another.

8. Hospitals are required to notify parents of the PA car seat law and also the location of car seat loan programs in the community.

9. An education program shall be conducted to insure maximum distribution of information about the law.

SUMMARY OF PENNSYLVANIA SEAT BELT LAW

1. Each driver and front seat passenger operating a passenger car, class I and II truck or motor home in the State of Pennsylvania shall wear a properly adjusted and fastened safety belt.

2. The driver of a passenger automobile shall secure or cause to be secured with a safety belt any child over the age of four and under the age of 18 riding in the front seat.

3. Violators, if convicted of the primary offense for which the vehicle was stopped, are liable to pay a $10 fine for the seat belt violation.

4. Exceptions to the Law are made for (1) those with medical or psychological diagnoses that makes them unable to wear a safety belt (written verification must be produced); (2) occupants of cars manufactured before July 1, 1966; (3) specific occupational designations.

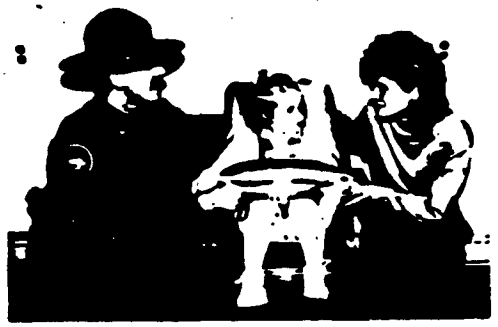
FOR CLARIFICATION, OTHER DETAILS OR A COMPLETE COPY OF THE LAW:

1-800-CAR BELT
PA Child Passenger Safety Project
610 Old Lancaster Road, Suite 220
Bryn Mawr, PA 19010
215-520-9124

3/90

OFFICERS LOVE KIDS TOO

OFFICER FRANK RUSCIO WITH DAUGHTER LAUREN AND WIFE SARAH
Tredyffrin Township Police Department



That's why we like to see them riding in cars or trucks with seat belts and car seats.

Car crashes kill and injure more children than any disease. A sudden, unexpected stop can hurl an unrestrained passenger into the dashboard or through a windshield.

Do your part. . .have everyone buckle up everytime!

Car Safety Seats and Seat Belts. It's the Law.

All drivers must assure that children from birth to four years are buckled up:

- birth to one year must be in a car seat
- one to four years should be in a car seat but may be in a seat belt, but only in the back seat
- all drivers and front seat passengers must be buckled
- drivers are responsible for front seat passengers 0 to 18.

OFFICERS LOVE KIDS TOO

OFFICER DENNIS ANDERSON WITH NEPHEW PATRICK
Haverford Township Police Department

That's why we like to see them riding in cars or trucks with seat belts and car seats.

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- all drivers and front seat passengers must be buckled
- drivers are responsible for front seat passengers 0 to 18.

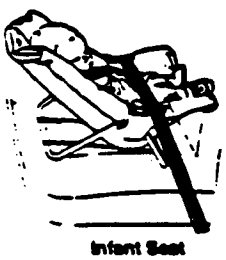
CAR SAFETY SEATS AND SEAT BELTS SAVE LIVES.

The Pennsylvania Chapter of the American Academy of Pediatrics Prescribes Car Safety Seats and Seat Belts for Pleasant Safer Driving.

Once children get used to riding buckled up they are often better behaved and cause less distraction. More importantly, they are safer. See that all passengers in your vehicle are in an approved car seat or seat belt.

For more information on child passenger safety, bicycle, school buses or pedestrian safety, ask your doctor or call

1-800-CAR BELT



Infant Seat

Convertible Seat

Bicycle Safety

School Bus Safety

Summer

Bummer

This summer, seatbelt laws are being enforced.
So buckle up. Or you might break more than the law.
And that would be the biggest bummer of all.

Buckle Up

Avoid the summertime blues.

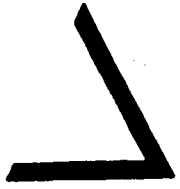
TIPS FOR RESTRAINING 2 TO 4 YEAR OLDS IN YOUR CAR

- Remain adamant about child safety seat use as your child outgrows the infant seat.
- Full child safety seats provide maximum protection, lap belts should only be used if a child safety seat is unavailable.
- When your toddler outgrows a full safety seat (at 40 pounds or 40 inches tall), use a booster seat that can be secured in your car with a lap-shoulder belt combination, until your child reaches 60 pounds.
- Tips for parents who cannot keep children in child safety seats:
  - All adults in cars and other vehicles should set a good example and wear safety belts.
  - Remember to be consistent– never let a fussy child out of the car seat–it will make it harder to keep him or her in the seat on the next ride.
  - Take along special toys (that stay in the car) or cuddlies for all age children. For young children, attach toys to the car seat with very short strings, so the toy cannot be thrown.
  - When children get restless, sing songs, give them a headset, so that they can play a favorite tape, or play games like looking for farm animals, school buses, signs, etc. Along the roadway.
  - 2 and 3 year olds will enjoy personalizing their seats with decorations, and may find it comforting to buckle up a favorite teddy or doll, in or out of the car. Talk about how safe teddy is riding in his seat.
  - Encourage 3 and 4 year olds to imagine themselves as astronauts or race car drivers, who also buckle up.
  - Preschoolers will model your "grown-up" buckling behavior and can be models for younger toddlers. Three and 4 year olds can understand why it is important to buckle up. Tell them, "in case we need to stop the car suddenly, your seat will keep you from bumping your head."

For more information on available materials, films, speaker's network, curriculum, etc. - which are free to Pennsylvania citizens - call or write:

PA Chapter - American Academy of Pediatrics
PA Traffic Injury Prevention Project
610 Old Lancaster Road #220
Bryn Mawr, PA 19010
1-800-CARBELT

Children And Car Safety: Making Friends With A Safety Seat



American Academy of Pediatrics

Your child's car safety seat can be a lifesaver. But to protect your child, the seat must be used consistently and properly. Most children accept the use of car seats and seat belts as a routine necessity; however, at various times, all children need special attention to keep them well protected.

Your attitude towards safety belts and child safety seats is of prime importance.

If you treat buckling up as a normal part of living—something to be done automatically—your children, generally, will follow your lead.

To keep your kids safe and happy:

ALWAYS use the safety seat, and use it correctly. If you're not sure, read the manufacturer's instructions. No exceptions—after all it's the law in all 50 states.

Allow NO exceptions for older kids and adults. *Everyone* buckles up! If adults ride unprotected, the child quickly decides that safety is just kidstuff.

Give frequent praise for appropriate behavior in the car.

Remember that a bored child can become a disruptive one. Keep a supply of favorite, soft toys and munchies on hand.

NEVER let a fussy child out of the car seat or safety belt while the car is in motion. If the child needs a break, STOP the car. Don't reward complaints by allowing your child to ride unprotected. That's a disastrous decision, and one that will make it harder to keep him or her in the seat on the next ride.

Remember make your message consistent—the child is always buckled up.

If a child tries to get out of the seat, stop the car and firmly, but calmly, explain that the car won't go until he or she is back in place—buckled in the car seat.

Make a vinyl seat pad more comfortable in hot weather by covering it with a cloth pad.

Some children hit rough spots that discourage car seat and seat belt use at certain ages. Here are some useful tips:

Birth to 9 Months: Comfort Counts

Start the use of safety seats on the first ride home from the hospital, and keep on using them for every ride.

Keep a newborn comfortable by padding the sides of the seat with rolled towels to prevent slouching.

Place a small rolled towel between the crotch strap and the small infant to prevent slouching in seats that have long seat back to crotch strap distances.

9–23 Months: Restless Toddlers

Kids this age love to climb, so yours may resist the safety seat for the first time. Be patient: it's only a phase. Keep a positive attitude and a calm but stern voice. Remember to be consistent. You're protecting your baby and it's worth the extra effort.

Attach soft or chewy toys to the safety seat with very short strings. Not only do children this age love to throw things, but unattached toys roll under seats and can go flying in sudden stops.

Talk with your toddler or sing a song. Work at keeping your child entertained, but don't let yourself get distracted from your own driving.

24–36 Months: Teachable Two's

Let kids personalize their seats with stickers, names, racing stripes. You should help, but let them choose their own decor. The seat should be their "special seat."

Talk about what they see along the roadside: signs, bridges, firetrucks, cows. Make driving with your child an educational experience.

Encourage youngsters to buckle up their favorite teddy, in or out of the car. Talk about how safe teddy is riding in his car seat or safety belt.

Preschoolers: Fast Learners

This child is ready to be a role model for any younger children.

Talk about safety as "grown-up" behavior and praise proper use.

Encourage your child to count how many children are in car seats.

Encourage imagination. When your child rides buckled up, is she an astronaut? A race car driver?

Now's the time to explain in more detail WHY buckling up is so important. "In case we have to stop suddenly, your safety seat keeps you from bumping your head."

Use books and pictures with safety messages.

Make sure *all* kids buckle up on school trips and other outings.

Remember to *always* buckle up yourself.

Elementary School Children: Graduating to Seat Belts

Explain how safety belts save lives.

Use dashboard stickers to remind them and their friends of your seat belt policy.

Help them practice how they would respond if friends or friends' parents contradict good safety habits. Your child could say, "My mom and dad have a rule that I *always* buckle up."

Long-Distance Tips for Kids of All Ages

Plan for frequent stops, and try to stop before the kids get restless. Cuddle young children and let older children snack, and run around for 10–15 minutes.

When there are two adults in the car, try switching positions so the child has a seat companion and isn't left out of the conversation.

Have a "surprise bag" in the car. Bring out toys and treats one at a time.

Play the radio and tapes, or sing songs. If more than one adult is present, read short stories aloud.

Try observation games. Preschoolers can spot cars of different colors. Older children can find vehicles from ten different states, or try to identify certain models of automobiles on the road, or count people wearing seat belts in passing cars.

Remember to always be consistent: you and your child are *always* buckled up, and the car seat is used correctly. If you believe in what you're doing, eventually your child will also.

Supported by an educational grant from Exxon Corporation with the cooperation of the National Highway Traffic Safety Administration.

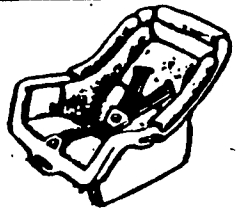
Buckle Baby Right.

Guide To
Child Safety Seats.

H-9

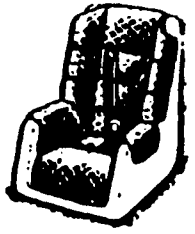
Child Safety Seats

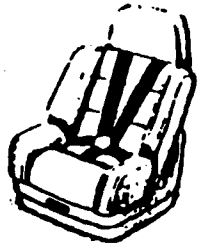
Child Safety Seats come in many sizes and designs. There is no "best" seat. The best seat for you is the one you'll use every time your child rides in your car. There are four basic types of safety seats.



Infant Seats are specially built for babies up to 20 pounds, or about 7 to 9 months old. These tub-shaped beds are easy to use, inexpensive, and fit most cars.

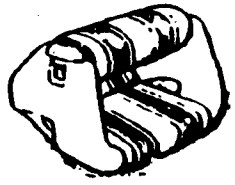
Toddler Seats are designed for children who have outgrown the infant seat and can sit up without support. They can be used for children who weigh between 20 and 40 pounds.





Convertible Seats function both as infant carriers and toddler seats. Although they cost more, you can use the same seat from infancy until your child outgrows it around age four or 40 pounds.

Booster Seats fill the gap between when your child outgrows his safety seat and when he can use only a seat belt. They provide a safe, inexpensive transition for children between 40 and 60 pounds.



Since the Child Passenger Protection Act was signed into law in 1983, many people have purchased or borrowed safety seats. Surveys show that many parents buy top-rated, federally approved safety seats, but misuse them.

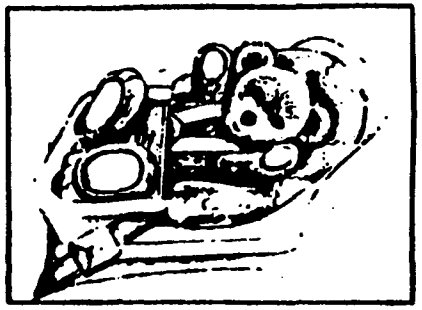
Some parents don't anchor the child seat to the vehicle's seat with the lap belt. Or they don't use the child seat's harness to hold the child in the seat. And some parents face the child the wrong direction.

