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# **Assessment of Elementary School Safety Restraint Programs**

The United States Government does not endorse products or manufacturers. Trade or manufacturers' names appear only because they are considered essential to the object of this report.

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16. Abstract  The purpose of this research was to identify elementary school (K-6) safety belt education programs in use in the United States, to review their development, and to make administrative and impact assessments of their use in selected States. Six programs--one K-6, two K-3, one 3-6, and two 4-6--were studied. Treatment and comparison groups were employed. Structured and spontaneous delivery approaches were identified. Pre- and post-tests were given to determine changes in knowledge, attitude, and reported behavior. Administrative and teacher perceptions were gleaned through interviews and questionnaires. All programs were viewed positively by those delivering instruction. They offered suggestions for program improvement. The programs were capable of leading to significant gains in knowledge though some classes failed to learn. Instruction led to no measurable improvement in attitudes but this could be misleading as students entered the programs with highly positive attitudes. Behavior changes were primarily in a negative direction. They were not, however, attributable to the programs as they were more prevalent among comparison groups.					
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## PREFACE

This report describes an assessment of elementary school safety restraint programs. The work was performed by the American Driver and Traffic Safety Education Association (ADTSEA) under contract to the National Highway Traffic Safety Education Association, U.S. Department of Transportation (Contract No. DTNH22-82-A-07419). Subcontractors for the assessment were the National Public Services Research Institute (NPSRI) and Dr. Richard F. Pain. Dr. William D. Cushman (ADTSEA staff) served as Principal Evaluator.

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## INTRODUCTION

This Assessment of Elementary School Safety Programs included the identification of K-6 safety belt education programs and developmental, administrative, and impact assessments of selected programs. Sixteen programs were identified as readily available nationally to support safety belt instruction in Grades K-6. Six were selected for further investigation. They were:

- o American Automobile Association, School Traffic Safety Education (lower elementary)
- o American Automobile Association, School Traffic Safety Education (upper elementary)
- o FLI, Inc., Beltman, Grades K-3
- o FLI, Inc., Do You Buckle Up?, Grades 4-6
- o NHTSA Safety Belt Activity book, Grades K-6
- o American Seat Belt Council, Three Seconds to Safety, Grades 3-6

The other ten programs were not investigated further for a variety of reasons including:

- o Lack of sufficient detail within the curriculum to provide uniform instruction
- o Implementation contingent upon material from many different programs
- o Lack of availability for large-scale implementation
- o Material not suited to K-6 population
- o Limited safety belt content.

The developmental assessment looked at programs' cognitive development factors, instructional objectives, content, activities, materials, and design.

The administrative assessment, limited to Georgia, Virginia and New Jersey, dealt with implementation requirements and constraints, acceptability among implementers and users, and the delivery process.

Selected schools in the three States participated in an impact evaluation which sought to assess the programs' effectiveness in improving youngsters' knowledge about, attitude toward, and self-reported safety belt use. A before-and-after design with comparison groups was employed. The measures of program effectiveness were the changes between pretest and posttest results.

The sixth program, "Three Seconds to Safety " was evaluated in two discrete settings: (a) among Grades 3-6 -- students in two Fairfax County, Virginia elementary schools,<sup>1</sup> and (b) among Cub Scouts in Northern Virginia dens. Objectives of the evaluation were to:

1. Determine whether or not the instructional materials led to increased knowledge and improved attitudes about safety belts, and
2. Determine teacher perceptions of the program relative to its usability and value to their objectives.

The elementary school evaluation found statistically significant increases in tested safety belt knowledge. Adjustments in procedures and direction were made during the Cub Scout study. This resulted in greater emphasis on the administrative and logistical aspects of program presentation and adaptability and less attention to evaluation of learning gained.

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<sup>1</sup> Cushman W D. and Pain R.F. Evaluation of "Three Seconds to Safety." Performed under Contract to the National Highway Traffic Safety Administration by the American Driver and Traffic Safety Education Association, Final Report, Report #DOT-HS-806-511, September 1983.

## IDENTIFICATION OF K-6 SAFETY BELT EDUCATION PROGRAMS

This section identifies major safety restraint programs used among elementary school youth in this country. The objectives of this information gathering activity were to:

- o Identify commercially available safety belt education programs for use with elementary school audiences.
- o Identify state program initiatives in this same area.
- o Determine where commercially available programs have been placed among the states.
- o Determine the means by which programs are distributed within states.
- o Gather preliminary information regarding the extent to which these programs were being used at the local school level within states.

The goal, therefore, was to identify which programs were currently available for use in elementary classrooms and which distribution methods appeared to be effective in terms of enabling and motivating teachers to use safety belt education materials.

This investigative effort was the first step in evaluating K-6 safety belt education programs. Project staff also collected information to be used in the remaining tasks of the project. Specifically, information was gathered to help identify states and, ultimately, schools within those states, which would be suitable sites for conducting administrative and impact assessments. Additionally, contacts were made to gather program materials and collateral documents and information which would be used in performing a developmental assessment of the program.

### INVESTIGATIVE PROCEDURES

The identification of K-6 safety belt education programs was initiated by locating educational programs already known to exist. Personal contacts (via telephone or face-to-face interviews) were initiated with program producers and/or distributors. An "interview protocol" was followed listing information items to be gathered from these sources. When desired information could not be collected during the initial contact, arrangements were made to have the information source gather the requisite data. Alternatively, the initial source was asked to identify others who could provide the missing information. These new sources were then contacted to fill the remaining information gaps.

In addition to being questioned concerning their own programs, the producers/distributors of well-known programs were queried as to the existence and availability of other programs. Where other programs were identified, representatives of the originating company were contacted and information

concerning their programs was requested. They, too, were asked to identify other programs not already identified.

State supervisors of driver and safety education were contacted in those states identified by commercial vendors as having purchased or obtained substantial quantities of the programs. These contacts were asked to verify vendor input and to identify any state level programs (their own or those of other states) worth investigating. Additionally, the supervisors were queried as to distribution and classroom use of elementary-level safety belt programs within their states.

The primary limitation of this investigative procedure is that it can lead to the identification of an unmanageable and unproductive number of elementary-level safety belt "programs." A large number of state and even local-level programs were identified. However, most state-level initiatives fell into one of three categories:

1. Curriculum Guides--"Programs" in the sense that they listed instructional objectives, key concepts to communicate, recommended time to be allocated to safety belt instruction, and perhaps program evaluation criteria.
2. Eclectic Programs--Programs that borrowed materials and activities from several existing programs and combined them into an instructional segment.
3. "Pick-Your-Own" Programs--In which states listed various programs available to teachers and encouraged teachers to use one or more in whatever way they saw fit.

Programs of the first type were not investigated further because of insufficient detail within the curriculum guides to provide for uniform instruction. The "eclectic" programs, such as New York State's Youth Instructional System, were not investigated further because their implementation is contingent upon materials from many different programs. This was an impediment toward widespread use of the program beyond the originating state, as most states would not have all of the requisite materials and purchase of several programs to gather materials needed for one coherent program was beyond the financial means of most states. Programs of the third type were not investigated as there was no documentation of these programs that permitted a reliable determination as to what was actually being done or an opportunity to transfer this program technology to other states.

Sixteen programs were identified which did not fall into one of the three "non-program" categories listed above. Of these programs, only eight were readily available to support safety belt instruction in Grades K-6. Three of the programs were available from FLI Learning Systems, Inc.--"The Adventures of Belt Man," "Dan Horn and His Safety Squad," and "Do You Buckle Up?" Two programs were available from the American Automobile Association (AAA). The core materials for these programs were the "Traffic Safety Teacher's Guides," one for teachers in Grades K-3, and the other for 4-6 teachers. The other four programs are: "Careful Buddy's Garage Theater," available from Media Intensive Learning Corporation; "The Mighty Buckle



Bee " available from Shipley Associates, Inc., and "Three Seconds to Safety," developed under the auspices of the American Seat Belt Council and being distributed by the National Safety Council. A ninth program--the NHTSA Safety Belt Activity Book--also was investigated, although it was not readily available. Existing stock of this program had been depleted. It was included, however, for further investigation under the assumption that it could be fairly readily reproduced and made available should an evaluation prove the program to be effective.

#### Identified/Dropped (From Investigation)

Other programs were identified but dropped from further study when cursory investigation revealed that they were not available for large-scale implementation among the intended audiences. Among these "other" programs were three from Media Intensive Learning Corporation: "Buckle Up Box," a K-2 safety belt program; "The Safest Show on Earth," a Grade 3-5 program on passenger, pedestrian, and bicyclist safety; and "Wheels," a Grade 5-6 program on passenger, pedestrian, and bicyclist safety. "Wheels" had already been withdrawn from the market and the other two programs were withdrawn from distribution before this study was concluded. As these programs were no longer available to the states, and as they all include consumable materials which negate the possibility of long-term use of materials already sold and distributed, they were dropped from further consideration.

"Buckle Up Buddy" is a K-3 safety belt program which had been marketed by Canson Associates, Inc. The program had been used extensively and, in fact, evaluated in Texas. Project staff, however, were unable to contact the distributor and there were indications that the company and the program were no longer in existence.

"Discovering Traffic Safety," developed and initially marketed by the Highway Users Federation for Safety and Mobility, had also been withdrawn from circulation. This program was designed as a comprehensive traffic safety education program for use in Grades K-8. While there was some possibility that the program would be made available at some time in the future, it would be released in a radically different form. For this reason, "Discovering Traffic Safety" was not investigated further.

"Buckle Bear" was another such program. Originally developed under an NHTSA grant by the UCLA School of Public Health, a modified version of this program was being commercially marketed by Weiner-Seaman, Inc. The program was developed as a predominantly pre-school program, with major emphasis on child restraints. Although the producer described the program as a pre-school through K program, an initial review of program materials revealed that even the safety belt segments of the program were too "young" for a kindergarten audience. The producers appeared to acknowledge this fact, as their marketing efforts were concentrated almost exclusively on pre-schools. As pre-school programs fell outside the scope of this project, "Buckle Bear" was dropped from further consideration.

Another program identified but not given further consideration was the "Traffic and Pedestrian Education System: A Safety Program for the Young" developed in 1975 by the New York State Department of Motor Vehicles. This

comprehensive program covers safety belt use. However, it was not subjected to follow-up investigation due to a combination of considerations: the program was not available in quantity; the prospects of reinitiating mass production in the future were dim; and the safety belt content was extremely limited. As an example of the latter consideration, one segment of instruction suitable for use at the K-1 level includes a filmstrip/cassette entitled "A Ride in a Car." This segment covers many aspects of occupant safety, including safety belt usage. However, safety belt information is very restricted, amounting to little more than presenting the advice that belts should be buckled and kept on throughout a ride. The remainder of the content is devoted to other issues such as: where to wait for a vehicle; the need to refrain from distracting the driver; the need to keep hands away from keys, knobs, and handles within the car and from sticking outside the car, and other information such as identification of traffic signs. Given the limited safety belt content of the entire program and the unavailability of component parts for widespread distribution, project staff decided to eliminate this program from in-depth investigation.

Figure 1 lists the eight programs that were readily available and displays the intended student audience of each program, the major content areas, and the generic types of materials included as part of the core program. Each of the eight programs identified in Figure 1 is described in the following paragraphs. Also included is a brief discussion of distribution among the states and within selected states. The within-state distribution mechanisms are presented to provide a general picture of the various procedures state agencies and traffic safety organizations use to get the materials from the producers to the elementary school students.

#### AAA School Traffic Safety Education (Lower Elementary)

The AAA School Traffic Safety Education program for grades K-3 includes the following materials:

- o Traffic safety teacher's guide for Grades K-3--presenting learning objectives, recommending learning activities and containing games and puzzles that teachers can duplicate and distribute to students.
- o Otto the Auto, for Grades K-3--a collection of 10 short stories on various traffic safety topics which typically are read to students by their teacher.
- o "My Own Safety Story"--a student workbook
- o Traffic safety education visuals--a collection of 12 classroom posters.

Supplemental program materials available through AAA include "Otto, the Auto in Buckle Up"--a brief animated film--and assorted materials which students could take home to their parents--e.g., pamphlets such as "Fragile! Transport Safely!" and "Safety Belts...for People Who Enjoy Living," as well as in-car stickers urging people to buckle their belts. The program is designed to focus on a specific traffic safety behavior each month of the

**FIGURE I  
ELEMENTARY SCHOOL SAFETY PROGRAMS**

PROGRAM NAME	INTENDED AUDIENCE							CONTENT AREAS			PROGRAM MATERIALS			
	K	1	2	3	4	5	6	Occupant Protection	Pedestrian Safety	Bicyclist Safety	Teacher	Student	Aids	Parent
AAA School Traffic Safety Education (lower elementary)	X	X	X	X				X	X	X	X	X	X	*
AAA School Traffic Safety Education (upper elementary)					X	X	X	X	X	X	X		X	
Belt Man	X	X	X	X				X	X		X	X	X	
Dan Horn and His Safety Squad			X	X	X	X	X	X	X	X	X		X	
Do You Buckle Up?					X	X	X	X			X		X	
Careful Buddy's Garage Theater	X	X	X					X	X	X	X	X	X	
Three Seconds to Safety				X	X	X	X	X			X	X	X	X
NHTSA Safety Belt Activity Book	X	X	X	X	X	X	X	X			X			

\* Supplementary materials available for special orders

school year. Hence, the 10 posters relate to the 10 instructional segments in the Teachers Guide, the 10 Otto the Auto stories, and the 10 workbook activities in "My Own Safety Story." Of these 10 segments, one is devoted to safety belt use.

It is important to note that the AAA program is revised every year. Each year there are 10 new stories, 10 new activities, 10 new posters, etc. Thus, the AAA program investigated this year will not be the same AAA program put into the schools in subsequent years. Because of this situation, description of the program distributed in the 1982-83 school year is useful only as a generic description of the AAA approach to formulating elementary traffic safety programs.

The objectives for the 1982-83 safety belt instructional segment were to enable students to:

- o Give reasons for using safety belts.
- o Demonstrate how to buckle safety belts properly.
- o Use and understand new vocabulary words.

From the last-mentioned objective, it may be inferred that teachers are not expected to use the safety belt material for strictly traffic safety behavioral improvement purposes. Rather, the program is designed to fit with mainstream educational objectives. Another AAA publication--"Through the Year with Traffic Safety: A Traffic Safety Curriculum Calendar"--makes clear that AAA regards the core program materials it provides as capable of supporting an independent unit of traffic safety instruction.

However, AAA advises teachers to "take advantage of teachable moments" in which a daily program activity or a student story might afford the opportunity to launch into an ad hoc traffic safety lesson. In sum, the AAA philosophy is "You don't need to add traffic safety to your program. Just locate it, accent it, and make it a vital part of daily living and learning."

The central piece of the program is, of course, the teacher's guide. The teacher's guide is little more than a detailed curriculum. In addition to listing the objectives of the unit, the guide suggests various learning activities. Teachers are free to use any and all of the suggested activities. In the guide proper, there is no clearly delineated relationship between the recommended learning activities and other program materials available (e.g., the Otto the Auto stories or film). These materials are referenced, however, on a back cover listing of supplementary materials.

### Distribution

One reason for the curricular, as proposed to programmatic, nature of the AAA lower elementary program is the non-uniform distribution of program materials. The various member clubs of AAA are solicited each year to purchase quantities of the various program materials to be provided to local schools free of charge. Participation in this activity on the part of clubs

is voluntary. However, more than 80% of the clubs do participate. As program participation does require out-of-pocket expenditures by the clubs, one limitation on the degree and breadth of distribution is the amount of money individual clubs are willing to dedicate to this safety activity. Thus, some clubs may feel they are able to afford only purchase of copies of the teacher's guide. Others may feel that they can afford only the posters and guides, whereas others may provide all program materials. Despite this limitation, however, the AAA Lower Elementary program is, beyond doubt, the most widely disseminated program in the country. In the 1983-84 school year, state and local clubs purchased more than 150,000 of the K-3 Teacher's Guides, more than 160,000 of the Otto the Auto stories, and more than 1 million copies of "My Own Safety Story."

While the AAA program is disseminated throughout all 50 states, the manner in which it is distributed varies according to the nature of the state and the commitment of the club to the program. For instance, in West Virginia, the representative of the Bluefield Automobile Club hand delivers program materials to each and every teacher within the state. Obviously, such a distribution method is not practical in larger states. In Virginia, three different clubs distribute the materials through three different methods. AAA of Virginia makes its materials available through education agencies at the state level as well as the district level. Education officials are responsible for the ultimate dissemination of these materials to the various schools. The Tidewater Automobile Association distributes the materials directly to teachers through a teacher workshop series. The AAA Potomac Club distributes the materials indirectly, providing them to safety education officers from the Police Department who then distribute them to the schools at which they make appearances. Yet another distribution mechanism has been established by the North Jersey Automobile Club, which maintains a computer inventory system recording the type and amount of program materials requested by individual teachers and then orders that amount each year.

The quantities of materials purchased and the way in which they are promoted also affect how program materials are used within a state. In most states, clubs buy as many copies of the Otto the Auto stories as they do Teacher's Guides. Thus, both publications are promoted as being exclusively teacher materials. The only materials ordered in sufficient quantity to serve as student materials are copies of "My Own Safety Story." However, the Peninsula Motor Club of Florida purchases enough Otto the Auto stories to provide one to each student along with the "My Own Safety Story" booklets. All of these materials are distributed to teachers via teacher workshops, where the prospect of using the Otto stories as parent-involvement materials is discussed.

#### **AAA School Traffic Safety Education (Upper Elementary)**

The AAA Upper Elementary program is similar to the program described previously with the exception that fewer program materials are available. The program uses the same 10 posters and provides a separate Teacher's Guide for teachers in Grades 4-6. Beyond these materials, however, none are available for this audience. There is no "advanced" version of "My Own Safety Story." Nor is there an "older" equivalent to the Otto the Auto

stories. Additionally, the popular supplementary teaching aid--"Otto the Auto--Buckle Up"--is geared to a younger audience and therefore not appropriate for use with children in this age category. Consequently, the Upper Elementary AAA program constitutes little more than a fairly detailed curriculum guide with (in 1982-83) the following objectives:

- o Students will be able to explain why wearing a restraint is important to their safety.
- o Students will be able to distinguish between factual and mythical beliefs regarding safety restraint use.
- o Students will be able to draw conclusions from statistical data.

While learning activities in the Lower Elementary school program are geared largely to getting children involved in physical activities pertaining to belt operation or belt-related games, recommended activities in this program are more academically oriented. The focus at this level is upon student discussion (especially in the area of attitudes concerning the usefulness of safety belts) and personal decision making.

In the 1982-83 school year, nearly 125,000 copies of the 4-6 Teacher's Guide were distributed by state and local AAA clubs. While this represents about 15% less of a distribution than that achieved with the K-3 Teacher's Guides, it still constitutes a wide distribution throughout the Nation's elementary schools. Within States, clubs use the same distribution procedures they follow with the lower elementary program.

### **The Adventures of Beltman**

The Beltman program covers both passenger and pedestrian safety topics. In fact, the bulk of program materials and recommended activities focuses exclusively on safe walking practices and knowledges. Program materials relating to the safety belt elements of the program include:

- o A teacher curriculum guide--recommending 10 lesson plans, two of which are devoted to safety belts.
- o A teacher orientation audio/filmstrip--introducing teachers to the overall program.
- o An eight-minute audio filmstrip on safety belts.
- o A lap belt--for use by children within class.
- o A safety belt use chart--which children use to indicate whether or not they wore belts that day.

Other program materials include a poster of the Beltman character, another audio filmstrip, a two-sided audio cassette, a booklet and various games pertaining exclusively to pedestrian behavior.

The 8-minute filmstrip on safety belt use--the "Adventures of Beltman" --actually extends beyond safety belt specific information to include other occupant protection information such as the need to ride quietly, lock doors, keep hands and arms inside the windows, and enter and leave the vehicle on the curbside. The second and final lesson is to be extended over a long period of time. Specifically, students are to practice in the class putting on the lap belt included in the kit. The buckle up chart provides a place where each student can record progress in buckling up over a 30-day period. Basically, they get to check whether or not they buckled up that day in class. The key concepts communicated by the filmstrip are:

- o Belts should always be worn.
- o Belts should be worn tight and low across the hips, not across the stomach.
- o Children should sit in the back seat with doors locked and belts on.
- o If the shoulder harness in the front seat crosses the child's neck, the child should move to the back seat and buckle up there.
- o Children should ask their parents to wear belts as well.

#### Distribution

Beltman is the most widely distributed commercial program in the country. Some 29 states have purchased copies of the kits, varying in number from 800 in both Georgia and Virginia, 200 in Alabama and Wyoming, and anything from a few to 150 in the other states. Two of the states (South Carolina and Iowa) have conducted or were in the process of completing evaluations of the Beltman materials. Suffice to say at this point that in both cases the reports are primarily of a positive nature.

#### **Dan Horn and His Safety Squad**

The "Dan Horn" program covers passenger, pedestrian, and bicycle safety. In addition to a Teacher's Guide, program materials include:

- o A 16-minute film introducing key concepts in all three subject area.
- o Two audio cassettes, which deal with the three main topic areas and a review quiz.
- o A Dan Horn poster
- o A reproducible "Safety Squad" certificate.

Instructional content of the safety belt section of the program is essentially identical to that in the previously described Beltman program with the addition of more specific information in the sense that wearing belts all the time means "not just on long trips."

The Dan Horn program was new at the time of this study, and distribution was limited to "samples" in a few states.

### Do You Buckle Up?

Although "Do You Buckle Up?" is marketed as a 4-9 program, the content is not appropriate for children who have completed elementary school. Therefore, this program will be considered in this study as a 4-6 program. The materials in the program include:

- o "Do You Buckle Up?"--a movie.
- o A supplementary filmstrip.
- o A Teacher's Guide.

The 16mm film uses facts, humor, and graphic demonstrations to:

- o Show how peers encourage safety belt usage.
- o Show the impact forces involved in a 10 mph crash (using a seat belt convincer).
- o Answer myths.
- o Demonstrate results of a serious accident (X-ray pictures).
- o Illustrate proper belt usage.

The filmstrip includes background information for the facts presented in the film. The package has been distributed in about half a dozen States, most notably in the State of New Jersey, in which every elementary school received a kit, and the State of Georgia in which 200 kits were purchased for use by the police department.

### Careful Buddy's Garage Theater

This program contains three independent modules, one each on pedestrian, passenger, and bicyclist safety. Each module is introduced by an 8-minute filmstrip/cassette featuring the character of "Careful Buddy" and his five safety buddies. Careful Buddy is a puppet. Aside from the filmstrip/cassette, program materials include:

- o A puppet theater
- o Two background scenes for use in the theater for each module--



one displaying unsafe behavior in the content area (i.e., unsafe passenger behavior) and the other showing the same scene but with the children displaying safe behavior.

- o The hand puppet of Careful Buddy, five finger puppets (the safety buddies), and a cardboard school bus.
- o A Teacher's Guide

Like the other two modules, the passenger protection module is designed to accommodate two lessons of approximately 30 minutes each. The lessons can be extended to last another 15 minutes, should teachers elect to cover supplementary material on schoolbus riding. The first lesson is devoted to viewing the filmstrip and discussing the concepts presented. The second lesson involves the students acting out the concepts through the use of the hand puppet and the finger puppets in the garage theater itself.

The key concepts presented in the passenger safety module extend beyond core safety belt use concepts. Non-safety belt information covered includes: definition of what is a passenger, the need to avoid horseplay, and the need to keep all parts of the body inside the vehicle while it is being operated. Safety belt related concepts are: always wear belts; sit in the back when possible; buckle the belt across the hips rather than across the stomach; if shoulder belts are present, wear them under the arms rather than across the neck; lock doors; and safety belts protect you because they keep you from flying through the air within the vehicle during a sudden stop.

"Careful Buddy's Garage Theater" was developed in 1977 and revised in 1979. However, the program, even after revision, was never a big seller. Virtually no sales have been registered since 1981. According to the distributor, the primary limitation to program sales was two-fold:

- o The program includes so many materials that teachers find it difficult to keep the kit intact.
- o The packaging of the program--specifically, the large size of the puppet theater itself--necessitated high shipping expenses, which made the program less competitive because of price.

The only large-scale distribution of the program was in South Carolina. One hundred sets were purchased in 1981 through the auspices of the Governor's Representative for Highway Traffic Safety. That office distributed the kits to the State's media centers, at which point the curriculum supervisor solicited individual schools to request the program from the centers. This means of distribution proved effective, and many of the sets have been in use in the schools since that period. An evaluation of the program and its use in South Carolina was conducted by the Department of Education. The major complaint about the program found during this evaluation was that the program materials did not hold up under repeated use. Specifically, the theater and the finger puppets tended to become unusable after several presentations.

### **Three Seconds to Safety**

This is an instructional reading program about seat belts for grades 3-6. It includes a Teacher's Guide, styled in a four-page, durable folder. The guide relates to five separate units and provides detailed assistance to the teacher for the conduct of the units. Materials include six activity masters which can be spirit duplicated for members of the classes. This provides hands-on materials for use by all of the youngsters. The activities are: a seat belt survey, who wrote it? (brief letters written by Humpty Dumpty, Little Red Riding Hood, and Little Bo Peep), Is That a Fact?, Wearing a Seat Belt, Think Ahead, and Amusement Park Mystery. A large bulletin board poster of Humpty Dumpty and All the King's Men entitled "Three Seconds to Safety" provide a continuing classroom visual to keep youngsters aware of the safety belt activity.\*

### **The NHTSA Safety Belt Activity Book**

This 1977 NHTSA/DOT publication is a guide for K-6 teachers. Its purpose is to help teachers train students to use safety belts properly at all times in an automobile and to encourage students to urge others to use safety belts. Twenty discrete activities have been divided into two sections: "Learning About Safety Belts," and "Telling Others About Safety Belts." Activities range from the very simple, for the younger students and slow learners, to more complex activities for older students. Activities are suitable for small or large group use and individual students also can use the materials effectively.

Activities are designed to encourage student involvement and can be presented as either a special curriculum or integrated into other curricular activities. The activities are varied and include, among others, hands-on work in building automobile mockups to demonstrate restraint values with the use of an egg, puzzles, drawings, short stories, letter writing, and songs. Illustrations are large and clear.

### **Programs Dropped From Further Consideration**

Seven of the programs initially examined were eliminated from further consideration early in the investigation for reasons already identified. However, not all programs subjected to additional investigation were examined further. Criteria guiding the determination as to whether or not programs would be considered further are:

- o Vertical Articulation--Does the program cover enough grades that it will seem to be a reasonable "buy" to the states? Schools are not likely to spend their money on a "limited" program that covers only one or two elementary grades when others reaching a larger share of their student population are available.

\* Since "3 Seconds to Safety" was evaluated under a different procedure, it is described later in the report.

- o Low Distribution/Sales--Has the program achieved, or is it likely to achieve, relatively large-scale distribution? While the reasons for low distribution may be varied (e.g. lack of promotion, overly expensive), the fact that a program is not well-received within the education community indicates that there is little probability that it would gain wide acceptance even with a favorable evaluation from this project or elsewhere--given the intensely competitive nature of program sales.
- o User Discontinued--Is the program still being used in places where it was placed initially? While many reasons may be involved, teacher discontinuation of a program readily available in schools indicates a practical flaw in the program which, again, would not be overcome by a favorable evaluation of its merits. For example, teachers are not likely to try to use a program that has been found to be effective if they feel they cannot operate the equipment or conduct the activities effectively themselves.
- o Limited Belt Content--Does the program contain enough information and activities devoted to safety belt use to create at least a possibility of effectiveness in this area? A program may cover safety belts in one minute and devote the remaining 10 hours of instruction to pedestrian and bicyclist safety. While such a program may be an effective means of inducing students to adopt safe walking and bicycling behaviors, there is little prospect for effectiveness in the belt area.

With these criteria in mind, the following programs were dropped from further consideration--"Dan Horn and His Safety Squad" and "Careful Buddy's Garage Theater." The Dan Horn program was dropped primarily because we were unable to identify any school currently using the program. One intent of the project was to examine real-world (in class) use of selected programs. The "Careful Buddy" program was dropped primarily because of low distribution and because it had been discontinued by those teachers who were using it.

Additionally, "Three Seconds to Safety" was dropped from this evaluation not for any of the foregoing criteria, but because it was being evaluated independently under a separate procedure.

## EVALUATIONS

A few evaluations of elementary school safety belt materials have been conducted. While reporting on such evaluations is beyond the scope of this section, it is useful to note that the Office of the Superintendent of Public Instruction for the State of Washington evaluated the Beltman, Buckle Up Box, and Buckle Up, Buddy programs. The South Carolina Department of Education conducted an evaluation of the Belt Man and Careful Buddies Garage Theatre programs. The Iowa Department of Public Instruction tested the Belt Man program. All three of these tests were made in elementary schools. In each of the three studies, Beltman was favorably received. The other pro-

grams, while viewed positively in some regards, were considered impractical in others. Careful Buddies Garage Theater, for instance, required replacement of expensive consumables.

The Texas Transportation Institute evaluated Buckle Up Box, Buckle up Buddy, and Beltman. While Buckle Up Box was rated highly in this evaluation, Buckle Up Buddy had a more favorable report. Beltman was found to be too advanced for the targeted (K-2) group.

## STATE PROGRAMS

In addition to the programs discussed earlier in this report, some state programs emerged as being worthy of additional consideration. By and large, they existed only within the individual state concerned, but there were possibilities of their spreading to other states. Brief discussions of a sample of these programs are offered here.

### Washington

The Office of the Superintendent of Public Instruction in the State of Washington had begun the development of what they call Teacher Resource Kits for elementary school safety belt instruction. The materials within the kits are a conglomerate from a number of different sources. Kits were developed for both K-3 and 4-6 grade levels. Currently, eight of these kits are now available from each of the States' nine educational service district offices. Kits were funded by the Traffic Safety Commission of the State of Washington. Because the kits were rather costly and the Commission felt unable to continue to provide such costly materials, the Superintendent's Office has been involved in the development of smaller kits. Distribution of the kits to the educational service districts was planned for September 1, 1983.

### Delaware

Safety belts is one of five content areas covered in the "The Mighty Buckle Bee" program. Materials submitted for our review, however, related only to safety belts.

The program was developed for the Delaware Office of Highway Safety for distribution by that office to the elementary schools of the State, specifically grades K-4. To date, the distribution has been limited to Delaware, but the developer has an interest in making it available to other States.

A person dressed as Mighty Buckle Bee visits each school. Two weeks before the scheduled visit, the teacher receives a package of materials to help prepare the class for the visit. An advance notice flyer is passed out to the children with the instructions that the flyer be taken home for parents' information. If school policy permits, all parents are invited to the presentation.

A week prior to the arrival of Mighty Buckle Bee, the teacher conducts

the Safety Belt Education lesson. The lesson takes approximately 20-30 minutes. After the lesson, a dot-to-dot activity sheet and a coloring/essay contest sheet are passed out along with an educational flyer and survey for the children's parents to complete. The choice of whether to conduct a coloring or an essay contest is up to the teacher and is based on the capability of the students. Contest entries are evaluated and a winner selected by the teacher prior to the visit of the Mighty Buckle Bee.

