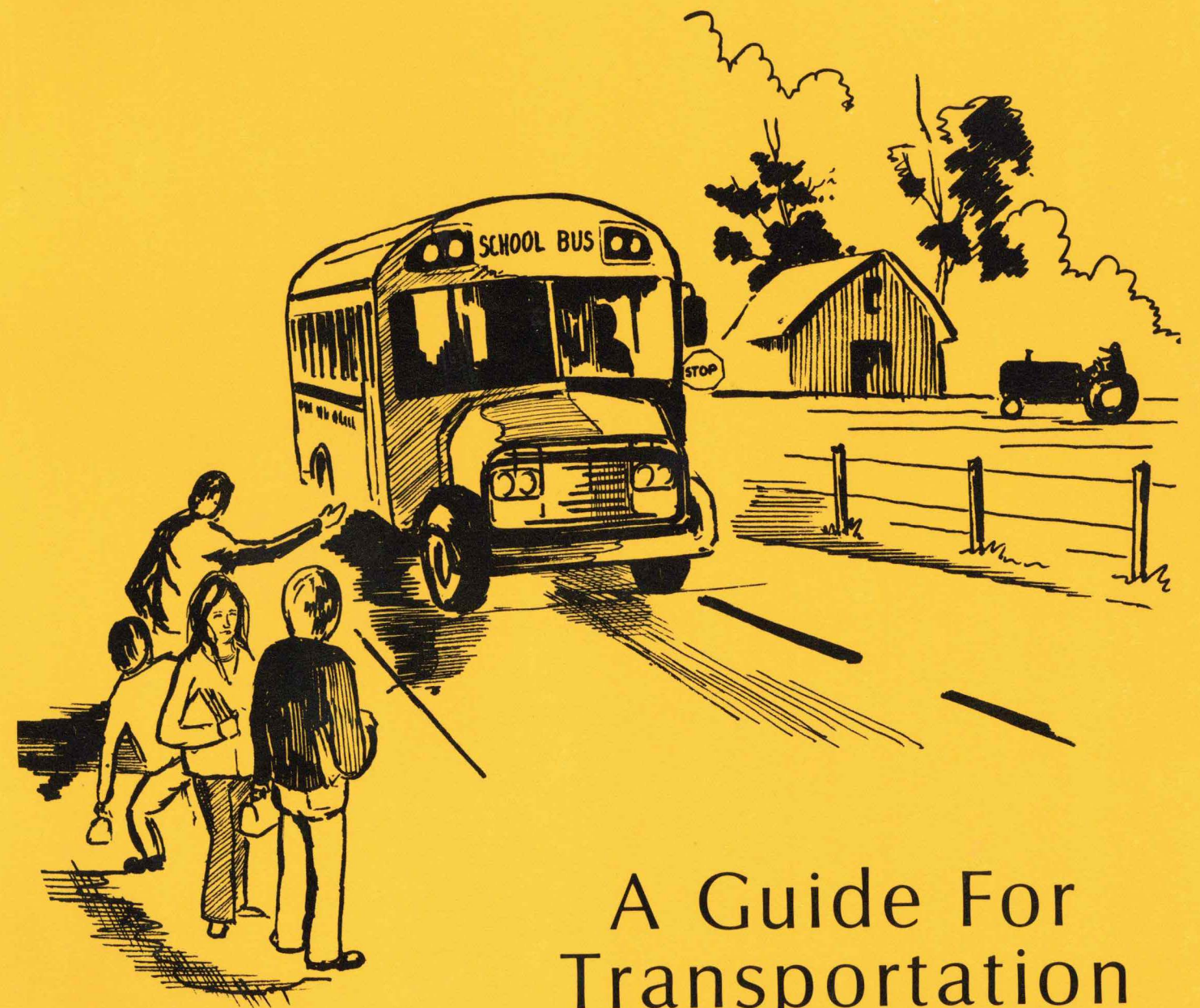


STATE LIBRARY OF IOWA
3 1723 02117 1715

LB
2864
.P87
1975

Pupil Transportation Manual



A Guide For
Transportation
Supervisors
1975

3-568

State of Iowa
1975

PUPIL TRANSPORTATION MANUAL

A GUIDE
FOR
TRANSPORTATION SUPERVISORS

Department of Public Instruction

Published by
THE STATE OF IOWA
Des Moines

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

STATE BOARD OF PUBLIC INSTRUCTION

Muriel I. Shepard, President, Allison
T. J. Heronimus, Vice-President, Grundy Center
Robert J. Beecher, Creston
Jolly Ann Davidson, Clarinda
Ronald P. Hallock, West Des Moines
Virginia Harper, Fort Madison
Robert G. Koons, Clinton
Georgia A. Sievers, Avoca
John E. van der Linden, Sibley

ADMINISTRATION

Robert D. Benton, State Superintendent, and Executive Officer
of the State Board of Public Instruction
David H. Bechtel, Administrative Assistant
Richard N. Smith, Deputy State Superintendent

Administration Branch

L. N. Jensen, Associate Superintendent
Arthur Roberts, Director, Transportation Division
Terry L. Voy, Consultant, Transportation Division

FOREWORD

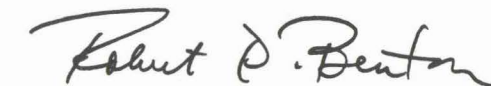
A school district which undertakes the transportation of children to and from school needs to give careful and continuous attention to the many problems involved. As an important facet of the educational program, transportation cannot be neglected without serious consequences resulting.

The purpose of this manual is to serve as a guide for all those who may be involved in the administration or management of pupil transportation in the State of Iowa.

