April 1983
Final Report

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ASSESSMENT OF THE SAFEY-RELEVANCE OF PEDESTRIAN AND BICYCLIST PROGRAMS
Volume I: Conduct and Results

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16. Abstract

This document (Volume One of a Two Volume Report) describes the development of a paper-and-pencil instrument for assessing the safety relevance of pedestrian and bicyclist safety education programs. The safety relevance of the program is the extent to which its content reflects the findings of NHTSA research in accident causation and countermeasure development. This instrument, called the Program Assessment Kit (PAK), was developed in response to a need to provide Federal, state, and local safety program personnel with a comprehensive and systematic means for performing comparative evaluation of alternate programs. It can also be used as an aid to the improvement of existing programs and the development of new programs.

The PAK was developed using the Worth Assessment Technique. Assessment areas and weights were provided by experts in pedestrian safety, bicycle safety and education.

The PAK contains a set of Program Assessment Scales (PAS) for both program types by various program age levels. Each PAS provides 11 subscores and three area scores -- safety relevance (content), instructional approach and materials adequacy. It also includes a checklist survey of implementation considerations, guidelines for interpreting reported program effectiveness and a description of NHTSA pedestrian and bicyclist accident types.

The PAK was tested by having project staff independently use the PAK to assess a sample of 23 pedestrian and bicyclist safety education programs. High interrater reliabilities were obtained (mean of .843) and all sub and area scores except two ranged between .657 and .905. These exceptions were the result of ambiguous instructions which were subsequently revised. The mean composite (overall) score for the pedestrian programs sampled was 37.5 (100 points possible); for bicyclist programs, 42.8. The most common program weaknesses identified were too much emphasis on irrelevant information (thus reducing the time or emphasis available for safety relevant content) and too little practice of safety behaviors.

Volume One also contains a listing and classification of 97 non-NHTSA programs developed in the United States which were available as of May 1981.

Volume Two of the Report contains the PAK in ready-to-use form.

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METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.96	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.
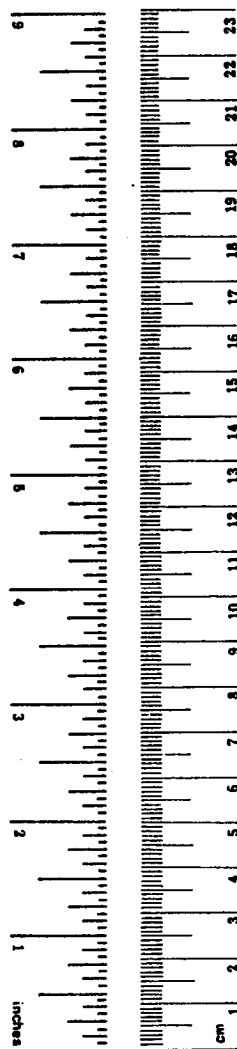
Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

°F -40   0   32 40   80 98.6 120   160 200 212 °F
°C -40 -20   0   20   37   40   60   80 100 °C

ACKNOWLEDGEMENTS

Objectives

The objectives of this project were to:

1. Develop a package of materials, called the Program Assessment Kit or PAK, to be used in assessing the safety relevance of pedestrian and bicyclist safety education programs. The PAK was to be directed to:

    - program users, as an aid in the selection of programs at the federal, state and local levels

    - program developers, as an aid to new program development and in the modification of existing programs.

    The PAK was to include detailed instructions and other supporting material so that these users could perform their own program assessments.

2. Test PAK for its interjudge reliability on a limited set of existing pedestrian and bicyclist programs.

3. Obtain information from intended users (including potential program developers) on the utility of the PAK, including its feasibility, desirability, and applicability.

4. Identify and classify major pedestrian and bicyclist safety education programs in use as of May, 1981.

Background

Over the years NHTSA has been asked by state and local safety practioners to provide information on the suitability of various pedestrian and bicyclist safety education programs. Unfortunately, in the case of pedestrian and bicyclist programs, a comprehensive and defendable set of criteria against which such products can be judged was not available. Therefore, the need existed for the specification of

(Continue on additional pages)

criteria upon which such programs could be evaluated and, further, the development of a means by which Federal, state, and local personnel could perform their own program assessments.

Since 1968 NHTSA has been involved in a research program which has generated an extensive body of knowledge concerning the causes of pedestrian and bicyclist/motor vehicle accidents. A number of unique accident types have been identified which differ in terms of their causal factors and age groups most frequently victimized. Countermeasures, many involving information and educational content, have been developed specifically to combat individual accident types.

The importance of this research is that it permits educators to focus on specific unsafe situations with precise advice for avoiding them. Using the descriptions of accident types, it is possible to judge the relevance of safety-education programs to the factors that contribute directly to actual accidents. A safety-education program that does not relate to the accident types in terms of warning users of their existence or telling them how to avoid or get through such situations safely is not likely to be very successful in reducing accidents.

A judicious way of selecting a program would involve assessing the safety relevance of its content to known accident problems. In addition to assessing safety relevance, a program assessment should systematically examine the methods and approaches used to teach the subject matter and the materials used to convey program information to administrators, instructors, and students.

The purpose of the Program Assessment Kit is to provide decision makers with just such a means for assessing pedestrian and bicyclist safety-education programs. The PAK provides for the first time in one place a summary of the most critical elements in bicyclist and pedestrian safety education, based on the extensive research programs sponsored by the NHTSA.

Development of the PAK

The assessment device itself was to be a self-contained package of materials which would provide the user with everything he/she required to assess one or more programs (or individual program materials) and evaluate the results with regard to his/her unique program needs. A program was defined as a packaged unit of instruction with objectives, specified teacher and learner activities and associated materials.

The development of the PAK itself involved several major elements.

A measurement and evaluation methods review resulted in the selection of the Worth Assessment Technique as the model to be used to develop the PAK. Worth Assessment provides the framework for instrument design, the

specific <u>content</u> dimensions of the instrument are drawn from the particular evaluation question at hand. Specifically, application of the Worth Assessment technique:

1. Stimulates putting evaluation criteria into measurable (operational) form;

2. Produces a structure which interrelates criteria obtained from different areas of concern;

3. Provides a system for determining the importance of each criterion relative to others; and

4. Provides a systematic and objective method for comparing materials/programs on their overall compliance with the evaluation criteria.

A panel of pedestrian/bicyclist safety, education and methodology specialists was selected and asked to list the factors to be included in the PAK. The factors suggested by the panel of specialists were organized into a hierarchy. The end result of this process is shown in the Figure on the following page. As shown in the figure, evaluation of a program is divided into three main program components -- Safety Relevance (Content), Instruction, and Materials. Each component is successively subdivided down to specific factors, shown at the far right of the figure. There are a total of 76 factors across all three components.

Assessment criteria were then defined for each of the 76 factors, making use of the panel of specialists and also literature review. The major focus of this task was a detailed review of the NHTSA pedestrian and bicyclist accident studies with emphasis on the various accident types, their causal elements and countermeasures.

The panel was asked to assign weights to each branch (i.e., dimension) in the hierarchy which would reflect to relative importance of that dimension. The Worth Assessment Technique provided for both overall and sub-component scores. Each alternative at each level in the hierarchy was assigned a weight reflecting the relative importance of that alternative relative to the others at that level. A given weight value was the mean of the weight values provided by the panel members. The weights were expressed as decimal fractions with the combined weights for all alternatives at a given level equaling 1.00.

A program's score for a given alternative at any level is found by adding the weighted scores for each of the components included in that alternative and multiplying by the alternative weight. For example, in the hierarchy shown in the Figure, the score for the safety relevance component is obtained by adding the scores obtained in the attitudes, knowledge and behavior/skill dimensions and multiplying by the weight value assigned to the Safety Relevance component. Of course, the score values for attitudes, knowledge and behavior/skill are each obtained by the same process from their component dimensions.