The day before the presentation, children are reminded of the visit and told to alert their parents. On the day of the visit, a Delaware State Trooper opens with a talk on the importance of using seatbelts and child restraints (for younger brothers and sisters), demonstrates what happens to belt wearers during an accident as opposed to what happens to those who are not wearing a belt, and gives a short slide presentation. The trooper then introduces Mighty Buckle Bee who says hello to the children and gives a short talk reinforcing the trooper's message. Mighty Buckle Bee presents certificates to the winners of the coloring/essay contest and Buckle Bee stickers to the students as a reward for promising to buckle up their safety belts.

Some 6,000 youngsters (grades K-4) took part in the program during the 1981-82 school year. The Office of Highway Safety made the program available three days each week and visited a different county each week. The program package includes a teacher's guide, a survey form, a number of informative flyers, the coloring and dot-to-dot forms, winner's certificate, and Mighty Buckle Bee stickers for each child.

#### SUMMARY OF INITIAL PROGRAM REVIEWS

On the basis of reviewing numerous restraint education programs marketed or provided to elementary level students, it was possible to make some general observations concerning the suitability of such programs for elementary students. First, despite the presence of many traffic safety education programs available for this age group, relatively few concern themselves solely with safety belt use. For example, of the 16 educational programs meeting the project definition of "program", only six focus exclusively on safety restraints. Of these six, only three--"Buckle Up Box", "Do You Buckle Up?", and "Buckle Up, Buddy"--were developed by commercial organizations. While the Buckle Bear program is now being marketed commercially, it is in fact an offshoot of a NHTSA grant to UCLA and, additionally, is much more of a child restraint program than a safety belt program. The fifth safety belt-only program--"Three Seconds to Safety"--was developed by the Communications and Education Group, a division of Mazer Corporation for the American Seat Belt Council. And the sixth program--the NHTSA Safety Belt Activity Book--was produced and distributed entirely by the Federal Government. In all other programs, safety belt-related instructional materials are one element in more comprehensive learning packages addressing pedestrian and bicyclist safety, and often schoolbus safety as well. Three possible reasons for this developmental consistency are:

1. Most were developed in the '70s, a time in which the trend was to provide for a comprehensive traffic safety education, rather than a narrowly-scoped program that focused on one behavior.

2. From a purely marketing point of view, it is easier to "sell" educators on a program that promises to address many aspects of safe behavior in the traffic environment rather than in one; educators would prefer to purchase one comprehensive program at a modest price rather than a collection of three or more programs that, together, cover the same information.
3. It may be a better approach to teaching safety.

A second observation concerns the programs which had been or shortly were to be withdrawn from circulation--namely, consumable programs. Programs such as "Buckle Up Box" and "The Safest Show on Earth," appeared to be very well-developed programs and, by all user accounts, well-received programs. However, these programs also appeared to be fatally flawed by the very nature of the materials used. Education agencies quite simply cannot afford to keep replenishing program material stocks year after year. Consequently, the programs with the most "staying power," in terms of continued sales and use, are those programs which may be used time and time again without additional cost to the education community and without degradation of the materials themselves. Programs would appear to be best situated for longevity if they reduce the number of materials actually handled and used by young hands and if those materials which are handled by students are of exceptional strength and durability. This is especially important considering the learning needs of young students as many need to learn through doing. Program developers must be sure that the material, learning/props they give students can take punishment over an extended period of time.

## DEVELOPMENTAL ASSESSMENT OF SELECTED K-6 SAFETY BELT PROGRAMS

This section documents a developmental assessment of the five selected elementary school level safety belt programs:

- o FLI Learning Systems, "The Adventures of Beltman" program (K-3)
- o AAA Lower Elementary Traffic Safety Program (K-3)
- o AAA Upper Elementary Traffic Safety Program (4-6)
- o NHTSA Safety Belt Activity Book (K-6)
- o FLI Learning Systems, "Do You Buckle Up?" program (4-6).

The assessment focused on whether the programs satisfied educational requirements appropriate to safety belt instruction for elementary school audiences. The educational content, methods, materials, and structure of each program were assessed for:

- o Appropriateness to the learning characteristics of the intended audience
- o Sufficiency to support achievement of the program's (stated and unstated) educational objectives
- o Adequacy to support achievement of optimal objectives established for elementary level safety belt education.

### ASSESSMENT METHODOLOGY

The assessment was performed by a desk audit of program materials received from developers/distributors. Where possible, the developers were contacted to gather additional information concerning the considerations and processes involved in program development. Evaluation reports also were solicited from the distributors and from outside sources, e.g. agencies which had conducted independent evaluations of the programs.

#### Assessment Criteria

The desk audits were guided by child cognitive development factors and optimum instructional objectives for safety belt education. The first included a list of cognitive limitations of elementary school students. This list was compiled on the basis of early childhood development research (see Appendix A). The five safety belt instructional programs were assessed according to their responsiveness to these general learner characteristics. It should be noted, however, that there is considerable variation among students in terms of individual development and subsequent related program needs.

Optimal objectives for elementary school restraints programs were developed (Appendix B). These objectives constituted a second criterion or benchmark against which the program materials were measured.

Additional criteria were employed to assess objectives, content, activities, materials, and overall design of each safety belt program.

## Assessment of Program Objectives

To assess the scope and comprehensiveness of the programs, it was necessary to look beyond the stated objectives. In every instance, they were limited to only two or three general statements of intent. In many cases, the stated objectives were administrative or teacher--rather than student--oriented. Project materials, therefore, were analyzed to identify student knowledge, attitude, and behavioral objectives "buried" within the programs.

The objectives were assessed for their appropriateness for the intended audience by using the following questions:

- o Is the intended audience physically able to perform the actions envisioned in the behavioral objectives?
- o Do the attitudinal objectives counter unsafe attitudes commonly held by children?
- o Are children capable of embracing the attitudes sought?
- o Do the attitude objectives support attainment of the behavioral objectives?
- o Are the attitude objectives necessary to attainment of the behavioral objectives?
- o Are children capable of understanding the knowledges to be imparted?
- o Do knowledge objectives take into account misinformation commonly acquired by children?
- o Do the knowledge objectives support attainment of the behavioral and attitudinal objectives?

## Assessment of Program Content

Program content was assessed in seven areas:

- o Appropriateness to program objectives--Does content support attainment of stated and implied knowledge, attitude, and performance objectives?
- o Appropriateness to audience--Can students understand the words used? If content uses analogies, surrogates, etc. to teach a concept, can children understand the connection to their lives and actions?
- o Imperviousness to misconstruction--Does content give the "right" message unequivocally, or are there undesirable connotations?



- o Sufficiency--Does content provide students with sufficient preparation and background to participate in and benefit from the learning activities and teaching methods recommended?
- o Accuracy--Is the information accurate?
- o Consistency--Does content convey compatible information or are there internal inconsistencies which may confuse the learner?
- o Currency--Is content up-to-date?

### Assessment of Program Activities

Program activities were assessed according to four key criteria:

- o Appropriateness--Are the activities appropriate to students' cognitive, perceptual, and physical development?
- o Practicality--Are activities reasonable for teachers? Do they require excessive preparation/execution time? Do activities provide for all students to be involved?
- o Contribution toward program objectives--Do the activities appear to support student attainment of program objectives or are they merely interesting and enjoyable for students (such as singing songs or finger plays)?
- o Imperviousness to undesirable outcomes--Are activities able to lead unequivocally to the desired learning, or might they result in false conclusions?

### Assessment of Program Materials

Materials were first assessed for their presence--are all requisite materials provided or must teachers obtain or create them? Student print materials were assessed for their appropriateness. Visual appropriateness was judged on the basis of layout and design. For instance, did the layout of print materials accommodate students' immature tracking ability? Responsiveness to learning limitations was determined in light of the following considerations:

- o Are the materials sufficiently illustrated?
- o Are print materials broken out into sections small enough to accommodate a short attention span?
- o Are illustrations simplified so that important elements are highlighted? Are extraneous, distracting features eliminated?

Teacher materials were assessed on the basis of the following considerations:

- o Do they provide a strong rationale for conducting the program?
- o Do they provide sufficient background information to enable teachers to respond to questions and concerns raised by students or their parents?
- o Do they provide adequate administrative information?
- o Do they suggest appropriate teaching techniques?

### Assessment of General Program Design

Major considerations in the assessment of the general design of programs were:

- o Appropriateness of methodology--Does the program call for teaching methods suitable for the intended audience?
- o Completeness/Practicality of Program--Are teachers/students/parents provided with all materials needed to support instruction?
- o Instructional Sequence--Are contents appropriately sequenced? Are teachers/students provided with the necessary information base prior to requiring them to lead/participate in learning activities?
- o Experiences--Is there sufficient exposure to key information and enough learning activities to build skills among the audience?
- o Time allocations--Are teachers provided with guidance as to the amount of time that should be devoted to a given content area? If so, is the time allocated sufficient to enable students to achieve the objectives?

### **External Assessment Aids**

Two "outside" sources of assessment information were used. They were:

- o Evaluation studies and program development reports compiled by state agencies or other sponsors
- o A review panel of elementary school teachers.

The evaluation and development reports contained quantitative data concerning program effectiveness and often included summary qualitative assessment statements from school teachers experienced in using the programs.

The review panel consisted of three elementary school teachers who had not used any of the programs. The panel provided educational practitioner's reaction to the programs and allowed the opportunity to ask specific questions regarding elements of each program. This type of qualitative information was not available from the summary statements accompanying the evaluation reports. The evaluation reports provided only general statements regarding, for example, how interested the children were in a given program overall. The teacher panel provided assessments of specific activities within a program. Such specific information was desirable, as the "Beltman" program and both AAA programs provide instruction in areas other than safety belt use. It was impossible to determine to what extent, if any, general comments regarding these programs related to safety belt-specific content and activities.

## **ASSESSMENT OF "THE ADVENTURES OF BELTMAN"**

"The Adventures of Beltman" is a multi-media passenger and pedestrian safety program marketed by FLI Learning Systems, Inc. It is promoted as a K-3 program, although it is used among the upper elementary grade levels in many school districts as well.

### **Objectives**

The "Teacher's Guide" states five program objectives that the Beltman program is to achieve. These objectives are:

- o To teach concepts, skills, and attitudes basic to the safe and efficient use of our streets and highways
- o To provide a variety of instructional aids for easy integration into daily classroom activities
- o To generate interest among children, teachers and parents for passenger/pedestrian safety education
- o To develop safe riding habits with emphasis on safety belt use
- o To develop safe walking habits.

These objectives largely reflect the developer's design goals and administrative concerns. The objective concerning provision of various instructional aids is an administrative rather than instructional objective. The objective of generating interest among children, parents and teachers is a design objective--it is a statement of what the program developers hope to have achieved. The remaining objectives are too general to serve teachers as a benchmark against which they can measure their own progress and that of their students.

From a review of all program materials, the following abstracted passenger-oriented objectives are implied.

### Behavioral Objectives

Students will:

- o Select a rear-seat position whenever possible.
- o Always sit in the back, especially if a shoulder strap would cross their neck while sitting in the front seat.
- o Use restraints on every trip.
- o Fasten and adjust restraints properly.
- o Ask other occupants (especially parents) to use belts.
- o Lock doors after entering vehicle.
- o Ride quietly on every trip.
- o Keep arms and head inside vehicle.
- o Enter and exit vehicle on curb side rather than street side.

### Attitude Objectives

Students will believe:

- o They can be hurt in crashes.
- o Belts can keep them from being hurt.
- o Belts should be worn on every trip.
- o It is smarter to enter and exit a vehicle from the curb than from the street.
- o Nice children ride quietly without jumping around.
- o Passenger safety rules are for their own good.
- o Passenger safety rules for everyone.
- o They should ask their parents to wear their safety belts.
- o Passenger safety rules are easy to remember and follow.
- o Safety belts are "neat."

## Knowledge Objectives

Students will know:

- o There are rules for being a safe passenger.
- o A passenger is anyone who rides in a car.
- o They should not stand or lean against the dash.
- o They can get thrown into the windshield if a car stops suddenly.
- o They can get badly hurt if they are thrown about in the car (or thrown outside of the car).
- o Belts will keep them from being thrown about.
- o How to buckle/unbuckle belts.
- o Belts should be worn over the hips, not the stomach.
- o Belts should be pulled tight.
- o A shoulder belt crossing the neck is dangerous.
- o Acting up in the car may distract the driver and cause an accident.

The derived objectives of this program are, by and large, appropriate to the intended audience (K-3 students). The program also addresses objectives beyond what would be essential to a narrowly defined "safety belt" program, covering other aspects of occupant behavior such as safe vehicle entries and exits and in-car riding decorum. However, against the criterion of optimum objectives, the safety belt education objectives are less than comprehensive. A brief discussion of the strengths and weaknesses of the program's objectives follows.

## Behavioral Objectives

In general, the behavioral objectives of the Beltman program are appropriate to a K-3 audience. However, some kindergarten students may not have the dexterity to adjust safety belts properly. For this subgroup of the target audience, an objective to prepare students to ask for help in fastening and adjusting belts (when necessary) is desirable. Additionally, since members of the target audience may have difficulty "digging out" belts buried between or behind seat cushions, failure to provide for requesting assistance in this area is an apparent shortcoming. Also unaddressed is the issue of what students should do when presented with the dilemma of having to sit where no belts are available (e.g., station wagon cargo area).

## Attitude Objectives

The attitude objectives appear to be appropriate to the intended audience. All support attainment of the behavioral objectives, and none appear to be non-contributory.

There are, however, two areas left unaddressed by the attitude objectives. One of these areas concerns the actions of others in the car--(1) unrestrained passengers pose a threat to the child's own safety, and (2) parents will be unable to protect themselves or their children in a crash unless they are restrained. The second major limitation is that the objectives do not address any of the undesirable attitudes toward safety belt use commonly held by children.

## Knowledge Objectives

Aside from information concerning how to buckle and adjust a lap belt, specific knowledge objectives are limited. This situation is a logical outgrowth of the approach of the program, which is motivational rather than informational. In essence, the program seeks to instill safe attitudes among children on the strength of their faith in the wisdom and truth of the Beltman character. The immediate success of the program, therefore, is largely dependent upon the extent to which children are willing and able to accept and act upon the "rules of passenger safety" delivered by the Beltman character.

The program seeks to gain the desired acceptance and use on the strength of student interest in and respect for the Beltman character (essentially, the appeal is one of role model and hero worship). There are two dangers in not providing for attainment of fundamental knowledge objectives that support the attitude and performance objectives. The first is that students are provided with no reasons to accept the rules other than the "fact" that Beltman says they should. Students not enamored of the Beltman character are not likely to achieve the stated objectives simply because "Beltman says so." The second danger is that, even those students who do embrace the attitudes and performances advocated by Beltman are left without rational defenses for their attitudes and behaviors.

## **Program Content**

As just indicated, the informational content of the Beltman program is relatively sparse. The safety belt content that is presented is done so appropriately. The audiovisuals are understandable to the target audience.\* And, core information--the specific "rules for passenger safety" (designated in this report as attitude objectives)--are repeated frequently enough to assure acquisition of this content.

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\* With the possible exception of the word "curbside." Some children may be unfamiliar with this term. Additionally, advising children to exit on the "curbside" gives gives them no guidance on what to do where no curbs are present.

As the Beltman program is more motivational than informational, it is appropriate to discuss content in terms of appeal. The program's main appeal is to the students' self-image. They are urged repeatedly to be "safe." While members of the target audience may have some difficulty with the concept of "safety," the program content creates a strong linkage between safety and the more understandable concepts of "goodness" and "niceness." This linkage is established quite skillfully. For example, students are urged to keep their belts "good and tight" and to be "nice and quiet" in the car. These and other linkages communicate subtly the following messages to students:

- o You can be safe (i.e., good and nice) by following the rules.
- o If you are good, your parents will be proud.
- o The rules are important, so you will be important, too, if you obey them.
- o You will be smart if you learn and use the rules.
- o The rules are easy to learn and use, so it is easy for you to be good, smart, and nice.
- o Safety belts are--in and of themselves--neat. If you use them, you will be neat too.

As indicated previously, the program also makes use of a role model/hero worship approach. The hero to be worshipped is, in fact, a super hero--the "sworn protector" of children. The implied message is that students can be like him by (1) wearing safety belts and (2) asking parents to use belts--thereby acting as "sworn protectors" of their parents. This super hero approach can be expected to generate interest among the children. In fact, members of the target audience age group may be commonly observed acting out fantasies of being television super heroes. While this augers well in terms of creating a likelihood that children will act out actions advocated by the Beltman character, it is not without at least some undesirable aspects. Beltman like all super heroes, does superhuman things. For example, in the "Adventures of Beltman" film strip, he swoops down on a car about to crash and lifts it into the air. This specific sequence is reminiscent of typical cartoons in which cars crash and heroes walk away unscathed. Specifically, thanks to Beltman's intervention, the children in the station wagon are unhurt--even though they are unbelted and Beltman has "stopped the car short." This sequence visually contradicts the information presented earlier by Beltman, that unrestrained passengers would get hurt if a vehicle stopped short. In this instance, at least, an exciting visual undermines the credibility of a key facet of knowledge.

Another potential problem involves the peer model presented to students in the "Adventures of Beltman" filmstrip. The difference between oral and visual content may limit effectiveness. In the opening sequence, students are informed that Mary is "a good girl and her parents are proud of her." However, no one in Mary's car--including Mary--is wearing a safety belt. Additionally, Mary is seated in the front--not in a back seat position as advocated later. At the conclusion of the filmstrip, Mary is wearing a Beltman belt on her shirt. Students are told that Mary will use safety

belts in the car and will ask her parents to do the same. But she is never shown to be wearing them in a car. For that matter, Beltman is never shown restrained in a car. The only person depicted as restrained in a car is the harried mother who almost crashes as a result of her children's disruptive behavior.

### Program Activities

The Teacher's Guide suggests many activities and the program kit contains the necessary materials for conducting the activities. Some suggested activities do not support safety belt instruction and others don't appear to support attainment of the programs' objectives. For example, students are asked to:

- o Draw and color pictures of Beltman or other situations concerning passenger safety (Lesson Plan 1)
- o Draw pictures illustrating a situation in which a particular traffic sound would alert or inform a pedestrian or passenger (Lesson Plan 6)
- o Write a story about one of the traffic sounds that helps them be safe pedestrians or passengers (Lesson Plan 6)

One safety belt activity involves distributing Beltman logo dots to students so that they may place them on the safety belts in their family vehicles. Sticking dots on safety belts is not a learning activity and their utility as an effective reminder to buckle up is questionable. In contrast the safety belt use chart which students can mark over a four-week period to indicate, day-by-day, that they have buckled their safety belts, appears to be a good daily reminder (reinforcement) of previous instruction.

The only other belt activity recommended in the Teacher's Guide is a practice buckling session, wherein students sit in a chair and practice buckling and unbuckling a safety belt attached to the chair. This activity provides teachers with an opportunity to assure that students have the skill and knowledge needed to manipulate and adjust safety belts properly. However, the Guide does not call for this activity to be repeated. Thus there is some question as to whether or not the activity provides students with sufficient experience to enable them to buckle and adjust their belts properly in real life situations. Additionally, this activity is devoted exclusively to manipulating belts. There is no indication that students should be advised to try to move when belted, thus experiencing the restraining action at work, without pain or injury to the wearer. There is no explicit provision for students to experience the restraining action of safety belts, even though the suggested activity offers the means and opportunity to do so:

The two potentially meaningful activities called for in the Teacher's Guide are geared to only one performance objective. Granted, buckling and adjusting belts properly is the most important objective of the program.



No activities are presented, however, to support attainment of other program performance objectives such as selecting the appropriate seating position, locking the doors, riding quietly, and keeping arms and head inside the vehicle.

## Program Materials

Student program materials are excellent. The safety belt used to support the buckle up activity is realistic and fully operable. Visual materials (i.e., the Beltman poster, the "Adventures of Beltman" filmstrip, and the "Did You Buckle Up Today?" chart) are colorful, attractive, and, in general accommodate the visual, physical, and cognitive limitations of K-3 youngsters. The use of cartoon drawings (as opposed to photography), keeps visual materials simple and free from extraneous, distracting elements. The wall chart provides spaces large enough to accommodate students' lack of finer motor skills (i.e. they have enough room to scrawl their checks for belt use without running over into someone else's space). The audio cassettes, "You're On the Air with Beltman" and "Beltman Traffic Sounds Game" are free from aural clutter as well. Like the "Adventures of Beltman" filmstrip audio materials are also responsive to the limited attention span of a K-3 audience. The filmstrip and the traffic sounds cassette each require only eight minutes. The other cassette, lasting 13 minutes, contains a "newsbreak" part way through, allowing the lesson to be interrupted naturally, should attention start to drift. A minor problem may arise from the rapidity with which "Beltman" and "Mary" speak in the "Adventures of Beltman" cassette. While rapid talking helps keep the presentation short, K-3 students may lose the intent of the narrative.

The major print material--the "Beltman Safe Walking Book"--is also prepared appropriately as a teacher material. As the title would indicate, this book is devoted primarily to pedestrian safety. However, two of its 32 pages deal with occupant protection. The illustrations are large enough to accommodate a small group session. And the type is sufficiently large and well-spaced to accommodate immature tracking ability. The reading level of this booklet is too high for students below grade 3. However, because of the large size, it accommodates having the teacher read the text and display the picture before a small group of students (ten or fewer).

## Teacher Materials

Teacher materials include a teacher orientation filmstrip/cassette ("Beltman Meets the Teacher") and the Teacher's Guide. The orientation materials are designed to accomplish two purposes:

- o To motivate teachers to use the program.
- o To explain the purposes of the various materials included in the program kit.

Specifically, teachers are informed that the Beltman program is:

- o Important--because traffic accidents are the leading killer of children.

- o Interdisciplinary--because it can be meshed with other activities such as art, counting, number identification, reading, and writing.
- o Effective--because it develops life-saving habits early.

To encourage teachers to use (safety belt) instructional materials, each is justified as follows:

- o "Adventures of Beltman" filmstrip will motivate children to use belts.
- o The safety belt will allow children to practice buckling up properly.
- o The logo dot and use chart will remind children of and reinforce the buckling habit.
- o "You're On the Air with Beltman" reviews and reinforces critical behaviors.
- o The Beltman poster stimulates interest.
- o The decal reinforces student interest.

The materials do not contain background information explaining how safety belts work, or how well they work. As a result, there is no information to convince teachers not already convinced of the utility of safety belts that the safety belt segment of the program should be offered. Even if teachers already believe in belts and the importance of teaching students in this area, they are given no background information with which to counter anti-belt arguments that may be voiced by students or parents. In sum, program materials treat teachers the same as students, expecting them to accept and act on the information out of faith--rather than from a factual basis.

The Teacher's Guide contains a brief foreword providing three statistics to reinforce the perception that traffic accidents are a serious threat to students. Program objectives follow. The remainder of the Guide presents ten lesson plans. Each lesson plan provides the design justification for the materials to be used in that lesson and contains brief statements suggesting instructional activities. The Guide tells teachers when to use what materials and suggests, in general terms, supporting activities that should accompany use of the materials. Detail is not provided on how activities should be conducted. For example, the Guide suggests following up the showing of the "Adventures of Beltman" filmstrip with an "'I Learned' Discussion" emphasizing:

- Buckling up
- Riding quietly in cars
- Locking doors

--Keeping hands and arms inside window

--Entering and exiting on curb side."

Activities may be more effective if detail were provided on questions to be asked to make sure that children understand the meaning of the messages-- e.g., when to buckle, why buckle, who should buckle, how to buckle properly, where to sit, etc..

The program learning activities would likely be improved by either more detailed guidance or the delineation of lesson-specific instructional objectives.

### **General Program Design**

The program relies heavily on interactive teaching methods--primarily discussion and question-and-answer. Discussions are called for in the Teacher Guide as a follow up to the "Adventures of Beltman" filmstrip. Here, discussion is used as a review technique, having the students feed back information presented in the filmstrip. Question-and-answer is employed through the two audio-cassettes and through the "Safe Walking" book. These materials pose questions which students are to answer by restating safety rules (an opportunity for reinforcement).

Information and activities concerning safety belt usage are, in general, appropriately sequenced. Most information concerning safety belts is presented in the first session through the "Adventures of Beltman" filmstrip. The following lesson is devoted to applying buckling knowledge in the practice buckling activity. This organization allows students to learn what they have to do and then put it into use.

The remaining ten lessons are devoted almost exclusively to pedestrian safety. Consequently, what little attention is given to safety belts takes the form of review and reinforcement of information provided in the first lesson. The "Beltman in the Land of Giants" filmstrip used in Lesson 3 begins with a one-minute review of passenger safety rules. In Lesson 4, the last two pages of the "Safe Walking Book" are devoted to occupant protection. Brief presentations regarding safety belts also are contained in "On the Air with Beltman" and "Beltman Traffic Sounds Game"--Lessons 5 and 6 respectively. Lessons 7 through 9 are devoted exclusively to pedestrian topics. And Lesson 10 is devoted to distributing the Beltman decal.

A minor problem in sequencing may exist in relation to the "Safe Walking Book" and the "Traffic Sounds Game." Both of these materials are, as mentioned, in a question-and-answer format. And both present students with questions whose answers require knowledge of information not presented previously. New information in the "Safe Walking Book" is non-safety-belt specific. For the first time, students are informed that it is not safe to ride with loose toys or something sharp in their mouths. This information was not included in the implied program objectives because it is presented only once, and it is not closely related to safety belts per se.

The traffic sounds game requires students to identify the following three sounds:

- o Door locking
- o Safety belt buzzer reminding occupants to buckle up
- o Safety belt clicking shut.

The second sound is totally new to students within the program, but is not critical to the program's educational objectives. Students should be able to recognize the sound of a door locking from their own experience. They should also recognize the "click" on the basis of prior experience--even if that experience consists only of the in-class practice with the program's safety belt. What is absent from this exercise is a clear statement of the importance of any of these sounds.

Perhaps the greatest limitation of the program is that it provides but limited opportunity for children to "learn through doing." The practice buckling exercise is the only "real world" experience provided children and addresses only one critical behavior. Students are provided with no practice or skills development activity in the other critical performance areas such as seat position location, locking doors, adjusting shoulder restraints, encouraging others to wear belts.

The lack of experiential education is magnified in contrast to the pedestrian elements of the program which suggest many application learning activities, both simulated and real-world. When the sequence of the safety belt program elements is considered in relation to the overall program, safety restraint use appears to get short shrift. Occupant protection is the sole topic of the first two lessons, but, it receives only lip service in four of the later lessons and no attention whatsoever in the other three. As a result, 75-80% of the program is devoted to new and exciting learning activities regarding pedestrian behavior, while the safety belt information presented at the onset of the program remains stagnant. Certainly Beltman gives much more of his filmstrip and cassette time to pedestrian topics than to occupant restraint subjects. Given this program sequence and emphasis, it is possible that the safety belt messages will be overshadowed and made to appear to be of lesser importance than the pedestrian messages. Indeed, the developer may have intended that other program elements receive major emphasis. If this be the case, however, one might question the program name and centrality of the Beltman character.

### **External Assessment Data**

The Beltman program is perhaps the most frequently evaluated elementary school safety belt program. These evaluations, primarily conducted by state agencies, have yielded both qualitative and quantitative data. No attempt was made to track down all the state studies. Most earlier studies evaluate the program exclusively on the basis of its appeal to teachers and students and its ability to improve basic student knowledges. This report summarizes only the most recently conducted studies. It is these studies that evaluate the behavioral effects of the program.

## Quantitative Data

Quantitative data are available from three studies: Pollack and Swant (1982)\*, Woolf (1983)\*\*, and Miller and Davis (1982)\*\*\*. Pollack and Swant evaluated the program among second graders in 510 elementary schools in Washington State. Effectiveness was evaluated on the basis of parent responses to two questions:

- o Did your child use safety belts on the last ride in the car?
- o Has your child ever questioned you regarding the use of safety belts in vehicles?

The study reports that the Beltman program evidenced no effectiveness in either behavioral area among students in urban counties compared to students not receiving the program. For students from rural counties, however, the study found that parents reported a significant increase in belt use among their children, both immediately after the program was completed and six to eight weeks later. Pre-treatment belt usage rates among rural elementary school students was reported to be 21.8%, compared to 36.9% and 37.1% in the post- and follow-up periods respectively. The study found that rural area students did not question their parents regarding seat belts any more than did the control group in rural counties.

While the increase in reported use among rural students is encouraging, it cannot be regarded as unequivocal evidence of program effectiveness. The study was hampered by very low return rates of the questionnaire sent to parents. The highest return rate (44.9%) occurred during the pre-treatment period. The return rates during the post- and follow-up periods were consistently below 33%. Thus, there is the possibility that the responses were received from an unrepresentative subsample of the treatment and control groups. The exceedingly high usage rate reported for pre-treatment groups (21.8% for treatment, 24.6% for control) make a response bias likely.

Results from the Wolf study, conducted in Iowa, are equally encouraging and inconclusive. Confounding factors entered this study before the evaluation began. Specifically, teachers participating in the study (primarily

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\* Pollack, R. and F. Swant. The State of Washington Youth Seat Belt Awareness Program: An Evaluation of Two Seat Belt Teaching Kits, Washington Traffic Safety Commission, Olympia, Washington, 1982.

\*\* Woolf, Douglas T., Iowa Elementary Seat Belt Pilot Project, Highway Safety Plan 83-00-05, Task #2, Iowa Department of Public Instruction, 1983.

\*\*\*Miller, D.H. and L. Davis. "Evaluation of Beltman Traffic Safety Program for Children," Journal of Traffic Safety Education, Vol. XXX, No. 1 (October 1982), pp. 13-14.

K-3 teachers, although some 4-6 teachers were involved as well), received an in-service workshop orienting them to the program. At that time, they were provided with supplemental instructional materials, including the films "Dynamics of a Crash," and "Egg, Pumpkin, Headache." These films provide graphic illustrations of the crash dynamics involved in accidents, and provide visual examples of safety belts restraining occupants (or eggs, as the case may be). An unknown number of teachers used these audiovisuals in conjunction with the basic Beltman program. As these audiovisuals constitute a source of supplementary information, the extent--if any--to which they contributed to the results found in the study are unknown. Iowa study results are summarized in the table below.

	<u>N</u>	<u>Frequency of Reported Belt Use</u>		
		<u>Always</u>	<u>Sometimes</u>	<u>Never</u>
Pre-program				
Parent Usage	2,114	6.6%	47.6%	45.8%
Child Usage	2,128	6.5%	55.1%	38.4%
Post-program				
Parent Usage	1,789	10.4%	55.6%	34.0%
Child Usage	1,793	16.5%	61.2%	22.4%

As can be seen from the chart, parents reported significantly greater usage after the program for both themselves and their children. An important additional finding of this study was that some 70% of the parents reporting in the post-program period indicated that their children had asked them to buckle up. This appears to be a very high percentage. However, whether this is a significant achievement of the program is unknown, as the question was not asked in the pre-program questionnaire.

The study results just described were obtained from survey letters sent home with children to be filled out by their parents over the course of a week. In addition to this technique, participating teachers were asked to report whether or not they observed any increase in student belt use following the Beltman program. Of the participating teachers, 29% reported that they had no opportunity to observe; 39% reported that they did observe an increase in student belt use, while 32% reported no observed change.

Miller and Davis evaluated Beltman among second grade classes in Oregon. Again, the study findings are *confounded* by pre-program activities. Specifically, participating teachers attended an in-service workshop, during which they were presented with 16 lesson plans for use in delivering the program. Obviously, these lesson plans represent a significant advance over the general guidance provided in the official program Teacher's Guide.

