

US Department of Transportation
National Highway Traffic Safety Administration

DOT HS 806 965
Final Report

School Bus Safety Belts: Their Use, Carryover Effects and Administrative Issues

Pertinent Excerpts

Notice

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for the contents or use thereof .

SUMMARY

INTRODUCTION

Over the years, various groups have advocated the installation of safety belts in large school buses. Among the arguments offered by these groups is that encouraging (or requiring) safety belt use in school buses may foster habits that “carry over” to the family automobile, resulting in increased use or encouragement of others to use belts.

As of April 1985, at least fourteen school districts across the nation had equipped a total of about 143 buses with passenger safety belts (.04 percent of the national fleet). More than forty additional school districts, including three of the five operating the largest school bus fleets, have decided to incorporate belts in to their school bus safety programs. Additionally, many jurisdictions are considering legislation to require the use of safety belts on large school buses.

Accordingly, the National Highway Traffic Safety Administration (NHTSA) initiated an exploratory study of the possible 'carryover’ effects of safety belt use in school buses. NHTSA contracted with Creative Associates, Inc. to look at the experiences of sites currently operating bus safety belt programs.

The resulting project was to report on three sets of questions:

- To what extent do students who ride belt-equipped school buses use the safety belts?
What factors appear to be related to increasing belt use on buses?
- To what extent do bus-related belt habits 'carry over' to the students' private automobiles?
For example, do students wear car belts more frequently or encourage others to use car safety belts?

- What other behavioral or attitudinal issues appear among students who ride belt-equipped buses? How does bus belt use affect student conduct on the bus? What effects do laws mandating belt use in cars have on students' bus and car belt use?

In addition to these use-related issues, the study was to provide initial reports on administrative and educational components of bus belt programs. Topics to be addressed included starting and managing the programs and reactions of school staff to the programs.

METHODS

The School Bus Safety Belt Project employed one-day site visits to several school districts operating bus safety belt programs. Information was collected through group meetings and informal interviews with individuals, using interview guides to ensure coverage of all relevant topics. Information gathered was primarily self-reported and anecdotal.

Nine school districts that operate transportation programs with large belt-equipped school buses were selected for the study: five Northeast and four Midwest school districts (Ardsley, Greenburgh, and Comsewogue, NY; Hartland, VT; West Orange, NJ; and Glencoe, Skokie Districts #68 and #72, and Wilmette, IL). These nine districts accounted for more than 85 percent of the large belt-equipped buses known to be in operation at the time of the study. Eight of the study sites were in metropolitan areas and none was located in impoverished urban or rural areas. According to school officials, students in the study sites were generally above average academically and well-disciplined. Sites had already undertaken most recommended bus safety programs and had adequate budgets for installing belts. Reported car belt use among parents in the sites was far above reported belt use elsewhere in their regions.

Group discussions and interviews focused primarily on behavioral and attitudinal information from nonstatistically sampled groups of students and parents. School district superintendents, business managers, transportation directors, and other school officials offered insights about program policies, operations, and management issues. Bus drivers, bus monitors, and transportation directors also provided impressions about safety belt usage patterns.

SUMMARY OF STUDY-SITE EXPERIENCES

Bus Belt Use

Administrators' and students' reports indicate that belt use is related to students' age -- The youngest students have the highest reported usage rates (80-100 percent); high school students reported using belts at a rate of 50 percent or less.

Students' reports suggested that use of belts on regular trips did not engender the formation of belt use habits -- older students reported that they did not use available bus belts routinely on late afternoon homebound trips or on field trips. They also did not generally express concerns about riding on buses not equipped with belts.

Most students who used bus belts habitually seemed to be predominantly those who had worn belts previously in family cars, rather than first-time belt users. (*Today all students have had previous experience due to laws requiring use in all states*)

Bus drivers and students said that many students buckled belts on buses in response to instruction and reminders by drivers, monitors, or teachers rather than on their own initiative. Presence of monitors on buses, per se had no apparent effect on belt use.

Carryover Effects

Elementary students reported 90-100 percent usage rates for car belts; junior high students, 75-80 percent; senior high students, all of whom lived, in states having mandatory use laws, reported 80-100 percent use of car belts.

Students who rode safety belt-equipped buses said that their frequency of car belt use had increased after the bus belt program began, even though they had already been regular or occasional car belt users.

Overall, students who rode belt-equipped buses reported using car belts somewhat more frequently than students who (did not ride belt-equipped buses).

In the sites located in states having laws requiring use of safety belts in cars, students who rode buses without safety belts tended to report usage of car belts at the same rate as students who rode belt-equipped buses. In nonmandatory states, students who rode nonequipped buses generally reported that they did not use car belts.

Students mentioned parental car belt rules, other car companions, and mandatory state belt use laws more often as influencing student car belt use than school bus belt programs.

Students and parents credited students in school bus belt programs with fostering belt use among other car passengers, even though these students' personal car belt use rates did not necessarily increase.

Impact of Bus Belt Use on Student Bus Conduct

Administrators, transportation directors, and drivers reported improved behavior on buses equipped with belts. There was little or no standing or roaming in the aisles, few instances of putting hands or heads out of windows, and fewer fights or rowdy behavior.