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                                                    I-- VALUE FOR LIVING THINGS
                                  I-- ATTITUDES ------------I-- RESPONSIBILITY FOR SAFETY
                                  I                         I-- RESPECT FOR AUTHORITY
                                  I
                                  I
                                  I                                        I-- BASIC TECHNIQUES
                                  I                   I-- OPERATING PROCEDURES ----I-- ADVANCED TECHNIQUES
                                  I                   I                             I-- SPECIAL SITUATIONS
                                  I                   I
                                  I                   I                             I-- RULES OF THE ROAD
                                  I-- KNOWLEDGE ------------I                       I-- AGE-RELATED ACCIDENT TYPES
           SAFETY RELEVANCE       I                   I-- TRAFFIC AWARENESS -------I-- LOCAL ACCIDENT SITUATIONS/HAZARDS
    I-- (CONTENT)-------------I    I                   I                             I-- PHYSICAL CAPABILITIES/LIMITS
    I                         I    I                   I
    I                         I    I                   I                   I-- VEHICLE
    I                         I    I                   I-- EQUIPMENT SELECTION -----I
    I                         I    I                                       I-- OPERATOR
    I                         I    I
    I                         I    I                                       I-- BASIC SKILLS
    I                         I    I                   I-- MOTOR SKILLS ------------I-- REPAIR & MAINTENANCE
    I                         I    I                   I                             I-- EVASIVE TECHNIQUES
    I                         I    I-- BEHAVIOR/SKILL ------I
    I                         I                          I                   I-- RISK ASSESSMENT
    I                         I                          I-- COGNITIVE SKILLS --------I-- VISUAL SEARCH/HAZARD RECOGNITION
    I                         I                                                I-- DECISION MAKING
    I                                                                         I-- PERCEPTUAL SKILLS
    I
    I
    I                                                                    I-- WRITTEN MATERIALS
    I                                              I-- PASSIVE INVOLVEMENT -----I-- LECTURES
    I                                              I                             I-- DEMONSTRATIONS (MODELING)
    I                                              I                             I-- AUDIO-VISUAL MATERIALS
    I                                              I
    I                        I-- LEARNING MODE -------I                        I-- TESTS
    I                        I                     I                             I-- GAMES
    I                        I                     I                             I-- ARTS/CRAFTS
    I                        I                     I-- ACTIVE INVOLVEMENT ------I-- VALUES CLARIFICATION EXERCISES
    I                        I                                                 I-- ON-BIKE/ON-FOOT TRAINING
    I                        I                                                 I-- DISCUSSION/QUESTIONS
    I                        I                                                 I-- DECISION-MAKING PRACTICE
    I                        I
    I                        I                     I-- REAL
    I                        I-- LEARNING          I                          I-- INDOORS
    I                        I    ENVIRONMENT -------I-- SIMULATED ---------------I
    I                        I                     I                          I-- OUTDOORS
    I                        I                     I-- CLASSROOM
    I-- INSTRUCTION ----------I
    I                        I                                              I-- FEAR
    I                        I                                              I-- LAW & ORDER
PROGRAM COMPONENTS---I       I                     I-- TONE --------------------I-- INFORMATIONAL
    I                        I-- MOTIVATIONAL      I                          I-- RESPECT FOR HAZARDS
    I                        I    APPROACH -----I                              
    I                        I                   I                            I-- FEEDBACK
    I                        I                   I-- FORMAT ------------------I-- REWARD
    I                        I                                                I-- IMITATION
    I                        I
    I                        I                                            I-- CLASS DURATION
    I                        I                     I-- CONTACT TIME ------------I
    I                        I                     I                          I-- NUMBER OF CLASSES
    I                        I-- EXPOSURE -----------I
    I                                              I-- REPETITION OF CONCEPTS
    I
    I
    I                                                                    I-- STATEMENT OF THE PROBLEM
    I                                              I-- BACKGROUND INFO ---------I-- PROGRAM DESCRIPTION
    I                                              I                             I-- THEORETICAL FOUNDATIONS
    I                                              I
    I                                              I                        I-- TIME
    I                        I-- ADMINISTRATOR'S   I                          I-- PERSONNEL
    I                        I     GUIDE ------------I-- IMPLEMENTATION         I-- EQUIPMENT/FACILITIES
    I                        I                   I    REQUIREMENTS -------I-- INSTRUCTOR TRAINING
    I                        I                   I                          I-- COST
    I                        I                   I
    I                        I                   I                          I-- TROUBLE-SHOOTING GUIDE
    I                        I                   I-- RESOURCES ---------------I-- BIBLIOGRAPHY OF RELEVANT MATERIALS
    I                        I
    I                        I                                            I-- OUTLINES OF LECTURES
    I                        I                                              I-- BIBLIOGRAPHY OF REFERENCES
    I                        I                     I-- COMPLETENESS ------------I-- IDEAS FOR ACTIVITIES
    I                        I                     I                          I-- BACKGROUND INFORMATION
    I                        I                     I                          I-- DESCRIPTION OF PROGRAM MATERIALS
    I                        I-- INSTRUCTOR'S      I
    I                        I     MANUAL ----------I                        I-- BULK
    I                        I                     I-- ATTRACTIVENESS ----------I-- DESIGN
    I-- MATERIALS -----------I                     I                          I-- PRODUCTION
                             I                     I
                             I                     I                          I-- CLEAR & CONCISE
                             I                     I-- EASE OF USE -------------I-- EXTENT OF EXTRANEOUS MATERIAL
                             I                                                I-- ORGANIZED
                             I
                             I                     I-- APPROPRIATENESS OF LANGUAGE
                             I                     I-- RELEVANCE TO PROGRAM OBJECTIVES
                             -I-- STUDENT'S WORKBOOK --I-- ENJOYABLE/SATISFYING TO STUDENTS
                             I                     I
                             I                     I                          I-- CHARACTERIZATION
                             I                     I-- ATTRACTIVENESS ----------I-- GRAPHICS
                             I                                                I-- PRINTING
                             I
                             I                     I-- ATTENTION GETTING/HOLDING
                             I                     I-- APPROPRIATENESS OF LANGUAGE
                             I-- AUDIO/VISUALS -------I-- COMPLEXITY OF PRESENTATION
                                                   I
                                                   I                          I-- AUDIO
                                                   I-- PRODUCTION QUALITY ------I
                                                                              I-- VISUALS
```

Program Assessment Kit Content Hierarchy

An important outcome of the development process (obtained both from the panel of specialists and the review of NHTSA accident research) was the determination that the criteria must be weighted differently depending on the age group to which the program is addressed. For example, 5-9 year old bicyclists are overrepresented in "ride out" accidents so assessment of programs directed at this age group must weight the presence of "ride out" content more heavily than assessment of programs intended for older riders. Thus, separate Program Assessment Scales (PAS) were developed for four target age groups within each program type (pedestrian or bicyclist). A separate scoring algorithm was developed for each PAS making use of the weighting information provided by the panel.

Supporting materials were developed (e.g., instructions for performing the assessment) which, together with the PASs made up the draft version of the PAK. The draft PAK was tested by the review panel, contractor and NHTSA personnel (a total of 12 evaluators) using a pedestrian and a bicyclist safety program. PAK materials were revised as a result of this tryout.

As development of the PAK proceeded, a second focus of the project was to identify existing non-NHTSA pedestrian and bicyclist safety programs. The purpose of this activity was to compile a listing as a service to potential users and to provide a source of programs for use in testing the assessment device. This activity was accomplished via contacts within NHTSA Federal and Regional Offices, the State Governor's Representatives and a large number of private sector organizations concerned with pedestrian/bicyclist safety. Program materials were obtained from program developers. They were reviewed and the programs classified on several content and structure dimensions.

The final step in the development of the PAK was to use the revised instrument to assess a specimen set of 23 pedestrian and bicyclist programs selected from the listing of 96 programs. Each program was assessed independently by three evaluators.

The revised PAK was also examined by a panel of individuals selected as representative of typical PAK users. Both program users and potential program developers (a total of 11 persons) were asked to review the contents of the PAK and critique their feasibility, desirability, applicability and usefulness in achieving their own program assessment needs. They were asked to define specific strengths and weaknesses.

The PAK underwent final revisions based on the results of the programs assessment and feedback provided by the user panel.

Results

The PAK development resulted in a ready-to-use materials package as described in the next section.

The tryout of the PAK involving the panel of 12 specialists, each reviewing one pedestrian and one bicyclist program, resulted in the following interrater reliability scores:

	Average Interrater Reliability
Bicyclist & Pedestrian (all items)	.65
Bicyclist (Composite Score)	.66
Bicyclist (Safety Relevance)	.68
Bicyclist (Instruction)	.47
Bicyclist (Materials)	.75
Pedestrian (Composite Score)	.64
Pedestrian (Safety Relevance)	.56
Pedestrian (Instruction)	.64
Pedestrian (Materials)	.73

The reliability values are all moderate to high especially considering the diversity of backgrounds represented among the raters.

The assessment of the 23 pedestrian and bicyclist programs provided the following assessment scores:

	Score*			
	Minimum	Maximum	Median	Mean
Pedestrian Programs				
Safety Relevance	18.5	74.3	29.3	36.2
Instructional Approach	21.8	59.0	29.5	34.1
Materials Adequacy	25.3	67.6	39.6	44.2
Composite Score	24.5	67.5	32.5	37.5
Bicyclist Programs				
Safety Relevance	9.7	80.0	38.7	40.8
Instructional Approach	15.6	73.3	38.4	41.9
Materials Adequacy	14.0	93.2	53.2	47.3
Composite Score	14.9	81.1	40.7	42.8

*Scores shown are the means of the scores given by three independent evaluators. The maximum possible score is 100.

In general, bicyclist programs rated higher on the three component scores than did pedestrian programs. With regard to safety relevance the scores reflect three factors. First, many programs omitted important information (e.g., midblock crossing instruction for pedestrians). A second major problem was a tendency to over emphasize information that was not directly relevant to safety for the target age group (e.g. bicycle maintenance directed at young children). This resulted in less time being available for the safety relevant content. Finally, the programs did not provide any (or enough) practice of important safety skills.

The interjudge reliabilities for the three evaluators across the 23 programs may be summarized as follows:

	Average Interrater Reliability*
Composite Scores	0.843
Safety Relevance (Overall)	0.772
Attitudes	0.153
Knowledge	0.798
Behavior/Skill	0.798
Instructional Approach (Overall)	0.824
Learning Mode	0.771
Learning Environment	0.905
Motivational Approach	0.448
Exposure	0.693
Materials Adequacy (Overall)	0.784
Administrator's Guide	0.784
Instructor's Manual	0.800
Student's Manual	0.750
Audio-Visuals	0.657

*Average scores across all combinations of the three evaluators. Perfect agreement = 1.000

It can be seen that, with the exception of the Attitudes element within the Safety Relevance component and the Motivational Approach element written the Instructional Approach Component, all reliabilitiies were uniformly high. The lack of agreement on these elements was due to ambiguous instructions. These instructions were rewritten as part of the final PAK revision.

Potential Applications

The PAK in its final form is contained in Volume Two of this Report. The PAK consists of:

. Introductory Material. This material describes what the PAK is, why it is needed, for whom it is intended, for what purposes it can be used and how it was developed.

. The Program Assessment Scale (PAS) Questionnaires. A set of
eight PAS questionnaires are provided with instructions for
completing the PAS appropriate for the program and age group
being assessed. PAS questionnaires are provided for the
following combinations of program type and age range:

Program Type	Age Range	Grades
Bicyclist	5 - 6	K - 1
Bicyclist	7 - 8	2 - 3
Bicyclist	9 - 15	4 - 10
Bicyclist	16 +	11 +
Pedestrian	5 - 8	K - 3
Pedestrian	9 - 11	4 - 6
Pedestrian	12 - 15	7 - 10
Pedestrian	16 +	11 +

. A Checklist of Implementation Considerations. This checklist
permits the user to assess the feasibility of implementing a
given program given his/her unique constraints. The following
program requirements are assessed: Facilities/Equipment,
Materials, Staffing, Scheduling and Costs.

. Guidelines for Interpreting Effectiveness Evaluations. These
guidelines help the user determine the adequacy of any evalua-
tions that may be provided to support a given program's
effectiveness. The issues discussed in the guidelines include
appropriateness of evaluation measures, validity of the research
design, significance of results and generalizability of results.

. Descriptions of NHTSA Accident Types. Each of the 37 Pedestrian
and 37 Bicyclist accident types are listed and the major accident
types in each typology are described and illustrated.

The PAK is intended for use by decision makers involved with bicyclist
or pedestrian safety education programs at several levels:

Administrators -- people who decide which of several programs
might be purchased or adopted, whether for a single school, a
school district, or statewide.

Program Developers -- people who need up-to-date and practical
information on the relative importance of different content areas
and instructional approaches.

Instructors -- people who need to know which of several content
areas need to be emphasized or modified to address the needs of
particular target audiences.

Users of the PAK might be paid professionals in an educational institution
or agency or they might be volunteers in a community-action group. They
need not be experts in bicycle or pedestrian safety in order to use the
PAK effectively.

The Program Assessment Scales and their companion materials provide important tools for approaching a wide variety of decision-making problems. The following examples illustrate some of the situations in which the PAK may be used:

Example One. Examination of your community's pedestrian accident records has revealed that children in the five- to nine-year-old age group are disproportionately involved in these accidents. You have identified six or seven recently developed education programs that claim to address pedestrian safety for that target population. By examining program descriptions, you have narrowed the field down to three candidates for adoption in your school system. Which of these programs best addresses the safety needs of this age group?

Example Two. Your recreational program developed a bicycle education program intended for five- to nine-year-olds. To what extent is the program also suitable for use with older children? Does it really provide for the special needs of the youngest children in the program?

Example Three. Your school system has a limited amount of time set aside for safety education. Accordingly, it uses a "combination" program that covers many different facets of safety. To what degree does the program address critical information in the areas of bicyclist and pedestrian safety?

Example Four. You have located a good film on bicycle touring that includes some coverage of bicycle safety. Before you show it to your scouting group, you want to know if it covers the "right" issues in bicycle safety. How well does this film meet the standard for a "good" bicyclist safety education material?

Example Five. After examining a number of different programs under consideration for adoption in your school system, you have narrowed the field down to two programs that received essentially equivalent Safety Relevance scores. Which of the two programs would be more likely to be implementable in your schools? What are the main implementation advantages of that program? Which program has the most believable effectiveness evaluation?

Example Six. Your school system wants to revise the safety program that was developed in the 1970's (before the NHTSA accident analyses were completed). In what areas is it most in need of updating to reflect the most recent research findings?

Using the PAS and its companion materials, a decision-maker can answer each of the questions raised on these examples.

Listing of Pedestrian and
Bicyclist Programs

One of the objectives of this project was to identify, list, and classify pedestrian and bicyclist safety education programs available as of May, 1981. Therefore, an extensive effort to identify such programs was conducted. Our search included all grade levels and ages, from preschoolers through senior citizens, and was focused on programs developed without NHTSA funding within the previous five years.

To accomplish this identification task, we requested program materials or program leads from Governors' Highway Safety Representatives in each state and from many national safety and educational organizations. We obtained additional leads by examining literature reviews, program lists provided by computerized searches, and other documents.

Once a program had been identified, a checklist was completed to describe its contents. These data formed the basis for Appendix A to this report which contains a pedestrian and bicyclist program listing as well as selected program characteristics. However, it should be pointed out that an evaluation of these programs was not conducted.

Each of the programs in Appendix A are listed and described in terms of the following:

. Year developed/revised

. Proportion of contents addressing pedestrian vs. bicyclist information

. Intended grade levels

. Types of content

. Types of materials used

. Whether skill and/or knowledge tests are used

. Proportion of field vs. classroom instruction

. Whether a simulated or real training environment is employed (or neither)

. Whether instructor training is required and/or provided

. Whether evaluation information is available and, if so, its type.

The programs identification and classification task resulted in the identification and classification of 97 safety education programs developed in the United States. Of this total, 16 were pedestrian programs, 39 were bicyclist programs and the remaining 42 programs had contents related to both pedestrian and bicyclist safety. In addition, a listing and description of three NHTSA programs (two pedestrian and one bicyclist) was included.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

SECTION ONE

INTRODUCTION

This document is the final technical report of a project designed to develop a decision-making tool for use by educators and administrators in selecting a pedestrian or bicyclist safety-education program for grade school children and adults. It also provides useful guidance to developers of such programs.

Background

The need for such an assessment methodology can be illustrated by the following scenario:

The father of a nine-year-old becomes concerned about pedestrian safety instruction in the schools when his child is injured in an accident in front of his house. He speaks at the PTA, writes a letter to the newspaper and calls the mayor.

The mayor asks for a copy of accident statistics and is alarmed to find that 5 to 9 year-olds are hit by cars about three times as often as would be expected from their representation in the population. The mayor writes a memo to the president of the School Board.

The School Board president agrees that traffic safety should be a high priority item in the schools' curriculum. The president convinces the Board to mandate traffic safety education in Kindergarten through sixth grade.

The Superintendent of Education, receiving the mandate, asks the Chief of Police to recommend suitable curriculum materials.

The Chief of Police passes on the request through channels to the Division of Highway Safety in the State Highway Department. The safety specialist in the Highway Department knows of several programs, but doesn't have enough information about them to decide which one is best for the school system that will implement it, so the specialist calls the NHTSA Regional Office for more information about the programs.

The Regional Office request is forwarded to NHTSA specialists in Washington. Unfortunately, NHTSA does not have available a comprehensive yet easy to use paper-and-pencil instrument to aid a decision maker in selecting among the safety-education programs under consideration. Therefore, only general guidelines can be sent back to the Superintendent of Education.

The school system ultimately chooses a program after reviewing the promotional literature they receive from the vendors of the various programs that have been suggested to them.

Is the program the school system selected a good one from a safety standpoint? Does the content of the program address what is now known concerning the causes of pedestrian accidents? For example, NHTSA research has shown that there are a number of distinct pedestrian accident types[1], each with its own unique situational factors and associated human errors. The importance of this research is that it permits educators to focus on specific unsafe situations with precise advice for avoiding them. Using the descriptions of accident types, it is possible to judge the relevance of safety-education programs to the factors that contribute directly to actual accidents. A safety-education program that does not relate to the accident types in terms of warning users of their existence or telling them how to avoid or get through such situations safely is not likely to be very successful in reducing accidents.

In addition, a program cannot be effective if it does not effectively communicate its content or if it is not properly implemented. Therefore, we must ask: Does the program follow sound learning and teaching practices? Are the program materials adequate to support teachers in implementing the program? Does the program capture the children's attention? How much will it cost to implement the program?

The scenario just presented and the questions we posed apply equally well to bicyclist safety education programs. Again, we know that there are a set of distinct accident types[2] involved.

As in the fictitious example cited above, over the years NHTSA has been asked by state and local safety practitioners to recommend pedestrian and bicyclist safety education programs. Therefore, the need existed for the development of a means by which Federal, state and local personnel could perform their own program assessments.

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[1] For a discussion of pedestrian accident types see:
  . Snyder, M.B. & Knoblauch, R. Pedestrian safety. The identification of precipitating factors and possible countermeasures. Volumes I and II. Springfield, VA: National Technical Information Service, U.S. Department of Commerce, January 1971. (Volume I--DOT-HS-800; Volume II--DOT HS-800 404)
  . Pedestrian Accident Reduction Guide. Springfield, VA: National Technical Information Service, U.S. Department of Commerce, November 1981. DOT HS-805 850.

[2] Cross, K. A study of bicycle/motor-vehicle accidents: Identification of problem types and countermeasure approaches. Washington, DC: U.S. Department of Transportation, September 1977. Contract No. DOT-HS-00982. (Available from NTIS)

The project reported herein was commissioned to meet this need.

Objectives

As noted above, the general objective of this project was to develop and test a package of materials which could be used to assess the safety relevance of pedestrian and bicyclist safety programs.

More specifically, the objectives of this project were to:

1. Identify and classify major pedestrian and bicyclist safety education programs, developed in the United States and in use as of May, 1981.

2. Develop a package of materials, called the Program Assessment Kit (PAK), to be used in assessing the safety relevance of pedestrian and bicyclist safety programs. The PAK was to be directed to:

   - program users, as an aid in the selection of programs at the federal, state and local levels

   - program developers, as an aid to new program development and in the modification of existing programs.

   The PAK was to include detailed instructions and other supporting material so that these users could perform their own program assessments.

3. Test PAK for interrater reliability on a limited set of existing pedestrian and bicyclist programs and assess the PAK's general useability. The evaluation was <u>not</u> intended to critique individual programs. Since the final suitability of a program is dependent on the unique needs of individual school systems, such a critique can only be made by the school system itself.

Report Overview

This document is Volume One of two volumes. It provides a review of the process by which the project was conducted including the identification of existing pedestrian and bicyclist safety programs (Section Two) and the development of the PAK (Section Three). Section Four describes the conduct of the programs assessment using the PAK and the results of the assessment. Section Five provides a brief description of the Program Assessment Kit in

its final form following development and testing. The actual listing of
the pedestrian and bicyclist safety programs, together with the major
characteristics of each, is found in Appendix A. Data collection forms
and materials are included as Appendix B.

Volume Two of this report contains the complete set of PAK
materials. It is designed for "stand alone" use, i.e., without need to
reference Volume One, for those persons wanting to perform actual program
evaluations.

SECTION TWO

COLLECTION OF EXISTING PROGRAM MATERIALS

The first task in the project was to develop a list of pedestrian and bicyclist safety programs then in existence and to classify these programs.

This listing would provide:

1. Descriptions of and sources for available pedestrian and bicyclist safety education programs. The listing, while not exhaustive, would provide assistance to potential program users in locating programs suitable to their needs.

2. A source from which a specimen set of programs could be selected later in the project for use in testing the Program Assessment Kit.

The listing was to be limited to programs which were currently available for distribution (as of May, 1981) and which has been developed within the United States. None of NHTSA's pedestrian and bicyclist programs were ready for distribution at this time and they were not considered for listing (but see footnote on page 2-5).

For our purposes a "program" was defined as a formal unit of instruction having objectives (although not necessarily formally stated), teacher and learner activities and associated program materials. We did not consider a film as a program unless it was accompanied by an instructor's guide which provided a broader training context of which the film was only a part. Similarly, other materials which might be employed by schools for an uncoordinated single exposure presentation were not considered (unless they were also included as part of a formal program).

The conduct of the Task was divided into three subtasks as discussed below.

Identification of Program Sources

Sources of existing non-NHTSA pedestrian and bicyclist safety programs were identified through contacts with NHTSA and the many agencies and organizations involved in pedestrian and bicyclist safety programs. Contacts were made with the following organizations:

. American Automobile Association (AAA)

. American Association of Motor Vehicle Administrators (AAMVA)

. American Driver and Traffic Safety Education Association (ADTSEA)

- The Bicycle Federation

- Highway Users Federation for Safety and Mobility (HUFSAM)

- International Association of Chiefs of Police (IACP)

- National Safety Council

- Transportation Research Board—Pedestrian and Bicyclist Committees

- All NHTSA Regional Offices

- All Governor's Highway Safety Representatives

The above sources provided information about specific programs and/or recommendations concerning other organizations/individuals to contact.

For example, the American Automobile Association's Pedestrian Inventory Program provided ASA with an extensive listing of pedestrian safety programs nationwide. This annual questionnaire, returned by almost 3,000 communities from 27 states in 1979, solicits information on legislation, enforcement, traffic engineering, safety program coordination, school traffic safety activities, public education information dissemination and on-going safety programs as well as pedestrian accident characteristics.

The Bicycle Federation provided an important source of programs and program information. The Bicycle Federation has accumulated an extensive library of educational materials (curricula, films, filmstrips, posters and brochures), research reports and state and local program documentation. Much of the material gathered by the Federation deals with both pedestrian and bicyclist safety. The Federation has copies of most of the state-wide and local curricula as well as commercial programs. All programs are catalogued for easy information retrieval.

In addition to making contact with organizations, project staff conducted a search of NHTSA's Highway Safety Literature abstracts, their National Project Recording System and the literature reviews conducted in connection with their other pedestrian and bicyclist related projects.

Collection of Materials

Once information sources and relevant programs were identified, project staff contacted the appropriate sources and requested a copy of all program-related materials. This subtask involved three major activities as discussed below.

Determine Materials to be Obtained

The objective of materials collection was to obtain a sample copy of all materials used during the conduct of a particular program. Materials used in support of the program (e.g., a pamphlet sent to parents) would also be requested. It was recognized that certain materials (e.g., mock-up cars) might be too large to be shipped. In these instances, we sought to obtain photos of the subject material.

Since materials alone do not make a program, the decision was made to request (as applicable) information concerning the following for each program:

1. Program goals/objectives--what are the stated purposes of the program?

2. Developmental history--why was the program developed; what need or problem was it designed to address; who developed it; what resources were used to fund development?

3. Primary target groups--what age and/or user group(s) is the program designed to address?

4. Curriculum guidelines/procedures--this would include teacher's guides, scheduling plan, assessment procedures, etc.

5. Implemenation requirements--this would include, for example, types of local support required, legal requirements, etc.

6. Personnel requirements--levels of staff necessary to operate the program (e.g., administrators, teaching staff, aides) and educational or training requirements for each level of staffing.

7. Program scope--number of locations at which program is offered and approximate number of target group members reached.

8. Instructional effectiveness--what evidence is there that students/participants do in fact learn the key skills/knowledge covered by the program; for example, pre-post knowledge test results, end of course skill test results.

9. User acceptance--reaction to the program by teachers, students, support personnel, parents, etc.

10. Administrative feasibility--overall cost, cost per student, teacher-student ratio, equipment/facility requirements, reaction to program by administrative-level personnel.

11. Countermeasure effect--this would include documentation of appropriate changes in safety-related behaviors, or positive changes in accident rates or particular accident types.

In reviewing the above information needs, it was recognized that very few of the programs would have been subjected to systematic evaluation. Where data existed, they would often pertain to the affective or cognitive domains and would not tell us much more about actual improvement in safety-related behaviors or accident rates. However, the decision was made to collect whatever evaluation data was available.

Contact Information Sources

The following procedure was employed for securing cooperation from the various program sources:

1. It was determined, through a series of telephone calls, who in the organizational structure decides the policy about what the organization "does" and "does not do" in regard to distributing program materials.

2. Contact was made with that individual by telephone. The research study was briefly described and why it was important to the public and to his/her organization to provide program materials.

3. The phone call was followed up with a letter providing a detailed description of the study, a list of specific actions required of their organization, and an account of benefits to the organization for participating.

4. The letter was followed with a telephone call to answer any questions, obtain cooperation, and reemphasize the deadline by which we needed to receive their materials.

Procure/File Materials

The materials were catalogued and filed as received. Separate files were established for each program to avoid possible misplacement of materials. As part of the cataloging process, a checklist for each program was completed to determine which materials had been received. If materials that had been requested were not received, follow-up phone calls were made to secure them.

We requested that program materials be provided free of charge. If this could not be negotiated, materials were requested on a loan basis. As discussed in Section Four, certain programs were selected for assessment. Since it was desirable to have such program materials on a permanent basis, some of these materials were purchased.

Classification of Programs

As program materials were received they were reviewed and classified on the following dimensions:

1. Year developed or most recent revision.

2. Program Type -- pedestrian, bicyclist or combination. Combination programs, i.e., those involving both pedestrian and bicyclist content, were listed in terms of the proportion of lessons or time allotted to each topic.

3. Grade level(s) to which the program was addressed.

4. Content, i.e., presence/absence of content related to:

    . Accident types/hazard recognition

    . Safety procedures and laws

    . Equipment and maintenance

    . Motor skill development

    . Decision making

5. Materials included/intended for use with the program.

6. Tests, skill and/or knowledge based, included with the program.

7. Proportion of field versus classroom training provided.

8. Whether a simulated, real, or no training range or practice environment was required by the program.

9. Whether instructor training was available and/or required.

10. What type of evaluation was performed (if any)--instructional effectiveness, user acceptance, behavior change, or accident reduction.

Results of Program Identification
and Classification

As the result of the activities described above, 97 programs were identified. Of this total 16 were pedestrian programs, 39 were bicyclist, and 42 had content related to both.

Appendix A contains the listing of these programs and a matrix of program characteristics[3].

Each program is described in terms of:

- Year developed/revised,
- Proportion of content addressing pedestrian versus bicyclist information,
- Intended grade levels,
- Types of content,
- Types of materials used,
- Whether skill and/or knowledge tests are included,
- Proportion of field versus classroom instruction,
- Whether a simulated or real training environment is employed (or neither),
- Whether instructor training is required and/or provided and
- Whether evaluation information is available and its type.

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[3]NHTSA sponsored pedestrian and bicyclist safety programs were not included in this listing and classification task. However, these programs are listed separately in Appendix A, together with classification information.

SECTION THREE

DEVELOPMENT OF THE PROGRAM ASSESSMENT KIT

At the same time that Pedestrian and Bicyclist safety education programs were identified, collected and classified, work proceeded on the development of the Program Assessment Kit (PAK). As noted previously, the objective of the PAK was to provide pedestrian and bicyclist safety education program users and developers with a reliable instrument which they could use to assess the safety relevance of pedestrian and bicyclist programs.

The development of this instrument package required completion of three major subtasks. First, the areas to be included in the assessment were determined, then theoretical considerations related to the structure of the instrument were addressed. Finally, the PAK was developed and tested. These three subtasks are discussed in more detail below.

Identify Areas to be Covered by Assessment Instrument

The first step in developing the assessment instrument was to specify the proper domain of the instrument. In what areas should programs and materials be evaluated? We were initially aware of four important aspects of safety programs to be addressed by the assessment instrument:

. Program content, i.e., safety relevance

. Communication/training techniques

. Effectiveness data

. User acceptability

In order to assure ourselves that all possible areas for assessment were adequately considered for inclusion in the PAK, we solicited detailed input from a number of specialists. The conduct of this subtask involved four major activities:

1. Specification of review panel selection criteria

2. Identification of candidate reviewers

3. Selection of review panel

4. Solicitation of input from panel

Specify Selection Criteria

The development of the PAK was considered to be a multidisciplinary effort. Given the objectives of the PAK, it was decided that at least the following disciplines were to be included on the panel of specialists:

- Bicycle safety

- Pedestrian safety

- Test construction

- Evaluation methodology

- Program administration/implementation

In order to maintain the size of the panel within reasonable limits, it was decided to limit panel size to ten members. It was our objective to find panel members who were expert in more than one of the above areas. This approach provided the opportunity to increase the number of specialists in a given area without enlarging the size of the panel.

Identify Candidate Reviewers

Using the criteria specified in the preceding subtask, we selected a number of candidate reviewers. Potential candidates were drawn from the following sources:

- Transportation Research Board committees on bicycles and pedestrians

- NHTSA - Traffic Safety Programs, Office of Driver and Pedestrian Research and Regional Offices

- National Safety Council pedestrian committee

- Traffic safety researchers

- City and state pedestrian/bicycle coordinators

- University faculty members--departments of education and psychology

Select Review Panel

Project staff prepared a list of potential reviewers, showing names, affiliations and areas of expertise. This list was then reviewed to select that combination of 10 individuals which provided the best breadth, balance and overall level of capability to the panel.

Project staff then telephoned these people to describe the project, their role and level of involvement. We obtained their agreement to serve on the review panel and to complete the input and review processes within the allotted time.

The final selection of the panel of specialists included the ten members plus representatives from NHTSA and the Bicycle Federation. The list of panel members and their affiliations is contained in the Acknowledgements Section.

Solicit Input From Panel

Once the panel was selected, project staff solicited input from panel members concerning the areas which needed to be addressed by the program assessment instrument. Based on our previous experience in this kind of program planning, the decision was made to use a Delphi-type inquiry. That is, we posed an open ended question to which panel members responded with a list of possible areas and topics. The questions were accompanied by a brief program description explaining the purpose of the assessment instrument. A copy of these materials is included in Appendix B.

As we received completed questionnaires from panel members, staff collected responses into content areas, creating a list of potential areas of concern and possible evaluation criteria.

Approximately 300 individual suggestions were provided by the panel members.

Specify Assessment Methodology

At the same time that areas of concern, i.e., assessment content, was being determined, an effort was carried out to define the proper structure for the PAK. The objective was to have an instrument which could provide valid and reliable assessments of pedestrian and bicyclist programs as well as being relatively simple to use.

The specification of assessment methodology involved first identifying assessment concerns. Then the current literature in measurement and evaluation was reviewed as well as other instruments currently used for assessing pedestrian and bicyclist programs. The final activity involved specifying the methodology.

Identify Methodological Concerns

The obvious first step in determining the assessment methodology was to document the criteria on which alternate assessment approaches were to be evaluated. As stated above, the objective was to develop a PAK which was valid, reliable and easy to use. Given the objective, project staff identified five aspects of assessment instrument structure which were considered to be most critical:

1. Item Format. How the item is phrased makes a difference. Should items be phrased as questions or as statements? Should they be yes-no, true-false, multiple choice, or fill in the blank?

2. Response Mode. Is the rater expected to supply objective information or subjective reaction? In some cases, raters may not routinely have the background or training to evaluate certain technical aspects of the program, yet may still be able to "agree" or "disagree" with statements about those aspects.

3. Response Scaling. How are the responses scaled: nominal, ordinal, interval and ratio? For some purposes of comparison, nominal or ordinal scaling are sufficient, but others require interval or ratio scaling.

4. Overall Scoring. Can the responses to each item be combined in an overall score? Is the total score obtained in a mathematically valid fashion (i.e., are all items scaled appropriately)? Scoring must be relatively easy to accomplish -- it should require neither a computer nor mathematics beyond simple arithmetic. Furthermore, scores should be related to some external measure of "goodness of program," even if that external measure is only rank ordering based on professional judgment.

5. Organization and Support. Is the instrument easy to use or does it require large cognitive leaps between items? Is it fully explained or does it require formal training? The more global aspects of the instrument's organization and support are more difficult to assess, but are ultimately important to the implementation of the instrument.

Review Current Measurement Theory and Practice

Project staff reviewed current textbooks and handbooks on theory and practice in the field of measurement, assessment, and evaluation. Of those reviewed, four provided the most comprehensive coverage:

. Worthen, B. R., & Sanders, J. R., Educational Evaluation: Theory and Practice. Belmont, CA: Wadsworth, 1973.

. Bloom, B.S., Hastings, J.T., & Madaus, G.I., Handbook on Formative and Summative Evaluation of Student Learning. New York, NY: McGraw-Hill, 1971.

. Chase, C.I., Measurement for Educational Evaluation (second edition). Reading, MA: Addison-Wesley, 1978.

. Sage, Andrew P. Methodology For Large Scale Systems. New York: McGraw-Hill, 1977.

These texts provided a substantial part of the information on which methodological decisions were later based.

Review Existing Assessment Instruments

The attempt was made to identify, obtain and review existing instruments used to assess pedestrian and bicyclist safety programs. Our intention was to evaluate such instruments so as to benefit from tried and proven approaches and avoid any problems they had encountered.

Most of the program sources previously listed in Section One were also asked to identify pedestrian and bicyclist program assessment instruments. Again, the Bicyclist Federation provided extensive support through their library and by providing literature searches.

Even though our criteria for what might be considered an assessment instrument was relatively broad and non-restrictive, no instruments were identified relating to pedestrian programs and only three were identified relating to bicycle programs. These three instruments were:

. Community Bicycle Safety Checklist -- distributed by HUFSAM.

. Evaluation Guide for Bicycle Safety Education Materials -- contained in the Bicycle Safety Atlas (developed as part of an NHTSA and CPSC contract).

. Planning Model for Bicycle Safety Education -- by Don LaFond,
originally published in <u>Bike Ed '77</u>, with an improved version
published in the <u>Bicycle Safety Atlas</u>.

These three instruments were evaluated and, while each contained
methodological features of interest, none were totally satisfactory
given our objectives.

Specify Methodological Approach

The review of the measurement and evaluation literature and the
review of existing assessment instruments culminated in the decision to
employ the Worth Assessment Technique for development of the PAK. Worth
Assessment was developed by J. R. Miller[4] and elaborated by A. P. Sage[5].
It represents a systematic proven approach to the development of assess-
ment instruments. Additionally, project staff had previously used the
technique to develop an instrument to evaluate traffic safety materials.[6]
Specifically, this instrument evaluated the extent to which safety helmet
educational materials met theory based criteria for changing attitudes
and behaviors. The Mountain Bicyclists' Association, with consultation
from the project staff, also had developed an evaluation instrument
based on the Worth Assessment model. Their instrument was designed to
assess the impact of a multitude of factors on bicycle usage.

It should be stressed that Worth Assessment provides the <u>framework</u>
for instrument design, the specific <u>content</u> dimensions of the instrument
are drawn from the particular evaluation question at hand.

Specifically, application of the Worth Assessment technique:

1. Stimulates putting evaluation criteria into measurable
   (operational) form;

2. Produces a structure which interrelates criteria obtained
   from different areas of concern;

3. Provides a system for determining the importance of each
   criterion relative to others; and

4. Provides a systematic and objective method for comparing
   materials/programs on their overall compliance with the
   evaluation criteria.

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[4]Miller, J.R., III. <u>A Systematic Procedure For Assessing The Worth Of
Complex Alternatives</u>. Mitre Corporation, Bedford, Mass., Contract
AF 19(628) 5165, EDP Equipment Office, Electronic System Division,
Air Force Systems Command, ESD TR 67 90 AD 662001, November 1967.

[5]See reference on preceding page.

[6]Blatt, J. and Chiplock, L. <u>Development of Safety Helmet Educational
Material</u>. Washington, D.C., U. S. Department of Transportation.
October 1982. Contract No. DOT-HS-9-09020.

Develop and Test the Program
Assessment Kit

Having selected the Worth Assessment Technique as the model for PAK development, the actual development of the instrument could begin. The conduct of this subtask was organized into six activities:

1. Specify assessment criteria

2. Operationalize assessment criteria

3. Determine criterion weights

4. Prepare assessment instrument

5. Prepare support materials

6. Test the Program Assessment Kit

Specify Assessment Criteria

As discussed at the beginning of this section, a panel of specialists was surveyed to identify areas of concern to be included in a pedestrian and bicycle program assessment instrument. About 300 suggestions were provided. The Worth Assessment Technique requires that the assessment content be organized into a hierarchical structure with each level having increasing specificity. The hierachy terminates in a number of areas of concern and each area of concern contains several assessment criterion items.

The objective of this activity was to define the content hierarchy and specify the individual assessment criteria within each area of concern.

Although some were quite specific and detailed, the majority of the areas of concern identified by our panel of specialists were of a general nature. The job of the project staff was to review the 300 suggestions—combining those that were similar, differentiating suggestions into distinct and independent categories, and developing the hierarchy.

The end result of this process was the tree-like structure shown in Figure 3-2. As shown in the figure, evaluation of a program is divided into three main program components -- Safety Relevance (Content), Instruction, and Materials. Each component is successively subdivided down to specific areas of concern, shown at the far right of the figure. There are a total of 76 areas of concern across all three components.

Having specified the areas of concern, project staff then set about defining the assessment criteria for each. The question to be answered for each area of concern was "What elements or aspects must the program being evaluated possess in order to be considered good in that area?"