Behavioral effects of the program were measured through questionnaires mailed to students' parents. Again, the response rate was very low (only 30% of the parents responded to the post program questionnaire, and 25% responded to the follow-up questionnaire mailed five months later). Behavi-

oral results were inconclusive. Data on the post-program questionnaires revealed a statistically significant increase in the number of students wearing safety belts after exposure to the program. Usage rates among the control remained the same. (No pre-program questionnaire was used. Rather the post-program questionnaire requested use information for the period before, as well as after, the program was offered.) Follow-up data indicated that the impact of the Beltman program declined during the follow-up period to the point that there was no statistically significant difference between the experimental and control students at the time the follow-up questionnaire was administered. The Oregon study also evaluated the program's ability to increase student knowledge of safety behaviors. Students exposed to the Beltman program substantially increased their knowledge about traffic safety behavior. This increase was maintained throughout the follow-up period.

In sum, state evaluations of the Beltman program indicate that the program does succeed in increasing students' knowledge of passenger safety. Its effectiveness--both immediate and long-term--remains debatable in terms of inducing students to adopt the desired behaviors. Methodological problems with the studies--principally concerning low response rates and the use of parent self-reports as opposed to direct observation--make it imprudent to state more than that there is some evidence that the program is effective. However, what--if any--effect exists may be restricted to a short-term improvement among only certain populations (e.g. students living in rural counties).

#### Qualitative Data

The Washington evaluation asked teachers who used the program to rate it by indicating the degree of agreement or disagreement they felt toward each of seven statements regarding the program. The responses were arrayed across a 5-point continuum ranging from "strongly disagree" to "strongly agree" with a midpoint of "undecided". For the purpose of analysis, the items on the continuum were given numeric values ranging from "1" for "strongly disagree" to "5" for "strongly agree." The two statements to which teachers responded that are of interest to this report were: "The students responded with enthusiasm to the course materials presented," and "The materials presented were appropriate to convey the objectives to this grade level." The average rating for both statements was a very positive 4.5.

The Iowa study asked teachers to assess seven different program elements. Possible ratings were "excellent," "good," "fair," or "poor." The three questions of interest to this report, and the responses received are presented in the table below.

	<u>N</u>	<u>Excellent</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>
Teaches proper use of restraint systems	137	56.9%	38.0%	5.1%	0 %
Motivates children to buckle up	132	39.4%	50.0%	10.6%	0 %
Develops enthusiasm for subject	136	49.2%	46.3%	3.7%	0.7%

As can be noted, the program again achieved highly favorable ratings in these areas from teachers. This same evaluation format was used in several other states (e.g., New Jersey, Connecticut), and similar results were obtained. On the whole, then, it can be stated that teachers who use the program believe it develops enthusiasm for traffic safety subjects and motivates children to use safety belts.

In the studies cited, as well as in others, teachers were encouraged to submit their own comments and observations about the program. Comments have been overwhelmingly favorable. On the negative side, the most frequently voiced concerns have been in the area of appropriateness to audience. Many kindergarten teachers indicate that the program is a little too difficult for their students, while some third grade teachers indicate that the material is a little too elementary for their students. The other significant negative comments concerns the lack of parent involvement in the program. Significant numbers of teachers reported that, while the program appeared to instill good attitudes and the intention to wear belts among students, this was often defeated by negative parent comments and reactions concerning belt use in their own vehicles. Teachers viewed this as a significant concern because of the general feeling that parental attitudes had more impact on students' immediate and long-term behavior than a brief school instructional program.

#### **ASSESSMENT OF AAA LOWER ELEMENTARY PROGRAM**

AAA publishes completely new program material each school year. Consequently, the materials assessed in this paper, distributed during the 1982-83 school year, will not be the same as those distributed in future years. Additionally, there is no set program kit, per se. Rather, AAA makes available a number of program materials each year. Individual clubs then determine which materials will be presented to schools and teachers in their areas. To some extent, this distribution process also affects how materials will be used in any given area. For example, some State or local clubs may purchase the "Otto the Auto" booklet in sufficient quantity to assure that each student receives a copy. More commonly, however, this booklet is provided by clubs in quantities sufficient only to distribute one copy to each



teacher. While teachers conceivably might run off copies so each student may receive a personal copy, this variance in distribution process is more apt to result in some students having the Otto stories as their personal reading matter, while others will receive the stories only when read to them in class by the teacher.

This assessment focuses on the "core" program materials. The vast majority of teachers receiving any program materials will receive the following:

- o Traffic Safety Teacher's Guide for Grades K-3.
- o Otto the Auto for Grades K-3 (Otto the Auto stories).
- o Traffic Safety Education Visuals--a set of 10 posters.

Also considered in this assessment is "My Own Safety Story: An Activity Booklet for Grades K-3." While this booklet does not receive as widespread a distribution as those mentioned previously, the majority of schools receiving the other materials also receive this publication.

## **Objectives**

The topic of safety restraints is but one of ten addressed by the overall program. Safety restraints is the feature topic for the November lesson plan presented in the program guide. The program guide stipulates three objectives to this module: That students be able to (1) give reasons for using safety restraints, (2) demonstrate how to buckle a safety belt properly, and (3) use and understand new vocabulary words. The last-mentioned objective is obviously a general education objective. The first-mentioned objective is a general knowledge objective. The second objective, while a performance objective, is stated as one which is more properly used to evaluate student progress in class, rather than as a long-term behavioral objective.

The following objectives were inferred from a review of the course materials.

### Behavioral Objectives

Students will:

- o Fasten, adjust, and unfasten restraints properly
- o Wear safety belts while the car is moving
- o Lock doors before riding in car
- o Keep hands inside vehicle
- o Not play with hard, sharp toys while in car
- o Not yell or roughhouse while riding in car.

### Attitude Objectives

Students will believe:

- o Buckling and unbuckling is fast, easy, and fun
- o They can buckle and unbuckle all by themselves
- o The more they practice, the easier buckling and unbuckling becomes
- o Using safety belts will protect them in a crash
- o Everyone should wear safety belts while the car is moving
- o It is unsafe to bother the driver
- o They should lock the doors
- o They should keep their hands inside.

### Knowledge Objectives

Students will know:

- o How to fasten and release belts
- o Belts should be worn over the hips
- o Belts should be fastened securely and snugly
- o Belts should be untwisted
- o Belts keep people from moving around and roughhousing in the car.

### Behavioral Objectives

The behavioral objectives are appropriate to the intended audience. However, there is no mention of students' buckling behavior in relation to others in the car. Specifically, there is no direct objective to dealing with having children ask others to buckle their belts. Nor is there any guidance provided to those children who are not capable of mastering the manipulations required to buckle and unbuckle belts. Finally, children are not specifically urged to ask a driver to wait until they can buckle their belts properly before starting the vehicle.

### Attitude Objectives

Attitudinal objectives appear to be appropriate. Other attitude areas that could be addressed include: (1) interaction with the driver or other passengers in the vehicle regarding belt use, and (2) counters to unsafe attitudes commonly held by children. The negative attitude addressed was "it takes too much time to fasten belts." This opinion may be more likely held by adults than small children.

## Knowledge Objectives

Knowledge objectives are appropriate, but do not appear to provide sufficient support to insure attainment of the attitude or behavioral objectives. Students are given safety "tips" and expected to accept them. The program does not provide information explaining why wearing safety belts is important and how they prevent injuries.

## **Content**

This content assessment covers "core" student materials of the program: the poster, the Otto story, and the "My Own Safety Story" booklet.

### Poster

Poster content is limited to a slogan "Fasten Your Seatbelt." Like all slogans, it is easy to remember. However, there is no rationale to justify why students should follow this advice, or any indication as to the benefits. Research indicates that posters can induce desired behaviors--absent this information--if posted at a location where the advocated action can be taken immediately (e.g., at a parking lot exit). However, the poster is intended as classroom material.

### Otto the Auto Story

The Otto story on safety restraints for the 1982-83 school year is entitled "The Day Nancy Reid Got Stuck in Her Seatbelt." It tells the story of a 6-year-old who waits in the car while her mother goes shopping. While waiting, the little girl panics and has trouble unbuckling her belt. With the help of Peggy the Parakeet, Nancy gets her belt unfastened and then, through practice, comes to the conclusion that it is fast, easy, and fun to buckle up. This not only makes her mother proud, but endears her to her teacher and fellow students when--the next day, she shows everyone in the school how much fun and how easy it is to buckle and unbuckle belts. While appropriate as a teacher-read (or parent-read) story, the text features many compound sentences and difficult words (e.g., embarrass, know-how) that would make independent reading of the story difficult, even for older children in the target audience.

Although the general thrust of the story is good, it contains some undesirable connotations. Not all of these connotations are restricted to safety restraint usage topics. For example, the story is contingent upon a 6-year-old girl being left alone in a parking lot while her mother goes shopping.

On belt-specific topics, the entire story takes place in non-moving vehicles. One program objective is for children to believe that they should always wear their belts when the vehicle is moving. Second, the story creates a linkage between the sound "click" and the seatbelt coming open. This guidance is contradictory to that provided in one of the activities recommended in the Teacher's Guide where students are instructed to listen for a

"click" as a clue that the belt is fastened securely. In the story, however, the click is presented twice (the only time the sound is mentioned) as an indication that a belt has become unfastened successfully.

The story may also contain some counter-productive messages. For example, the story's premise is that children will get "stuck" in their safety belts and panic when this happens. Also, a main thrust of the story appears to be to counter adult attitudes that it takes too long to buckle up and that belts will trap children (and others) in the car. Consequently, should a child take this story home (and teacher guidance accompanying the booklet indicates that students could take the stories home to show their parents), parental fears of having their children trapped by belts might be reinforced. Nowhere in the story are any advantages to belt use given.

### My Own Safety Story

The activity booklet provides one activity related to safety belt use. It is a sequencing exercise, wherein students are presented with four pictures and then asked to put them in the right order by numbering them 1 through 4. The pictures depict: (1) children opening a car door, (2) children locking the car door, (3) children sitting down, and (4) children buckling up.

Though small children cannot reach the lock if buckled in, some larger youngsters could do so. Teachers may, therefore, benefit from some guidance for scoring student responses and discussing alternatives.

This material has been explicitly prepared for use as a student booklet. It features large type and excellent spacing.

### **Activities**

The program guide presents a list of activities which teachers may conduct in class. All of the activities presented are classroom activities--i.e., there is no provision for a field trip or other real-world experience. Few of the activities directly support attainment of the critical objectives related to safety belt use.

Program activities are:

- o Vocabulary exercise
- o Poster power
- o How Do I Buckle?
- o Art project
- o Talk it Over
- o Crossword puzzle

## Vocabulary Exercise

The first activity consists of a vocabulary exercise in which students are acquainted with the terms: passenger, enter, exit, fasten, restrain, belt collision and snug. Comprehension of any or all of these words is not necessary to obtaining the objectives. Two supplemental activities regarding this vocabulary list focus exclusively on the word "exit." While these activities (a series of riddles about three things that have exits) may help children understand what an exit is, such knowledge does not increase the likelihood that they will use belts, nor does this understanding give them any reason to wear belts.

## "Poster Power"

In this activity children are instructed to look at the poster and then answer a series of questions. The first questions asked are simple. Students report whether or not their parents, their brothers/sisters and they personally use safety belts. This series of questions is then followed by the question "Why should you wear seat belts?" Nowhere in the material preceding this question has any activity been suggested that would provide children with the information they would need to answer the question. Consequently, there is no assurance that children will know the appropriate answers. Another problematic aspect of this activity is that, prior to being asked this question, children have already reported on safety belt use by family members. Given current usage rates among adults and children, it is highly likely that this series of questions will have resulted in the vast majority of students reporting that neither they nor other members of their family wear belts. In a sense, the question has "committed" them to non-belt use. Given this public affirmation of non-belt use, students may be expected to be reluctant to provide any good reason for using belts. (They may reason, "I've already said I don't wear belts, so I'll look foolish if I show that I know I should be acting differently.") Thus, this question may generate responses by which some students will seek to justify their reported non-use of belts. If so, a number of harmful myths concerning safety belt use may be aired. Since teachers have been provided no background information with which to counter such mis-information, this activity may produce counter-productive "learning" among students.

The second suggested exercise within this activity is to have students imagine they are the safety-belt depicted on the poster and to write a story from the belt's view. Such an activity would seem to be beyond the ability of many students. It requires a very difficult and imaginative leap. Additionally, without an information-base to support this activity, it is highly unlikely that students would be able to come up with accurate or meaningful content to include in their stories. As this activity is to play off the poster, about all that children may reasonably be expected to produce in this activity would be something like: "I am a safety belt. Hands hold me. I go around people's waist." Such "imagination" stories would not contribute to attainment of educational objectives. In fact, in trying to come up with something to say, students may provide erroneous information (as in the example above).

## Riding in a Car Activity

In this activity children are to sit in two rows of three chairs each (arranged as though they were in an automobile) and act out unsafe passenger behaviors and at a later time safe behaviors. Each role play is to be followed by a discussion of what happened and what would be the likely outcomes of the behaviors displayed. The teacher's guide does provide some background information for use by teachers preparing their students for this activity. However the information as presented is technical in nature, and may not be helpful to teachers unless they have a traffic safety background. The guide states

Driving cars is a complex task requiring a combination of physical and mental factors. Point out that when children are passengers they are also factors. If the passenger disturbs the driver, an unsafe situation could occur.

From this background information, students are expected to participate meaningfully in the role plays. When unsafe behaviors are being acted out, students playing the roles of drivers will have a difficult time guessing how a real driver would react to an unsafe behavior. Additionally, much teacher guidance would be needed to get students to be able to predict what would be the outcome of certain driver reactions in terms of crash probabilities.

Another potential flaw in the activity is that students will be lacking a seemingly necessary prop--safety belts or some surrogate which they can use to restrain themselves in the chairs--for the safe behavior role plays. If a role play is to make the key point that safety belts can restrain children in a crash or sudden stop, students would have to imagine that they are being restrained and then pretend that they are being restrained by the belt.

Additionally, a teacher using the background information to set up the role plays has given students only one reason for using belts: that belts will keep them from yelling or rough housing in the car. A true-to-life role play will show that students can still rough house and yell, even while buckled up. Consequently, the role play may contradict the information presented. Additionally, an appeal to wear belts because they will keep you from rough housing or yelling does not appear to be well calculated to strike a responsive chord among young children. If anything, it may reinforce a preconception that safety belts are "bad" because they keep you from having fun while you are riding.

An additional recommended activity is have students draw pictures of unsafe behaviors and anticipated outcomes. Such an exercise may be beyond the artistic and conceptual abilities of the intended audience. A picture of unsafe behavior (such as a child leaning against the dash while being held in a parent's arms) is a very complex composition. Perhaps children in the "upper grades" (2-3) might be able to manage a simple line drawing of an unbuckled belt and a crashed car. However, an unbuckled belt is a situation rather than unsafe behavior. And a crashed car, though it could be, is not necessarily a result of an unbuckled belt.

## How Do I Buckle My Safety Belt?

Three exercises are suggested under this activity heading. The first exercise calls for students to explain orally how to buckle a safety belt. Again, no information base to support student performance of this exercise is provided unless students have already read the Otto story. The guide does not stipulate that the story should have been read by the students previous to the activity.

The second exercise involves student volunteers demonstrating proper buckling procedures with a real safety belt. Such a demonstration would appear to be very beneficial to helping students learn the proper procedures. The student volunteers are also requested to try to move while restrained. This provides the volunteers with the personal experience (and the class with a demonstration) in the restraining property of safety belts.

This exercise is reinforced by the third recommended exercise--a timed relay race in which participants walk quickly to a belted chair, open and then lock an imaginary car door, actually buckle and unbuckle a belt, open the "door," and walk quickly back to the starting point. This activity provides everyone with a chance to use safety belts. It should reinforce the key concepts of the Otto story that it is easy, quick, and fun to buckle up. However, to ensure effectiveness, it must be repeated to the extent that children have sufficient opportunity to practice with their belts.

## Art Project

The art project involves cutting out pictures of old and new cars and various safety features such as windshield wipers, brake lights, horns, bumpers, safety belts. The students will then paste the devices on automobiles they have drawn. They may also draw their own safety devices to put on their cars. The guide advocates putting these pieces of art on display, along with brief written reports concerning the need for certain safety features. A major problem with this activity is that it introduces many safety features and, consequently, many ideas to students. It is doubtful that with all these new considerations, students will be able to focus on belts. The brief written report assignment is obviously impossible for K-1 students. Students in grades 2-3 could not be expected to write meaningful reports on this topic.

A supplemental recommended activity is to talk about how the changing world results in the need for changing safety devices. This topic appears to be far over the heads of K-3 students. In addition, it is irrelevant to the topic of safety belts. Safety belts have always been needed; they simply weren't widely available back in the "old days."

## Talk It Over

Teachers are instructed to "describe what happens when a car collides with another car or fixed object. Without frightening the students, emphasize the importance of wearing a safety restraint so that they will be pro-

protected in the event of a collision, sudden stop, or swerve." Research has shown that many adults--including teachers--would not be able to handle the presentation or the resulting discussion effectively. They simply do not know enough about safety belts or crash dynamics to give a meaningful presentation. Thus, the effectiveness of this activity is questionable.

### Crossword Puzzle

The final activity consists of a crossword puzzle which, when the correct words are identified and arranged in the proper order, spells out "safety belts save lives." The crossword puzzle would be too difficult for K-1. Students in grades 2-3 could complete the puzzle with some teacher assistance. Assistance would be necessary as some of the clues are very difficult. The exercise may be fun for students--much like the cut, paste, and draw activities mentioned earlier. However, the message is not personalized for children. And few children in the intended audience will have achieved the rather mature knowledge that their lives may be taken in a traffic crash.

### **Program Materials**

This section is devoted to a discussion of the teacher's guide and parental materials.

### Teacher's Guide

The Teacher's Guide is brief. It begins with a section entitled "To the Teacher." In an overview of the entire AAA program approach ("Helping Children Develop Awareness of Traffic Hazards") this section is described as providing current background information to enrich teachers' knowledge of safety factors. The background information on safety restraints states:

- o Children look to adults as role models.
  
- o Less than 10% of the driving population uses safety belts regularly
  
- o Mandatory child restraint laws have made buckling up a topical as well as critical subject.

Teachers are given little guidance in how to conduct the various recommended activities. For example, in the role-playing activity, teachers are advised to "discuss what happened and the possible outcome" and, later, to compare differences and outcomes "of safe versus unsafe behaviors." Exactly what is desired out of this exercise is left to the teacher's imagination. Similarly, the art project involving safety features, past and present, is presented simply as an art project. Teachers are told that the class should discuss the differences in safety features "among old and new vehicles." However, neither teachers nor students are given any background information as to when these features were introduced, why they were introduced, exactly how they serve to prevent accidents or lessen injuries, etc.



## Parent Materials

While there are no parent-specific materials involved in the core program, "My Own Safety Story" does provide a note to parents. This note emphasizes that the child has been learning to become a safe pedestrian. Safety belts also are mentioned. Parents are advised to "make certain that everyone buckles up before any car is started." The note also lists other parent references. These consist of AAA-published brochures and films on traffic safety topics. Two of these are brochures that urge parents to restrain their children in vehicles.

## **General Program Design**

The teaching methods recommended in the program can be appropriate for students of this age in certain circumstances. However, as has been indicated, the Guide does not specify what these circumstances are, nor does it provide teachers the background information needed to assure that they can create the necessary circumstances/environment to support the instructional method.

The program doesn't suggest a specific sequence for instruction. This is largely a result of the philosophy of the program developers that teachers should be given a smorgasbord of activities and left free to choose those which are most appropriate for their students and for their classroom time requirements. As a result, there is little--if any--relationship between the activities suggested. There is no set format to allow students to build on knowledges or skills learned earlier. The design philosophy also may conflict with the predominant teaching method, student "discovery" through question and answer. Students may experience difficulty discovering truths on their own without preparation for the discovery activity.

All requisite materials are not provided as part of the program. Safety belts to be used in "How Do I Buckle My Safety Belt?" and, ideally, the "Riding in a Car" activities are not provided. Teachers are advised to obtain seat belts from an auto supply outlet or dealership. Some teachers may take the time and trouble to acquire such materials on their own but it is doubtful that many teachers will acquire the number of belts needed to support these activities. Consequently in some instances these activities will not be conducted. As these are the only two experiential activities suggested, failure to supply the means to support their administration lessens the potential of the program.

## **AAA UPPER ELEMENTARY PROGRAM**

The 1982-83 program for grades 4-6 is prepared in the same way as the lower elementary program. Consequently, it features many of the same strengths and weaknesses already identified.

## Program Objectives

The objectives of this program are stated clearly, but are general in nature and provide limited direction to teachers. The three stated objectives are that students will be able to: (1) explain why wearing a restraint is important to their safety, (2) distinguish between factual and mythical beliefs regarding safety restraint use, and (3) draw conclusions from statistical data. The first two objectives are safety-belt specific. The third is a general educational objective. Review of the program materials revealed the following implied objectives.

### Behavioral Objectives

Students will:

- o Wear their safety belts on every trip
- o Encourage others to wear belts. providing reasons that will convince them
- o Write letters and slogans stating why belt use is important for everyone.

### Attitude Objectives

Students will believe

- o It is irresponsible not to wear safety belts
- o The benefits of belt use far outweigh the perceived drawbacks
- o Everyone regardless of age should wear belts
- o It's good to encourage people to buckle up
- o Belts won't trap you in a crash
- o It's better to be belted in a vehicle than to be thrown in a crash
- o Belt use is an important issue.

### Knowledge Objectives:

Students will know that

- o Belts can help only if used
- o Belts can keep people from getting hurt if the car stops suddenly

- o Entry to a car should be from the curb side
- o It is dangerous to race to get in a car
- o Belts could save thousands of lives if everyone wore them
- o Belts could reduce the seriousness of personal injuries
- o Belts could reduce wage losses, medical expenses, serious injuries, and deaths by a great deal--if everyone would wear them
- o Belts can keep you conscious, making escape from a crash easier
- o People are far more likely to die if they are thrown out of a car in a crash
- o Common excuses for not wearing belts are based on misinformation.

The behavioral and attitudinal objectives are appropriate to the intended audience. The appropriateness of the knowledge objectives are somewhat more questionable. Students may have trouble relating to concepts such as wage losses, medical expenses, and death, as they have little--if any--experience with these matters. These objectives appear to be more appropriate to an adult audience with adult concerns regarding finances and life and death.

Although students are told about the benefits of universal belt usage, they do not learn how belts work. Also missing are objectives on content regarding proper seat selection. There are no objectives dealing with proper seat selection and procedures for fastening and adjusting restraints. The dangers posed by unbelted occupants to others in the vehicle also are unaddressed.

### **Program Content**

As is the case with the lower elementary program, there is little content to be communicated through the program activities. Information presentation is limited to statements such as: (1) the savings in lives, injuries, and wage losses that could be realized if everyone wore safety belts, (2) safety belts can keep people conscious and unhurt in a crash, and (3) the probability of death is almost 25 times greater if you're thrown from a car rather than remain inside restrained by a belt.

This content may not be entirely appropriate to an upper-elementary audience (i.e. in the accident reduction statistics). A statement that two million personal injuries may be eliminated may not communicate to children. Certainly this information is not personalized to any degree that children can internalize and relate to how it may affect their own lives.

As for the information regarding safety belt facts and myths, the two myths dealt with (being trapped in the vehicle or the advantages of being thrown clear) are myths that need to be addressed among this age group.

However, the support information provided to explore the myths is highly statistical in nature. Children are assured that fire and submersion occurs in less than 1/2 of 1% of all serious accidents. Similarly, they are told that they are 25 times more likely to die should they be thrown clear. Again, students may have a difficult time relating to these statistics. Since they regularly see crashes on TV, they may also have a difficult time believing this information. On television they have seen people being thrown clear in high-speed accidents, only to walk away laughing. And, TV accidents frequently result in either fire or submersion. The program may be strengthened if these points were explored from the child's viewpoint so the child clearly understands that what is seen on television is a distortion and complete misrepresentation of real-life experience.

The program addresses myths and perceptions regarding belt use that are commonly expressed by adults, but it ignores myths that more specifically focus on children's needs. Unaddressed are erroneous beliefs such as:

- o My parents are good drivers and won't have an accident
- o If we have a crash, my dad will throw out his arm and hold me back
- o I don't need a safety belt as long as I sit in the back seat away from the windshield.

This latter item needs to be addressed. In class, a scenario is read in which a girl sitting in the front seat bumps her head in a sudden stop. Students are expected to determine that she should have been wearing a lap/shoulder combination. However, it is possible that some students may suggest taking a back-seat position--unbelted-- to avoid the injury. There is no content explicitly stating the need for belt use regardless of seating position.

Some of the other perceptions that are addressed (they mess up my clothes, and it takes too much time to buckle one) are more typical of adult misgivings than those of children.

### **Program Activities**

The Teacher's Guide calls for several activities that require mental and verbal skills. Recommended activities are:

- o "The Decision is Yours"--students analyze scenarios to decide upon the proper course of action.
- o "What Do You Think?"--students write essays on safety belt use.
- o "The Art of Persuasion"--students write letters supporting safety belt use.

- o "Fact or Myth?"--students are exposed to conflicting statements regarding belt usage and identify which are factual and which are "mythical".
- o "Seat belt Survey"--students survey belt usage among others and draw conclusions from data.

### "The Decision is Yours"

Teachers are given two scenarios to read to students and are advised to "make up your own situations as well." In the first scenario, an unbelted front seat passenger bumps his head. Students can relate to a bump on the forehead. Additionally, they should have little difficulty figuring out that the girl pitched forward in the sudden stop and this could have been prevented by safety belts.

The second scenario presents the story of three children running to enter a car. While this scenario is also workable, it does not support attainment of any critical safety belt objectives.

### "What Do You Think?"

Students are given background information and assigned to write on one of two essay topics. They may write an essay to answer people who say they won't wear safety belts because they are uncomfortable, they mess up clothes, and they take too long to buckle. Or, they can write their views on denying insurance payments to people who were unbelted when injured in a crash (the concept of contributory negligence).

The first-mentioned essay topic presents students with the hypothetical benefits of universal belt usage in gross numbers (i.e., thousands of lives saved, millions of injuries reduced). Students are then presented with "arguments" against belt use (e.g., belts are not comfortable). Among an older audience, there is little doubt that the desired conclusions would be reached. With children in Grades 4-6, the outcomes may be different from those desired. The benefits identified are abstract, whereas the objections offered are concrete and personal. There is always a chance that students may accept the more concrete and personal examples.

Contributory negligence is dealt with effectively. There is no guarantee, however, that students will adopt the position that people should be penalized for not using their safety belts. Some students may conclude that at-fault drivers are fully responsible for crashes and their consequences. Such a conclusion would not support optimal program objectives geared at getting students to recognize their personal responsibility for their own and others' safety.

A fundamental problem with the activity is that an essay assignment on major complex issues may be too difficult for students in grades 4-5. Stu-

dents may have difficulty sorting out the issues and organizing thoughts. Few will be able to organize the information presented in an effective manner. A potentially effective alternative approach would be to conduct a discussion rather than a writing exercise. Using these as discussion topics would have the added benefit of allowing the group to overcome undesirable attitudes expressed by individual students on either topic.

### "The Art of Persuasion"

In this activity, students are to write letters explaining why they think it is important for people of all ages to use safety restraints. They are also to write safety belt slogans, some of them targeted for different age groups and interest groups.

Certainly students would be able to come up with slogans for safety belts. Both the slogan and letter writing activities, however, introduce the concept of age. Students have been given no information as to the importance (or lack thereof) of age in regard to belt usage. Consequently, it is unclear exactly what students are to make of the age issue in preparing their written materials.

A puzzling aspect of the slogan activity is that students are told to come up with three slogans that would attract the attention of different age and interest groups. They are to examine how the slogans differ and then to "try them out on the age groups for which they are intended." They are then to discover whether or not they work and which work best. Students (and teachers) are given no guidance beyond this. It is difficult to imagine exactly how they are to determine whether or not these slogans work and to evaluate which are more effective than others. Also, students may find out the slogans don't work. Some well-meaning adults may also reinforce their reason for not wearing safety belts (i.e., that's a nice slogan, but...).

### "Fact or Myth"

In this activity, students are presented with two pairs of statements. Each pair contains a safety belt fact and a conflicting safety belt myth. Students are to identify which is which and to explain their answers. It is doubtful that this activity can be conducted as envisioned in the Teacher's Guide. Students have been given no information to help them decide which statement is true and which is false. The Guide appears to take this into account by providing information which the teachers can use in this exercise.

### "Seat Belt Survey"

The purpose of the safety belt survey is to have students question people of various ages regarding their frequency of use and their reasons for use or non-use. While conducting such a survey would not be beyond the ability of students, the survey itself is a risky business. They are likely

to find the vast majority of people--especially adults--seldom if ever wear safety belts.

While this, in itself, might not be a counterproductive learning experience, there is a real danger that the reasons given by these people for not wearing belts will be reasons not addressed in prior learning activities. Consequently, students may be exposed to myths and misinformation regarding safety belts which they are incapable of assessing accurately. As only a few of the myths regarding belt use have been addressed, students may therefore "learn" incorrect information from this survey.

### **Program Materials**

Materials for the upper-elementary program consist exclusively of the poster and a Teacher's Guide. As the poster has been discussed in the analysis of the lower elementary program, it will not be discussed here.

The Teacher's Guide incorporates many of the features already identified in the lower grade program. Limited content is provided for handling student questions or motivating teachers who may be hesitant to provide safety belt instruction. Teachers are provided guidance in how to conduct the activities recommended. There is no clear statement, however, as to why the activities should be conducted or what the activities should accomplish.

Also, as was the case with the lower-elementary program, one program activity is contingent upon teachers' acquiring materials not provided. In this program they are told to obtain the NHTSA pamphlet, "How Many of These Fairy Tales Have You Been Told?" No reason is given as to why they should get this pamphlet. Given that the safety belt survey is likely to result in exposure to many myths not identified and dealt with in the Teacher's Guide, it would be highly desirable if the Teacher's Guide would (1) explain to teachers what they can expect to learn from this pamphlet and (2) provide a little stronger motivation to assure that they do get this valuable material. Better yet, consideration should be given to including this information along with information on crash dynamics and how belts work in the program materials. This would assure that teachers would have the background information needed to conduct the program confidently and competently.

### **General Program Design**

Most teaching methods recommended (e.g., situation analyses and discussions) seem to be appropriate to the student audience. Writing safety belt slogans and conducting a survey would seem to be especially appealing to this age group because they offer a chance to "do something different." However, as has been discussed, there is some doubt as to whether these interesting activities will be effective in helping students to attain the program's objectives.

The lack of any specific sequencing of program activities is also unfortunate. If students are asked to write letters telling why they think

it's important to buckle up before they have been given the modest information background provided in the essay writing activity, it is questionable whether this activity will be productive. The major value of the letter-writing activity would be as a reinforcement of the essay activity, that is, children would report what they had learned about the benefits of belt use. Similarly, it would be desirable to delay the safety belt survey until the other activities dealing with common myths regarding belt use have been conducted. Otherwise, children may be exposed to erroneous statements and misconceptions regarding belt use from multiple and diverse sources.

As has been indicated earlier, another concern with the program design is the absence of guidance and information for teachers. On the one hand, it assumes that teachers know enough about belts to answer any questions raised by students in the problem-solving activities. On the other hand, it recognizes that teachers need to have outside materials ("How Many of These Fairy Tales Have You Been Told?") to support one activity. Program materials, in and of themselves, do little to overcome teacher information deficiencies.

