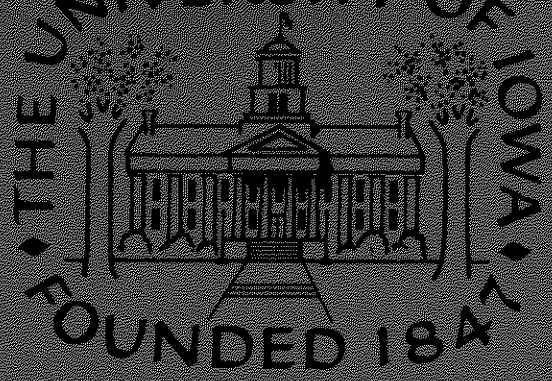

IOWA PUPIL TRANSPORTATION WORKSHOP

PUBLIC INSTRUCTION
RANSPORTATION
N

THE UNIVERSITY OF IOWA
TRANSPORTATION SAFETY
RESEARCH CENTER

2200-B28869-4/73

State of Iowa
DEPARTMENT OF PUBLIC INSTRUCTION
Transportation Division
Grimes State Office Building
Des Moines, Iowa 50319

LEGAL ASPECTS OF PUPIL TRANSPORTATION IN IOWA

LAWS RELATING TO PUPIL TRANSPORTATION ARE FOUND IN THE FOLLOWING SECTIONS:

321.1 (27)	DEFINITION OF A SCHOOL BUS
321.343	RAILROAD CROSSINGS
321.372	OPERATIONAL PROCEDURES
321.373	CONSTRUCTION STANDARDS FOR EQUIPMENT
321.374	INSPECTION OF SCHOOL BUSES
321.375	DRIVERS (Age - physically & mentally competent - not possess immoral habits - have an annual physical examination) (Use of alcoholic beverages or immoral conduct shall automatically cancel contract.)
321.376	REQUIRES DRIVER TO HAVE CHAUFFEUR'S LICENSE AND SCHOOL BUS DRIVER'S PERMIT
321.377	SPEED LIMIT OF SCHOOL BUSES (45-50-60)
321.378	APPLICABILITY OF SECTIONS 321.372 to 321.380 inclusive
321.379	PROVIDES THAT ANY SCHOOL BOARD MEMBER OR OTHER INDIVIDUAL WHO AUTHORIZES THE PURCHASE, CONSTRUCTION, OR CONTRACT FOR ANY BUS THAT DOES NOT MEET THE REQUIREMENTS SHALL BE GUILTY OF A MISDEMEANOR. (Maximum fine of $100 and not over 30 days in prison.)
321.380	DUTY OF ALL PEACE OFFICERS TO ENFORCE THE PROVISIONS OF SECTIONS 321.372 to 321.379

CHAPTER 285 - CODE OF IOWA

285.1	A. ELIGIBILITY REQUIREMENTS B. MEETING SCHOOL BUS AT DESIGNATED STOPS C. USE OF COMMON CARRIERS D. METHOD FOR MEASURING DISTANCE E. COST ITEMS TO BE INCLUDED IN COMPUTING PER PUPIL COSTS
285.2	REIMBURSEMENT FORMULA (Repealed)
285.3	REIMBURSEMENT REPORT (Repealed)
285.4	DESIGNATIONS (For all practical purposes, this is obsolete.)
285.5	CONTRACTS FOR TRANSPORTATION (Private Parties) Also: ALL BUS DRIVERS FOR SCHOOL OWNED EQUIPMENT SHALL BE UNDER CONTRACT

(Over)

285.6 DIVISION ESTABLISHED (Provides for a director and staff.)

285.7 POWERS AND DUTIES SHARED (Repealed)

285.8 POWERS AND DUTIES OF STATE DEPARTMENT (Includes inspection of school buses.)

285.9 POWERS AND DUTIES OF COUNTY BOARDS

285.10 POWERS AND DUTIES OF LOCAL BOARDS

285.11 BUS ROUTES (Use of school buses.)

285.12 PROCEDURES FOR DISPUTES (Hearings & Appeals)

285.13 DISAGREEMENT BETWEEN A LOCAL BOARD AND COUNTY BOARD (May appeal to the Department of Public Instruction.)

285.14 PENALTY FOR NONSTANDARD BUSES (Same as Section 321.379)

285.15 FORFEITURE OF REIMBURSEMENT RIGHTS
Also: PROVIDES ANY SUPERINTENDENT OR BOARD MEMBER WHO OPERATES BUSES IN VIOLATION OF ANY SCHOOL TRANSPORTATION LAW SHALL BE DEEMED GUILTY OF A MISDEMEANOR

SECTIONS OF CODE RELATING TO
PURCHASING AND BIDDING

Section 23.18 relating to any public improvements.
Section 73.2 relating to advertisements.
Section 297.7 and 297.8 relating to repair of buildings.
Section 297.22 relating to sale of school property.
Section 301.1 relating to textbooks and supplies.
Section 301.7 and 301.8 relating to bids and awarding of contracts.

Departmental Rule Number 22.47 (3) relating to bids on school buses.
Departmental Rules Relating to Transportation: Pages 61-76, School Rules of Iowa, 1972.

"Parents and Guardians Indemnifying Release and Covenant Not to Sue."

If youngster sues the school district after he reaches the age of 21, the above document provides that the parents or guardian agrees to pay the school district for the amount of the judgment awarded the youngster by the court.

2200-B29644-6/73

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TRANSPORTATION SURVEYS

I. Materials and Information Needed

To make a survey for the purpose of organizing a transportation program, including the establishment and description of school bus routes, the basic materials and information listed below are necessary.

1. A map of the school district showing:

   a. The district or proposed district's boundary lines.

   b. The attendance center boundary lines if there is more than one attendance center.

   c. The location of the homes of all pupils to be transported. Colored pencils should be used to identify the pupils in each home. The colors should indicate the attendance center the pupils will attend. Red, blue, and green are the preferred colors. For example, if there are three high school pupils and two elementary pupils living in the same home who will attend different centers, the figure 3 should be placed near the home in one color and the figure 2 in another color. The color red is preferred for high school pupils.

   d. The number of pupils living in towns and villages to be transported. These should also be identified with colored pencils indicating the center they will attend.

   e. A list of buses now owned by the district indicating the capacity of each.

2. Maps should be the official Iowa State Highway Commission, General Highway and Transportation Map. These are county maps drawn to a scale of one inch to the mile. The latest map available should be obtained so that the present road conditions will be accurately indicated. Maps may be obtained for a small charge from the:

Iowa Highway Commission
Map Division, Building No. 1
Ames, Iowa 50010

3. Short distances often permit one bus to transport more than one load of pupils. This "double-routing" or multiple load service, however, requires careful planning including school scheduling.
4. An "emergency" route should be established for each "regular" route and a copy of the route should be given to the patrons before the school term begins. When weather or road conditions dictate that it is not safe to travel on other than hard-surfaced roads, an announcement can be made by radio or other means that the "emergency" route will be used on that particular day or days. The patrons can then arrange to have their children meet the bus at a designated point.
5. If possible, routes should be arranged so that pupils need not cross a heavily traveled road to either board the bus or after being discharged from the bus. (Note: It is illegal for a school bus to stop on a highway with four or more lanes to load or unload pupils who must cross the highway, except where there are official traffic control devices or police officers.)
6. The size of buses contemplated should be governed by road conditions and the density of pupil population. If the time required to make the route is within reasonable limits, the number of pupils on the route is sufficient, and the road surface is good enough, a sixty or over passenger bus is warranted. The larger bus will, of course, if fully utilized, result in a lower per pupil cost.
7. Service should be from the driveway entrance, insofar as possible, for all pupils transported. However, the stops should not be so close that the driver of a school bus cannot legally shut off his

12. Where "double routing"* is not feasible, opening and closing hours for the daily program in the elementary schools and the high school in the district should be approximately the same. This means that separate transportation systems for elementary pupils and for high school pupils should be provided if elementary and high school attendance centers are completely separate. Thus, if it is planned to operate a combined high school and elementary center at one location and several additional elementary attendance centers dispersed in outlying areas of the district, the outlying elementary centers should each have their own transportation system while the transportation system for the one high school-elementary center could transport all pupils attending that center.
13. Consideration for economy should be limited only by requirements for safety and reasonably efficient and convenient service to the pupils to be transported.

It is recognized that a board of education confronted with the task of setting up an operating transportation service, with limited financial resources, may find it necessary to establish general policies which vary somewhat from the above.

III. Feeder Routes

After route locations have been determined, it might be found that several of the routes show spurs on dirt or side roads from one to three or four miles in length to serve several pupils whose homes are on these side roads.

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*See paragraph #3.

2200-B28867-4/73

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EVALUATING THE EFFICIENCY AND ECONOMY OF THE PUPIL TRANSPORTATION PROGRAM

A. WHAT CRITERIA ARE THE MOST USEFUL IN DETERMINING WHETHER OR NOT THE PROGRAM IS ECONOMICAL AND EFFICIENT?

1. This is a very debatable question. There are some people who believe the cost per mile is a good measure to use in arriving at comparable costs. However, the cost of traveling 50 miles per day is not necessarily double the cost of traveling 25 miles per day. Many of the operational cost items are "fixed costs" and, therefore, are not affected by the number of miles of bus travel. These costs include depreciation, insurance, storage, administrative salaries, and a large portion of the drivers' salaries.

2. Some individuals contend that the average cost per pupil per day is the best unit of measurement.

3. Other individuals are of the opinion the per day per bus cost is the best method to use if all factors are considered.

B. WHAT FACTORS SHOULD BE CONSIDERED IN COMPARING TRANSPORTATION COSTS?

1. The average age of the school buses.

2. The type of road surface on which the buses travel.

3. Topography of the school district.

4. The number of multiple runs made by buses.

5. The length of the bus routes.

6. The pupil population density.

7. The percentage of buses which have been in service beyond the depreciation period of seven years.

8. The pupil capacity of the school buses.

9. The ratio between the number of high school and elementary pupils transported.

10. The number of unoccupied seat spaces.

11. The number of special routes for kindergarten and special education students.

12. The wage level in the community. (There is a considerable spread in salaries paid to school bus drivers, and this one item represents about 45 percent of the total operating cost.)

(Over)

C. WHAT POSSIBLE STEPS CAN BE TAKEN TO REDUCE TRANSPORTATION COSTS?

1. Establishing different beginning and closing hours for elementary and high school attendance centers which would permit school buses to make multiple runs. (This cannot be accomplished in all school districts.)

2. Using a larger capacity bus where there is a sufficient number of pupils without making the riding time too long.

3. Establishing a definite replacement program for the purchasing of new buses.

4. Trading in buses when maintenance and operating costs become excessive.

5. Making a careful analysis of all bus routes to reduce deadhead mileage.

6. Providing for a preventive maintenance program for the buses. It is less costly to prevent failure of the vehicle or any of its parts than to make repairs after a breakdown has occurred.

7. Providing a formalized course of instruction for school bus drivers. Normally, maintenance costs on a school bus will be minimal if it is properly operated. Clutches and brake linings, for example, will last longer.

8. Installing gasoline storage tank and pump if the size of the fleet is large enough to warrant the purchasing of gas in large quantities.

D. WHAT PURPOSES ARE SERVED BY A GOOD PUPIL TRANSPORTATION ACCOUNTING SYSTEM?

1. The cost of operation and maintenance of each bus is necessary to determine the efficiency of the maintenance program.

2. These cost figures are also helpful in determining when a vehicle should be retired.

3. State aid programs require annual reports on expenditures, number of pupils transported, miles traveled, and other items to be filed with the state.

4. Information must be prepared each year for the local district's budgetary allocations.

5. An adequate accounting procedure is simply "good business." Patrons will have more respect for the school officials, and proper accounting makes it difficult to accuse school administrators of being inefficient or careless.

6. Certain statistical information should be preserved for historical purposes.

RECRUITMENT AND SELECTION OF SCHOOL BUS DRIVERS

by

Paul Walz
Director of Transportation
Burlington Community School District

Every morning during this school year, approximately 287,000 children across Iowa will be driven to school by one of 6,000 school buses in the state.

How were the drivers of these buses selected for their job?

In Iowa, I am sorry to say, we have school officials who do not accept the fact that selecting a school bus driver should demand as much time and attention as selection of any other member of the school staff. Too often we hire the first available applicant in spite of the fact that we realize no school bus is safe in the hands of a driver who is physically or emotionally unfit, or who fails to follow sound driving practices.

Driving Demands High Qualities

Driving a school bus today calls for physical, mental and emotional capabilities of the very highest order. To secure qualified school bus drivers possessing these capabilities, it is necessary to establish adequate standards that all drivers are required to meet prior to employment.

Driver Influences Children

A school bus driver can have either a positive or negative influence on the young minds which are under their charge for a considerable portion of the school day. Their attitude toward promptness, the manner in which they drive the bus, their respect for laws and regulations during the daily run, the manner in which they handle discipline, and their personal habits of speech, dress, self-control and emotional stability; all can have considerable and perhaps even a lasting influence on the attitudes and behavior patterns in this particular age group.

Who To Recruit

You may say, who is there to recruit? Who in their right mind would be interested in driving a bus loaded with squirming, yelling kids? People from the following groups have and are driving buses:

1. Farmers
2. Students
3. Ministers
4. Semi-Retired
5. Factory Shift Workers
6. Firemen
7. Police Officers
8. Housewives

Advertise Recruitment

In today's modern world of communication and transportation, an employer has a much wider area to select from. He can advertise for help by television, radio, newspaper, public bulletin board; and one I call organizational recruitment, or you can call it communications oldest method, word of mouth.