Why are so many seats misused? Usually parents just don't read the manufacturer's instructions. Sometimes, parents don't realize the terrible danger they have created for their child by misusing the seat.

It's easy to use a child seat correctly if your follow three simple steps . . .

1. Sit Right.
2. Seat Right.
3. Belt Right.

1. Sit Right



Face The Child the Right Direction.

Child Safety Seats are designed to hold the child in place and absorb the impact of a crash by spreading the forces over the stronger parts of a child's body. For these reasons, it's critical that your child is sitting correctly in a safety seat that *is facing the right direction.* To do it right, follow these simple rules . . .

Infant Seats – Face the seat backwards. Baby rides in a semi-reclining position facing the rear of the car.

Toddler and Booster Seats – Face the seat forward. The child sits upright facing the front of the car.

Convertible Seats – In the infant position, the seat reclines and faces rearward. In the toddler position, face the seat forward with the child upright.

2. Seat Right

Secure The Child In The Safety Seat.

Your child must be secured within the seat itself *by the harness and/or straps.* If not, he could be thrown from the seat during a crash and hit the car's interior surfaces. He could even be ejected from the car. Here are some important points to remember . . .

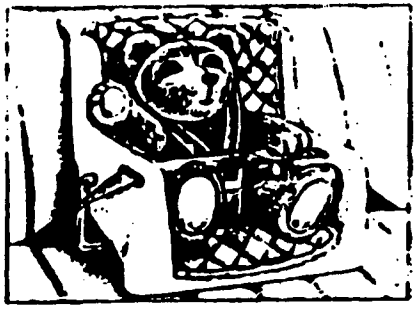
All Seats – *Always* snugly and completely fasten the harness. In most seats, the harness goes over the child's shoulders and through the legs.

Toddler Seat – Don't be fooled by models that have a U-shaped, padded armrest. This is only a cosmetic feature. *Always* fasten the harness.

Convertible Seat – Thread the harness differently for the infant and the toddler positions. The manufacturer's instructions explain how.

Booster Seat – This seat comes with its own harness or uses the car's lap/shoulder belt. In either case, *always* secure the child with an upper body restraint.

3. Belt Right



Properly Secure the Child Seat to the Car.

Failing to correctly anchor the seat in the car as recommended by the manufacturer has resulted in seats tipping over, sliding sideways or being ejected from the car completely. It also resulted in many children being hurt or killed. Anchoring the car seat properly is critical to the seat's performance in a crash.

Convertible and booster seats require extra attention since the car's seat belt is routed differently in each position. Older seats sometimes require a tether strap attached to the top of the seat and the frame of the car. If you are unsure of the directions for anchoring your car seat, call 1-800-CAR-BELT to receive those instructions.

Always Remember...

- Never hold a child in your lap while riding in either the front or back seat.
- All infants and toddlers under four must, according to Pennsylvania law, travel in approved car seats, except for older children (between one and four) who may use the car's seat belt in the back seat only.
- Always follow the manufacturer's instructions for correct installation.
- The center rear seat is the safest place in the car.
- Remember. Infants face backward. Toddlers face forward.
- Always use the car's seat belt to anchor the seat to the car.
- Make sure the seat's harness fits snugly (two finger widths of slack only).
- Use a tether strap if the seat requires it.
- Set a good example by using your seat belt everytime you travel. All front seat passengers must use a seat belt in Pennsylvania. It's the law.
- Studies show that when children are correctly buckled up they are better behaved, feel more secure, fall asleep sooner and are less likely to be injured in the car.

For more information on safety seats check with your pediatrician or contact:

Child Passenger Safety Project
121 Coulter Avenue #5
Ardmore, PA 19003

Toll Free 1-800-CAR-BELT

CORRECT USE OF CHILD SAFETY SEATS

ARE YOU MAKING THESE MISTAKES ?

- **BUNDLING YOUR CHILD IN BLANKETS BEFORE PLACING IN THE CAR SEAT?**

This makes correct positioning of shoulder harness and crotch strap impossible.

- **FACING YOUR CAR SEAT IN THE WRONG DIRECTION?**

Baby must ride backwards until he or she can sit up well and is over 12 months old. The back seat is usually safer than the front seat. If the driver must supervise the infant, place the seat in the front seat facing the rear. A forward facing, upright toddler seat is used after the child weighs 20 pounds and is over 1 year old.

- **RECLINING THE CAR SEAT TOO MUCH?**

This could permit the child to be forced out head first by frontal impact. Check manufacturer's instructions for safe degree of tilt.

- **FAILING TO SECURE THE CAR SEAT WITH AUTO SEAT BELT?**

If lap belt does not fit around or through its frame as directed, try another seating position in the car. A seat belt extender can lengthen the belt. If these do not work, use a different model car seat, which should be fitted in the car before purchase. DO NOT PUT SEAT BELT IN A DIFFERENT POSITION OTHER THAN THAT RECOMMENDED BY MANUFACTURER.

- **NEGLECTING TO USE THE HARNESS, SHIELD OR COMBINATION OF THE TWO, AS SPECIFIED IN THE MANUFACTURER'S INSTRUCTIONS?**

This could allow child to be thrown out of seat.

- **FAILING TO USE THE HARNESS ON A CAR SEAT WITH A PADDED ARMREST?**

The armrest is a comfort feature and will not protect your child in any way. The harness must be used at all times.

- **IS THE HARNESS TOO LOOSE?**

This allows the child to experience a very severe jolt during a collision, because webbing is not stretched to absorb impact.

- **NEGLECTING TO FASTEN TOP TETHER STRAP?**

Some older model car seats require a top tether strap. When not used the seat pivots forward in a frontal crash. Check your car seat directions. If you are not sure whether your car seat needs one call 1-800-CARBELT.

- **ALLOWING YOUR CHILD TO RIDE LOOSE IF HE/SHE COMPLAINS OR CLIMBS OUT OF THE CAR SEAT?**

This commonly happens when children are between 9 and 24 months, when they are becoming mobile and resist being confined. They can and must be taught that the car seat is their place in the car. For most children, the parent can accomplish this in a few days or weeks by stopping the car whenever their behavior is intolerable and letting them know that the car won't start again until they are secured in their car seat. Being firm and explaining that everyone else in the car is also buckled up will help. Letting the child ride loose a few times will only make buckling up harder the next time. Be reassured that your child can and will learn to accept the car seat and that this resistance is a passing phase. Making frequent stops during long trips and providing simple entertainment will help. (see other side for suggestions)

- **RECLINING A FORWARD-FACING SEAT FOR YOUR TODDLER?**

Convertible seats for toddlers are built to be used in the upright forward-facing position. Children quickly learn to sleep in an upright car seat very easily.

- **FAILING TO DOUBLE STRAPS BACK THROUGH THE BUCKLE WHEN ADJUSTING THE HARNESS?**

The harness straps must be secured by doubling them back through the buckles. When incompletely threaded the harness could pull out unnoticed.

- **REPLACING YOUR CAR SEAT IF IT HAS BEEN THROUGH AN ACCIDENT?.**

Always replace car seats and safety belts after an accident.

- **MOVING YOUR CHILD TO A BOOSTER SEAT TOO SOON?**

Manufacturers claim that children who weigh as little as 20 pounds can safely ride in a booster seat. The American Academy of Pediatrics recommends keeping your child in the car seat until he or she weighs 40 pounds. Your young child needs the additional support provided by the full harness in the car seat.

- **FAILING TO USE A LOCKING CLIP TO SECURE THE SEAT BELT?**

Many new cars require the use of a locking clip to secure the car seat within the belt. A continuous loop belt (when it's secured, you can pull on the lap portion and it will expand) will not keep the car seat intact. Call 1-800-CAR BELT to determine if you will need a locking clip. Your car's manual can also give you this information.

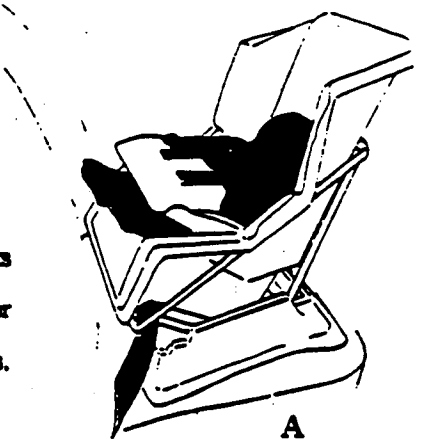
For more information on available materials, films, speaker's network, curriculum, etc. -- which are free to PA citizens -- call or write:

PA Chapter - American Academy of Pediatrics
PA Traffic Injury Prevention Project
610 Old Lancaster Road #220
Bryn Mawr, PA 19010

1-800-CARBELT

The One-Minute Safety Check-Up

Using a car seat right makes a *big* difference. Even the "safest" seat may not protect your child in a crash, unless you. . .

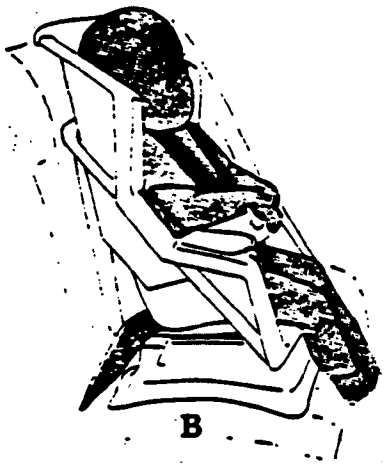


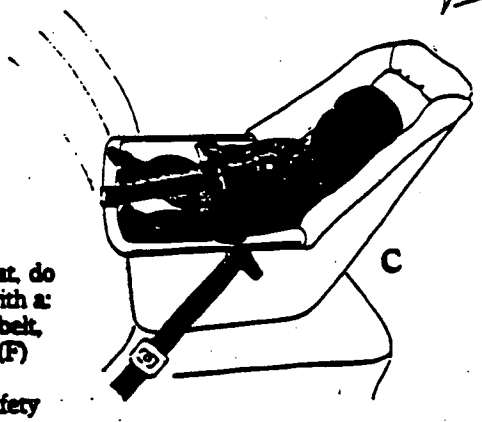
CHECK TO BE SURE!

Is your child facing the right way?

- backward to at least 18-20 pounds (A). If using a seat made for infants only, *always* face it backward.
- forward over 18-20 pounds, if he or she can sit up well (B).

Is the harness (C) over the shoulders, and snug? Is the crotch strap short?

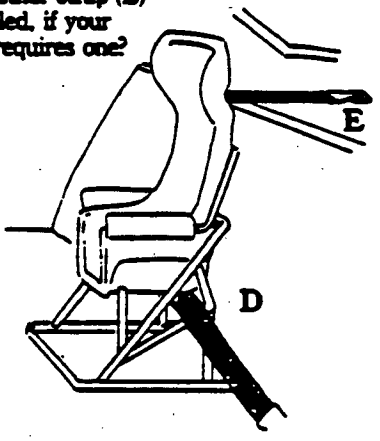




If you have an auto booster seat, do you always use it with a:

- lap and shoulder belt,
- tethered harness (F) with lap belt, or
- shield (G) with safety belt?

Is the auto belt (D) in the right place, and tight?
Is the tether strap (E) installed, if your seat requires one?



American Academy of Pediatrics
P.O. Box 927, Elk Grove Village, IL 60007
Supported by a grant from Exxon with cooperation from NHTSA. Flyer may be reproduced.
ER6005

BE SURE TO READ, FOLLOW AND KEEP THE MANUFACTURER'S INSTRUCTIONS.

QUESTIONS? Contact your pediatrician or local safety group.

U.S. Department of Transportation
National Highway Traffic Safety Administration

1991 Shopping Guide to Car Seats

All products listed meet Federal Motor Vehicle Standard 213

American Academy of Pediatrics

A child safety seat that is installed and used correctly will provide very effective crash protection for your child. Incorrect use of a child safety seat can drastically reduce its effectiveness. Carefully read and follow the instructions that come with the child safety seat. Also, read the car owner's manual for installation instructions.

NOTE: Occasionally, child safety seats are recalled by the manufacturer to correct safety related problems. Phone the Auto Safety Hotline at 1-800-424-9393 to find if your new or used child safety seat has been recalled.