#### **NHTSA SAFETY BELT ACTIVITY BOOK**

The NHTSA Safety Belt Activity Book is a 1977 revision of two programs developed in 1971 by the American Institute for Research.

#### **Program Objectives**

The activity book states two principal program objectives:

- o To train students to use safety belts properly at all times
- o To encourage students to urge others to use safety belts.

Support objectives listed are to:

- o Illustrate and explain two types of safety belts
- o Demonstrate the correct fastening, adjusting, and unfastening of safety belts
- o Explain why it's important to wear belts
- o Explain when belts should be worn
- o Explain who should wear safety belts
- o Reinforce safety belt information through related activities.

The stated objectives are teacher-oriented--i.e., they tell the teacher what is to be accomplished through the program.

Student-oriented objectives derived from the booklet are listed below.



## Behavioral Objectives

Students will:

- o Fasten and adjust belts properly
- o Wear safety belts on every trip
- o Encourage others (family members, teachers, and friends) to wear belts at all times.

## Attitude Objectives

Students will believe:

- o It is important to wear belts at all times
- o Belts can save their lives or keep them from being seriously hurt
- o They should encourage everyone in their family to buckle up
- o Asking someone to buckle up shows you care
- o Buckling up is smart; many people don't buckle up because they don't know the facts
- o Everyone should use safety belts on every trip.

## Knowledge Objectives

Students will know:

- o Safety belts keep people from being thrown around inside the car in quick stops or crashes
- o Safety belts keep people from being thrown outside the car in a crash
- o Safety belts keep the driver behind the wheel and in control
- o Safety belts keep people in a more comfortable and safe position
- o Most accidents occur close to home--not just on highways or at high speeds
- o How to fasten and adjust belts properly
- o Belts should be worn across the hip
- o Belts can keep you conscious and free of injury so you can help others after an accident
- o Doors should be locked after entering the vehicle.

As can be seen from this listing, this program offers a fairly comprehensive collection of knowledge objectives. The only major areas unaddressed by the objectives are proper seat selection and techniques for assuring that hard-to-get-at belts are recovered and used.

### **Program Content**

Despite the number of activities (20) contained in the program, the amount of informational content specifically indicated within the text of the Teacher's Guide is relatively limited. Presentational content is limited to the following facts:

- o Safety belts keep people from being thrown about in a crash or sudden stop
- o Safety belts keep the driver behind the wheel and in control
- o Safety belts keep people in a comfortable, safe position
- o Safety belts keep people conscious and unhurt during a crash so that they may help others afterward
- o Everyone should wear safety belts during every trip.

This content supports achievement of program objectives. The key information items are repeated in two additional activities (Activity 5 and Activity 19). This may be sufficient repetition to provide for acquisition of the knowledges.

In general, content appears to be appropriate to the target audience. The information concerning driver control, however, may be beyond the understanding of elementary school children. They may have difficulty understanding the concept of controlling a car and why a driver cannot stay behind the wheel simply by holding onto the wheel. Similarly, the information about keeping people in a comfortable safe position may not speak to the cognitive ability or the general attitudes of young children. In the lower grades, their concept of safety will be tenuous at best. And the matter of comfort may be troublesome. Children usually are not "comfortable" when confined or restricted. Additionally, the benefits of safety belts as a comfort device is primarily limited to their use on long trips. Children are not accustomed to making long car trips.

Minor content problems are apparent in two activities. Activity 4 presents the proper sequence of procedures for getting ready to ride. It is also suggested that, beyond getting in, sitting down, closing and locking the door, and fastening the safety belt, students think of a continuing sequence of events. The sample sequence presented includes items such as start the engine, check gas level, etc. No purpose for this extended sequence is offered or apparent. It seems pointless to make the getting-ready-to-ride sequence more complex than necessary. Indeed, the additional procedures may distract students from the key behaviors they need to adopt.

The other content problem is in Activity 12, which presents a story to be read and then role played. In that story, the authority figure (an older sister who has just received her license) states, "Now that I'm driving, I'm responsible for the people who ride with me. That's why everyone has to buckle up...." This message may carry the connotation that passenger safety is the responsibility of only the driver, rather than the personal responsibility of individual passengers.

## Program Activities

Of the 20 activities constituting the program, the first three provide for acquisition of new knowledges. The first establishes the core information to be communicated by the entire program. The teacher explains the types of safety belts available and how they fit together. Students are then asked how safety belts work to save lives and reduce injuries.

The second activity provides students with an opportunity to practice positioning, fastening, and adjusting belts properly. This would be appropriate to all members of the target group if real safety belts were used. While teachers are urged to obtain real belts, they are given the option of making paper or cardboard belts for use in this exercise. Conducted in this fashion, the activity would be unrealistic. Specifically, it would not give students the opportunity to adjust or fasten belts, as a cardboard replica would have no locking mechanism or adjustment feature. The directions could be improved as the Guide suggests only that the teacher demonstrate proper procedures and then provide each student with an opportunity to do the same. There are no recommendation as to how to demonstrate the restraining properties of a belt or to relate directly what is being done in class to what should be done in a vehicle (and why).

The third learning activity provides a visual experience in crash dynamics through the use of a homemade "car" with an egg passenger. This can be an exciting demonstration of the properties of restraints and how they work in a crash. To a great extent, the success of this activity is contingent upon the question-and-answer period in which students draw conclusions about the effectiveness of safety belts in restraining passengers. This activity is designed to "prove" that belts keep passengers from being thrown in a crash. It does not support other key facts, however. Specifically, there is no means to debunk the myth of the driver holding on to the wheel. Difficulties in using the egg demonstration may arise in two areas:

- o Children may rightfully perceive themselves as being less fragile than an egg, and consequently better able to withstand the impact.
- o Students may see themselves as being able to take protective action such as bracing themselves or throwing themselves to the floor of the vehicle before the crash.

If either of these perceptions are left undealt with, the activity may fail to achieve its objective.

Many of the remaining 17 activities give children the opportunity to practice intervention skills. One of these activities (Activity 12) involves students in role play situations in which some of the players will be required to justify their belt use and urge others to do the same. This could be an effective way to make the players feel comfortable about wearing their belts and urging others to do the same.

Activity 18 involves students writing letters to influential people or organizations urging them to support belt use. Again, this activity may help students feel more comfortable in their roles as safety belt advocates. However, unlike the role plays, it is not expected that children will be called upon to use these letter-writing skills for the benefit of safety belts at a future date.

The remaining activities fall into one of two categories: Content review activities or desk work activities. Content review activities include Activity 5, in which children list car safety devices and their functions. They also include writing activities (15, 17, 20), in which students are asked to feed back as many safety belt facts as they can. The final activity in this category is Activity #19, in which students repeat one of the preceding activities or present a play, for the benefit of another class.

Desk work activities are more numerous. There is a sequencing activity (#4) similar to that discussed in relation to the AAA lower- elementary program. There is a singing activity (#6) and a crossword puzzle activity (#7). Activity 8 is a cut, paste and draw exercise. Activities 9, 10, 14, 15 and 16 center primarily around developing safety belt slogans and preparing materials upon which these slogans may be displayed. In virtually all instances, the children are encouraged to display their materials or pass along their slogans to others.

The remaining activities include using a speaker and conducting the survey activity called for in the upper-elementary programs.

### **Program Materials**

The Teacher's Guide--the sole material provided--contains materials which teachers may reproduce for use by students. These materials include:

- o 8" x 10" illustrations of safety belts and children using safety belts
- o Four illustrations contained on an 8" x 10" page for use in the "getting ready to ride" sequencing activity
- o A 5-page instructional document providing directions on how to make the "egg" car and conduct the vehicle dynamics experiment
- o A 2-page story ("Amy's Big Sister") to be read in class and used as the starting point for the role play activity
- o Illustrations to be traced and reproduced for use in a parent brochure

- o The script for a student play
- o A wall mural for use in identifying quick-stop situations in a community.

Student textual materials are appropriate to students' physical needs (e.g., type is large and well spaced to accommodate immature tracking ability) and their learning expectations and limitations. The longest student piece--directions for making the egg car--are well and copiously illustrated, making the directions easy to follow. The other materials are short enough to accommodate students' short attention span and do not require illustration.

The illustrative materials (those on 8" x 10" stock) are a mixed bag in terms of their appropriateness to the students. All could benefit from the use of color to make them attractive to teachers and students alike. The getting-ready-to-ride sequence pictures are clean and clearly delineated, showing only necessary details. The same is true of the pictures of safety belts. The illustrations of children wearing belts, however, are not as clean. Shading has been added through the use of screens and cross hatching, to the point that the presence of the belt is understated. The understatement is not so severe as to create a major problem in and of itself. The size of these pictures, however, combined with the lack of definitive contrast, makes it difficult for students to perceive proper belt location. Though the Guide refers to these pictures as posters, they are not poster size. Their suitability would be limited to small groups (e.g., no more than 10 students). Where larger groups are being used, those far away from the posters have a great deal of difficulty picking out the important details of belt location.

An additional problem exists with the "poster" showing the lap/shoulder combination. The problem here is not clarity, but obsolescence. The system shown is a two-point system. While appropriate during the time when the original program materials were developed, few, if any, students nowadays will recognize this system as being in their cars.

The wall mural is appropriate to the intended audience in its simplicity, clarity of delineation, and size. It is unclear how it is to be used, however. If students are to draw on it, it could be used only once. If it is presented as a model for teachers to copy, its utility is doubtful. Few teachers would have or take the time to recreate the mural on a chalkboard.

The Teacher's Guide also contains information and directions to teachers. Background information on the types of belts available and how they should be fastened and adjusted properly is more than sufficient to prepare teachers. Motivational information for teachers, however, is limited. The introductory section of the Guide states:

- o Traffic accidents are the leading cause of death for young and middle-age people
- o Safety belts can save lives and reduce injuries among all people

o Teachers are in a position to convince students to use belts and, thus, establish safety habits that will last a lifetime.

Teachers are directed to review the "Automobile Safety Belt Fact Book" for supplementary information (e.g. motivational, etc.).

The detail and quality of information on how activities should be conducted varies from activity to activity. For example, the first activity lists key points that should be made during a discussion of how safety belts work. On the other hand, the direction provided for making sense out of the safety belt survey activity is far less detailed:

"When all the information has been organized..., ask students to draw some conclusions from it. Have the students give some reasons why they think their survey results came out as they did. Discuss this with them."

Teachers are not given any reason as to why activities should be conducted as suggested. Many of the activities involve substantial teacher effort in preparation (e.g., tracing and duplicating illustrations, obtaining safety belts from car dealers, arranging for outside speakers, arranging presentations to other classes). The lack of any statement as to what an activity is to accomplish or why an activity should be conducted as suggested reduces the likelihood that teachers will bother with these more administratively difficult activities.

Although the program does not include parent materials per se, several activities are designed to result in students producing materials to take home and give to parents. The material produced in Activity #14 is a tag to be hung in the family car. The tags are to display either a safety belt slogan or a safety belt picture.

Activity #15 is to result in children producing safety belt brochures to take home to their parents. The brochure consists of illustrations of cars and safety belts and is to include either a message copied by younger students or an original message by the older students telling why safety belts are important. All ages are to copy a message on child safety seats. The content may be inappropriate to many of the parents receiving this material. Additionally, the content is restricted to stating (1) who should not use lap belts and shoulder belts and (2) that parents should show their love by buying child restraints for their small children because holding them in the arms or sharing a belt with them is not safe. None of this content supports the instruction given to students in class. Should parents question children about child restraints, the children would have no information.

### **Program Design Considerations**

Several activities are recommended and teachers are encouraged to choose activities that will be "most appropriate for the interests and abilities" of their students. Consequently, the appropriateness of any given teaching method or activity is to be determined by teachers, rather than by the program developers.

It does appear, however, that the program is top heavy with desk activities--cutting, pasting, coloring, drawing, and language arts. While they provide children with the opportunity to "participate" in safety-belt-related activities, there is little reason to believe that this type of participation will develop desired behaviors in the children. While children are engaged in "active learning" by these techniques, they are developing general skills more than learning about safety belts.

There is no time allocation recommended for any activity. However, many of the activities would require considerable teacher time in preparing for instruction. For example, the practice buckling activity requires teachers either to solicit and obtain safety belts or to make safety belts for students. The guide calls upon teachers to "trace" illustrations or reproduce puzzles or illustrations for student use. Activity #19, in which students present a program for another class, would require a great deal of in-class preparation time as they rehearse the activities or plays to be conducted. In general, therefore, the program does not appear to be responsive to teachers' needs for activities requiring little or no preparation.

While the sequencing of the first three program activities is appropriate, it is not presented as being necessary. Remaining activities have no apparent inter-relationships. Consequently, the sequence in which they are implemented is immaterial.

### **Outside Assessment Studies**

The NHTSA Safety Belt Activity Book program was evaluated in 1982 by National Analysts, Inc. (Senk and Schwartz).<sup>\*</sup> In this study, elementary school teachers in Loudon County, Virginia, used the program guide for a period of one month, devoting about 45 minutes per week to various activities. There is no indication as to which activities were used most frequently and which activities were not used at all among the treatment population.

The effect of the program was assessed through observations of elementary school children in a front-seat position as they entered or left shopping centers in Loudon County. Three observation periods were established: (1) before the program was implemented, (2) during the month in which the program was being offered, and (3) following completion of the treatment period.

Belt use observed among elementary-school-age children rose with each succeeding period from a pre-program usage rate of 6.1% to a program level of 7.7% to a post-program level of 9.9%. During the same period, usage rates declined (although not significantly) among a control population of elementary-school-age children entering shopping centers in Prince George's County, Maryland. There is no indication as to whether effectiveness was limited to one subgroup or more of the student population. (At the time of

<sup>\*</sup> Senk, S.A., and S.L. Schwartz. Evaluation of the Effects of a Seat Belt Education Program Among Elementary School Children in Loudoun County, Virginia (Final Report to the NHTSA), National Analysts, Inc., November 1982 (Report #DOT-HS-800-766).

the evaluation, the program was actually two programs--one for lower-elementary students and another for grades 4-7.)

Another study finding was that there was no change in belt rates among the parents or older siblings of the treatment population. Consequently, it would appear that, while the program did achieve one of its two major goals, it apparently did not enable students to become effective safety belt advocates among family members and friends.

## **DO YOU BUCKLE UP?**

The Do You Buckle Up? program is marketed by FLI Learning Systems, Inc., for kids in Grades 4-9. However, for the purposes of this report, it will be assessed for its appropriateness and utility for children in Grades 4-6. It would appear that the program was developed as an upper-elementary program and is too juvenile for the junior-high-aged audience. A foreword to the Teacher's Manual states that the program materials "will increase the use of safety belts by elementary-age level children" (emphasis added).

## **Objectives**

There is no clear, concise statement of educational objectives for students in the program materials. Objectives stated on the program description sheet are teacher-oriented and include the following:

- o To demonstrate the severe impact forces of a 10-mph collision.
- o To counter myths that inhibit belt use.
- o To demonstrate consequences of non-use.
- o To illustrate the proper use of belts.
- o To motivate students and teachers to use belts.

As can be observed, these objectives represent a statement of intent by program developers, rather than a benchmark of success by which student benefits from the program may be assessed.

Specific student oriented objectives derived from the program materials are listed below:

### Behavioral Objectives

Students will:

- o Buckle belts over their hips
- o Wear belts on all trips, regardless of length or speed involved
- o Select a back seat position (especially if they are too short to use a shoulder harness)



- o Lock the door
- o Ask others to use their belts.

### Attitude Objectives

Students will believe:

- o Everyone should wear belts on every trip
- o Belts are not dangerous
- o There are no good reasons for not wearing belts
- o Safety belts will keep people from getting hurt
- o Smart people--especially people who know what it is like to be in a crash--always buckle up
- o The consequences of not wearing belts have serious personal implications
- o They should ask everyone in their families to buckle up
- o If they ask, family members will buckle up
- o The back seat is the safest position
- o Even low speed crashes can produce serious injuries
- o Passengers are responsible for their own safety
- o It is safer staying in the car than being thrown clear.

### Knowledge Objectives

Students will know:

- o Crashes kill and hurt many people
- o Even low speed crashes can kill
- o Belts can prevent injuries
- o Belts keep you in the car
- o Most serious accidents happen on everyday (short, slow) trips
- o If a shoulder belt crosses the neck, you should move to the back seat
- o Sitting in the back is safer
- o Even in the back seat, you need to use belts

- o Belts should be worn over the hip, not over the stomach
- o Properly worn, belts aren't likely to hurt you
- o They should lock the door when riding
- o Belts can help you stay conscious and able to get out of a flaming crash
- o Back seat passengers could be thrown through the window
- o Belts have been available, but not used, for a long time
- o Two collisions occur in a crash; it is the second collision that hurts people
- o Safety belts are the only available protection against the second collision
- o Belts can help drivers keep control in an emergency and thus, perhaps, avoid a crash
- o Little children can be hurt in a quick stop unless they are using belts
- o The head restraint should be adjusted to meet the back of the head squarely
- o Properly adjusted head restraints will eliminate whip lash.

As is clear from a cursory review of these implied objectives, the program comes closest to mirroring the optimal objectives of any of the programs studied. Furthermore, all behavioral and attitudinal objectives are appropriate to this older audience. The attitude objectives fully support attainment of the behavioral objectives as well.

By and large, the knowledge objectives are appropriate to the intended audience as well. A full, clear understanding of crash dynamics (i.e., the second collision), however, may be beyond younger pupils in the audience. An understanding of the use and function of head restraints also may be inappropriate to a large segment of the audience, as many will be of too short a stature to take advantage of these restraints.

### **Program Content**

Program content does appear to support attainment of virtually all of the implied program objectives. Much of the content is communicated visually, through a film. Critically important visual content includes depiction of a peer (Billy) riding in a safety belt convincer. Students can see for themselves the force generated in a 10 mph collision and can readily draw the conclusion that they could not brace themselves sufficiently to avoid injury even in a low speed crash. The visual, aural and written

content of the program communicates well with the intended audience. Important information is sufficiently repeated to prepare students to benefit from the learning activities and teaching methods suggested as a followup to presentation of the film.

The film provides a number of surrogates which should be readily understandable and acceptable for students. There are two peer models--a child narrator and "Billy." The child narrator uses belts all the time. Billy, a non-user at first, is finally convinced of the wisdom of using belts. A hero figure is introduced--the child narrator's father, who flies an airplane. An authority figure is presented--a physician who provides a "technical" explanation of how belts work and why they are necessary. A negative role model--humorously presented by one "John B. Foon"--voices familiar misinformation about safety belts.

There are some minor problems in content in the portion of the film devoted to the adventures of "John B." In one episode, "John B." indicates he will be driving slowly. This is immediately followed by the squealing of tires indicating a high-speed maneuver that results in a crash. The sound effects appear to contradict the words spoken earlier, possibly leaving students with the impression that safety belts are valuable only in high-speed crashes. This is not considered likely, however, as students have previously seen the usefulness of belts in a 10-mph crash as demonstrated in a convincer ride. The other problem arising from the "John B." episode is a matter of consequences. "John B." is involved repeatedly in what we are led to believe are high-speed crashes. Although he suffers injuries in all crashes, the effects are presented as being somewhat humorously debilitating. Such a representation may undermine an appreciation of the grave and permanent damage which can result from a crash.

Content also is somewhat deficient in two of the more technical areas concerning safety belt use. Specifically, the concept of belts as a means of helping drivers keep control of a vehicle is mentioned but not well explained. Also, crashes are consistently presented as occurring between a vehicle and a fixed object. Multiple-vehicle accidents are far more common. Consequently, those are the kinds of crashes which students can best relate to their own observations. There is a need to translate what a 10-mph collision with a fixed object equals in terms of a vehicle-to-vehicle collision.

Another potential problem with the content is that there is a heavy reliance on statistics. Effectiveness data are presented in terms of percentages (e.g., 50%, 75%, 33%). These are not exact percentages. They have been rounded off, apparently for the sake of comprehension by the students. As long as gross estimates are being used, however, it would appear to be more appropriate to address them in understandable terms, such as injuries cut in half, only a quarter as many injuries after belts were used. Many children, as well as adults, have difficulty relating to percentages.

## **Activities**

The program is broken into a 5-unit lesson plan. Lesson 1 is centered around student viewing of the film. Lesson 2 uses discussion, teacher pre-

sentation, and in-class demonstration to show why belts should be worn. Lesson 3 consists of a teacher presentation on the proper adjustment of safety belts. Lesson 4 calls for discussion and presentation concerning myths inhibiting belt use. Lesson 5 features student-prepared talks or reports on why belts should be worn. Each of these lessons and their central activities are discussed in the following paragraphs.

### Lesson 1

Teachers begin this lesson by asking students the pros and cons of belt use. Responses are recorded on the chalkboard. The teacher then introduces and shows the film. After viewing the film, a discussion is held in which the listed pros and cons are discussed in light of what the film has covered. Students then discuss their personal experiences with safety belts.

This activity appears to be a good way of reviewing what has been learned from the film. It provides for instructional repetition coming come students and allows the teacher to gauge their attainment of critical knowledges. This interactive teaching technique also personalizes instruction, encouraging students to relate safety belt facts to their own world of experience. The potential drawback to this latter type of discussion is that, while it may effectively elicit a peer testimonial as to the benefits of belts, it may also elicit horror stories such as "Dad said he sure was glad he was free to get out of the car," or "The cop said Dad was lucky he got thrown clear."

### Lesson 2

Teacher presents:

- o The magnitude of the traffic accident problem (National Safety Council statistics on death and injuries).
- o The efficacy of safety belt use (NHTSA estimates as to potential life savings and data on accident reduction associated with Australian mandatory belt use laws).
- o The two collisions occurring in a crash.
- o How a "convincer" works.
- o Passenger responsibility for fastening their own belts.

The presentation of the two-collision concept is supported by the egg-in-a-truck demonstration similar to that included in the NHTSA safety belt activity book.

This lesson also includes a class discussion focusing on x-rays of a broken finger and a broken leg. Students are asked what they could not do if they suffered these injuries in a crash. This appears to be a good way

of personalizing the consequences of non-belt use in an unthreatening, non-authoritative manner. Most 10-12-year olds can identify with broken arms and legs.

Another discussion focuses on the convincer sled demonstration depicted in the film. The discussion is designed to get students to state what they observed about the 10-mph crash and then to examine the implications of crash forces and likely outcomes of higher speed (25-mph and 50-mph) crashes. This discuss residential and highway travel). Elementary school s dents, however, may have some trouble visualizing the true severity of crash forces involved at these familiar speeds. It would appear that this discus- sion could benefit from a film depicting crash dummies in simulated 25-mph and 50-mph collisions.

The presentation of Australian data is to be accompanied with a student activity in which they prepare bar graphs communicating the extent of injury reductions achieved by mandatory belt use legislation. This activity appears to be appropriate for the intended audience and, in fact, may be necessary to engender a full understanding of the significance of these facts by fourth and fifth graders.

The major limitation of this lesson plan appears to be the absence of two necessary discussions. To make sure that students understand and draw the correct conclusions from the egg-on-a-truck demonstration, it would be desirable to conduct a class discussion in which students state the lesson they have learned from this demonstration and relate that to what might hap- pen to them in a collision. Additionally, the issue of passenger responsi- bility is handled totally by teacher presentation. The teacher states that passengers are responsible for their own safety and that a safety belt is the only protection available to passengers. In essence, the matter of passenger responsiblity in safety is a matter of personal opinion. Conse- quently, a discussion would be appropriate so that group dynamics might help students understand this position and come to consider it their own position rather than one which is given them by the teacher.

### Lesson 3

Lesson 3 is devoted to teacher presentation. It focuses on how to position and adjust belts and what to do if the shoulder harness crosses the student's neck. The lesson concludes with advice to make sure that younger siblings and parents are restrained as well.

The only suggested activity has younger students locate their hip bone. Such an exercise may not be necessary even for the youngest students in the intended audience.

### Lesson 4

The fourth lesson is a discussion of five common myths given for not

using safety belts. This would appear to be an excellent activity. Students have been given core information (Lesson 1) needed to handle the discussion intelligently. The Teacher Guide provides additional data to support rebuttal of these myths. Consequently, the activity offers students a chance to feed back information and to acquire new, more detailed knowledge as to why objections to belt use are really excuses rather than reasons. The limitation to this activity is that teachers are provided with rebuttal only to these five myths. In an open discussion, students may come up with additional myths which teachers may not be prepared to rebut.

## Lesson 5

In the final lesson, students are to prepare talks or essays that either defend their reasons for wearing safety belts or negate their reasons for not wearing safety belts. This activity is a good way of personalizing key program content and addressing the personal attitudes of students. It gives students the opportunity to reinforce their most important positive motivations and to encounter the reasons given for not using belts.

## **Materials**

Presentation materials consist of a film and a film strip. Both appear to be appropriate to students' needs and to their learning expectations and limitations. The film strip is to be used in three sections, thus accommodating a limited attention span. The film provides a variety of spokespersons and numerous types of scenes (e.g., old film footage, new film footage of rocket sleds, a humorous case study, a real-life case study). Through this format, interest is kept alive by listening to a variety of voices and viewpoints and observing a number of exciting and entertaining scenes.

Teacher materials consist of a teacher's guide. The teacher's guide is the most complete of those programs examined. It specifies what teaching techniques should be used and frequently suggest specific well-phrased presentation questions to be asked.

There is no clear statement of anticipated outcomes from the various activities. However, desired outcomes often may be inferred from introductory statements made at the beginning of each lesson plan.

More significantly, there is no explanation as to why interactive techniques should be used by the teacher. Unless teachers understand the dynamics of question-and-answer and discussion as a means of personalizing information and promoting positive attitudinal changes, some may lecture merely to move rapidly through the material. This could reduce the potential effectiveness of the program.

A limitation of the teacher guide is a lack of editing. The text is excessively wordy. More significant, however, is that the syntax at times makes it difficult to understand. As an example, teachers are told that

"almost all passenger fatalities are caused...when the people in the vehicle...are ejected from the vehicle striking the pavement or other object." In this instance, it is difficult to tell exactly what is striking the pavement or other object. A similar example occurs in the statement that NHTSA "has suggested a guideline of 55" tall before a person should use the shoulder belt." Students will have a hard time comprehending this information. In some cases, it is questionable whether or not teachers will be able to get the right message from the material. The Guide states that NHTSA "has suggested that children use a child restraint seat until they weigh 40 lbs., and use a lap belt only until they are 55" tall. This may lead the casual reader to feel that NHTSA recommends lap belts only for short people.

### **General Program Design**

In general, the program appears to be well designed. It advocates teaching methods appropriate for grades 4-6. The combination of film presentation, teacher presentation, and class discussion allows for adequate repetition of key content.

The program content activities are generally arranged in an appropriate sequence. The five lesson plans are in a workable sequence, however, the sub-elements of Lessons 2 and 3 could be better organized. In Lesson 2, the teacher begins by citing statistics as to the magnitude of the crash injury problem and the potential benefits of universal belt use. The next emphasis is on how safety belts have been available but not used for a long time. This presents an interesting but pointless historical fact that could be eliminated so as to not obstruct the flow of instruction. The teacher next discusses the two collisions in a crash, followed by a class discussion of the consequences of crash injuries. A presentation of Australian injury reduction data follows. These data should follow the NHTSA estimate of belt effectiveness to provide documentation of results achieved through belt use. Following the Australian data, the teacher presents and discusses the convincer and crash impact forces. This is followed by the explanation that fatalities and injuries are caused by the second impact. This entire presentation and discussion would be more efficiently delivered as a prelude to the teacher presentation of the "two collisions". The lesson ends with the teacher emphasizing passengers' responsibility for their own protection. An adjunct to that presentation is more Australian crash data. Again, this information should support the NHTSA belt effectiveness presentation.

In Lesson 3, the sequencing also is questionable. Content is covered in the following order:

- o Lap and shoulder belt placement and adjustment information
- o What to do if the shoulder belt crosses the neck
- o Adjustment of the lap belt
- o Why the back seat is a safer location

- o Location of the lap belt
- o Why to lock the door
- o Why everyone should buckle up.

The last information is more appropriate to the second lesson rather than the third. Reorganization of the remaining content would avoid needless repetition and make for a more coherent and direct presentation. For example, "why everyone should buckle up" would be a logical conclusion of Part 2. Lesson 3 sequence would be improved by considering "why to lock the door," lap and "shoulder belt placement and adjustment information", "what to do if the shoulder belt crosses the neck," and "why the back seat is a safer location." The other items should be discarded.

Overall, the Instructor Guide provides more background information and direction for teachers than the other guides examined. Teachers could benefit, however, from additional information on safety belts such as (a) exactly what happens to people when a car crashes at road and highway speeds (25-50 mph), and (b) insights into myths other than those presented in Lesson 4. They also need a clear statement of the objectives for each lesson and the time needed to give the lesson.

The program also could benefit from take-home materials for students and parents. Students could benefit from a data summary sheet focusing on the effectiveness of mandatory safety belt legislation and the extent to which risk of injury or death are increased by non-use of belts. Parents could benefit from this information, as well as information countering common myths given for not wearing safety belts.

## **SUMMARY OF DEVELOPMENTAL ASSESSMENT**

A few generalizations are offered about all five programs under consideration. The stated objectives were, for the most part, administrative and/or teacher- rather than student-oriented. Other objectives, more in tune with hoped-for student achievement were identified through program analyses. The identified objectives, as well as program content, activities, materials, and design were to some degree useful and supportive of the education process while, at the same time, lacking in some respects.

### **Beltman**

The informational content of the Beltman program is relatively sparse. This is not surprising since the program is more motivational than informational by design. A strong, skillfully established linkage is developed between the concept of safety and goodness or niceness. Concepts such as "you can be safe," "be good and your parents will be proud," "it's smart to learn the rules," "safety belts are neat--use them and you'll be neat, too" are communicated subtly to the students. The Beltman role model has both positive and negative influences.



Some program activities like drawing, coloring, and writing stories are questionable in terms of program objectives. One activity, sitting in a chair and buckling up, is a useful, hands-on, opportunity to learn an important behavior. Student program materials are excellent while those of teachers are short in background information explaining how--and how well--safety belts work.

The program relies heavily on interactive teaching methods--primarily question-answer and discussion techniques.

### **AAA Lower Elementary Program**

The AAA program is unique because the materials change each year and there is no set program kit even within a given year. AAA produces the programs and local clubs, according to their own priorities, purchase all, some, or none of the materials. In some cases, a single copy of the teacher's manual is the only material provided to a school. In most instances, however, schools receive everything produced and in sufficient quantity for all students. Safety restraints is only one of ten topics addressed by the program. Both behavioral and attitudinal objectives are appropriate for the grade levels in question. Knowledge objectives are appropriate but are not sufficiently supported by information provided.

Basic Grades K through 3 student materials include a poster, a story, "Otto the Auto," and a booklet, "My Own Safety Story." The poster content is limited to an easy- to-remember slogan with no justifying rationale. The Otto story has both positive and negative connotations. It would be more useful as a teacher- or parent-read lesson followed by discussion. The vocabulary appears to be too advanced for this age group. Finally, there is danger that the fear of being trapped in a safety belt could be reinforced by circumstances that might logically evolve from the lesson. A number of activities are suggested including a vocabulary exercise, poster activities, how to buckle up, talking it over, and a crossword puzzle. Both positive and negative learning experiences appear as likely outcomes. Student demonstrations of proper buckling up technique with real belts is excellent. Asking the students to move while wearing the belts reinforces the benefit of belts protecting by holding the passenger in place. A timed relay race demonstrates clearly that buckling and unbuckling safety belts is quick and easy. On the negative side, most of the suggested activities require teacher knowledge and insights that have not been provided, require responses that are likely to be beyond the abilities of the intended audience, and, in a number of instances, may promote introduction and reinforcement of harmful myths about safety belt usage.