Organizational Recruitment

All during the year, the school bus driver is constantly in contact with the general public, and at each chance a driver gets, they are talking and advertising their job, and when doing this the motions of organizational recruitment have been put into effect. If the person being talked to seems interested to the point of wanting to fill out an application form, the driver tells them how to obtain one or the interested parties name is given to me and I make contact with them.

Application Form Begins Screening

I believe a brief and properly developed application form can serve as a valuable tool as well as a personal interview in the selection process. A thorough investigation of drivers before they are hired is not only extremely important, it is essential. The only way to predict how a person will live and work for you is to find out how they lived and worked in the past.

Screening

In screening an application, several methods can be used. They include a phone check, credit bureau check, form letters to previous employers and law enforcement agencies.

Interview

Personal interview is designed to eliminate the grossly unfit and takes very little time. All jobs have standards, and school bus drivers are no exceptions: these standards must be met if the applicant is to become an employee. Some things which can be determined very quickly are as follows:

1. Does the applicant's conversation indicate ability to meet the need?

2. Is the applicant available for work now or still employed?

3. Is the applicant willing to work as a sub, or work 3 or 4 hours a day, etc.?

4. Does applicant meet age standards?

5. Is applicant handicapped in a way that will not meet requirements?

Should the applicant pass the screening interview and should there be no disqualifying data revealed in the credit bureau records, local law enforcement agencies records, or the State Driver's License Bureau; I consider the applicant ready for the next step, and that is the training.

Recommended Selection Program

Goals of the Selection Program

Background Factors

Sex

Experience

Education

Family Characteristics

Prior Employment

Outside Employment

Driving Record

Criminal Record

Financial Record

Measurement of Psychological Characteristics

Knowledge Tests

Performance Tests

Attitudes

Personality Tests

Physical Characteristics

Vision

Hearing

Physical Handicaps

General Health

Training Objectives

LECTURE - SCHOOL BUS SPECIFICATIONS

Bud Wall - Director of Transportation

Marshalltown Community Schools
Marshalltown, Iowa

I. School Bus Specifications

A. Reason for writing chassis and body specifications

B. Needs for your school operation

C. Local road conditions and passengers

II. Cover New Minimum Standards as Committee Recommendations

THE WEATHER FACTOR

A. ADVERSE WEATHER REPORT SOURCES

1. Radio Weather Reports
2. WHO and local Radio Station
3. Instant Weather Band Radio
4. Weather Alert Monitoradio
    a. Continuous weather information. (Must be within 40-60 mile radius of National Weather Service Transmitter site. Des Moines is site in Iowa.)
    b. Contains an automatic alert control which signals only to urgent weather warnings.
5. Natural Gas Companies

B. WAYS TO CHECK ROAD CONDITIONS

1. Drive the road yourself
2. Contact bus drivers
3. Check with parents
4. Telephone radio stations
5. Contact County Engineer
6. Check with the Highway Commission
7. Telephone Sheriff's Office
8. Check with Police
9. Telephone road conditions. (Recording at 3:45 a.m. 8:15 a.m. and 3:00 p.m.)
    a. Phone Number 288-1049
    b. Phone Number 288-1047

C. COMMUNICATIONS

1. Persons to Contact
    a. Superintendent of Schools
    b. Bus drivers
2. Source of Contact
    a. Telephone (Not always dependable due to overload or temporary disconnection)
    b. Two-way radios
    c. Local radio station

D. PERSONNEL

1. Drivers knowing how to drive on adverse roads
2. Driver knowing what to do in case of emergency
3. Alternate road to drive
4. Emergency Hard Surface Routes

E. EQUIPMENT

Buses must be in A-1 Condition. (Motor, brakes, steering, drive line, lights, heaters defrosters, wipers, horn, etc.)

F. ADVERSE CITY ROUTES

Check with City Street Commissioner for snow and ice route.

WAVERLY-SHELL ROCK COMMUNITY SCHOOLS
Sound Slide Series
Student Presentation

School Bus Safety is Everyone's Business

1. School Bus Safety is everyone's business. As a bus passenger you have an important job in helping the bus driver to make your ride to and from school a safe one. The following slides are designed to show how you can be a part of the school bus safety team.

2. Each morning before he starts on the route, the driver checks under the hood to make sure the bus is in good working order.

3. Your bus driver also completes a daily safety check each morning. He checks the tires, brakes, flashing lights, signal lights, stop arm, and all the gauges on the dashboard to make sure they are working properly.

4. Our school employs school bus mechanics to service and repair the buses. The school bus mechanic regularly inspects the buses to make sure they are in safe working order.

5. This is your friendly school bus driver. Greet him with a friendly smile and say good morning! He is your friend. It is your duty to obey the drivers directions promptly and cheerfully. He is responsible for your safety.

6. Try to be on time for the bus. The driver will try to be at your home the same time each day. If you are late for the bus, the driver will not be on time for stops at other boys and girls homes.

7. Be at the bus stop a few moments before the bus comes. Wait in the driveway for the bus, not in the road. Wait for the bus to stop before you move toward it. If you must cross the road, check traffic in both directions, wait until the driver signals you to cross and then walk in front of the bus.

8. No fooling around or horse play while waiting for the bus. It is dangerous and could cause accidents.

9. When getting on the bus use the handrail and take one step at a time. Go directly to your seat and be seated.

10. Please do not bring pets to school on the bus.

11. Don't bring guns or knives on the bus. Other than band instruments, do not carry large boxes or packages on the school bus.

12. Good bus riders stay seated and facing the front while the bus is in motion.

13. Keep the bus aisles clear. Objects in the aisle may cause students to trip and have an accident.

14. A few years ago several children were killed in a Colorado school bus-train accident. The driver of the school bus said the children were making so much noise he could not hear the train coming. Please be very quiet when the bus stops for railroad crossings. School bus safety is your business.

15. The Emergency door should never be opened unless there is an accident and this is the quickest and safest way to leave the bus.

16. Do not jump out of the emergency door. Older boys will help you. Do not carry lunch buckets or band instruments out of the bus in an emergency. Your life is more important.

17. Do not move around in the bus while it is in motion. Stay in your seat until the bus stops.

18. When getting off the bus, use the handrail and take one step at a time. You and your bus driver are a team, a team concerned with safety.

18.5 If you must cross the road: Walk in front and at least ten feet ahead of the bus; stop when you are even with the traffic side of the bus and look carefully in both directions; wait until the driver signals you to cross the road, then cross quickly but do not run. If your home is on the right side of the road, go directly to the driveway so the driver can see you. Do not stop at the mailbox for mail.

19. When waiting for the bus at school, stand well back from the bus. Follow the instructions of the patrol leader.

20. Line up when getting on the bus. During the evening shuttle at the high school, wait until all boys and girls are off the bus until boarding the bus that will take you home.

21. Be courteous, form a single line and don't crowd or push. Boy's shouldn't the girls go first?

22. Crowding is not polite and will lead to fights and accidents. Courtesy is a good habit to practice.

23. When going between buses, please walk, don't run.

24. Ready for the trip home. Please help to make it a safe trip.

25. This is a dangerous situation and can lead to serious accidents. Keep your head, arms, and hands inside the bus at all times.

26. A sudden turn or stop will cause this young man to fall and be injured. Stay seated at all times while the bus is in motion.

27. Shooting objects from rubber bands may cause blindness or other serious accidents. This could distract the drivers attention and cause a bus accident.

28. Never throw objects around in the bus--

29. Or out of the window. While riding the bus you represent your fellow bus riders, school, and community. Such behavior will give our community a bad reputation. Courteous bus riders reduce accident chances and make people from other communities like our town.

30. It is not a good practice to eat on the bus. This is especially true when apple cores, banana peelings and half-eaten sandwiches are thrown on the floor.

31. Don't be a litterbug! Does Mom let you litter on the living room floor? Cleanliness is a good habit. Practice it.

32. Please don't distract the driver when he is driving. He needs to keep his attention on driving the school bus safely.

33. Good night, Mr. Bus Driver!

34. Don't go under the bus after papers or other things that you may drop after getting off the bus.

35. In case of a tornado, follow the drivers instruction and get into the ditch. Lie face down and keep your head down.

36. The rest of the slides show some poor bus riding practices that could lead to an accident. There will be a brief pause following each slide. Name what is wrong in the slide. Pause 8 seconds--Never cross the road behind the bus.

37. Fighting in the roadway while waiting for the bus.

38. Bringing pets on the bus.

39. Bringing guns or knives on the bus.

40. Talking at railroad crossings.

41. Crowding and pushing when getting on the bus.

42. Running between shuttle buses.

43. Head and arms out of window.

44. Standing in seat while bus is in motion.

45. Shooting paperwads.

46. Throwing things on bus.

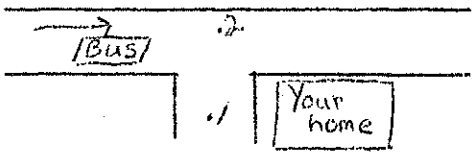
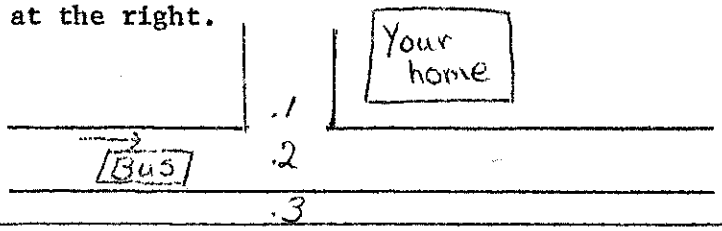
47. Throwing objects out of window.

48. Eating on bus.

49. Distracting driver.
50. Going under bus after paper.
51. School bus safety is Everyone's business. Make it your business to be a good bus rider. You and your bus driver make a good school bus safety team.

WAVERLY-SHELL ROCK COMMUNITY SCHOOLS
SCHOOL BUS SAFETY FOR SCHOOL CHILDREN
A programed approach

1. The material you are now reading is called a frame. This frame is part of a larger plan that helps you learn quickly and easily. Read carefully what is written in each frame and then do what it tells you. Most of the time you will be asked to write something in the top blank at the right. The correct answer will be in the bottom blank at the right. Cover up the bottom blank with the piece of paper given to you until you write the answer in the top blank at the right. You have just finished reading frame _____. (1 or 2)	1
2. A program is a plan for learning. Because what you are about to learn has been planned we call it a P _ _ _ _ _ _ _.	PROGRAM
3. A program consists of a number of pieces of information called frames. For example you have just finished reading the third _____ in this program	FRAME
4. Many frames put together to make learning easier make up what we call a _____.	PROGRAM
5. It is important that you be at the bus stop when the bus comes so the bus will be on time all during the trip to school. If you are late in meeting the bus, the driver will be behind on his schedule. Being on time is the same as being on sc _ _ _ _ _ _.	SCHEDULE
6. It is important that you be on _____ when the bus comes.	TIME or SCHEDULE
7. When you are on time for the bus the bus driver will be able to stay on _____ .	SCHEDULE
8. If the driver has to hurry it could cause an accident. If you are not on time for the bus it could cause an AC _ _ _ _ _ _ _ .	ACCIDENT

9. If everyone meets the bus on time, you are more likely to have a safe trip. If you are on time for the bus it will help make a _____ trip.	SAFE
10. If everyone meets the bus on time, the bus will be on _____ .	SCHEDULE
11. If you are on time for the bus, the bus will be on schedule and you will have a _____ trip.	SAFE
12. Each school day the bus will stop for you at a place called the bus stop. There is a certain place where you should wait for the bus. Look at the drawing below and tell which place would be best to wait for the bus. Write either 1 or 2 in the answer blank. 	1 is correct 2 is wrong. It is dangerous to wait in the road.
13. Look at the drawing below and tell which place would be best to wait for the bus. Write either 1, 2, or 3 in the blank at the right. 	1 is correct 2 is dangerous 3 is dangerous as you would have to wait in the road
14. You should always wait for the bus on the _____ (same or other) side of the road where your house is located. Put the correct word in the blank at the right.	SAME
15. It would be dangerous to stand in the _____ while waiting for the bus.	ROAD
16. Write a short statement telling why it is dangerous to stand in the road while waiting for the bus. Your answer should say the same thing as the answer given but it does not need to be said in the same words.	You might get run into by a car or the bus.

17. It is important that you wait for the bus to stop before getting on the bus. Before you get on the bus you should wait for it to come to a complete _____ .	STOP
18. When the bus comes to a complete _____, then you may walk to it and get on.	STOP
19. The school bus has two doors. The front door is the one you always use to get on the bus. You should always get on the bus through the _____ door.	FRONT
20. The door at the back of the bus is called the Emergency door. You use this door only if you are told to do so by the driver. The door at the back of the bus is called the em _ _ _ _ _ _ _ door.	EMERGENCY
21. You use the front door to get off and _____ the bus.	ON
22. The emergency door is located at the _____ (back or front) of the bus.	BACK
23. The door at the back of the bus which you do not use unless the driver tells you is the _____ door.	EMERGENCY
24. As soon as you get on the bus you should go right to your seat. The bus driver will not start the bus until you are in your seat. If you do not go right to your seat, it might cause the bus to be behind _____.	SCHEDULE
25. When you get on the bus, you should go right to your _____ .	SEAT
26. The driver will not start the bus until you are in your _____.	SEAT

27. If you go directly to your seat after getting on the bus, you will be more likely to have a safer ride. Mark true or false in the blank at the right.	TRUE
28. Do not open the windows on the bus unless the driver tells you that you may. Remember to keep your head and arms inside the bus. No answer needed on this frame	
29. You may open the _____ on the bus if the driver says it is all right.	WINDOW
30. To prevent accidents, remember to keep your head and _____ inside the windows.	ARMS
31. Keeping your head and arms inside the windows will help to prevent _____ .	ACCIDENTS
32. The windows on the bus should be kept _____ unless the driver tells you that you can open them.	CLOSED
33. While riding the bus, you should stay in your seat at at times. You should not talk loudly. It is important that you stay in your _____ while riding the bus.	SEAT
34. You could bother the bus driver and cause an accident if you talk too _____ .	LOUD OR LOUDLY
35. If you talk too loudly on the bus it could bother the _____ _____ and cause an accident.	BUS DRIVER
36. Explain in a short statement what might happen if you were not in your seat while the bus was moving and the driver had to stop the bus quickly. Place your answer in the blank at the right.	You might get hurt because you would be thrown forward.