To be sure that you can be reached, send the manufacturer a postcard marked "CHILD SAFETY SEAT REGISTRATION" with your name, address and the model number and production date of your child safety seat.

Size and weight guide for child safety seats provided on reverse side.

Manufacturer/Name	Harness Type	Harness Adjustment	Special Notes	Price Range
Infant Seats				
Century 560, *565*	Straps only	One-step	Tilt-indicator, fits in shopping cart.	$25-35
Century 580, *590*	Straps only	580 - Manual 590 - One-step	Tilt-indicator; 590 - separate base stays in car; can also be used in car without base.	$45-65
Cosco Dream Ride	Straps only	One-step	To 17 lbs; use flat as car bed, or semi-reclined, rear-facing.	$59-69
Cosco TLC	Straps only	Manual		$29-35
Evenflo Dyn-O-Mite	Straps only	Manual	Shoulder belt wraps around front of seat.	$29-34
Evenflo Joy Ride	Straps only	Manual	Shoulder belt wraps around front of seat; "Joyride Convertible" model is for infants only.	$36-60
Evenflo Travel Tandem	Straps only	Manual	Separate base stays belted in car; seat can be used in second car without base; locks in shopping cart.	$62-79
Fisher-Price Infant Car Seat	Straps/T-shield	Manual	No locking clip; leveling line; locks in shopping cart.	$50
Kolcraft Rock 'N Ride	Straps only	Manual	No harness height adjustment.	$29-50
Convertible Seats				
Brookhood Mfg. Baby Sitter	Straps only	Manual	Previously called "Wonda Chair."	$89
Century 1000 STE	Straps only	One-step	2 crotch strap positions.	$50-60
Century 2000 STE	Straps/T-shield	One-step	2 crotch strap positions.	$55-70
Century 3000 STE, *3500 STE Premier*	Straps/wide shield	One-step	2 crotch strap positions.	$80-90
Century 5000 STE, *5500 STE Premier*	Straps/wide shield	One-step	2 crotch strap positions; multi-position shield; back pads for infant support.	$90-120
Cosco 5-Pt	Straps only	One-step	Back pads for infant support.	$55-59
Cosco Luxury 5-Pt	Straps only	One-step	Back pads for infant support.	$69-89
Cosco Comfort Ride	Straps/wide shield	One-step	Back pads for infant support.	$75-89
Cosco Soft Shield	Straps/T-shield	One-step	Back pads for infant support.	$79
Cosco Autotrac	Straps/T-shield	Automatic	Back pads for infant support.	$99
Evenflo One-Step	Straps/wide shield	Manual		$56-90
Evenflo Champion	Straps/wide shield	One-step	Smaller, lighter than other Evenflo models.	$76-90
Evenflo Seven Year Car Seat	Straps/wide shield	One-step	Converts to booster (see Evenflo Booster).	$110-130
Evenflo Ultara I, II, V	Straps/shield; Straps only (V)	One-step	Wide shield (I); T-shield (II); back pads for infant support.	$90-126
Fisher-Price Car Seat	Straps/T-shield	Automatic	No locking clip provided.	$78
Gerry Guardian	Straps/T-shield	Automatic	Harness locks on impact.	$55-85
Kolcraft Auto-Mate	Straps/T-shield	One-step	New name for "Dial-A-Fit."	$45-75
Kolcraft Traveler 700	Straps/wide shield	One-step		$45-75
Nissan Infant/Child Safety Seat*	Straps/T-shield		Not for aircraft use.	$100
Playskool Carseat (by Kolcraft)	Straps/wide shield	One-step	Inflatable head support for infant.	$70-90
Renolux CT 2000	Straps only	Manual		$60-80
Renolux CT 5000	Straps only	Manual	High headrest; swivel base.	$100-130
Renolux CT 7000	Straps only	Manual	High headrest; remote control recline feature.	$180-200
Harnesses				
Little Cargo Auto Safety Vest (25-40 lbs)	Straps only	Manual	Padded shoulder, hip and crotch straps; auto lap belt attached through padded stress plate.	$40
E-Z-On Vest (several sizes)	Straps only	Manual	Tether strap must be installed in vehicle.	$62

Booster Seats	Belt Position	Special Notes	Price Range
Century Commander*	Wrap-around	Not for aircraft use.	$20-30
Century CR-3*	Wrap-around	Belt-positioning booster for lap/shoulder belt use; shield to add for lap belt use; not for aircraft use.	$30-40
Cosco Explorer	Wrap-around	2 seat heights.	$25-29
Evenflo Booster Car Seat	Wrap-around or through base	Split shield open in middle; belt through base for short child; internal crotch strap.	$46-55
Evenflo Sightseer	Wrap-around		$29-34
Gerry DoubleGuard	Wrap-around; through base with lap belt	Belt-positioning booster for lap/shoulder belt use; shield to add for lap belt use.	$45-60
Kolcraft Tot Rider Quik Step	Wrap-around	Crotch post; shield pivots down on for access to seat.	$19-35

*Seat not certified for use in aircraft. (New models in italics.)

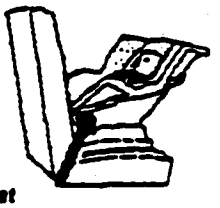
Shopping Guide for Child and Infant Safety Seats 1991

SIZE AND WEIGHT GUIDE FOR CHILD SAFETY SEATS

From Birth to 12 Months or 20 Pounds

Use an infant or convertible seat facing the rear.

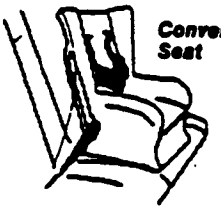
Infant



Rear Facing Convertible Seat

12 Months or 20 Pounds to 4 Years or 40 Pounds

Use a convertible or toddler seat.



Convertible Seat

4 Years or 40 Pounds to 8 Years or 70 Pounds

Keep children in convertible or toddler seats as long as they will fit.

When they have outgrown the convertible or toddler seat,

- If the vehicle has a lap/shoulder belt in the rear seat, use a booster seat that ***positions the lap/shoulder belt correctly—secures the lap belt across the child's hips, and positions the shoulder belt so it does not cross the face or the front of the neck.***

OR

- Use the rear lap/shoulder belt alone ***IF it fits properly—does not cross the face or neck and fits across the child's hips and does not ride up across the stomach.***
- If no other type of restraint is available, use the lap belt, positioned ***low on the hips and adjusted snugly.***

Booster Seat with Lap/ Shoulder Belt

Vehicle Lap/ Shoulder Belt

Shield-Type Booster Seat

8 Years and Older or 70 Pounds or more

Use the protection system that is in the vehicle.

Vehicle Lap Belt

NOTE: Ages and weights are approximate. Manufacturer's instructions should be consulted for exact figures. Use only safety seats labeled: "This child restraint system conforms to all applicable Federal motor vehicle safety standards" and has a stamp of manufacturing after January 1, 1981.

DOT HS 807 667
February, 1991

WHAT IS A LOCKING CLIP? DO I NEED ONE IN MY CAR?

A properly installed and used car seat provides optimum crash protection for your child. If the car seat you own does not fit easily in your car, don't try to "make" it work through make-shift measures. Incorrect use of your car seat can drastically reduce its ability to function in a crash.

To be sure you have installed the car seat correctly, first check the instructions provided by the manufacturer of the car seat. Then check the owner's manual for your particular car to be sure the seat belts provided in your car are safe to use with a car seat. SOME SEAT BELTS CANNOT BE USED WITH CAR SEATS UNDER ANY CIRCUMSTANCE.

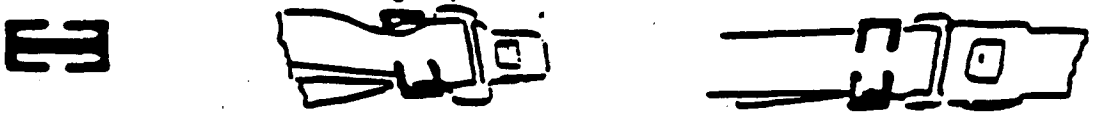
Some seat belts require the use of a locking clip to secure a car seat. If your seat belt has a continuous loop or sliding latchplate (see diagram on back of page) you will have to use a locking clip to hold your car seat tightly in place. Pictures of several different types of seat belts are on this page. Check your vehicle owner's manual to determine which type of seat belt you have in your vehicle. It is NOT unusual to have several different types of seat belts in one vehicle. Front seat belts are often different from back seat belts and the middle of the back seat may have yet another type of belt. Before placing your car seat in any seating position, you must test the seat belt to be sure it will hold a car seat.

Test your seat belt by installing your car seat according to the manufacturer's instructions. Once the seat is attached by the seat belt, give a hearty tug on the seat. Does it move freely from side to side? Front to back? Tug on the lap portion of the belt. Does the belt pull loose in your hand? If you answered yes to these questions, you may need a locking clip to secure your car seat. Again, the locking clip may not be able to correct this situation depending on the type of seat belt installed in your vehicle.

To attach a locking clip:
1. Buckle the seat belt around or through the car seat according to the manufacturer's instructions.
2. Tighten, as snugly as possible, the lap portion of the belt by pulling on the shoulder portion and feeding the excess into the retractor. It is helpful to place your knee in the child safety seat and press it down into the car seat while tightening the belt.
3. When the belt is tight, pinch the webbing together behind the sliding latchplate and unbuckle the belt while still holding the webbing together so it stays tight.
4. Thread the belt webbing onto the locking clip, one side at a time. Keep the clip close to the sliding latchplate (no farther than 1/2"). See diagram below.
5. Rethread the seat belt correctly around or through the car seat and fasten the buckle. Pull the lap portion and the shoulder portion separately to be sure the clip is safely in place. Tug the seat forward and side to side. If seat is still not secure, remove clip and repeat process. If car seat continues to move loosely, try another seating position in the vehicle to see if another seat belt is more compatible with the car seat.

The locking clip will remain on the belt until you remove it. If the seat is removed, the clip should be removed for passengers using the belt. The clip should be reinstalled each time the car seat is placed back in the vehicle.

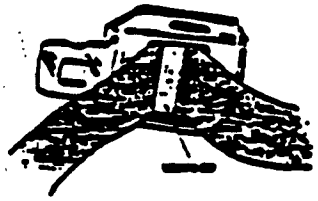
LOCKING CLIP



MOST COMMON BUT NOT ONLY TYPES OF SEAT BELTS

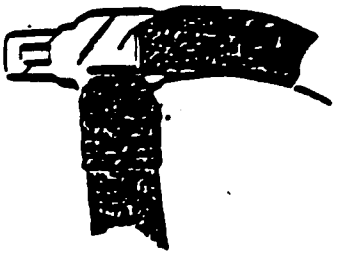
** Test your car seat in every type of seat belt before trusting your child's safety.