It is especially designed for superintendents and transportation supervisors who are new in the field and have no prior experience in operating a pupil transportation system.

It is hoped the information contained herein will be of assistance to those who have been assigned these responsibilities.

This publication was financed by funds provided by the National Highway Traffic Safety Administration.



ROBERT D. BENTON, Ed. D.
State Superintendent of Public Instruction

TABLE OF CONTENTS

Section	Page
I. ADMINISTRATION	1
State Transportation Policies	2
Functions of the Administrator	5
Duties and Responsibilities of the Transportation Supervisor	6
II. LEGAL REQUIREMENTS	10
Index to Iowa Code Provisions	11
Index to Iowa Departmental Rules	14
Federal Highway Safety Program Standard 17	16
III. INSURANCE AND LIABILITY	23
Types of Insurance	24
School Bus Driver Liability for Pupil Injuries	25
IV. SCHOOL BUS DRIVERS	28
Selection and Training of the School Bus Driver	29
Checking the Bus Driver's Performance	33
School Bus Driver Application Form	37
V. OPERATION	39
Types of Transportation Service	40
Communications	42
Planning Bus Routes	44
Planning School Sites for School Bus Safety	50
Management and Control of Pupil Passengers (Discipline).	55
VI. MAINTENANCE.	60
The School Bus Garage	61
The Maintenance and Inspection Program	65
Record Forms	71
VII. HEALTH AND SAFETY	73
Instruction for School Bus Passenger Safety	74
Emergency Evacuation Drills	75
School Bus Patrols	77
VIII. SPECIAL SERVICES	80
Use of School Buses for Extracurricular Activities	81
Transportation of Handicapped Children	88
IX. PURCHASING	91
Purchasing School Buses (Preparing Bid Specifications).	92
Purchasing Supplies and Equipment (Federal Excise Tax).	110
Procedures for Registration of School Vehicles	111
X. ACCOUNTING AND REPORTING	112
The Accounting System	113
Sample Forms	115
Computing the Pro Rata Cost of Transportation	123
Reports to be Filed with the Transportation Division	126
School Bus Accident Reports	127
Violation of School Bus Stop Law (Sample Letter).	128

Section	Page
XI. EVALUATION OF THE SCHOOL TRANSPORTATION OPERATION	129
Guide for Evaluating the Transportation Program	130
Evaluating the Efficiency and Economy of the Transportation Program	134
APPENDIX	138
Resource Materials	139
Bibliography	140

S
E
C
T
I
O
N

I

ADMINISTRATION



School Transportation Policies
Functions of the Administrator
Duties and Responsibilities of the
Transportation Supervisor

SCHOOL TRANSPORTATION POLICIES

Section 285.10, Code of Iowa, delegates certain powers and duties to the local school boards. One of these specific duties, (285.10(5)), is to "Exercise any and all powers and duties relating to transportation of pupils enjoined upon them by law."

In addition, Section 279.8, Code of Iowa, provides that "The board shall make rules for its own government and that of the directors, officers, teachers, and pupils, and for the care of the schoolhouse, grounds, and property of the school corporation, and aid in the enforcement of the same, and require the performance of duties by said persons imposed by law and the rules."

It will be noted that these legal responsibilities are stated in rather broad terms. Since many questions often arise which are not contained in the statutes, local boards of education need to establish policies within the framework of those established at the state level. Some other reasons for having policy are:

1. Eliminates the need to make a decision in recurring situations.
2. Reduces pressures of special interest groups.
3. Permits consistency in the decisions of the school administrator.
4. Solves many management problems before they happen.
5. Improves board-administration relations and maintains stability of relationships.
6. Raises staff morale through uniform and fair treatment.
7. Provides legal foundation on which to build a program.
8. Gives citizens understanding of objectives and school activity.
9. Enables staff members to better understand their work in relation to total school programs.
10. Differentiates between board "director" and administrative "management".

Policies will vary due to local conditions or situations but there are a few general rules that should be followed. These include:

1. Policies should always be in written form.
2. Policies must be kept up to date with changing conditions and changes in the state law.
3. Policies should be subjected to review and evaluation at periodic intervals by board members, administrators and members of the faculty.
4. The number of policies should be limited. It is not possible to write a policy to cover every situation that might occur.

Written board policies should include the following as a minimum:

1. Specifying the extent of the transportation service to be provided including pupils entitled to transportation by law and the conditions, if any, under which it will be provided to pupils who do not qualify.
2. Describing rules of behavior for all transported pupils including the discipline procedures.
3. Designating the person responsible for the enforcement of such rules of behavior.
4. Describing the transportation insurance program.
5. Outlining the procedures for the use of buses for extra-curricular activities and by other groups permitted by law.
6. Establishing replacement program and the responsibility for writing specifications for the purchase of new buses.
7. Setting standards for the bus maintenance program.
8. Establishing requirements for the employment of transportation personnel including drivers, mechanics and supervisor.

SAMPLE BOARD POLICY

Student Eligibility For Bus Service

Policy No. _____

1. All students living outside the city limits, all other elementary students living more than two miles and all other high school students living more than three miles from their designated attendance center will be provided transportation.
2. A high school student is one who is enrolled in grades 9 through 12.
3. Distance to the attendance center shall be measured on a public highway only and over the most passable and safest route as determined by the Board of Directors, starting in the roadway opposite the private entrance to the residence of the pupil and ending in the roadway opposite the entrance to the school grounds.
4. A student may be required to meet the bus on the approved route a distance up to three-fourths of a mile.