37. For your own safety, you should stay in your _____ while the bus is moving.	SEAT
38. Your bus stops at all railroad crossings. The driver looks and listens to make sure that a train is not coming before he crosses the tracks. The bus stops at all railroad cr _ _ _ _ _ _ _ .	CROSSINGS
39. The school bus _____ at all railroad crossings.	STOPS
40. The driver looks and listens to see if a _____ is coming on the track.	TRAIN
41. If you are talking while the bus is st _ _ _ _ _ at the railroad crossing, the driver may not be able to hear the train coming.	STOPPED
42. Help the bus driver make sure that a train is not coming by being very quiet and not ta _ _ _ _ _ when the bus is stopped at the railroad tracks.	TALKING
43. When your bus is stopped at railroad crossings you should be very _____.	QUIET
44. Explain in a short statement what might happen if you make too much noise while the bus is stopped at the railroad crossing.	The driver might not be able to hear a train coming. It could cause an accident.
45. You should help the bus driver keep the bus clean and in good condition. If you do not throw things on the floor, you can help the bus driver to keep the bus _____ .	CLEAN
46. If you do not mark or damage the seats and walls of the bus, you can help the driver to keep the bus in good con _ _ _ _ _ _ .	CONDITION

47. Name two things that you can do to keep the bus clean and in good condition.	Do not throw things on the floor or mark on the seats and walls.
48. If something is broken or damaged on the bus you should report it to the school bus driver. Report any damage or anything broken to the school bus _____.	DRIVER
49. When getting off the bus do not leave your seat until the bus stops and then do not push or shove. Do not leave your seat until the bus has come to a complete _____.	STOP
50. When the bus has come to a complete stop, you may leave your _____ to get off the bus.	SEAT
51. When getting off the bus you should not push or _____ the students ahead of you.	SHOVE
52. If you push or shove students while getting off the bus, someone is likely to get hurt (True or False)	TRUE
53. The bus driver is your friend and he always thinks about your safety. He is your fr _ _ _ _.	FRIEND
54. The bus driver is your friend. You should always obey him. If you always do what he tells you then you _ _ _ _ him.	OBEY
55. The bus driver is your friend and he is always willing to help you. If you have problems on the bus, you should tell the bus _____.	DRIVER

BUS SAFETY CHECKUP

Directions: Complete the test by placing the correct word or words in the blank.

1. If you are on time for the bus, the bus will be on schedule and you will have a _____ trip.
2. Do not stand in the _____ as you wait for the bus.
3. You should always wait for the bus on the _____ side of the road (same or other) where your house is located.
4. Do not crowd or _____ in getting on or off the bus.
5. The bus must come to a complete _____ before you walk to it and get on.
6. Do not get on or off a bus as it is _____.
7. When you get on the bus go right to your _____ and stay there until you get to school.
8. Always keep your _____ and other parts of your body inside the bus.
9. As a bus rider you should help to keep the bus _____ and neat.
10. Do not talk _____ or get out of your seat while riding the bus.
11. A good bus rider takes care of bus _____ which he uses every day.
12. If something is broken on the bus you should tell your _____ _____.
13. Do not open or close _____ on the bus unless the driver tells you to do so
14. Do not throw things out of the bus _____.
15. When the bus is near a railroad crossing be very _____.
16. The school bus driver wants you to be safe so _____ him at all times.
17. The rear door of the bus is called the _____ door.
18. Always get on and off the bus through the _____ door.
19. A good boy or girl on the bus helps make a _____ bus ride for everyone.
20. The bus driver is always willing to help you with your problems. He is your _____.

SCHOOL BUS SAFETY

A-The "yellow" school bus and its place in todays traffic.

B-School bus safety officers, their duties and responsibilities.

C-Emergency equipment, location and use.

D-KEY school bus safety rules and their importance.

E-Chalk-Talk message on school bus rules and regulations.

"KEY" SCHOOL BUS SAFETY RULES

1. Stay in your SEAT.
2. Keep aisles CLEAR.
3. Keep down loud NOISE and DISTRACTIONS.
4. Keep from Pushing and SHOVING. (While loading and unloading)

The above Rules to serve as reminders of all School Bus Safety Rules

1. STAY IN YOUR SEAT

Remain in your seat while bus is in motion.
Refrain from over crowding each seat.
Feet planted firmly in front of each passenger.
Standing, kneeling or lying on seat forbidden.

2. KEEP AISLES CLEAR

Passengers should not stand in aisles when bus is moving.
Feet should be kept out of aisles.
Lunch boxes, band instruments etc. should be kept in designated space.
Refuse should not be thrown in aisles, keep bus clean.

3. KEEP DOWN LOUD NOISE AND DISTRACTIONS

Be courteous to your school bus driver and fellow passengers.
Remain quiet and orderly.
Loud talk, rough-housing, and fighting prohibited.
Head, arms and hands should not be extended out the window.

4. KEEP FROM PUSHING AND SHOVING
(while loading and unloading)

Wait for bus in safe place-well off the roadway.
Enter bus in orderly manner and take your seat.
Be alert to traffic when leaving bus.
Walk to your bus stop-avoid parents driving you there.

Martin Carlson (Captain)
Tri-County School Safety Officer

CURRICULUM GUIDE FOR SCHOOL BUS SAFETY

College Community School
Cedar Rapids, Iowa

This presentation will include a description of the Curriculum Guide for School Bus Safety developed for use in the College Community School, and a look at materials and activities that accompanied it.

School bus riders must be properly and well trained if we are to have a safe, efficient, and economical transportation system. The contents of our Teacher's Guide to School Bus Safety were designed to cover day-to-day situations confronting students riding school buses. Through reading and studying it the instructors and students should be better prepared to cope with problems that they will encounter. It was also designed to assist the students in developing proper attitudes, skills and knowledge that are essential in riding a school bus safely.

I. Overview of the Bus Safety Program

   A. Elementary level - specific examples for grade 2.

   B. Intermediate level - specific examples for grade 6.

   C. Junior High

   D. Bus Safety Patrol

II. General description of materials and activities used at all levels.

2200-B29650-6/73

State of Iowa
DEPARTMENT OF PUBLIC INSTRUCTION
Transportation Division
Grimes State Office Building
Des Moines, Iowa 50319

FILMS AVAILABLE AT THE MEDIA CENTERS

16MM Films

1. AUTO TIRE HYDROPLANING - 12 minutes - color

   This film shows very dramatically the effect that water, on a road or highway, has on the point of contact between tires and road surfaces. Good for senior high and adult audiences.

2. BUS DRIVERS' HELPERS - 10 minutes - color - primary/elementary

   By observing other children on a school bus field trip, the students viewing this film are able to discover for themselves that good bus riding habits are essential for everyone's health and safety. Bus travel is made safer for all, by the teacher who discusses good bus standards, the maintenance crew and the inspectors who check the bus for safety, well trained drivers, and most important, the children who follow good bus standards. By the POSITIVE APPROACH taken in this film, the student is reminded about keeping a quiet voice, hands and arms inside the bus at all times, and remaining seated. SAFETY IS EVERYONE'S RESPONSIBILITY!

3. DEAD RIGHT - 10 minutes - color

   A pedestrian victim may have been legally right, but he was almost killed and is now wheelchair-bound.

4. DEFENSIVE DRIVING TACTICS - 12 minutes - color

   The ABC's of Defensive Driving. Vignettes of "offender-type-drivers" emphasize the need for practicing defensive tactics.

5. DESTINATION SAFETY - 58 minutes - color

   This hour-long film brings many facets of our traffic safety problem into sharp focus. Virtually as eye-witness observers, the audience is transported to various parts of the country to see at first hand student training, licensing procedures, proving ground and laboratory safety testing, law enforcement and court penalty techniques, highway design studies, governmental programs and many other aspects of the problem.

6. DRIVE DEFENSIVELY - 11 minutes - color

This film demonstrates, in a series of typical driving situations, the basic principles of defensive driving. Shows how a good driver must anticipate and recognize the mistakes of others.

7. DRIVER, THE - 30 minutes - color

An analysis of the physical and mental make-up of drivers with exposure to approaches being used to improve driver performance. The effects of alcohol and other drugs are included.

8. DRIVING AT NIGHT - 9 minutes - color

Discussion on poor visibility and fatigue; over-driving headlights; dimming headlights; reduction of speed at night; limited visibility at night; and pedestrian dangers. Good for high school and adult groups.

9. DRIVIN' AND DRUGS - color

This film deals with the effect that drugs may have on an individual who drives. It is important that all drivers understand that different drugs may effect them differently at different times.

10. DRIVING HIGHWAYS AND FREEWAYS - 12 minutes - color

Discussion of correct speeds, proper lane driving, safe following distance, passing on the highway, and what to look for at intersections. Good for high school and adult groups.

11. DRIVING IN BAD WEATHER - 9 minutes - color

Techniques used for driving in fog, rain, snow, mud and under other bad weather conditions.

12. DRIVING IN THE CITY - 9 minutes - color

Discussion on correct driving speed in the city, proper lanes in city, passing in city traffic, one-way street driving, traffic controls in the city, right-of-way at intersections, how to make turns. Good for high school and adult groups.

13. EXPECT THE UNEXPECTED - 31 minutes - color

Develops an understanding of the series of events that produce street and highway collisions with emphasis on immediate and direct causes of such collisions.

14. FINAL FACTOR, THE - 15 minutes - color

In five short narratives the film shows how drivers can get into trouble any time they find themselves confronted with just the right combination of accident factors. Most of these are commonplace and alone would not likely cause an emergency. But collectively, supposedly innocent factors can suddenly become dangerous. Good for junior high, high school and adult groups.

15. FIRST FILM ON FINDING YOUR WAY TO SCHOOL SAFELY - 9.5 minutes - color

Recognizing landmarks and understanding safety rules can make the walk to school a safe one. Color and sizes of houses, street signs, traffic signals, and many other familiar things are seen on the walk to school. Primary grade level.

16. FREEWAYPHOBIA - PART I (Each 15 minutes) - color

The characterizations are devoted to a thorough discussion of the new problems of Interstate driving and the definition of the new "rules of the road" which all drivers must know and follow if the real promise of Interstate is to be fulfilled. Part I deals with: (1) using "on" and "off" ramps; (2) maintaining proper distances; (3) reaction time and braking time; (4) changing lanes; (5) understanding proper speeds; (6) anticipating possible emergencies; and (7) freeway hypnosis.

17. FREEWAYPHOBIA - PART II - 15 minutes - color

Part II deals with: (1) faulty car maintenance; (2) loose objects within the car; (3) badly loaded trailers; (4) inadequate fuel supply; (5) proper techniques if actual breakdown occurs; (6) mental and physical condition of driver; and (7) safety belts. Good for junior high, senior high, and adult audiences.

18. I'M NO FOOL AS A PEDESTRIAN - 8 minutes - color

Walt Disney's character, Jiminy Cricket, shows problems of safety which pedestrians face and suggests measures to help them. Suggested for elementary grades.

19. IN THE CRASH - color

An excellent film on the new engineering aspects that could be built into the automobile for passenger safety. The film also compares repair costs of automobiles.

20. LET'S LIVE A LITTLE--LONGER - 18 minutes - color

This film covers some of the things which General Motors and the automobile industry are doing to improve our traffic safety record. This not only concerns automobile design and safety features, but the rigorous testing in the laboratory and on the road, elimination of roadside hazards, better traffic controls, and finally driver responsibility and the importance of good driving habits.

21. MOTOR MANIA - 7 minutes - color

Humorous cartoon explanation of the appalling change which takes place in the average individual when he finds himself behind the wheel of a car.

22. NIGHT DRIVING TACTICS - 17 minutes - color

Although there is less traffic at night, there are two and one-half times more accidents than in daylight hours--mainly due to poor visibility.

23. OTTO THE AUTO - SERIES I, II, III

Series I - 14 minutes - The film is cleverly animated. Otto the Auto is characterized by a little automobile jauntily wearing a hat. "The Little White Line that Cried" deals with crossing at the corner between the white lines. "Inky and Blinky" brings out the safety rule to wear white after dark. "Two Sleeping Lions" illustrates the danger of crossing between parked cars. Good for elementary grades.

Series II - 14 minutes - Animated film. Otto the Auto is characterized by a little automobile jauntily wearing a hat. "Otto Meets a Puppet" presents the message to look all ways before crossing. "Otto Asks a Riddle" asks students to help the Safety Patrol. "The Bright Yellow Raincoat" stresses wearing bright colored clothes on rainy days and to be particularly careful in bad weather. Good for elementary grades.

Series III - 18 minutes - Animated film. Otto the Auto is characterized by a little automobile janutily wearing a hat. "Timothy the Turtle" illustrates the safety slogan to watch for turning cars. "Squeaky and his Playmates" encourages children to play away from traffic. "Billy's New Tricycle" demonstrates tricycle safety rules. "Peter the Pigeon" stresses the importance of walking single file facing the traffic on a country road. Good for elementary grades. (AAA)

24. REACTION, BRAKES, TIME AND SPACE - 9 minutes - color

Graphic proof that "tailgating" is ridiculous. A viewer's self-test illustrates reaction time lag. Time is translated into reaction distance, a 50 mph test staged with stunt drivers.