LOCKING LATCHPLATE



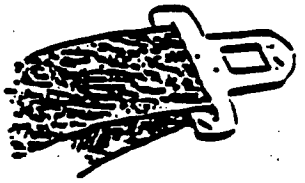
NO LOCKING CLIP
USUALLY NECESSARY

SEWN-ON-LATCHPLATE



NO LOCKING CLIP
USUALLY NECESSARY

CONTINUOUS LOOP

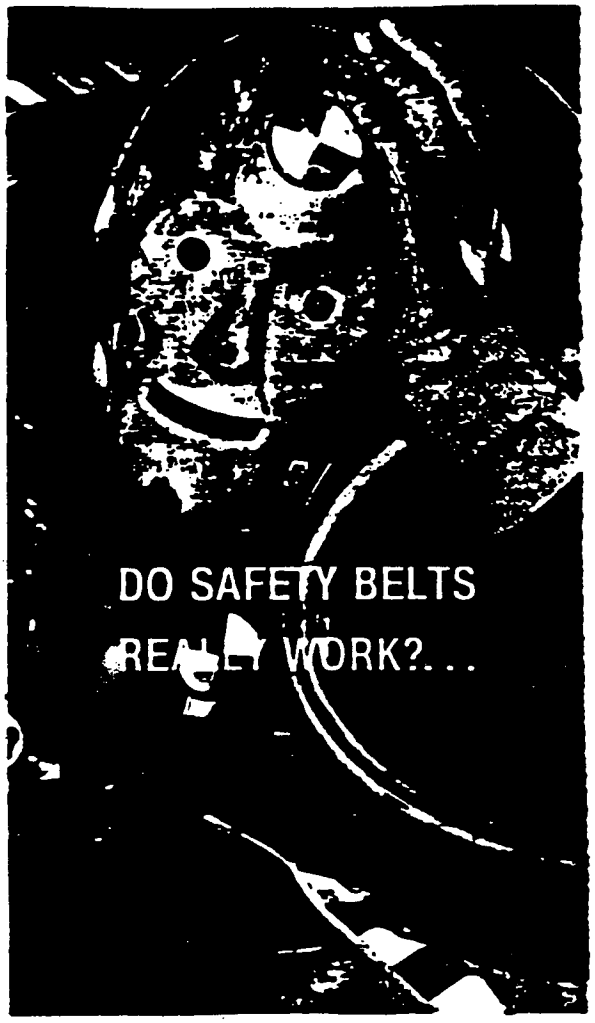


LOCKING CLIP
ALWAYS NECESSARY

TO OBTAIN A FREE LOCKING CLIP AND INSTRUCTIONS FOR YOUR VEHICLE CALL:

PA CHILD PASSENGER SAFETY PROJECT
PA AMERICAN ACADEMY OF PEDIATRICS
1-800-CAR BELT

CPSP 11/89



FACT: TRAFFIC ACCIDENTS CAN HAPPEN TO YOU

In your lifetime, you have a 50 percent chance of being in a serious accident and a 1 in 50 chance of being killed in a traffic accident. Ask the experts. . .it can happen to you.

Why risk it? Your best protection against death and injury in your car is your safety belt. There are no good reasons for not buckling up. It's easy. Just reach over - click - and you're set.

. . .JUST ASK THE EXPERTS.

Vince and Larry, the test crash dummies, are convinced that safety belts work. But you may not be.

You hear many stories told about safety belts that just aren't true. . .just ask the experts. These Pennsylvanians learned from experience that safety belts save lives.

MYTH: BELTS CAUSE INJURIES

"In my accident, I hit an object on the road and my car rolled over. Afterwards, I had some soreness in my chest, probably caused by my safety belt. But I shudder to think of what type injuries I would have suffered if I wasn't wearing my belt."

Thomas Wolfendale
Pittsburgh, Pennsylvania

There have been reports of injuries caused by safety belts. In these rare cases, however, the belt was either worn incorrectly or the crash was so severe that the occupants would have been seriously injured or killed if not belted. Also, a belt-induced injury occurs to a strong part of the body, such as the chest, which can better withstand the force of the crash.

MYTH: PREGNANT WOMEN SHOULDN'T WEAR SAFETY BELTS

"During my pregnancy, I was a little uneasy about wearing my safety belt because I was afraid the pressure from the belt would hurt my baby. But my doctor reassured me that my baby would be much safer if I were protected by a belt in an accident. And, I proved him right. If I hadn't been buckled up

on that winter night when our car slid on the ice, I'm positive that my daughter would never have been born."

Cheryl Porter
Middletown, Pennsylvania

The best way to protect an unborn child is to protect the mother. For pregnant women, as for anyone, the key to making safety belts effective is knowing how to wear them properly. When pregnant, place the lap belt under your abdomen as low on the hips as possible. Never place the belt above your abdomen - this could cause injuries in an accident. Place the shoulder belt between your breasts. Then adjust both belts to fit as snugly and comfortably as possible.

MYTH: IT'S BETTER TO BE THROWN CLEAR OF THE CAR

"I not only believe that my safety belt saved my life, but I have long lamented that I didn't insist that my friend wear a safety belt that night. We were hit head-on and my friend was thrown through the windshield. I survived, but she was dead on arrival at the hospital. Had she had her belt on, I know she'd be alive today."

Richard Johnson
Melrose Park, Pennsylvania

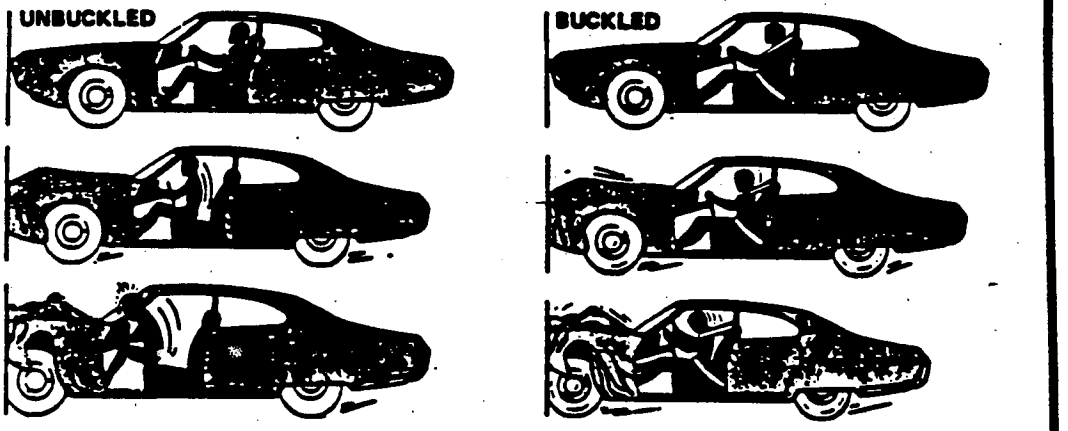
You are about 25 times more likely to be fatally injured if ejected from the vehicle. It's better to be buckled inside the car. Ejection

THE HUMAN COLLISION

In an accident, there are really two different collisions. The first is the car's accident in which the car hits something, buckles and bends, and then comes to a stop.

The second, and more important collision, is the "human collision." This happens when a person hits some part of the car, such as the steering column, dashboard, or windshield. How hard is the impact? If the car is going only 30 mph, the passengers will hit the car interior with the same force as a fall from a three-story building.

The second collision doesn't have to happen. Safety belts help you "ride down" the force of the crash (first collision) by holding you in place, and they prevent contact with either the car's interior or with other passengers (second collision).



can result, not only in landing on unforgiving pavement, but also on other lethal objects, scraping along the ground, or being crushed by another vehicle.

MYTH: GOOD DRIVERS DON'T CAUSE ACCIDENTS

"I always considered myself a good driver. I never thought an accident would happen to me. But one night, while responding to an emergency call in an ambulance weighing more than four tons, the vehicle hit a patch of ice and began sliding. My safety belt kept me in place so I kept some control of the ambulance and managed to hit a cement wall rather than another car."

James Bente
Washington, Pennsylvania

Most people feel that accidents happen to other people. Every day, hundreds of careful, law-abiding drivers become traffic victims. The primary purpose of the safety belt is to protect against injury after the crash, when everyone is vulnerable. When belted, you have more control over the vehicle in emergencies. If unbelted, you may lose control and cause death and injury to others, including those not involved in the initial collision.

MYTH: I CAN BRACE MYSELF IN A CRASH

"I always thought I could hold myself back if I was ever in an accident. But when a truck hit my car in the rear, I couldn't even think because everything happened so fast. I remember being thrown forward and watching the ash tray being dislodged by the force. Suddenly, my safety belt pulled me back from the dashboard, while the ash tray crashed through the windshield. I remember thinking 'that could have been me'."

Maureen Hoepfer
Girardville, Pennsylvania

The forces involved in even a low-speed crash make it impossible for anyone to avoid contact with the inside of the car or other occupants, which ultimately results in injury. For example, the force of a 30-mph crash is equal to a fall from a three-story building.

MYTH: MY SAFETY IS MY BUSINESS

"After my accident, all I could think of was 'what would have happened to my husband and children if I had been killed'."

Kathy Werling
Glenshaw, Pennsylvania

Safety on the highways is not personal. It's everyone's business. Traffic accidents don't happen on your personal streets and highways. And, it's your tax money that provides the emergency services required after collisions and pays for the health and welfare services needed by accident victims.

The emotional and financial toll traffic accidents have on a family can be devastating. Each highway death, for example, costs more than $300,000. On an average, medical expenses for serious injuries resulting from traffic accidents amount to $208,400. More importantly, what about the grief and loss inflicted on families when a father, mother, son, daughter, brother, or sister are needlessly killed or disabled in an accident because they weren't buckled up?

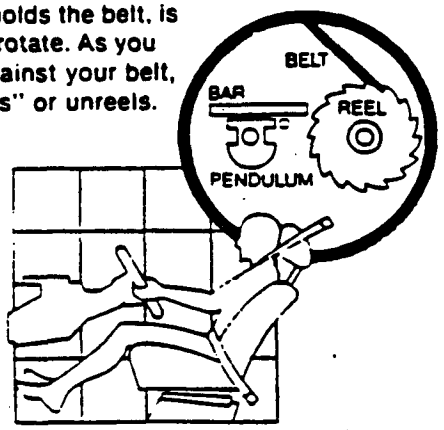
Safety belts work...that's a fact!

HOW SAFETY BELTS WORK

Since the shoulder belt is designed to allow freedom under normal driving conditions, some people question whether it would restrain them in a collision. But, don't worry. Your belt will automatically lock and hold you if your car makes a sudden stop or crashes. Here's how your belt works.

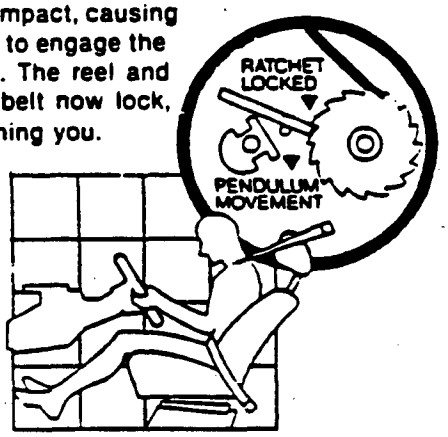
NORMAL

Under normal conditions, the pendulum and bar are in the rest positions. The reel, which holds the belt, is free to rotate. As you lean against your belt, it "gives" or unreels.



ACCIDENT

Under accident conditions, such as a collision, the pendulum tilts toward the force of the impact, causing the bar to engage the ratchet. The reel and safety belt now lock, restraining you.



OTHER MYTHS AND FACTS

MYTH: ***"I never drive fast or travel far from home so I don't need safety belts."***

FACT: Eighty percent of serious and fatal injuries occur in cars traveling less than 40 mph. Seventy-five percent of serious and fatal traffic injuries occur less than 25 miles from home.

MYTH: ***"What if my car catches fire or goes under water? I'll be trapped in my car if I'm buckled up."***

FACT: Less than one-half of one percent of all injury producing accidents involve fire or submersion. When they do, safety belts can prevent you from hitting your head or losing consciousness, making it possible for you to escape.

MYTH: ***"I have air bags in my car. I don't need to wear my safety belt."***

FACT: Air bags alone can reduce the chance of fatality in crashes by 20 to 40 percent. But air bags in combination with safety belts reduce your chances of being killed in an accident by 45 to 55 percent. Safety belts are still your best protection in rear, side, and roll over crashes.

MYTH: ***"I can protect my baby by holding him."***

FACT: On the contrary, a baby may weigh very little, but in an accident, your baby becomes a human projectile. In a crash as slow as 10 mph, a 12-pound baby exerts a force of 120 pounds. You can't possibly hold on. And, if you're unbelted and a collision occurs, you may crush your baby between your body and the dashboard as you're violently pushed forward by the crash forces. The best protection for your child is a child safety seat. In fact, Pennsylvania law mandates that children under four be buckled up when riding in the car.

FOR MORE INFORMATION:

Robert P. Casey
Governor

Howard Yerusalim, P.E.
Secretary of Transportation

"Steer clear of trouble."

"Avoid ring around the collar."

"And don't do windows."

"Vince and Larry" © 1991 U.S. DOT

A Public Service Message of U.S. Department of Transportation

YOU COULD LEARN A LOT FROM A DUMMY.
BUCKLE YOUR SAFETY BELT.

VINCE AND LARRY ON BELTS AND BAGS

VINCE AND LARRY ON BELTS AND BAGS

Hi! We're "Vince and Larry" and we've been on the road for a long time trying to convince humans about the importance of safety belts and air bags. We're crash dummies for the National Highway Traffic Safety Administration, but we're smarter than you think.