FUNCTIONS OF THE ADMINISTRATOR

Pupil transportation is an integral part of the total school program. The time that children spend on buses is an important influence on their physical, mental and moral well-being. It is important, therefore, that the personal services devoted to transportation be sufficient to assure a safe, efficient and economical program. The standards achieved in pupil transportation will only be as high as the standards of the staff operating the program.

The superintendent or principal who has the administrative responsibility for pupil transportation should have a broad understanding of the program. Specific functions of the administrators include:

1. Implementing state school transportation policy.
2. Becoming involved in the school transportation operation within their jurisdiction. This would include participation in training programs for school transportation supervisors, school bus drivers and maintenance personnel; observing school bus routes by riding the buses; supervising the loading and unloading zones at or near the school; participating in the investigation of school bus accidents and the evaluation of the school transportation operation.
3. Encouraging classroom teachers to become more involved in the transportation program by performing some of the duties identified in paragraph 2 above.
4. Providing resource material and encouraging teachers to include instruction in passenger safety in the school curriculum.
5. Providing for close supervision of the unloading and loading zones at the attendance center and of the emergency evacuation drills.
6. Providing supervision of those students whose bus schedules require them to arrive at school before classes begin or remain after class terminates.
7. Promoting public understanding of, and support for, the local school transportation program.
8. Assisting in the development of local school transportation policies and regulations.

It is desirable to employ a full-time transportation supervisor in districts operating a fleet of sufficient size to warrant such a position. In other districts the functions may be performed by a part-time supervisor, a head bus driver, and/or by the administrator.

DUTIES AND RESPONSIBILITIES OF THE TRANSPORTATION SUPERVISOR

The duties of the supervisor may be grouped under several major categories as illustrated in the following. In some districts the duties may be assigned to more than one person but, in any event, all of the duties listed must be performed by someone to insure a safe, efficient and economical transportation program.

1. DRIVERS

- a. Selecting and approving all new drivers
- b. Improving the quality of drivers by establishing an adequate training program
- c. Keeping drivers informed concerning laws and regulations
- d. Seeing that all drivers have been examined by a physician and declared physically able to drive
- e. Seeing that all drivers are properly licensed according to legal requirements
- f. Providing recognition program for bus driver achievement

2. VEHICLES

- a. Being familiar with all state regulations for equipment and developing such local standards as are necessary
- b. Inspecting all new buses to see that these specifications are met
- c. Seeing that drivers perform pre-trip inspections and that reports of defects are submitted to the maintenance personnel
- d. Establishing preventive maintenance program
- e. Scheduling buses for necessary repair work to keep down time at a minimum
- f. Arranging for scheduling and carrying out two or three bus inspections each year and seeing that necessary repairs are made
- g. Conducting unannounced informal inspections as needed.

3. PUPIL PASSENGERS

- a. Working with principals and teachers in developing and providing an active safety program for the bus riders
- b. Arranging for emergency evacuation drills. (Should be at least two per year)
- c. Developing policies on discipline procedures for the review and consideration for adoption by the administration and the board
- d. Providing restricted loading and unloading zones at school sites.

4. BUS ROUTES
 - a. Arranging bus routes to prevent overloading of buses and keeping riding time within legal limits
 - b. Reviewing routes for possible hazards
 - c. Improving routes by consolidation, re-routing or extension
5. PERSONNEL
 - a. Investigating all job applicants and making recommendations to the superintendent before the applications are considered by the administration and the board
 - b. Conducting safety meetings for drivers and mechanics
 - c. Making recommendations for promotions and pay increases
6. RECORDS
 - a. Developing and maintaining a system of records covering all phases of the transportation system
7. PUBLIC RELATIONS
 - a. Disseminating information to drivers, parents, schools and to the local news media concerning school bus operation
 - b. Investigating all requests and complaints concerning transportation
 - c. Relating the transportation program to lay groups as a representative of the superintendent
 - d. Attending and participating in safety and highway group meetings
 - e. Working cooperatively with local and state police, highway departments, state agencies and all other organizations working to improve safety on the highway
8. PURCHASING
 - a. Developing specifications and writing bid proposals for the purchase of school buses
 - b. Ordering repair parts, equipment and other supplies
 - c. Maintaining a thorough inventory of supplies and repair parts
9. OTHER ADMINISTRATIVE AND SUPERVISORY DUTIES
 - a. Observing the entire operation of the transportation system by riding the buses, following buses, being present at or near loading areas at school and at other places along the route
 - b. Investigating school bus accidents
 - c. Arranging for buses and drivers for educational and activity trips
 - d. Making recommendations to the superintendent concerning possible school closing or early dismissal due to road or weather conditions and other safety factors affecting transportation
 - e. Developing and keeping revised a set of regulations which are distributed to drivers, mechanics and the schools

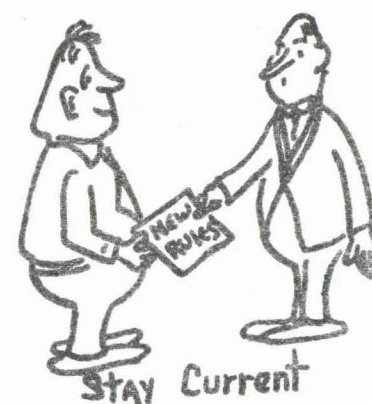
9. OTHER ADMINISTRATIVE AND SUPERVISORY DUTIES (continued)

- f. Drafting transportation policies for review and consideration for adoption by the administration and the board of education
- g. Keeping informed of the transportation laws and being prepared to interpret them to the superintendent or others as needed
- h. Preparing the budget for the transportation program
- i. Working with building principals in organizing a system to facilitate loading, controlling conduct, conducting safety evacuation drills, instructing pupils on passenger safety, etc.
- j. Striving to improve the cooperation among students, drivers, mechanics, principals, teachers and parents in order to unify the efforts of all