The Teacher's Guide is brief and offers little guidance in how to conduct the various activities.

Teaching methods could be appropriate under ideal circumstances but the guide does not suggest the circumstances or provide teachers with the necessary informational base. No instructional sequence is suggested. Requisite program materials are not provided. Teachers are advised to obtain belts from an auto supply outlet or dealership. Few teachers would do so.

## **AAA Upper Elementary Program**

The program for Grades 4 through 6 is developed much like the lower elementary program and features many of the same strengths and weaknesses. As in the lower elementary program, little content is communicated through program activities. Accident reduction statistics may not be appropriate for the intended audience. Two safety belt myths--being trapped in the vehicle and being thrown clear--are appropriately addressed for this age group. Unfortunately, some myths that specifically focus on children's needs are ignored, e.g., "I don't need a safety belt if I sit in the back seat." Belief in this myth may even be reinforced by one program activity in which a girl sitting in the front seat bumps her head in a sudden stop. Students are expected to determine that she should have been properly belted. They may, however, suggest that sitting in the back seat would have prevented the mishap. Depending on forcefulness or power of persuasion, the message "caught" by some students could be erroneous.

Most recommended teaching methods seem to be appropriate for the intended audience. Some activities, while likely to appeal to the youngsters, are not likely to increase belt usage. Again, lack of proper sequencing is unfortunate. Both teacher and students could be inadequately prepared because some activities preceded others which would have provided useful background.

## **NHTSA Safety Belt Activity Book**

This program offers a fairly comprehensive collection of knowledge objectives. Two major areas unaddressed are proper seat selection and techniques for recovering hard-to-get-at belts.

Informational content is relatively limited in the Teacher's guide. It does, however, support achievement of program objectives. Content, in general, appears to be appropriate to the target audience. Minor content problems are apparent in two activities. Included in a sequence of "getting ready to ride" are such items as "start the engine, check gas level, etc." It seems pointless to make the getting ready to ride sequence more complex than necessary for the intended audience of non-drivers. In another activity, the message could suggest that only the driver is responsible for passenger safety.

The first three activities provide for the acquisition of knowledge. They also include opportunities to practice positioning, fastening, and adjusting belts and visual experience in crash dynamics. The latter uses a homemade "car" with an egg as passenger. Difficulties can arise as children might perceive themselves as being less fragile than an egg and they might think they can brace themselves thus avoiding the effects depicted in the egg demonstration. A number of activities give children opportunities to practice intervention skills. A letter-writing activity could make youngsters more comfortable in their safety belt advocate roles.

Teachers can reproduce material from the Teacher's Guide for student use. Such materials would be appropriate for this age group as the type is large and well-spaced. Some of the illustrative materials would be better

in color. Many are clean and clearly delineated. Illustrations of children wearing safety belts, however, lack clarity because of shading, cross-hatching and the like. The poster showing the lap/shoulder combination features an obsolete two-point system and is not likely to be recognized by students. The wall mural, while appropriate for the intended audience, leaves questions as to its use.

Detail and quality of information on how activities should be conducted vary from activity to activity. Teachers are not given reasons as to why activities should be conducted as suggested. Some take-home activities restrict their message to suggesting to parents how they should provide restraints for very young children rather than attempting to hold them. They offer no reinforcement for the learning of the school-age children.

One assessment (1982) observed increases in belt usage among elementary school age youngsters from pre-instruction through instruction and post-instruction periods. A control population experienced some decline in usage during comparable periods.

### **Do You Buckle Up?**

The implied objectives for this upper elementary program are appropriate for the intended audience. The crash dynamics objectives may be overly energetic and beyond the youngsters' capabilities. Program content appears to support attainment of virtually all of the implied objectives. Repetition is used imaginatively. A film features two peer models, an authority figure, and a humorous negative role model. Film content is contradictory in one instance and technically deficient in two others. Heavy reliance on statistics could blunt the instructional effect of the film.

Program activities include showing the film, class discussion, teacher presentation of safety belt adjustment, consideration of myths, and student-prepared talks on why belts should be worn. As in other programs, both positive and negative comments can be made. It is notable that suggested activities are, in all cases, preceded by informational content that make the activities more likely to succeed.

Materials include a film and a film strip. The film strip can be shown in three segments, thus accommodating students' limited attention span. A variety of voices helps keep interest alive. The Teacher's Guide is the most complete of any program studied. Unfortunately, there is no explanation of why interactive techniques should be employed by the teacher. Unknowing teachers could lecture to "cover" the material more quickly and, in so doing, miss the numerous opportunities for learning through class discussions and sharing. The guide could have been more tightly edited as it is too wordy.

In general, the program appears to be well-designed. It advocates teaching methods appropriate for Grades 4-6. The combination of film presentation, teacher presentation, and class discussion promotes repetition of key content.

Some content reorganization could avoid needless repetition. Learning could be elevated with the addition of some take-home materials for both students and parents.

## ADMINISTRATIVE ASSESSMENT OF SELECTED K-6 ELEMENTARY SCHOOL SAFETY BELT PROGRAMS

The purpose of the Administrative Assessment was to:

- o Identify administration and implementation requirements and constraints.
- o Determine the acceptability of programs among implementers and users.
- o Determine how the programs were delivered in the classroom.

This assessment was done for the five selected programs:

- o The Adventures of Beltman
- o AAA Lower Elementary Traffic Safety Program (K through 3)
- o AAA Upper Elementary Traffic Safety Program (4 through 6)
- o Do You Buckle Up?
- o NHTSA Safety Belt Activity Book

Field representatives were selected to collect program data from supervisors and teachers. Activities and results are described in the remaining parts of this section. They include:

- o Site location
- o Procedures
- o Field sites
- o Data Collection Instruments
- o Analysis Categories
- o Qualitative Results

### LOCATIONS FOR FIELD INVESTIGATION

On the basis of information gathered concerning the distribution and use of programs, six States were identified as promising sites for field investigation of program use and effectiveness. The six States selected were: Delaware, Georgia, Iowa, North Carolina, New Jersey, and Virginia. The considerations for selection of these States were:

- o In-State use of at least one program beyond the nearly universally available AAA and "Belt Man" programs
- o The strong likelihood of receiving support for and cooperation with field investigations from the education community within these States.

The distribution of safety belt programs among these states is shown below.

	Two AAA Programs	"Belt-man"	"Do You Buckle Up?"	The NHTSA Safety Belt Activity Book
Delaware	X	X		
Georgia	X	X	X	X
Iowa	X	X	X	
North Carolina	X	X		X
New Jersey	X		X	
Virginia	X	X		X

The selection of States for the field investigations was based on geographic location and the requirement that the programs either be in place or could be implemented and the site would allow an assessment of the program. Based on these requirements and the willingness of the sites to cooperate with the field investigations, three States were selected-- Virginia, Georgia, and New Jersey.

It should be noted that the possibility of assisting Washington State in its evaluation of its safety belt program was considered. However, independent evaluation of this program appeared to be superfluous and, indeed, somewhat meddlesome if conducted at the same time as the State-sponsored evaluation was getting underway.

## PROCEDURES

Information from the participating schools in Virginia, Georgia, and New Jersey were collected by field staff. These individuals had the responsibility to work directly with school administrators and teachers to determine administrative factors relating to use of the programs. In-depth information was gathered through telephone and face-to-face interviews using questionnaires and checklists.

Field staff were provided specific instructions via telephone and printed material for carrying out their responsibilities. They were given information on the overall project, samples of safety belt program materials under investigation, and other specific print material and information collection instruments for carrying out their duties. Specifically, field staff received:

- c. Field Staff Responsibilities--Appendix C
- d. Guidelines for Field Staff--Appendix D
- e. Administrative Fact Sheet--Appendix E
- f. Basic Interview Questions--Appendix F

In addition to the written guidelines and other project memoranda, telephone conversations clarified field staff responsibilities, answered questions that arose during collection of administrative assessment information, and provided field staff feedback on project progress.

## FIELD SITES

From within the three States, 17 schools provided information for the administrative assessment. Two schools participated in New Jersey, five in Virginia, and 10 in Georgia.

Administrative information relative to the five safety belt programs was gathered from Grades K through 5. No information on a sixth-grade level safety belt program was collected as none was offered at the field sites. More information was available for lower grades (e.g., K through 3) than for upper elementary grades. This reflects the schools' implementation of safety belt instruction for lower and upper elementary grade levels (i.e., more programs are offered at the lower grade levels). More information was available for the Beltman and AAA programs than for the programs, Do You Buckle Up? and NHTSA's Safety Belt Activity Booklet. This also reflects an implementation pattern for safety belt instruction that mirrors the availability and distribution of currently available safety belt instructional programs for elementary schools. For the AAA (Grades K through 5), and Beltman (Grades K through 3) programs, four to six schools provided information. For the NHTSA Activity Booklet, one school was available and information was provided on the implementation at the second grade. For the Do You Buckle Up? program, one source was provided at the second grade, another at the fourth, and two at the fifth. Interestingly, one Beltman program was offered at the fourth grade and one Do You Buckle Up? was offered at the second grade, even though the program designers do not "market" the programs at those levels. Beltman is promoted as a K through 3 program, and Do You Buckle Up? is promoted as a 4 through 8 program. The Do You Buckle Up? program was the only program that spanned upper elementary and junior high levels. As was noted earlier, no programs were administered at the sixth grade level, nor were programs administered at the junior high level at the field sites. Table 1 provides a summary of the field sites identified in terms of safety belt program, grade level, State, and school.

School enrollments varied from a low of about 200 to a high of approximately 850 students. The typical range was from 300 to 500. Instructional staff size for participating schools was between 15 and 45, with most schools employing approximately 20-25 teachers. Administrative assessment information was provided by approximately 1/4 to 1/3 of the teachers assigned in the school. This was particularly true with regard to the AAA program.

**TABLE 1**  
**FIELD SITES**

<u>PROGRAM</u>	<u>GRADE</u>	<u>STATE</u>	<u>SCHOOL</u>
AAA	K	Virginia	Hilton, Lee Hall, Richneck, McIntosh
AAA	1	Virginia	Sedgefield, Hilton, McIntosh, Lee Hall
AAA	1	Georgia	Eastview, Sunset
AAA	2	Virginia	Sedgefield, Hilton, McIntosh, Lee Hall, Richneck
AAA	2	Georgia	Beaverbrook
AAA	3	Virginia	Hilton, McIntosh, Lee Hall, Richneck
AAA	4	Virginia	Sedgefield, Hilton, McIntosh, Lee Hall, Richneck
AAA	4	Georgia	Benning Hills
AAA	5	Virginia	Sedgefield, Hilton, McIntosh, Lee Hall
Beltman	K	Virginia	Sedgefield, Hilton Lee Hall, Richneck
Beltman	K	Georgia	Dougherty
Beltman	1	Virginia	Hilton, Lee Hall, Richneck
Beltman	1	Georgia	Laurens
Beltman	2	Virginia	Sedgefield, Hilton, McIntosh, Lee Hall, Richneck
Beltman	3	Georgia	Quitman
Beltman	3	New Jersey	Lincroft
Beltman	4	Georgia	Quitman
Buckle Up?	2	Georgia	Garrison-Pilcher
Buckle Up?	4	New Jersey	Redbank
Buckle Up?	5	New Jersey	Redbank
Buckle Up?	5	New Jersey	Lincroft
NHTSA	2	Georgia	Turner

## DATA COLLECTION INSTRUMENTS

Information items ranged from specific implementation procedures (e.g., changes in school programming) to utilization (e.g., modifications that were introduced), and the overall suitability of program materials. Two sets of information categories were identified:

- o Information that would provide an administrative picture at the school level.
- o Implementation at the class instruction level.

The "Administrative Fact Sheet" (Appendix E) and the "Basic Interview Questions" (Appendix F) were the basic data collection instruments.

The purpose for the Administrative Fact Sheet was to identify schools and their overall characteristics to determine the school's suitability for participation in more in-depth data collection for the administrative assessment. The Administrative Fact Sheet was designed to guide initial telephone communication with more detailed refinement occurring through on-site visits. The Basic Interview Questions were used as follow-up to determine the reasoning behind the decisions to use a safety belt instructional program. These two documents were the principal tools used by the field staff in collecting information for the qualitative assessment.

## ANALYSIS CATEGORIES

Four categories were identified to facilitate structuring, analyzing, and documenting results. The categories are:

- o Implementation procedures including specific expenditures incurred over and above program purchase price and specific changes or activities necessary for implementing (e.g., teacher training, schedule changes).
- o Materials use, including the addition of different materials, the deletion of existing materials, and the effect that either of these facts may have had on the program.
- o Program acceptance, including how the teachers judged the adequacy of the program in meeting safety belt instructional requirements, evidence of acceptance and/or acceptability, as well as teacher motivation and enthusiasm.
- o Improvement needs, including whether or not the methods and media were sufficient, whether the program needed updating or localization, and the suitability of the program for the specified audience.



## QUALITATIVE RESULTS

This section presents the results of administrative elements and how they relate to incorporation of one of the safety belt programs into a school. It is based on information and perceptions gleaned through the assessment process. While some of the results are general in nature, i.e., applicable to all programs, specific attention focuses on individual programs and their implications for the various grade levels. The results include:

1. An overview that is applicable to all programs
2. Individual program (e.g., AAA, Beltman) information from the above-noted analysis categories
3. A discussion of individual programs at specific grade levels in those instances where this information differs from the general pattern for the program as a whole.

## PROGRAM OVERVIEW

Categorizing program administration in a general way, i.e., in terms applicable to all programs in all schools and at all levels, is imprecise, at best. Indeed, different persons viewing the collected data may see different patterns emerging. No administrative pattern or approach to implementation portrays all situations. Different approaches, however, cut across schools while some within-school variations do exist. Despite these problems, reviewing the information from all participating schools brings two principal implementation approaches into focus. For the sake of convenience and identification they are labeled "structured" and "spontaneous."

### Structured Implementation

In the structured approach, the administration and program activities appear to be pre-planned and carried out systematically. This was evident where all teachers at a given grade level were involved and all students received the program. In addition, for each program, approximately two hours of instruction was provided at each grade level. While instruction may have been integrated with, for example, reading, it also was taught as a "separate safety unit" within the reading curriculum. Resource persons were frequently used. They were used, however, to assist or supplement activities carried out by teachers, rather than to replace the teacher. Structured programs were more likely to be implemented in those instances where the program was "required" or there was a strong implication that the program was required.

## **Spontaneous Implementation**

In contrast with the structured program, spontaneous programs were taught in fewer grades within a school and in a wide range of subjects such as health, social studies, and language arts. They were also taught as independent units or included in the more general curriculum (e.g., more than one subject). Instructional time ranged from five to ten hours per grade level. Also, extensive use was made of resource people. Spontaneous programs utilized resource people from within the school (e.g., other teachers), police agencies, legislative bodies, and, especially, community health programs. Spontaneous programs typically reflected the background and interests of the teachers involved. Also, the force behind implementation of the "spontaneous" programs was teacher interest and/or recognition of the importance to teach safety.

While other minor categories could be used to identify approaches, these two, structured and spontaneous, reflect the major differences in school implementation. Further, the division of the implementation of safety belt programs into the two categories does not reflect a judgment as to the adequacy of either approach. The most probable reason for the two approaches is the driving force or motivation for their implementation. In the structured approach, more students were reached because use of the program was basically a requirement. In the spontaneous program, fewer students were reached, however, those that were reached got a more lengthy instructional program.

## **PROGRAM RESULTS**

In this section, each of the safety belt instructional programs is discussed within the construct of the analysis categories identified earlier.

### **AAA**

The results cover both K through 3 and 4 through 6 elementary safety belt instructional programs.

### **Implementation Procedures**

The AAA programs were implemented as designed and as specified in the developer's guidelines. Programs were, for the most part, implemented without changes in school programming (e.g., schedules) and/or with additional expenditures for material. Further, little, if any, need existed for special teacher preparation activities to enable the teachers to follow the basic program. In some instances, however, teachers felt the need for additional materials, both to supplement existing programs and for additional "supplies" to be provided within the program (decals, stickers). Also, in some instances, teachers felt a need for teacher preparation on the technical contents and a desire for all teachers in the school to be exposed to safety instruction.

## **Materials Use**

Generally, the instructional materials were used as provided by the manufacturers and distributors. In some instances, materials were deleted because they were too abstract, lacked visual value (photographs), or failed to provide basics, e.g., vocabulary, for understanding the program. Teachers generally used all of the materials provided and expressed a desire for additional materials to meet basic instruction needs and increase enrichment opportunities.

## **Program Acceptance**

The teachers judged the program as generally acceptable. Evidence for acceptability included student enthusiasm and acquired knowledge as well as teacher acceptance and use of the materials. It was felt that the programs were easy to use and addressed an important subject area. Students evidenced the most enthusiasm and enjoyment with those programs that depended heavily on pictures. There was, however, a strong minority opinion that not enough materials were provided and instructional materials were inadequate (i.e., lacking in instructional aids). Further, the teachers reported that the "safety belt instructional programs" were not really instructional programs but were merely supplemental material suitable for use in addition to teacher-prepared units in safety and safety belt instruction.

## **Improvement Needs**

Specific instructional aids for most of the programs were identified as needing improvement. This ranged from those reflecting cosmetic changes to changes in the basic design. Generalized comments included such items as "programs are too abstract" and "programs are too advanced" for the intended audience. Further, several sources report the need for more real and varied aids. In addition, there was a strong minority opinion indicating that the programs needed to be updated and localized. Also, minority opinion emerged particularly role-playing type methods, was expressed. Presumably, role-playing methods provide for more concrete and hands-on experiences tempering what the teachers felt to be the more abstract and advanced methods on which the programs relied.

## AAA Grade K

In the area of program improvement needs, strong opinion was expressed to improve program posters. Teachers requested stiffer paper for display purposes and indicated that the content needed to be less abstract and more appropriate for this age group.

### AAA Grade 1

Teachers felt that the program could be improved with the addition of a tape or film strip to supplement or reinforce the existing program.

### AAA Grade 2

while the program was generally acceptable, teachers reported that it could be shortened. The posters were deficient (e.g., required stiffer paper). Further, the need for more aids was noted in order to provide for hands-on experiences.

### AAA Grade 3

The program was implemented as part of an overall traffic safety unit. Materials were adequate. The program could be improved by providing a display rack for the charts. Some very positive comments were offered for program acceptability and improvement. Teachers indicated they had a very positive student response. Teachers felt the program was easy to use and liked the teacher guides, especially the charts for instruction in conducting the survey. They particularly liked the guidelines and felt no need to change (i.e., localize) the program.

### AAA Grade 4

The teachers reported they did not have enough time to take advantage of all the materials provided. In terms of program acceptability, the teachers felt that they were motivated because they received the material early enough in the year to permit realistic planning for the school year. They also reported being motivated because they felt that child safety was important. Some of the teachers also indicated that the program could be improved. For example, they preferred more than one poster to support instruction. They felt that the poster could be constructed of heavier paper. In addition, they felt the need to involve teachers in localizing the program. They also believed safety belt instruction should be provided for more age groups. Interestingly, the reflection on program improvement was that, while the students enjoyed the program, exposure to it did not influence their behavior, i.e., students accepted the program but did not increase their belt usage.

### AAA Grade 5

In general, more critical comments were offered about the fifth grade level AAA program than for any of the other grade levels.

- o Program Implementation--Teachers used the available material. A strong consensus, however, did not believe the materials constitute a real program. The heart of the "AAA Program" is the posters. Sources indicated that many other methods and

materials are drawn from the school safety unit and from health units currently used in the school. In summary, the AAA materials support instruction but cannot serve adequately as a "stand-alone" unit for a safety belt program.

- o Materials Use--It was indicated that the poster was used, but the activity was not used by all teachers.
- o Program Acceptability--Teachers indicated that they were more motivated to teach about safety belts than they were to use the AAA instruction program. On the positive side, they felt the materials were attractive, they used the poster, and they used the idea of the poster contest. They concluded, however, that the program would not be acceptable as a stand-alone program. Rather, it would serve best as a supplement to the health unit.
- o Program Improvement Needs--Strong opinion was expressed that the program requires an instructional design including objectives, varied methods and materials, and evaluation procedures.

## **BELTMAN SAFETY BELT PROGRAM**

The Beltman Safety Belt Program was designed for Grades K through 3. In general, comments indicated that the program was expensive and required extensive instruction--five to ten hours. The basic implementation pattern was to provide only one or two hours of instruction at each grade level and to integrate the program into a reading unit. The Beltman program relies on a film strip for instruction. The use of the film strip requires preview time by the teacher as well as coordination with the media department. In some cases, the teachers indicated that they had to adjust their schedules according to the availability of projection equipment.

### **Beltman Grade K**

- o Implementation Procedures--A major problem was modifying the program to meet student functioning levels. Vocabulary had to be carefully selected in an effort to increase the chances of student comprehension. Many elements had to be simplified to match student understanding level. For the program to be considered sufficient, it was necessary to integrate the Beltman program into an overall safety unit. It was not considered sufficient as an independent unit.
- o Materials Use--A wide pattern of implementation existed for the materials. The pattern included (1) all materials used in some instances, (2) selected materials used to augment existing unit, and (3) material that was not used at all because of insufficient supplies to meet class enrollment size. For example, the standard quantity of iron-on insignia provided in the kits was not adequate for some existing classes. In

addition, only one safety belt is provided for student practice. Teachers indicated that it was difficult to keep the attention of a kindergarten group if only one child can participate at a time. In general, the sources would like to see materials to support more hands-on instruction. It must be recognized, however, that providing more than one belt might price the program beyond the market.

- o Program Acceptability--Program acceptability was somewhat controversial. Teachers indicated that the materials provided in the program were easy to use but that not enough materials were provided to support instruction. There were indications that teachers must rely on their own resources and knowledge of safety belts in order to teach with this program.
- o Program Improvement Needs--There was strong consensus for the need to provide background information for teachers and less abstract and more concrete materials for students. Further, the teachers indicated a strong preference for a self-contained program if they were to both learn from (e.g., prepare to teach) and teach from the available program resources.

### **Beltman Grade 1**

Several suggestions were offered on program acceptability and improvement. The program would be acceptable if more materials were provided and additional instruction methods employed. Recommended alternative methods included discussion to gain more student interest. Some cases were reported in which difficulties were encountered in using the slide tape program. The reports indicated that the cassette tape did not match the film strip and/or that the pulsing/signal mechanism advancing the film strip was inadequate. Additionally, teachers reported the need for more information both to prepare to teach and enrich instructional content.

### **Beltman Grade 2**

Teachers generally found the AV program acceptable. Some criticism, however, focused on:

1. Vocabulary and comprehension level
2. Excessive length of the program
3. Absence of hands-on activities.

As a result of these factors, some teachers omitted some material to fit available instructional time.

### **Beltman Grade 3**

The Beltman program at Grade 3 was judged as generally acceptable in that the students enjoyed it and the program stimulated discussion. For the most part, the program was implemented as designed with no recommendations for improvement at this level.

### **NHTSA SAFETY BELT ACTIVITY BOOKLET GRADE 2**

Assessment comments provided on the NHTSA Safety Belt Activity Booklet were similar in nature to those provided for all programs.

- o Implementation Procedures--For the most part, the program was implemented as designed, that is, the activities within the booklet were used. Teachers needed no special preparation. Approximately five hours were devoted to instruction.
- o Materials Use--All materials provided in the program were used.
- o Program Acceptance--The program was judged to be generally acceptable. Students appeared to enjoy the instruction and experience. Teachers also reported enthusiasm for the program. The program was ranked higher in those districts where teachers were able to select the program rather than where the program was required by the school district.
- o Program Improvement Needs--Two areas of suggested improvement were identified. The teachers indicated that the program should be made more readily available to schools and that the booklets should be updated on an annual basis.

### **DO YOU BUCKLE UP?**

Do You Buckle Up? is a safety belt program designed for upper elementary and middle school students. Based on the developmental assessment reported earlier, the program is somewhat juvenile for middle school level students (e.g., seventh and eighth grade). Also, few programs were found in use at the sixth grade level. The program also was used at the lower elementary level (e.g., Grade 2).

The Do You Buckle Up? program, particularly if implemented in Grades 3 through 5, overcomes many of the concerns teachers expressed about other programs. The Do You Buckle Up? program can support approximately two meaningful hours of instruction. In those instances where implementation goes beyond two hours, the teachers report that more materials would be necessary. Additionally, a stronger appeal was made for teacher (e.g., technical) support material for this program than for any other program. This seems reasonable since presentations at the upper elementary grade level become more "sophisticated" and rely on a greater teacher understanding of the subject matter. The program also was implemented in a variety of ways. The program was taught by teachers (e.g., reading with special teacher preparation) and also by outside resource persons (e.g., nurses).

## SUMMARY OF ADMINISTRATIVE ASSESSMENT RESULTS

As a rule, all programs received positive assessment from those involved in delivering instruction. Acceptance could be enhanced somewhat if more technical information were provided teachers so that they could (1) understand the need for safety belts, and (2) explain to students the rationale for using belts. Additionally, if the programs provided more varied materials, teacher acceptance would be enhanced. With more varied materials and methods, teachers could select those that best met the needs of their students. Further, since many teachers rely on resource persons to provide instruction or to supplement teacher instruction, guidelines on the appropriate kinds and uses of resource people might be helpful for many of the programs. Finally, most teachers indicated they implemented the program as designed. This result should be viewed cautiously, however. As is the case with all educational programs, teachers pick, choose, and adjust recommended methods to meet their own interest and abilities as well as that of the students. It would, therefore, be erroneous to conclude that teachers participating in this assessment followed program design to the letter. It would be reasonable to assume that programs would be administered differently by different teachers even in those instances where they were attempting to provide identical instructional experiences.



**IMPACT ASSESSMENT OF SELECTED K-6  
ELEMENTARY SCHOOL SAFETY BELT EDUCATION PROGRAMS**

This section describes an impact evaluation of five elementary school safety belt programs. The purpose was to assess each of the programs' effectiveness in improving youngsters' knowledge about, attitudes toward, and self-reported safety belt use. The evaluation was carried out during the fall semester of the 1983-84 school year.

The five programs selected for evaluation were:

<u>Program</u>	<u>Source</u>	<u>Grades</u>
The Adventures of Beltman	FLI Learning Systems	K-3
The AAA Lower Elementary Traffic Safety Program	American Automobile Association	K-3
The AAA Upper Elementary Traffic Safety Program	American Automobile Association	4-6
NHTSA Safety Belt Activity Book	National Highway Traffic Safety Administration	K-6
Do You Buckle Up?	FLI Learning Systems	4-6

This section describes evaluation:

- o Methods
- o Results
- o Conclusions
- o Recommendations

## **METHODS**

The five safety belt programs were evaluated by assessing changes in knowledge of, attitudes toward, and reported use of safety belts following participation in the programs. This description of methodology, includes the evaluation design, evaluation instruments, and administrative procedures.

### **Evaluation Design**

A before-and-after design with comparison groups was employed. Measures of knowledge, attitude, and self-reported behavior were administered before and after students participated in the programs. The measure of program effectiveness was the change between the pretest and posttest results.

The programs were administered to students in elementary schools in New Jersey, Georgia, and Virginia. For each participating school, another school in the same district was selected as a comparison group. Identical test measures were administered to students in these schools at the same points in time. However, no safety belt programs were taught in the comparison schools.

No attempt was made to match the students in the comparison school classes with their counterparts who received a safety belt program. The students in the comparison schools were not intended to provide a "control" group for the evaluation. Rather, students receiving the safety belt programs served as their own controls by taking the same measures before and after receiving the program. The purpose of the comparison group was simply to provide a means of determining the effect of any factors other than the training program that might bring about changes in knowledge, attitude, or self-reported behavior during the pre- and post-test administrations. To guard against the possibility that changes occurring within schools receiving the program were the result of some external factor that was unique to the school (and did not affect the comparison groups), each program was replicated across at least two schools at each grade level for which it was intended.

### **Effectiveness Measures**

A questionnaire (Appendix G) was developed specifically to assess changes in knowledge, attitude, and behavior resulting from exposure to program materials. The breakout of items by categories was as follows:

Knowledge	-	9
Attitude	-	7
Behavior	-	3

Since actual use of a safety belt is rather simple, the knowledge items dealt primarily with reasons for wearing safety belts. The attitude items dealt with opinions concerning conditions under which safety belts should be worn. The three behavior items assessed the frequency of safety belt use by the student, by the student's family, and by the student's friends.

The same questionnaire was used as both a pre- and post-test. There are simply not enough questions one can ask children about safety belts to permit alternate forms. Any pre-post changes in responses to the questionnaire resulting merely from readministration of the questionnaire itself could be identified through the comparison groups.

### **Administrative Procedures**

A total of 16 schools and 23 teachers (classes) agreed to participate in the program by administering one or more of the safety belt programs

along with the pre- and post-tests. For each of the 23 participating classes, a comparison class (without a safety belt program) in the same district was identified and had agreed to administer pre- and post-tests. It was not possible to exercise control over the courses that were administered by individual schools. Teachers taught the course that interested them and administrators the most. In some cases, the program was already being used. The number of teachers (classes) selecting each program at each grade level is shown below:

<u>Grade</u>	<u>PROGRAM</u>			
	<u>Beltman</u>	<u>Do you buckle up?</u>	<u>AAA</u>	<u>NHTSA</u>
K	1			
1	2		2	1
2	2		1	1
3	5		2	
4			2	
5		2	2	

In the schools teaching the safety belt program, a schedule of administration was prepared for the pre-test, instructional program, and post-test. Teachers in the comparison schools were asked to follow the same schedule with respect to pre- and post-test administrations.

Classes in which the safety belt programs were taught ranged in size from 20 to 30 students. No special instruction was given to any of the teachers in administration of the programs. All teachers were dependent upon information furnished with the program materials, as would be the case normally.

For those classes in which students were able to read at a level commensurate with the test items, the questionnaires were self-administered. Teachers were available to assist those students having trouble. At the lower grade levels (K-3), the questions were read aloud to the students and they were shown how to mark a response. It was necessary that the names of the students be entered on the questionnaires in order to permit pre- and posttests to be matched for analysis purposes. The questionnaires themselves were color-coded to prevent any confusion between pretests and post-tests.

Questionnaires were distributed to and retrieved from individual schools by field staff.

## RESULTS

This part of the report describes the results obtained from administration of the knowledge, attitude, and behavior self-report measures.

## Knowledge

Knowledge test results for all programs and all grades appear in Tables 2 through 5. The numbers in the table represent percent gain, that is, the difference between pretest and posttest results expressed as a percent of pretest scores. Since results differed markedly across schools, no attempt has been made to pool data across schools. Note that each treatment school is paired with a comparison school from the same district.

Before discussing individual programs, it is important to note that all groups scored very high on the pretest. With a maximum score of 18, all schools averaged over 14 correct and three-quarters of the schools averaged over 15 correct. This does not leave a great deal of room for improvement, hence, the rather modest knowledge gains shown in the table.