Vince: I've been in the business for more than 20 years. I graduated from the School of Hard Knocks with very high marks—skid marks. Larry is fresh out of Notre Dumb where he was a Road Scholar.

We love our job of going through windshields and eating dashboards to demonstrate how safety belts and air bags make a difference. We'd give an arm and

a leg (and usually do) to convince even one person to buckle up.

Since many of you don't know about safety belts, air bags and automatic belts, let us give you a "crash course."

Here are five important lessons to learn:

Lesson One:

Motor vehicle crashes are the number one killer of Americans under the age of 34. Every 22 minutes someone is killed in a crash and every 2 minutes a crash injures someone severely enough to require hospital treatment.

Lesson Two:

Use safety belts on every trip. If your car has an air bag,

you get added protection. The best way to protect yourself is to have an air bag and use your safety belts—the winning combination.

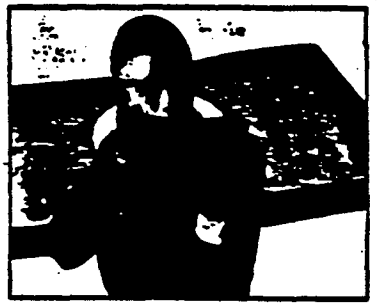
Lesson Three:

People who ride unrestrained will be tossed around inside the vehicle or ejected during a crash. At 30 mph, a 150-pound person who is not buckled in will crash into the steering wheel or dashboard with a force of more than two tons. But, when you use your safety belts properly, you significantly improve your chances of escaping injury or death.

Lesson Four:

Safety belts and air bags absorb some crash forces and spread the remaining ones over the relatively strong portions of the body. The safety belts also keep you inside the vehicle, which improves your chance of remaining conscious and in control during a crash.

Lesson Five:



Belts and air bags are so effective, the government requires *all* new cars sold in the United States after Sept. 1, 1989, to be equipped with automatic crash protection—either air bags or automatic safety belts—for front-seat occupants.

SAFETY BELTS

LARRY: Hey Vince, do you realize that thousands of lives have been saved by *safety belts*?

VINCE: I'd hope so Larry.—I'd hate to think we've been beatin' our heads against the wall for all those years for nothin'!

Wearing a safety belt and driving a car with an air bag can reduce your chance of fatality by 45 to 55 percent.

VINCE AND LARRY: There's a right way and wrong way to wear a *safety belt*. So don't be a dummy!

Wear the lap belt low and snug across your hips. Be sure not to tuck the shoulder belt under your arm or behind your back. The belts are designed so the impact of a crash is absorbed in the strongest areas of your body—the bones of your hips and shoulders.

VINCE AND LARRY: Buckle up no matter what kind of belt it is.

For cars that don't have automatic belts, it's important to buckle the manual safety belts. The moment it takes to buckle a safety belt can help save a life or prevent an injury. And don't forget to fasten the manual lap belt in cars where only the shoulder belt is automatic.

VINCE: Don't let safety take a back seat. Make sure everyone's buckled in.

Everyone in the vehicle should be buckled up. Even in the back seat. Young children need to be buckled into a child safety seat that's installed and used properly. Older children and adults should buckle themselves in no matter where they are sitting. Don't drive off until everyone is buckled up. If you make that a habit, you'll have a better chance of reaching your destination safely.

AIR BAGS

VINCE AND LARRY: Hey Vince, how do air bags work? And do they really taste like marshmallows?

Air bags work great in frontal or near-frontal collisions. In these types of crashes, sensors in the front of the car send a signal that inflates the air bag in less than one-tenth of a second and then quickly deflates. The bag then provides a cushion to keep the driver from crashing into the steering wheel, dashboard and windshield. Air bags reduce the chance of injury to the head, face, neck and chest—the parts of the body that are most likely to receive serious injuries in a crash.

VINCE: Remember Larry—If someone tells you that you don't have to buckle up if your car has an air bag, tell them they're full of hot air!

Air bags are only added protection. You must wear your safety belt so you're in place for the air bag's protection. It's important, too, to always buckle up since air bags inflate only in head-on crashes. Without your safety belt fastened, you might be injured in a side, rear or rollover crash.

LARRY: Tell me more Vince! How do the sensors work?

The air bag is hidden in the steering wheel or dashboard until it is needed. When a crash sets off the sensors, an inflation cycle produces harmless nitrogen gas that inflates the bag. It all happens faster than the blink of an eye. When an air bag inflates, you'll see a lot of white powder that may appear to be smoke. This is a cornstarch-based talcum used to lubricate the bag so it releases smoothly. It is harmless and quickly disappears.

VINCE: Do air bags have a proven track record?
They are extremely reliable and have worked as designed in thousands of serious frontal crashes and have logged more than 10 billion highway miles. Unexpected inflations almost never occur, and even if one did the small size of the bag and its quick inflation and deflation cycle enable the driver to safely stop the car.

VINCE AND LARRY: Air bags are easy to take care of 'cause they're usually good for the life of your car.
Most air bag systems require no maintenance. They are designed to last the life of the car. But once the air bag is used, it must be replaced. Most insurance policies cover the replacement cost.

VINCE AND LARRY: Can an air bag hurt me?
The air bag inflation cycle necessarily must be very quick to get the bag in place in time to protect you. There is a loud noise when it inflates, but not so loud that it causes hearing damage. The bag itself may cause slight chafing (similar to a rug burn) on exposed skin on the face, neck and arms. But these injuries are rare and minor compared to the serious injuries that are likely without an air bag.

VINCE AND LARRY: How about child safety seats? Where's the safest place for one in an air bag-equipped car?
The safest place for a child safety seat in any vehicle (with air bag or not) is the rear seat. If the car has a passenger-side air bag, a forward-facing child safety seat may be used in the right front passenger seat. The safety seat must still be secured by a safety belt.

AUTOMATIC BELTS

VINCE: Hey Larry, these new-fangled automatic belts are a snap aren't they?
Automatic safety belts come in a variety of styles, but there are basically two types: motorized and non-motorized. They all move into place automatically when the car door is closed.

VINCE AND LARRY: What's a motorized belt?
Motorized belts are shoulder belts anchored to small electric motors in the door frame; when you turn on the ignition, these motors move the belts into place. All motorized safety belts have manual lap belts. These lap belts must be buckled to provide the best protection possible and prevent the occupant from "submarining" (sliding out of the shoulder harness).

VINCE AND LARRY: What's a non-motorized belt?
Non-motorized automatic belts are anchored to the car door. When you close the door, the belt automatically moves into position around you. Many non-motorized automatic belts are combination shoulder and lap belts, but some manufacturers have automatic shoulder belts with manual lap belts. The lap belt *must* be fastened to provide maximum safety.

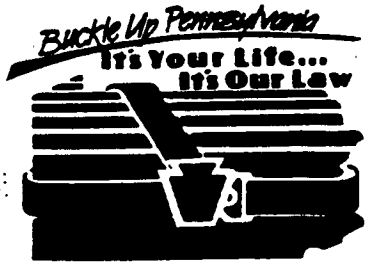
If you have any more questions about occupant protection, write to the National Highway Traffic Safety Administration, NAD-51, 400 Seventh Street, S.W., Washington, D.C. 20590, or call the toll-free Auto Safety Hotline at (800) 424-9393.

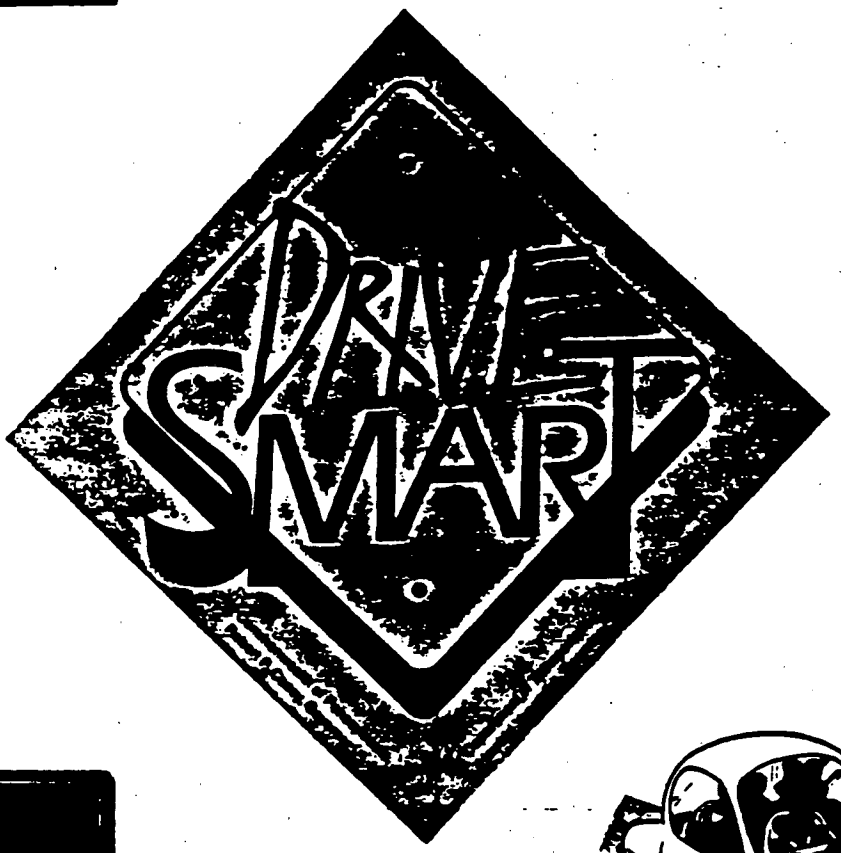
Air bag photo courtesy of Insurance Institute for Highway Safety

The holidays would not be the same without you.

Please buckle up and don't drink and drive.

Season's Greetings from your Police Department and the Keystone Safety Belt Network.


Buckle Up Pennsylvania
It's Your Life...
It's Our Law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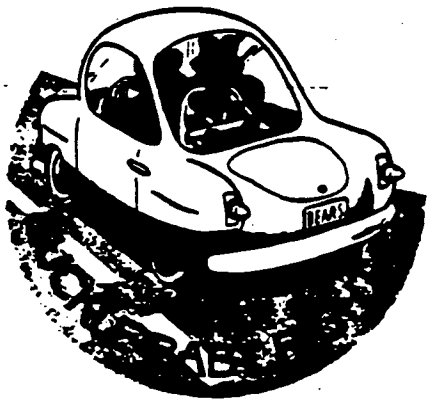