S
E
C
T
I
O
N

III

LEGAL REQUIREMENTS



Index to Iowa Code Provisions

Index to Departmental Rules

Federal Highway Safety Program
Standard 17

INDEX TO LEGAL REQUIREMENTS

Chapter 321 - Code of Iowa

- 321.1 (27) DEFINITION OF A SCHOOL BUS
- 321.343 RAILROAD CROSSINGS (School Buses Must Stop)
- 321.372 OPERATIONAL PROCEDURES (Receiving or Discharging Pupils)
- (1) Must be 300 feet of clear vision in each direction at school bus stops.
- (4) Headlights must be on when school bus is carrying passengers.
- (4) Ordinance required to permit use of flashing warning lights and stop arm in "business" and "residence" districts.
- 321.373 CONSTRUCTION STANDARDS FOR EQUIPMENT
- (4) Must be a comfortable seat for each child.
- (5) Privately owned school buses must have "School Bus" sign covered when vehicle is not in use as a school bus.
- (6) Vehicles formerly used as school buses must be repainted a different color by the individual purchasing bus.
(Certain groups exempt)
- 321.374 INSPECTION OF SCHOOL BUSES (Seal of Approval)
- 321.375 DRIVERS (Age - minimum of 16 if individual has successfully completed an approved driver education program - physically and 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 IOWA CHAUFFEUR'S LICENSE AND SCHOOL BUS DRIVER'S PERMIT
- 321.377 SPEED LIMIT OF SCHOOL BUSES
- 321.378 APPLICABILITY OF SECTIONS 321.372 to 321.380 inclusive
- 321.379 VIOLATIONS (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

- (1) ELIGIBILITY REQUIREMENTS
- (2)&(3) MEETING SCHOOL BUS AT DESIGNATED STOPS
- (4) PARENT TRANSPORTATION
- (5) USE OF COMMON CARRIERS
- (8) SUSPENSION OF TRANSPORTATION SERVICE
- (9) METHOD FOR MEASURING DISTANCE
- (12) COST ITEMS TO BE INCLUDED IN COMPUTING PER PUPIL COSTS
- (17) TRANSPORTATION OF SENIOR CITIZENS, CHILDREN, AND
HANDICAPPED PERSONS (Individuals)

285.2

PAYMENT OF CLAIMS FOR NONPUBLIC SCHOOL PUPIL TRANSPORTATION

285.5

CONTRACTS FOR TRANSPORTATION (Private Parties)
Also: (9) ALL BUS DRIVERS FOR SCHOOL OWNED EQUIPMENT SHALL
BE UNDER CONTRACT

285.6

DIVISION OF TRANSPORTATION ESTABLISHED (Provides for a
director and staff.)

285.8

POWERS AND DUTIES OF STATE DEPARTMENT (Includes inspection
of school buses and prescribing standards and regulations)

285.9

POWERS AND DUTIES OF COUNTY BOARDS

285.10

POWERS AND DUTIES OF LOCAL BOARDS

- (6) Purchase of Insurance
- (7) Purchase of School Buses
- (9) Transportation of senior citizens, children, and handi-
capped persons (Groups)

285.11

BUS ROUTES

- (7) Restrictions on use of school buses
- (8) Bus shall not leave public highway to receive or discharge
pupils.

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 TRANS-
PORTATION LAW SHALL BE DEEMED GUILTY OF A MIS-
DEMEANOR

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.
Section 285.10(7) relating to purchase of school buses.

ASSISTANCE ON LEGAL QUESTIONS

336.2(7)

DUTY OF THE COUNTY ATTORNEY TO GIVE HIS OPINION IN WRITING
WHEN REQUESTED BY THE SCHOOL BOARD ON ALL MATTERS IN WHICH
THE BOARD HAS AN INTEREST.

Chapter 613A

TORT LIABILITY OF GOVERNMENTAL SUBDIVISIONS

INDEX TO DEPARTMENTAL RULES FOR TRANSPORTATION

Rule 22.4	INTRACOUNTY BUS ROUTES (Maximum Riding Time)
Rule 22.5	INTERCOUNTY ROUTES
Rule 22.13	CONTRACTS WITH PRIVATE PARTIES
Rule 22.14	UNIFORM CHARGE FOR ALL PUPILS TRANSPORTED
Rule 22.15	BOARD MUST BE A PARTY IN ALL CONTRACTUAL ARRANGEMENTS
Rule 22.16	CONTRACT WITH PARENTS REQUIRED IF TRANSPORTING OTHER CHILDREN THAN THEIR OWN
Rule 22.17	VEHICLE REQUIREMENTS FOR RULE 22.16
Rule 22.18	REQUIRED CHARGES FOR TRANSPORTING NONRESIDENT PUPILS
Rule 22.25	ACTIVITY TRIPS (Costs may not be included in determining pro rata cost of transportation)
Rule 22.32	PERMITTED USE OF SCHOOL BUSES
Rule 22.33	TEACHER TRANSPORTATION
Rules 22.34 through 22.46	BUS DRIVER QUALIFICATIONS
Rule 22.47	PURCHASE OF BUSES
Rule 22.48	FINANCING THE PURCHASE OF BUSES
Rule 22.49	PURCHASING BUSES ON INSTALLMENTS
Rule 22.50	COUNTY BOARD APPROVAL REQUIRED IN CERTAIN INSTANCES
Rule 22.51	DETAILS OF BUS PURCHASE PROCEDURE
Rule 22.52	ANNUAL INSPECTION OF BUSES
Rule 22.53	CHASSIS INSPECTION CARD, FORM 27A
Rule 22.54	DRIVERS' SCHOOLS
Rule 22.55	INSURANCE
Rule 22.56	CONTRACT PROVISIONS FOR PRIVATELY-OWNED BUSES