Drivers reported that they were required to speak to students about their behavior less frequently, and experienced fewer distractions in belt-equipped buses than in nonequipped vehicles.

Administrative Factors Affecting Student Bus Belt Use

School officials credited parent and community groups with providing important, constructive assistance in program implementation.

Administrators and drivers reported that the existence and enforcement of school belt use policies were essential to achieve high usage, although sanctions were rarely invoked. Drivers reported using alternative techniques to enforce belt use, such as refusing to leave a stop, pulling over to the side of the road until passengers were belted, or walking down the aisle in a friendly manner to check on belt use.

All districts trained students how to use their bus belts and explained why belts were important. Districts with the highest reported bus belt use rates also had student education on car belt use, repeated belt education at all grade levels, and information programs for school staff.

Transportation directors said that initial and ongoing training was essential for providing drivers and monitors with information about school belt use policies, familiarizing them with techniques for getting students to use their safety belts, and fostering positive attitudes.

Transportation directors, drivers, and parents agreed that belt programs were successful because of support from school officials and teachers. Districts that had periodic orientations for teachers and drivers seemed also to have the highest reported usage rates.

Administrators reported that student bus belt use corresponded to belt availability and convenience. Most districts had no problems when buckles were easy to use and belts were easy to keep clean, untangled, and outside of gaps between seat cushions. Even the youngest students could be taught to use them properly. Thoughtful belt design also eliminated vandalism. Maintenance problems were minimal.

Perceptions of Bus Belt Programs

School administrators perceived that safety belts increased student safety and improved student conduct. Administrators reported that if they had to make the decision over again they would opt for equipping buses with belts and would recommend belt programs to other school districts. However, they would not support legislative mandates for school bus belt programs in all school districts because some districts would not have the resources, commitment, and leadership necessary to succeed.

All transportation directors, even those initially opposed to a trial bus belt program, supported subsequent decisions to equip their entire large bus fleets with belts as soon as possible.

Drivers in most sites supported the bus belt programs, valuing improved student conduct. However, some drivers reported difficulties enforcing the belt program when school administrators were not fully supportive.

Parents uniformly supported the program, primarily based on perceptions of increased safety and optimism about carryover effects, although some acknowledged that their interest initially was in the effects on discipline. (Several superintendents, who perceived safety and conduct improvements, mentioned that their endorsement and leadership for a belt program were relatively easy, inexpensive, and noncontroversial ways to increase their support among parents.)

Students generally favored the program. Younger students reported positive feelings, especially related to not sliding out of their seats and prevention of injury in case of an accident. Most high school students voiced the opinion that safety belt use should be optional for them but required for younger students.

I. INTRODUCTION

There is growing concern nationwide for improving motor vehicle passenger safety. Voluntary safety belt usage has increased, states are passing mandatory safety belt use laws, and some communities have elected to install safety belts on large school buses.

It has been proposed that there is a potential 'carryover,' or transfer of habits, between students' bus experience and their car experience. Students who wear belts on school buses may increase their use of safety belts in the family automobile or encourage other car occupants to buckle up. Conversely, the experience of riding a school bus without safety belts may reduce the likelihood of the student wearing a belt in a car. However, in part because there are relatively few school districts operating large buses equipped with safety belts, little or no information is available on this issue.

As of April 1985, approximately fourteen school districts across the nation were operating a total of 143 large buses with passenger safety belts. While this accounts for only about 4/100 of one percent of the total national school bus fleet, the number of school districts considering equipping large school buses with safety belts is growing. According to the National Coalition for Seat Belts on School Buses, more than forty additional school districts, including three of the five operating the nation's largest publicly-owned school bus fleets (Fairfax County, VA; Houston, TX; and Montgomery County, MD) and Chicago, IL, will start trial programs in the 1985-86 school year. As of this writing, the Congress, 32 states, and an unknown number of city and county governments are considering legislation, or have legislation pending, regarding safety belts on school buses.

The National Highway Traffic Safety Administration (NHTSA) contracted with Creative Associates, Inc., to conduct an exploratory study of the possible 'carryover' effects of safety belt use in school buses, based on the experiences of sites currently operating school bus safety belt programs.

The project goal was to answer three sets of questions:

- To what extent do students who ride belt-equipped school buses use the safety belts?
What factors appear to be related to increasing belt use on buses?

- To what extent do bus-related belt habits “carry over’ to the students’ private automobiles? For example do students wear car belts more frequently or encourage others (parents, siblings, peers, etc.) to use car safety belts?
- What other behavioral or attitudinal issues appear among students who ride belt-equipped buses? How does bus belt use affect student conduct on the bus? What effects do laws mandating belt use in cars have on these students’ bus and car belt use?

In addition to these use-related issues, the study was to provide initial reports on administrative and educational components of bus safety belt programs. Topics related to starting and managing the programs were to be addressed along with key school staff reactions to the program.

II. METHODS

PROJECT NATURE AND SCOPE

As an exploratory study, the School Bus Safety Belt Project focused on the experiences of administrators, drivers, students, and parents in nine school districts that have operated safety belt-equipped school buses. The study relied primarily on self-reported behavioral and attitudinal information derived from informal group discussions and short conversations with students and parents. In a limited number of cases, self-report data was supplemented with informal observations.

In order to gather the desired information, a member of the project staff usually spent one day in each district with school officials, students, and parents.