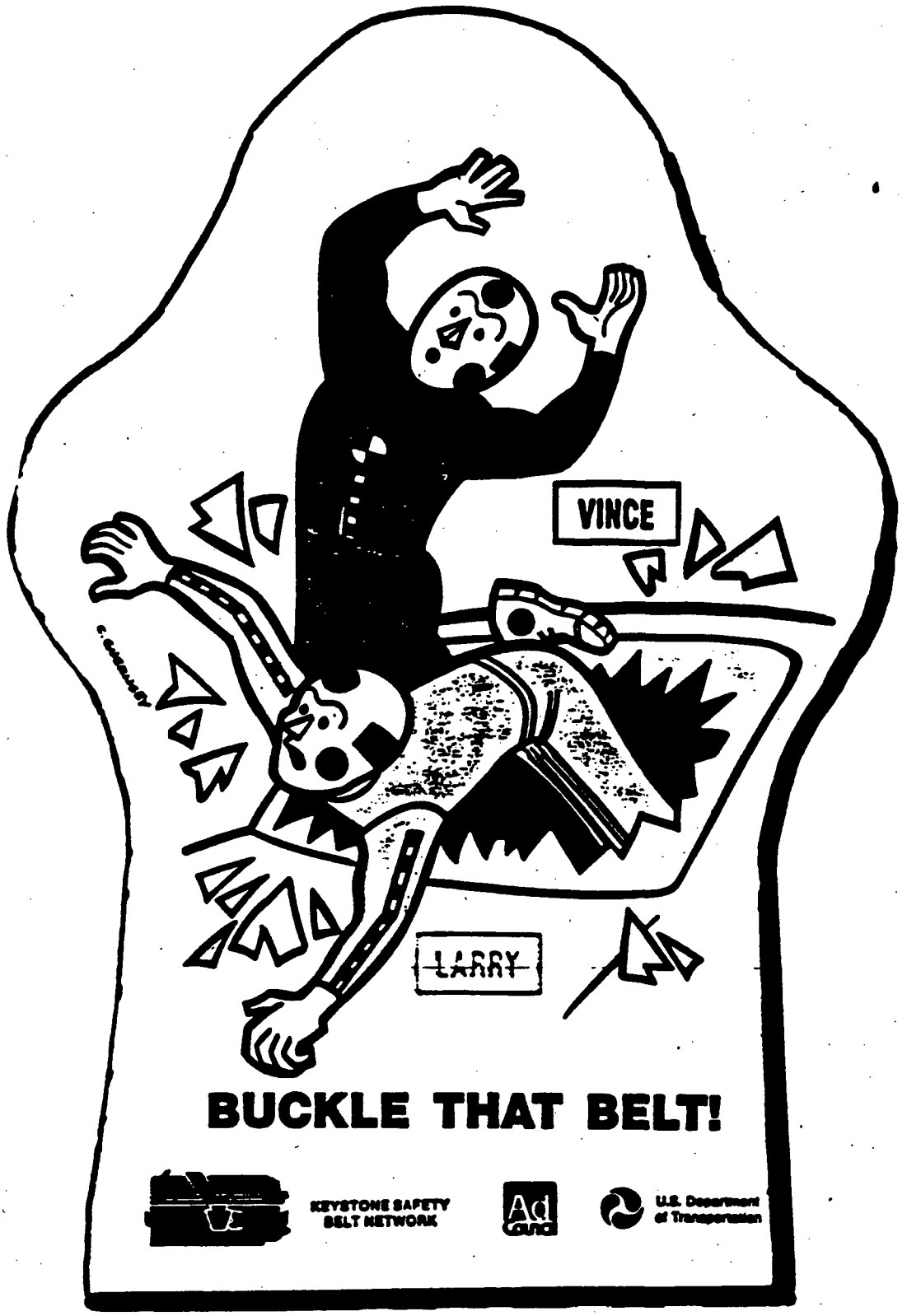
VINCE
LARRY
BUCKLE THAT BELT!
KEYSTONE SAFETY BELT NETWORK
Ad Council
U.S. Department of Transportation

APPENDIX I

PUBLISHED NEWSPAPER ARTICLES ABOUT PROJECT

In Tredyffrin, buckle up or else

BY JIM McCAFFREY
Suburban Staff Writer

Nothing is more tragic than the sudden and preventable death of a child. With that in mind, Tredyffrin police will begin pulling over and ticketing drivers who do not obey the Pennsylvania child safety seat law, as well as its adult seat belt law.

The Tredyffrin program is being monitored by the National Highway Traffic Safety Administration over the next year. NHTSA, noting the millions spent educating people to get them to wear seat belts, now believes it is time to start enforcing the laws requiring people to wear seat belts.

Pennsylvania law requires children birth to age 1 to be strapped in an NHTSA-approved car seat. Children ages 1-4 need only be in a lap belt in the back seat (although experts recommend car seats). But children from birth to 4 who ride in the front seat of a car must be in a car seat. Pennsylvania police may pull over a car and cite the driver for violating these requirements. The cost of that ticket is $84, or the defendant can bring the proof of purchase of a car seat to court and the case will be dismissed.

Police also will enforce seat belt laws applying to adults. The law requires all drivers and front seat passengers to wear seat belts. Drivers are responsible not only for their own seat belts but for making sure others under age 18 are wearing theirs. Fines for an adult seat belt violation total $69.

Police cannot stop a car for an adult seat belt violation or for seat belt violations involving children older than 4. However, if the driver is stopped for another violation, the police will issue seat belt citations if it is warranted.

A Tredyffrin police department release about the project noted, "The Chester County Highway Safety Project, the Pennsylvania Traffic Injury Prevention Project, Tredyffrin Townwatch, Valley Forge R.E.A.C.T., business and other community organizations are assisting in the project, donating time and material. The feasibility of receiving a grant from the Pennsylvania Department of Transportation is also in progress. Community Relations Officer Nick Bereda and Sgt. Stephen Dintino are leading the police effort on the project.

"An observation study of 800 drivers conducted earlier this year for NHTSA in the township shopping centers showed that about 98 percent of the infants were observed in child safety seats. For toddlers 1-3 years old, the rate was 91 percent. However, for toddlers 3-5 years old, only 41 percent were observed in child safety belts. However, only 48 percent of other community residents were buckled up. About 90 percent of the drivers knew about Pennsylvania's child safety seat and safety belt laws. However, only 72 percent stated that they always restrain their children and only 9 percent thought they were likely to get a ticket for violating the laws. Nevertheless, about 88 percent were strongly in favor of the police enforcing the laws."

LYDIA FORTE ROBERTS

Tredyffrin Officer Tim Barror (left) and officer Tony Giamo attend to Barror's daughter Meghan while son Tim visits with Sgt. Steve Dintino and wife Andrea holds the "Buckle up for Safety" award. They're reminding motorists that Tredyffrin is enforcing the Pennsylvania seatbelt law.

MUTUAL
PRESS CLIPPING SERVICE INC.
MAY 23, 1991
SUBURBAN AND
WAYNE TIMES
WAYNE, PA
WKLY - 16,200

MUTUAL
PRESS CLIPPING SERVICE INC.
AUG 15, 1991
SUBURBAN AND
WAYNE TIMES
WAYNE, PA
WKLY - 16,200

Tredyffrin calls for seatbelt safety

BY JOHN KELLY
Suburban Staff Writer

A new government program has Tredyffrin police thinking more about safety this summer.

The program, "70 percent by '92," refers to the government's goal of having 70 percent of the nation's auto passengers using their seat belts by 1992. The government estimates that only 49 percent of vehicle passengers now use their belts.

About 25,000 people die each year in auto accidents, according to the National Highway Traffic Safety Administration. Several hundred thousand people are seriously injured. Seat belts cut in half a person's chance of being killed in an auto accident.

Tredyffrin police are doing their part to promote seat belt use this summer. They will hold child safety seat check clinics; they'll have information booths and displays set up in shopping centers; they will conduct child safety and belt use surveys; and will step up enforcement of Pennsylvania's child passenger and safety belt laws.

Under state law, all drivers must secure children 1 year or younger in a safety seat. Children under 4 may ride in the front seat only if restrained in a safety seat. Children over 1 year can ride in the rear seat but must wear a lap belt.

The fine for violating the child seat belt regulations is $84. The fine for adult passengers unbuckled is $60.

"The problem with the fine is that it's a secondary offense, and we can only pull cars over for a primary offense," said police Capt. Paul Pennypacker. "I think it is a problem that has to be changed and I think (the state) is working on it."

According to the NHTSA and Tredyffrin police, the most common errors in seat belt use are:

- improper routing of the vehicle's safety belt to anchor the child's safety seat.
- seat harnesses or shields fastened incorrectly.
- infant seats (for children from birth to 1 year old) facing forward rather than rearward.

According to the police, community safety belt observation studies in Tredyffrin Township have shown that 45-50 percent of community residents were using safety belts.

"We're committed to the program," said Pennypacker. "It definitely saves lives and other bodily injury."

The Tredyffrin police have increased enforcement and have cited more than 50 drivers for violation of the safety belt or child safety seat laws since May.

"We rarely have to unbuckle a dead person," said Pennypacker.

MUTUAL
PRESS CLIPPING SERVICE INC.

SEP 25, 1991

TIMES - HERALD
NORRISTOWN, PA

PM - 30,427

Tredyffrin's push on seat belt law increases usage

Since the Tredyffrin Township police department started giving tickets and warnings to motorists not wearing seatbelts or providing proper restraint use for children, people driving in the township are buckling up more frequently than drivers elsewhere.

During the last few months, Tredyffrin police have given out over 140 tickets and warnings to people not following Pennsylvania's occupant restraint laws.

Recent surveys in the township found that seat belt usage was about 10 to 15 percent above the state average of 55 percent. Seat belt usage monitored last year before police began actively enforcing restraint laws showed usage rates in the township were 5 to 10 percent below the state average.

Child safety seat violations total $84 in fines while seat belt violations total $60 in costs.

Last year, the police department received the 1990 Keystone Safety Belt Network Silver Buckle Award for Pennsylvania Law Enforcement. The award was given for exemplary departmental safety belt policies, education and training programs, public promotion of safety belts and active enforcement policies.

THE SUBURBAN AND WAYNE TIMES Thursday, September 26, 1991

Better buckle up in Tredyffrin!

Since Tredyffrin police started giving tickets and warnings — over 140 — to motorists who don't wear seat belts or provide proper restraint for children, people who drive in the township are buckling up more frequently.

Recent surveys in the township found that seat belt use was about 10-15 percent above the statewide average of 55 percent. Seat belt usage monitored last year before police actively started enforcing the occupant restraint laws showed that seat belt use rates were about 5-10 percent below the statewide average.

Child safety seat violations total $84 in costs, safety belt violations $69.

The department's program is being monitored by the National Highway Traffic Safety Administration. Last year the department received the 1990 Keystone Safety Belt Network Silver Buckle Award for Pennsylvania Law Enforcement. The award was given to the police department for exemplary departmental safety-belt policies, education and training programs, public promotion of safety belts, and active enforcement policies.

MUTUAL
PRESS CLIPPING SERVICE

NOV 13. 1991

DAILY / SUNDAY
LOCAL NEWS
WEST CHESTER. PA

PM - 28.733
SUN - 35.677

Over 150 are ticketed for seat belt violations

TREDYFFRIN — Police issued more than 150 tickets and warnings to drivers not obeying Pennsylvania's seat belt and child safety seat laws in the past six weeks.

In total, police have issued more than 275 tickets and warnings since beginning their own occupant-restraint enforcement program earlier this year.

The department's program is being monitored by the National Highway Traffic Safety Administration, a division of the U.S. Department of Transportation.

The price for not wearing seatbelts is $69, including a fine as well as contributions to state emergency services costs and the CAT fund.

The fine for failing to properly restrain a child is $84.

The law regarding proper child restraint states that infants from birth to age 1 must be in an approved child safety seat, and that children from 1 to 4'9 in a child safety seat anywhere in the vehicle, or in a seat belt in the back seat only.

Seatbelt safety

... sweeps through Treyffrin Township

October and early November have been busy for the Tredyffrin Township police department's occupant restraint enforcement program. More than 150 tickets and warnings have been given to people for violating Pennsylvania's seat belt and child safety seat laws in the last month and a half.

Since the start of the program earlier this year, over 275 tickets and warnings have been given to area residents in an effort to promote seat belt use among drivers and passengers as well as full protection to children, especially toddlers and infants.

The police department's program is being monitored by the United States Department of Transportation's National Highway Traffic Safety Administration and later this month, observations will be conducted in the township's shopping centers to provide data that will be used to evaluate the effects of the program.

The cost associated for violating the seat belt law is $69, which includes the fine and state EMS and CAT funds. The child passenger protection law requires the following:

–infants from birth to age 1 must be in an approved child safety seat.

–Children from 1-4 years may be in a child safety seat anywhere in the vehicle or in a seat belt in the back seat only.

NHTSA and the Tredyffrin police department recommend that all children up to 4 years old be in a child safety seat.

Police spreading the message of automobile safety

By NATALIE SMITH
Associate Editor

Haverford Township police are trying to make the car a safer place for babies and toddlers.

The Highway Safety Division of the township police department sponsored a display on Saturday at the Manoa Shopping Center featuring brochures and posters stressing the use of child safety restraints.

"We're trying to get information out to the general public," said department head Sgt. Gary Hoover.

Greeting shoppers Saturday and handing out bags to the kids containing posters and stickers were Larry (Officer John Escher) and Vince (Officer George Christake) — the "crash dummies" from the National Highway and Traffic Safety Administration television commercials. Also there officers Dennis Anderson and John Viola.

Kris Sullivan photo

Greeting strollers and shoppers at the Haverford Township Police Department highway safety display Saturday at Manoa Shopping Center are "crash dummies" Larry (Officer John Escher) and Vince (Officer George Christake. Looking on are (from left) James Fullerton, 5, Kevin McCanney, 5, Christopher Viola, 4, Stephanie Viola, 2, and mom Denise Viola.

The state Child Passenger Safety Law states:

All drivers are responsible to secure children from birth to age four in the appropriate restraint.