Rule 22.57	CONTRACT PROVISIONS FOR DISTRICT-OWNED BUSES
Rule 22.58	ACCIDENT REPORTS
Rule 22.59	PROCEDURES AT RAILROAD CROSSINGS
Rule 22.60	DRIVER RESTRICTIONS
	(a) The driver shall not smoke when passengers are on bus
	(b) The driver shall not permit firearms on the bus
	(c) The driver shall not fill gasoline tank while motor is running
Rule 22.61	USE OF BUSES (Civil Defense Projects)
Rules 23.1 through 23.4	REQUIREMENTS FOR SCHOOL BUS CONSTRUCTION (Refer to separate Bulletin TR-B-3R Revised)

HIGHWAY SAFETY PROGRAM STANDARD 17
(Pupil Transportation Safety)

Purpose

Standard 17 is designed to improve State programs for transporting pupils safely in urban and rural areas by setting requirements for proper and safe equipment; maintenance of equipment; selection, training and supervision of drivers and maintenance personnel; and administrative provisions in the field of pupil transportation.

Standard

- 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," section 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. (Required in Iowa.)

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 retro-reflective 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 (8-lamp system in Iowa); 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. Type I school vehicles that are operated by a privately or publicly owned local transit system, and used for regular common carrier transit route service as well as special school route service, shall meet all of the requirements of this standard, except as follows:
 - a. Such vehicles need not be painted yellow and black as required by paragraphs 1(b) and 1(c) of this section.
 - b. In lieu of the requirements of paragraph 1(a) of this section, such vehicles shall, while transporting children to and from school, be equipped with temporary signs, located conspicuously on the front and back of the vehicle. The sign on the front shall have the words "School Bus" printed in black letters not less than 6 inches high, on a background of national school bus glossy yellow, as specified in paragraph 1(b) of this section. The sign on the rear shall be at least 10 square feet in size and shall be painted national school bus glossy yellow, as specified in paragraph 1(b) of this section, and have the words "School Bus" printed in black letters not less than 8 inches high. Both the 6-inch and 8-inch letters shall be Series "D" as specified in the Standard Alphabets--Federal Highway Administration, 1966.
 - c. Where such vehicles are used only in places where use of warning signal lamps is prohibited, they need not be equipped with the signal lamps required by paragraph 1(d) of this section.
3. 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. (Iowa law is not in compliance.)
4. 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.
5. 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: (next page)

- 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. (Standees are not permitted in Iowa.)

- 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.

S
E
C
T
I
O
N



INSURANCE AND LIABILITY



Types of Insurance

School Bus Driver Liability for
Pupil Injuries

INSURANCE

Section 285.10(6), Code of Iowa, provides that local school boards "Shall purchase liability insurance and other insurance coverage which the board deems advisable to insure the school district, its officers, employees and agents against liability incurred as a result of operating school buses, including but not limited to liability to pupils or other persons lawfully transported. Section 613A.7 shall apply to such insurance. However, the board of directors in its discretion shall determine the insurance coverages and limits, and the school district and directors shall not be liable as a result of any such discretionary decision."

As provided in Chapter 613A, Code of Iowa, every municipality (and this includes school districts) is subject to liability for its torts and those of its officers, employees and agents acting within the scope of their employment or duties, whether arising out of a governmental or proprietary function. There are several exceptions to liability claims so the transportation supervisor should acquaint himself with the provisions of Chapter 613A, "Tort Liability of Governmental Subdivisions."

The recommended types of insurance coverages for school boards to carry on pupil transportation vehicles are:

- Liability
- Property Damage
- Medical
- Collision
- Comprehensive
- Uninsured Motorist
- (Many school districts also include an umbrella provision)

There should be a limiting endorsement regarding the use of school buses during the summer months. In other words, coverage on most buses would be for nine months with coverage for only the buses used during the summer period for twelve months.

Bid specifications should list the types and amounts of insurance coverage desired. A provision should also be included to require the insurance companies submitting the bids to be approved by the Iowa State Insurance Commissioner.

SCHOOL BUS DRIVER LIABILITY FOR PUPIL INJURIES

Negligence of a School Bus Driver

As a general rule, the driver of a school bus, whether an employee or an independent contractor, is liable for injuries to school children resulting from his negligence. All essential elements of actionable negligence must be present. Courts generally consider these to be: (1) A legal duty to conform to a standard of conduct for the protection of others against unreasonable risks (2) A failure to conform to the standard (3) A reasonable close causal connection between the conduct and resulting injury, commonly known as "legal cause" or "proximate cause." (4) Actual loss or damage resulting to the interests of another.

Major Considerations Directly Applied To Drivers

1. Degree of care required; age of child; determination of when a child is capable of recognizing danger and contributing to the negligence.
2. Equipment used.
3. Driver as employee or contract driver.
4. Loading areas; safe place to alight.
5. Bus Drivers and third party in other vehicles.
6. Bus discipline.
7. Use of evidence of injury as automatic proof of negligence.

When considering the amount of care to be used by a driver courts carefully noted that the degree of care increased with the immaturity of the child. Since the driver is a carrier of passengers he must use extraordinary care for the safety of the children. Even the slightest negligence can be the cause for a suit when children are involved.