PROJECT STUDY SITES

To conserve travel and telephone funds, only districts known to be operating a transportation program with large safety belt-equipped buses in the Midwest; South; and Northeast were considered for participation in the study. Staff selected nine school districts using the criteria listed below. Five study sites were located in the Northeast and four in the Midwest. (See Appendix A.) The selected districts had 125 belt-equipped large buses, accounting for more than 85 percent of the large belt-equipped buses known to be in operation in April 1985.

Site Selection Criteria

After determining that a school district operated belt-equipped large school buses, project staff telephoned the district’s superintendent (or designee) and asked a series of screening questions. The final sites met the following criteria:

- Program in operation for more than three months;
- Belts installed in three or more large buses;
- Scheduling flexibility to avoid Spring vacations and to enable the project field representative to come as early as two weeks from the time of initial contact; and

- Willing to cooperate in arranging groups, schedules, and contacts at a school at each grade level served by the program.

In choosing study sites, staff endeavored to maintain a balance between larger, more experienced programs and programs in the first year of operation.

The sites were ultimately chosen to enable a clustering of contractor visits to several school districts within the same metropolitan areas during the same trip:

Ardsley and Greenburgh Central District 47, NY, north of New York City;

Glencoe, Skokie Districts #68 and 072, and Wilmette, IL (Chicago suburbs).

West Orange, a northern NJ suburb, and Comsewogue School District in eastern Long Island, NY; and

Hartland, VT.

Site Descriptions

The sites visited by the project staff represent both rural and suburban communities in largely White, middle class communities. (One district included a sizeable Black, inner-city based enrollment; one other was a particularly affluent community.) With the exception of Hartland, VT and Comsewogue (Port Jefferson), NY, the sites are within 25 miles of a major city (New York or Chicago). Topography varies, too: Hartland, Ardsley, Greenburgh, and West Orange are hilly, while the remaining sites are flat.

The study sites are not 'typical' school districts. All nine school systems are primarily college preparatory programs with above average academic ratings in their states. None is plagued with major discipline problems such as school vandalism, high dropout rates, or drug problems. The schools themselves have comprehensive operating budgets, and funding for the school bus belt program (at a cost of \$800-1500 per bus) was not a major consideration .

Generally, the chosen communities are safety conscious. There are active PTA's with a high concern for student safety. Parents', own reported safety belt usage of 80-100 percent is consistently much higher than the national self-reported average of about 35 percent. (Nationally, the observed use rate is only about 19 percent.) In fact, all the sites except Hartland, VT, are in states that have passed mandatory safety belt use laws. (New- York and New Jersey laws went into effect before site visits; Illinois law did not become effective until July 1985). The same local advocates for bus belts said they had also helped pass prior child safety belt laws and had lobbied for state belt use laws.

Study sites' decisions to install safety belts on school buses were part of their larger concern to improve the safety of school bus transportation. Each district had already adopted industry-recommended bus passenger safety program measures such as timely and modern bus replacements and a no-standee policy. Study sites ran programs to train drivers and students

how to prevent accidents that occur as children board and leave the buses. Furthermore, in six sites, monitors rode buses to assure bus stop safety and good passenger conduct. Auxiliary mirrors, flashers, signs, and other hardware had been adopted to reduce bus stop accidents. Other hardware purchased in several visited sites included safety features such as high back padded seats, emergency roof hatches, and two-way radio communications.

Program Descriptions

Three study sites had operated belt-equipped bus programs since 1983 and are the most experienced in the U.S. The remaining six inaugurated their bus belt programs in September 1984. The sites' administrators are familiar with the full range of phase-in and operational issues, as well as long-term program development and evolution.

Four of the nine districts provided at least some belted bus service to all grades, X-12. The remaining five provided belted bus service to kindergarten through 8th grade students in the four school districts whose bus fleets were only partially belt-equipped, priority assignments for belted buses were given to the younger children.

Exhibit II-I provides additional information about fleets of large belted buses, both in the study sites and in other communities.

Each site had some kind of education program to familiarize students with bus belt mechanics and schoolbus belt policy. Several had made additional educational efforts to foster use of safety belts in cars as well as buses.

INFORMANT POPULATIONS

Project staff held discussions at each study site with representatives of as many of the groups affected by the safety belt program as possible. Those participating included the following groups:

School district superintendents and other policymaking officials: The superintendent, assistant superintendent, or the business-manager from all nine sites participated both in a preliminary telephone discussion and an in-depth interview at the time of the site visit. In several instances, interviewers also spoke with principals or assistant principals when visiting their schools.

District transportation directors or coordinators: The transportation director or coordinator from seven of the nine districts met with project staff during the site visits.

Students: In six districts, the interviewer met with small, informal groups of students, including both those who regularly rode belt-equipped buses and those who did not. Students from all age ranges participated in the group discussions but were not randomly selected. Approximately one-fourth of the students interviewed were between 6 and 8 years of age; one-half were between the ages of 9 and 13; and one-fourth were 14 to 17 years old.

Parents: The field investigator met with small groups of parents in seven of the nine sites and with individual parents in the remaining two sites. Parent participants were recruited by coordinators in the study sites to represent a diversity of families with children of all age groups. The majority of their children rode belt-equipped school buses. (About half of the parents who participated had been actively involved in the initial campaign to inaugurate the belt program.)