- Children under 1 must be in an approved car seat.
- Children from 1 to 4 should be in an approved car seat but legally can wear a lap belt in the back seat only.
- Children from birth to 4 can ride in the front seat of the car only if they are in an approved car seat.

Fine for violation is $25 plus court costs or proof of car seat purchase.

Haverford Township was one of three Philadelphia suburban communities monitored by the National Highway Traffic Safety Administration for child safety seat and restraint use.

The NHTSA report stated between Nov. 9, 1990 and Jan. 25, 1991, more than 3,000 observations were conducted on drivers who had small children in their vehicles while they were driving in community shopping centers in Haverford, Abington and Tredyffrin townships.

According to the report, in the 795 cars observed in Haverford Township, about 98 percent of the children up to 1 year were observed in child safety seats, as were 60 percent of the toddlers to age 4. About 75 percent of the 795 drivers surveyed thought it unlikely they would get a ticket for not restraining their child. Seventy-two to 80 percent of those surveyed stated they always restrained their children in the car.

Between 80 to 90 percent knew of child safety law and 90 percent of drivers were in favor of police enforcing safety seat law, the report stated.

The results of the survey were basically the same in all three townships.

Hoover said the ultimate goal of the NHTSA is to increase the occupant restraint use for all children ages 1 to 5 and extending the use of proper safety seats for older toddlers from 20 to 40 pounds up to age 4.

Also important is the use of appropriate occupant restraints for children 1 to 5 during short distance rides.

"The idea is to make public aware of usage and the penalties," Hoover said.

The display in Manoa Shopping Center on Saturday was just part of an ongoing program for public awareness. Officers from the Highway Safety Division are available to talk at schools or citizens groups about everything from traffic laws to driving under the influence of alcohol.

"We can talk to anyone from young kids to senior citizens," said Officer Dennis Anderson, who along with Officer Richard Psenik is a program instructor.

To arrange for a Highway Safety Department Division program for a school or group, call the Haverford Township Police Department at 853-2400 and ask for Sgt. Hoover.

MUTUAL
PRESS CLIPPING SERVICE INC.
MAY 15, 1991
NEWS OF DELAWARE
COUNTY
UPPER DARBY, PA
WKLY - 24,230

Enforcement planned for child safety, seatbelt laws

The Haverford Township Police Department will be actively enforcing the state child safety seat and safety belt laws in the township during Pennsylvania Child Passenger Safety Week (May 11 to 18) and National Buckle Up Week (May 19-25).

The department urges parents and others to protect their children in child safety seats and safety belts by correctly using them.

The police are conducting a child safety seat and safety belt project this year. The project is being monitored by the National Highway Traffic Safety Administration. It consists of education and program activities promoting proper child safety seat and safety belt use, police training on enforcement procedures, and stepped-up enforcement of Pennsylvania's child passenger safety seat and safety belt laws.

Under the state law, all drivers are responsible to secure children from birth to age four in the appropriate restraint. Fine for violation totals $84.

Drivers and all front seat passengers must be restrained. Fine for violation is $69.

The Delaware County Highway Safety Project, the Pennsylvania Traffic Injury Prevention Project, business and other community organizations are assisting in the project, donating time and material. The feasibility of receiving a grant from the Pennsylvania Department of Transportation is also in progress. Haverford Sgt. Gary Hoover and Officer Denis Anderson are leading the police effort on the project.

An observation study of 1,000 community drivers conducted earlier this year in the township shopping centers, showed that about 98 percent of the infants were observed in child safety seats. For toddlers 1 up to 3 years old, the rate was 85 percent. However, for toddlers 3 up to 5 years old, only 41 percent were observed in chiold safety seats. About 71 percent of the drivers with small children observed were wearing safety belts. However, only 44 percent of other community residents were buckled up. About 93 percent of the drivers know about Pennsylvania's child safety seat and safety belt laws.

Only 84 percent stated they always restrain their children and only 9 percent thought it was likely to get a ticket for violating the laws. Eighty two percent were strongly in favor of the police enforcing the laws.

MUTUAL
PRESS CLIPPING SERVICE INC.

MAY 15, 1991

HAVERFORD PRESS
NEWTOWN SQUARE, PA

WKLY - 3,875

98 Percent Of Infants

Safety Seats Being Used In H'ford

A study by Haverford Police indicates that 98 percent of infants traveling in cars in the township are restrained in child safety seats. The study being administered by Sgt. Gary Hoover and Officer Denis Anderson is part of a project promoting child restraints and seat belts which is being monitored by the National Highway Traffic Safety Administration (NHTSA). Assisting the police are the Delaware County Highway Safety Project, the Pennsylvania Traffic Injury Prevention Project and business and community organizations.

Pennsylvania Child Passenger Safety Week is may 11-18. National Buckle Up Week is May 19-25.

In a study at the lowntnup shopping centers which involved 1,000 drivers, police found that 98 percent of infants, 85 percent of children between one and three years old and 41 percent of children between three and five years old were in child safety seats.

About 71 percent of drivers with small children were seen wearing safety belts while only 44 percent of other community residents were observed buckled up.

About 93 percent of the drivers know about Pennsylvania's child safety seat and safety belt laws. Police say 84 percent stated that they always restrain their children. Only nine percent thought it was likely to get a ticket for violating the laws.

Police say that 82 percent were strongly in favor of the police enforcing the laws.

The state's child passenger safety law requires that children be in an approved car seat from birth to age one, and wear a lap belt in the back seat from age one through age four. Children under four years old must be in an approved car seat if riding in the front seat.

Haverford Police say all children under four should ride in car seats. Fines for violation are $25 plus $17.50 court cost, plus $30 for the CAT fund plus $11.50 in other costs, totaling $84 or proof of car seat purchase.

The seat belt law requires that all front seat passengers be restrained and makes drivers responsible for themselves and for each passenger under 18 riding in the front seat. The law allows exemptions for carriers of medical or psychological excuses signed by a physician; deliverers of goods or service vehicle operators driving at speeds less than 15 mph and making frequent stops; and drivers of automobiles manufactured before July 1, 1966. Fines for violation are $10 plus $17.50 court cost, $30 for CAT fund, $10 for EMS costs and $1.50 for JCP fund, totaling $69.

MUTUAL
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MAY 15, 1991

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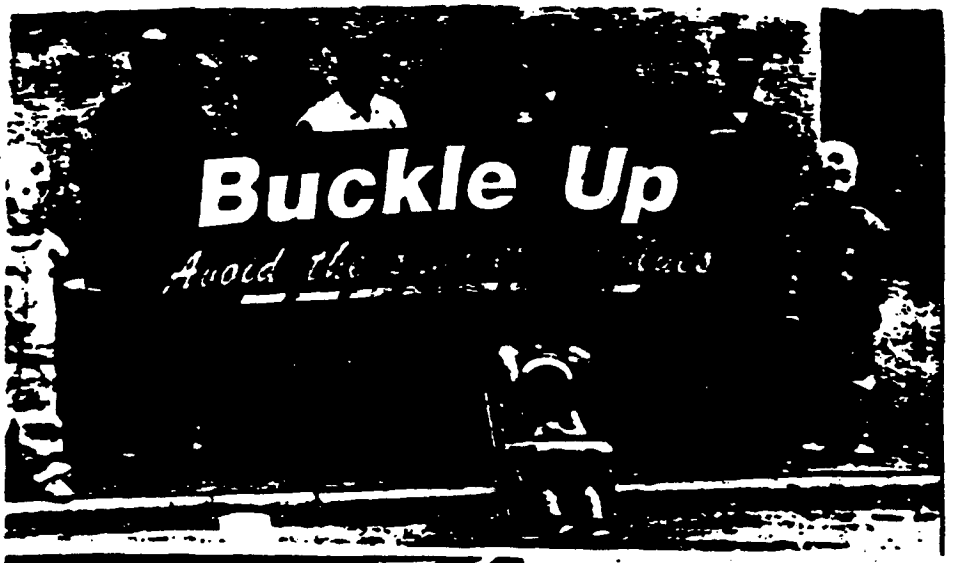
MUTUAL
PRESS CLIPPING SERVICE INC

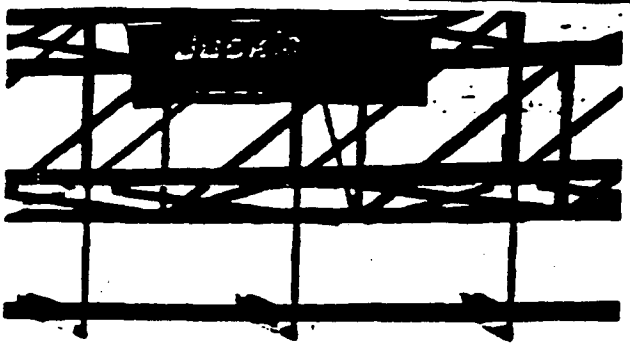
AUG 7, 1991

HAVERFORD PRESS
NEWTOWN SQUARE, PA

WKLY - 3,875

The Haverford Township Police Department reminds community residents to buckle up this summer. The chances of serious injury or death are significantly reduced by wearing safety belts. In addition, the police are reminding parents to protect their young children by using a child safety seat that is installed and used correctly. The department is participating in a National Highway Traffic Safety administration project that involves enforcement of the child safety seat and safety belt laws; and an education program highlighting the lifesaving potential of using safety belts and child safety seats. The Haverford Township School District has provided space on their message board for the summer to promote the "Buckle Up" message. With (standing) Officer Robert Stichney, Chief Howard Walton and Sgt. Gary Hoover, and Officer John Viola are Gregory and Elizabeth Docina, children of Havertown resident Larry Docina of Kotron, Inc. Kotron is doing a survey on seatbelt use as part of the project.





Get the message?

The Haverford Township Police Department conducted special enforcement activities over the Labor Day weekend to help remind community residents to drive safely, wear seat belts and protect their young children by using child safety seats that are installed and used correctly. The enforcement activities are part of two projects the department is working on for the National Highway Traffic Safety Administration and PennDOT. The NHTSA project involves police training on enforcement of occupant restraint laws, combined with stepped-up enforcement and media coverage to promote public awareness of the enforcement effort and safety benefits of buckling up. To date, the police have cited numerous drivers and passengers on violations of the safety belt and child safety seat laws. The PennDOT project not only includes active enforcement of restraint laws by other hazardous violations. The enforcement activities are being conducted on West Chester Pike. In conjunction with both projects, a "Buckle Up — Avoid the Summertime Blues" banner was installed by PennDOT on West Chester Pike (left). Pictured holding the banner with crash test dummies Vince and Larry looking on are (from left) Commissioner Wilson Bunce, police Lt. James Metzler, Officer John Viola and Officer Robert Stickney. The baby is not identified.

Acme Publishing photo

2A—News of Delaware County, Wednesday, (3) September 4, 1991

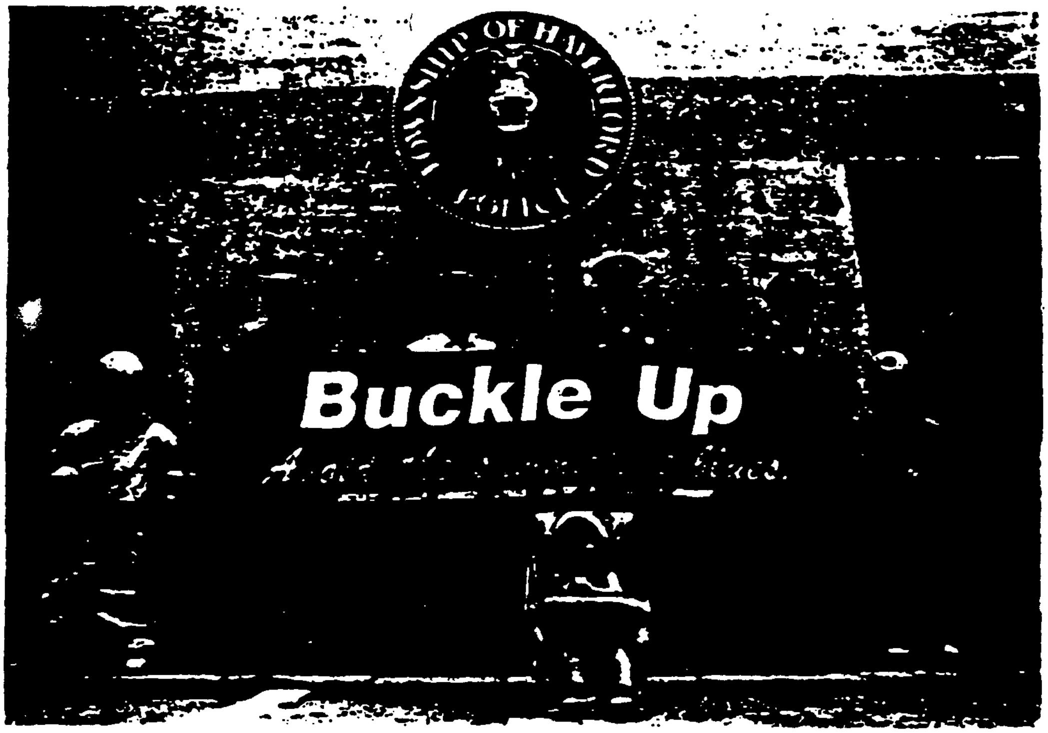
MUTUAL
PRESS CLIPPING SERVICE INC.