```
                                               I-- VALUE FOR LIVING THINGS
                           I-- ATTITUDES -----------I-- RESPONSIBILITY FOR SAFETY
                           I                        I-- RESPECT FOR AUTHORITY
                           I
                           I
                           I                                             I-- BASIC TECHNIQUES
                           I                        I-- OPERATING PROCEDURES ----I-- ADVANCED TECHNIQUES
                           I                        I                            I-- SPECIAL SITUATIONS
                           I                        I
        SAFETY RELEVANCE   I                        I                            I-- RULES OF THE ROAD
        I-- (CONTENT)----------I                    I                            I-- AGE-RELATED ACCIDENT TYPES
        I                  I   I-- KNOWLEDGE ------------I-- TRAFFIC AWARENESS -------I-- LOCAL ACCIDENT SITUATIONS/HAZARDS
        I                  I                        I                            I-- PHYSICAL CAPABILITIES/LIMITS
        I                  I                        I
        I                  I                        I                            I-- VEHICLE
        I                  I                        I-- EQUIPMENT SELECTION -----I
        I                  I                        I                            I-- OPERATOR
        I                  I
        I                  I                                             I-- BASIC SKILLS
        I                  I                        I-- MOTOR SKILLS ------------I-- REPAIR & MAINTENANCE
        I                  I                        I                            I-- EVASIVE TECHNIQUES
        I                  I-- BEHAVIOR/SKILL ------I
        I                  I                        I                            I-- RISK ASSESSMENT
        I                                           I-- COGNITIVE SKILLS --------I-- VISUAL SEARCH/HAZARD RECOGNITION
        I                                                                        I-- DECISION MAKING
        I                                                                        I-- PERCEPTUAL SKILLS
        I
        I
        I
        I                                                                 I-- WRITTEN MATERIALS
        I                                           I-- PASSIVE INVOLVEMENT -----I-- LECTURES
        I                                           I                            I-- DEMONSTRATIONS (MODELING)
        I                                           I                            I-- AUDIO-VISUAL MATERIALS
        I                                           I
        I                       I-- LEARNING MODE ------I                        I-- TESTS
        I                       I                   I                            I-- GAMES
        I                       I                   I                            I-- ARTS/CRAFTS
        I                       I                   I-- ACTIVE INVOLVEMENT ------I-- VALUES CLARIFICATION EXERCISES
        I                       I                                                I-- ON-BIKE/ON-FOOT TRAINING
        I                       I                                                I-- DISCUSSION/QUESTIONS
        I                       I                                                I-- DECISION-MAKING PRACTICE
        I                       I
        I                       I                   I-- REAL
        I                       I-- LEARNING        I                            I-- INDOORS
        I                       I   ENVIRONMENT ------I-- SIMULATED ---------------I
        I                       I                   I                            I-- OUTDOORS
        I                       I                   I-- CLASSROOM
        I-- INSTRUCTION ---------I
        I                       I                                             I-- FEAR
        I                       I                                             I-- LAW & ORDER
        I                       I                   I-- TONE --------------------I-- INFORMATIONAL
        I                       I-- MOTIVATIONAL    I                            I-- RESPECT FOR HAZARDS
        I                       I       APPROACH -----I
        I                       I                   I                            I-- FEEDBACK
        I                       I                   I-- FORMAT ------------------I-- REWARD
        I                       I                                                I-- IMITATION
        I                       I
        I                       I                                             I-- CLASS DURATION
        I                       I                   I-- CONTACT TIME ------------I
        I                       I                   I                            I-- NUMBER OF CLASSES
        I                       I-- EXPOSURE ----------I
        I                                           I-- REPETITION OF CONCEPTS
        I
        I
        I
        I                                                                 I-- STATEMENT OF THE PROBLEM
        I                                           I-- BACKGROUND INFO ---------I-- PROGRAM DESCRIPTION
        I                                           I                            I-- THEORETICAL FOUNDATIONS
        I                                           I
        I                                           I                            I-- TIME
        I                       I-- ADMINISTRATOR'S I                            I-- PERSONNEL
        I                       I       GUIDE --------I-- IMPLEMENTATION          I-- EQUIPMENT/FACILITIES
        I                       I                   I      REQUIREMENTS -------I-- INSTRUCTOR TRAINING
        I                       I                   I                            I-- COST
        I                       I                   I
        I                       I                   I                            I-- TROUBLE-SHOOTING GUIDE
        I                       I                   I-- RESOURCES ---------------I-- BIBLIOGRAPHY OF RELEVANT MATERIALS
        I                       I
        I                       I                                             I-- OUTLINES OF LECTURES
        I                       I                                             I-- BIBLIOGRAPHY OF REFERENCES
        I                       I                   I-- COMPLETENESS ------------I-- IDEAS FOR ACTIVITIES
        I                       I                   I                            I-- BACKGROUND INFORMATION
        I                       I                   I                            I-- DESCRIPTION OF PROGRAM MATERIALS
        I                       I-- INSTRUCTOR'S    I
        I                       I    MANUAL ----------I                        I-- BULK
        I                       I                   I-- ATTRACTIVENESS ----------I-- DESIGN
        I-- MATERIALS ------------I                 I                            I-- PRODUCTION
        I                       I                   I
        I                       I                   I                            I-- CLEAR & CONCISE
        I                       I                   I-- EASE OF USE --------------I-- EXTENT OF EXTRANEOUS MATERIAL
        I                       I                                                I-- ORGANIZED
        I                       I
        I                       I                   I-- APPROPRIATENESS OF LANGUAGE
        I                       I                   I-- RELEVANCE TO PROGRAM OBJECTIVES
        I                       I-- STUDENT'S WORKBOOK --I-- ENJOYABLE/SATISFYING TO STUDENTS
        I                       I                   I
        I                       I                   I                            I-- CHARACTERIZATION
        I                       I                   I-- ATTRACTIVENESS ----------I-- GRAPHICS
        I                       I                                                I-- PRINTING
        I                       I
        I                       I                   I-- ATTENTION GETTING/HOLDING
        I                       I                   I-- APPROPRIATENESS OF LANGUAGE
        I                       I-- AUDIO/VISUALS -------I-- COMPLEXITY OF PRESENTATION
        I                                           I
        I                                           I                            I-- AUDIO
        I                                           I-- PRODUCTION QUALITY ------I
        I                                                                        I-- VISUALS