Bus drivers and monitors: In five of the sites, the interviewer spoke with bus drivers who operate belt-equipped buses, as well as with individual monitors in two of the districts. Interviewed drivers tended to be district employees whose high seniority status qualified them to be assigned to the newest buses, the ones that happened also to have safety belts.

Other individuals: During the site visits, the interviewer met with a variety of other individuals in the community who were involved with the school bus safety belt programs. These contacts included teachers involved in safety education; local PTA officials; local, state, and national representatives of advocacy organizations; and contractors operating belt-equipped buses in the district, one of whom was also the president of a national association of bus owners. Belt advocates in the study sites were not always parents of district students, e.g., a transportation director, a teacher, and a mother of; former students who never rode school buses.

INFORMATION GATHERING APPROACHES

Project staff used the following methods to obtain information about the schoolbus safetybelt programs operating in the study sites:

Telephone calls: Prior to the site visits, project staff contacted school officials at potential sites to obtain background information about the various programs and to explore the feasibility of a site visit. Followup calls made after the visits provided additional information or verification of information obtained onsite.

Interviews: Project staff conducted informal, one- or two-person interviews at each site to obtain an orientation to the community, to accommodate schedules of individuals who were not able to participate in larger group discussions, to discuss topics of relevance to only one or two individuals, and to ensure privacy for open discussion of possibly sensitive issues.

Group Discussion: Informal discussion with small groups, such as 15-30 students, 5-10 parents, and 3-5 bus drivers, was the most frequently used method. In general, students were grouped by grade level (elementary, junior high, senior high). Whenever possible, separate sessions were arranged for students who rode belt-equipped buses and those that did not. Groups were typically arranged so that school officials, teachers, or belt advocates were not present. When they were present, the group leader discouraged their active participation and influence over other group members.

Direct Behavioral Observation: While extremely limited in number, field investigators were able to form tentative impressions based on a few informal observations of safety belt usage patterns. Staff rode with students on the belt-equipped buses and watched

students in both belt-equipped and non-equipped buses arriving and leaving the school grounds. They also noted passenger and driver use of safety belts in cars entering and leaving school grounds. Observations of student behavior on buses were made as unobtrusively as possible, usually before class discussions were held, and students were not informed about what the observer was looking at.

Other Information Sources: Throughout the study, project staff gathered relevant printed materials on school bus safety issues from clippings from local newspapers in study sites, newsletters, school bus industry magazines, NHTSA documents, the National Coalition for Seat Belts on School Buses, and materials prepared by the school districts, themselves. The Glencoe, Illinois, school district provided a 1984 census of all 704 elementary school students in grades K-3 (Appendix B) that recorded self-reports of their bus and car belt use before and after its bus belt program began. Other examples of these information sources are included in Appendices C-F.

While these methods were informal, the project team nonetheless endeavored to maximize the validity of the information obtained. Staff used the following procedures to systematize information gathering at each site:

Staff asked local coordinators to invite to group discussions people who represented a range of viewpoints and were, not just supporters of the bus belt programs;

Interviewers met privately with a range of individuals and assured the anonymity of each person's responses;

Staff used interview guides and topic outlines to ensure that they consistently addressed all the essential topics related to the main study questions as well as administrative issues related to program operation;

Staff led discussions in ways that attempted to discourage responses aimed at pleasing the interviewer (e.g., staff presented people with opposing views for response and comment, alluding to possible disagreements with belt policy and probing for potential conflicts);

During the interviews and discussions, field investigators gave particular attention to tone, question wording, and the participants' level of understanding;

Interviewers solicited responses from students and parents first, when other authority figures such as school officials, program managers, or belt advocates were present in group discussions; and

Discussions with students focused primarily on the experiences of those who rode belted buses regularly, though others were asked about their attitudes toward belts on buses and cars, as well as their use of car belts and bus belts on field trips.

Exhibit II-2 provides a schedule of typical site visit activities.

System Descriptions of Districts with Safety Belts on Large School Buses As Of April 1985

VISITED SCHOOL DISTRICTS WITH BELTED BUSES	LARGE BUS FLEET SIZE					GRADES WITH BELTED BUSES		
	Date Belt Service Started	Belted Fleet		Total Planned		K-6	7-8	9-12
		Initial	Current	Current	Belted			
ILLINOIS**								
Glencoe	9/84	4	4	4	All	X*	X*	--
Skokie 68	9/84	11	11	13	All	X	X	--
Skokie 72	9/84	4	4	4	All	X*	X	--
Wilmette	9/84	4	4	14	All	X*	X*	--
NEW JERSEY****								
W. Orange	9/84	9	9	22	All	X*	X*	X
NEW YORK								
Ardsley	9/83	12	10	10	All	X*	X*	X
Comsewogue	9/84	25	25	25	All	X*	X	X
Greenburgh	6/83	31	55	55	All	X	X	X
VERMONT****								
Hartland	9/83	2	3	6	All	X	X	--
SUBTOTALS		103	125	143				
OTHER KNOWN DISTRICTS WITH BELT-EQUIPPED BUSES								
	Catalina Foothills, AZ			(5)				
	Dalton, GA			(7)				
	Manchester, MA			(2)				
	West Windsor-Plainsboro, NJ***			(3)				
	Oxford, MI			(1)				
						Total Number of Belt-Equipped Large Buses: 143		

*Buses operate with monitors

**Not including Chicago, IL since its buses have just one belt for 2 – 3 seat occupants.

*** West Windsor-Plainsboro was visited by NHTSA’s Project Manager, but not by the contractor and, therefore, is not included in the numbers quoted by the contractor.