### Beltman/Do You Buckle Up?

Five of the 10 schools in which the Beltman program was given showed significant knowledge gains. The two schools administering its fifth grade counterpart, Do You Buckle Up?, also showed significant knowledge gains. Of the remaining five schools, three showed nonsignificant gains and two showed significant knowledge losses. Before too much attention is paid to the losses, it should be recognized that pretest scores in the two schools were very high. In the school showing the 6.4% loss, the pretest mean was 17.4 items correct out of a possible 18. The posttest mean of 16.3, while a drop, was still comparable to posttest scores in schools showing sizeable gains.

The comparison schools showed largely a chance pattern of gains and losses. Only one of the 12 schools showed a significant gain, something that could occur by chance alone.

Overall, the Beltman and Do You Buckle Up programs appeared to produce significant knowledge gains among already knowledgeable students.

### AAA Program

Significant knowledge gains were evident in four of the nine schools given the AAA program. In three of the schools, the knowledge gains were quite sizeable (greater than 10%). There is no ready explanation for why the gains were so meager in the remaining schools. Pretest scores were not particularly high and there was certainly room for improvement. All that can be said is that it seems to have worked in some schools and not in others. The administrative evaluation revealed that teachers varied in their approach to administering the various programs. It may be simply that it was not taught well in some schools.

There is the disquieting note of significant gains found among two of the eight comparison schools (one of the original comparison schools failed to complete the testing). The gains are small and the significance is marginal. It is conceivable that something happened between pre- and post-tests to increase the students' knowledge of safety belts. Whatever it was,

TABLE 2

KNOWLEDGE

Beltman

(18 possible points)

TREATMENT				COMPARISON				
1 Grade	Pre-Test Mean	Post-Test Mean	2 Gain/ Loss	1 Grade	Pre-Test Mean	Post-Test Mean	2 Gain/ Loss	
<u>K</u> a	14.5	14.81	2.1	<u>K</u> a b	13.42	13.73	2.4	
					b	13.69	14.12	3.2
<u>1</u> a b	17.38	16.27	-6.4**	<u>1</u> a b	14.90	15.28	2.5	
	15.87	16.56	4.3*		b	14.57	14.24	-2.3
<u>2</u> a b	14.83	15.25	2.8	<u>2</u> a b	15.12	15.12	0	
	15.42	17.04	10.5**		b	15.09	15.54	3.0
<u>3</u> a b c d e	14.66	16.55	12.9**	<u>3</u> a b c d e	14.95	14.10	-5.6	
	15.41	16.76	8.8**		b	15.43	15.81	2.5
	15.62	17.81	13.9**		c	15.67	15.76	0.6
	14.75	15.04	2.0		d	13.95	15.70	12.5**
	15.29	14.87	-2.7**		e	15.27	15.52	2.2

\* P < .05  
\*\* P < .01

1/ Each letter designation indicates a different class or consort.  
2/ Each entry shows the mean pre-post knowledge gain (or loss) as a percent of the pre-test mean.

**TABLE 3**  
**KNOWLEDGE**  
**DO YOU BUCKLE UP?**  
(18 possible points)

TREATMENT				COMPARISON			
<sup>1</sup> Grade	Pre-Test Mean	Post-Test Mean	<sup>2</sup> Gain/ Loss	<sup>1</sup> Grade	Pre-Test Mean	Post-Test Mean	<sup>2</sup> Gain/ Loss
<u>5</u> a	15.58	17.79	14.2*	<u>5</u> a	15.5	16.45	6.1*
b	15	16.64	10.9*	b	15.27	15.52	1.6

\* P < .01

1/ Each letter designation indicates a different class or consort.

2/ Each entry shows the mean pre-post knowledge gain (or loss) as a percent of the pre-test mean.

TABLE 4  
KNOWLEDGE

AAA

(18 possible points)

TREATMENT				COMPARISON			
Grade <sup>1</sup>	Pre-Test Mean	Post-Test Mean	Gain/ Loss <sup>2</sup>	Grade <sup>1</sup>	Pre-Test Mean	Post-Test Mean	Gain/ Loss <sup>2</sup>
<u>1</u> a	14.41	15.41	6.9*	<u>1</u> a	15.10	15.21	0.7
b	15.22	17.72	16.4**	b	N/C	N/C	N/C
<u>2</u> a	15.14	17.00	12.3**	<u>2</u> a	15.06	15.25	1.3
<u>3</u> a	15.68	16.09	2.6	<u>3</u> a	14.94	15.59	4.3*
b	15.04	15.28	1.6	b	14.86	15.41	3.6*
<u>4</u> a	15.3	15.6	2.0	<u>4</u> a	15.58	15.75	1.1
b	15.76	15.86	0.6	b	15.37	15.31	-0.3
<u>5</u> a	16.05	16.48	2.7	<u>5</u> a	15.53	15.68	1.0
b	15.39	17.04	10.7**	b	15.79	15.96	1.1

\*  $p < .05$   
 \*\*  $p < .01$   
 N/C This school did not complete the testing.

1/ Each letter designation indicates a different class or consort.  
2/ Each entry shows the mean pre-post knowledge gain (or loss) as a percent of the pre-test mean.

**TABLE 5**  
**KNOWLEDGE**  
**NHTSA**

(18 possible points)

TREATMENT				COMPARISON			
Grade	Pre-Test Mean	Post-Test Mean	Gain/ Loss <sup>1</sup>	Grade	Pre-Test Mean	Post-Test Mean	Gain/ Loss <sup>1</sup>
<u>1</u>	14.45	16.25	15.0**	<u>1</u>	14.95	14.9	-0.3
<u>2</u>	16.48	15.04	-8.7**	<u>2</u>	15.00	15.48	3.2*

\* P < .05

\*\* P < .01

<sup>1</sup>/ Each entry shows the mean pre-post knowledge gain (or loss) as a percent of the pre-test mean.



it did not affect their counterparts in the treatment schools, which were among those showing no gain.

It would appear that the AAA program is capable of producing knowledge gains, although only if taught well.

### NHTSA Program

The results from the NHTSA program are ambiguous. One of the two schools receiving the program showed a significant gain of 15% while the other showed a significant loss of 8.7%. Meanwhile, one of the comparison schools showed a small but significant gain.

It is difficult to generalize results of the NHTSA program since it was given at only two schools. Additionally, the program is designed for use in Grades K-6. Since this assessment included only Grades 1 and 2, interpretations must be limited to those grade levels. Further, there is some evidence that upper level grades may achieve greater gains than lower in some safety belt instruction and this assessment precludes measurement of such gains. The results at either school could be considered flukes. In the schools showing the gain, not one of the 20 students receiving the program showed a decline from pretest to posttest scores. Conversely, in the schools showing the overall decline, not one of the 23 students receiving the program showed a gain.

The appearance of a significant gain in one of the comparison schools, while puzzling, should not be particularly disconcerting. The gain was very small (3.2%) and significance was marginal.

### Summary

It appears that all the programs evaluated are capable of leading to significant gains in knowledge about safety belts among grade school children. The magnitude of the gain is obviously dependent to a great extent upon how much the children know to begin with. However, it also appears to depend upon how well it's taught. Not only did some classes fail to learn anything, as a group, but it seems that some classes ended up knowing less than when they began. This is not a particularly surprising outcome.

This result may be due, in part, to the ages of the students. Most of the traffic safety programs evaluated through knowledge change have been aimed at high school and adult groups. Older students and adults are able to acquire information in a variety of ways, through lecture, written materials, films, and so on. Children in elementary school are much more dependent upon the teacher for what they learn. If a teacher fails to give a point sufficient emphasis, fails to cover it altogether, or--even worse--miscommunicates, the children will not evidence learning. If this is the case, in attempts to achieve uniform gains in information about safety belts among elementary school children, the materials with which they work should be easily understandable, perhaps oriented toward audiovisual techniques that stand on their own in providing essential points.

## Attitudes

Results from administration of the attitude measure appear in Tables 6, 7, 8, 9. The results show a change in attitude as a percent of attitude score on the pretest. Positive scores represent attitude changes in a direction favorable to safety belt use; negative scores represent a change toward less favorable attitudes.

The results can be summarized very quickly: no change. The small shifts in both directions can be viewed as chance fluctuations around an overall mean of zero. These results, however, should not be viewed as reflecting any inadequacies of the programs. The children's attitudes were so overwhelmingly favorable to safety belts before they entered the program that there was scarcely any room for improvement. The highest score possible was 14. All of the classes averaged higher than 13.0 on the pretest and several averaged as high as 13.9.

These results do not mean that elementary school children's attitudes toward seatbelts are as favorable as possible or that the programs could not make changes. A more sensitive attitude measure, one that allowed children to express even more favorable opinions, might have registered a change. It is fair to say, however, that attitude toward use of safety belts was high to begin with and the programs made no discernible change.

## Behavior

The students were asked about the extent of their own use of safety belts as well as that of their family and friends. Tables 10, 11, 12, 13 present changes in reported use between the pre- and post-test.

In the children's own behavior, there were few significant changes. There were two classes that significantly increased use, three that significantly decreased usage, and five with no changes at all. Four changed in a positive direction and nine in a negative direction, none were significant. This general pattern also was seen in the comparison classes. The predominance of negative changes, and the number of statistical findings, suggest that the shift toward less frequent reported use is not a chance phenomenon.

Before attempting to interpret these results, let us proceed to reported use by family and friends.

In the students' reports of safety belt use by members of the family, the changes again tend to be in a negative direction, including 9 out of the 11 achieving statistical significance.

Student reports of changes in safety belt wear by friends are again negative, including 10 out of the 12 achieving statistical significance.

Since the changes toward less frequent safety belt use were reported by students in comparison schools as well as those receiving the programs, they obviously had nothing to do with the programs. And, since the changes were reported for safety belt use by family members and friends, it had nothing

**TABLE 6**  
**ATTITUDE CHANGE**

GRADE	PROGRAM	
	BELTMAN	
	Treatment	Comparison
<u>K</u>	0.8	-2.4
		0.9
<u>1</u>		
a	-5.9*	-2.8
b	-0.4	3.5
<u>2</u>		
a	-0.6	0
b	0	0.7
<u>3</u>		
a	0	0.4
b	0.4	-4.2
c	0.5	0
d	0.6	0.4
e	0.3	- .7

\* P < .01

1/ Each letter designation indicates a different class or consort

**TABLE 7**  
**ATTITUDE CHANGE**

GRADE	PROGRAM	
	AAA	
	Treatment	Comparison
<u>1</u>		
a	1.3	-2.3
b	0.4	
<u>2</u>		
	2.0	-0.4
<u>3</u>		
a	0.3	3.5*
b	0	-1.0
<u>4</u>		
a	1.4	0.3
b	-0.4	0.7
<u>5</u>		
a	0	0.7
b	1.9*	2.1

\* P < .05

1/ Each letter designation indicates a different class or consort

**TABLE 8**  
**ATTITUDE CHANGE**

GRADE	PROGRAM	
	NHTSA	
	Treatment	Comparison
<u>1</u>	0.7	-0.7
<u>2</u>	-1.2	0.3

**TABLE 9**  
**ATTITUDE CHANGE**

GRADE	PROGRAM	
	DO YOU BUCKLE UP?	
	Treatment	Comparison
<u>5</u>		
a	0.6	0.3
b	-0.8	0

1/ Each letter designation indicates a different class or consort

Each entry shows the pre-post change as a percent of pre-test mean.

**TABLE 10**  
**BEHAVIOR CHANGE**  
**BELTMAN**

Each entry shows the pre-post change in the students' own safety belt use as a percent of pre-test mean.

GRADE	OWN		FAMILY		FRIENDS		
	T	C	T	C	T	C	
<u>K</u>	a	-14.4	0	-14.9	3.7	-25.1*	4.0
	b	***	9.5	***	0	***	-4.8
<u>1</u>	a	4.0	-15.1	4.0	-22.4*	0	-9.3
	b	- 4.0	13.6*	15.0	0	10	0
<u>2</u>	a	15.2	12.3*	25.0*	-12.3*	0	-8.3
	b	-11.9	-15.9	4.6	0	- 9.7	-26.0*
<u>3</u>	a	0	- 7.8	4.5	-12.4*	11.1	- 4.4
	b	0	-20.0*	5.0	-11.5	9	-21.5**
	c	- 5.6	- 3.9	- 8.1	8.9	-19.3**	- 9.3
	d	- 8.8*	- 3.1	- 6.4	- 7.0	3.3	- 7.8
	e	9.3	-15.4*	-21.0*	-15.4*	5.6	0

\* P<.05

\*\* P<.01

\*\*\* Data not available

1/ Each letter designation indicates a different class or consort.

TABLE 11  
BEHAVIOR CHANGE

AAA

Each entry shows the pre-post change in the students' own safety belt use as a percent of pre-test mean.

GRADE	OWN		FAMILY		FRIENDS	
	T	C	T	C	T	C
<u>1</u> a	0	5.1	-15.5*	- 4.9	-27.0**	17.4
b	-9.0	***	-17.2	***	0	***
<u>2</u>	5.4	- 4.1	18.8*	- 4.0	-16.7*	-12.3*
<u>3</u> a	0	- 4.3	-6.4	- 4.5	-31.9**	- 4.3
b	-5.3	-14.8	0	- 5.2	2.9	-11.7
<u>4</u> a	-14.8*	-11.7*	-7.7	- 7.0	- 8.0	- 3.1
b	- 8.5	-32.9*	14.9	-28.7**	5.1	-22.4*
<u>5</u> a	-25.4*	-15.0*	-37.1**	-8.9	-12.8	-18.6*
b	41.9**	-18.9**	-31.4**	-14.3	-45.0**	- 7.4

\* P<.05  
\*\* P<.01  
\*\*\* Data not available  
1/ Each letter designation indicates a different class or consort.

**TABLE 12**  
**BEHAVIOR CHANGE**  
**NHTSA**

Each entry shows the pre-post change in the students' own safety belt use as a percent of pre-test mean.

GRADE	OWN		FAMILY		FRIENDS	
	T	C	T	C	T	C
1	14.3*	- 7.1	9.1	- 6.9	-10.5	0
2	0	4.8	0	0	- 7.1	29.2**

\* P<.05  
\*\* P<.01

**TABLE 13**  
**BEHAVIOR CHANGE**  
**DO YOU BUCKLE UP?**

Each entry shows the pre-post change in the students' own safety belt use as a percent of pre-test mean.

GRADE <sup>1</sup>	OWN		FAMILY		FRIENDS	
	T	C	T	C	T	C
<u>5</u> a	-4.8	4.7	- 9.7	- 4.5	0	-23.4
b	-31	4.1	3.2	0	- 3.4	-20.1

1/ Each letter designation indicates a different class or consort.

to do with anything going on in the schools. Finally, it is not due to extremely high reported pretest use; in all three categories of behavior, responses to frequency of safety belt use were fairly equally distributed across the responses "never", "a little", and "a lot".

One possible explanation for these results is that taking the pretest sensitized students to the issue of safety belt wear. Thus sensitized, they may have been more observant of their own use of safety belts as well as that of family members and friends. Since safety belt use is generally low, those who observed accurately may have discovered that everyone was wearing safety belts less frequently than at first thought.

Whatever the explanation for the changes shown in Tables 10-13, the results cannot be taken as evidencing any effect of the programs upon actual safety belt use.

## CONCLUSIONS

From the results described, we can offer the following conclusions as to the effect of the safety belt programs upon the knowledge, attitudes, and behavior of students.

1. All programs appeared to be capable of leading to significant gains in knowledge concerning safety belts among students at all grade levels. However, the effect of the programs upon knowledge appears to vary markedly as a function of the manner in which the program is used. All programs can be taught in a way such as to produce no knowledge gain and can possibly lead to misconceptions.
2. The ability of the safety belt programs to produce changes in attitudes cannot be confirmed by results of the present study. This is due primarily to the students' highly favorable attitudes toward safety belts before being exposed to the program.
3. No assessment can be made of the effect of the programs upon the students' actual use of safety belts. One interpretation of the results suggests that exposure to the questionnaire concerning safety belt use caused students to be more observant of their own use as well as that of family and friends, and to see such use as being less frequent than originally thought.

## EVALUATION OF "3 SECONDS TO SAFETY"

This section presents an evaluation of the program, "3 Seconds to Safety", developed for the American Seat Belt Council and Daniel J. Edelman, Inc. by the Communications and Education Group, a Division of Mazer Corporation. The program was designed for use by elementary school students in Grades three through six and by Cub Scouts in their traditional den setting.

Two separate studies were conducted, one in elementary school settings and the other in the Cub Scout environment. The elementary school evaluation was completed and submitted to the National Highway Traffic Safety Administration in final form in September 1983. Since it has been published\* in its entirety, it will, for the purposes of this report, only be summarized briefly.

The Cub Scout evaluation, while completed in April 1984, has not yet been published. Hence, it will be reported in its entirety.

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\* Cushman, W.D. and Pain, R.F. Evaluation of "3 Seconds to Safety". Performed under contract to the National Highway Traffic Safety Administration by the American Driver and Traffic Safety Education Association. Final Report. Report #DOT-HS-806 511, September 1983.



## ELEMENTARY SCHOOL EVALUATION

This section summarizes a study conducted to assess the effectiveness and utility of "3 Seconds to Safety," an instructional reading program about seat belts for Grades three to six. The objectives were to determine whether the instructional materials could increase knowledge and improve attitudes among elementary school youth and to identify teacher perceptions relative to the material's usability and value to their instructional objectives. The experiment was conducted in two Fairfax County, Virginia, elementary schools. A pre-test established student knowledge and attitude baselines prior to instruction. Treatment groups in each grade were then exposed to instruction using the program materials. Control groups received no instruction. A post-test was administered to determine changes in knowledge and attitudes. The treatment groups took a followup test two weeks later. Statistically significant increases in tested safety belt knowledge were found. It was not possible to gauge program impact on children's attitudes as pre-test scores were too high to permit measurable change. Teacher perceptions were gleaned from a brief questionnaire and an oral debriefing session. In general, the teachers found the materials useful and of value. Fourth and fifth grade teachers, particularly, offered strong positive comments. While third and sixth grade teachers were positive, they indicated that the materials would be better if down- or up-graded for those levels.

### TREATMENT

"3 Seconds to Safety" is an instructional reading program designed for grades three to six. The program is divided into five teaching units. Each unit has one or more "activity masters." The six activity masters each have a content or seat-belt-related objective. Four of the six activity masters also have a reading skill objective. Thus, the program is designed to support the development of four reading skills:

- o finding the main idea
- o identifying detail
- o sequencing
- o drawing conclusions.

Teachers of the treatment group and control classes were randomly assigned by their principals. Three to five days after administering the pre-test, teachers began the instructional program. Each teacher was given an instructional package and asked to complete teaching the material within four weeks. Teachers had complete freedom to use, adapt and schedule the materials as they deemed appropriate. This unrestricted approach to treatment application represents the way "3 Seconds to Safety" would likely be used after mass distribution.

## MEASURES OF EFFECTIVENESS

Two types of measures were used in the evaluation. A knowledge and attitude test\* was developed specifically for the "3 Seconds to Safety" materials. Teachers completed a questionnaire and responded to questions in a debriefing about their experience with the program.

### Teacher Questionnaire and Debriefing

A brief teacher questionnaire\*\* (5-10 minutes' completion time) was prepared and administered. It addressed such points as:

- o which activity units were used and in what order
- o adequacy and problems of instructional material organization
- o reactions to four issues for each activity unit
  - instructional material effectiveness in reaching objectives
  - student interest and involvement in learning activities/ideas
  - specific problems and suggestions for changes
  - time required to teach each unit.

Treatment group teachers were assembled in each school after the post-test was completed. They filled out the questionnaire, then responded to interview questions posed by project members.

The group interview\*\*\* was conducted as a discussion. The initial questions, "Did you have any success? What did you think of the program?" opened the discussion. In the course of the discussion, four additional areas were covered:

- o student response and involvement
- o usefulness of the reading objectives
- o problems encountered
- o suggested changes

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\* Appendix H

\*\* Appendix I

\*\*\* Appendix J

## RESULTS

The evaluation showed that the program does significantly increase knowledge of safety belts. Considering the rather high pretest scores of students, the mean increase of 1 to 2.5 test points suggested the effect to be of practical use. In other words, a substantial percentage of the students exposed to the program retained a relatively high level of seat belt knowledge. Because attitude pretest scores were so high, it was not possible to gauge the program's impact on children's attitudes to seat belts.

The evaluation was conducted in schools which have a regular safety program. The high pre-test scores may not be totally representative of other school systems. Likewise, the test score increases attributable to exposure to the materials may be conservative for schools where there is little or no safety training.

Finally, this evaluation tested only knowledges/attitude changes. No impact on behavioral change, i.e., increase in seat belt usage is implied by these findings.

### Teacher Questionnaire/Interview Results

Responses to the questionnaire were summarized by grade, school and activity unit. Interview comments were also summarized by grade and school. There was considerable overlap between the questionnaire and interview responses, especially in judging success of the instructional materials.

### Synthesis of Teacher Questionnaire Responses

- o Materials, activities targeted to younger children--too basic for 6th graders.
- o Interest of sixth graders variable and probably dependent on what teacher brings to lessons. Materials themselves generate little interest.
- o Variably successful with third graders; depends on particular class reading/vocabulary ability; some classes may not develop interest in lessons; may take more time per lesson to get third graders interested.
- o Materials work better for fourth and fifth grades; evoke interest, involvement; helpful in supporting reading skills learned in class.
- o Teaching time per unit ranged between 10-40 minutes with an average around 20 minutes.
- o Materials are well organized.
- o Only one out of eight teachers used a unit in other than the 1, 2, 3, 4, 5 sequence.

SYNTHESIS OF TEACHER INTERVIEW RESPONSES  
(SCHOOL A)

3rd	4th	5th	6th
Vocabulary difficult			
Liked egg demo			
No questions about pregnancy (asst. principal is pregnant)		Recently had sex education	
Quality of dittos a problem	They ran (bled) Xerox copies would be better		
Nursery rhymes not familiar to kids			
Interested in belts	Liked survey	Liked survey	Fresh ideas, well-written
Too hard for a few	Interest in well speed & injury information	Kids embarrassed because parents didn't wear belts	Kids interested and enjoyed activities
Could expand easily for activities, e.g. create notebooks, more coloring activity	Tied in well with reading/sequencing  Some activities used for poor readers  High 4th graders enjoyed it more than lower half of class	Kept bringing up being thrown from car  OK for weak 5th Grade	Lots of curiosity about pregnancy  Had them outlining; need more expansion materials  Used lots of personal stories about people killed  Many felt they knew it already. Too childish for 6th, not challenging enough, need more content

SYNTHESIS OF TEACHER INTERVIEW RESPONSES  
(SCHOOL B)

3rd	4th	5th	6th
Not one child understood word pregnant	Kids didn't take time to learn, e.g., sequencing	Very receptive, poster on board could be easily expanded	Not much enthusiasm after first unit
Problems w/underlining	Kids had lots of preconceived ideas	Many took survey home to ask parents	Liked survey but otherwise hard to keep interest
Had difficulty with reading objectives	Materials lead to good discussion	Reading objectives useful	Too easy for them, e.g., nursery rhymes
Cartoon style might be more appropriate	<p>Needed this lead-in</p> <p>Discussion did more to change minds than training materials</p> <p>Difficulty getting into it but they enjoyed it once they did</p> <p>Reading objectives were useful</p>	<p>Offered instruction in brief time frames on alternate days</p>	<p>Felt seat belts a danger; several kids had examples where they had to get out quick</p> <p>Discussed inconsistency between car and school bus seat belt needs</p> <p>Many said belts are a nuisance, inconvenient, and they don't like being restrained</p> <p>Kids felt they had to do lessons--never got into it</p>

## RECOMMENDATIONS

- o The program is well organized and easy to use with 4th and 5th grade children. Except for improving logistics, e.g., ditto masters, the materials appear ready for national distribution.
- o Use with 3rd and 6th grade children was effective in increasing knowledge. However, teachers faced a greater challenge in presenting the existing materials. Additional activities, geared down for 3rd or up for 6th grades, would make the materials more usable.
- o A test of this, and other educational material, to determine if there is any relationship of knowledge or attitude to behavioral outcome, i.e., seat belt use, would provide a more effective evaluation.
- o Teacher orientation in safety belt concept generally, and the "3 Seconds to Safety" materials specifically, would likely promote more effective teaching and learning experiences.
- o Testing of the material in additional schools could provide a more accurate index of instructional impact, e.g., in the present study, the schools had established safety programs. Some schools undoubtedly have lesser or no safety programs and some may have more effective programs. Presumably, instructional impact for these materials would vary accordingly.
- o If material is distributed nationally, school personnel should be cautioned as to the need to expand, modify, and upgrade the materials and instruction as youngsters move upward through the grades.

## CUB SCOUT EVALUATION

The purpose of this study was to assess the effectiveness and utility of "3 Seconds to Safety," an instructional program about safety belts for Cub Scouts.

Specifically, the objectives of the study were to:

1. Determine whether or not the instructional materials led to increased knowledge and improved attitudes about safety belts among Cub Scouts, and
2. Determine leader perceptions about the program relative to its feasibility as a scouting activity and value to their objectives.

This research was conducted in 14 Cub Scout dens in the George Washington District of the National Capital Area Councils of the Boy Scouts of America. The George Washington District includes Fairfax County, Virginia, where the dens were located.

Adjustments in procedures and direction were made during the study. This resulted in greater emphasis on the administrative and logistical aspects of program presentation and adaptability and less attention on evaluation of learning gained as the elementary school evaluation found statistically significant increases in tested safety belt knowledge.

### POPULATION/ORGANIZATION

The Cub Scouts are a part of the Boy Scouts of America (BSA). The BSA is organized into geographical area councils. Washington, D.C. and its environs are served by the National Capital Area Council (NCAC). Within the NCAC is the George Washington District which includes 15 service areas.

### Administrative Units

Cub Scout service areas are organized into administrative units designated as packs and dens. Individual packs serve 15 to 30 boys. For the purpose of this investigation, it was anticipated that six packs (90 to 180 boys) would be involved. To facilitate management of the project, den units (two to three dens per pack) would be utilized. It was anticipated that 12 to 15 dens would be used for experimental and control purposes. The sample would be evenly divided into treatment and control groups.

### Logistics

Conducting a research study involving volunteer leaders (and subjects) presents unique circumstances not usually encountered when dealing with schools, businesses, or other entities characterized by more rigid authority lines and relationships.

## Delivery Options

In preliminary discussions, the liaison (Assistant District Commissioner, responsible for the service area) and the researcher identified three approaches for delivery of the instructional activity and tests to the Cub Scouts. They included the researcher:

1. Dealing directly with the den leaders.
2. Dealing with intermediaries who function between the liaison and den leaders.
3. Dealing only with the liaison who would assume the responsibility for communicating and transmitting information and materials through the intermediary levels to the den leaders.

Each option had advantages and disadvantages. It was determined that the time required to secure clearance for operation at the den leader level (first option) was such as to render that option impractical. The major consideration here was that such expenditure of time would have extended the total research effort far beyond the time constraints of the project. The second option was rejected for the same reason.

The third option, leaving the communication and transmission details to the liaison had the advantage of creating minimum dislocation in the Cub Scout modus operandi. In so doing, it would have the additional advantage of most nearly approximating the usual patterns of activity within the scouting framework. In connection with this latter point, one might expect that the level of acceptance and cooperation achieved would be a reasonable indication of what might be achieved under similar circumstances within other Cub Scout jurisdictions, thus rendering the research more useful.

The major negative factor, of course, was the unknown quantity of how well the transfer of information and materials from the liaison person to the den leaders would be achieved. Two additional administrative levels existed between the liaison and den leaders. They included the position of committee chairman, and another of den leader coach (sometimes referred to as Committee member).

The project staff, in detailed discussions with the liaison, outlined the research and instructional needs of the project. The discussions were followed by a written communication to the liaison reinforcing agreed-upon plans and procedures. The liaison person, then, was to convey the information and materials through the intervening administrative levels to the individual den leaders for implementation.

## **Treatment**

All instructional materials were assembled in a package including leader introduction, content and instructions, and six activity sheets (spirit masters). Packages were prepared for each den leader. Additionally, enough sets of activity sheets were prepared so that each Cub



Scout could have individual copies. Pre- and post-test forms were also prepared, numbered, batched by numbers in groups of 10 (90 Treatment and 90 Control), and delivered to the Cub Scout liaison along with stamped, addressed, return envelopes. Copies of all program materials are in Appendix K.

It was anticipated that den leaders would receive instructional packages, review them, make a judgment on whether safety belt activities fit within their objectives, and, if so, select all or some of the activities for use during den meetings. The leaders were not told specifically when to deliver the program or how to space the activities contained in the instructional package. In short, the delivery of the program was left to them. Under this scheme, they were free to administer learning activities at their own pace. One requirement imposed on the leaders, however, was to complete the administration of the program within a three-month period. Since no specific directions or suggestions regarding degree of involvement (other than that all would be asked to give both pre- and post-tests) were given, varying levels of participation might reasonably have been expected.

#### Den Level Considerations

Den leaders have differing circumstances and constraints relative to time available for delivery of the program. All are volunteers.

Boys participate in scouting, presumably, by choice. Unlike school, which is mandated, scouting activities attract youngsters who want to participate. The activities are less structured and less formal. A typical den meeting, for example, brings together five to ten neighborhood youngsters for one hour of evening activity once each week. In contrast with a school environment, with careful seating arrangements, bells to signal beginning and ending of lessons, and professionally prepared teachers, the Cub Scouts usually meet in someone's recreation room (usually one of the participants), for a loosely defined "hour," and are led by a volunteer who is likely to be a parent of one of the children and not professionally prepared for leadership/teaching responsibility. Den leaders typically enjoy a wide range of freedom in objectives and activity selection.

#### STUDY DESIGN

The study plan included two data gathering elements:

1. Knowledge and attitude tests administered to Cub Scouts.
2. Interviews to determine den leader perceptions regarding the "3 Seconds to Safety" materials.

## Knowledge and Attitude

Treatment (T) and Control (C) Cub Scout dens were to be involved. All participants (boys in T and C dens) were to be given a pre-test to determine knowledge and attitudes. Cubs in T dens were to be provided (after pre-testing) with opportunities to complete the various activities presented in the "3 Seconds to Safety" activity sheets.\* At the conclusion of the Treatment or instructional activity, both T and C dens were to be given the post-test for knowledge and attitude. The same form (see Appendix L) would serve both pre- and post-test needs.

Completed test forms were to be returned to the project director for scoring, comparisons, and statistical treatment. It was anticipated that a Sandler's A Statistic would be employed to quantify knowledge and attitude changes.

## LEADER PERCEPTIONS

After post-tests had been administered, den leaders were to be debriefed through interviews to determine their perceptions of the "3 Seconds to Safety" program. It was anticipated that insights gained through teacher comments relating to understandability and usability of the materials, time requirements, suitability to their objectives, youngsters' reactions, and the like would be useful in determining the feasibility and appropriateness of using the Cub Scouts as a delivery system for these learning activities.

## INTERIM RESULTS

Close monitoring revealed early in the study that administrative realities would determine, in large measure, ultimate research direction and success. For example, the first meeting of the liaison with the den coaches (those who would serve as conduits to den leaders) was postponed for about three weeks. Thereafter, at each stage along the way, delays were experienced. Pre-testing fell behind schedule, return of completed test forms was slow, instruction was stretched over a longer period than had been anticipated, and post-tests had to be put off.

The project director and liaison had numerous discussions during this period of time and efforts were attempted to move the treatment and testing program forward in a timely manner.