PROGRAM COMPONENTS--I
```

Figure 3-1.   Program Assessment Kit Content Hierarchy

In order to define these assessment criteria, the project staff was required to research the three major program component areas.

Program Content. The first concern was to research "safety relevance" i.e., a program's potential to reduce accidents as provided by its content. Of particular concern was that many programs provide traditional safety content which has evolved without the benefit of systematic research into accident causation. In contrast, since 1968 NHTSA has been involved in an extensive program of research directed at identifying the specific types of pedestrian and bicyclist accidents, specifying their causes and defining specific countermeasures for them. Therefore, our research centered on the major Pedestrian and Bicycle accident studies which were conducted directly or indirectly as a result of this NHTSA research emphasis:

- Snyder, M. B. & Knoblauch, R. Pedestrian safety. The identification of precipitating factors and possible countermeasures. Volumes I and II. Springfield, VA: National Technical Information Service, U.S. Department of Commerce, January 1971. (Volume I--DOT HS-800 403; Volume II--DOT HS-800 404)

- Knoblauch, R. L. Urban pedestrian accident countermeasures experimental evaluation. Final report. Volume II: Accident studies. Washington, DC: National Highway Traffic Safety Administration and Federal Highway Administration, February 1975. (DOT HS-801 347)

- Knoblauch, R. L. Causative factors and countermeasures for rural and suburban pedestrian accidents: Accident data collection and analysis. Washington, DC: U. S. Department of Transportation, National Highway Traffic Safety Administration and Federal Highway Administration, March 1977. Contract No. DOT-HS-355-3-718. (DOT HS-802 266)

- Thackray, Richard M. Denver Pedestrian Safety Project. Phase I--Accident Analysis and Countermeasure Identification. Denver, CO: Denver Police Department, February 1977. Project No. 05-77

- Cross, K. A study of bicycle/motor-vehicle accidents: Identification of problem types and countermeasure approaches. Washington, DC: U.S. Department of Transportation, September 1977. Contract No. DOT-HS-00982. (Available from NTIS)

- Evaluation of the Eugene Bikeways Master Plan. Eugene OR: City of Eugene, Oregon, July 1979. Project No. 1386

In addition, project staff reviewed the NHTSA/FHWA Urban Pedestrian Data Base containing about 14,000 pedestrian accidents catagorized by type, as well as smaller pedestrian and bicyclist accident data bases also catagorized by type.

One important outcome of this investigation which was also indicated by our panel of specialists was the determination that program content must be age-specific. For example, younger bicyclists are overrepresented in "ride-out" accidents and underrepresented in

nighttime overtaking accidents. Therefore, it would be inappropriate for a bicycle safety program designed for 5 to 9 year olds to devote a significant amount of time to teaching nighttime riding techniques. It would be more appropriate to devote a considerable amount of time to countering ride-out type accidents, as these are accidents in which 5-9 year olds are frequently involved. Similarly, "Dart-out" pedestrian accident types most heavily victimize the 5-9 age group, so pedestrian safety programs directed to this age group should emphasize content designed to counter these types.

Since the optimum program content differs as a function of the age group to which the program is targeted, evaluation criteria were defined separately for four pedestrian age groups and four bicyclist age groups. (See Table 5-1, Page 5-2 for a listing of these age groups.)

Instructional Approach. The second focus in defining assessment criteria concerned the best instructional approaches to be employed. Clearly, the ability of a program to reduce accidents depends not only on its content but on how well that content is learned. Therefore, the investigation centered on determining state-of-the-art teaching/learning techniques.

Frequently, programs are based on a single approach to learning and thus lose potential benefits of alternative approaches. For instance, a program based solely on "reinforcement" may overlook the benefits of "feedback", suggested by "neocognitive" behaviorists or the practicing of safety related behavior sequences in the context in which they will ultimately be employed, as suggested by "contiguity" behaviorists. Accordingly, in determining assessment criteria, we employed a multiple-theoretical approach, based on the fields of mass communication, learning theory, educational psychology, instructional systems development, and developmental psychology.

It was again determined that the optimal learning approach depends on the age of the audience targeted by the program. For example, a passive rule learning approach might be appropriate for adults who can mediate their behavior using learned rules but would be inappropriate for young children who typically act impulsively, i.e., without considering the consequences of their acts.

Moreover, a program that attempts to teach concepts which are beyond the cognitive abilities of most target group members is doomed to fail—even though it might use age-appropriate instructional principles. For example, even though Piaget's theory of cognitive development suggests that children cannot make accurate speed-distance judgments until they are about 11 years old, some programs include speed-distance judgments in their topic-domain for 5-9 year olds.

Given these considerations, the assessment criteria for instructional component of the PAK were defined separately for the various age groups.

Materials. Related to instructional effectiveness is the issue of the quality of materials. While a program may be based on appropriate content and sound educational theories, it cannot meet its objectives if

the actual program materials are poorly prepared. For example, a slide
show designed to illustrate key bicycling hazards can only be effective
if the slides are all in focus and the subjects well framed. Similarly,
a photocopied pamphlet with primitive drawings might not have the same impact
as a full-color brochure with professional graphics. Criteria for this
program component were based on commonly accepted photography, publishing
and graphic standards.

In addition to the quality aspect, assessment criteria were defined
to reflect whether the materials were clearly written, easy to use, and
comprehensive.

Operationalize Assessment Criteria

Once the assessment criteria were defined for each combination of
areas of concern and age group, it was necessary to operationalize them,
i.e., state them in a manner such that a clear and unambiguous response
could be made. The review of the measurement literature and the nature
of the criteria themselves lead to the selection of two response modes:

1. Select the "best fit" alternative. With this mode the
    program evaluator selects the one alternative which best
    describes the program being evaluated. For example:

    For each of the following rationales for behaving
    safely, estimate the degree to which the program
    emphasizes that approach.

    30. Fear -- unsafe behavior will result in injury,
         harm, or pain.

         a. Not mentioned
         b. Little or no emphasis
         c. Some emphasis
         d. Heavy emphasis

2. Select all that apply. Here the program evaluator selects
    all response alternatives that apply to the subject program.
    For example:

    For each Behavior/Skill, decide whether the program
    provides sufficient training so that students might
    reasonably be expected to be able to acquire the skill.
    A program that provides specific behavioral instruction
    and an opportunity to practice a skill would be consid-
    ered sufficient on that topic. One that provides in-
    formation only and requires or encourages the student
    to practice on his or her own time is not sufficient.

Score every alternative that meets the above require-
ments.

11. Basic Skills

    a. Balancing
    b. Pedaling
    c. Straight-line riding
    d. Steering
    e. Controlled (non-emergency) stopping
    f. Scanning/Searching (forward & lateral)
    g. Entering the roadway

Each criterion statement was similarly phrased so as to be easily used by traffic safety specialists such as federal, state and local personnel.

Determine Criterion Weights

In order for the assessment instrument to be useful, it must provide some mechanism for scoring a particular program's performance in relation to the criteria. It should provide an overall score so that alternative programs can be compared in terms of their total quality. It should also provide a score for each subcomponent of a program so that the relative strengths and weaknesses of a given program can be assessed.

The Worth Assessment Technique provides for both overall and sub-component scores. Each alternative at each level in the hierarachy is assigned a weight reflecting the importance of that alternative relative to the others at that level. The weights are expressed as decimal fractions with the combined weights for all alternatives at a given level equaling 1.00. A program's score for a given alternative at any level is found by adding the weighted scores for each of the components included in that alternative and multiplying by the alternative weight. For example, in the hierarchy shown in Figure 3-1 (see page 3-8) the score for the safety relevance component would be obtained by adding the scores obtained on the attitudes, knowledge and behavior/skill dimensions and multiplying by the weight value assigned to the safety relevance component. Of course, the score values for attitudes, knowledge and behavior/skill were each obtained by the same process from their component dimensions.

The key to this scoring process is the determination of the weight values for each alternative at each level, i.e., each branch in the hierarchy. To accomplish this task, project staff again called upon the panel of specialists who had earlier provided the assessment areas of concern.

To simplify this process for the review panel, a workbook and detailed instructions were developed to lead panel members through a step-by-step rating sequence. These instructions, which also contain examples of the workbook format, are provided in Appendix B. They provide a detailed explanation of how weight values were assigned by the individual panel members.

Once the Weight Assignment Workbooks were returned by the panel, final weight values were determined. Separate weight values were determined for each branch within each age group by program type hierarchy. This was accomplished by calculating the arithmetic mean of the weight values proposed by the panel members. Thus, the final weights represent the composite opinion of the specialists concerning how important a given dimension was for a given program type and age group.

Prepare Assessment Instrument

Once the criteria had been phrased in operational form and assigned weights, they were ready to be put together into an evaluation instrument.

After review of several alternatives, project staff determined that the simplest and easiest to use format was to develop separate questionnaire type instruments, one for each combination of program type and age group. These questionnaires were called Program Assessment Scales (PASs).

Although the procedures described in the preceding activity for determining the criterion weights are somewhat complex, in actual practice people using the PAK must deal only with a single list of statements or questions and their responses (i.e., only one PAS). First the program evaluator chooses the PAS appropriate to the program type and age group targeted by the program being assessed. He/she then (after studying the program materials) responds to a set of questions like those shown on page 3-11. The answers are recorded on an answer sheet which shows a numeric value for each alternative for each question. Once all questions are completed, the program evaluator adds up the numeric values for each alternative selected to obtain the various subcomponent scores. The overall program score requires the evaluator to multiply each of the three program component scores by its respective weight, then add the resulting values.

Prepare Supporting Materials

Once the PASs were completed, it was necessary to develop and/or assemble a variety of materials in order to support the use of the PASs and to provide a truly comprehensive and useful program assessment package.

The most extensive of these support materials was the Survey of Implementation Considerations. While the PASs provide for the assessment of a program's safety relevance, they do not address certain practical issues that must be considered by a program evaluator in determining the suitability of a program for his/her unique needs. What was needed was an instrument that could be used by the program evaluator to compare alternate programs in terms of the following requirements:

1. Facilities and equipment

2. Materials

3. Staffing, including number and special training requirements.

4. Scheduling and implementation time.

5. Cost

To support this need, a 35-item checklist type questionnaire was developed which was designed to permit comparative evaluation of several programs. A worksheet to permit estimation of implementation costs was also prepared.

In addition to the Survey of Implementation Considerations Materials, the following support materials were also prepared:

. Complete instructions on how to use the instrument

. Instructions for scoring, analyzing and interpreting the results of the assessment

. Definitions of pedestrian and bicylist accident types, likely target groups and information regarding possible critical errors for these types

. A bibliography of relevant literature.

All these materials and the PASs were assembled in loose leaf format to facilitate use of the various materials and the duplication of forms. This complete set of materials comprises the Program Assessment Kit.

Test the Useability and Reliability
of the Program Assessment Kit

The final activity in the development of the PAK was to conduct an actual tryout of the kit using a pedestrian and a bicycle safety program.

The first step in this activity was to select both a pedestrian and a bicyclist program for use in the test. Of the 97 programs compiled as described in Section Two, one curriculum, was selected as being representative of these programs in terms of content, instructional approach and materials. This curriculum was well suited to our purpose since it contained in one package separate pedestrian and bicycle programs for various age groups.

The objectives of the test were to:

. Determine whether the PAK could be properly employed to perform program assessments without the need for outside support, i.e., given only the information contained in the kit itself. Implementation problems were to be identified.,

. Determine the extent to which different evaluators output similar subcomponent and overall scores for the test programs. That is, the test was to determine the reliability of the PAK when employed by personnel with different backgrounds.

A copy of the PAK and the program materials were submitted to each review panel member with instructions to evaluate the pedestrian program for the second grade age group and the bicycle program for the fifth grade age group. A questionnaire was also included for use by reviewers in providing an evaluation of the PAK as well as specific suggestions for improvement. A copy of the instructions to the reviewers and the questionnaire are included in Appendix B.

A total of 12 panel members and project staff completed the evaluation of the example programs.

The test resulted in a number of useful suggestions for improvements to the PAK but no serious deficiencies were noted. Item 17 of the questionnaire asked the reviewers to rate the PAK on several dimensions. These ratings are shown in Table 3-2. As can be seen from the table, ratings were uniformly high with the lowest rating given to the Instructions Section.

	Mean*	S.D.
Introduction	2.8	.8
Assessment Instrument	3.8	.5
Implementation Considerations	3.5	.7
Evaluation Issues	3.2	.9
Accident Types Appendix	3.5	.5
Overall Package	3.5	.5

*Maximum Score possible is 4.0.

Table 3-1. Average Ratings of The Program Assessment Kit

Project staff performed an inter-rater reliability analysis on the scores from the assessment task. The results of this analysis are shown in Table 3-3. The reliability values are all moderate to high especially considering the diversity of backgrounds represented among the raters.

	Mean Inter-rater Agreement
Bicyclist & Pedestrian (all items)	.65
Bicyclist (Composite Score)	.66
Bicyclist (Safety Relevance)	.68
Bicyclist (Instruction)	.47
Bicyclist (Materials)	.75
Pedestrian (Composite Score)	.64
Pedestrian (Safety Relevance)	.56
Pedestrian (Instruction)	.64
Pedestrian (Materials)	.73

Table 3-2. PAK Inter-rater Reliability (Test Sample: Two Programs by 12 Evaluators)

In addition to the above analyses, item analyses were performed to identify ambiguous or unclear items. The PAK was revised based on these analyses and the written suggestions provided by the reviewers. The major revision occurred to the Introduction and Instructions Sections which were rewritten to make them easier to understand.

SECTION FOUR

ASSESS SELECTED PROGRAMS

Given that the PAK had been developed, tested for interrater reliability and useability then revised, the next major task in the project was to employ the PAK to assess a number of pedestrian and bicycle safety programs. The objectives of this task were to:

1. Develop assessment scores on a variety of pedestrian and bicycle programs so as to generate benchmarks against which the scores of programs assessed by actual PAK users could be compared.

2. Generate reliability data on the revised version of the PAK.

In addition the PAK was subjected to review by a second panel which was selected to represent potential user personnel at the Federal, state and local levels.

This Section is subdivided into two subsections. The first reviews the conduct of the task and the second the results.

Conduct of the Program Assessment

The conduct of this task was divided into four subtasks:

1. Select programs to be assessed

2. Assess programs

3. Conduct User Panel Review

4. Make final PAK revisions.

Select Programs to be Assessed

After review of the 97 programs identified earlier in the project, the project staff together with NHTSA selected a sample of programs to be assessed. The selection was made based on four criteria:

1. Length of Time in Use. A representation was sought that included older programs as well as new ones.

2. Number of communities using the program. More popular programs tended to be selected since these would have better likelihood of being known to PAK users.

3. Strength of Reputation. Highly reputed programs tended to be selected because they provide a standard of comparison.

4. Diversity of Conduct/Approach. It was deemed desirable to assess a diversity of programs.

Given these criteria seven (7) pedestrian, eight (8) bicyclist and four (4) combination (pedestrian and bicyclist content) were selected. The combination programs were evaluted separately for pedestrian and bicycle content. Thus, 23 separate program assessments were performed.

Assess Programs

Each of the 23 program assessments was conducted independently by three professionals from the project staff and the Bicycle Federation. The assessment process involved two steps:

1. A given program's materials were reviewed and the appropriate PAS was completed.

2. The PAS was completed and scores calculated by each staff person. These individual scores were then compiled to a single matrix of scores by programs and summary statistics were calculated.

Conduct User Panel Review

While programs assessment was underway a user panel review of the PAK was carried out. The user panel differed from the panel of specialists used earlier in the project in that the user panel was specifically selected to represent actual users of the PAK, that is, the federal, state and local level personnel who might have need to assess a pedestrian or bicyclist safety program.

A total of 11 persons were selected and agreed to participate in the user panel. These individuals are listed in the Acknowledgements Section.

A copy of the PAK was sent to each together with an evaluation questionnaire. A copy of this questionnaire is contained in Appendix B.

Each panel member was asked to identify the strong and weak points of the PAK with regard to feasibility, desirability, applicability, usefulness and adequacy in relation to his/her specific needs for program assessment. The questionnaire asked for suggestions to improve the PAK and a rating of its major parts.

Results of the Programs Assessment

The results of the assessment of the example pedestrian and bicycle safety programs can be divided into a discussion of the assessment scores themselves and discussion of PAK reliability. Also included in the subsection is a summary of the PAK evaluation provided by the user panel.

Assessment Scores

Table 4-1 summarizes each major subscore and overall score by program type--pedestrian or bicyclist.

As shown in Table 4-1, the scores show a wide range of compliance with the safety relevance criteria provided by the PAK. In general, programs did not measure up very well, as indicated by the low means. In our sample, which was more or less representative of the range of programs available, more programs scored below the mean than above. Typically, programs receiving higher scores were developed after the results of the NHTSA accident-type research had been made available. Higher scoring programs also tended to be more costly to implement and require more time than lower scoring programs.

On the whole, program materials scored higher than instructional approaches, which, in turn, scored higher than program content. (This was especially true with the Bike Programs, where materials were usually quite good, even if the content they presented was rather mediocre.)

PED PROGRAMS

PAK LEVEL	Min.	Max.	Median	Mean	Std. Dev.
Composite Score	24.5	67.5	32.5	37.5	13.0
Safety Relevance	18.5	74.3	29.3	36.2	16.8
Instruction	21.8	59.0	29.5	34.1	12.6
Materials	25.3	67.6	39.6	44.2	15.0

BIKE PROGRAMS

PAK LEVEL	Min.	Max.	Median	Mean	Std. Dev.
Composite Score	14.9	81.1	40.7	42.8	17.5
Safety Relevance	9.7	80.0	38.7	40.8	20.9
Instruction	15.6	73.3	38.4	41.9	16.3
Materials	14.0	93.2	53.2	47.3	22.8

Table 4-1.   Summary of PAK Scores and Subscores
by Program Area

In the Safety Relevance area, the most common program weakness
(aside from not providing an opportunity for practicing important safety
skills) was spending a disproportionate amount of time in conveying
irrelevant information. Typically, this took the form of information
that would have been appropriate for an older age group, e.g., teaching
Kindergarten and 1st grade children how to maintain and adjust their
bikes -- information more properly addressed to the parents of children
this age or to older children.

Many, many programs dedicated an inordinate amount of time to teach-
ing signs and signals -- some to the point of getting into the inter-
national symbols for road services. Another form in which irrelevant
information appeared was the teaching of theoretical concepts without
relating them to practical applications. One program devoted several
hours of instruction to how the eye works -- based on the premise that
vision is the main sensory pathway in detection of safety hazards --
but never instructed or demonstrated how to search for moving vehicles.

In most cases, the irrelevant information was basically harmless,
except that it kept the program from addressing other, more cogent
issues. Some programs, however, left out essential information or
actually gave incorrect information -- thus increasing the hazards to

students taking those programs. One program, while emphasizing the importance of bicyclists signalling their turns, never mentioned the need for a turning cyclist to scan to the rear for approaching traffic before making a turn. One of the slides in this program showed a cyclist signalling without scanning over his shoulder. Another program advocated cyclists riding at the extreme right side of the roadway and showed slides of cyclists riding almost in the gutter and turning left from the far right-hand position.

The most common omission from pedestrian programs was information on how safely to enter a street in mid-block locations. These programs usually carried a "cross at the corner" message without addressing the need for younsters to enter a street to retrieve a ball or to cross the street when an intersection is not close at hand (as in many suburban areas).

Another common problem with pedestrian programs was the instruction to "look in all directions." Such instructions are unnecessarily vague -- should children look at the sky or at their feet?

One program gave a lot of statistics to show that most child pedestrian accidents occur on residential streets after school, but concentrated its educational efforts on how to cross signalized multi-lane intersections with heavy traffic. A program that did address mid-block crossings instructed children to stop "one step back from the curb" -- not bad advice when there are no parked cars, but would serve to keep the child and driver mutually invisible when visual obstructions were present.

On the positive side, there were a few programs that gave appropriate safety information for the intended age groups and objectives of the program. The strongest programs backed up the information with pictures and demonstrations showing appropriate performance of critical actions and provided students with guided practice of these skills.

One program addressed the idea of safety, rather creatively, through the concept of "calculated risk." This program illustrated the concept through the use of stories of "heroes" -- people who have accomplished difficult feats in spite of danger. By studying dangerous situations carefully, they eliminated impulsiveness and prepared intelligently for those risks that could not be avoided. The program then related the notion of calculated risk to pedestrian risk taking and traffic safety.

PAK Reliability

As noted previously, each of the 23 example programs was independently assessed by three persons. Table 4-2 summarizes the interjudge agreement across the various levels of the PAK.

	Average Interrater Reliability*
Composite Scores	0.843
Safety Relevance (Overall)	0.772
Attitudes	0.153
Knowledge	0.798
Behavior/Skill	0.798
Instructional Approach (Overall)	0.824
Learning Mode	0.771
Learning Environment	0.905
Motivational Approach	0.448
Exposure	0.693
Materials Adequacy (Overall)	0.784
Administrator's Guide	0.784
Instructor's Manual	0.800
Student's Manual	0.750
Audio-Visuals	0.657

*Average scores across all combinations of the three evaluators. Perfect agreement = 1.000

Table 4-2. PAK Inter-rater Reliability (Assessment Sample: 23 Programs by Three Evaluators)

The high interjudge correlations obtained by the three independent judges across the 23 programs (the average interrater reliability was .84) indicates that the PAK produces highly consistent scores across a wide range of programs.

Even at the subsection level, the PAK scores are quite reliable. Discussions with the judges after the data analysis was complete revealed that the low correlations in the Attitudes and Motivational Approach subsections were due to one of the three judges having misinterpreted the instructions given for those subsections. The final PAK incorporates revisions to clarify these instructions.

User Panel Review

Eight of the ten reviewers provided comments on the potential feasibility, desirability, applicability, utility, and adequacy of the PAK in their situations. In general, reviewers gave favorable responses on each of these issues. They were impressed with the comprehensiveness of the PAK, but concerned about its length. However, one reviewer commented that the PAK was a lot easier to use than she first expected, based on her first impressions of its size. Several reviewers suggested that the PAK be split up into smaller units to make it appear less formidable. Although length was a concern, only one reviewer suggested making the PAK less comprehensive.

The user-review panel's comments were quite helpful in identifying several specific issues to be addressed in the final revision of the PAK. The PAK contained in Volume Two of this report takes into account all of these suggestions. However, no way could be found to shorten the PAK without endangering its comprehensiveness.

SECTION FIVE

OVERVIEW OF THE PROGRAM ASSESSMENT KIT

Although the Program Assessment Kit is contained in ready-to-use
form as Volume Two of this report, it may be helpful to close this volume
with an overview of the content and structure of the PAK. This section
provides such an overview.

Contents of the PAK

The Program Assessment Kit contains all the materials needed
to assess the safety relevance of pedestrian and bicyclist education
programs. The kit includes the following parts:

- Program Assessment Scales for Pedestrian and Bicyclist Education
  Programs
- Survey of Implementation Considerations
- Guidelines for Interpreting Effectiveness Evaluations
- Description of NHTSA Accident Types

Program Assessment Scales

The Program Assessment Scale (PAS) provides educators and administrators
with a systematic method for comparing bicyclist or pedestrian safety-
education programs on the following dimensions:

1. The extent to which a pedestrian or bicyclist safety-
    education program contains information consistent with
    the findings of accident research sponsored by the National
    Highway Traffic Safety Administration (NHTSA) i.e., Safety
    Relevance

2. The appropriateness of the educational and motivational
    approaches of the program, relative to the needs of target
    audiences of different ages

3. The suitability of the program materials for program
    administrators, instructors, and members of the target
    audiences.

Each PAS is designed to be used with education programs intended to
convey information about bicyclist or pedestrian safety to target audiences
five or more years old.

The scoring system of the PAS is based on the assumption that a program consists of an integrated set of materials accompanied by a plan for their use. However, the PAS can be used with programs containing fewer elements or with individual program materials. For example, one could use the PAS scores to compare one film with another in regard to how well each covered the appropriate content issues. Alternatively, PAS scores might show that a single "good" film could, to a large extent, replace a more time consuming, but less relevant, series of classroom activities.

To use the PAS to assess the safety relevance of an education program, the user follows the sequence of steps outlined below:

1. Select the program to be assessed.

2. Establish the age range of the target audience.

3. Select the PAS Questionnaire appropriate to that program area and age range.

4. Make photocopies of the Answer Sheets accompanying the Questionnaire on which to record the answers.

5. Review the program in order to become familiar with its organization, content, and materials.

6. Answer the questions in each of the three sections of the Questionnaire, frequently referring back to the program.

7. Calculate the scores for each section of the Answer Sheets.

8. Repeat these steps for additional programs, content areas, or age groups.

9. Compare the Scores.

A separate PAS is provided for eight combinations of program type and age group as shown in Table 5-1.

Program Area	Age Range	Grades
Bicyclist	5 - 6	K - 1
Bicyclist	7 - 8	2 - 3
Bicyclist	9 - 15	4 - 10
Bicyclist	16 +	11 +
Pedestrian	5 - 8	K - 3
Pedestrian	9 - 11	4 - 6
Pedestrian	12 - 15	7 - 10
Pedestrian	16 +	11 +

Table 5-1. Listing of Program Assessment Scale
Score Questionnaires

Depending on the program area and the target age group, the Questionnaire contains between 70 and 74 specific items divided between three major sections:

1. Safety Relevance (13 - 17 Items) -- the subject matter contained in the program

2. Instruction (25 Items) -- the methods and approaches used to teach the subject matter

3. Materials (32 Items) -- the physical means for conveying program information to administrators, instructors, and students.

Questionnaire items may be phrased as questions, statements, or descriptions. Regardless of the form it takes, each item is accompanied by a set of multiple-choice answers.

To complete the PAS, the user goes through the items one at a time, recording his/her responses on the copy of the Answer Sheet, following the instructions provided in the text of the Questionnaire. Sections may be completed in any order.

Depending on the nature of the program materials, it may not be possible to evaluate the program on certain items. The user is encouraged to gain additional information for completing these items through telephone calls or letters to program developers.

Survey of Implementation Guidelines