****Five Vermont school districts (Middlebury, Worcester, Peachem, Waltsfield Elementary and Weathersfield operate at least one belted bus; information was not gathered about their programs.

EXHIBIT II-2
TYPICAL DAILY SITE VISIT SCHEDULE

8:15 – 8:30	Informal observation of car belt use in school driveways
8:30 – 9:00	Meeting with superintendent
9:00 - 9:45	Meeting with elementary school students (belted bus riders)
9:45 -10:15	Meeting with elementary school students (non-belted bus riders)
10:15 -10:45	Travel to junior high and meeting with principal
10:45 -11:15	Meeting with group of junior high students (belted bus riders)
11:15 – 11:45	Meeting with group of junior high students (non-belted bus riders)
12:00 - 12:45	Lunch interview with the transportation director or coordinator
1:15 - 1:30	Meeting with high school principal
1:30 - 2:15	Meeting with high school students (belted bus riders)
2:30 - 3:15	Meeting with high school student's (non belted bus riders)
3:15 - 4:30	Informed observation of bus belt use at departure sites; optional school bus rides for observation and conversation
4:30 - 5:30	A group discussion with bus drivers and monitors;
5:30 - 7:30	Optional additional activities--such as meetings with bus contractor representative, community advocate, school principals and teachers, or school officials from neighboring districts; and
7:30 - 9:30	Group discussion with parents.

III. SUMMARY OF STUDY SITE EXPERIENCES

This chapter summarizes the comments made by school officials, drivers, students, and parents.

BUS BELT USE

School officials, educators, and parents expressed a widespread belief that routine bus belt use by students would be habit forming. They further presumed that students' bus belt habits would lead to belt use in cars among those students who had not buckled up before riding belt-equipped buses. Because this “carryover” effect depends on the bus belt use habit, bus belt behavior warrants a thoughtful examination.

Usage on Regular-Trips To and From School

Reports of belt use came from a diversity of the student population assigned to belt-equipped large school buses - kindergarten through senior high, boys and girls, White and non-White populations, and suburban and rural areas. Even the youngest children were able to fasten and fasten their own belts.

Elementary school students reported the highest usage rates, from 75-100 per cent. (In the only accident involving a belted bus in the study sites, all passengers were reported by school officials to be wearing their belts.) Students in 7th and 8th grades said their use rate was about 75 percent. Among high school students, reported bus belt use was between 25 and 50 per cent.

Usage of Other Bus Trips

In addition to the students who regularly rode belted buses, other students had some exposure to belt-equipped buses. Students who participated in school supervised field trips, team sports events, or summer-school programs usually rode belt-equipped buses, since the newest buses were commonly assigned to these trips. In some cases, students from nearby school districts rode belt-equipped buses from study sites that provided contract bus services to neighboring districts.

Reports of belt usage on these nonroutine trips suggest considerably lower usage rates than the ones cited for routine morning and homebound trips, especially for older students and students who did not usually ride supervised, belt-equipped buses to and from school.

Reasons for Bus Safety Belt Use and Nonuse

Most students reported that their parents preferred that they use their safety belts on buses as well as in cars. Students and drivers reported that most student bus passengers who did not buckle up on their own initiative would use their safety belts if they were reminded by the driver or monitor. Younger children were more likely to indicate that they wore their belts because an adult (driver, teacher, monitor, or parent) told them they should.

Students of all ages saw prevention of injury, however unlikely, as the primary reason for wearing belts on the bus. Several older students said they were concerned about risk of injury only under the same kinds of hazardous conditions (such as bad roads, reckless drivers, or bad weather) that also prompted their voluntary belt use in cars. Many of the students interviewed who used belts either in the car or the bus reported that they knew of someone who had been in an accident without a belt, which influenced their habits. Other reasons students gave for wearing belts on the bus included a feeling of ownership for their seat by younger children (since older children cannot force them to move), less bouncing around on rough roads, and no sliding off the seat when a driver turned a corner too quickly.

The drivers' and monitors' own attitudes and approaches toward students and to belt use promotion affected the students' belt use behavior, according to administrators, drivers, students, and parents. Belt use rates seemed highest on school buses with experienced drivers who knew each of their passengers and used personal ways to encourage them to buckle up. (New drivers and drivers working for some contract bus operators, who might be under less supervision than school district employees, seemed less likely to achieve high belt use, according to discussions with several senior school district employee-drivers.)

No general picture emerged of nonusers of bus safety belts. Some junior high students reported that they wore belts in cars but said they did not wear belts on buses. In some sites, certain bus monitors focused on getting the students on or off the bus safely and did not actively encourage students to use safety belts. Students mentioned that drivers, teachers, and coaches seldom encouraged or enforced bus belt use rules on nonroutine trips.