The number of subjects in the treatment group emerged as a concern after scoring of the pre-tests. The evaluation plan had been designed to handle between 45 and 90 persons in the treatment group with an expectation that possibly 50 or 60 would participate. As it developed, however, only 28

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\* Leaders of Control dens would be provided activity sheets after completion of post-testing of their groups.

usable pre-test forms were received from the participating Cub dens. This low number, coupled with the likelihood that some attrition would take place through absenteeism or improper execution of the post-test form, was further evidence that the knowledge or attitudes dimension of the evaluation would fall short of necessary minimums.

Because of the foregoing, the project director and CTM discussed a number of options regarding the ongoing study. Of principal concern was providing the most useful data to NHTSA while, at the same time, conserving financial resources. One option considered was that of terminating the study. It was agreed that the study would be continued for three primary reasons:

1. Though it was evident that the impact assessment was not likely to produce meaningful outcomes, previous research had demonstrated that the materials were useful and were associated with knowledge gains in an elementary school setting which served youngsters in the same age group. Therefore, loss in this area was not critical.
2. Some of the participating Cub Scout personnel (den leaders and scouts) appeared to be making a genuine effort to fulfill their commitment to the research.
3. Useful information could be obtained from the administrative evaluation. This information could be helpful in determining potential future use of the materials with Cub Scout groups.

In agreeing that the research would be continued, it was decided that more emphasis would be placed on the administrative aspects of the evaluation than on the impact assessment. The rationale for this direction was that, even lacking a usable impact assessment experience, the knowledge gained from identifying communication and material transfer breakdowns would be beneficial. Such knowledge related directly to the feasibility of the instructional programs as a Cub Scout activity.

## **FINAL RESULTS**

### **Den Leader Questionnaire/Interview Results**

Den leaders (T and C) were interviewed by telephone at the conclusion of the post-testing period.

#### Treatment Groups

Eight dens participated in the treatment phase. Six were regular Cub dens (ages 8 to 10), two were Webelo dens (ages 10-11). All den leaders reported administering the pre-test and using the learning materials. One leader qualified use of the materials to the extent that she used "most" of the materials. One of the den leaders failed to give the post-test. And another, a Webelo den leader, reported doing nothing with the program, i.e., no pre-test, no instruction, no post-test.

The reported testing time for the knowledge and attitude instruments varied between 10 and 30 minutes among the dens. The time allocated to instruction varied between 30 minutes in one den to as much as four hours in another. Most of the den leaders reported about one hour instructional time.

All of the den leaders said that the materials were well organized and easy to use. With the exception of one den leader, all reported that they felt some level of success with the program, that the boys showed interest, became involved, and took the program seriously. They reported, too, that they thought the program was a useful Cub Scout activity. Finally, all except one stated that, if it were their decision to make, they would use the materials again. Four of the den leaders said they would modify the program or tailor it to their groups' needs. Reducing the content and time requirements were common observations. One of the leaders said she would be somewhat selective in what portions of the program she used.

The one den mother who didn't share the comments offered above was the only one to indicate having any problem with the materials. It was her opinion that the instructions for the den mother were not adequate, "they may have been there, but I didn't see them."

#### Positive Comments

Among the positive comments offered by the den leaders were the following:

- o The boys liked the pictures.
- o They particularly enjoyed the amusement park exercise.
- o They enjoyed the egg and tape drill, also Humpty Dumpty.
- o The kids found the material understandable (it was at their reading level).
- o The boys said they started using safety belts.
- o The boys discussed safety belts freely.
- o They got after their parents to wear belts.
- o They got the point.

#### Negative Comments

The den leaders freely offered negative comments relative to the program:

- o The kids were interested at first, but got tired of it quickly.

- o It was overkill for this age youngster.
- o I didn't really teach.
- o This project interfered with my program.
- o It was too long.
- o The kids recognized the last test as being the same as the first.
- o The kids come to Cub Scout meetings for fun. This was too much like school; they didn't like the idea.
- o It required too much time.
- o Their attention span wasn't up to it.

Except for saying that her boys liked the amusement park exercise and poster and discussed them, one den mother was totally negative. She said, "Parents will determine whether their boys wear belts or not. The boys don't want to read at den meetings. The reading level was too high for my boys. They lacked interest. They want fun and games. This is a babysitting kind of thing, not instruction. I don't think it's a suitable Cub Scout activity. I wouldn't use it again."

Another den mother (a beginner) said the project helped her and her boys get organized. "It got them speaking out about safety belts and about their families. It helped us get to know one another. It got us working together as a team."

The one webelo den leader who had indicated no participation level said that he had too many activities scheduled and was simply too busy to include an additional project. He said there was simply no way that he could include it without shortchanging other planned parts of his program.

### Control Groups

Seven dens participated in the "C" group. While the Control dens performed well at the pre-test interval (test forms returned from 46 subjects, 42 of which were usable--as opposed to 33 test forms of which 28 were usable returned from the Treatment groups), return of "C" group test forms at the post-test interval was non-existent.

There was no indication that the seven "C" group dens that participated in the pre-test would not take part in the post-testing. As has been stated, however, no post-test forms were returned.

Since no post-tests had been returned, it was obvious that the telephone interviews would have to be conducted from a different frame of reference than that used with the Treatment groups. The researcher decided that, after introducing himself and explaining his involvement in scouting activities (and giving the den leader an opportunity to comment), he would ask a few basic questions:

1. "You recall giving a test on safety belts some time ago, do you not?"

A positive answer to that question, triggered the next,

2. "Did you receive a second set of testing materials?"

Depending on the answer, the next questions could take different directions such as:

3. "Did you give the second test to the youngsters?"

or

3a. "Then your den's only involvement was the test last fall?"

Obviously negative answers at any point along the line of the previous questioning would (and did) elicit different questions or directions in the interview process.

In view of the high level of involvement in pre-testing and no evidence of post-test effort prior to the interviews, the information offered by "C" group den leaders was revealing.

A wide variety of information regarding "(C)" group participation was proffered ranging from, "we completed both tests and mailed them in." to one den leader who hung up the telephone when asked if he had received the second set of test forms. Another respondent indicated that she had given the first test but did not receive the second test form. She also said that she had recently received a packet of dittos. Another den mother said, "We gave the first test but forgot to give the second." while another said, "I gave the first test but knew nothing of the second. Two weeks ago we got an envelope with no instructions. It's in the car." One other den leader responded. He said, "I gave the first test but never got around to giving the second. Frankly, the reason I didn't give the second was that I was not certain which boys had taken the first and I knew it was important that the same boys take the test again."

### **Knowledge and Attitude Test Results**

As stated earlier, the usable (T) group pre-test scores were 28 in number out of the 33 returned sets. While 35 to 45 usable sets would have been preferred, the 28 scores, if they could be matched with post-test scores, would have been useful. The (T) group post-test returns, however, numbered 37 of which only 15 usable scores could be matched with the (T) group pre-test scores.

- o Den leaders are volunteers who have their own objectives. They may decide to use or not use programs and materials on the basis of anticipated level of interference with their own objectives.
- o The home (den meeting) setting may not always be conducive to school-like activities.
- o Cub Scouts view den meetings as opportunities for fun and fellowship. They see paperwork (particularly testing) as school-like, hence, undesirable.
- o Cub Scouts enjoy exposure to the materials but not continuing involvement. This may be a function of attention span.
- o No conclusion is offered regarding the effectiveness of material in improving knowledge or changing attitudes when used in the Cub Scout setting. No significant changes were found; however, the limited followup response rate precludes any conclusions being drawn.

### Recommendations

Since Cub Scouts ages range between 8 and 11 years, and since the "3 Seconds to Safety" materials are also designed for use in elementary schools which reach most boys in this age bracket, it is recommended that, to the extent that delivery of the program through elementary schools is achieved, delivery through the scouting framework would be redundant.

IF the Cub Scouts are to be viewed as a potential delivery system, it is recommended that:

- o Entry into the scouting system be at a relatively high administrative level to assure the program "having its place" as a scheduled activity.
- o If entry must be below the District level, contacts should be directly with den leaders.
- o Since den leaders are volunteers and not likely to be trained as teachers, orientation and familiarization sessions could increase their motivation to use and their effectiveness with the materials.
- o Because den meeting time is very limited, consideration should be given to simply introducing the materials to the Scouts with the intent of their sharing them with parents and family and reporting back at the next meeting.

APPENDIX A:  
LEARNER CHARACTERISTICS AND MEDIATING FACTORS  
AFFECTING SAFETY BELT INSTRUCTION IN GRADES K-6

**LEARNER CHARACTERISTICS**

Grade

K	May make up own meanings for words they don't understand
K-1	May not understand traffic safety vocabulary
K-2	Has difficulty assuming objective viewpoints
K-2	Has trouble distinguishing relevant from irrelevant information
K-3	Does not realize own death is inevitable
K-3	Has immature tracking ability (may have trouble following line of type and keeping it in focus)
K-4	Does not well understand concepts of danger, traffic safety; cannot explain need for safe behaviors or danger of unsafe behaviors
K-4	Links causes of events to psychological intentions; does not understand events are caused by physical action
K-4	Cannot classify, organize information
K-6	Cannot fully understand laws of probability
K-6	Has strong emotions that override traffic safety concerns

**MEDIATING FACTORS**

- o Desires freedom of movement
- o Trusts parents/adults to drive collision-free
- o Size unsuited to shoulder harness
- o May resist belts for childish reasons (e.g., wishes to stand so can see out window)
- o Has fixed idea of physical properties (e.g., strength of daddy's arm, softness of mommy's tummy); does not understand how crash forces can change familiar physical properties.



## APPENDIX B OPTIMAL OBJECTIVES

### PERFORMANCE OBJECTIVES

Students will:

- o Refuse to ride in vehicle positions where there are no belts
- o Use restraints on every trip
- o Fasten and adjust restraints properly
- o Ask for help in locating, fastening, and adjusting restraints whenever needed
- o Ask drivers to wait until they are properly restrained
- o Ask other occupants to use belts
- o Keep restraint in place until each trip is completed
- o Select rear seat position whenever possible.

### ATTITUDE OBJECTIVES

Students will believe:

- o They can be hurt in crashes
- o Belts can keep them from being hurt
- o Belts should be worn for every trip--no matter who the driver, what the vehicle, what the speed, or what the length
- o Belts can keep them from causing a crash or from hurting others in crashes
- o People who don't wear belts could hurt others in a crash
- o Everyone should wear belts
- o It is worth the trouble to dig out belts and wear them (and to ask for help if needed)
- o They should not ride in a position where belts are not available
- o No one can guarantee they will not have a crash
- o If a crash occurs, no one will be able to keep them from being thrown

- o There are no good reasons not to wear belts
- o Wearing belts is a positive thing to do, i.e., a sign of maturity, a sign of importance, neat
- o Asking others to wear belts is a good thing, i.e., a sign of maturity, a sign that you like yourself, a sign that you love others
- o Most people will buckle up if someone asks them to do so
- o People who know the facts always wear safety belts.

## KNOWLEDGE OBJECTIVES

Students will know:

- o In a crash, people are thrown about
- o When people crash into something, they get hurt
- o People are not strong enough to keep themselves or others from being hurt in a crash (can't brace themselves or hold others back)
- o People can't tell when they will be in an accident
- o People can't always keep an accident from happening (even though no one wants to have an accident)
- o Belts are the only way to keep from being thrown in an accident
- o Belts will keep them from hurting themselves against the car or against something outside the car
- o Belts will keep them from hurting someone else inside the car
- o People can be hurt in crashes no matter how slow the car is going
- o Crashes can happen anytime, anyplace
- o Every car, van, truck has belts
- o Where restraints are in vehicles (and where they aren't--e.g., cargo areas)
- o How to dig out "hidden" belts (or ask for help, if needed, to dig out belts)
- o How to position, fasten, and adjust various types of restraints
- o How to make sure belts are securely fastened

- o To ask for help (if needed) in fastening and adjusting restraints
- o Procedures for checking for proper adjustment
- o When it is safe to unbuckle belts
- o Most drivers will wait for them to buckle up, even if it takes time to find the belts
- o Most drivers will help them buckle if asked
- o Not everyone wears safety belts
- o A driver who doesn't wear safety belts is more likely to crash than a driver who does wear safety belts
- o Anyone in the car not wearing a safety belt can be thrown into others in the car, hurting these other people as well as themselves
- o Most people will buckle up if someone asks them to do so
- o Doors should be locked
- o There should be only one person to a belt
- o It is not safe to sit on someone's lap
- o People cannot hold them back in a crash
- o The safest seating position in a vehicle.

## APPENDIX C

### FIELD STAFF RESPONSIBILITIES

Field staff are responsible for the accomplishment of four basic tasks:

1. Select schools which will provide data.
2. Gather data through interviews.
3. Record and report data to project staff.
4. Recommend one school which could best serve in the concentrated assessment of instructional impact.

In order to accomplish the tasks, a number of supportive activities must be undertaken. These supportive activities are listed below as items under each of the four basic tasks.

1. Select schools
  - a. Familiarize yourself with the program materials, i.e., Developmental Assessment, Guidelines for Field Staff, and Basic Interview Questions.
  - b. Contact (probably by telephone) key person in suspect school (principal, curriculum specialist, head teacher, etc.).  
The purpose of this contact is to open the door. You want to find out if the school is using one or more of the safety belt programs listed on the administrative fact sheet and if so, who could best answer questions on the administrative factsheet. On the basis of this contact, select schools to be involved further.
2. Gather data through interviews
  - a. Interview (probably by telephone) designated person. Your purpose is to fill out the yellow Administrative Fact Sheet. Note: A separate Administrative Fact Sheet will be required for each program if more than one is offered. Arrange to interview teachers.
  - b. Visit schools and interview teachers using the Basic Interview Question Sheet s(white).
3. Record and report data to project staff
  - a. After interviews, refine notes and write report.
  - b. Send report to project staff.
  - c. If requested, follow up to clarify points and tie up loose ends.
4. Recommend one school which could best serve in a concentrated assessment of instructional impact
  - a. Administrative and teacher interest, enthusiasm, willingness.
  - b. Gut level feeling that something's really going on.

## ELEMENTARY SCHOOL SAFETY BELT PROGRAMS

### Guidelines for Field Staff

Our purpose is to determine as accurately as possible what is going on in Grades K-6 with regard to four specific safety belt instructional programs. The four programs in question are:

- A. K-3; 4-6/AAA developed
- B. Beltman/FLI Learning Systems developed
- C. Do You Buckle Up/FLI Learning Systems developed
- D. Safety Belt Activity Book/NHTSA developed

Your job is to gather information based on responses to the questions provided. In doing so, you will, in effect, be painting a picture of what's happening out there. Using your information, we will be able:

1. To determine the degree of use at the local level.
2. To determine requirements and constraints pertaining to administration and implementation.
3. To determine how and by whom the program is actually delivered in the classroom.
4. To determine the acceptability of the program among those who have procured and distributed the program, those who have helped implement its use, and those who use it.

The Administrative Fact Sheet (yellow) will aid you in Item 1 (above). The Basic Interview Questions (white) address Items 2, 3, and 4. The Developmental Assessment will provide insights into each of the four programs.

Additionally, machine copies of program materials are included in your kit to enable you to be familiar with the objectives, content, and suggested activities of the various programs. They include:

AAA developed/Traffic Safety Teacher's Guide for Grades K-3; Otto the Auto for Grades K-3; My Own Safety Story for Grades K-3. Also, for Grades 4-6, Traffic Safety Teacher's Guide.

FLI developed/for Grades K-3, Beltman, Lesson Plans 1&2. Also, for Grades 4-6, Do You Buckle Up Fact Sheet

NHTSA Developed/Safety Belt Activity Book: Summary of Activities and Materials.

Study of these materials and related content of the Developmental Assessment prior to interviews will greatly improve your ability to gather valuable information.

The Basic Interview Questions are obviously not the type that can be recorded on a grid or with a brief checklist-type response sheet. It is obvious, too, that not all questions will be applicable in every instance. Reading the Developmental Assessment, the Administrative Fact Sheet, and the Basic Interview Questions, will give you a feel for the content and you may find that such general opening questions as "How did it go with the program?" or "What did you like about the program?" or "Did the program do what you thought it would?" may trigger a number of responses that will build on one another until most of the information sought will come out without further probing. As further information is needed, specific Basic Interview Questions could be asked. The primary concern is getting and recording the information. Using the (white) question forms for brief notes should be helpful.

APPENDIX E

ADMINISTRATIVE FACT SHEET

Date of Contact:    /    /    Program (circle one)\*    A - AAA       B - Beltman       C - Do You Buckle Up:  
   D - NHTSA Safety Belt Activity Book

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
 Address: \_\_\_\_\_ Phone: \_\_\_\_\_  
                     Street  
                     \_\_\_\_\_  
                     City, State, ZIP        Name of jurisdiction: \_\_\_\_\_  
   Number of schools in jurisdiction \_\_\_\_\_  
   Name of school: \_\_\_\_\_

Number of K-6 teachers in school: \_\_\_\_\_

Number of K-6 students in school: \_\_\_\_\_

Grades at which program delivered (circle each)

	K	1	2	3	4	5	6
Number students instructed (list under grade)							
Number students in each grade in which program is used (list under grade)							
Number teachers using program in each grade							
Total number of teachers in each grade in which program is used							
Program taught as independent unit or integrated in general curriculum--place "U" for independent unit or "G" for general curriculum (by grade)							
List (by grade) curriculum in which program delivered, e.g., reading (R), language arts (LA), mathematics (M), social studies (S), health (H), other (O)							
Was a "roving" teacher used (answer YES or NO in each applicable grade).							
Was a resource person (non-teacher, i.e., automobile club person, policeman, etc.) used (answer YES or NO in each applicable grade).							
Number of hours devoted to program (by grade)							

\* NOTE: Only one program (A, B, C or D) is to be recorded on each Administrative Fact Sheet.

APPENDIX F

**BASIC INTERVIEW QUESTIONS**

1. Is the program being implemented as designed? Yes \_\_\_ No \_\_\_  
(If "no", skip "A" and go to "B" below.)

A. If yes, did implementation require:

o changes in school programming? Yes \_\_\_ No \_\_\_

If yes:

--what kind of programming changes?

--how onerous was it (would it be) to make the changes?

--was it (would it be) worthwhile to make the changes?  
Why/why not?

o special teacher preparation? Yes \_\_\_ No \_\_\_

If yes:

--what kind/how much preparation?

--how onerous was it (would it be) to provide preparation?

--was it (would it be) worthwhile to provide preparation?  
Why/why not?

o expenditures beyond purchase of program materials? Yes \_\_\_ No \_\_\_

If yes:

--what kind/how large an expenditure?

--how onerous was it (would it be) to expend the funds?

--was it (would it be) worthwhile to spend the funds?  
Why/why not?

B. If Question 1 was answered "No," what changes were made in the program to make it workable?

o Were program materials dropped? Why? With what effect?

o Were materials used differently than designed? In what way? With what effect?



2. Is the program, as it is currently used, acceptable?
  - o Is it meeting student requirements? Evidence of this?
  - o Are students responding positively? Evidence of this?
  - o What motivates teachers to use the program?
  - o Are teachers enthusiastic about the program? Why/why not?
  
3. How would you improve the program?
  - o Must it be updated? If so, in what way? Who does this?
  - o Must it be localized? If so, in what way? Who does this?
  - o Should it be given to a different audience? If so, why?
  - o Should it be shortened? Why? How? Who should do this?
  - o Should it be expanded? Why? In what way?
  - o Should different teaching methods be used? Why? Where?
  - o Should different media be used? Why? Where?

APPENDIX G:  
Questionnaire

\_\_\_\_\_, \_\_\_\_\_  
FIRST NAME LAST INITIAL

**SAFETY BELTS**

USE A CIRCLE FOR THE BEST ANSWER. EXAMPLE: a. This paper is blue  
b. This paper is white

1. The safest place to ride in a car is in:
  - a. The front seat, by the door
  - b. The front seat, beside the driver
  - c. The back seat
2. Most car crashes happen:
  - a. Near home
  - b. On long trips
3. When you put on a safety belt, where do you wear it?
  - a. Around your hips
  - b. Around your stomach
4. A safety belt should be:
  - a. Tight around you
  - b. Snug around you
  - c. Loose around you
5. How many people can safely ride with the same safety belt on at one time:
  - a. One
  - b. Two
6. I would rather ride in a car with a:
  - a. Driver who wears a safety belt
  - b. Driver who does not wear a safety belt
7. If a car hits something, your safety belt will:
  - a. Help keep you from getting hurt
  - b. Hurt more than help you
8. If a car hits something, safety belts help:
  - a. Only if the car is going fast
  - b. Only if the car is going slow
  - c. If the car is going fast or slow
9. If a car rolls over, it is:
  - a. Safer to stay in the car
  - b. Safer to be thrown out of the car

10. If a car goes into a deep lake, it is better to:
  - a. Have a safety belt on
  - b. Not to have a safety belt on
11. People who tell you to put on your safety belt want to keep you:
  - a. Quiet
  - b. Safe
12. If a car hits something, I would want to:
  - a. Put my hands out and hold myself
  - b. Slide down to the floor of the car
  - c. Be wearing a safety belt
13. What should people do if you ask them to wear safety belts:
  - a. Put them on
  - b. Get upset
14. People should put a safety belt on:
  - a. Only if the driver asks them to
  - b. As soon as they get in a car
15. If a car hits something, your safety belt will:
  - a. Keep you from hurting others in the car
  - b. Cause you to hurt others in the car
16. If the car hits something:
  - a. I would want to be held by an adult
  - b. I would want to be thrown out of the car
  - c. I would want to be wearing a safety belt
17. Wearing safety belts is:
  - a. Smart
  - b. Foolish
18. I wear safety belts:
  - a. Never
  - b. A little
  - c. A lot
19. People in my family wear safety belts:
  - a. Never
  - b. A little
  - c. A lot
20. My friends wear safety belts:
  - a. Never
  - b. A little
  - c. A lot

APPENDIX H:  
Knowledge and Attitude  
Test

Date \_\_\_\_\_

I. D. number \_\_\_\_\_

Place an X beside the best answer.

Example:

This paper is

white   X  

yellow \_\_\_\_\_

I don't know \_\_\_\_\_

The questions are about riding in a car.  
Be sure to answer each question.

---

1. Do you feel safer when you wear a seat belt?  
Yes \_\_\_\_\_  
No \_\_\_\_\_
2. In a crash, is it better to be thrown from the car?  
Yes \_\_\_\_\_  
No \_\_\_\_\_
3. How long does it take to find and buckle a seat belt?  
1 second \_\_\_\_\_  
2 to 5 seconds \_\_\_\_\_  
30 seconds \_\_\_\_\_  
1 minute \_\_\_\_\_
4. If your car crashes, then catches fire, can a seat belt help save your life?  
No \_\_\_\_\_  
Not really \_\_\_\_\_  
Yes \_\_\_\_\_
5. You are not wearing a seat belt and the car crashes. Can you catch yourself by holding on to the dashboard?  
Yes \_\_\_\_\_  
No \_\_\_\_\_

6. Do you need to wear a seat belt on short trips?

Yes \_\_\_\_\_

No \_\_\_\_\_

7. A seat belt works just as well if it is twisted.

True \_\_\_\_\_

False \_\_\_\_\_

8. Do you know who uses seat belts when you ride in your family's car?

Yes \_\_\_\_\_

No \_\_\_\_\_

Do people get hurt or killed in car crashes

9. on dry, sunny days?

Yes \_\_\_\_\_

No \_\_\_\_\_

10. at slow speeds?

Yes \_\_\_\_\_

No \_\_\_\_\_

11. Where do most accidents happen?

on short trips \_\_\_\_\_

on long trips \_\_\_\_\_

Could you be killed

12. if you are thrown out of the car?

Yes \_\_\_\_\_

No \_\_\_\_\_

13. If you hit some part of the inside of the car?

Yes \_\_\_\_\_

No \_\_\_\_\_

14. Will a loose seat belt protect you?

Yes \_\_\_\_\_

No \_\_\_\_\_

15. Is it worth the time it takes to buckle a seat belt?

Yes \_\_\_\_\_

No \_\_\_\_\_

Who should wear a seat belt?

16. Children your own age Yes \_\_\_\_\_

No \_\_\_\_\_

17. Pregnant women Yes \_\_\_\_\_

No \_\_\_\_\_

Four people are in a car that crashes. The driver is not wearing a safety belt; the passengers are.

The following can happen:

18. The driver can hurt other people in the car. Yes \_\_\_\_\_

No \_\_\_\_\_

19. People in other cars can be hurt. Yes \_\_\_\_\_

No \_\_\_\_\_

20. The driver may hit the inside of the car and be killed or injured. Yes \_\_\_\_\_

No \_\_\_\_\_

21. In a car crash, holding on to the steering wheel would protect the driver as much as wearing a seat belt. True \_\_\_\_\_

False \_\_\_\_\_

22. If you are not wearing a seat belt and the car crashes, the other riders will keep you from being hurt. True \_\_\_\_\_

False \_\_\_\_\_

23. The steps for putting on a seat belt are listed. Number them from 1 to 5 in the order you would do them.

\_\_\_\_\_ Push the clasp into the buckle until it clicks

\_\_\_\_\_ Pull the shoulder belt so it feels good across your chest

\_\_\_\_\_ Find the two ends of the seat belt

\_\_\_\_\_ Pull the seat belt so it is snug and comfortable across your lap

\_\_\_\_\_ Grip the metal clasp and pull the seat belt across you

APPENDIX I

Teacher Questionnaire

Name:

Class:

In the "3 Seconds to Safety" materials you recently used, there were five instructional units:

1. Become aware of importance of using seat belts
2. Differentiate between fact and fiction concerning seat belts
3. Correct sequence of belting
4. Reasons for using seat belts
5. Explain at least three reasons for using seat belts.

Please provide the following information:

1. Using the numbers 1 through 5, please list, in the order used, those units you actually taught.
  
2. Were the materials organized adequately for you to use easily and efficiently? Please describe any problems.

3. Please comment on the following issues:

	1	2	3	4	5
Do you think the instructional materials/activities were effective in reaching lesson objectives, both safety and reading?					
Did the students become involved and interested in the ideas and learning activities?					
Please indicate any specific problems/difficulties or changes/suggestions you have for the units.					
How much time did it take to teach each unit?					

Apx. 1-2



## APPENDIX J

### Teacher Interview

1. Did you have any successes? What did you like about the program?
2. How did the students respond? Were they interested? Did they get involved? Did they take the ideas seriously?
3. Did you reach reading objectives? Were they helpful to your overall reading curriculum goals?
4. What problems did you encounter with the teaching materials and activities?
5. What changes would you suggest in objectives, learning materials, or logistics?

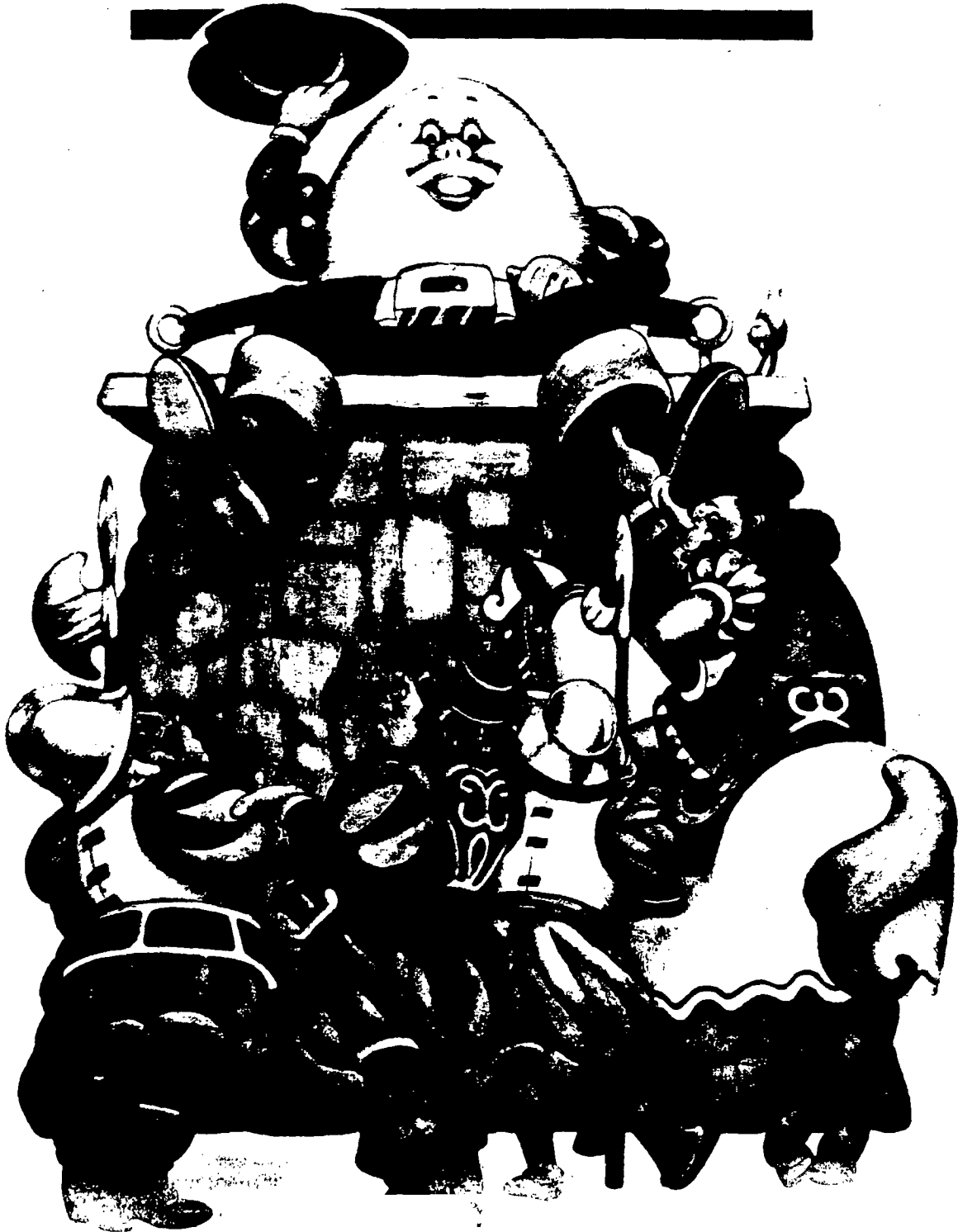
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# 3 SECONDS TO SAFETY

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An Instructional Reading Program  
About Seat Belts For Grades Three to Six

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# 3 SECONDS TO SAFETY

An instructional reading program about seat belts for grades three to six

Three seconds is all the time needed to buckle a seat belt. Yet millions of Americans fail to take those few seconds to slip on the belt that may save their lives.

Over their lifetimes, your students face more than a fifty-fifty chance that they will be injured in an accident. Their use of seat belts will reduce significantly their chance of serious injury or death. Even now they are in danger every time they ride in a car unsecured, especially during the comparatively short trips close to home. Three out of four crashes happen while driving around town, within 25 miles of home. And more than 80 percent of all accidents occur at speeds less than 40 mph. Familiarity with the streets and stores masks the danger of the traffic.

You can help improve the odds by teaching your students about the importance of wearing seat belts. To simplify the task, the American Seat Belt Council is offering this program, which examines the need for seat belts, analyzes the commonly told tales about them, and explains how to wear them properly.