In order to determine the level of feasibility of implementing a given program within a given community setting, several aspects of the program's requirements must be considered.

Facilities and Equipment. Many education programs involve the use of audio-visual materials, simulations, or hands-on training. These frequently require using special equipment and facilities.

Materials. Program materials include curriculum guides, instructor's manuals, administrative guides, posters, filmstrips, cassettes, spirit masters, coloring books, badges, certificates, and stickers.

Staffing. Depending on the complexity of the program materials, the instructor may or may not require special training. It is also assumed that instructors will commit a certain amount of time

to the program for preparation and delivery. It is important to make these expectations explicit in order to determine if they can be satisfied by the school system.

Scheduling. With the ever increasing pressure to include new items in the regular school curriculum, the amount of time allocated to a particular subject can be critical. Time requirements must be examined in the context of needs for existing educational activities.

Costs. All of the areas highlighted above can involve extra costs. The Cost Worksheet provided at the end of this Summary assembles the major cost categories that should be considered when evaluating the cost of a program. Responses to individual items can be summed to yield the total cost of the program.

The survey highlights the most critical program requirements in these areas by asking a series of simple questions. There are no "right" or "wrong" answers to these questions -- they are designed to provide a systematic method for comparing several programs in light of the unique conditions, limitations, and opportunities that exist within a given school system.

Guidelines for Interpreting Effectiveness Evaluations

A program is not more "safety relevant" for having been evaluated. However, the results of an evaluation can be extremely useful in helping the school system decide on the "worthiness" of a program. Unfortunately, not all evaluations are of the same quality, so the program evaluators cannot take all results at face value. Therefore, the PAK contains some guidelines to assist the user in examining evaluation results.

Research results should always be examined in the context of the methods used to obtain them. This does not mean that the PAK users must become an expert in the area of program evaluation before they can utilize research results, but they should be aware of the most critical elements that affect the extent to which results can be relied upon. The most important issues may be summarized in four areas:

1. Appropriateness of evaluation measures;
2. Validity of research design;
3. Significance of results; and
4. Generalizability of results.

Description of NHTSA Accident Types

The final section of the PAK addresses the pedestrian and bicyclist accident typologies that have resulted from NHTSA accident research. Each typology contains 37 distinct accident types which differ from one another not only in terms of how they occur but also in terms of their causal factors (including errors) and the age groups most heavily victimized. The section lists all of the accident types and provides detailed illustrated summaries of the more common types. A bibliography and a listing of NHTSA Headquarters and Regional Sources are provided to permit the user to obtain more information.

The purpose of this section is to educate the PAK user concerning the major accident types and their causal factors. This information prepares the PAK user to more effectively evaluate the safety relevance of the programs he/she is assessing.

Intended Users of the PAK

The PAK is intended for use by people involved with bicyclist or pedestrian safety-education programs at several levels:

Administrators -- people who decide which of several programs might be purchased or adopted, whether for a single school, a school district, or statewide.

Program Developers -- people who need up-to-date and practical information on the relative importance of different content areas and instructional approaches.

Instructors -- people who need to know which of several content areas need to be emphasized or modified to address the needs of particular target audiences.

Users of the PAK might be paid professionals in an educational institution or agency or they might be volunteers in a community-action group. They need not be experts in bicycle or pedestrian safety in order to use the PAK effectively.

Purposes of the PAK

The Program Assessment Scale and its companion materials provide important tools for approaching a wide variety of decision-making problems. The following examples illustrate some of the situations in which the PAK may be used:

Example One. Examination of your community's pedestrian accident records has revealed that children in the five- to nine-year-old age group are disproportionately involved in these accidents. You have identified six or seven recently developed education programs that claim to address pedestrian safety for that target population. By examining program descriptions, you have narrowed the field down to three candidates for adoption in your school system. Which of these programs best addresses the safety needs of this age group?

Example Two. Your recreational program developed a bicycle education program intended for five- to nine-year-olds. To what extent is the program also suitable for use with older children? Does it really provide for the special needs of the youngest children in the program?

Example Three. Your school system has a limited amount of time set aside for safety education. Accordingly, it uses a "combination" program that covers many different facets of safety. To what degree does the program address critical information in the areas of bicyclist and pedestrian safety?

Example Four. You have located a good film on bicycle touring
that includes some coverage of bicycle safety. Before you show
it to your scouting group, you want to know if it covers the
"right" issues in bicycle safety. How well does this film meet
the standard for a "good" bicyclist safety education program?

Example Five. After examining a number of different programs
under consideration for adoption in your school system, you have
narrowed the field down to two programs that received essentially
equivalent safety-relevance scores. Which of the two programs
would be more likely to be implementable in your schools? What
are the main implementation advantages of that program? Which
program has the more believable effectiveness evaluation?

Example Six. Your school system wants to revise the safety
program that was developed in the 1970's (before the NHTSA acci-
dent analyses were completed). In what areas is it most in need
of updating to reflect the most recent research findings?

Using the PAS and its companion materials, a decision-maker can answer
each of the questions raised in these examples. As the examples illus-
trate, the PAK fills a variety of needs.

Administrative Considerations in Using The PAK

Two questions may arise in making a decision to use the PAK for
program assessment. The first of these is, "Does it require special
training to use the PAK?" The answer to this question is, "No." The
PAK is totally self-contained and provides a comprehensive and clearly
written set of instruction for use. No specialized skills or knowledge
are required to use the PAK. Although the PAK will often be employed
by persons with college degrees, given the type of user to which it is
directed, it could be employed by any reasonably competent high school
graduate. Of course, a thorough review of the program materials being
evaluated is required.

The second question concerns how long it takes to perform a program
assessment using PAK. The answer to this question clearly depends on the
number of materials in the program(s) being evaluated. Review of the
program materials is usually the most time consuming part of the evalua-
tion process once the PAK instructions have been read and understood.
Obviously, it will take more time to review a program that has an
administrator's guide, one or more teacher's manuals, a film and a variety
of student materials than a program that consists of one 25-page teacher's
manual.

While the complete PAK Volume is relatively large, only a few pages
of materials are actually referred to during the assessment of a given
program. Assuming that all program materials have been thoroughly
reviewed and that all information is at hand, the entire review can be
accomplished in 1.5 to 3.0 hours.

APPENDIX A

TABLE OF CONTENTS

Characteristics of Pedestrian and Bicyclist Education Programs

This Appendix comprises two major components: A matrix of program characteristics by programs and a set of indexes that facilitate access to the matrix. The Bicycle Federation, under subcontract to Applied Science Associates, Inc. (ASA), was largely responsible for collecting and processing program information for inclusion in the matrix. ASA project staff produced the matrix and indexes and prepared the text for publication.

The information presented herein represents the first step in the development of an instrument to assess the safety relevance of pedestrian and bicyclist education programs. It is not in itself an evaluation of those programs, but merely a listing of programs and selected characteristics.

In order to prepare this listing, we made an extensive effort to identify pedestrian and bicyclist education programs currently in use or developed within the last five years. Our search included all grade levels and ages, from preschoolers through senior citizens. It was limited to programs that were developed without NHTSA funding. However, a listing of NHTSA programs presented under development is included as the last section of this Appendix. To accomplish the identification task, we requested program materials or program leads from Governors' Highway Safety Representatives in each state and from many national safety and educational organizations. Our subcontractor, the Bicycle Federation, made a similar request of attendees of their national conference, PRO-BIKE '80, who identified education as one of their major program areas. We obtained additional leads by examining literature reviews, program lists provided by computerized searches, and other documents.

We defined an educational program as a complete package of materials. Thus, we did not consider a film to be an educational program unless it included an instructor's guide. Likewise, we did not consider a pamphlet or series of pamphlets to be a program unless it was incorporated with other materials that guided its use.

Once a program has been identified, we obtained a copy of it to see if it fit our definition of an educational program. If so, we completed a checklist to describe its contents. These data are the main subject of this listing and are presented in the Matrix of Program Characteristics. In cases where we were unable to make exact determinations regarding program characteristics, the data represent our best judgment.

Even though our search was extensive, the list of programs contained here probably is not exhaustive. We were able to include only those programs that came to our attention as a result of the many leads which we pursued. We apologize to anyone whose program has been inadvertently left out.

This information was current as of May 31, 1981. We expect that some programs may be revised, some may become unavailable, and in some cases, evaluation data may become available in the future.

How to Use the Matrix

The data from the checklists are presented in the Matrix of Program Characteristics in an abbreviated form. In order to make the contents of the matrix understandable, it is accompanied by a Key to Abbreviations/Symbols. If you have not done so already, look over both the matrix and the key before proceeding.

Finding Programs with Specific Characteristics

By examining the columns, you can locate programs that contain a specific characteristic or combination of characteristics in which you are interested. For example, if you are looking for a program that is entirely devoted to bicyclist education and contains both skill and knowledge tests, examine the columns entitled "%Bike" and "Test." The first program that fits this description is on the 10th row of the matrix: the number "100" appears in the %Bike column and the letters "SK" in the Test column. By following that row to the left-hand side of the matrix, to the column entitled "ID," you can determine that the ID number for this program is 10. In order to find out the name of the program, go to the List of Program Sources, which is organized by ID number. After locating ID number 10, you will see that the title of this program is "Cub Scout Bicycle Safety Program."

Finding Characteristics of Specific Programs

If you already know a program's ID number, you can determine at a glance which characteristics a particular program contains by examining a row in the matrix. We have provided several indexes to assist in locating program ID numbers.

- Alphabetical Index of Program Names- This index is useful if you know the exact name of a program that you want to locate in the matrix. The alphabetizing procedure we used is very literal: a program entitled "A Bicycle Safety Program," will be found under the letter "A", and not "B", in the index. By checking the ID column, you can determine that this program's ID number is 35. If you examine the index further, you will see that some program names are repeated several times. This occurs when a program has separate components for different grades or different program areas (pedestrian vs. bicycle). To help you tell these programs apart, we have included a column of grade levels and have added program area information in parentheses after duplicate

program names.

Index of Programs by State- This index is
alphabetized by State and may be helpful if
you are not sure of the exact name of a program
but have some idea about where it was developed.
If a program was developed by a State or local
government, the abbreviation for the State ap-
pears in the column entitled "ST." If the
developer was an individual, private organi-
zation, or Federal agency, a "--" appears in the
State column.

Index of 100% Pedestrian Programs; Index of
100% Bicyclist Programs; Index of Mixed
(Pedestrian/Bicyclist) Programs- These indexes
may assist you in locating a program that
addresses topic areas appropriate to your needs.

The List of Program Sources provides addresses for each
program where you can obtain more information.

Alphabetical Index of Program Names

PROGRAM NAME	GRADE	ID #
A BICYCLE BUILT FOR YOU	K-6	37
A BICYCLE SAFETY PROGRAM	3-5	35
A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (BIKE)	K-6	95B
A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (PED)	K-6	95A
AAA TRAFFIC SAFETY PROGRAM	K-9	68
ADULT CYCLING: AN INSTRUCTOR'S MANUAL	A	44
ADVENTURES OF BELTMAN	K-3	16
AETNA PEDESTRIAN/BICYCLE SAFETY PROGRAM	3-5	54
ALL ABOUT BIKES -- TEACHING GUIDE	2-8	45
BICYCLE SAFETY	2-8	70
BICYCLE SAFETY	3-6	36
BICYCLE SAFETY ALERT PROGRAM	K-A	64
BICYCLE SAFETY PROGRAM	K-9	62
BICYCLE SAFETY PROGRAM	K-8	03
BICYCLE SAFETY PROJECT	4-6	76
BICYCLE SAFETY: STOP, SEARCH AND ASSESS	1-A	14
BICYCLE SAFETY: THE BEGINNING YEARS	K-6	15
BICYCLE SKILLS TEST MANUAL	K-9	63

PROGRAM NAME	GRADE	ID #
BICYCLE/PEDESTRIAN SAFETY EDUCATION: A CURRICULUM GUIDE	K-6	80
BICYCLES	7-A	78
BICYCLING SAFETY FOR FUN AND FITNESS	10-A	46
BIKE SAFETY	K-6	81
BIKE SAFETY INSTRUCTOR'S GUIDE	K-9	52
CALIFORNIA GUIDE FOR PEDESTRIAN SAFETY EDUCATION	K-2	40
CALIFORNIA TRAFFIC SAFETY EDUCATION PROGRAM - BICYCLE SAFETY EDUCATION	4-A	42
CAREFUL BUDDY'S GARAGE THEATER	K-2	29
CHILD SAFETY PROGRAM OF THE FLINT POLICE DEPT.	K-9	55
COMPREHENSIVE BICYCLIST EDUCATION PROGRAM: CURRICULUM GUIDE	4-6	82
CONNECTICUT K-6 BICYCLE SAFETY PROGRAM	K-6	65
CUB SCOUT BICYCLE SAFETY PROGRAM	K-6	10
CURRICULUM FOR SAFETY EDUCATION	K-6	77
CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	K-3	88A
CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	7-9	88C
CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	4-6	88B
CYCLE SAFELY FOR PEP	K-6	50
D.C. WALKER	PS-3	06

PROGRAM NAME	GRADE	ID #
DENVER PEDESTRIAN SAFETY PROGRAM (WISE WALKER)	K-3	04
DISCOVER BICYCLING	K-6	71
DISCOVERING TRAFFIC SAFETY -- SERIES 1-7	K-9	39
EARLY LEARNERS' CLUB	PS	12
EASY STEPS	2-5	17
EFFECTIVE CYCLING AT THE INTERMEDIATE LEVEL	4-9	11
ELEMENTARY TRAFFIC SAFETY EDUCATION	K-6	66
EVALUATION AND REFINEMENT OF PROTOTYPE BICYCLE SAFETY EDUCATION PROGRAM	4	67
GENESEE COUNTY TRAFFIC SAFETY COMMISSION CHILD SAFETY PROGRAM	K-6	56
HERMAN HOGLEBOGLE GREEN FLAG SAFETY PROGRAM	K-6	96
HOW DO YOU DRIVE A BIKE?	K-6	48
I'M NO FOOL AS A PEDESTRIAN	K-6	23
I'M NO FOOL WITH A BICYCLE	K-6	24
IDAHO TRAFFIC SAFETY EDUCATION (INCL. PED)	K-6	92B
IDAHO TRAFFIC SAFETY EDUCATION (INCL. BIKE)	K-6	92A
IMLAY SCHOOL DISTRICT BICYCLE EDUCATION PROGRAM	K-6	57
INDIANA BICYCLE SAFETY PROGRAM GUIDE	K-A	41
INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. BIKE)	K-6	87B

PROGRAM NAME	GRADE	ID #
INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. PED)	K-6	87A
IT'S YOUR MOVE	7-A	49
JUST LIKE A CAR	3-8	18
K-12 TRAFFIC SAFETY EDUCATION CURRICULUM GUIDE	K-12	43
K-2 PEDESTRIAN SAFETY PROGRAM	K-2	53
K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. PED)	K-6	89B
K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. BIKE)	K-6	89A
K-9 TRAFFIC SAFETY EDUCATION (INCL. BIKE)	K-9	91B
K-9 TRAFFIC SAFETY EDUCATION (INCL. PED)	K-9	91A
KALEO'S SAFE WALKING KIT	K-6	30
MILNER-FENWICK FILMSTRIP SERIES	K-9	22
MONTANA BICYCLIST TRAINING PROGRAM	4	31
NATIONAL OFFICER FRIENDLY PROGRAM	K-3	21
OKLAHOMA SAFETY EDUCATION	4-6	94B
OKLAHOMA SAFETY EDUCATION	K-3	94A
PEDAL ON!	6-9	51
PEDESTRIAN SAFETY EDUCATION FOR ALABAMA YOUTH	K-5	72
PEDESTRIAN SAFETY GUIDE K-6	K-6	74

PROGRAM NAME	GRADE	ID #
PEDESTRIAN SAFETY PROGRAM	1-A	07
PEDESTRIAN SAFETY PROGRAM	K-3	02
PEDESTRIAN, SCHOOL BUS AND CYCLING SAFETY FOR LOUISIANA SCHOOLS	K-9	33
PEDESTRIAN/PEDACYCLE SAFETY PROGRAM	K-6	08
PRESCHOOL CHILDREN IN TRAFFIC	PS	47
PRESCHOOL EDUCATION FOR SAFETY	PS	58
PROFESSIONAL GUIDE: TRAFFIC SAFETY RESOURCE CURRICULUM	4-6	86
PROJECT S.A.F.E.: AN ELEMENTARY CHILD SURVIVAL CURRICULUM	K-6	69
PROJECT TRAFFIC	K-5	60
SAFE 'N' SOUND	1-3	27
SAFEST SHOW ON EARTH	3-5	26
SAFETY	K-6	85
SAFETY ACTION	K-6	05
SAFETY EDUCATION UNITS FOR ILLINOIS ELEMENTARY SCHOOLS	K-8	34
SAFETY INSTRUCTIONAL SYSTEM	2	93B
SAFETY INSTRUCTIONAL SYSTEM	1-6	93A
SAFETY TOWN	K-6	13
SGT. ROBERT MILLER SAFETYVILLE	PS-5	59

PROGRAM NAME	GRADE	ID #
SKILLS FOR BICYCLE SAFETY	K-6	20
SPOKE BICYCLE PROJECT	4-7	19
TEACHER'S GUIDE TO PEDESTRIAN SAFETY	K-6	79
THE BICYCLE DRIVER'S GUIDE	6-12	84
THE BICYCLIST'S GUIDE	4-12	83
THINGS AREN'T WHAT THEY USED TO BE	A	97
TRAFFIC SAFETY EDUCATION	K-6	75
TRAFFIC SAFETY EDUCATION	K-12	25
TRAFFIC SAFETY EDUCATION -- BICYCLE SAFETY	K-8	38
TRAFFIC SAFETY EDUCATION FOR OREGON SCHOOLS, 7-9	7-9	01
TRAFFIC SAFETY PROGRAM FOR YOUNG CHILDREN	K	32
WELCOME TO HAZARDVILLE, PENNSYLVANIA	K-3	61
WHEELS	5-6	28
WILL WALKWRIGHT	K-6	09
WYOMING TRAFFIC SAFETY EDUCATION	K-6	73
YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	7-11	90B
YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	K-6	90A

Index of Programs by State

(In the following index, "--" denotes that
the developer was an individual, private
organization, or Federal agency. If a
state or local government developed the
program, the abbreviation for the state
is listed.)

ST	PROGRAM NAME	GRADE	ID #
--	THE BICYCLE DRIVER'S GUIDE	6-12	84
--	THE BICYCLIST'S GUIDE	4-12	83
--	COMPREHENSIVE BICYCLIST EDUCATION PROGRAM: CURRICULUM GUIDE	4-6	82
--	BIKE SAFETY	K-6	81
--	BICYCLES	7-A	78
--	DISCOVER BICYCLING	K-6	71
--	AAA TRAFFIC SAFETY PROGRAM	K-9	68
--	PRESCHOOL EDUCATION FOR SAFETY	PS	58
--	AETNA PEDESTRIAN/BICYCLE SAFETY PROGRAM	3-5	54
--	K-2 PEDESTRIAN SAFETY PROGRAM	K-2	53
--	BIKE SAFETY INSTRUCTOR'S GUIDE	K-9	52
--	PEDAL ON!	6-9	51
--	IT'S YOUR MOVE	7-A	49
--	PRESCHOOL CHILDREN IN TRAFFIC	PS	47
--	BICYCLING SAFETY FOR FUN AND FITNESS	10-A	46
--	DISCOVERING TRAFFIC SAFETY -- SERIES 1-7	K-9	39
--	A BICYCLE BUILT FOR YOU	K-6	37
--	WHEELS	5-6	28

ST	PROGRAM NAME	GRADE	ID #
--	SAFE 'N' SOUND	1-3	27
--	SAFEST SHOW ON EARTH	3-5	26
--	I'M NO FOOL WITH A BICYCLE	K-6	24
--	I'M NO FOOL AS A PEDESTRIAN	K-6	23
--	JUST LIKE A CAR	3-8	18
--	ADVENTURES OF BELTMAN	K-3	16
--	BICYCLE SAFETY: THE BEGINNING YEARS	K-6	15
--	SAFETY TOWN	K-6	13
--	CUB SCOUT BICYCLE SAFETY PROGRAM	K-6	10
--	CAREFUL BUDDY'S GARAGE THEATER	K-2	29
--	EASY STEPS	2-5	17
--	MILNER-FENWICK FILMSTRIP SERIES	K-9	22
--	HOW DO YOU DRIVE A BIKE?	K-6	48
--	CYCLE SAFELY FOR PEP	K-6	50
--	EFFECTIVE CYCLING AT THE INTERMEDIATE LEVEL	4-9	11
--	NATIONAL OFFICER FRIENDLY PROGRAM	K-3	21
--	THINGS AREN'T WHAT THEY USED TO BE	A	97
--	HERMAN HOGLEBOGLE GREEN FLAG SAFETY PROGRAM	K-6	96

ST	PROGRAM NAME	GRADE	ID #
--	BICYCLE SAFETY: STOP, SEARCH AND ASSESS	1-A	14
AK	K-12 TRAFFIC SAFETY EDUCATION CURRICULUM GUIDE	K-12	43
AL	PEDESTRIAN SAFETY EDUCATION FOR ALABAMA YOUTH	K-5	72
AZ	TRAFFIC SAFETY EDUCATION -- BICYCLE SAFETY	K-8	38
CA	SAFETY	K-6	85
CA	EVALUATION AND REFINEMENT OF PROTOTYPE BICYCLE SAFETY EDUCATION PROGRAM	4	67
CA	CALIFORNIA TRAFFIC SAFETY EDUCATION PROGRAM - BICYCLE SAFETY EDUCATION	4-A	42
CA	CALIFORNIA GUIDE FOR PEDESTRIAN SAFETY EDUCATION	K-2	40
CA	BICYCLE SAFETY	3-6	36
CA	SKILLS FOR BICYCLE SAFETY	K-6	20
CA	SPOKE BICYCLE PROJECT	4-7	19
CO	DENVER PEDESTRIAN SAFETY PROGRAM (WISE WALKER)	K-3	04
CT	TEACHER'S GUIDE TO PEDESTRIAN SAFETY	K-6	79
CT	CONNECTICUT K-6 BICYCLE SAFETY PROGRAM	K-6	65
CT	EARLY LEARNERS' CLUB	PS	12
DC	D.C. WALKER	PS-3	06
DE	SAFETY ACTION	K-6	05
FL	BICYCLE SAFETY PROJECT	4-6	76

ST	PROGRAM NAME	GRADE	ID #
FL	TRAFFIC SAFETY EDUCATION	K-6	75
FL	PEDESTRIAN/PEDACYCLE SAFETY PROGRAM	K-6	08
FL	PEDESTRIAN SAFETY PROGRAM	1-A	07
HI	KALEO'S SAFE WALKING KIT	K-6	30
IA	K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. BIKE)	K-6	89A
IA	K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. PED)	K-6	89B
ID	IDAHO TRAFFIC SAFETY EDUCATION (INCL. PED)	K-6	92B
ID	IDAHO TRAFFIC SAFETY EDUCATION (INCL. BIKE)	K-6	92A
IL	PROJECT S.A.F.E.: AN ELEMENTARY CHILD SURVIVAL CURRICULUM	K-6	69
IL	SAFETY EDUCATION UNITS FOR ILLINOIS ELEMENTARY SCHOOLS	K-8	34
IN	INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. BIKE)	K-6	87B
IN	SGT. ROBERT MILLER SAFETYVILLE	PS-5	59
IN	INDIANA BICYCLE SAFETY PROGRAM GUIDE	K-A	41
IN	INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. PED)	K-6	87A
KY	PEDESTRIAN SAFETY GUIDE K-6	K-6	74
LA	PEDESTRIAN, SCHOOL BUS AND CYCLING SAFETY FOR LOUISIANA SCHOOLS	K-9	33
MD	SAFETY INSTRUCTIONAL SYSTEM	2	93B
MD	SAFETY INSTRUCTIONAL SYSTEM	1-6	93A

ST	PROGRAM NAME	GRADE	ID #
MI	CURRICULUM FOR SAFETY EDUCATION	K-6	77
MI	IMLAY SCHOOL DISTRICT BICYCLE EDUCATION PROGRAM	K-6	57
MI	GENESEE COUNTY TRAFFIC SAFETY COMMISSION CHILD SAFETY PROGRAM	K-6	56
MI	CHILD SAFETY PROGRAM OF THE FLINT POLICE DEPT.	K-9	55
MI	TRAFFIC SAFETY PROGRAM FOR YOUNG CHILDREN	K	32
MO	CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	K-3	88A
MO	CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	7-9	88C
MO	CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	4-6	88B
MT	MONTANA BICYCLIST TRAINING PROGRAM	4	31
NC	K-9 TRAFFIC SAFETY EDUCATION (INCL. BIKE)	K-9	91B
NC	K-9 TRAFFIC SAFETY EDUCATION (INCL. PED)	K-9	91A
NC	BICYCLE SKILLS TEST MANUAL	K-9	63
NC	ADULT CYCLING: AN INSTRUCTOR'S MANUAL	A	44
NJ	BICYCLE SAFETY ALERT PROGRAM	K-A	64
NV	PROFESSIONAL GUIDE: TRAFFIC SAFETY RESOURCE CURRICULUM	4-6	86
NY	YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	7-11	90B
NY	YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	K-6	90A
OH	BICYCLE SAFETY PROGRAM	K-8	03

ST	PROGRAM NAME	GRADE	ID #
====	===	=======	======
OH	PEDESTRIAN SAFETY PROGRAM	K-3	02
OH	BICYCLE/PEDESTRIAN SAFETY EDUCATION: A CURRICULUM GUIDE	K-6	80
OK	OKLAHOMA SAFETY EDUCATION	K-3	94A
OK	OKLAHOMA SAFETY EDUCATION	4-6	94B
OR	BICYCLE SAFETY PROGRAM	K-9	62
OR	TRAFFIC SAFETY EDUCATION FOR OREGON SCHOOLS, 7-9	7-9	01
PA	WELCOME TO HAZARDVILLE, PENNSYLVANIA	K-3	61
PA	ALL ABOUT BIKES -- TEACHING GUIDE	2-8	45
TX	A BICYCLE SAFETY PROGRAM	3-5	35
UT	A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (BIKE)	K-6	95B
UT	A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (PED)	K-6	95A
VA	WILL WALKWRIGHT	K-6	09
VA	BICYCLE SAFETY	2-8	70
WA	ELEMENTARY TRAFFIC SAFETY EDUCATION	K-6	66
WA	TRAFFIC SAFETY EDUCATION	K-12	25
WI	PROJECT TRAFFIC	K-5	60
WY	WYOMING TRAFFIC SAFETY EDUCATION	K-6	73

Index of 100% Pedestrian Programs

PROGRAM NAME	GRADE	ID #
A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (PED)	K-6	95A
CALIFORNIA GUIDE FOR PEDESTRIAN SAFETY EDUCATION	K-2	40
D.C. WALKER	PS-3	06
DENVER PEDESTRIAN SAFETY PROGRAM (WISE WALKER)	K-3	04
EASY STEPS	2-5	17
I'M NO FOOL AS A PEDESTRIAN	K-6	23
K-2 PEDESTRIAN SAFETY PROGRAM	K-2	53
KALEO'S SAFE WALKING KIT	K-6	30
PEDESTRIAN SAFETY EDUCATION FOR ALABAMA YOUTH	K-5	72
PEDESTRIAN SAFETY PROGRAM	1-A	07
PEDESTRIAN SAFETY PROGRAM	K-3	02
PRESCHOOL CHILDREN IN TRAFFIC	PS	47
TEACHER'S GUIDE TO PEDESTRIAN SAFETY	K-6	79
THINGS AREN'T WHAT THEY USED TO BE	A	97
WELCOME TO HAZARDVILLE, PENNSYLVANIA	K-3	61
WILL WALKWRIGHT	K-6	09

Index of 100% Bicyclist Programs

PROGRAM NAME	GRADE	ID #
A BICYCLE BUILT FOR YOU	K-6	37
A BICYCLE SAFETY PROGRAM	3-5	35
A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (BIKE)	K-6	95B
ADULT CYCLING: AN INSTRUCTOR'S MANUAL	A	44
ALL ABOUT BIKES -- TEACHING GUIDE	2-8	45
BICYCLE SAFETY	2-8	70
BICYCLE SAFETY	3-6	36
BICYCLE SAFETY ALERT PROGRAM	K-A	64
BICYCLE SAFETY PROGRAM	K-9	62
BICYCLE SAFETY PROGRAM	K-8	03
BICYCLE SAFETY PROJECT	4-6	76
BICYCLE SAFETY: STOP, SEARCH AND ASSESS	1-A	14
BICYCLE SAFETY: THE BEGINNING YEARS	K-6	15
BICYCLE SKILLS TEST MANUAL	K-9	63
BICYCLES	7-A	78
BICYCLING SAFETY FOR FUN AND FITNESS	10-A	46
BIKE SAFETY	K-6	81
BIKE SAFETY INSTRUCTOR'S GUIDE	K-9	52
CALIFORNIA TRAFFIC SAFETY EDUCATION PROGRAM - BICYCLE SAFETY EDUCATION	4-A	42
COMPREHENSIVE BICYCLIST EDUCATION PROGRAM: CURRICULUM GUIDE	4-6	82
CONNECTICUT K-6 BICYCLE SAFETY PROGRAM	K-6	65
CUB SCOUT BICYCLE SAFETY PROGRAM	K-6	10
CYCLE SAFELY FOR PEP	K-6	50

Index of Mixed (Pedestrian/Bicyclist) Programs

PROGRAM NAME	% PED/BIKE		GRADE	ID #
AAA TRAFFIC SAFETY PROGRAM	50	10	K-9	68
ADVENTURES OF BELTMAN	50	0	K-3	16
AETNA PEDESTRIAN/BICYCLE SAFETY PROGRAM	50	50	3-5	54
BICYCLE/PEDESTRIAN SAFETY EDUCATION: A CURRICULUM GUIDE	50	50	K-6	80
CAREFUL BUDDY'S GARAGE THEATER	33	33	K-2	29
CHILD SAFETY PROGRAM OF THE FLINT POLICE DEPT.	40	0	K-9	55
CURRICULUM FOR SAFETY EDUCATION	6	3	K-6	77
CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	40	5	7-9	88C
CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	75	5	4-6	88B
CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	75	5	K-3	88A
DISCOVERING TRAFFIC SAFETY -- SERIES 1	50	50	K-9	39
EARLY LEARNERS' CLUB	50	0	PS	12
ELEMENTARY TRAFFIC SAFETY EDUCATION	25	25	K-6	66
GENESEE COUNTY TRAFFIC SAFETY COMMISION CHILD SAFETY PROGRAM	?	?	K-6	56
HERMAN HOGLEBOGLE GREEN FLAG SAFETY PROGRAM	90	10	K-6	96
IDAHO TRAFFIC SAFETY EDUCATION (INCL. PED)	30	0	K-6	92B
IDAHO TRAFFIC SAFETY EDUCATION (INCL. BIKE)	0	40	K-6	92A
INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. BIKE)	0	25	K-6	87B

INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. PED)	25	0	K-6	87A
K-12 TRAFFIC SAFETY EDUCATION CURRICULUM GUIDE	0	7	K-12	43
K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. PED)	30	0	K-6	89B
K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. BIKE)	0	33	K-6	89A
K-9 TRAFFIC SAFETY EDUCATION (INCL. BIKE)	0	25	K-9	91B
K-9 TRAFFIC SAFETY EDUCATION (INCL. PED)	25	0	K-9	91A
NATIONAL OFFICER FRIENDLY PROGRAM	33	20	K-3	21
OKLAHOMA SAFETY EDUCATION	33	33	4-6	94B
OKLAHOMA SAFETY EDUCATION	92	0	K-3	94A
PEDESTRIAN SAFETY GUIDE K-6	80	0	K-6	74
PEDESTRIAN, SCHOOL BUS AND CYCLING SAFETY FOR LOUISIANA SCHOOLS	40	40	K-9	33
PEDESTRIAN/PEDACYCLE SAFETY PROGRAM	50	50	K-6	08
PRESCHOOL EDUCATION FOR SAFETY	90	0	PS	58
PROFESSIONAL GUIDE: TRAFFIC SAFETY RESOURCE CURRICULUM	30	30	4-6	86
PROJECT S.A.F.E.: AN ELEMENTARY CHILD SURVIVAL CURRICULUM	40	35	K-6	69
PROJECT TRAFFIC	25	25	K-5	60
SAFE 'N' SOUND	?	?	1-3	27
SAFEST SHOW ON EARTH	33	33	3-5	26
SAFETY	?	?	K-6	85
SAFETY ACTION	25	25	K-6	05
SAFETY EDUCATION UNITS FOR ILLINOIS ELEMENTARY SCHOOLS	25	50	K-8	34
SAFETY INSTRUCTIONAL SYSTEM	20	20	1-6	93A
SAFETY TOWN	75	0	K-6	13

SGT. ROBERT MILLER SAFETYVILLE	? ?	PS-5	59
TRAFFIC SAFETY EDUCATION	40 40	K-6	75
TRAFFIC SAFETY EDUCATION	30 10	K-12	25
TRAFFIC SAFETY EDUCATION FOR OREGON SCHOOLS, 7-9	2 10	7-9	01
TRAFFIC SAFETY PROGRAM FOR YOUNG CHILDREN	? ?	K	32
WHEELS	33 33	5-6	28
WYOMING TRAFFIC SAFETY EDUCATION	25 30	K-6	73
YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	? ?	7-11	90B
YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	? ?	K-6	90A

Matrix of Program Characteristics

Key to Abbreviations/Symbols

ID #
Identification Number – a number assigned to each program for identification purposes. In addition, alphabetic characters were used to further identify programs with separate components for different age groups or program types (pedestrian vs. bicycle).

YR D/R
Year Developed/Revised – the year the program was developed or revised. "?" denotes that the date could not be determined from available program materials.

% PED/BIKE
Percent Pedestrian/Bicyclist – estimate of the proportion of the program addressing each of these areas. Whenever possible, proportions were determined from the number of lessons or time allotments. Otherwise, they were estimated from program descriptions. "?" denotes that an estimate could not be made based on available program materials.

GRADE
Grade – the grade level(s) for which the program was designed. "PS" denotes preschool; "K" denotes kindergarten; "A" denotes adult and includes post-secondary students to senior citizens.

CONTENT
The following five categories are program content areas. "+" means that the program includes the content area and "-" means that it does not.

ACC TYP/ HAZ REC   Accident Type/Hazard Recognition

PRO & LAWS   Procedures and Laws

EQ & MAINT   Equipment and Maintenance

MOTOR SKILL   Motor Skills

DEC MAKING   Decision Making

MAT'L   Materials - There are three columns to indicate whether student ("S"), instructor ("I"), or audiovisual ("A") materials are included in the program. (Materials that must be obtained from other sources were considered to be part of a program if they were incorporated into lessons.) "-" in a column denotes that that particular type of material is not included in the program.

TEST   Tests - whether skill ("S") or knowledge ("K") tests are included in the program. "-" denotes that neither a skill or a knowledge test is included.

%   Percent Field/Classroom - estimate of the
FLD/CR   proportion of the program requiring field/ classroom training. Proportions were determined with the same procedure used for %PED/BIKE estimates. Where both percentages are zero, this indicates a self-study program. "?" denotes that an estimate could not be made based on available program materials.

TRNG   Training Range - whether a simulated ("S") or
RANGE   real ("R") training range is required. "-" denotes that no training range is required.

INSTR   Instructor Training - whether instructor training is available and/or required. Training was designated as required if it was specified in course materials or if the necessity was inferred from specialized course content.
         NR = available but not required
         R = available and required
         - = unavailable and not required
         * = unavailable but is required

EVAL   Evaluation - There are three columns to indicate whether information regarding instructional effectiveness ("I"), user acceptance ("U"), or countermeasure effectiveness ("C") is available. "-" in a column denotes that no information regarding that aspect of evaluation was included in available program materials.

ID	YR D/R	% PED/BIKE		GRADE	ACC TYP/ HAZ REC	CONTENT PROC & LAWS	EQ & MAINT	MOTOR SKILL	DEC MAKING	MAT'L	TEST	% FLD/CR		TRNG RANGE	INSTR TRNG	EVAL
01	?	2	10	7-9	+	+	+	-	-	-IA	-	0	100	-	-	-U-
02	80	100	0	K-3	-	+	-	-	-	--A	-	0	100	-	R	---
03	80	0	100	K-8	-	+	+	-	-	-I-	-	0	100	-	R	---
04	?	100	0	K-3	+	+	-	-	-	SI-	S	90	10	S	SR	---
05	68	25	25	K-6	-	+	+	-	-	-I-	-	0	100	-	-	---
06	79	100	0	PS-3	+	+	-	-	+	SI-	K	0	100	-	-	---
07	78	100	0	1-A	-	+	-	-	-	-IA	-	?	?	S	R	---
08	80	50	50	K-6	-	+	+	-	-	-IA	K	0	100	-	-	---
09	76	100	0	K-6	-	+	-	-	-	S-A	-	0	0	-	-	---
10	77	0	100	K-6	-	+	+	+	-	-I-	SK	5	95	S	-	---
11	80	0	100	4-9	+	+	+	-	-	-IA	K	50	50	R	R	---
12	?	50	0	PS	-	+	-	-	-	S--	-	0	0	-	-	---
13	73	75	0	K-6	-	+	-	-	-	-IA	-	95	5	S	-	---
14	?	0	100	1-A	+	+	-	-	+	--A	-	0	100	-	-	---
15	?	0	100	K-6	+	+	-	-	+	--A	-	0	100	-	-	---
16	81	50	0	K-3	-	+	-	-	+	SIA	-	0	100	-	-	---
17	73	100	0	2-5	+	+	-	-	+	-IA	K	0	100	-	-	---
18	?	0	100	3-8	+	+	+	+	+	-IA	K	30	70	S	-	---
19	77	0	100	4-7	-	+	+	+	-	-I-	S	90	10	S	-	---
20	75	0	100	K-6	+	+	-	-	-	SI-	S	90	10	SR	-	---
21	66	33	20	K-3	-	+	+	-	-	---	K	0	100	-	-	---
22	76	0	100	K-9	+	+	+	-	-	-IA	K	0	100	-	-	---
23	?	100	0	K-6	+	+	-	-	-	--A	-	0	100	-	-	---
24	?	0	100	K-6	-	+	-	-	-	--A	-	0	100	-	-	---
25	75	30	10	K-12	-	+	+	-	-	--A	SK	?	?	S	-	---
26	79	33	33	3-5	-	+	-	-	-	-I-	K	0	100	-	-	I--
27	-	?	?	1-3	-	+	-	-	+	-IA	-	0	100	-	-	---

ID	YR D/R	% PED/BIKE		GRADE	ACC TYP/ HAZ REC	PROC & LAWS	CONTENT EQ & MAINT	MOTOR SKILL	DEC MAKING	MAT'L	TEST	% FLD/CR		TRNG RANGE	INSTR TRNG	EVAL
28	?	33	33	5-6	-	-	-	-	-	-IA	K	0	100	-	-	---
29	?	33	33	K-2	-	-	-	-	-	-IA	-	0	100	-	-	---
30	?	100	0	K-6	+	+	-	-	+	-IA	-	0	100	-	-	---