Students in school districts with older belted bus programs and more extensive safety education were less likely to mention perceived dangers of wearing a belt on the school bus. However, approximately one fourth of the junior high and high school students raised concerns about possible dangers associated with belt use. Such perceived dangers included the possibility of being trapped in the bus under water or in a fire, or injuring their stomachs in case of an accident.

Older students who did not use bus belts complained about a violation of personal freedom of choice, inconvenience and discomfort, and inappropriateness at their age -- belts are only appropriate for younger children. Students who did not regularly ride a belt-equipped bus were the most likely to express negative attitudes about belt bus use.

IMPACT OF BELT USE ON STUDENT CONDUCT ON BUSES

Many school administrators and drivers in the study sites reported positive effects of a belted bus program on student onboard bus conduct, i.e., improved student discipline and reduced driver distractions. Belts on buses did not lead to significant long term vandalism and mischief involving the belts.

Student Discipline

Improved student conduct on the bus appears to be one of the major benefits of a belted school bus program. Students riding both belt-equipped and non-equipped buses reported this effect.

Student conduct on belted buses varied among routes. On some routes, children already so well behaved that the implementation of the belt program did not have a great impact. However, most bus drivers and some principals who were interviewed noted an overall improvement in behavior on buses as a result of belt usage.

While riding on several bus runs, one field investigator noted that students on belt-equipped buses were seated and not roaming the aisles or standing on the seats, as were students on the unequipped buses. In two other instances, the investigation could distinguish between the belt-equipped and the unequipped buses lined up in front of the school by observing the behavior of the students on the buses.

Even in the district with the lowest reported belt usage rate, the drivers maintained that the belt program had a significant effect on behavior. Since these drivers report students to school officials for not wearing their safety belts when they are observed standing, students are more likely to remain seated, if not buckle their belts. Drivers and students in all sites concurred that students did not put their hands or heads out of windows when riding belted buses.

The improvement in behavior on belt-equipped buses contrasted with the behavior reported by drivers and students riding on buses not equipped with safety belts. Drivers reported that students stand, are more likely to get into fights, and generally display more rowdy behavior. This finding was corroborated by self-reports of a group of junior high school students who rode a belt-equipped bus in the morning and an unequipped bus in the afternoon.

A few drivers with seniority (who typically have the privilege of driving the newest, i.e., belt equipped, buses) suggested that belt impacts on bus conduct might be greatest on routes where less experienced drivers had not yet mastered other control techniques for assuring safe, orderly passenger behavior.

Driver Distraction

Based on observation and driver reports, bus drivers seemed less distracted by student noise and movement on the belt-equipped buses than drivers who drove buses without belts.

While riding one of the non-belted buses, a field investigator observed the driver spoke to the students about their behavior 20 times in a 25 minute period. One group of drivers, who had driven unbelted buses the previous year but now drove belt-equipped buses, confirmed that with improved student discipline, they no longer needed to spend as much time handling misbehavior and could concentrate on safe driving.

Vandalism and Mischief Involving Belts

Belt-related vandalism and mischief were not reported in most districts. Reported instances of vandalism were limited to the removal of buckles from straps. Mischief usually involved stuffing the belts between seat cushions. Some mention was made of buckling long straps across the aisles during the novelty phase of belt programs. Where such acts occurred, buckle theft or hiding appeared to 'be done first by older students, and later by younger ones.

ADMINISTRATIVE FACTORS AFFECTING STUDENT BUS BELT USE

Administrators reported a variety of strategies to ensure program "effectiveness", usually meaning student bus belt use. These strategies involved local support, use policies, driver and monitor training, school staff support, student education, and belt design.

Parent and Community Support

School superintendents and program managers in visited districts acknowledged parent participation. According to school officials, parents had played constructive, central roles in their districts' decision making. Administrators saw parent support as a critical element in achieving student bus belt use. Administrators seemed to regard interested parents as integral and worthwhile members of the bus belt program.

In some districts the local PTA or another interested citizen group informally surveyed the level of community support for a belted bus program and current car belt use, before bus belt

programs were adopted and implemented. When school staff did not have time to obtain information on which to base initial belt investment decisions, some parents helped them to identify procurement options, phase-in strategies, costs, technologies, and associated lessons from other districts. Parent volunteers, also proposed school safety belt curricula, trained new students on bus belt use, served as morning bus monitors, and helped schools learn about students, and parents, car and bus belt use after programs began.

Program Policies and Enforcement

All nine districts reported that they had established specific policies regarding bus belt usage. Penalties for nonuse typically included a warning, followed by a 3-day suspension of bus riding privileges and a meeting between the school disciplinarian and one of the parents of a student who disobeyed the belt use rule. (See Appendix C for sample policy statements.)

Informants concurred that enforcement (or student-perceived fears of enforcement) of school belt use rules by drivers or monitors were needed to achieve high usage, at least for older students; the mere provision of bus belts was insufficient to lead to their use. Drivers said they were more likely to achieve high usage rates if they reminded students to buckle up, did not move their buses (or pulled them over to roadsides) unless all passengers were buckled or at least seated, or took enforcement actions whenever they heard the inappropriate clatter of dangling unattached belts. Drivers, monitors, teachers, and coaches who did not remind students of belt use rules or who did not take enforcement actions seemed to get worse compliance, at least from some junior high and the majority of high school students, according to student passenger reports.