25. SAFE ON IMPACT - 12 minutes - color

A U.C.L.A. Institute of Transportation and Traffic Engineering motion picture report on automobile glass tests--with resulting human exposure hazards.

26. SAFETY - WALK TO SCHOOL - 11 minutes - color - elementary

Tim and Chuck walk to school safely. The camera follows their route and illustrates to viewers the importance of safety while crossing streets, accepting rides, obeying traffic signals, and walking on sidewalks.

27. SAFETY FACTS ABOUT CROSSING RAILROAD TRACKS - 15 minutes - color

Presents the railroad crossing problem. The different types of motor vehicle-train accidents are shown with various types of drivers involved. Uniform motor vehicle laws concerning railroad crossings are discussed with safety precautions to be taken and safety equipment present at the crossings. Excellent for high school and adult groups.

28. SIGNS OF LIFE - 27 minutes - color

A concentrated look at the signs, signals and markings that help control traffic.

29. SIX DEADLY SKIDS - 14.5 minutes - color

Demonstrates the six deadly skids and the methods to control them.

30. SMITH SYSTEM OF SPACE CUSHION DRIVING, THE - 18 minutes - color

Specific driving habits to avoid dangerous situations.

31. SPACE DRIVING TACTICS - 15 minutes - color

You need a "space cushion" surrounding you and your car. "We're selling free insurance. It is the insurance of SPACE. SPACE to react, to take action, SPACE to stay out of trouble!"

32. SPECIAL CONDITIONS - 25 minutes - color

Prepared decisions are presented for coping successfully with impending collision situations.

33. STOP, LOOK AND THINK - 10 minutes - color - five-to-ten year olds

Animation and live action supplement a California Highway Patrol school demonstration featuring the braking distance of automobiles and the stopping distance of children, walking versus running.

34. TALKING CAR, THE - 16.5 minutes - color

After a near miss when he ran into the street without first looking for oncoming cars, Jimmy -- in a dream sequence -- is grilled by a tribunal of three talking cars, two of them vintage models, as to how well he knows the "See and Be Seen" traffic safety rules. Elementary.

35. WE DRIVERS - 13 minutes - color

From our normal vantage point behind the wheel, things ahead sometimes can't be seen . . . or they simply look different than they really are. Very often, if we could see some driving situations in their entirety, we could approach them in greater safety.

Soaring overhead in a helicopter, it is easy to see booby traps that sometimes develop in traffic situations which can't readily be detected from inside our cars. Nevertheless from up above, we can spot tell-tale signs that we could recognize and be warned by on the ground.

36. WHERE MILEAGE BEGINS - 26 minutes - color

Easy-to-understand animation, and fascinating stop motion technique combine to make this a most entertaining and explanatory picture on what makes a car go and how its engine is put together.

37. YOUR CAR IN MOTION - 10 minutes - color

This film deals with basic driving techniques.

2200-B29609-5/73

State of Iowa
Department of Public Instruction
Transportation Division
Grimes State Office Building
Des Moines, Iowa 50319

SAFETY PROBLEMS OBSERVED IN SOME IOWA SCHOOLS

GENERAL

1. Record keeping (OSHA & IOSHA requirements): Forms equal to those required by OSHA 29CFR 1904.22(a)
   29CFR 1904.2
   29CFR 1904.5
   29CFR 1904.5(d)(1)
   Recordkeeping Requirements, U.S. Dept. of Labor.

2. Safety meeting: records of a functioning safety committee (meetings, plans, and actions) must be on record and available for review by inspectors. Compliance Operations Manual, Jan. 1972 (OSHA 2006), Chapter XII(K) Item 7(a) pXII-81

3. Only one person known to be able to administer first aid: Additional people should be trained and made known as first aid trained! 29CFR 1910.151(b) p22242

4. Direction to exit should be posted: 29CFR 1910.36(b)(5) p22130
   29CFR 1910.37(g)(5) p22131

5. Fire Drills: One (1) per month required - not observed!
   School Laws of Iowa 100.31

6. Warning signs on the doors: Eye protection required in this area - Special equipment signs around grinders and other special eye hazardous areas:
   29CFR 1910.145 p22239 (Signs)
   29CFR 1910.36(b)(5) p22130 (Egress)

7. Compressed air blow gun nozzles for cleanup: maximum 30 p.s.i.g. should be installed.
   29CFR 1910.242(d) p22295 & Program Directive #100-1

8. Industrial eye safety protection must be worn by instructor and students.
   School Laws of Iowa 280.20

9. One cracked bump cap: Discard immediately! 29CFR 1910.132(b) p22231

10. Grinding area: face shields recommended. School Laws of Iowa 280.20

11. Guard rail along window area on second floor: recommended

12. Balcony storage area: guard rail and toeboard required.
    29CFR 1910.23(c)(1) p22109

13. Permanent aisle and passageways shall be marked (all areas)
    29CFR 1910.144(k)(7) p122238

14. Floor surface, slippery when wet: Non-slip surface recommended.

15. General Housekeeping should be improved: Poor housekeeping is a detriment to safety itself, and is often an indication to the inspector to be critical of many other border line situations. 29CFR 1910.176(c) p22253

16. Improperly supported hot water line: 29CFR 1910.22 p22108

17. Tool room: thinners, adhesives, paints, etc. stored in tool room on open metal shelves: Safety Cans: 29CFR 1910.106(a)(29) p22170
Storage: 29CFR 1910.106(a)(32)
Cabinets: 29CFR 1910.106(d)(3) p22177

U. L. Fire Resistant Cabinet recommended: manditory if stored over 30 days. (Open Shelf storage prohibited.)

18. Disposal containers for oils and solvents should be supported from upsetting and protected against fire and vandals.

19. Oil container open: improper container. 29CFR 1910.106(a)(29) p22170

20. Blocked fire extinguishers: extinguishers must be accessible at all times. 29CFR 1910.3 p22243

21. Fire extinguisher needed?!

22. Automatic closure on door: fused type needed

23. Fork lift truck: drivers license required - load plate not clearly readable - Unattended with key in ignition - Driver not guarded (cage from lift and chain sprocket). 29CFR 1910.178(l) p22257
29CFR 1910.178(m)(a) p22257 (Guarding)
29CFR 1910.178(a)(6) p22254 (Labeling)
29CFR 1910.178(m)(5) p22257 (Labeling)

24. Flammable liquid hose nozzle valves: approved or non approved?
29CFR 1910.106(g)(1)(i)(e)(5) p22183 & Program Directive #100-12
29CFR 1910.106(g)(3)(vi)(b) & (c) p22184
29CFR 1926.152(g)(4) p27517
29CFR 1926.152(e)(5) p27517

25. Employees eating lunch while exposed to toxic fumes & dust.
29CFR 1910.141(g)(1) p22235
29CFR 1910.141(g)(3)(i) p22235
29CFR 1910.141(g)(3)(iii) p22235

26. Radial saw: not properly labeled
29CFR 1910.213(h)(5) p22275 & Program Directive 100-24

27. Dead men switches on portable equipment: Voluntary compliance recommended for metal area, manidatory in wood area. 29CFR 1910.243(a)(2) p22295

28. Band saw blade: should be coiled immediately after removal from saw.

1. ARC Welders: Exposed terminals (especially Lincoln Welders) require covering.
   29CFR 1910.252(b)(2)(iv)(d) p22305

2. Safety check valves on manifold outlets not installed:
   29CFR 1910.252(5)(iii)(b)(i) p22302

3. Storage of oxy-acetylene tanks: should be separated by firewall or 20ft. between them. 29CFR 1910.252(a)(2)(iii)(c) p22299

4. Outlet adjacent to water pipe in welding area: Remove or relocate (Danger of electrical shock)

5. Additional fire extinguishers are needed in welding shop

6. Acetylene regulator pressure: in excess of 15 p.s.i.g.
   29CFR 1910.252(a)(1)(ii) p22299

7. Welding cart: sparks hitting cylinders 29CFR 1910.252(a)(2)(v)(b)(9) p22299

ELECTRICAL

1. Portable electric equipment: bad cords-improperly grounded cords
   29CFR 1910.309(a) p23342 (NEC 250-45(d)(3) & NEC 400-5)
   (NEC 250-51)
   (NEC 250-59)

2. Extension cord on horizontal band saw: 29CFR 1910.309(a) p22343
   NEC 250-59(b)

3. Drop cords not grounded: 29CFR 1910.309(v) p22343 (NEC 250-45)

4. Extension cords: reel (cordomatic 900) not grounded.
   29CFR 1910.309(v) p22342 (NEC 250-45)

5. Cords running under divider curtain: additional electrical outlets needed in the area. NEC 400-4

6. No ground wire and improper box on drop cord.
   NEC 250-51 and NEC 250-59

7. General drop cords: Improper male and female terminals.
   29CFR 1910.308(d)(2)(vi) p22343 & Program Directive #100-8
   (NEC 410-52(d))

8. Spliced trouble light: entire light unapproved.
   29CFR 1910.309 p22342 (NEC 400-5) & Program Directive #100-10

9. Portable vacuum cleaner: ground wire terminal removed.
   29CFR 1910.309(a) p22342 (NEC 250-45(d)(4))
   (NEC 250-51)
   (NEC 250-59(b))

10. Portable pressure washer: improper electrical male plug
29CFR 1910.309 p22342 (NEC 250-45 & 51)

11. Pedestal fan improperly guarded and cord insulation bad
29CFR 1910.309(a) p22342 NEC 250-45(d)(4) (Cord)
29CFR 1910.212(a)(5) p22274 (Shielding)

12. Wall electrical box: knockout plugs missing

13. Six lathes: electrical boxes have knockout plugs missing: needs capping.

14. Lights to showcase area: Need switchable circuits. Are circuits overloaded?

15. Extra outlets needed for the amount of electrical machines being used (Adapters prohibited)!

16. Need additional electrical outlet: 3 units in unapproved 3-plug adapter, circuit overloaded. Replace plug - ground cash register.
29CFR 1910.309(a) p22342 (NEC 250-45(d)(4))

17. Exposed wires at ceiling clamp on drop cord: drop cord should be in conduct to stationary machinery. 29CFR 1910.309(a) p22342 (NEC 400-3 and 10)

18. Power hack saw: open cord outside electric box also should be grounded
29CFR 1910.309(a) p22342 (NEC 250-59(b))

19. Small pedestal grinder: Defective electrical cord - improper rest on buffing wheel - spark guards not adjusted properly.
29CFR 1910.215(a)(4) p22278 (Work Rest)

20. DoAll Band saw: receptable has improper voltage marking on box for 220 volt - Light cord spliced - improper male plug - Open ground wire
29CFR 1910.309(a) p22342 NEC 110-14(b) & NEC 250-51

21. Belt sander: Is it 110v or 220v? Improper male plug - Belt guarding should be improved! 29CFR 1910.309(a) p22342 NEC 250-59(a)
29CFR 1910.212(a)(3)(ii) p22273

22. Vertical lathe: switch button covered but not labeled

23. Cincinnati Mill: loose electrical box

24. Exposed wires: Conduct to motor box on lathe. NEC 400-10

25. Surface grinder: wires to electrical chuck spliced - should have guard over electric chuck switch.
29CFR 1910.309(a) p22342 NEC 400-5

26. Vertical mill: power feed flexible line unguarded

27. Ventilation system in spray booth: health benefit - sprinkling system in paint booth needed - improperly serviced lights in the booth - open light switch too near explosive atmosphere of spray booth!

1. Grinders: Improperly guarded - shields required - signs not posted - face shields not available. 29CFR 1910.215(a)(1) + (4) p22278 (Guarding)
   School Laws of Iowa 280.20 (Shields)

2. Large pedestal grinder: no spark guard

3. Grinder: Guards improperly adjusted - no posted signs stating eye protection required. 29CFR 1910.215(a)(4) p22278 (Guarding)

4. Belt guards on compressors: Required. 29CFR 1910.219(e)(1)(i) p22290 and Table O-12 p22292

5. Drill press improperly guarded: Belts must be guarded sides and top. 29CFR 1910.219(d)(3) p22290

6. Unguarded belts on cylindrical grinder: 29CFR 1910.212(a) p22273

7. Vertical mill: belts improperly guarded - flexible electrical conduct out of clamps at junction box. 29CFR 1910.212(a) p22273 NEC 400-10

8. Punch press: Improperly guarded - no safety switch (A complete review of 29CFR 1910.217 p22285 is needed. Note particularily the following sections: 29CFR 1910.217(a)(2), 29CFR 1910.217(b)(4) or (5), (a), (1), (e)

9. Small shaper: no guard on v-belt. 29CFR 1910.212(a) p22273

10. Sheet metal shear: guarding required - fingers and length regulators on back side should be guarded. 29CFR 1910.212(a)(3)(iv) p22274

11. Hydraulic shear - improper cutter guard and foot control guard needed. 29CFR 1910.212(a)(3)(iv) p22274 (Guarding)
    29CFR 1910.217(b)(7)(x) p22286 (Controls)

12. Unguarded V-belts on 6 sewing machines and blind stitcher: 29CFR 1910.219(e)(3) p22290

13. Paper cutter: Foot guard recommended (?)

14. Pedestal fan: Improperly guarded. 29CFR 1910.212(a)(5) p22274

15. Consider guarding of headstocks on all lathes: 29CFR 1910.212(a) p22273

SUGGESTED REFERENCES FOR OSHA AND IOSHA

1. The Williams - Steiger Occupational Safety and Health Act of 1970, Public Law 91-596, 91st Congress, Senate 2193, December 29, 1970.