SEP 4, 1991

HAVERFORD PRESS
NEWTOWN SQUARE, PA

WKLY - 3.875

Beware On West Chester Pike



The Haverford Township Police Department is reminding residents to drive safely, wear seat belts and protect children by properly using child safety seats. With this banner, which was hung on West Chester Pike, are seven-year-old Larry Becker as Larry the Test Dummy; William Bunce, vice president of the township commissioners; Lt. James Metzler; patrolmen John Viola and Robert Stickney; and eight-year-old Chris Czyzewski as Vince the Test Dummy. In the safety seat is 22-month-old Gregory. Police are participating in a National Highway Traffic Safety Administration project involving more occupant restraint law enforcement, and promoting awareness of the enforcement and benefits of buckling up. Police have cited numerous drivers and passengers. Fines range from $[illegible] to $[illegible]. Police are also participating in a PennDOT project involving increased enforcement of traffic safety laws on West Chester Pike.

Photo by [illegible]

Study: Seat belt usage up in township

During the last few months, the Haverford Township Police Department has given out more than 120 tickets and warnings to people who are not following Pennsylvania's occupant restraint laws.

According to data collected for the National Highway Traffic Safety Administration, recent surveys by the department found that seat belt use at three township locations was 1 to 12 percent above the statewide average of 55 percent. Seat belt usage monitored last year before the police started actively enforcing the occupant restraint laws showed that seat belt usage rates in the township were about 10 percent below the statewide average.

Child safety seat violations total $84 in costs; safety belt violations, $69 in costs. The police are also giving out warnings for these violations, with second warnings resulting in tickets.

The department was recently given the 1991 Keystone Safety Belt Network Silver Buckle Award for Pennsylvania Law Enforcement. The award is given to police departments with exemplary departmental safety-belt policies, education and training programs, public promotion of safety belts and active enforcement policies. The award will be presented at the Governor's Highway Safety Conference Oct. 11.

Study: Seat Belt Usage Up In Haverford Township

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Safety lauded

By MARY BETH LAUER
Correspondent

The effort Haverford Township police have put into educating the public about highway safety and the necessity of wearing seat belts is paying off — in recognition from the state and from the Keystone Automobile Club.

The Governor's Highway Safety Award was presented to police at a Oct. 11 conference for making an outstanding contribution of the cause of highway safety.

But Police Chief Howard Walton is most proud of the Silver Buckle Aware presented to the department from the Keystone Safety Belt Network which recognizes the departments excellence in promoting safety belt and child safety seat awareness.

"We are very pleased," Walton said, "we are honored that the state has recognized the efforts of the police department and its men."

Walton said Haverford's department was the only Delaware County police department singled out by the state auto club.

Walton said he and the department began a program of education and awareness last year. More than 4,000 students were reached when police went to schools in the community stressing the importance of wearing seatbelts.

He said the other goals of the department have been to strive for more compliance. He said warnings have been issued on the road, and a few citations have also been issued when seatbelts were not used and children were not properly restrained.

Child seats checked

Members of the Haverford Township Police Highway Safety Department will be in the Manoa Shopping Center Saturday from 10 a.m. to noon and at the Clover Store from 1 p.m. to 3 p.m. to check child safety seats.

Police will be available to answer any questions the public may have on using child safety seats and on seat belt safety.

They will be working in conjunction with Lorrie Walken, coordinator of the Pennsylvania Traffic Injury Prevention Project.

The event is part of a township-wide seatbelt safety program.

MUTUAL
PRESS CLIPPING SERVICE
DEC 23. 1991
DELAWARE COUNTY
DAILY TIMES
PRIMOS. PA
AM - 60.000

Safety belt check held in Haverford

By JOHN M. ROMAN
Of the Times Staff

HAVERFORD — Police recently checked about 200 drivers and passengers for safety belt use and found about 65 percent were properly restrained.

The check was conducted at Manoa shopping center.

A similar check last year found only about 44 percent were wearing safety belts, police said.

The Haverford police and the American Academy of Pediatrics' Traffic Injury Prevention Project (TIPP) were on hand at the shopping center and the Clover store to check cars for proper child seat safety and seat belt use.

"Vince" and "Larry," the crash test "dummies," distributed stickers and pins, brochures and season's greeting cards reminding people to buckle up for safety and not to drink and drive.

Police are also involved with the National Highway Traffic Safety Administration and PennDOT safety projects.

The NHTSA project involves promoting occupant protection through the use of enforcement — to date more than 200 tickets and warnings have been used.

Child safety seat fines and violations cost $84; safety belt fines and violations cost $50. The PennDOT project involves sobriety checkpoints and education programs.

The TIPP and NHTSA programs recommend that infants up to 1-year-old or under 20 pounds be in an infant seat, facing backward. Toddlers aged 1 to 4 or between 20 and 40 pounds should be in a toddler/convertible seat facing forward.

Children from 40 to 60 pounds should be in a booster seat.

APPENDIX J

CHILD SAFETY BELT MESSAGE CARDS

CHESTER COUNTY LOVES KIDS TOO

That's why we like to see them riding in cars or trucks with seat belts and car seats.

Car crashes kill and injure more children than any disease. A sudden, unexpected stop can hurl an unrestrained passenger into the dashboard or through a windshield.

Do your part. . .have everyone buckle up everytime!

Car Safety Seats and Seat Belts. It's the Law.

All drivers must ensure that children from birth to four years are buckled up:

- birth to one year must be in a car seat
- one to four years should be in a car seat but may be in a seat belt, but only in the back seat
- all drivers and front seat passengers must be buckled
- drivers are responsible for back seat passengers 5 to 15.

JUDGES LOVE KIDS TOO!

DISTRICT JUSTICE ARMAND A. PERANTE

That's why we like to see them riding in cars with safety belts and car safety seats.

Car accidents kill and injure more children than any disease. Any sudden, unexpected stop can hurl an unrestrained passenger into the dash or through the windshield.

Children depend on us to keep them safe.

Do your part . . . have everyone buckle up in car safety seats.

CAR SAFETY SEATS. IT'S MORE THAN AN ACT OF LAW. IT'S AN ACT OF LOVE.

CAR SAFETY SEATS SAVE YOUNG LIVES

The Pennsylvania Chapter of the American Academy of Pediatrics Prescribes Car Safety Seats for Pleasant Safer Driving.

Toddler Seat • Convertible Seat • Infant Seat

Pennsylvania Act 53

- Children under one year of age must be properly buckled into a child car safety seat regardless of where they ride in your vehicle.
- Children under four years of age must also be in a child car safety seat if they ride in the front seat.
- As back seat passengers, children 1-4 years of age should use car safety seats or they may use the regular seat belt . . . they must be buckled up.

Once you get your children in the habit of being buckled up, they will ride warmer and cause less distractions. *Most importantly they will be safer.* See that they ride in one of these approved safety seats.

For more information on choosing a safe seat, ask your doctor or call the Pennsylvania Chapter of American Academy of Pediatrics at

1-800-CAR-BELT

APPENDIX K

CHARACTERISTICS OF SAMPLE

Table K-1. Drivers (with Young Children) Observed

Community	Intervention Phase		Total
	Pre-	Post-	
Tredyffrin	774	681	1,455
Haverford	914	881	1,795
Abington*	831	481	1,312
Total	2,519	2,043	4,562

* Comparison site

Table K-2. Young Children Observed

Community		Intervention Phase		Total
		Pre-	Post-	
Tredy frin	Up to 1	134	102	
	1 up to 5	703	637	
	5 to 9	114	137	
	Total	951	876	1,827
Haverford	Up to 1	108	145	
	1 up to 5	949	884	
	5 to 9	183	175	
	Total	1,240	1,073	2,313
Abington*	Up to 1	113	84	
	1 up to 5	743	433	
	5 to 9	209	137	
	Total	1,065	654	1,719
	Grand Total			5,859

* Comparison site

Table K-3. Driver Age Category
(Percentages)

Age	Tredyffrin		Haverford		Abington*	
	Intervention Phase %		Intervention Phase %		Intervention Phase %	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
Less than 30	16.6	12.8	20.5	21.1	21.7	14.7
30 to 39	75.3	70.6	69.4	66.4	62.8	68.4
40 and over	8.1	16.6	10.0	12.4	15.5	16.9
Total Sample	704	640	818	804	715	468

* Comparison site

Table K-4. Driver Time from Last Stop
(Percentages)

Time (in minutes)	Tredyffrin		Haverford		Abington*	
	Intervention Phase %		Intervention Phase %		Intervention Phase %	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
0-5	39.2	40.3	28.1	29.1	34.9	37.9
5-10	37.7	35.5	43.2	38.7	35.7	35.6
10-15	15.5	15.8	19.9	20.8	20.0	18.6
15-30	6.3	7.6	7.8	10.8	7.6	7.4
30-60	1.3	0.7	1.0	0.7	1.7	0.2
More than 60	0	0	0	0	0.2	0.2
Total Sample	607	563	627	750	605	404

* Comparison site

Table K-5. Driver's Distance from Last Stop
(Percentages)

Table K-7. Vehicle Type
(Percentages)

Type of Vehicle Observed	Tredyffrin		Haverford		Abington*	
	Intervention Phase %		Intervention Phase %		Intervention Phase %	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
Passenger Car	56.2	55.2	54.5	53.0	46.4	40.8
Station Wagon	24.5	22.1	24.2	23.4	32.3	31.6
Mini-Van	11.4	14.6	9.2	16.8	11.1	15.9
Van	2.1	1.3	7.0	1.9	1.5	2.2
Pickup	1.0	1.5	1.7	0.6	0.9	1.0
Jeep-Type	4.8	5.4	3.1	4.3	7.7	8.4
Other	0.0	0.0	0.2	0.0	0.0	0.0
Total Sample	808	480	880	880	737	667

* Comparison site

Table K-5. Driver's Distance from Last Stop
(Percentages)

Distance (mileage)	Tredyffrin		Haverford		Abington*	
	Intervention Phase %		Intervention Phase %		Intervention Phase %	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
0-.5	11.8	10.4	4.4	8.5	14.4	13.3
.5-1	6.8	8.4	3.8	6.5	6.8	10.8
1-3	43.9	47.5	57.3	49.3	43.0	41.6
3-5	21.1	18.8	20.4	20.4	18.4	19.0
5-10	13.1	12.1	11.9	12.7	13.7	12.0
10-15	2.0	2.1	1.5	2.1	2.5	2.3
More than 15	1.2	0.7	0.8	0.4	1.2	1.0
Total Sample	601	560	613	706	570	399

* Comparison site

Table K-6. Frequency of Visits Per Week
(Percentages)

Visits (per week)	Tredyffrin		Haverford		Abington*	
	Intervention Phase %		Intervention Phase %		Intervention Phase %	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
0-1	12.0	13.4	45.1	36.9	21.4	25.6
1-2	31.6	29.9	38.1	34.7	41.1	37.8
2-3	22.0	16.4	9.1	13.2	19.1	15.2
3-5	25.0	28.5	4.5	9.7	14.7	14.4
More than 5	9.3	11.8	3.1	5.5	3.7	7.0
Total Sample	591	561	616	712	598	402

* Comparison site