Schools reported other measures to reinforce the regular large belted bus programs:

- Requiring drivers to wear belts that already exist on all buses;
- Requiring students wear belts when riding in equipped small school buses;
- Assigning available belted buses for field trips;
- Chartering buses with safety belts for field trips;
- Requiring that students wear belts on field trips;
- and mailing information about school bus belt policy to parents.

In practice, sanctions for students' nonuse of bus belts were rarely invoked. Students reported that some drivers and monitors were more likely to enforce the rules than were others. Enforcement involving school officials was extremely unlikely, even with high school students; in one district, drivers only reported students that were seen standing in the aisles. If any sanctions were invoked, discipline problems (rather than noncompliance with safety belt policies) were most likely to have been the trigger.

Policy with explicit penalties was not always implemented in a timely way. At least one district's program had been underway for seven months before a new state law mandated car belt use and provided school officials with implicit authority to introduce sanctions into its bus use policy. No one had foreseen the desirability of an explicit enforcement mandate from the local Board of Education when it made the decision to install belts on large buses. Student bus

belt use behavior patterns in this district remained at a relatively low level of compliance without strong driver/monitor controls or student fears of punishment, until drivers and monitors secured mandates to impose sanctions that could increase bus belt use substantially .

Transportation directors and drivers agreed that it was critical for the school district to have a clear belt-use enforcement policy. Belt use seemed likely to be higher, especially for older students, in particular districts or schools where such policy and its threatened or apparent administrative enforcement made the importance of bus belt use obvious to students. If belt use violations also had effective penalties that are enforceable, older students seemed more likely to buckle up. Ironically, high school students frequently stated that they would wear their bus belts if required to do so.

Driver and Bus Monitor Training

All the transportation directors emphasized the importance of providing driver and monitor training to familiarize them with the elements of an effective belted bus program. Start-up and recurring training was believed to be a crucial means of ensuring that drivers and monitors could implement the belted bus program with knowledge and confidence. (See Appendix D for a sample driver training outline.)

Officials credited the role that supportive drivers played in encouraging belt use on buses. High levels of student bus belt use were reported on buses with no monitors to help with policy enforcement. Even on buses with monitors, control of bus movement gave drivers ways to foster belt use that monitors lacked. On routes that did not have monitors assigned to the buses, officials said the driver's program commitment was especially important.

There was agreement among drivers and program administrators that a 'heavy-handed,' punitive approach was ineffective to secure high student bus belt usage. Rather, they believed that driver and monitor training to foster a positive attitude, coupled with firm, consistent policy enforcement techniques, were most effective. Students confirmed that they were more likely to listen to drivers and monitors with whom they had a friendly relationship. Two transportation directors, in particular, emphasized the importance of incorporating techniques for communicating with students and for encouraging belt usage into regular driver and monitor training.

Finally, all superintendents stressed the critical role the transportation director plays in ensuring the quality of the program by supervising drivers (directly in the case of district-owned fleets or indirectly by supervising the operations of contracted service). Many of the most committed transportation directors conducted driver belt program training themselves, even when service was provided by a contractor.

Support and Involvement of School Officials, Teachers , and Others

Transportation directors, parents, and drivers adults agreed that support from senior school officials was an important influence on all aspects of program effectiveness . Support was essential for timely procurements, persuasive explanatory letters to students and parents ,

policy enactment, and its enforcement. Officials' support was important in permitting and shaping classroom education efforts to foster belt use on buses and in cars.

School officials and their boards of education in each district have already demonstrated their high level of program commitment to students and program staff by taking steps to outfit all their large school buses with belts, as soon as possible. According to several interviewed officials and drivers, districts' willingness to portray their programs to other interested school districts manifested local support for and pride in the programs. These actions and underlying positive attitudes toward the program encouraged further program efforts of transportation coordinators, drivers, monitors, and other involved people.

A few drivers expressed concern that they were the only ones who emphasized the belt program directly to students and that they could not do it on their own. Drivers who did not have monitors were the most vocal about the need for more reinforcement through either occasional monitoring or educational programs. Conversely, drivers in districts that received assistance from monitors or other staff were more supportive of the program than those who did not.

In some programs, teachers played supplemental roles, especially with younger children, by serving as monitors as the children board the bus. They checked to be sure all children were belted, helped any who were having difficulty with the belt, and praised children for wearing the belts. They did not leave the bus until all children were in their seats and belted. On field trips, some teachers wore their belts to serve as models for student behavior.

School districts that seemed to have the highest reported student bus belt use rates had periodic in-service orientations for teachers and drivers and other activities for staff.

Bus and Car Belt Education Programs

All the school districts presented students with bus safety information. This orientation included instruction on proper fastening and tightening of the bus belt, sometimes with the help of parent volunteers. Simple training exercises enabled even very young children to attach, adjust, and detach their own belts. Districts in Illinois and Vermont also provided students with bus evacuation training. The school districts with the highest reported bus belt usage rates expanded upon the orientation provided at the beginning of the year by incorporating bus safety into ongoing safety curricula.