2. Federal Register, Volume 37, Number 202, Part 11, Wednesday, October 18, 1972. Occupational Safety and Health Standards, Part 1910. 20¢ per copy.

3. Federal Register, Volume 37, Number 243, Part 11, Saturday, December 16, 1972. Safety and Health Regulations for Construction, Part 1926. 20¢ per copy.

4. Conducting a Job Hazard Analysis. OSA-OSHA-163, U.S. Government Printing Office: 1971 0-444-309. 10¢ per copy.

5. What Every Employer Needs to Know about OSHA Recordkeeping. Report 412, Department of Labor. U.S. Government Printing Office: 1972 0-470-605. (This should be on file at the Central Administration Office.)

6. Recordkeeping Requirements under the Williams Steiger Occupational Safety and Health Act of 1970. U.S. Department of Labor. (This should be on file at the Central Administration Office.)

7. Compliance Operations Manual, January 1972 OSHA-206. U.S. Government Printing Office: 1972 0-465-448. Price $2.00 (Note this manual maybe replaced with a new revised edition shortly.)

8. Job Safety and Health. U.S. Government Printing Office: 1973-734-005/6. One year subscription $4.50.

9. State of Iowa Senate File 1218, Sixty-fourth General Assembly. An act relating to Occupational Safety and Health, Providing appropriations to carry out the provisions of this Act, and Providing Penalties for Violations. A copy maybe secured from your Iowa senator or from:

   Jerry L. Addy, Commissioner
   Iowa Bureau of Labor
   East 7th and Court Avenue
   Des Moines, Iowa 50319
   Phone: 515/281-3606

10. Iowa Occupational Safety and Health Review Commission, Rules of Procedure, Effective April 27, 1973. A copy can be obtained without charge from:

    G. Lawrence Ragan, Executive Secretary
    Iowa Occupational Safety & Health Review Commission
    300 - 4th Street, 7th Floor
    Des Moines, Iowa 50319
    Phone: 515/281-5389

NOTE: Single no charge copies of items #1 through 6 above may be obtained from:

Warren Wright, Area Director
OSHA-U.S. Dept. of Labor
City National Bank Building
Omaha, Nebraska 68102
Phone: 402/221-3276

All Federal items may be order from:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

It is also suggested that a membership be taken out in the "Industrial Safety Association of Iowa, 1212 Des Moines Building, Des Moines, Iowa 50309". Annual membership is $10.00. A monthly Safety Bulletin includes facts on safety, OSHA, IOSHA, membership questions and OSHA answers. This is an excellent guide. It is a good current reference to find out what's happening to Iowa's Industries.

Prepared By:

Don Simmons, Consultant
Manpower Development Training
Department of Public Instruction

HIGHWAY SAFETY PROGRAM MANUAL

VOL. 17 (INTERIM)

PUPIL TRANSPORTATION SAFETY

FEBRUARY 1973

National Highway Traffic Safety Administration
Washington, D.C. 20590

U.S. DEPARTMENT OF TRANSPORTATION

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

ORDER 960-15	
DATE OF ISSUANCE February 6, 1973	OPI: N42-11

SUBJECT: Highway Safety Program Manual **Volume 17, Pupil Transportation Safety**

1. PURPOSE: This Order transmits Highway Safety Program Manual **Volume 17 (Interim), Pupil Transportation Safety, and provides guidance for its use.**

2. EFFECTIVE DATE: Highway Safety Program Standard 17 was promulgated by publication in the Federal Register on May 6, 1972, and became effective 30 days later. This supporting Manual is effective as of the date of issuance.

3. EFFECT ON OTHER DIRECTIVES: None. This is an original issuance.

4. USE OF THIS VOLUME: As part of the Highway Safety Program Manual, this Volume is designed to provide guidance to State and local governments on preferred highway safety practices. This Volume supplements Highway Safety Program Standard 17 and presents additional information to assist State and local agencies in implementing their highway safety programs. This "Interim" Volume has been published in order to provide immediate guidance to States to assist them in developing Annual Highway Safety Work Programs.

James E. Wilson
Associate Administrator
Traffic Safety Programs

Attachment

DISTRIBUTION:

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HIGHWAY SAFETY PROGRAM MANUAL

VOLUME 17 INTERIM

PUPIL TRANSPORTATION SAFETY

This volume is designed as a guide for States and their political subdivisions to use in developing policies and procedural activities. Its contents do not negate any requirement found in Highway Safety Program Standard No. 17.

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

HIGHWAY SAFETY PROGRAM MANUAL

Volume 17 PUPIL TRANSPORTATION SAFETY	Transmittal 34
Chapter CONTENTS	February 1973

FOREWORD

As a part of the Highway Safety Program Manual, this volume is designed to provide guidance to State and local governments on preferred highway safety practices. Volumes comprising the Manual are:

0. Planning and Administration
1. Periodic Motor Vehicle Inspection*
2. Motor Vehicle Registration*
3. Motorcycle Safety*
4. Driver Education*
5. Driver Licensing*
6. Codes and Laws*
7. Traffic Courts*
8. Alcohol in Relation to Highway Safety
9. Identification and Surveillance of Accident Locations
10. Traffic Records*
11. Emergency Medical Services*
12. Highway Design, Construction and Maintenance
13. Traffic Engineering Services
14. Pedestrian Safety
15. Police Traffic Services*
16. Debris Hazard Control and Cleanup
17. Pupil Transportation Safety
18. Accident Investigation and Reporting

The volumes of the Manual supplement the Highway Safety Program Standards and present additional information to assist State and local agencies in implementing their highway safety programs.

The content of the volumes is based on the best knowledge currently available. As research and operating experience provide new insights and information, the Manual will be updated.

The volumes of the Highway Safety Program Manual deal with preferred highway safety practice and in no way commit the Department of Transportation to funding any particular program or project.

Many organizations and individuals at all levels of government and in the private sector contributed heavily in the preparation of the volumes of the Manual. The Department appreciates greatly this help in furthering the national program for improving highway safety for all Americans.

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*These volumes have been updated by Supplements issued during 1971-72.

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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

HIGHWAY SAFETY PROGRAM MANUAL

Volume 17 PUPIL TRANSPORTATION SAFETY	Transmittal 34
Chapter I PURPOSE	February 1973

1. INTRODUCTION

There is a recognized national need for improving pupil transportation programs in both the public and private sectors. This volume is designed to assist the States in initiating, expanding and improving programs under the national Standard on pupil transportation safety.

2. PURPOSE

To interpret the Pupil Transportation Safety Standard and policies on a national uniform basis and to assist the States in achieving the highest attainable level of safety in the transportation of school children.

3. SPECIFIC OBJECTIVES

The specific objectives of the pupil transportation safety program are to ensure that:

a. Each person who operates a vehicle identified as a school vehicle is properly licensed and examined for this job.

b. An approved training program is provided by or through the responsible State agency that will enable each driver to operate the school vehicle as skillfully and safely as possible.

c. The greatest degree of uniformity and safety in the loading and unloading of school vehicles is obtained nationally.

d. Each child who rides in a school vehicle is instructed as to safe riding behavior.

e. School vehicles are inspected at frequent intervals and maintained in safe operating condition.

f. Adequate records are kept with respect to crashes, injuries and fatalities which occur during the operation of the school vehicle, as well as other information which would contribute to improved operational safety.

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Chapter II AUTHORITY	February 1973

1. AUTHORITY

The authority for the Program Standard on Pupil Transportation Safety is vested in the Secretary of Transportation in accordance with Chapter 4 of Title 23, U.S.C. (hereinafter referred to as the Highway Safety Act of 1966). Section 402(a) requires that:

> "Each State shall have a highway safety program approved by the Secretary designed to reduce traffic accidents and deaths, injuries and property damage resulting therefrom. Such programs shall be in accordance with uniform Standards promulgated by the Secretary."

2. STANDARD

The Secretary in May, 1972 promulgated Standard 17, Pupil Transportation Safety, (Appendix A), which presents requirements to be met in the design and implementation of the State Pupil Transportation Safety Program.

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HIGHWAY SAFETY PROGRAM MANUAL

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Chapter III GENERAL POLICY	February 1973

1. INTRODUCTION

a. This volume supplements the provisions of the Pupil Transportation Safety Standard setting forth guidelines and suggestions for implementing an effective pupil transportation safety program.

b. The guidelines set forth in this volume seek an appropriate balance between safety achieved through statutory regulation of school vehicles and safety achieved through the development of carefully selected and trained drivers operating well maintained vehicles.

2. POLICIES

The general policy of the Department of Transportation is to encourage and support the States in improving pupil transportation safety. In the interest of promoting a comprehensive State program in pupil transportation, the State should exercise broad general controls over standards for school vehicles and equipment, safety, finance and standards of adequacy. More specifically the State should:

a. Adopt standards for school vehicles which are in accordance with the Federal Motor Vehicle Safety Standards and those set by the National Conference on School Transportation in the publication Minimum Standards for School Buses (1970 Revised Edition).

b. Approve school vehicles before they are registered by the State agency with responsibility for titling and registering motor vehicles.

c. Provide guidelines for the selection, training and supervision of all pupil transportation personnel.

d. Establish regulations governing the operation of all school vehicles in the State.

e. Provide a uniform transportation accounting system for the use of all schools.

f. Establish a system for keeping statistical data on pupil transportation and for reporting crashes and other incidents involving drivers, passengers and vehicles.

g. Establish clear lines of coordination among the various agencies having responsibility for pupil transportation. For example, traffic engineering responsibilities for routing and establishing bus stop locations should be identified.

h. Provide assistance to school administrators, contractors and others in making transportation surveys, evaluating bus garages and maintenance facilities, organizing transportation programs and establishing safe vehicle inspection and maintenance practices.

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HIGHWAY SAFETY PROGRAM MANUAL

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Chapter IV PROGRAM DEVELOPMENT AND OPERATIONS	February 1973

1. INTRODUCTION

Although pupil transportation is not a new service of the schools, it has been undergoing an evaluation which has brought numerous changes in policy and procedure. Many of these changes have significantly affected the character of the service. The pupil transportation safety program set forth in the Standard and further defined in this volume comprises ten program areas. Requirements and recommendations for use in the implementation and operation of these program areas are presented in this chapter.

2. STATE ADMINISTRATION

a. The responsibilities listed below should be assumed directly by the State agency with primary responsibility for pupil transportation within the framework of a total cooperative effort whereby this agency and local boards of education work together for the best possible safety program.

(1) Develop and implement a clear, concise policy for pupil transportation.

(2) Provide leadership in the development of a comprehensive school transportation safety program for application statewide.

(3) Develop and implement educational programs and materials for school vehicle drivers, mechanics, supervisors and administrators, and pupil passengers.

(4) Develop and implement a system for collecting and reporting program information relating to pupil transportation safety.

(5) Provide leadership in the development of a school vehicle maintenance program and coordinate the inspection of all school vehicles used to transport children.

(6) Maintain cost and expenditure data for pupil transportation facilities, equipment and staff.

(7) Study and make recommendations regarding liability and insurance, legislation and appropriate research in the field of pupil transportation.

(8) Develop and implement an evaluation program for the State pupil transportation safety effort.

b. Local school units often need advice on a variety of technical problems involved in operating a transportation program. School officials need help on route planning, school bus operating procedures, insurance programs, selecting and drawing up specifications for school vehicles, planning a maintenance shop and training programs as well as many other related problems. The State agency with primary responsibility for pupil transportation should have staff members competent to furnish these advisory services.

3. LOCAL ADMINISTRATION

a. Generally the local area school board has all powers not specifically reserved for the State education authority, including purchase and ownership of school buses, establishing bus routes, employment of drivers, providing for operational and maintenance services, determining policy on all matters not specifically regulated by the State.

b. The local superintendent generally has the responsibility for making recommendations to the board concerning all phases of the transportation system and personnel and for carrying out policies established by the Board of Education, as well as for administering the pupil transportation department.

4. IDENTIFICATION AND EQUIPMENT

a. Use of the stop arm is permitted. No restrictions are currently placed on size, shape or color.

b. It is the intent of the Standard to provide through color, lighting, mirror systems, and the words ''SCHOOL BUS'' for uniform identification and equipment of vehicles used to transport children. All vehicles used at any time to transport pupils and school personnel exclusively to and from school are covered by this section regardless of ownership. It will be necessary for most States to look carefully at the private and parochial school buses operated within their borders to be certain they comply with the lettering, color, warning system and mirror requirements.

c. Over 20,000 school buses are disposed of each year through resale to other operators or to junk yards. Those that are turned into campers, mobile homes, mobile shops, etc., should not be relicensed until the color has been changed and the warning lights and stop arm, if used, are removed. No vehicle should be operating on the highways that ''appears'' to the motorist to be a school bus, but is not. However, those that continue to be used to transport children to and from school must meet the requirements of the Standard.

d. Field trip or charter work is not prohibited. A vehicle used exclusively for this type of transportation is not to be identified as a Type I school vehicle.

e. The State is required to establish guidelines for the identification of small vans, Type II school vehicles, as school buses. Because there are many instances when these vehicles operate more safely by blending in with traffic rather than trying to control it, the option of painting and equipping as a school bus is left to the States. The State shall establish criteria that will be applied by the local district where the vehicle is used. The following items should be considered:

(1) The intended uses of the vehicle; e.g., transporting children to and from school, transporting athletic teams, regular transportation for handicapped children, etc.

(2) Traffic density in areas where it will operate.