Moreover, the format of the activities integrates readily into your reading program. The information about seat belts provides the content for exercises that develop four critical reading skills: finding the main idea, identifying details, sequencing, and drawing conclusions. This teacher's guide supplies background information and suggestions for teaching both the seat belt usage concepts and the reading skills. Additional activities to expand either of the subjects also are included throughout the program. You may want to teach this program as a separate unit or incorporate it into your reading program.

The spirit duplicating activity masters in this program will reproduce at least 200 excellent copies. To make enough copies for your students, simply remove the brown paper tissue, attach the master to your spirit duplicating machine and run as many copies as necessary. Replace the tissue behind the activity master and store in this

folder for future use. The information in red on the front side of the activity master is for your information and will not reproduce on student copies.

## UNIT I

### ACTIVITY MASTER 1

**Content Objective:** Students will become aware of the importance of using seat belts.

**Reading Skill Objective:** None.

**Instructions:** Begin this unit by distributing the survey forms to your students. Have them complete the forms in class, asking them to be as honest as possible in recording what they actually do, rather than what they think they ought to do. Remind them that, to assure privacy, names are not necessary on the papers. After you tabulate the results on a chalk or poster board, help the class draw some preliminary conclusions about their current behavior. Save a copy of the results for the next activity.

Distribute additional copies of the survey to the class and ask them to interview several volunteers outside of class, such as family members, neighbors, peers and other teachers. In the next class, tally and discuss the results; compare them with those of the class. Look for areas of significant similarities and differences.

The primary reason for wearing seat belts is to reduce injuries and save lives. To dramatize the life-saving capability of a seat belt, demonstrate how an "egghead" can be shaken up without one.

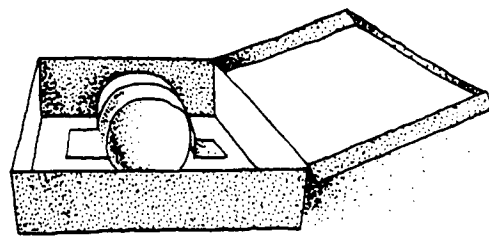
**Materials Needed:** Several raw eggs; sturdy tape, such as strapping tape; and a small metal box with a lid that fastens, such as a lunch box, small tool box, or safe-deposit box.

**Directions:** Fasten one egg with a piece of tape to the bottom of the box. Fasten the lid and flip the box over on the table. Open the box and show the unbroken egg. Remove the tape, fasten the lid and flip the box over again. Open the box and show the damaged egg.

**Discussion:** What was the difference between the two eggs? (One was fastened; the other not.) What happened to the loose egg? (Damaged.) The secured egg? (Safe.) How does this compare with a person wearing a safety belt? (Holds you in place and protects you from major injuries.)

#### Additional Activities

1. Use the results of the survey to reinforce math skills, such as addition of whole numbers, writing fractional parts,



converting fractions to decimals and making bar graphs.

2. Have the students practice their organizational skills by writing a short report summarizing the results of the survey.

## UNIT II

### ACTIVITY MASTER 2

**Content Objective:** Students will be able to differentiate between fact and fiction concerning seat belt usage.

**Reading Skill Objective:** Students will be able to identify the main idea of a paragraph.

**Instructions:** Briefly remind the class of the reasons for not wearing seat belts that people gave in the survey. Then pass out copies of Activity Sheet 2.

Let the students read the notes and decide what fairy tale characters are the authors. Ask your students to identify the context clue that helped them reach their decisions.

Next, go back and focus on the details about seat belts. Help the students see the difference between a detail describing one or two facts and a major idea that blankets all of them. Explain that a paragraph expresses one main idea, though several smaller ideas may be included for support. Put on the board two questions: "What is the paragraph about?" and "What is said about it?" The answer to the second question is usually the main idea. The main idea of each paragraph is underlined for you on the front side of the activity master.

You may want to discuss the location of the sentence containing the main idea. The topic sentence is not always at the beginning of a paragraph; other times it is in the middle or at the end.

### ACTIVITY MASTER 3

**Content Objective:** Students will be able to differentiate between fact and fiction concerning seat belt usage.

**Reading Skill Objective:** Students will be able to find details to verify a fact from the text.

**Instructions:** The paragraphs on this activity sheet help the students examine three more myths they may have heard about seat belt usage. After you distribute the activity sheets, read the paragraphs aloud to the class. Make sure they do not have any difficulty following the conversations, indicated by the quotation marks. Then give the class time to complete the exercise.

As a review of the answers, ask the students to find the specific sentence that helped them determine whether the statement was true or false. Even the false statements can be proven with a statement that conveys the opposite meaning. To assist you, the reference statements are underlined and numbered in each paragraph. In most cases, the true/false statements are merely rewording of the sentences in the paragraphs.

During your class discussion, you may want to mention that wearing a seat belt in the back seat is important for two reasons: it gives the wearer the added protection a seat belt affords, and it prevents the passenger from being thrown forward into a front seat passenger, causing injury to others.

Young children are sometimes allowed to kneel or stand on car seats, sleep in the window ledge or climb around inside a moving car. These actions become even more dangerous during an accident. The safest place for a child is in the back seat, secured by either a properly installed child restraint or a seat belt.

After you have discussed the specific sentences, give your students extra practice in identifying the main idea. Ask them to write a short sentence that describes the main idea of each paragraph on this activity sheet. Correct answers will include these ideas.

- A. Buckling up is worth the few seconds it takes.
- B. You still need seat belts, even in the back seat.
- C. Pregnant women also should wear seat belts.

#### **Additional Activities**

1. Compare the true/false statements with the reference statements from the paragraph. Challenge your students to pick out the synonyms and antonyms.
2. Ask each student to write a short sentence that may be fact or fiction about seat belts. Collect all the sentences and put them in a bowl. Let each student pick one out, read it aloud and identify it as true or false. The author of the sentence then agrees or disagrees with the answer.

## **UNIT III ACTIVITY MASTER 4**

**Content Objective:** Students will be able to number in correct sequence the steps for proper wearing of a seat belt.

**Reading Skill Objective:** Students will be able to arrange steps in proper sequence.

**Instructions:** Before class, refer to the results of questions 11 and 12 on the questionnaire to identify any personal needs of your students. In addition, you may want to try to arrange for a demonstration of wearing a seat belt properly. Perhaps you can take your class out to the school parking lot and use one or several cars there. Or, contact the driver education department in your school system to see if they have a seat belt that can be used in the classroom.

Read the paragraphs on the activity sheet with the class. Remind students that seat belts may vary a little from car to car, but they basically all operate the same. Ask the class where else they may have worn seat belts besides in cars. (Amusement rides, airplanes.) Were those seat belts similar to those found in cars?

Next, remind students that the sequence of events can be identified by the order of the sentences and the use of key words or phrases. List on the blackboard several of these words that the students suggest. Among those students suggest might be "first," "second," "last," "next," "followed by," "before," "ahead," and "ended by." Direct the students to read through the paragraphs again, circling any key words that give clues to the sequence of events.

Finally, let the students demonstrate their skill on the exercise that follows the paragraphs. In reviewing the answers, ask the students to locate the sentence which identified the next step. Point out the key words that helped crystallize the order. If possible, demonstrate the steps to the class, using the steps as the guide.

#### **Special Adjustments for Children**

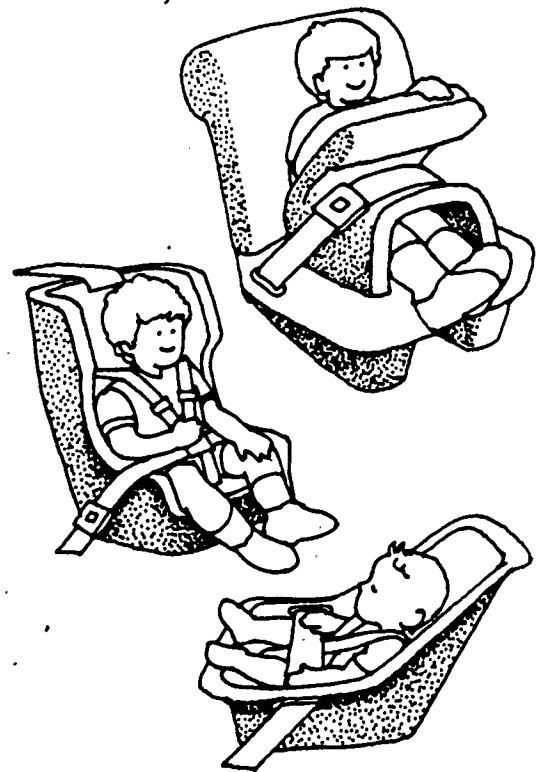
Children over the age of five or weighing more than 40 pounds can wear a regular lap belt. Until the age of ten, when the pelvis is more fully developed, however, youngsters must be careful to keep the lap belt snug on the hips and off the stomach. A firm support underneath the child may be necessary to raise him or her a few inches.

Children between 20 and 40 pounds should use a properly installed child

restraint. A child restraint uses the adult lap to hold a seat in place, which protects the child's growing body. Infants weighing less than 20 pounds should be protected by a rear-facing seat anchored by the adult lap belt.

#### **Additional Activities**

1. Discuss the consequences of wearing a shoulder harness or lap belt too loosely. Do the students see that the effectiveness would be compromised?
2. Types of seat belts vary with the age as well as the model of the car. Turn your students into investigators and see how many different types of seat belts they can locate in the cars of family members, friends and neighbors. Emphasize that they still all work fundamentally the same.



## **UNIT IV ACTIVITY MASTER 5**

**Content Objective:** Students will be able to explain at least three reasons for using seat belts.

**Reading Skill Objective:** Given an unfinished sentence, students will be able to complete the sentence with a logical conclusion.

**Instructions:** Students may be aware that wearing seat belts can help reduce the number and extent of injuries and even save lives. But they may understand more fully the injury-saving effects of seat belts in specific situations. Seat belts that are used properly are effective for six reasons:

- Seat belts keep a person from being thrown around inside a car, possibly hitting the interior or another passenger.
- Seat belts keep a person from being ejected from the car, which offers limited chances for a safe exit or landing.
- Seat belts keep a driver behind the wheel and in control of the vehicle.
- Seat belts help people maintain better posture and hold them in a safer position throughout the trip.
- In case of fire or submersion, seat belts keep a person alert and conscious enough to exit quickly.
- Seat belts keep a person conscious so he or she can help others.

The first three reasons are included in the reading exercise on Activity Master 5. Each story tells what happens when a seat belt is not worn in a specific case. The students must draw a conclusion about what would have happened if a seat belt had been worn. Because students are writing in their own answers, accept any answer that conveys the same thought or also seems logical.

ilar to the one illustrated or use a picture from a car advertisement or brochure. Translate the percentages to graph symbols, fractions or decimals, according to the mathematical competency of your class. (Percentages total more than 100 because occupants frequently hit more than one instrument in a crash.)

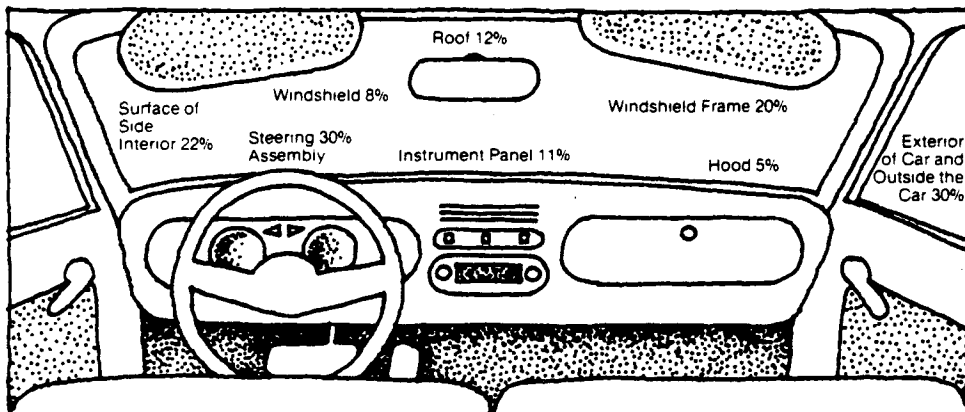
2. Conduct a contest for the best slogan motivating people to use seat belts. The entries can be judged on the slogan alone or in combination with art. Display the results throughout the school.

## UNIT V ACTIVITY MASTER 6

**Content Objective:** Students will become aware of the importance of using seat belts.

**Reading Skill Objective:** None.

**Instructions:** For a simple and fun wrap-up to the program, challenge your students to try the hidden pictures puzzle.



You may want to list the answers on the blackboard. Supplement this exercise with additional stories that highlight other reasons. Or, see if your class can list the other possibilities.

In an accident, there are actually two collisions: The first collision occurs when one car hits another car or object; the second collision results when an unbelted person is thrown into one of the car's hard surfaces. After explaining this difference to your class, ask them to decide if the reasons for wearing seat belts protect them in the first or second collision. Your students will see readily that seat belts help protect a person against the second collision, the one that more often injures and kills people.

### Additional Activities

1. Using the data provided in the illustration above, make a bulletin board showing the percentage of unbelted occupants who were fatally injured in second collisions with various hard surfaces inside a car. Draw a diagram similar

You may wish to set a time limit or make the activity into a contest to see who can do it most quickly.

Remind your class that wearing seat belts is not reserved for just wild rides; the ride to and from the amusement park is just as important. Finally, students may color in the picture if they like.

### Concluding Activity for the Class

During this program, students have learned how and why to wear seat belts. But information alone is not enough to save lives and reduce injuries. The ultimate assessment of the program is in personal behavior.

Ask your class to share any changes that may have occurred in their families' habits of using seat belts. Are your students more aware of who is using them? Do they feel uncomfortable without them? Do they think twice about which seat to sit in? Are they more concerned about the safety of things in automobiles?

Be careful not to embarrass any student. By selecting your questions carefully and asking for voluntary answers only, you can avoid any potentially discomforting situations for students who are unable to identify any significant positive changes in behavior.

### Additional Activities

1. Organize a Seat Belt Awareness Week at your school in connection with auto safety activities. Each class might conduct the survey at the beginning of this program and compile the results for the school. Another activity might be a poster contest, with all of the entries posted throughout the building.
2. Contact your local automobile or safety association to see what resources are available for your classroom use, including speakers.

The American Seat Belt Council appreciates your concern and commitment to assist in the nationwide program to educate our youth about the value of seat belts. We hope that this program provides you with an effective and enjoyable complement to your reading program. Your comments are most welcome. Send them, or any requests for further information, to:

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Washington, D.C. 20006

Developed for  
American Seat Belt Council and  
Daniel J. Edelman, Inc. by





# SEAT BELT SURVEY

Please check the box which contains the best answer to each question.

## HOW OFTEN...

	ALL OF THE TIME	MOST OF THE TIME	SOME OF THE TIME	NEVER
<b>1</b> Do you wear a seat belt in the front seat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2</b> Do you wear a seat belt in the back seat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>3</b> Do you use seat belts on short trips around town?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>4</b> Do you use seat belts on long trips?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>5</b> Do you ask people riding with you to fasten their seat belts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Is it necessary for the following people to wear seat belts?

<b>6</b> Babies in an infant carrier or seat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>7</b> Small children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>8</b> Women expecting babies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>9</b> Good drivers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>10</b> Old people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please answer the following questions with YES or NO:

<b>11</b> Do you know how to fasten the seat belts in your car?	<input type="checkbox"/>
<b>12</b> Do you know how to adjust the seat belts in your car?	<input type="checkbox"/>

Why do you wear (or not wear) a seat belt?

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Read each note. Write the name of the fairy tale character who left the note. Then underline the sentence that is the main idea.

**A**

Dear Grandma,

Sorry, you weren't here. I dropped in with some cookies while running around town. On the way over here I stopped and talked to a wolf. Dumb guy. He was also doing some errands, but he didn't bother to wear his seat belt. He said he didn't need it on short trips. Guess he didn't know that 8 out of every 10 crashes happen at speeds less than 40 mph. Or that people not wearing seat belts have died from injuries in accidents as low as 12 mph. I feel a lot safer wearing mine. I hope you're wearing your seat belt around town too. You need to wear a seat belt every time you ride in a car, even on the short trips.

Love,

Little Red Riding Hood

P.S. That wolf better start wearing his seat belt or he might lose all those big strong teeth.

Dear Mom,

I wish you would talk to my brother Bruce. He's so selfish. He thinks only about himself. We went for a ride the other day and he wouldn't wear his seat belt. He said if he was in an accident, he would be the only one who got hurt. But if he gets hurt, it's our problem too. We'll feel sad. And what if he crashes into people in another car! He could even hurt someone who was wearing a seat belt. And if he was driving, he could be knocked out. Then the car would be out of control and might hit someone else. If he won't wear a seat belt for himself, he should wear it for others. Please talk to him.

By the way, I've lost the sheep again. Bruce says not to worry and that the sheep will come home soon. I hope so.

Love and kisses,

Little Bo Peep

**B**

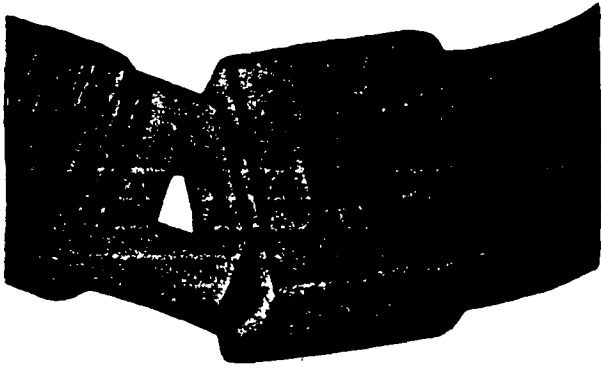
Dear King's Men,

Thank you for your help the other day when I fell off the wall. I sure learned my lesson. You won't catch me sitting around without a seat belt on. But I really felt sorry for the guy that ran into the wall. He was thrown from the car and smashed into it. ~~It's a lot safer inside a car than being thrown from it.~~ Talk about scrambled eggs! If he had worn his seat belt, he might have been O.K. But he thought being thrown clear was safer. Too bad he didn't think about going through the windshield or crashing into the wall when he landed.

Sincerely,

Humpty Dumpty

**C**



# IS THAT A FACT?

Read the following paragraphs and the sentences following them.  
Write "true" or "false" after each sentence.

## A

My friend Dan Dolittle said to me, "I don't fasten my seat belt because it's just too much bother. It takes too much time, and I can never find the parts." I showed Dan where the parts were and how to fasten the belt. I told him it takes only two or three seconds to buckle up, and who knows when an accident will happen?<sup>1</sup>

"Isn't it worth a few seconds of your time to avoid being hurt or killed?" I asked.

Dan smiled and said, "Well I guess it's worth the time,"<sup>2</sup> and fastened the seat belt.

- 1 It takes several minutes to fasten a seat belt.
- 2 Time used to fasten a seat belt is time well spent.
- 3 Accidents can happen at any moment.

false

true

true

## B

Mr. Grimes next door told me that people riding in the back seat are safer than those in the front, so they don't need to wear seat belts. I talked about it with my mother. She said, "It's true that it is a little safer to ride in the back. But you're even safer if you wear your seat belt in the back seat."<sup>1</sup> "You could be hurt, and we don't want that." So when my little brother and I ride in the back seat, we fasten our belts. I help him because he is only five, but he is learning to do it himself."<sup>2</sup>

- 1 Riding in the front seat is not as safe as riding in the back.
- 2 Five-year-olds cannot learn to fasten seat belts.
- 3 You do not need to wear a seat belt in the back seat.

true

false

false

## C

My mother's friend, Mrs. Melissa Wrongly, was going shopping with us. My mom is going to have a baby in a couple of months. Mrs. Wrongly said to her, "Oh, don't fasten your seat belt. Don't you know that seat belts can hurt pregnant women—and the baby, too!"

Mom said, "Oh, no, Melissa. You're wrong. Seat belts won't hurt me or you or anybody if you wear them properly. I pull the lap belt comfortably snug as low as possible and the shoulder belt not too tight. If I didn't wear my seat belt and we had a crash, I might be really hurt, and the baby, too."

- 1 Women expecting babies should not wear seat belts snugly.
- 2 Seat belts, when worn properly, prevent injuries.
- 3 Women expecting babies will be hurt if they wear a seat belt.

false

true

false



# WEARING A SEAT BELT

Read the information below. Number the sentences at the end in the correct order.

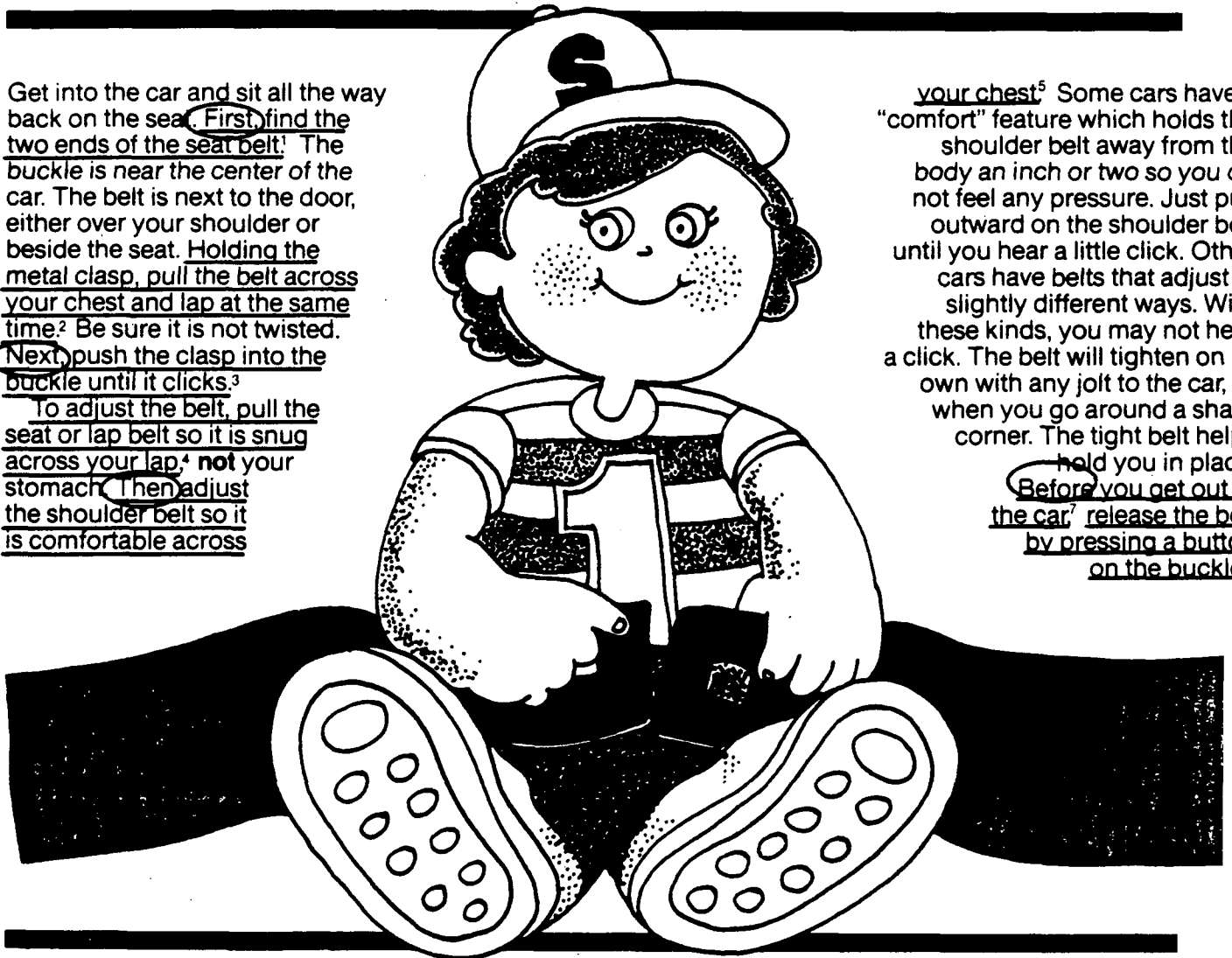
Get into the car and sit all the way back on the seat. First, find the two ends of the seat belt. The buckle is near the center of the car. The belt is next to the door, either over your shoulder or beside the seat. Holding the metal clasp, pull the belt across your chest and lap at the same time.<sup>2</sup> Be sure it is not twisted.

Next, push the clasp into the buckle until it clicks.<sup>3</sup>

To adjust the belt, pull the seat or lap belt so it is snug across your lap,<sup>4</sup> not your stomach. Then adjust the shoulder belt so it is comfortable across

your chest.<sup>5</sup> Some cars have a "comfort" feature which holds the shoulder belt away from the body an inch or two so you do not feel any pressure. Just pull outward on the shoulder belt until you hear a little click. Other cars have belts that adjust in slightly different ways. With these kinds, you may not hear a click. The belt will tighten on its own with any jolt to the car, or when you go around a sharp corner. The tight belt helps hold you in place.

Before you get out of the car,<sup>7</sup> release the belt by pressing a button on the buckle.<sup>6</sup>



- 2 Grasp the metal clasp and pull the seat belt across you.
- 7 Leave the car.
- 6 Press the release part of the buckle to release the seat belt.
- 1 Locate the two ends of the seat belt—the metal clasp and the buckle.
- 3 Push the clasp into the buckle until you hear it click.
- 5 Pull the shoulder belt so it feels good across your chest.
- 4 Pull the seat belt so it is comfortable and snug across the lap.

# THINK AHEAD

Using seat belts helps reduce injuries and save lives.

But how? Read each of these stories and complete the sentence.

## SILLY WILLY

Silly Willy didn't believe in wearing seat belts. "I can always stop myself by holding onto the front dashboard." One day the driver slammed on the brakes to miss hitting a child in the street. The car stopped in time. Silly Willy didn't. He had a painful meeting with the windshield. "I sure wish I had been wearing a seat belt. It would have

my head."

kept me from moving forward and hitting

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## FLYING FRED

"My chances are better in an accident if I'm not wearing a seat belt. I might be thrown clear of the car in a crash." But Fred isn't thinking about how he's going to get out of the car—through a windshield, window, door? Or where he is going to land? Under the other car? In a tree? On a rock? Flying Fred should wear a seat belt so he

won't be thrown outside the car."

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## LEANING LINDA

"I don't need a seat belt when I'm driving because I am always holding onto the steering wheel." Those were Linda's last words before her car was hit from behind by another car. It wasn't a big crash, but she was knocked across the seat. Leaning Linda couldn't get back behind the wheel before her car smashed into the one in front of her. Now Linda is leaning on crutches. "If only I had been wearing my seat belt. I could have

of the car."

remained in the driver's seat and kept control

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# AMUSEMENT PARK MYSTERY

How sharp is your eye? Are you a careful observer? Look carefully at this picture and circle the following things: eyeglasses, pen, flower, balloons, candle, cup, kite, rope, and two seats for a.

Why are the seat belts being used in this picture?

protect the child

Why should you wear one in a car?

protect yourself



APPENDIX L  
Test Form

Date \_\_\_\_\_

I. D. number 48

Place an X beside the best answer.

Example:

This paper is

white X

yellow \_\_\_\_\_

I don't know \_\_\_\_\_

The questions are about riding in a car.  
Be sure to answer each question.

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1. Do you feel safer when you wear a seat belt?

Yes \_\_\_\_\_

No \_\_\_\_\_

2. In a crash, is it better to be thrown from the car?

Yes \_\_\_\_\_

No \_\_\_\_\_

3. How long does it take to find and buckle a seat belt?

1 second \_\_\_\_\_

2 to 5 seconds \_\_\_\_\_

30 seconds \_\_\_\_\_

1 minute \_\_\_\_\_

4. If your car crashes, then catches fire, can a seat belt help save your life?

No \_\_\_\_\_

Not really \_\_\_\_\_

Yes \_\_\_\_\_

5. You are not wearing a seat belt and the car crashes. Can you catch yourself by holding on to the dashboard?

Yes \_\_\_\_\_

No \_\_\_\_\_

6. Do you need to wear a seat belt on short trips?

Yes \_\_\_\_\_

No \_\_\_\_\_

7. A seat belt works just as well if it is twisted.

True \_\_\_\_\_

False \_\_\_\_\_

8. Do you know who uses seat belts when you ride in your family's car?

Yes \_\_\_\_\_

No \_\_\_\_\_

Do people get hurt or killed in car crashes

9. on dry, sunny days?

Yes \_\_\_\_\_

No \_\_\_\_\_

10. at slow speeds?

Yes \_\_\_\_\_

No \_\_\_\_\_

11. Where do most accidents happen?

on short trips \_\_\_\_\_

on long trips \_\_\_\_\_

Could you be killed

12. if you are thrown out of the car?

Yes \_\_\_\_\_

No \_\_\_\_\_

13. If you hit some part of the inside of the car?

Yes \_\_\_\_\_

No \_\_\_\_\_

14. Will a loose seat belt protect you?

Yes \_\_\_\_\_

No \_\_\_\_\_

15. Is it worth the time it takes to buckle a seat belt?

Yes \_\_\_\_\_

No \_\_\_\_\_

Who should wear a seat belt?

16. Children your own age Yes \_\_\_\_\_

No \_\_\_\_\_

17. Pregnant women Yes \_\_\_\_\_

No \_\_\_\_\_

Four people are in a car that crashes. The driver is not wearing a safety belt; the passengers are.

The following can happen:

18. The driver can hurt other people in the car. Yes \_\_\_\_\_

No \_\_\_\_\_

19. People in other cars can be hurt. Yes \_\_\_\_\_

No \_\_\_\_\_

20. The driver may hit the inside of the car and be killed or injured. Yes \_\_\_\_\_

No \_\_\_\_\_

21. In a car crash, holding on to the steering wheel would protect the driver as much as wearing a seat belt. True \_\_\_\_\_

False \_\_\_\_\_

22. If you are not wearing a seat belt and the car crashes, the other riders will keep you from being hurt. True \_\_\_\_\_

False \_\_\_\_\_

23. The steps for putting on a seat belt are listed. Number them from 1 to 5 in the order you would do them.

- \_\_\_\_\_ Push the clasp into the buckle until it clicks
- \_\_\_\_\_ Pull the shoulder belt so it feels good across your chest
- \_\_\_\_\_ Find the two ends of the seat belt
- \_\_\_\_\_ Pull the seat belt so it is snug and comfortable across your lap
- \_\_\_\_\_ Grasp the metal clasp and pull the seat belt across you

## APPENDIX M:

**FIGURE 1**  
(T) GROUP TEST SCORES

n	Pre	Post	Difference	
	X	X <sub>2</sub>	D	D <sup>2</sup>
1	18	18	-	-
2	17	18	1	1
3	13	19	6	36
4	16	15	-1	1
5	17	18	1	1
6	16	18	2	4
7	20	18	-2	4
8	20	19	-1	1
9	15	13	-2	4
10	15	19	4	16
11	18	19	1	1
12	19	20	1	1
13	21	16	-5	25
14	14	19	5	25
15	15	19	4	16
Total	254	268	14	136
$\bar{X}$	16.93	17.86	.93	

FIGURE 2

(C) GROUP PRE-TEST SCORES\*

n	
1	17
2	16
3	20
4	17
5	16
6	18
7	17
8	16
9	18
10	17
11	17
12	14
13	19
14	14
15	20
16	15
17	21
18	19
19	20
20	16
21	14
22	19
23	15
24	19
25	18
26	19
27	15
28	19
29	19
30	20
31	15
32	16
33	15
34	17
35	19
36	19
37	14
38	14
39	20
40	17
41	19
42	17
TOTAL	726
$\bar{X}$	17.28

\*No post-tests returned.