31	79	0	100	4	+	+	+	-	-	-IA	SK	45	55	SR	R	-U-
32	?	?	?	K	-	+	-	-	-	--A	-	?	?	R	NR	---
33	77	40	40	K-9	-	+	+	-	+	-I-	K	10	90	S	-	---
34	?	25	50	K-8	+	+	+	-	+	-IA	K	5	95	S	-	---
35	77	0	100	3-5	+	+	+	-	-	-IA	SK	?	?	S	-	---
36	?	0	100	3-6	-	-	+	+	-	-I-	SK	?	?	S	-	---
37	?	0	100	K-6	+	-	+	-	-	-IA	S	20	80	S	-	---
38	?	0	100	K-8	-	+	+	-	-	---	-	0	100	-	-	---
39	79	50	50	K-9	+	+	-	-	+	-IA	-	0	100	-	-	IU-
40	80	100	0	K-2	+	+	-	-	+	SIA	-	50	50	R	-	---
41	?	0	100	K-A	+	+	+	-	-	SI-	S	?	?	S	-	---
42	77	0	100	4-A	+	+	+	-	+	-IA	K	0	100	-	R	---
43	73	0	7	K-12	+	+	+	-	-	SI-	K	25	75	S	-	---
44	78	0	100	A	+	+	+	-	-	-IA	-	50	50	SR	*	---
45	72	0	100	2-8	+	+	-	-	+	SIA	SK	10	90	S	-	IU-
46	77	0	100	10-A	-	+	+	+	-	S-A	-	0	100	-	-	---
47	76	100	0	PS	-	+	-	-	-	-I-	-	0	100	-	-	---
48	74	0	100	K-6	+	+	+	+	+	-IA	SK	?	?	S	-	---
49	80	0	100	7-A	+	+	-	-	-	-IA	K	0	100	-	-	-U-
50	80	0	100	K-6	+	+	-	+	-	--A	S	100	0	S	-	---
51	77	0	100	6-9	-	+	+	-	-	-I-	K	0	100	-	-	---
52	?	0	100	K-9	+	+	+	-		S-A	S	13	87	R	-	---
53	80	100	0	K-2	-	+	-	-	+	-IA	K	0	100	-	-	---
54	?	50	50	3-5	+	+	-	-	+	-IA	K	0	100	-	-	---

ID	YR D/R	% PED/BIKE		GRADE	ACC TYP/ HAZ REC	CONTENT PROC & LAWS	EQ & MAINT	MOTOR SKILL	DEC MAKING	MAT'L	TEST	% FLD/CR		TRNG RANGE	INSTR TRNG	EVAL
55	?	40	0	K-9	-	+	-	-	-	--A	-	20	80	S	-	---
56	78	?	?	K-6	-	-	-	-	-	---	-	20	80	S	-	---
57	?	0	100	K-6	-	+	-	-	-	---	-	0	100	-	-	---
58	81	90	0	PS	-	+	-	-	-	SI-	-	?	?	SR	-	---
59	75	?	?	PS-5	-	+	-	-	-	S--	-	100	0	S	-	---
60	80	25	25	K-5	+	+	+	-	+	SIA	SK	10	90	S	-	---
61	?	100	0	K-3	+	+	-	-	-	-IA	K	2	98	SR	-	---
62	?	0	100	K-9	+	+	+	-	+	SIA	SK	0	100	-	-	---
63	?	0	100	K-9	-	-	-	+	-	-I-	S	100	0	S	-	---
64	74	0	100	K-A	-	+	-	+	-	---	S	0	100	-	-	---
65	?	0	100	K-6	+	+	+	+	+	-IA	SK	?	?	S	-	-U-
66	74	25	25	K-6	-	+	+	-	+	SI-	-	0	100	-	-	---
67	77	0	100	4	+	+	-	-	-	SIA	K	0	100	-	-	---
68	80	50	10	K-9	+	+	+	-	-	SI-	-	0	100	-	-	---
69	?	40	35	K-6	+	+	+	+	+	-IA	SK	10	90	SR	-	---
70	80	0	100	2-8	+	+	+	-	+	-IA	S	0	100	-	-	---
71	79	0	100	K-6	-	+	+	-	-	SI-	SK	20	80	S	-	---
72	79	100	0	K-5	+	+	-	-	+	-IA	K	10	90	SR	-	---
73	79	25	30	K-6	+	+	+	-	+	-I-	SK	20	80	SR	-	---
74	76	80	0	K-6	+	+	-	-	+	-I-	K	5	95	SR	-	---
75	?	40	40	K-6	+	+	+	-	+	SI-	K	0	100	-	R	---
76	?	0	100	4-6	+	+	+	+	+	-IA	SK	60	40	S	-	---
77	73	6	3	K-6	+	+	+	-	-	-IA	S	30	70	SR	-	---
78	78	0	100	7-A	+	-	+	-	-	SIA	K	15	85	S	-	---
79	?	100	0	K-6	+	+	-	-	+	SI-	K	2	98	SR	-	-U-
80	?	50	50	K-6	+	+	+	-	+	-IA	SK	10	90	S	NR	--
81	80	0	100	K-6	+	+	+	+	+	SIA	SK	20	80	S	-	---

ID	YR D/R	% PED/BIKE		GRADE	CONTENT ACC TYP/ HAZ REC	PROC & LAWS	EQ & MAINT	MOTOR SKILL	DEC MAKING	MAT'L	TEST	% FLD/CR		TRNG RANGE	INSTR TRNG	EVAL
82	81	0	100	4-6	+	+	+	+	+	SIA	SK	50	50	SR	R	---
83	79	0	100	4-12	+	+	+	-	-	S--	K	0	0	-	-	---
84	78	0	100	6-12	+	+	+	-	-	S--	SK	0	0	-	-	---
85	64	?	?	K-6	+	+	-	-	+	-I-	-	0	100	-	-	---
86	?	30	30	4-6	+	+	+	+	+	-IA	SK	10	90	SR	-	---
87A	75	25	0	K-6	-	+	+	-	-	---	K	0	100	-	-	-U-
87B	75	0	25	K-6	-	+	+	-	-	---	-	10	90	S	-	-U-
88A	76	75	5	K-3	+	+	+	-	+	-IA	SK	8	92	SR	-	---
88B	?	75	5	4-6	+	+	+	-	+	-IA	K	5	95	SR	-	---
88C	?	40	5	7-9	+	+	+	+	+	-IA	S	5	95	S	-	---
89A	75	0	33	K-6	-	+	+	-	+	SIA	K	?	?	S	-	---
89B	75	30	0	K-6	+	+	+	-	-	-IA	K	0	100	-	-	---
90A	80	?	?	K-6	+	+	-	+	+	SI-	SK	1	99	S	-	-U-
90B	80	?	?	7-11	+	+	-	+	+	SI-	SK	1	99	S	-	-U-
91A	75	25	0	K-9	+	+	-	-	+	-I-	K	0	100	-	-	---
91B	75	0	25	K-9	-	+	+	+	-	-I-	-	0	100	-	-	---
92A	78	0	40	K-6	+	+	+	+	+	SIA	SK	5	95	S	-	---
92B	78	30	0	K-6	+	+	-	-	+	SIA	K	0	100	-	-	---
93A	?	20	20	1-6	-	+	-	-	+	-I-	K	0	100	-	-	-U-
93B	?	0	100	2	-	+	+	+	+	SIA	K	10	90	S	-	-U-
94A	76	92	0	K-3	+	+	-	-	+	SIA	SK	0	100	-	-	---
94B	76	33	33	4-6	+	+	+	-	+	SIA	S	10	90	SR	-	---
95A	77	100	0	K-6	+	+	-	-	+	-IA	K	7	93	SR	-	---
95B	77	0	100	K-6	+	+	+	-	+	-IA	SK	10	90	S	-	---
96	52	90	10	K-6	+	+	+	-	-	-I-	K	0	100	-	-	---
97	?	100	0	A	+	+	-	-	-	--A	-	0	100	-	-	---

List of Program Sources

ID #	PROGRAM NAME	GRADE	SOURCE
01	TRAFFIC SAFETY EDUCATION FOR OREGON SCHOOLS, 7-9	7-9	DEPT. OF EDUCATION 942 LANCASTER DR., NE SALEM, OR 97310
02	PEDESTRIAN SAFETY PROGRAM	K-3	SAFETY SECTION COORDINATOR KETTERING TRANSPORTATION ENG. DEPT. 3600 SHROYER RD. KETTERING, OH 45429
03	BICYCLE SAFETY PROGRAM	K-8	SAFETY SECTION COORDINATOR KETTERING TRANSPORTATION ENG. DEPT. 3600 SHROYER RD. KETTERING, OH 45429
04	DENVER PEDESTRIAN SAFETY PROGRAM (WISE WALKER)	K-3	DENVER POLICE DEPT. 1331 CHEROKEE ST., RM. 106 DENVER, CO 80204
05	SAFETY ACTION	K-6	DEPT. OF PUBLIC INSTRUCTION DOVER, DE 19901
06	D.C. WALKER	PS-3	D.C. DEPT. OF TRANSPORTATION 415 12TH ST., NW, RM. 604 WASHINGTON, D.C. 20004
07	PEDESTRIAN SAFETY PROGRAM	1-A	COUNTY ADMINISTRATOR PALM BEACH COUNTY COURTHOUSE WEST PALM BEACH, FL 33401
08	PEDESTRIAN/PEDACYCLE SAFETY PROGRAM	K-6	COORDINATOR, HEALTH EDUCATION 600 NW 19TH AVE. LINCOLN PARK COMPLEX FT. LAUDERDALE, FL 33311

A-38

ID #	PROGRAM NAME	GRADE	SOURCE
09	WILL WALKWRIGHT	K-6	COMMONWEALTH OF VIRGINIA DEPT. OF TRANSPORTATION SAFETY 300 TURNER RD. RICHMOND, VA 23225
10	CUB SCOUT BICYCLE SAFETY PROGRAM	K-6	CUB SCOUT DIV. BOY SCOUTS OF AMERICA P.O. BOX 61030 DALLAS/FT. WORTH AIRPORT, TX 75261
11	EFFECTIVE CYCLING AT THE INTERMEDIATE LEVEL	4-9	JOHN FORESTER 726 MADRONE AVE. SUNNYVALE, CA 94086
12	EARLY LEARNERS' CLUB	PS	DEPT. OF PUBLIC SAFETY OFFICE OF SAFETY EDUCATION 79 ELM ST. HARTFORD, CT 06115
13	SAFETY TOWN	K-6	SAFETY TOWN CENTER P.O. BOX 39312 CLEVELAND, OH 44139
14	BICYCLE SAFETY: STOP, SEARCH AND ASSESS	1-A	FIESTA FILMS P.O. BOX 3545 SANTA MONICA, CA 90403
15	BICYCLE SAFETY: THE BEGINNING YEARS	K-6	FIESTA FILMS P.O. BOX 3545 SANTA MONICA, CA 90403
16	ADVENTURES OF BELTMAN	K-3	FILM LOOPS, INC. P.O. BOX 2233 PRINCETON, NJ 08540

ID #	PROGRAM NAME	GRADE	SOURCE
17	EASY STEPS	2-5	FILM LOOPS, INC. P.O. BOX 2233 PRINCETON, NJ 08540
18	JUST LIKE A CAR	3-8	FILM LOOPS, INC. P.O. BOX 2233 PRINCETON, NJ 08540
19	SPOKE BICYCLE PROJECT	4-7	L.A. CITY SCHOOL DISTRICT SCHOOL TRAFFIC & SAFETY ED. SECTION 1200 N. CORNWELL ST., RM. 205 LOS ANGELES, CA 90033
20	SKILLS FOR BICYCLE SAFETY	K-6	SCHOOL TRAFFIC & SAFETY ED. SECTION L.A. UNIFIED SCHOOL DISTRICT 3317 BELLEVUE AVE. LOS ANGELES, CA 90026
21	NATIONAL OFFICER FRIENDLY PROGRAM	K-3	THE SEARS ROEBUCK FOUNDATION 675 PONCE DE LEON AVE., NE 95 ANNEX ATLANTA, GA 30395
22	MILNER-FENWICK FILMSTRIP SERIES	K-9	MILNER-FENWICK, INC. 3800 LIBERTY HEIGHTS AVE. BALTIMORE, MD 21215
23	I'M NO FOOL AS A PEDESTRIAN	K-6	WALT DISNEY EDUCATION MEDIA CO. BURBANK, CA 91505
24	I'M NO FOOL WITH A BICYCLE	K-6	WALT DISNEY EDUCATION MEDIA CO. BURBANK, CA 91505

ID #	PROGRAM NAME	GRADE	SOURCE
25	TRAFFIC SAFETY EDUCATION	K-12	AUBURN PUBLIC SCHOOLS AUBURN, WA 98002
26	SAFEST SHOW ON EARTH	3-5	MEDIA INTENSIVE LEARNING CORP. 1623 S. LAMAR AUSTIN, TX 78704
27	SAFE 'N' SOUND	1-3	MEDIA INTENSIVE LEARNING CORP. 1623 S. LAMAR AUSTIN, TX 78704
28	WHEELS	5-6	MEDIA INTENSIVE LEARNING CORP. 1623 S. LAMAR AUSTIN, TX 78704
29	CAREFUL BUDDY'S GARAGE THEATER	K-2	MEDIA INTENSIVE LEARNING CORP. 1623 S. LAMAR AUSTIN, TX 78704
30	KALEO'S SAFE WALKING KIT	K-6	DEPT. OF TRANSPORTATION MOTOR VEHICLE SAFETY OFFICE 79 SOUTH NIMITZ HIGHWAY HONOLULU, HI 96813
31	MONTANA BICYCLIST TRAINING PROGRAM	4	MISSOULA BICYCLE SAFETY PROGRAM CITY OF MISSOULA ENGINEERING DEPT. 201 SPRUCE ST. MISSOULA, MT 59801
32	TRAFFIC SAFETY PROGRAM FOR YOUNG CHILDREN	K	DEPT. OF EDUCATION P.O. BOX 30008 LANSING, MI 48909

A-41

ID #	PROGRAM NAME	GRADE	SOURCE
33	PEDESTRIAN, SCHOOL BUS AND CYCLING SAFETY FOR LOUISIANA SCHOOLS	K-9	DEPT. OF EDUCATION SAFETY EDUCATION SECTION BATON ROUGE, LA 70821
34	SAFETY EDUCATION UNITS FOR ILLINOIS ELEMENTARY SCHOOLS	K-8	ILLINOIS OFFICE OF SUPT. OF PUBLIC INSTRUCTION SPRINGFIELD, IL 62706
35	A BICYCLE SAFETY PROGRAM	3-5	TRAFFIC SAFETY SECTION SDHPT AUSTIN, TX 78701
36	BICYCLE SAFETY	3-6	EL CAJON POLICE DEPT. 100 FLETCHER PKWY. EL CAJON, CA 92020
37	A BICYCLE BUILT FOR YOU	K-6	U.S. CONSUMER PRODUCT SAFETY COMM. WASHINGTON, D.C. 20207
38	TRAFFIC SAFETY EDUCATION -- BICYCLE SAFETY	K-8	DEPT. OF TRANSPORTATION OFF. OF HIGHWAY SAFETY 1655 W. JACKSON ST. PHOENIX, AZ 85007
39	DISCOVERING TRAFFIC SAFETY -- SERIES 1-7	K-9	AUTOMOTIVE SAFETY FOUNDATION 1776 MASSACHUSETTS AVE., NW WASHINGTON, D.C. 20036
40	CALIFORNIA GUIDE FOR PEDESTRIAN SAFETY EDUCATION	K-2	DEPT. OF EDUCATION STATE EDUCATION BLDG. 721 CAPITOL MALL SACRAMENTO, CA 95814

A-42

ID #	PROGRAM NAME	GRADE	SOURCE
41	INDIANA BICYCLE SAFETY PROGRAM GUIDE	K-A	DEPT. OF TRAFFIC SAFETY GRAPHIC ARTS BLDG. 215 N. SENATE AVE. INDIANAPOLIS, IN 46202
42	CALIFORNIA TRAFFIC SAFETY EDUCATION PROGRAM - BICYCLE SAFETY EDUCATION	4-A	DEPT. OF EDUCATION SUPT. OF PUBLIC INSTRUCTION SACRAMENTO, CA 95814
43	K-12 TRAFFIC SAFETY EDUCATION CURRICULUM GUIDE	K-12	DEPT. OF EDUCATION DIV. OF INSTRUCTIONAL SERVICES POUCH F JUNEAU, AK 99801
44	ADULT CYCLING: AN INSTRUCTOR'S MANUAL	A	DEPT. OF TRANS. BICYCLE PROGRAM BOX 25201 RALEIGH, NC 27611
45	ALL ABOUT BIKES -- TEACHING GUIDE	2-8	NATIONAL SAFETY COUNCIL 444 N. MICHIGAN AVE. CHICAGO, IL 60611
46	BICYCLING SAFETY FOR FUN AND FITNESS	10-A	SCHWINN BICYCLE CO. 1856 N. KOSTNER AVE. CHICAGO, IL 60639
47	PRESCHOOL CHILDREN IN TRAFFIC	PS	AAA TRAFFIC ENGINEERING & SAFETY DEPT. 811 GATEHOUSE RD. FALLS CHURCH, VA 22042
48	HOW DO YOU DRIVE A BIKE?	K-6	KILBY ASSOCIATES P.O. BOX 1113 PENDLETON, OR 97801

ID #	PROGRAM NAME	GRADE	SOURCE
49	IT'S YOUR MOVE	7-A	THE TRAVELERS FILM LIBRARY ONE TOWER SQUARE HARTFORD, CT 06115
50	CYCLE SAFELY FOR PEP	K-6	THE TRAVELERS FILM LIBRARY ONE TOWER SQUARE HARTFORD, CT 06115
51	PEDAL ON!	6-9	ABT ASSOCIATES, INC. 55 WHEELER ST. CAMBRIDGE, MA 02138
52	BIKE SAFETY INSTRUCTOR'S GUIDE	K-9	UNIV. OF MINNESOTA 4-H YOUTH DEV. AGR. EXT. SERVICE 475 COFFEY HALL ST. PAUL, MN 55108
53	K-2 PEDESTRIAN SAFETY PROGRAM	K-2	AETNA LIFE & CASUALTY DRIVER EDUCATION SERVICES D-A 151 FARMINGTON AVE. HARTFORD, CT 06156
54	AETNA PEDESTRIAN/BICYCLE SAFETY PROGRAM	3-5	AETNA LIFE & CASUALTY DRIVER EDUCATION SERVICES D-A 151 FARMINGTON AVE. HARTFORD, CT 06156
55	CHILD SAFETY PROGRAM OF THE FLINT POLICE DEPT.	K-9	BICYCLE COORDINATION COUNCIL 1602 W. THIRD AVE. FLINT, MI 48504
56	GENESEE COUNTY TRAFFIC SAFETY COMMISSION CHILD SAFETY PROGRAM	K-6	BICYCLE COORDINATION COUNCIL 1602 W. THIRD AVE. FLINT, MI 48504

ID #	PROGRAM NAME	GRADE	SOURCE
57	IMLAY SCHOOL DISTRICT BICYCLE EDUCATION PROGRAM	K-6	BICYCLE COORDINATION COUNCIL 1602 W. THIRD AVE. FLINT, MI 48504
58	PRESCHOOL EDUCATION FOR SAFETY	PS	THE GAN SCHOOL NEW HAVEN, CT 06510
59	SGT. ROBERT MILLER SAFETYVILLE	PS-5	SAFETYVILLE SOUTH BEND POLICE DEPT. 701 W. SAMPLE ST. SOUTH BEND, IN 46625
60	PROJECT TRAFFIC	K-5	MADISON CITY SCHOOL DISTRICT 545 W. DAYTON ST. MADISON, WI 53703
61	WELCOME TO HAZARDVILLE, PENNSYLVANIA	K-3	DEPT. OF EDUCATION DEPT. OF PUBLIC INSTRUCTION HARRISBURG, PA 17105
62	BICYCLE SAFETY PROGRAM	K-9	DEPT. OF EDUCATION 942 LANCASTER DR., NE SALEM, OR 97310
63	BICYCLE SKILLS TEST MANUAL	K-9	DEPT. OF TRANSPORTATION BICYCLE PROGRAM P.O. BOX 25201 RALEIGH, NC 27611
64	BICYCLE SAFETY ALERT PROGRAM	K-A	CRANFORD POLICE DEPT. CRANFORD, NJ 07016

ID #	PROGRAM NAME	GRADE	SOURCE
65	CONNECTICUT K-6 BICYCLE SAFETY PROGRAM	K-6	DEPT. OF PUBLIC SAFETY OFFICE OF SAFETY EDUCATION HARTFORD, CT 06115
66	ELEMENTARY TRAFFIC SAFETY EDUCATION	K-6	SUPT. OF PUBLIC INSTRUCTION OLYMPIA, WA 98504
67	EVALUATION AND REFINEMENT OF PROTOTYPE BICYCLE SAFETY EDUCATION PROGRAM	4	ANACAPA SCIENCES, INC. P.O. DRAWER Q SANTA BARBARA, CA 93102
68	AAA TRAFFIC SAFETY PROGRAM	K-9	AAA TRAFFIC ENGINEERING & SAFETY DEPT. 811 GATEHOUSE RD. FALLS CHURCH, VA 22042
69	PROJECT S.A.F.E.: AN ELEMENTARY CHILD SURVIVAL CURRICULUM	K-6	COMMUNITY SCHOOL DISTRICT #5 1800 6TH AVE. STERLING, IL 61081
70	BICYCLE SAFETY	2-8	CITY OF CHARLOTTESVILLE DEPT. OF COMMUNITY DEVELOPMENT CITY HALL CHARLOTTESVILLE, VA 22902
71	DISCOVER BICYCLING	K-6	AMERICAN CYLING ASSN. 107 BARRON ST. PETAL, MS 39465
72	PEDESTRIAN SAFETY EDUCATION FOR ALABAMA YOUTH	K-5	DRIVER & TRAFFIC SAFETY EDUCATION DIV. OF INSTRUCTION ALABAMA ST. DEPT. OF EDUCATION MONTGOMERY, AL 36130

ID #	PROGRAM NAME	GRADE	SOURCE
73	WYOMING TRAFFIC SAFETY EDUCATION	K-6	DEPT. OF EDUCATION HATHAWAY BLDG. CHEYENNE, WY 82002
74	PEDESTRIAN SAFETY GUIDE K-6	K-6	PROGRAM MANAGER DEPT. OF EDUCATION CAPITOL PLAZA TOWERS, RM. 1807 FRANKFORT, KY 40601
75	TRAFFIC SAFETY EDUCATION	K-6	DEPT. OF EDUCATION TALLAHASSEE, FL 32301
76	BICYCLE SAFETY PROJECT	4-6	SUPERVISOR, HEALTH EDUCATION SARASOTA COUNTY SCHOOL BOARD 2418 HATTON ST. SARASOTA, FL 33577
77	CURRICULUM FOR SAFETY EDUCATION	K-6	DEPT. OF EDUCATION LANSING, MI 48902
78	BICYCLES	7-A	U.S. CONSUMER PRODUCT SAFETY COMM. WASHINGTON, D.C. 20207
79	TEACHER'S GUIDE TO PEDESTRIAN SAFETY	K-6	DEPT. OF PUBLIC SAFETY OFFICE OF SAFETY EDUCATION 79 ELM ST. HARTFORD, CT 06115
80	BICYCLE/PEDESTRIAN SAFETY EDUCATION: A CURRICULUM GUIDE	K-6	DEPT. OF EDUCATION DRIVER EDUCATION SECTION 65 S. FRONT ST., RM. 815 COLUMBUS, OH 43215

ID #	PROGRAM NAME	GRADE	SOURCE
81	BIKE SAFETY	K-6	NATIONAL CHILD SAFETY COUNCIL 4065 PAGE AVE. P.O. BOX 1368 JACKSON, MI 49204
82	COMPREHENSIVE BICYCLIST EDUCATION PROGRAM: CURRICULUM GUIDE	4-6	MOUNTAIN BICYCLISTS' ASSN. 1290 WILLIAMS ST. DENVER, CO 80218
83	THE BICYCLIST'S GUIDE	4-12	OUTDOOR EMPIRE PUBLISHING, CO. 511 EASTLAKE AVE., E P.O. BOX C-19000 SEATLLE, WA 98109
84	THE BICYCLE DRIVER'S GUIDE	6-12	OUTDOOR EMPIRE PUBLISHING CO. 511 EASTLAKE AVE., E P.O. BOX C-19000 SEATTLE, WA 98109
85	SAFETY	K-6	SCHOOL TRAFFIC & SAFETY ED. SECTION L.A. UNIFIED SCHOOL DISTRICT 3317 BELLEVUE AVE. LOS ANGELES, CA 90026
86	PROFESSIONAL GUIDE: TRAFFIC SAFETY RESOURCE CURRICULUM	4-6	DEPT. OF MOTOR VEHICLES TRAFFIC SAFETY DIV. CAPITOL COMPLEX CARSON CITY, NV 89710
87A	INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. PED)	K-6	DEPT. OF PUBLIC INSTRUCTION INDIANAPOLIS, IN 46206
87B	INDIANA K-6 TRAFFIC SAFETY EDUCATION CURRICULUM (INCL. BIKE)	K-6	DEPT. OF PUBLIC INSTRUCTION INDIANAPOLIS, IN 46206

ID #	PROGRAM NAME	GRADE	SOURCE
88A	CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	K-3	MISSOURI SAFETY CENTER CENTRAL MISSOURI ST. UNIV. WARRENSBURG, MO 64093
88B	CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	4-6	MISSOURI SAFETY CENTER CENTRAL MISSOURI ST. UNIV. WARRENSBURG, MO 64093
88C	CURRICULUM RESOURCE GUIDE FOR SAFETY EDUCATION	7-9	MISSOURI SAFETY CENTER CENTRAL MISSOURI ST. UNIV. WARRENSBURG, MO 64093
89A	K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. BIKE)	K-6	DEPT. OF PUBLIC INSTRUCTION GRIMES STATE OFFICE BLDG. DES MOINES, IA 50319
89B	K-6 TRAFFIC SAFETY EDUCATION FOR IOWA SCHOOLS (INCL. PED)	K-6	DEPT. OF PUBLIC INSTRUCTION GRIMES STATE OFFICE BLDG. DES MOINES, IA 50319
90A	YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	K-6	DEPT. OF MOTOR VEHICLES YOUNG HIGHWAY USER'S SWAN ST. BLDG., FL. 4 ALBANY, NY 12229
90B	YOUNG HWY. USER INSTR. PROGRAM (BACK TO BASICS THROUGH TRAFFIC SAFETY)	7-11	DEPT. OF MOTOR VEHICLES YOUNG HIGHWAY USER'S SWAN ST. BLDG., FL. 4 ALBANY, NY 12229
91A	K-9 TRAFFIC SAFETY EDUCATION (INCL. PED)	K-9	DEPT. OF PUBLIC INSTRUCTION RALEIGH, NC 27611

ID #	PROGRAM NAME	GRADE	SOURCE
91B	K-9 TRAFFIC SAFETY EDUCATION (INCL. BIKE)	K-9	DEPT. OF PUBLIC INSTRUCTION RALEIGH, NC 27611
92A	IDAHO TRAFFIC SAFETY EDUCATION (INCL. BIKE)	K-6	DEPT. OF EDUCATION SUPT. OF PUBLIC INSTRUCTION BOISE, ID 83707
92B	IDAHO TRAFFIC SAFETY EDUCATION (INCL. PED)	K-6	DEPT. OF EDUCATION SUPT. OF PUBLIC INSTRUCTION BOISE, ID 83707
93A	SAFETY INSTRUCTIONAL SYSTEM	1-6	DEPT. OF EDUCATION 200 W. BALTIMORE ST. BALTIMORE, MD 20240
93B	SAFETY INSTRUCTIONAL SYSTEM	2	DEPT. OF EDUCATION 200 W. BALTIMORE ST. BALTIMORE, MD 20240
94A	OKLAHOMA SAFETY EDUCATION	K-3	HIGHWAY SAFETY PROGRAM 1118 UNITED FOUNDERS TOWER OKLAHOMA CITY, OK 73112
94B	OKLAHOMA SAFETY EDUCATION	4-6	HIGHWAY SAFETY PROGRAM 1118 UNITED FOUNDERS TOWER OKLAHOMA CITY, OK 73112
95A	A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (PED)	K-6	BOARD OF EDUCATION DIV. OF CURRICULUM 250 E. FIFTH SOUTH SALT LAKE CITY, UT 84111

ID #	PROGRAM NAME	GRADE	SOURCE
95B	A COURSE OF STUDY FOR ELEMENTARY SAFETY EDUCATION IN UTAH (BIKE)	K-6	BOARD OF EDUCATION DIV. OF CURRICULUM 250 E. FIFTH SOUTH SALT LAKE CITY, UT 84111
96	HERMAN HOGLEBOGLE GREEN FLAG SAFETY PROGRAM	K-6	AAA TRAFFIC ENGINEERING & SAFETY DEPT. 811 GATEHOUSE RD. FALLS CHURCH, VA 22042
97	THINGS AREN'T WHAT THEY USED TO BE	A	PROMOTION COORDINATOR THE INDIANAPOLIS NEWS 307 N. PENNSYLVANIA ST. INDIANAPOLIS, IN 46204

LIST OF NHTSA PROGRAMS

List of NHTSA Programs

Three pedestrian and bicyclist safety programs are presently under development by NHTSA. The characteristics of these programs are presented in a matrix like that used to describe the non-NHTSA programs. The same key to abbreviations/symbols applies (see page A-31). These programs are as follows:

ID	Program Name *
A	Safe Street Crossing Training Program (for urban pedestrian accidents)
B	PEDSAFE Training Curriculum (for suburban/rural pedestrian accidents)
C	A Fourth Grade Course in Bicycle Driver Education

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* Source: National Highway Traffic Safety Administration
Traffic Safety Programs (NTS-30)
400 Seventh Street S.W.
Washington, DC 20590

ID	Year O/R	Ped/Bike		Grade	Acc. Haz	Type/ Rec	Proc. Laws	Eqt. Maint.	Motor Skill	Dec Making	Mat'l	Test	FLP/CR		Tr'ng Range	Inst. Tr'ng	Eval
A	*	100	0	K-3	+	+	-	+	+	SIA	S	40	60	SR	NR	IUC
B	*	100	0	K-6	+	+	-	+	+	SIA	SK	40	60	SR	--	IUC
C	*	0	100	4	+	+	+	+	+	SIA	SK	10	90	S	R	----

*Now under development

APPENDIX B

The Problem Solvers

Dear

Thank you for agreeing to serve on our panel of specialists. This panel will assist us in the development of an instrument to assess the safety relevance of pedestrian and bicyclist safety education programs. We have included a brief description of the entire project to provide you with an overview of its goals and methods.

As we discussed in our recent telephone conversation, panel members will be involved in several aspects of the instrument development process:

1. Identifying the areas to be covered by the instrument

2. Rating the relative importance of the resulting assessment criteria

3. Reviewing a draft of the instrument for its usability and providing suggestions and recommendations for its revision

These activities will be conducted by mail so that panel members may allocate their time more efficiently. We estimate that each activity will take between two and five hours. The first activity begins now, Activity 2 in about three months, and Activity 3 about five or six months from now. Panel members will be paid an honorarium of $200 at the completion of these activities.

In order to complete the first two activities, we will be using a group program planning process entitled the Delphi Technique. This technique allows us to collect ideas from a large group of people in an organized manner. The Delphi Technique involves three carefully designed sequential questionnaires that build upon each other through information summarization and feedback derived from earlier responses.

<center>-continued-</center>

1. The first questionnaire asks you to specify factors which need to be addressed by the assessment instrument.

2. In the second questionnaire, you will be asked to rate assessment criteria which we will develop from the areas of concern that you identify in the first questionnaire.

3. In the third questionnaire, you will have the opportunity to examine the average importance ratings and rerate the items if you so choose.

We have enclosed the first Delphi questionnaire, along with instructions for its completion. Please make every effort to return this questionnaire within ten days. Prompt response is essential to the success of this process. For your participation to count, therefore, we must receive your response on time.

Should you have any questions about the project in general or any activities in specific, please don't hesitate to call--collect, if necessary. We appreciate your interest in this project and are happy to have the benefit of your professional judgment in the development of the assessment instrument. We are certain that your contributions will add to the quality of this effort.

Sincerely,

APPLIED SCIENCE ASSOCIATES

Pam White

Nancy Stevens

Project Associates

ASSESSMENT OF THE SAFETY-RELEVANCE
OF PEDESTRIAN AND BICYCLIST PROGRAMS

INSTRUCTIONS FOR RESPONDING
TO DELPHI QUESTIONNAIRE #1

There are two columns for your responses to the Delphi question. The
left-hand column is entitled "Areas of Concern." Under this column, please
list those aspects of pedestrian and bicyclist safety education programs which
should be examined to judge their effectiveness. Be as specific or general as
you like, but write down all the ideas that come to mind.

The right-hand column is entitled "Clarification." In this column,
please supply a breakdown of each factor that you listed in the left-hand
column. It is very important that you give clarifications for every area
of concern. The answers in both columns will give us two ways of viewing
your answers to be sure we do not misinterpret your responses when we trans-
late them into specific assessment criteria.

An example list is provided for you on the following page. Feel free to
use extra sheets of paper if necessary, but please follow the same two-column
format. It is not necessary to type your responses--typing would just delay your
getting the completed questionnaire back to us--but please write legibly.

Return the completed questionnaire as soon as possible, but not later
than 10 days after receipt. A self-addressed, stamped envelope has been
provided for your convenience.

If you want further instruction, please call us (collect) at (202)887-5651.

ASSESSMENT OF THE SAFETY-RELEVANCE
OF PEDESTRIAN AND BICYCLIST PROGRAMS

NAME: _____

QUESTIONNAIRE #1

Pretend for a moment that you are given the responsibility for selecting a program for pedestrian and bicyclist safety education. What factors would you examine to judge the overall effectiveness of each of the programs under your consideration?

AREAS OF CONCERN	CLARIFICATION
1. Program Content	Addresses identified accident types
	Accident types appropriate to the targeted age group
	Important skills covered in the program
2. Communication/Training Techniques	Attention getting
	Uses multi-theoretical approach to learning
	Concepts appropriate to age of target audience
3. Administrative Feasibility	Cost per student
	Facility/equipment requirements
	In-service training needs
	Scheduling

ASSESSMENT OF THE SAFETY-RELEVANCE
OF PEDESTRIAN AND BICYCLIST PROGRAMS

NAME: _____

AREAS OF CONCERN	CLARIFICATION

The Problem Solvers

ASSESSMENT OF THE SAFETY-RELEVANCE
OF PEDESTRIAN AND BICYCLIST PROGRAMS

INSTRUCTION MANUAL

for
WEIGHT ASSIGNMENT WORKBOOK

INSTRUCTION MANUAL
for
WEIGHT ASSIGNMENT WORKBOOK

This Instruction Manual describes the task of assigning relative weights to each of the assessment criteria by which pedestrian and bicyclist education programs can be evaluated. These relative weights will indicate how much each criterion contributes to the overall evaluation score.

Introduction

The task at hand is critical to the ultimate success of this project. Since your full compliance with the procedures outlined in this manual is extremely important, we have provided a brief description of the rationale for our approach.

The Need to Structure the Weighting Task

Under most circumstances, people have little or no difficulty assigning relative weights to five or fewer items at a time. Between five and ten items, the task becomes more difficult, but still possible. But when there are a great many items, assigning relative weights is extremely difficult.

Since we are faced with weighting 76 specific assessment criteria (derived from the nearly 300 suggestions provided by the panel of specialists), we have employed a strategy that permits breaking up the items into several smaller, more manageable, groups. Specifically, we have adapted a decision-making technique known as Worth Assessment to provide a systematic method for arranging our assessment criteria into smaller groups and assigning weights within each group.

Classification of Criteria

Worth Assessment calls for items to be placed into hierarchically ordered, independent categories. In addition to reducing the number of items that must be

considered together at one time, hierarchical classi-
fication focuses the rater's attention on items at the same
level of generality or specificity. For example, apples
and oranges are at the same level of generality; and fruits
and vegetables are at the same level of generality; but
apples and vegetables are at different levels of
generality. It is much simpler to assign relative weights
to items when they are at the same level of generality.

It is possible to display a hierarchical arrangement
in a traditional multi-level topic outline, placing the
items on different levels of headings and sub-headings.
However, the relationships between the items are most
apparent when the items are graphically displayed in the
form of a classification "tree", placing the items on the
limbs, branches, and twigs that stem from the main trunk.

This Instruction Manual contains a listing of the
topic areas and assessment criteria in outline format; the
Workbook contains a display of the topics and criteria in
tree format. In the outline format, the three main
sections (I, II, and III) are "Content", "Instruction", and
"Materials". In the tree format, these three sections are
shown as the three major "limbs" from the "trunk" of the
tree.

From Branch Weights to Criterion Weights

Once the items at each branching point have been
assigned relative weights among themselves, we can
calculate the weight for each individual criterion (the end
points of each branch) from the series of weights assigned
to the preceding branches of the tree, i.e., the
higher-ordered categories related to that criterion.
Because the sum of the weights at each branch equals 100,
the sum of the individual criterion weights also equal 100.
Thus each criterion weight can be expressed as a percent of
the total evaluation score.

We will give you an example of how this procedure
works later in these instructions.

Development and Classification
of the List of Criteria

The development and classification of the list of
criteria began with the data obtained from our inquiry
about relevant assessment criteria. Putting the criteria
in a form in which they could be assigned weights required
the completion of a number of specific tasks:

o   Division of the suggested criteria
        into major topic areas;

o   Determination of the "assessability" of
        each of the major topic areas; and

o   Development of a hierarchical classifi-
        cation system for program assessment
        criteria.

The items in the Weight Assignment Workbook are grouped
according to the "tree" resulting from the hierarchical
classification of assessment criteria.

Data Reduction

Project staff, with the assistance of Ms. Katie Moran,
Executive Director of the Bicycle Federation, examined
nearly 300 individual suggestions for criteria that were
submitted by our panel of sixteen specialists. Ultimately,
we were able to fit each of the suggested criteria into one
of the following four major topic areas:

o   Problem Definition--e.g., accident profile,
        relevant age groups, program objectives;

o   Program Components--e.g., instructional
        methods, program content, materials; and

o   Implementation Considerations--e.g., cost,
        availability, user acceptance.

o   Evaluation Issues--e.g., type(s) of eval-
        uation already performed, amenability to
        evaluation by users.

In the few cases where a suggestion fit into more than one
topic area, it was listed in each place.

Determination of "Assessability"

Of the four major topic areas, only the "Program
Components" area contains criteria on which programs can be
evaluated independently from local community situations.
Criteria that fit into the other three topic areas,
"Problem Definition", "Implementation Considerations", and
"Evaluation Issues" must be assessed in relation to the
unique features of each user community.

The "Problem Definition" suggestions provided the
direction for developing the eight specific situations
under which each asessment criterion is to be considered.
They defined the boundaries for the assessment instrument:

The instrument shall address bicyclist and pedestrian programs, and shall cover the ages from 5 years old to adult, with ages grouped according to similar cognitive and physical abilities.

"Implementation Considerations" are not universally assessable. Unlike content issues, there are no generally accepted measures of "good" or "bad" in implementation factors. What is feasible in one community may be totally out of the question in another because of the political climate, budget problems, school board policies or the availability of time and staff. Consequently, the assessment instrument cannot give comparative weights and values to implementation questions. However, even though these won't be included in the assessment instrument, we will provide a checklist or worksheet for local implementors to direct their attention to these crucial implementation issues.

"Evaluation Issues" cannot really be addressed in the same instrument as safety relevance. A program is not more or less "good" for having been evaluated or not. These issues are, none the less, important for potential implementors to consider. We anticipate developing a checklist, similar to the one for Implementation Considerations, to guide program administrators in their efforts to determine the adequacy of a program's evaluation. This checklist will also provide direction for future evaluation activities.

Classification System Development

Many of the suggestions for assessment criteria were highly specific; others were more general. One of our most important--and most difficult--tasks was to combine suggestions that appeared to duplicate one another while maintaining separate categories for closely related suggestions that seemed to be different in important ways.

We developed a hierarchical classification system using the Q-sort technique to arrange the criteria into appropriate subordinate and superordinate classes. This process resembles a factor analysis, but instead of using numeric relationships between items, we based the classification on semantic relationships between the items.

It is unfortunate that we had neither the time nor the resources to allow each member of our panel of specialists to participate fully in this aspect of the study. We are certain that each of you could have provided many valuable suggestions. The approach we have taken is but one of many different possiblities. We have no doubt that a different task force would have developed a slightly different list

of criteria, or chosen different names for the branches, or
placed items into somewhat different categories. However,
previous experience with this process has demonstrated that
moderate differences in organization lead to virtually the
same final weights for the assessment criteria.

INSTRUCTIONS FOR ASSIGNING CRITERION WEIGHTS

If you haven't done so already, look over both the outline and the tree representations of the program components. The actual assessment criteria are those items at the lowest level of the outline (labeled with either arabic numerals or lower-case letters, depending on the branch). In the tree, the criteria are at the right of the page, at the third or fourth level, depending on the branch.

The procedure you will use to assign weights to the individual assessment criteria is rather straightforward: You are to divide 100 points between the items at each branch of the tree in proportion to your perception of the relative importance of each item at that branch. Using a pencil will make it easier to adjust the weights to your satifaction.

The weighting task is complicated only by the fact that each item in the Workbook must be considered under each of eight different circumstances: two areas of program content (pedestrian and bicyclist) and four age groups (5-8, 9-11, 12-15, and 16 +). While this may seem burdensome at first glance, you will find that you will rate many items the same across the different circumstances.

Each page of the Workbook provides spaces for you to enter your weighting for the items at a given branch of the tree. There are two blocks; one for bicyclist programs and one for pedestrian programs. Each block contins four columns; one for each age group. The number of rows varies from block to block, depending on how many items are at the corresponding branch of the tree.

The page facing each Workbook page displays the section of the tree that contains the items that you are rating, with those items highlighted in boldface type. The numbers or letters next to the items on the rating sheet correspond to the Outline contained in this book. You may use either the Tree or the Outline (or both) to assist you in the rating task.

Sections corresponding to each of the three limbs of the tree are separated by heavy paper to make it more obvious when you have to shift from considering the more specific items to the more general items.

Example of Rating Process

We have created the following hypothetical example to demonstrate the rating process.

Suppose that I am in the market to buy a house, and have looked at a number of houses, each of which has some, but not all, of the features for which I am looking. I could evaluate each house using an assessment instrument developed along the same lines as the "ped-bike" assessment instrument. First, I make a list of all of the features I think are important and arrange them in hierarchical fashion. Such a tree might look like this:

```
                                         I-- Down payment
                I-- Cost -----------I-- Monthly   payment
                I                        I-- Upkeep
                I
                I                        I-- Proximity to Schools
                I-- Location --------I-- Access to Pub Transp
                I                        I-- Qual of Neighborhood
-- House -----I
                I                        I-- Living Area
                I-- Size ------------I-- Storage Space
                I                        I-- Lot Size
                I
                I                        I-- Appearance
                I-- Aesthetics ------I-- Amenities
                                         I-- Landscaping
```

Accordingly, the first page of the Workbook for
weighting these criteria would look like this:

House

```
            I-----I
            I     I
Cost        I     I
            I     I
            I-----I
            I     I
Location    I     I
            I     I
            I-----I
            I     I
Size        I     I
            I  .  I
            I-----I
            I     I
Aesthetics  I     I
            I     I
            I-----I
     TOTAL   100
```

My task is to divide 100 points between these four
branches, based on my perception of the relative importance
of each branch. For demonstration purposes, I have filled
in the boxes as shown:

House

```
            I-----I
            I     I
Cost        I 30  I
            I     I
            I-----I
            I     I
Location    I 23  I
            I     I
            I-----I
            I     I
Size        I 20  I
            I     I
            I-----I
            I     I
Aesthetics  I 27  I
            I     I
            I-----I
     TOTAL   100
```

After much agonizing, I decided that Cost was the most
important consideration in my decision to buy a house, but
Aesthetics ran a close second. Size and Location are of
lessor importance, but location is more important than
size. (I can always build onto a house, but I can't as
easily move it to a new location.)

Following the same procedure for the next page in the
workbook, it would look like this:

Cost