(3) The street width and availability of curb side or driveway loading.

(4) The type of child transported; e.g., handicapped.

(5) Whether registration plates are to be regular bus plates or special plates of some kind.

f. Whether the Type II Vehicle is identified as a school bus or not, there is no Federal restriction against having the name of the school or contractor on the sides.

g. To best meet local needs the State should avoid requiring or prohibiting all Type II vehicles from being identified as school buses.

5. OPERATION

a. Driver Selection

(1) School vehicle drivers should be in good physical condition, of good character, skilled in the operation of their vehicles and in personal relationships with the children they carry. They should be people with morals above reproach, even in temperament, have the ability to adjust to the varying conditions of their job and with positive attitudes toward safety. Their traffic records should be free from arrests, crashes and warning notices for a period of at least three years.

(2) Because the bus driving job is generally a part-time job the population from which drivers can be selected is limited to those who can leave their regular daily activities for several hours in the morning and again in the late afternoon. Each person applying for a bus driving position should complete an application blank which asks for at least the following information:

(a) Name and address of the applicant
(b) Education and special training
(c) Driving record
(d) General physical condition
(e) Armed service record
(f) Personal and business references

(3) A personal interview followed by a series of tests to determine temperament, knowledge and attitude for the job, should be given. A physical examination should be mandatory. The administrator should be sure that the physician understands the qualifications for the bus driving job and can answer yes to the question, ''Is the applicant physically qualified in every way to perform the work of a school bus driver?'' The examination should include but not be limited to tests for:

(a) Vision deficiencies including tests for glaucoma, depth perception and presence of cataracts.

(b) Tuberculosis

(c) Hypertension

(d) High blood pressure

(e) Overweight

(f) Diabetes

(g) Use of drugs (including alcohol)

(4) A road test in the school vehicle should be given which includes maneuvers difficult enough to test the driver's ability and be given over a standard route with a standard scoring procedure. The results of the road test should be used as a preliminary step in planning a good training program for this driver.

(5) No person over the age of 65 should be hired to drive a school bus. Those who reach the age of 65 while employed as drivers may be permitted to drive as long as health and operating skills permit. Physical examinations for drivers over 65 should be required more frequently than for younger drivers. At least every six months is recommended.

(6) Unsatisfactory drivers should be rejected. For example, those with a bad driving record or where there is evidence of bad moral character within the last three years. For additional guidance see The Selection and Training of School Bus Drivers, Research Report on Contract FH-11-7339 by Human Resources Research Organization, February 1971. (See Appendix C)

6. DRIVER TRAINING

The program of instruction should provide an opportunity for transportation personnel to improve, evaluate and reinforce their learning through discussion with each other and with their instructors. The goal is to motivate them to change their behavior so that the performance of their duties results in a safer trip for the children who are transported.

a. Pre-Service Instruction

Every driver of a school bus should have instruction before being allowed to operate a bus loaded with children. This instruction should be of two types, classroom instruction and behind the wheel instruction. The length of the instructional program should be determined by the experience of the driver applicant. Instructors for these programs may be other drivers, the supervisor or driver trainers who are not only knowledgeable concerning the following topics but skilled enough in the art of teaching and communications to impart knowledge and develop minimal skills in the driver applicant.

Pre-service instruction should include but not be limited to the following:

(1) Classroom instruction

(a) Applicable laws, rules and local regulations

(b) State and local policies covering pupil transportation

(c) First-aid (the standard course as approved by the American Red Cross)

(d) Driver responsibility to the child and to the school

(e) Completion of records and reports

(f) Post-trip vehicle condition reports

(2) Behind-the-wheel Instruction

This instruction should be conducted in the type of vehicle the applicant will drive and should cover at least:

(a) Pre-trip inspection procedures

(b) Care and maintenance of the school bus

(c) Smooth starting, stopping and turning

(d) Proper use of signals

(e) Proper use of the clutch

(f) Emergency evacuation drills

(g) Defensive driving techniques

(3) Pre-service instruction should be at least 40 hours for applicants who have never driven heavy equipment. All other driver applicants should be required to demonstrate knowledge and skill in the above areas. All applicants should have supervised instruction behind-the-wheel first with the bus empty and then with children aboard. Length of instruction to be commensurate with ability. Reference is made to the research entitled The Selection and Training of School Bus Drivers, as an excellent guideline.

b. In-Service Training

The Standard requires that persons whose primary duties involve the transportation of school pupils attain a high degree of competence and knowledge of their duties. Because of the constantly changing conditions all bus drivers should have periodic retraining.

c. In-service training should be devoted to improving skills, attitude and knowledge based on the driver's experience. In-service classes may be held at any time convenient to drivers and instructor(s). Content can de designed around drivers' problems and local school conditions and regulations. Special problems created by railroad crossings, blind intersections, interstate highways, pupil behavior, and skill improvement should be the basis for content.

d. At least 8 hours of in-service training should be provided each school year. The Selection and Training of School Bus Drivers mentioned above is recommended as an excellent guideline for course content.

7. LICENSING THE SCHOOL BUS DRIVER

Driving privileges cannot be extended to those who are physically, mentally or emotionally UNABLE to drive. The safety of the public in the use of its streets and highways must be protected. It is recommended that the State agency with primary responsibility for pupil transportation cooperate with the state licensing agency to establish the requirements for a school bus driver's license. Every effort should be made to see that the school bus driver applicant:

a. Holds only one license which identifies the type(s) of vehicle(s) he is authorized to drive.

b. Passes an examination demonstrating his ability to operate the class(es) of vehicle(s) for which he is licensed.

c. Meets those special requirements established by the Bureau of Motor Carrier Safety if he is to operate a bus in interstate or foreign commerce subject to the Bureau's regulatory jurisdiction.

d. Meets the special requirements established by the State education agency including but not limited to:

(1) Health
(2) Emotional stability
(3) Driving record
(4) Criminal record

e. The manual entitled Standards for School Bus Operation, Recommendations of the National Conference on School Transportation, May 1970 provides guidelines for those State agencies involved. A sample physical examination form may be found therein, also forms for the driver application and the driving record. The criminal record check will require that fingerprints be taken.

8. PUPIL INSTRUCTION

a. Pupils who are knowledgeable about the rules for bus riders are more easily held accountable for their behavior and reduce the need for adult or student monitors. Good student behavior permits the school bus driver to give all his attention to the driving task. Students whose behavior threatens the safety of all aboard should be denied transportation until their behavior becomes acceptable.

b. Instruction should include but not be limited to the following:

(1) Identification of the individual who has authority over the passengers

(2) Loading procedures and seat assignments

(3) Acceptable practices with respect to talking, moving around the bus and use of windows

(4) Bus cleanliness

(5) Taking care of the bus and its equipment

(6) Emergency procedures

c. One emergency evacuation drill should be held during the first week of school each semester. If unexpected problems develop, a make-up drill should be scheduled as soon as possible. The following guidelines are given for conducting the emergency evacuation drills:

(1) Be sure there is a written policy covering these drills.

(2) Permission to hold drills should be given by school authorities well in advance.

(3) Initial practice drills should be held on school grounds, during school hours, in a safe place and under supervision.

(4) Allow for individual differences in jumping out the emergency door. Instruct helpers to offer a helping hand palm up and avoid grasping a child's hand or arm. Children will hold on if they want help.

(5) Time each drill.

(6) Additional guidelines may be found in A School Bus Driver's Manual produced by Eastern Michigan University, Ypsilanti, Michigan 48197

9. VEHICLE OPERATION

a. School buses and motorists are involved in extensive interstate travel. Because the State permits the school bus to control traffic, every effort must be made to be sure that school buses are clearly and uniformly identified and that the requirements are clear and uniform upon the motorist as to what to do around a loading or unloading school bus.

b. It is intended that the loading and unloading function of the school bus present as little disruption in traffic as possible by performing this function off the main travelled portion of the highway if possible and by controlling traffic only when and where necessary. It will be noted that the Standard does not require the use of the warning lights every time the bus stops to load and unload (IV.C.3.b.) It should also be noted that the uniform signal for stopping traffic is the flashing red warning lights on a stopped school bus. The red warning lights are not to be activated until after the school bus has stopped. If a pre-warning is necessary, the flashing amber should be used, or the bus driver may pump his brake pedal, or the emergency warning lights may be activated.

c. The red warning lights are not to be used to assist the school bus driver in making left turns, at railroad crossings or during periods when the bus is stopped because the driver must discipline some of the bus passengers.

d. The assistance of a traffic engineer in route design and identification of streets on which the school bus should control traffic is recommended.

e. Many States find the ''Stop Arm'' a distinct advantage in controlling traffic. It is intended that this supplemental warning device not take the place of the flashing red warning lights, therefore, it shall swing into position only during the time the red flashing lights are activated and retract when the red warning lights are deactivated.

f. The following may help alleviate the potential standee problem:

(1) Use multiple tripping

(2) Stagger starting and release time from school

(3) Reduce the number of ineligible riders

(4) Increase walking distance to reduce the number of riders

(5) Buy more buses

10. VEHICLE MAINTENANCE

a. Preventive maintenance is necessary to minimize vehicle breakdown enroute and the possibility of part failure that could lead to a crash. Maintaining the school vehicle in safe operating condition is a job for the professional mechanic. A systematic preventive maintenance program shall be set up on any basis that will assure that each vehicle will operate reliably and perform safely. This may be done on a time or mileage basis or on a combination of both time and miles.

b. Accurate records are important. If there are no records, begin immediately to set up at least a simple folder for each vehicle. Guidance is available from chassis and bus body manufacturers, from oil companies and from local school bus dealers.

c. The school bus driver's pre-trip inspection should cover at least the following:

(1) Windshield and wipers

(2) Engine compartment — Wiring
Battery — Oil level
Belts — Radiator

(3) All outside lights

(4) Exhaust system and a check for any pools of oil or water under bus

(5) Tires and wheels

(6) Emergency door and buzzer and service door

(7) Mirrors

(8) All gauges

(9) All emergency equipment
First-aid kit Chains
Fire extinguisher Axe
Fuses and flares

(10) All glass

(11) Seats

(12) Brakes

(13) Stop arm

(14) All interior lights

(15) Cleanliness of the bus

(16) Security of fuel filler cap

d. If a defect is discovered it should be corrected before the bus transports children. If the defect cannot be corrected immediately written approval should be given by a competent mechanic or the fleet supervisor that the defect would not create a hazard for the children to be transported.

e. A written report should be made at the completion of each trip or tour of duty with respect to any deficiency, malfunction or questionable performance of any of the items listed in section ''c'' above.

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Chapter V PROGRAM EVALUATION	February 1973

1. INTRODUCTION

a. A periodic evaluation of program objectives relative to established individual State plans and Highway Safety Program Standard 17 requirements is essential to program effectiveness.

b. Quantitative and qualitative measures relative to the reduction of school bus accidents and pupil injuries must be carefully analyzed in any evaluative procedure.

c. Each State plan should incorporate those features considered conducive to providing a maximum level of safety for the transported child.

d. The quantitative evaluation should include a report of crash frequency, injury and property damage.

e. Research data needed to assure continued improvement in program services should be identified and then collected on a periodic basis.

2. PURPOSE OF EVALUATION

a. Evaluation of school vehicle safety programs will provide a basis for improved transportation safety. Benefits from these evaluations are:

(1) The identification of existing program deficiencies will facilitate improvements in planning at the State and local levels.

(2) The application of knowledge relative to the strengths and weaknesses in present programs of service will provide for the most effective utilization of available funds.

(3) Implementation of research procedures can be initiated in areas of greatest need at both State and local levels.

3. EVALUATION OBJECTIVES

The evaluation of program services should be conducted on an objective basis and should include:

a. Continuity in the evaluation of program services.

b. Early identification of program deficiencies.

c. Implementation of corrective procedures for maximum safety and program efficiency.

d. Collection of relevant data for essential aspects of program service.

4. EVALUATION PLANNING

Adequate planning, prior to the implementation of the Pupil Transportation Safety Standard, is essential to the completion of a comprehensive evaluation of the overall program. The planning procedure should emphasize:

a. The establishment of essential short and long range goals, with provisions for periodic evaluations of progress along predetermined time schedules proposed at the time of implementation.

b. A series of definitive procedural steps, supplemented with a compilation of pertinent data and acceptable measuring techniques.

c. The correlation of pre-implementation data with current data collected for evaluation purposes.

d. The preparation of an implementation schedule that would expedite compliance with the Pupil Transportation Safety Standard.

e. The formulation of concise, yet comprehensive, procedures to be utilized in the evaluative process.

5. EVALUATION PROCEDURE

Definitive quantitative measures should be devised, perfected, and adopted to facilitate a reduction in the frequency and severity of school vehicle crashes and pupil injuries. Consequently, the evaluation of pupil transportation service should be conducted in accordance with the following types of criteria.

a. Essential Criteria:

(1) Written policies have been adopted by the board of education to govern the pupil transportation program.

(2) The program is administered by a transportation supervisor who meets or exceeds employment requirements recommended by the State Department of Education.

(3) Physical examinations are required of all driver personnel.

(4) Pupil transportation equipment is replaced on a systematic scheduled basis.

(5) Pupil loads do not exceed the available seating capacity of the transporting unit.

(6) The curriculum is supplemented with instruction in pupil safety for all transported pupils.

(7) A map of all school bus routes, complete with school centers and supporting zones (where applicable), is maintained on a current basis.

(8) Transportation equipment is repaired and maintained under provisions of a preventive maintenance program.

b. Flexible Criteria:

The following criteria should be appraised and scored (1 through 3) in the following manner with special emphasis devoted to the degree of quality and/or quantity evidenced within the program of service. The final score may be used as a benchmark. Each year of program operation should show an improved score.