Some study sites had implemented safety education programs that focused on car belt use. Ardsley, NY and Hartland, VT, had integrated their car and bus belt curricula into all grades. These programs included the national PTA resource kit with films, "Belt Man" kit, visits by "Buckle Bear", visits by crash victims and state troopers who related stories about traffic accidents, "Seat Belt Week" in the schools, rides aboard the 'Convincer' sled at 5-7 miles per hour, and driver education programs that emphasized belt use. (See Appendix E.)

Field trips and extracurricular activities also provided opportunities for more informal education. A few, but not most, teachers insisted on bus belt use by all students on their field

trips. When some high school sports coaches required team members to wear safety belts both in cars and on the school buses, students voiced no objections.

Belt Design and Maintenance

In several districts, school officials and drivers reported low initial student usage rates when poor buckle and belt design were first supplied by bus manufacturers. Their heavy, old-fashioned latch buckles on the belts were hard for students to use, and long straps were frequently tangled or dirty. The districts had to replace them with improved designs soon after their programs began.

Most Jurisdictions reported no usage problems with modern belt and seat designs. Their push-button buckles were lightweight, easy to attach and detach, and readily adjustable. Their relatively short straps did not become entangled in seats or dirty from falling onto the bus floor. Using different colors or alternating colors for each belt position made it easier for students to find matching belts. One-piece seat cushions eliminated the inconvenience and difficulty of retrieving belt straps that can otherwise get lodged between separate vertical and horizontal cushions.

Some belt designs and installations appear to have effectively discouraged vandalism and mischief, at least in cases where students are not committed to these misdeeds. With some designs, belt buckles cannot be removed from straps without tools. One-piece seat cushions eliminated chances for hiding belts. Installing the short end of the belt on the aisle end of each seat ensured that students could not fasten belts across the aisles. Lightweight buckles and short straps practically eliminated any possible threat that they would be used as striking weapons.

In order to overcome problems with poor belt design, several administrators were considering retractable belts to replace their conventional belts or to install in new buses. They expected that students could easily find matching belts, avoid adjustment problems, and avoid problems of belts and buckles being lodged between horizontal and vertical seat cushions.

Administrators reported taking several steps to ensure timely belt maintenance: regular belt inspection - driver training in simple daily belt maintenance, staff mechanic to perform minor routine maintenance repairs, and stockpiling spare parts to avoid ordering and delivery delays.

PERCEPTIONS OF BUS BELT PROGRAMS

Informants shared many general observations and attitudes about the bus belt program. Appendix F includes a sample of related documents prepared by some of these individuals.

Administrators: When superintendents and assistant superintendents were asked if they would still opt for belt-equipped buses (if they had to make the decision again), they all replied that they would. When asked if they would recommend a similar program to a school official from another district, eight of the nine said unequivocally that they would. The ninth official qualified his response by saying that he could only speak for his own district, but that for a

district with comparable conditions and needs, he would recommend installation of safety belts on large school buses.

Superintendents offered several reasons for their support of bus belt programs. They perceived an added increment of safety in the event of an accident and reduced behavioral (conduct) problems. They said that teaching children to wear belts appeared to make sense from an educational standpoint, fostering car belt use and, hence, increasing students' overall safety. Superintendents also volunteered that parents perceived them as being supportive of popular programs for their children, with little expenditure of the administrator's time or the school's budget.

Administrators said that they support voluntary school district adoption of belt programs with community support but would not endorse 'top down' mandates from elected public officials at state levels. They felt that mandates imposing bus belt requirements on different kinds of districts (e.g. those with discipline, funding, and other problems) would not be sufficient to ensure that all school districts had the resources, ongoing commitment, and leadership necessary to ensure that supportive policies and other program elements are put in place to achieve high bus and car belt use.

Transportation Directors: Most transportation directors and coordinators were former drivers or bus contractor employees who had initially had reservations about school bus safety belts. After initial experience with the program, however, all favored equipping their entire large bus fleets with belts.

Drivers: On balance, drivers in most localities supported their bus belt programs. One group of drivers in Illinois cited difficulty in enforcing the rules and on maintaining the belts as the basis of their opposition. Another system's drivers complained about poor belt design and subsequent belt vandalism. While they acknowledged difficulty in enforcing the belt policy, especially when it was not reinforced by school sanctions or supported by teacher and administrative involvement, they emphasized the positive aspects of having the program - the perceived carryover value of bus belts and improvements in passenger conduct and discipline.

Parents: The belt programs in visited sites appeared to have broad support from parents, according to discussions with parents and school officials. A few parents acknowledged that their initial interest in the program stemmed more from discipline rather than safety concerns, but now they perceived improved safety as the primary benefit of the program. At least one district gave parents a chance to exempt their children from bus belt requirements, but no requests were ever filed.

Elementary and Junior High Students: Virtually all the six to eight year olds who participated in the group discussions expressed positive feelings about having safety belts on buses. They talked in particular about not sliding out of their seats and prevention of injury in case of an accident as the primary benefits of wearing the belts. Older children (10 to 13 years of age) cited essentially the same benefits of safety belts on buses as did younger children.

Senior High Students: Senior High School students expressed the greatest number of negative attitudes about having safety belts on school buses. Most expressed the opinion that they

should not be forced to wear the belts, but that they should be available to those who choose to wear them. There was also consensus among high school students that younger children should be required to wear safety belts on the school bus.

This document is available to the public from the National Technical Information Service.
Springfield, Virginia 22161