The age of the child becomes an important factor in court cases involving the issue of contributory negligence. For example, a five year old boy is considered too immature to be charged with contributory negligence, but a child of 12 years is thought to be capable of recognizing danger. Courts have said that a nine year old student cannot be presumed to be capable of protecting himself. A 14 year old girl can be assumed capable of helping herself across a street and a bus driver need not warn a 16 year old of the danger involved with crossing a street after alighting from the bus. It is evident that care required increases as the age of the child decreases.

One of the elements of a driver negligence case frequently involves the equipment being used and the condition of the bus at the time of the accident. Regardless of the ownership status of the unit, the driver cannot plead that he

is not responsible for the proper upkeep and use of the safety equipment. There are times when the driver claims the safety lights were flashing and the driver of another vehicle involved states that they were not. In this situation, the second driver has not been allowed to escape liability merely on this count. Courts have said that the school bus is an obvious warning of possible danger and that the second car must have the vehicle under control and be alert for children. However, the driver of the bus is not freed from responsibility of proof of proper signals.

Since more accidents involving pupil injury and death occur at places of alighting and boarding, much has been written regarding the responsibility of bus drivers at this point. The language of the court would indicate that bus stops can be at any point where the driver deems safe and so signals his intention. There does not need to be an obvious reference point such as a home, school or intersection. Pupil discipline and control is under the supervision of the school while students are waiting on a bus or while they are within the normal limits of the bus stops. However, a driver should not be expected to anticipate every move of a child waiting for a bus.

Third parties involved with an accident (student, driver of bus, and driver of another vehicle) become important in establishing bus driver negligence. Normally, a bus driver may assume that a car will stop as required by law. Bus drivers do not have to anticipate all moves a car might make to be clear of negligence. Another important consideration with third parties is concerned with the signalling of another vehicle or person to proceed or stop. The person so directing another is responsible for all foreseeable consequences if he doesn't exercise the highest degree of care for the safety of others. The courts say that one who acts gratuitously may therefore become subject to duty of acting carefully if he acts at all. Bus drivers who take it upon themselves to wave directions to cars are acting in a manner as to assume responsibility.

The driver of a school bus has a great responsibility to act in the most effective manner possible to protect the pupils in his bus. This includes the matter of discipline. Courts have given the driver considerable range in the methods used to maintain proper discipline. Normally accepted means of keeping order have been declared satisfactory by the courts. All that is asked of a driver is that he use prudence, judgment, and care in stopping rowdiness. The courts recognize that the driver has many things to observe in just the driving of the bus and should not be expected to tolerate unruly attitudes of behavior.

In times past, courts tended to allow the evidence of injury to be sufficient cause to prove negligence against the bus driver. In recent years this trend has been reversed somewhat by permitting the driver to present proof that proper care had been used. The point of law still remains however, that injury is prima facie evidence of negligence and the carrier must bring contrary evidence.

School boards throughout the country have become very much aware of the possibility of suits being brought against the district, the individual board members and the driver involved. Insurance coverage has been increased as the local law permitted.

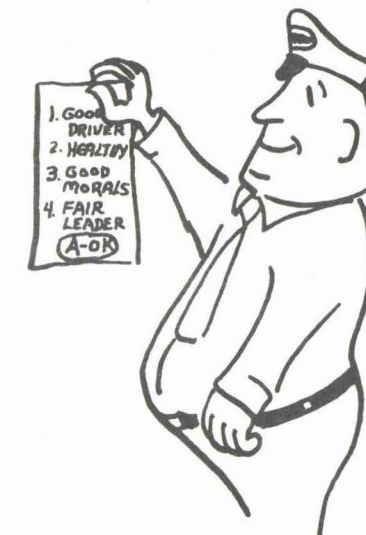
Conclusions Reached From The Study of Major
Considerations Used in Determining Driver Negligence

1. The degree of care required ranges from "ordinary" and "reasonable" to "extraordinary" and "highest degree." The tendency of the courts is to require more care with younger children.
2. The approximate age of a child considered to be capable of recognizing road dangers and therefore a prospect for contributory negligence is 10 to 11 years.
3. A district and the driver are both accountable for maintaining a safe vehicle.
4. More injuries and death to pupils occur as a result of accidents at places of boarding and alighting from a bus.
5. Most cases involving boarding and alighting from a bus use the "safe place" and "reasonable care" determinate.
6. The driver of a bus may not negate his own responsibility because of a third party.
7. A driver is expected to keep order on a bus and may use any normally accepted means.
8. A driver is no longer automatically guilty of negligence if injury occurs. He has opportunity to refute the charge by proof that proper care was used.
9. NEGLIGENCE IS FOR JURY DETERMINATION.

S
E
C
T
I
O
N

IV

SCHOOL BUS DRIVERS



Selection and Training of the School
Bus Driver

Checking the Bus Driver's Performance

School Bus Driver Application Form

SELECTION AND TRAINING OF THE SCHOOL BUS DRIVER

The employment of careful, well qualified bus drivers is a most essential phase of a safe school transportation program. Driver selection should have only one basic criterion--the employment of the most responsible and careful operator that can be found. It must be recognized that school bus driving is generally a part-time job and that the school district cannot afford to pay a full-time salary for a part-time job. A careful survey should be made of those persons in the community who can arrange their work so that they can devote the time required for bus driving.

Possible sources of drivers include:

Housewives	Custodians
Ministers	Part-time employees
Farmers	Students

The selection of school bus drivers is the responsibility of the local school officials. The State Department of Public Instruction has a part in the employment of drivers only to the extent that it rules on the physical fitness of the applicants and issues the state school bus drivers' permits to those who meet the physical requirements.