3 Superior
2 Adequate
1 Inadequate
N Does not apply

ADMINISTRATION

( ) 1. Pupil transportation is recognized as an integral part of the education program.

( ) 2. Written policies have been adopted by the board of education to govern the program of transportation service.

( ) 3. Board policies and decisions are a matter of school board record.

( ) 4. Pupils are provided with written and oral instruction describing safe riding practices at periodic intervals during the school year.

( ) 5. Definitive job descriptions have been provided for all program personnel.

( ) 6. Emergency evacuation drills are required of all transported pupils.

( ) 7. Program services are provided in accordance with State laws and State Department of Education rules and regulations.

( ) 8. Properly designated and supervised school bus loading zones are provided at all affected school centers.

( ) 9. Insurance coverage equivalent to, or in excess of, State minimum requirements is provided.

( ) 10. Bus routes are planned to improve program efficiency, operational economy and pupil safety on a system-wide basis.

( ) 11. Seating accommodations are provided for all transported pupils.

( ) 12. Pickup and discharge points are located off the main traveled portion of the highway when reentry into the normal flow of traffic does not constitute a greater hazard.

( ) 13. Routes are designed to restrict normal time in transit to a maximum of one hour for Jr. and Sr. High students and 45 minutes for Elementary students.

( ) 14. Definite time schedules are observed on all established routes.

( ) 15. Bus stops, located to minimize the possibility of crashes en-route, are permitted at 600 feet minimums in urban type patterns of traffic.

( ) 16. Pupils are loaded and discharged only at predetermined stops along the route.

[ ] Administration total score.

PROGRAM PERSONNEL

Administrative:

( ) 17. The supervisor, or director of transportation, is employed on a full-time basis and is directly accountable to the super-intendent of schools for implementation of the school board's program of transportation service.

( ) 18. The supervisor, or director of transportation, maintains close cooperation with drivers and maintenance personnel.

( ) 19. Satisfactory job performance is rewarded with tenure or favor-able job security.

( ) 20. A continual effort is made to improve professional competencies through attendance and participation in professional meetings.

( ) 21. Prior experience in pupil transportation or school administration is a prerequisite for employment.

[ ] Administrative Personnel total score.

Driver:

( ) 22. All regular and substitute driver personnel possess a valid license issued by the State licensing agency(ies).

( ) 23. A minimum of one complete physical examination is required of all driver personnel annually.

( ) 24. Driver training programs, developed and sponsored by the State Department of Education, are mandatory for all school bus driver personnel.

( ) 25. Minimum and maximum age limits for driver personnel are established for employment purposes.

( ) 26. Drivers are employed annually under the provisions of a written contract.

( ) 27. Driver personnel are required to complete a written report on all school bus crashes regardless of the severity of damage.

( ) 28. Drivers meet all special requirements established by the State Department of Education and other appropriate State agencies.

( ) 29. All drivers have completed a basic course in First-Aid.

( ) 30. Drivers assume positions at the door entrance to assist teachers in the loading of pupils.

[ ] Driver Personnel total score.

Maintenance:

( ) 31. The maintenance staff is employed on the basis of a 1:15 (or less) mechanic/vehicle ratio.

( ) 32. Mechanics are required to attend a State-approved training session on an annual basis.

( ) 33. Previous experience is required as a condition of employment.

( ) 34. Employment is provided on a 12 months calendar year basis.

( ) 35. Regular mechanics perform maintenance duties on a full-time basis.

( ) 36. Responsibility for the maintenance of equipment is assigned to the shop foreman.

[ ] Maintenance Personnel total score.

[ ] Program Personnel total score.

PUPIL TRANSPORTATION EQUIPMENT

( ) 37. All buses either equal or exceed the minimum standards for school buses as recommended by the National Conference on School Transportation (see appendix).

( ) 38. Buses are inspected at least semi-annually by State agency personnel and more frequently by personnel within the local education agency.

( ) 39. Buses are equipped with flashing red warning lights in combinations of four or eight as specified in Motor Vehicle Safety Standard No. 108.

( ) 40. Vehicles utilized for transportation purposes are registered in accordance with Highway Safety Program Standard No. 2.

( ) 41. The number of pupils assigned to ride a bus is determined by the seating capacity of the bus.

[ ] Pupil Transportation Equipment total score.

MAINTENANCE PROGRAM

( ) 42. The repair facility is adequate to provide for the maintenance of all transportation equipment.

( ) 43. Buses are inspected for possible mechanical deficiencies on a regularly scheduled basis.

( ) 44. Records of mechanical repairs are maintained for each vehicle within the school bus fleet.

( ) 45. A current inventory of parts and supplies is maintained.

( ) 46. A written record is maintained on all repairs conducted on individual units

( ) 47. The repair facility includes special provisions for the painting of vehicles.

( ) 48. Telephone service is provided at the repair facility.

[ ] Maintenance Program total score.

[ ] GRAND TOTAL SCORE

Total number of questions (48) minus (-) number of inapplicable questions (N)

The resulting answer, expressed as a quotient, can serve as a benchmark against which program progress in succeeding years can be evaluated.

c. Research Techniques

(1) Information studies should be initiated to provide local school officials with data essential to the reduction or elimination of program deficiencies.

(2) Studies or research areas to be considered should focus attention upon those aspects of accident involvement that were considered contributory in nature and provide suggested corrective measures to prevent their recurrence.

(3) Data collection procedures including type, content of data, and frequency of collection, should be constantly revised to avoid inadequate collection procedures and the accumulation of irrelevant data on reported accidents.

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

HIGHWAY SAFETY PROGRAM MANUAL

Volume 17 PUPIL TRANSPORTATION SAFETY	**Transmittal** 34
Chapter VI REPORTS	February 1973

1. INTRODUCTION

Effective program management requires that State program administrators be kept informed of the various activities carried on by the local school districts, contractors and others operating school buses.

2. OPERATIONAL REPORTS

a. Records of successful completion of bus driver training courses should be available from public schools, contractors and others engaged in transporting children to and from school.

b. Records of pre-service and in-service training should be kept.

c. Records of training programs for other pupil transportation personnel such as school bus mechanics, and fleet supervisors should be kept.

d. The following suggested Pupil Transportation Safety Program Report can serve as a guide for the State Administrator in evaluating the State program and developing a reporting form for all public, private and parochial fleets of school vehicles.

PUPIL TRANSPORTATION SAFETY PROGRAM REPORT	SCHOOL DISTRICT	REPORTING PERIOD

PROGRAM ADMINISTRATION	YES	NO
1. Does the State have an official Pupil Transportation Safety Program?		
2. Name of State agency responsible for program		
3. Name and title of State official in charge of program		
4. Has the State issued written policies or regulations on pupil transportation?		
5. Does the State have established qualifications for school bus operators?		
6. Are school pupil transportation programs reviewed annually?		
If yes, are they approved and disapproved by the State?		
7. Have plans and guidelines been published for safe school routing?		
8. Is advisory service provided to help contract operators meet minimum requirements?		
9. Have requirements for Type II vehicle operation been published?		

LEGISLATION		
10. Indicate whether motorists are required to stop for stopped school buses in the following situations?		
a. Traffic Conditions:		
(1) Following traffic - divided highway		
(2) Approach traffic - divided highway		
(3) Following and approaching traffic - non-divided highway		
b. Warning Signal Conditions:		
(1) Red flashing lights only		
(2) Stop arm only		
(3) Red flashing lights and stop arm in combination		
(4) Red flashing following amber flashing lights (8-light system)		

EQUIPMENT				
11. Are the following equipment requirements applicable to school buses in your State?	TYPE I		TYPE II	
	YES	NO	YES	NO
a. Stop arms				
b. Words SCHOOL BUS with 8" letters front and rear				
c. Proper painting				
d. 8-light warning system				
e. 4-light warning system				
f. Required mirrors				
g. Seat belts for drivers				
h. Lap belts for pupil passengers				

TRAINING		
12. Total number of school bus drivers licensed and driving		
13. Total number of school bus drivers trained during current year		
14. Percent of drivers trained during current year:		
a. Pre-Service		%
b. In-Service		%
15. Number of drivers trained by hours during current year:		
a. 20+ hours Pre-Service		
b. 12+ hours In-Service		
c. Other Pre-Service		
d. Other In-Service		
16. Have pupils been instructed at least twice during current year in safe riding and evacuation?	YES	NO
17. Is advisory service provided to teachers colleges for development and improvement of training programs in pupil transportation safety?		

OPERATIONS	
18. Average number of standees on daily basis:	
a. To school	
b. From school	

OPERATIONS (Continued)	YES	NO
19. Are buses inspected at least twice yearly?		
20. Are drivers pre-trip vehicle safety inspections conducted daily?		
a. If yes, average number of defects or deficiencies reported monthly		
21. Is pupil transportation data centrally collected or available in the following categories? a. Drivers (By sex and age)		
b. Vehicles (Number, capacity, ownership, conventional and transit)		
c. Accidents (Number, type and severity)		
d. Driver education (Type, length and number)		
22. Number of non-public schools transporting pupils		

23. Comments

24. SIGNATURE OF RESPONSIBLE OFFICIAL	25. TYPED NAME AND TITLE	26. DATE

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

HIGHWAY SAFETY PROGRAM MANUAL

Volume 17 PUPIL TRANSPORTATION SAFETY	Transmittal 34
Chapter VII LOCAL GOVERNMENT PARTICIPATION	February 1973

1. INTRODUCTION

Interest, cooperation and active participation of local government agencies and other organizations and individuals at the local level are essential in meeting the goals of the State Pupil Transportation Safety Program. Local school districts play a decisive role in the development, implementation and conduct of the Statewide program. When it is evident that local agencies are unable to perform a necessary function, they should look to the county or State organizations for assistance.

2. LOCAL AGENCIES INVOLVED

The following local public agencies should be considered to have an interest or responsibility for developing and managing a pupil transportation safety program.

a. Community and county school boards and their immediate staffs

b. Public safety and enforcement agencies

c. Community and county highway departments

d. Health authorities

3. DESCRIPTION OF ACTIVITIES

a. School boards and their staff

(1) Prepare written policies on pupil transportation in line with the general policies prepared by the State.

(2) See that pupil transportation staff participate in the educational programs prescribed by the State.

(3) Keep such records and make such reports as are required under the State program.

(4) See that all equipment is purchased and maintained according to the State and Federal regulations.

(5) See that all school bus drivers are selected and trained in accordance with State guidelines.

(6) Conduct such educational programs as will assure all transported pupils the highest degree of safety while they are in or around the school bus.

b. Safety and enforcement agencies

(1) Participate in educational programs for the pupil transportation staff.

(2) Assist pupil transportation staff in the establishment of safe school bus routes and loading areas.

c. Highway departments

(1) Assist schools in the establishment of safe school bus routes and loading areas.

(2) Work closely with the local director of pupil transportation on route safety problems that occur because of road repair or construction and roadside maintenance.

(3) Periodically check the condition of bridges used by school buses.

d. Health authorities

(1) Participate in educational programs for school bus drivers.

(2) Work closely with local transportation director in checking the health and physical condition of all transportation staff who come in contact with transported children.

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

HIGHWAY SAFETY PROGRAM MANUAL

Volume 17 PUPIL TRANSPORTATION SAFETY	**Transmittal** 34
Chapter VIII FUNDING CRITERIA FOR 402 PUPIL TRANSPORTATION SAFETY PROJECTS	February 1973

Par. 1. Introduction
2. Administration
3. Equipment
4. Pupil Instruction
5. Operating Costs
6. Maintenance Costs
7. Inspections

1. INTRODUCTION

These criteria will be used by NHTSA personnel in approving State Annual Work Programs and specifically pupil transportation safety sub-element plans.

2. ADMINISTRATION

a. Staff Costs - To provide proper administration, supervision, and coordination of a Statewide pupil transportation safety program, there should be an adequate staff of qualified personnel to plan, develop, research and operate the program. These personnel along with their clerical support are fundable.

b. Training Costs - Costs for the development and operation of educational and training programs for school bus drivers, school bus mechanics, fleet supervisors and administrators directly responsible for fleet operation are fundable when they are in accordance with Order NHTSA 462-10/FHWA 7-8, ''Use of Section 402 Funds for Training'', August 7, 1972.

c. Systems Design and Development - Costs for design and development of data collection and reporting of such information as that identified in Chapters V and VI of this manual are fundable. Costs for special projects involving EDP applications to pupil transportation safety functions are fundable. Computer hardware is not fundable.

d. Evaluation - Costs for design, development and data collection for the annual evaluation of the State program in pupil transportation safety are fundable. Computer hardware is not fundable.

3. EQUIPMENT

a. Purchase costs for Type I and Type II school vehicles whether or not identified as school buses are not fundable.

b. Retrofitting of school vehicles to bring them into compliance with the Standard is fundable on a one-time basis for the following items: repainting, addition of mirror systems to give the seated school bus driver a view of the road area immediately in front of the vehicle, lighting systems that meet the Federal Motor Vehicle Safety Standard requirement.

c. Add-on optional items of equipment such as special types of bumpers, road stabilizers, paging systems, radios, two-way radios or special signalling or warning devices are not fundable.

d. Repainting and equipment removal when the school bus is being converted for purposes other than the transportation of pupils to and from school is not fundable.

4. PUPIL INSTRUCTION

a. Instructional supplies and materials directly related to safe school bus riding practices are fundable.

b. Staff costs for instructing pupils in safe riding practices and emergency evacuation drills are fundable.