```
                              I-----I
                              I     I
Down Payment                  I 20  I
                              I     I
                              I-----I
                              I     I
Monthly Payment               I 40  I
                              I     I
                              I-----I
                              I     I
Upkeep                        I 40  I
                              I     I
                              I-----I
                        TOTAL   100
```


Since I will have money for the down payment available
from the sale of my current house, it is of less concern
than other cost factors. Monthly payments and upkeep
costs, however, are of equal importance to me.

The third page, once completed, would look like this:

Location

```
                              I-----I
                              I     I
Close to Schools              I 25  I
                              I     I
                              I-----I
                              I     I
Access to Pub Transp          I 35  I
                              I     I
                              I-----I
                              I     I
Quality of Neighborhood       I 40  I
                              I     I
                              I-----I
                        TOTAL   100
```

Since my kids are nearing junior-high age and ride their bikes to school, Proximity to Schools is relatively less important than the other two. Although I would like to start commuting to work on public transit, I currently drive my car, and it would be no great loss if I had to continue to do so. I weighted "Quality of Neighborhood" heaviest because it is very important to me to be able to walk the dog after dark without fear of physical violence.

We continue this process until all subsequent branches have been weighted.

The weight that each criterion carries in the total is calculated by multiplying each branch weight from the criterion back to the beginning of the tree. Thus, "Monthly Payment" contributes 12% to the total evaluation score (.40 X .30 = .12); "Access to Public Transportation" contributes 8% (.35 X .23 = .08). Carrying this process throughout the entire structure gives a weight to each criterion such that the sum of all the weights is 100. (The evaluation task, then, is to determine to what extent a given house meets each criterion. But that comes later in the project.)

How to Determine and Record Item Weights

In order to decide how much weight to assign to each item, review the branches that lead directly to that item and that follow directly from it. This will give you a good idea of what each term means in the context of this project. Most of the actual assessment criteria, those items that do not have branches extending from them, are self evident. However, some of the criteria, especially those on the "Knowledge" and "Behavior/Skill" branches of the "Content" limb, require further clarification. Refer to the back of this Instruction Manual for examples of the kinds of items that will be included in the actual evaluation of programs on those assessment dimensions.

The Workbook task differs from the foregoing example only in that you will have to consider each set of items under the eight conditions listed earlier. In many cases, the weightings may not differ between the two kinds of

programs for a given age group, but will differ for different ages. Indicate that condition as follows:

Bicyclist

5-8	9-11	12-15	16 +
25	20	25	20
35	40	25	30
40	20	50	50
100	100	100	100

Pedestrian

5-8	9-11	12-15	16 +
———	———	———	———
———	———	———	———
———	———	———	———
100	100	100	100

Whenever all four cells in a row contain a dashed line, we will assume that each cell is weighted the same as its corresponding cell in the other block.

When the weights are the same for all ages but different for the two kinds of programs, use the notation illustrated in the next example:

Bicyclist

5-8	9-11	12-15	16 +
25	———	———	———
35	———	———	———
40	———	———	———
100	100	100	100

Pedestrian

5-8	9-11	12-15	16 +
25	———	———	———
25	———	———	———
50	———	———	———
100	100	100	100

Whenever the first cell in the set is filled in and followed by a line, we will assume that the remaining cells get the same rating as the first.

If you leave one cell of a column blank, we will assume its value to be the difference between the sum of the amounts in the remaining cells and the column total of 100.

If a column total exceeds 100, we will recalculate the cell weights so that they remain in the same proportion but sum to 100.

If you leave a whole column blank, we will assume that you did not wish to weight those items. In these cases, the averages will be based on the number of valid ratings for those items in that situation.

Ordering of Items

We have arranged the workbook pages in the order of the branching structure, from top to bottom, left to right. This may not be the easiest order for you to follow in assigning item weights. You may wish to weight all the branches at the same level of generality before you move on to the more specific items. Or you may prefer to work from right to left on the tree (specific to general). Since weights at each branch are assigned independently from the other branches, the order in which you assign weights to the different branches does not affect the ultimate criterion weights. Follow the order that is most comfortable for you.

You may also find it easier to consider only one type of program at a time, instead of shifting between Bicyclist and Pedestrian programs for each item. If so, do it that way.

Summary of Instructions

Divide 100 points between the items for each of the eight situations. Use pencil so that adjustments will be easier to make and clearer to read.

Fill in the pages in any order you choose.

You may choose not to rate items about which you feel you don't have enough information or expertise—just leave a blank column of cells. Blank columns will not be included in the average ratings.

If you have any questions, call us (collect) for clarification.

A Few "Last Thoughts"

If your conceptualization of this program area is different than the one we have utilized, try to put yours aside for the task at hand--follow the specified procedures faithfully, even if you would have put a given criterion in a different place in the "tree".

Please make full use of the blank space in the Workbook to express your comments, feelings, ideas, etc. They will help us to organize future tasks more efficiently.

Lastly, thank you for taking the time to read this Manual. Your thoughtful participation in this task is vital to the ultimate usefulness of the program assessment instrument that we are developing together.

Please try to get the completed Workbook in return mail by July 31, using the envelope provided.

APPENDIX A

Outline of Program Contents

PROGRAM COMPONENTS

I. Content

   A. Attitudes

      1. Value for Living Things
      2. Responsibility for Safety
      3. Respect for Authority

   B. Knowledge

      1. Operating Procedures

         a. Basic Techniques
         b. Advanced Techniques
         c. Special Situations

      2. Traffic Awareness

         a. Rules of the Road
         b. Age-related Accident Types
         c. Local Accident Situations/Hazards
         d. Physical Capabilities/Limits

      3. Equipment Selection

         a. Vehicle   (*)
         b. Operator

   C. Behavior/Skill

      1. Motor Skills

         a. Basic Operating Skills
         b. Repair and Maintenance   (*)
         c. Evasive Techniques

      2. Cognitive Skills

         a. Risk Assessment
         b. Visual Search/Hazard Recognition
         c. Decision Making
         d. Perceptual Skills

II. Instruction

    A. Learning Mode

        1. Passive Involvement

            a. Written Materials
            b. Lectures
            c. Demonstrations (Modeling)
            d. Audio-Visual Materials

        2. Active Involvement

            a. Tests
            b. Games
            c. Arts/Crafts
            d. Values Clarification Exercises
            e. On-bike/On-foot Training
            f. Discussion/Questions
            g. Decision-making Practice

    B. Learning Environment

        1. Real

        2. Simulated

            a. Indoors
            b. Outdoors

        3. Classroom

    C. Motivational Approach

        1. Tone

            a. Fear
            b. Law and Order
            c. Informational
            d. Respect for Hazards

        2. Format

            a. Feedback
            b. Reward
            c. Imitation

    D. Exposure

        1. Contact Time

            a. Class Duration
            b. Number of Classes

        2. Repetition of Concepts

III. Materials

    A. Administrator's Guide

        1. Background Information

            a. Statement of the Problem
            b. Program Description
            c. Theoretical Foundations

        2. Implementation Requirements

            a. Time
            b. Personnel
            c. Equipment/Facilities
            d. Instructor Training
            e. Cost

        3. Resources

            a. Trouble-shooting Guide
            b. Bibliography of Relevant Materials

    B. Instructor's Manual

        1. Completeness

            a. Outlines of Lectures
            b. Bibliography of References
            c. Ideas for Activities
            d. Background Information
            e. Description of Program Materials

        2. Attractiveness

            a. Bulk
            b. Design
            c. Production

        3. Ease of Use

            a. Clear and Concise
            b. Extent of Extraneous Material
            c. Organized

    C. Student's Workbook

        1. Appropriateness of Language
        2. Relevance to Program Objectives
        3. Enjoyable/Satisfying to Students
        4. Attractiveness

            a. Characterization
            b. Graphics
            c. Printing

    D. Audio/Visuals

        1. Attention Getting/Holding
        2. Appropriateness of Language
        3. Complexity of Presentation
        4. Production Quality

            a. Audio
            b. Visuals

APPENDIX B

Examples for Assessment Criteria

Knowledge
Behavior/Skill

Criteria	Examples	
	Bicyclist	Pedestrian

Operating Procedures

Basic Techniques	Scanning, signalling, turning, stopping	Mid-block crossing, scanning
Advanced Techniques	Emergency maneuvers	Intersection crossing, walking along roadway
Special Situations	Night, rain, ice, wind	Working in the roadway, disabled vehicles, parking lots

Traffic Awareness

Rules of the Road	Sign recognition, right of way, riding with traffic	Sign recognition, right of way, walking facing traffic
Age-related Accident Types	Ride outs (young cyclists), overtaking accident types (older cyclists)	Dart outs and dashes (young cyclists), trapped and multiple threat (older cyclists)
Local Accident Situations/ Hazards	Roadway and intersection types, high accident locations	Same
Physical Capabilities/ Limits	Ability of traffic to see, motor vehicle stopping distance requirements, effects of alcohol and drugs, time required to cross intersection	Same

Criteria	Examples	
	Bicyclist	Pedestrian
Equipment Selection		
Vehicle	Size and type, lights, reflectors, brakes	Not applicable
Operator	Protective clothing (helmet, gloves), conspicuity	Conspicuity
Motor Skills		
Basic Skills	Balance, straight line riding, scanning, signalling	Walking and chewing gum at the same time
Repair & Maintenance	Lubrication, adjustments, safety inspection	Not applicable
Evasive Techniques	Rock dodge, emergency turns, emergency stops	Dodging, jumping
Cognitive Skills		
Risk Assessment	Speed-time-distance judgments, assessment of capabilities	Same
Visual Search/Hazard Recognition	Ability to recognize accident situations, relating hazards to specific situations, understanding how to search and detect	Same
Decision Making	When to initiate a maneuver, when to consider something a hazard, ability to make decisions under stress	Same
Perceptual Skills	Speed/distance	Same

To: Review Panel Members

From: Nancy J. Stevens
       Project Director

Re: Assessment of the Safety-Relevance of Pedestrian
     and Bicyclist Programs

At last, here is the draft Safety-program Analysis Package. We've come a long way since asking you to specify what needed to be included in the package.

The heart of the package, the Safety-relevance Assessment Instrument, comprises the criterion items that you weighted with the Worth Assessment procedure. The averages of those criterion weights serve as the numerical basis for scoring.

In addition, the implementation considerations and evaluation issues were generated from suggestions supplied by the panel.

There were countless decisions to be made during the past months as we developed the contents of this package. Many times, we labored over the wording of an item, the format of a section, whether or not an example was necessary, and so on. Sometimes, when we finally did resolve an issue, we were only able to do so because we knew that you (collectively) would be reviewing the draft. The phrase, "Let the panel decide," settled many disagreements.

Your final task as a panel member will be to review this package for its useability and provide suggestions for its revision. We estimate that this task will require two two-hour blocks of time.

In order to have you assess the useability of the package, we would like you to try it out on an actual safety program. The
          has been kind enough to loan us a number of copies of their program
entitled   and a copy is enclosed for
your use.

Since the programs are on loan, we must ask that you return this copy to us after using it to complete the package. Also, if you want to write down comments about the program, please write them on the Assessment Instrument, not on the   materials.

We would like you to put yourself in the place of a user of the Safety-program Analysis Package. Use the package to perform the following tasks: (1) Determine the safety-relevance scores of the   Bicyclist Program for fifth graders; (2) Determine the safety-relevance scores of the Pedestrian Program for second graders; (3) Based on safety-relevance scores, determine which aspect of each program has the greatest strength or greatest weakness.

Unfortunately, although the   program was evaluated some years ago, the evaluation report is not available. Therefore, you will not be able to use the Guidelines for Interpreting Effectiveness Evaluations. However, we would still appreciate receiving your opinions regarding the useability of this component of the package.
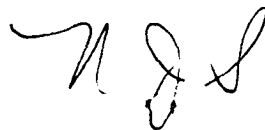
Since you will be judging the package both as a user and a specialist, we also want you to tell us about its adequacy and accuracy. Whenever possible, make specific suggestions for changes. Feel free to write comments or make notes for change directly on the Analysis Package. Rephrase items, suggest additional illustrations, etc., by writing in the margins or other blank spaces.

In addition, we have enclosed a questionnaire for you to complete that summarizes your comments and recommendations. Kindly return the original of the questionnaire to us. Please also make one photocopy of the questionnaire and send it to Dr. Marvin Levy, the Contract Technical Manager for this project. We have provided a stamped, addressed envelope for this purpose.

It may be necessary to re-circulate the   program to additional reviewers. Therefore, we would appreciate your returning it as soon as possible. We have provided a large padded mailer, stamped and addressed, for your convenience, so that the   program, the Safety-program Analysis Package, and your completed questionnaire can be returned to us.

We appreciate your continued participation in this project. We think that the Safety-Program Analysis Package represents a major achievement in helping communities deal effectively with their safety problems. Thank you for your dedicated assistance.

If you have any questions during the review of the Package, please feel free to call me. Please do not call the

REVIEWER'S COMMENTS AND RECOMMENDATIONS

As part of our development and refinement effort, we are soliciting detailed comments and recommendations from our review panel. We have structured our questions so that you can first consider each component of the package separately and then consider the package in its entirety.

==
                    Component A: Introduction
==

1. Is there anything about the Introduction that you would like to see changed? Make specific suggestions for additions, deletions, or modifications.

2. If there are other important applications for the package that you think should be included in the list contained in the Introduction, what are they?

==
          Component B: Safety-relevance Assessment Instrument
==

3. Is there anything about the Instructions for the Safety-relevance Assessment Instrument that you would like to see changed? Make specific suggestions for additions, deletions, or modifications.

4. Is there anything about the way the Assessment Instrument is laid out that you would like to see changed?

5. List specific assessment criterion items that were particularly difficult to complete. For each item that you list, describe why you think the item was difficult (i.e., the item was worded poorly or you could not locate the information in the program necessary to answer the item). When possible, make a suggestion about how to improve the item.

Item #	Page #	Problem	Solution

6. Do the alternatives listed under the CONTENT criteria adequately cover what you think is necessary? List particular additions or deletions that you would like to see made.

Item #	Ped/Bike	Age Range	Additions or Deletions (mark with + or -)

7. Can you suggest anything that would make the calculation of safety-relevance scores easier?

8. Would you like to see the Score Sheets re-arranged in any way?

===
                  Component C: Survey of Implementation Considerations
===

9. Is there anything about the Implementation Considerations that you would like
to see changed? Make specific suggestions for additions, deletions, or
modifications.

===
            Component D. Guidelines for Interpreting Effectiveness Evaluations
===

10. Is there anything about the Evaluation Guidelines that you would like to
see changed? Make specific suggestions for additions, deletions, or
modifications.

===
            Component E. Descriptions of Pedestrian and Bicyclist Accident Types
===

11. What would you like to see changed in the Accident-type Appendix? Make
specific suggestions for additions, deletions, or modifications.

12. Considering the Package as a whole, what was most difficult about using it?

13. Was there any part of the Package that seemed to consume more time than it seemed to be worth?

14. What did you like best about the Package?

15. In general terms, how could the Package be made better?

16. Do you have any additional comments or suggestions that are not covered by the above questions?

17. Using the following scale, how would you rate each component of the Package?

		Poor	Fair	Good	Excellent
A.	Introduction	( )	( )	( )	( )
B.	Assessment Instrument	( )	( )	( )	( )
C.	Imple. Considerations	( )	( )	( )	( )
D.	Evaluation Issues	( )	( )	( )	( )
E.	Acc. Types Appendix	( )	( )	( )	( )
F.	Overall Package	( )	( )	( )	( )

USER REVIEW
COMMENTS AND RECOMMENDATIONS

===

1. To what extent is the PAK **feasible** to use in your situation? In regard to feasiblity, what are its strengths and weaknesses?

2. To what extent is the PAK **desirable** to use in your situation? In regard to desirability, what are its strengths and weaknesses?

3. To what extent is the PAK **applicable** to problems you face in choosing or recommending safety education programs? In regard to applicablity, what are its strengths and weaknesses?

4. To what extent is the PAK **useful** in meeting your program assessment needs? In regard to utility, what are its strengths and weaknesses?

===

==

5.   To what extent does the PAK provide **adequate** materials
to evaluate the kind(s) of programs you deal with?   In
regard to adequacy, what are its strengths and weaknesses?

6.   What was most difficult about using the PAK?   In your
opinion, what would make it easier?

8.   What did you like best about the PAK?

9.   In general terms, how could the PAK be improved?

==

===

10. Using the following scale, how would you rate each
component of the PAK?

		poor	fair	good	excl
A.	Introduction	( )	( )	( )	( )
B.	Safety Relevance Scale	( )	( )	( )	( )
C.	Imple. Considerations	( )	( )	( )	( )
D.	Evaluation Issues	( )	( )	( )	( )
E.	Descr. of Acc. Types	( )	( )	( )	( )
F.	Overall PAK	( )	( )	( )	( )

11. What additional comments or suggestions would you like
to make regarding the PAK?

===