In addition to the requirements of bus drivers specified by law and regulations, the school authorities should adopt standards as to character, emotional stability, plus knowledge and skill requirements. Among the elements that should be considered in setting up character standards are reliability or dependability, initiative, self reliance and leadership; ability to get along with others; freedom from use of undesirable language; personal habits of cleanliness; moral conduct; honesty; freedom from addiction to narcotics or habit-forming drugs; and freedom from addiction to alcoholic beverages or liquors.

In recognition of the importance of emotional stability needed in school bus driving, local school officials, in selecting applicants and in re-employing drivers, should give full consideration to such factors as patience, considerateness, even temperament, and calmness under stress.

All applicants for driving a school bus should be required to show a satisfactory knowledge of state and local motor vehicle regulations; traffic laws and ordinances; traffic signs, signals and road markings; and driving techniques, including knowledge of the effects of physical laws on vehicle control. They should also be required to show satisfactory proficiency in the skills necessary in all phases of school bus operation. This should include experience in driving large vehicles such as trucks and buses.

Local school authorities should check the driving records of all persons who apply for a position as school bus drivers. The driver's word should not be accepted as final on this point, but information on traffic violations should be secured from the Drivers License Division

of the Iowa State Department of Public Safety. A suggested form for use in securing this information is included herein as well as a School Bus Driver Application and School Bus Driver's Interview Checklist.

Following the selection, each school bus driver must be adequately trained. Skill, proper attitude and knowledge necessary for safe driving and handling of pupils must be developed through the driver training program. The program must provide for the development of driving skills to a high level of performance. Proper supervision should further refine and improve such skills. (See attached check list to be used when observing driver)

Each new driver, regardless of previous training or experience should be provided with:

1. On-the-road driving practice in an empty bus.
2. Instruction as to the schedule, including stops and stopping procedures.
3. A statement of local policies and regulations, including those governing relations with pupils, parents and the public.
4. Training in the handling of children.

The in-service training should also include the following features:

1. Group conferences of the supervisor and drivers, and other personnel as needed, on a regularly scheduled basis.
2. Individual conferences of drivers with the transportation supervisor.
3. Bulletins issued by the administration.
4. Appropriate reading material directed to the attention of the drivers.
5. The use of appropriate films, film strips and slides.
6. Supervision on the route by the transportation supervisor or administrator.

An estimate of the degree of driving skill possessed by the applicant should be determined from a road test. The supervisor should observe the applicant's driving ability over a prescribed course. The test should last for at least 60 minutes and should cover at least 10 miles over public streets, secondary roads, and primary highways. The examination should be designed to evaluate the following:

1. The applicant's skill in operating the vehicle, including smoothness of operation and awareness of potential hazards
2. Use of defensive driving techniques
3. Knowledge of traffic rules and regulations
4. Ability to adjust to changing traffic conditions

It must be remembered that this test will only assist in determining the mechanical and manipulative skill of the operator. Other factors, such as emotion, anger, worry and attitude can affect his safe operation of the bus.

A standard course for school bus drivers, consisting of twenty (20) hours of classroom instruction, is offered at each of the fifteen area schools in Iowa. Another excellent asset to the training program is the Defensive Driving Course which is available from the National Safety Council.

It has been said that nothing satisfies a person more than pride in achievement. Therefore, recognition of a bus driver's achievement must be included to complete the elements of a safe transportation operation. Achievement of the goal, measured in terms of the performance standard, should be recognized by some visible evidence that can be displayed by the driver such as a certificate or an emblem. The recognition must be meaningful and it must represent the appreciation of the superintendent and the board of education.

The efficiency of the drivers determine to a great degree the quality of the pupil transportation service. Therefore, the factors affecting that efficiency should receive careful attention. Some of these factors are:

1. Attitude of the administration
2. Quality of supervision
3. Adequacy of in-service training
4. Clarity of policies and requirements
5. Adequacy of salary and job security
6. Condition of equipment
7. Cooperation of Teachers and other staff personnel
8. Attitude of pupils
9. Attitude of parents and the public

Finally, each party has certain responsibilities to perform. These include:

A. Administration's Responsibilities

1. Selecting personnel after careful evaluation and then providing adequate training.
2. Giving drivers a careful and accurate statement of policy.
3. Letting each driver know exactly what his responsibilities cover.
4. Providing the driver with a sound vehicle.

B. School Bus Driver's Responsibilities

1. Protecting his own health
2. Making a pre-trip inspection of his bus
3. Exerting effort to improve discipline on his bus
4. Giving unceasing attention to defensive driving concepts.

ACTIONS TO BE TAKEN DURING AND FOLLOWING OBSERVATION OF SCHOOL BUS ROUTES

When the transportation supervisor rides the school bus for purposes of observation, here are some of the actions that should be taken during and following this observation:

1. Introduce himself to students and driver.
2. Record time first student is taken on the bus and the time bus arrives at school. In the afternoon, record the time of departure from school and the time last student is discharged from the bus.
3. Check to see whether driver is wearing glasses. (If restricted)
4. Check to see if driver has his chauffeur's license and his school bus driver's license.
5. Does driver follow the prescribed route?
6. Does driver stop only at authorized stops?
7. Does driver operate vehicle in accordance with prescribed regulations?
8. What is the apparent status of driver-student rapport?
9. What are the conditions at the school? Is there a satisfactory area at which to unload and load the students? Is supervision in evidence?
10. What is the apparent status of student discipline?
11. What hazardous road conditions were noted?
12. Note the nature, frequency, and locations of violations of the school bus stop law.
13. Note the identities of students who do not follow prescribed procedure when boarding or alighting from the bus.
14. Observe apparent condition of driver.
15. Observe condition of bus, e.g., cleanliness, tires, windows, emergency exit(s), first aid kits, fire extinguisher, seats, etc.