5. OPERATING COSTS - Costs for operating Type I and II school vehicles are not fundable.

6. MAINTENANCE COSTS - Costs for maintenance of Type I and II school vehicles are not fundable.

7. INSPECTIONS - Costs for the semi-annual inspections are fundable. Regular maintenance checks and any additional inspections are not fundable.

APPENDIX A

HIGHWAY SAFETY PROGRAM STANDARD NO. 17

Pupil Transportation Safety

I. *Scope.* This standard establishes minimum requirements for a State highway safety program for pupil transportation safety; including the identification, operation, and maintenance of schoolbuses; training of personnel; and administration.

II. *Purpose.* The purpose of this standard is to reduce, to the greatest extent possible, the danger of death or injury to schoolchildren while they are being transported to and from school.

III. *Definitions.* "Type I school vehicle" means any motor vehicle with motive power, except a trailer, used to carry more than 16 pupils to and from school. This definition includes vehicles that are at any time used to carry schoolchildren and school personnel exclusively, and does not include vehicles that only carry schoolchildren along with other passengers as part of the operations of a common carrier.

"Type II school vehicle" means any motor vehicle used to carry 16 or less pupils to or from school. This does not include private motor vehicles used to carry members of the owner's household.

IV. *Requirements.* Each State, in cooperation with its school districts and its political subdivisions, shall have a comprehensive pupil transportation safety program to assure that school vehicles are operated and maintained so as to achieve the highest possible level of safety.

A. *Administration.* 1. There shall be a single State agency having primary administrative responsibility for pupil transportation, and employing at least one full-time professional to carry out its responsibilities for pupil transportation.

2. The responsible State agency shall develop an operating system for collecting and reporting information needed to improve the safety of school vehicle operations, in accordance with Safety Program Standard No. 10, "Traffic Records," § 204.4.

B. *Identification and equipment of school vehicles.* Each State shall establish and maintain compliance with the following requirements for identification and equipment of school vehicles. The use of stop arms is at the option of the State.

1. Type I school vehicles shall:

a. Be identified with the words, "School Bus," printed in letters not less than 8 inches high, located between the warning signal lamps as high as possible without impairing visibility of the lettering from both front and rear, and have no other lettering on the front or rear of the vehicle;

b. Be painted National School Bus Glossy Yellow, in accordance with the colorimetric specification of Federal Standard No. 595a, Color 13432, except that the hood shall be either that color or lusterless black, matching Federal Standard No. 595a, Color 37038;

c. Have bumpers of glossy black, matching Federal Standard No. 595a, Color 17038; unless, for increased night visibility, they are covered with a retroflective material.

d. Be equipped with a system of signal lamps that conforms to the schoolbus requirements of Federal Motor Vehicle Safety Standard 108, 49 CFR 571.21; and

e. Have a system of mirrors that will give the seated driver a view of the roadway to each side of the bus, and of the area immediately in front of the front bumper, in accordance with the following procedure:

When a rod, 30 inches long, is placed upright on the ground at any point along a traverse line 1 foot forward of the forwardmost point of a schoolbus, and extending the width of the bus, at least 7½ inches of the length of the rod shall be visible to the driver, either by direct view or by means of an indirect visibility system.

2. Any school vehicle meeting the identification requirements of 1.a-d above that is permanently converted for use wholly for purposes other than transporting pupils to or from school shall be painted a color other than National School Bus Glossy Yellow, and shall have the stop arms, and equipment required by section IV.B.1.d, removed.

3. Type I school vehicles being operated on a public highway and transporting primarily passengers other than school pupils shall have the words, "School Bus," covered, removed, or otherwise concealed, and the stop arms and equipment required by section IV.B.1.d shall not be operable through the usual controls.

4. a. Type II school vehicles shall either:

(1) Comply with all the requirements for Type I school vehicles; or

(2) Be of a color other than National School Bus Glossy Yellow, have none of the equipment specified in IV.B.1.d, and not have the words,

"School Bus," in any location on the exterior of the vehicle, or in any interior location visible to a motorist.

b. The State shall establish conditions under which one or the other of the above two specifications for Type II vehicles shall apply.

C. *Operation.* Each State shall establish and maintain compliance with the following requirements for operating school vehicles:

1. *Personnel.* a. Each State shall develop a plan for selecting, training, and supervising persons whose primary duties involve transporting school pupils, in order to assure that such persons will attain a high degree of competence in, and knowledge of, their duties.

b. Every person who drives a Type I or Type II school vehicle occupied by school pupils shall, as a minimum:

(1) Have a valid State driver's license to operate such a vehicle(s);

(2) Meet all special physical, mental, and moral requirements established by the State agency having primary responsibility for pupil transportation; and

(3) Be qualified as a driver under the Motor Carrier Safety Regulations of the Federal Highway Administration 49 CFR 391, if he or his employer is subject to those regulations.

2. *Pupil instruction.* At least twice during each school year, each pupil who is transported in a school vehicle shall be instructed in safe riding practices, and participate in emergency evacuation drills.

3. *Vehicle operation.* a. Each State shall develop plans for minimizing highway use hazards to school vehicle occupants, other highway users, pedestrians, and property, including but not limited to:

(1) Careful planning and annual review of routes for safety hazards;

(2) Planning routes to assure maximum use of buses, and avoid standees;

(3) Providing loading and unloading zones off the main traveled part of highways, wherever it is practicable to do so;

(4) Establishing restricted loading and unloading areas for schoolbuses at, or near schools;

(5) Requiring the driver of a vehicle meeting or overtaking a schoolbus that is stopped on a highway to take on or discharge pupils, and on which the red warning signals specified in IV.B.1.d are in operation, to stop his vehicle before it reaches the schoolbus and not proceed until the warning signals are deactivated; and

(6) Prohibiting, by legislation or regulation, operation of any vehicle displaying the words, "School Bus," unless it meets the equipment and identification requirements of this standard.

b. Use of flashing warning signal lamps while loading or unloading pupils shall be at the option of the State. Use of red warning signal lamps for any other purpose, and at any time other than when the school vehicle is stopped to load or discharge passengers shall be prohibited.

c. When vehicles are equipped with stop arms, such devices shall be operated only in conjunction with red signal lamps.

d. *Seating.* (1) Seating shall be provided that will permit each occupant to sit in a seat in a plan view lateral location, intended by the manufacturers to provide seating accommodation for a person at least as large as a 5th percentile adult female, as defined in 49 CFR 571.3.

(2) Bus routing and seating plans shall be coordinated so as to eliminate standees when a school vehicle is in motion.

(3) There shall be no auxiliary seating accommodations such as temporary or folding jump seats in school vehicles.

(4) Drivers of school vehicles equipped with lap belts shall be required to wear them whenever the vehicle is in motion.

(5) Passengers in Type II school vehicles equipped with lap belts shall be required to wear them whenever the vehicle is in motion.

D. *Vehicle maintenance.* Each State shall establish and maintain compliance with the following requirements for vehicle maintenance:

1. School vehicles shall be maintained in safe operating conditions through a systematic preventive maintenance program.

2. All school vehicles shall be inspected at least semiannually, in accordance with Highway Safety Program Manual Vol. 1, published by the Department of Transportation January 1969. School vehicles subject to the Motor Carrier Safety Regulations of the Federal Highway Administration shall be inspected and maintained in accordance with those regulations (49 CFR Parts 393 and 396).

3. School vehicle drivers shall be required to perform daily pretrip inspections of their vehicles, and to report promptly and in writing any defects or deficiencies discovered that may affect the safety of the vehicle's operation or result in its mechanical breakdown. Pretrip inspection and condition reports for school vehicles subject to the Motor Carrier Safety Regulations of the Federal Highway Administration shall be performed in accordance with those regulations (49 CFR 392.7, 392.8, and 396.7).

V. *Program evaluation.* The pupil transportation safety program shall be evaluated at least annually by the State agency having primary administrative responsibility for pupil transportation. The National Highway Traffic Safety Administration shall be furnished a summary of each evaluation.

APPENDIX B

GLOSSARY OF DEFINITIONS

This glossary defines those terms whose meanings may be unclear in the context in which they are used. These definitions are meant to apply only to the usage of these terms in this volume.

Behind-the-Wheel Instruction - An extension of classroom instruction which provides drivers with supervised learning experiences while operating a motor vehicle.

Classroom Instruction - A supplemental educational program to that which takes place behind the wheel of the school bus.

Emergency Evacuation Drill - A program of instruction which involves pupil and/or adult passengers leaving the school bus via the designated emergency exits under timed conditions.

Political Sub-Divisions - State recognized administrative units having highway safety responsibilities below the State level and responsive to an electorate residing within a defined geographic area of the State.

School bus is a Type I or Type II school vehicle (as defined in Appendix A) meeting the identification and equipment requirements of Highway Safety Program Standard 17.

APPENDIX C

The following is a selected list of references which may be helpful in implementing the programs specified in this volume. This is not meant to be a bibliography of all the documents available in this field.

Federal Motor Vehicle Safety Standards, 101, 102, 103, 104, 107, 108, 112, 113, 116, 121, 124, 205, 207, 208, 209, 210, 217, 302, National Highway Traffic Safety Administration, Washington, D. C. 20590

Highway Safety Program Standards, Nos. 1, 4, 5, 6, 10, 11, 14, 18. National Highway Traffic Safety Administration, Washington, D. C. 20590

Inadequate Structural Assembly of School Bus Bodies, National Transportation Safety Board, Report #NHTSB-HSS-70-2, July 29, 1970, 800 Independence Avenue, S. W., Washington, D. C. 20590

Minimum Standards for School Buses, 1970 Revised Edition, Recommendations of the National Conference on School Transportation, May 1970. Available from State of Florida, Department of Education, Bureau of Curriculum and Instruction, Publications and Textbook Services, Tallahassee, Florida 32304.

Motor Carrier Safety Regulations, Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402 Price 65 cents. (Sections 391, 392.7, 392.8, 393, 396, 396.7.)

Pupil Transportation, Featherston and Culp, Harper and Row, New York, N. Y. 1965.

A School Bus Driver's Manual, Revised edition, 1967. Homer A. Earl, editor. Available from Coordinator, Michigan School Bus Driver Education Program, Eastern Michigan University, Ypsilanti, Michigan 48197.

School Bus Inspection and Maintenance Guide, General Motors Corp., 3044 West Grand Boulevard, Detroit, Michigan 48202.

School Bus Passenger Protection, Derwyn Servey, H. M. Brink, and J. D. Baird, ITTE-UCLA. Completed in 1966. Report made January 9, 1967. Available from Society of Automotive Engineers, Inc., 485 Lexington Avenue, New York, N. Y. 10017. Report No. 670040.

School Bus Safety - Age in Relation to School Bus Operators, Dunlap and Associates, Inc. (PB 189-677). FH 11-6933. National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151.

The Selection and Training of School Bus Drivers, FH 11-7339, Human Resources Research Organization, National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151,

Standards for School Bus Operation, Recommendations of the National Conference on School Transportation, May 1970. Available from the State of Florida, Department of Education, Bureau of Curriculum and Instruction, Publications and Textbook Services, Tallahassee, Florida 32304.

Study of Bus Side Windows, FH 11-6888, All American Engineering Company, Wilmington, Delaware 19899. (PB 195-231), National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151.

Study of School Bus Safety, FH 11-6525, National Education Association (PB 177-905) National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151.

A Study of the Availability and Nature of Information on School Bus Accidents Recorded at the Local Level, prepared for the Office of Education, U. S. Department of Health, Education and Welfare, Washington, D. C. 20202 by Maryland State Department of Education, Baltimore, Maryland 21201. Available from Committee on Education and Labor, House of Representatives, Washington, D. C. Request ''SCHOOL BUS SAFETY REPORT,'' August, 1969.

APPENDIX D

REPRESENTATIVE PROJECTS

There are many approaches possible to achieve greater safety in pupil transportation. The following projects are intended to illustrate specific program activities that would materially assist in achieving the purpose of the Standard.

1. School bus driver education at local and/or State level. Programs may be of two types, pre-service and in-service.

2. In-service training for school bus mechanics. These may be special courses conducted by industry or workshops conducted on a regional or Statewide basis.

3. In-service training for fleet supervisors conducted on a Statewide basis.

4. Special projects for State level personnel covering review and approval of programs conducted by non-public schools.

5. Curriculum development.

6. Development of instructional materials such as video tapes and programed learning materials.

7. Trouble shooting and road supervision related to high accident areas in the State.

8. Data processing applications as they relate to:

   a. Crash data

   b. Driver records

   c. Route construction and trip scheduling

   d. Equipment maintenance.

APPENDIX E

RESOURCE ORGANIZATIONS

The following organizations are actively studying the highway safety problem and are knowledgeable regarding pupil transportation safety. They are presented here as sources of more detailed and technical information to aid the States in developing and maintaining a viable pupil transportation program.

American National Standards Association
10 East 40th Street
New York, New York 10016

Association of State Directors of Pupil Transportation Services (Address available from State Director of Pupil Transportation)

National Association of School Bus Contract Operators
4616 Lawn Court
Fairfax, Virginia 22030

National Committee on Uniform Traffic Laws and Ordinances
1776 Massachusetts Ave., N.W.
Washington, D. C. 20036

National Safety Council
425 North Michigan Ave
Chicago, Illinois 60611

School Bus Fleet Magazine
1155 Waukegan Road
Glenview, Illinois 60025

U. S. Department of Transportation
Bureau of Motor Carrier Safety
400 7th St., S.W.
Wahsington, D. C.

U. S. Department of Transportation
Federal Highway Administration
400 7th St., S.W.
Washington, D. C. 20590

U. S. Department of Transportation
National Highway Traffic Safety Administration
400 7th St., S.W.
Washington, D.C. 20590