16. Review bus record indicating preventive maintenance servicing, etc.

17. Note driver attitude toward other motorists and pedestrians.

Following completion of observation, report deficiencies in student behavior to school administrator (in writing); arrange to meet with driver, superintendent or principal, and others, as appropriate, to discuss deficiencies noted in the operation and recommendations for their correction.

BUS DRIVERS PERFORMANCE CHECK LIST

	Yes	No
1. Did the driver check his bus properly before boarding?		
a. Check tires		
b. Oil level		
c. Water in radiator		
d. Clean windshield and mirrors		
e. Clean rear windows, signs, and lettering		
f. Check lights and safety equipment		
2. If the engine was cold, did the driver warm it up properly?		
3. Did the driver sit up in proper driving position?		
4. Did he orient himself properly in the driver's seat before taking off?		
5. Was he alert to conditions outside the bus?		
6. Did he test his brakes before pulling into traffic when leaving the parking area?		
7. Did he use proper signals before making a turn?		
8. Did he get into the proper lane before making a turn?		
9. Did the driver "ride" the clutch?		
10. Did he "lug" the engine?		
11. Did he show skill in down shifting?		
12. When stopping to load or unload pupils, did he use his warning lights approximately 300 feet before stopping?		
13. Were stops made properly at grade railway crossings?		
14. Did the driver use good judgment in passing other vehicles?		
15. Did the driver use brakes properly in bringing the bus to a stop?		

SCHOOL BUS DRIVER APPLICATION
(Example of a form that may be used)

16. Did the driver allow plenty of room when following other vehicles? _____
17. Did he check traffic before opening door to discharge pupils? _____
18. When pupils had to cross the road did the driver, after stopping the bus on the highway and ascertaining that the way was clear, signal pupils across the road in front of the bus? _____
19. Did the driver make sure that all was clear before backing at turn-around? _____
20. Did the driver maintain good discipline? _____
21. Did the driver carry on unnecessary conversation? _____
22. Did the driver observe safe speed limits? _____

Name _____ Age _____ Male _____ Female _____

Present address _____ Phone No. _____

How long have you lived at present address? _____

Last previous address _____

How long did you live there? _____ Social Security No. _____

Date of Birth _____ Place _____

Marital status: Single _____ Married _____ Widowed _____

Do you have any physical impairments? _____

Years of formal education completed: Grade School _____ H.S. _____ College _____

Current driver's license: Operator's _____ Chauffeur's _____
Other _____ Number _____ State _____

Have you had any type of vehicle accident in the last 3 years? Yes _____ No _____

If yes, give approximate dates

Have you been arrested for a moving traffic violation in the last 3 years?
Yes _____ No _____

If yes, give approximate dates

Has your driver's license ever been suspended or revoked? Yes _____ No _____

Do you use intoxicants? Yes _____ No _____ To what degree _____

Do you use drugs? Yes _____ No _____ If so, to what degree _____

To the best of my knowledge the answers to the above are full and correct.

Date _____ Signature _____

* * * * *

REFERENCES

Do not use relatives. Include at least one businessman, and one professional person.

	NAME	ADDRESS	TEL	OCCUPATION
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

REQUEST FOR DRIVING RECORD

To: Driver's License Division - Motor Vehicle Department

Address _____ Date: _____

The following individual has applied for a position as a school bus driver.

Please type or print

Name _____ Date of Birth _____
First _____ Middle _____ Last _____ Month _____ Day _____ Year _____
Social Security No. _____
Last License Number _____ State _____ Expiration Date _____

List moving violations, accidents, probations, suspensions, revocations.

Please return this form to:

School _____ Address _____
City _____ State _____ Zip Code _____

S
E
C
T
I
O
N

V

OPERATION



Types of Transportation Service

Communications

Planning Bus Routes

Planning School Sites for School Bus Safety

Management and Control of Pupil
Passengers (Discipline)

TYPES OF TRANSPORTATION SERVICE

There are three types of service which may be considered in planning pupil transportation. These are: (1) district-owned vehicles, (2) contracted privately-owned vehicles and (3) public service (Common Carriers).

At the present time, approximately 97 percent of the districts in Iowa use district-owned vehicles. These buses are purchased, operated and maintained by the school district. Drivers are employed and management of the transportation system is provided by school personnel.

Less than three percent of the Iowa school districts provide transportation by means of contracts with individuals, partnerships or corporations. In this type of arrangement, the contractor owns and operates the vehicles while the district pays a predetermined sum for the service.

The third type of service is provided by common carriers (city transit buses) which operate under franchises. The routes and schedules of these bus lines are planned primarily to meet public requirements. When the service provided also meets school needs, districts may arrange to utilize it for the transportation of pupils.

The type of service which best meets the local situation is a matter to be determined by each local district. The checklist on the following page may be helpful in making the decision. While a district may rely chiefly or exclusively on one type of service, it may use either or both of the two other types to whatever extent deemed desirable.

Iowa law provides that in any district where transportation by school bus is impracticable or where school bus service is not available, the board may require the parents or guardian to transport their children to the school designated for attendance.

For obvious reasons, parent transportation is not included in the three types of service listed on the following page.

[illegible]

1. Adequacy and condition of equipment
2. Maintenance Standards
3. Caliber of Drivers
4. Willingness of drivers to take training
5. Compliance with regulations by drivers

1. Meeting the need for regular service
2. Meeting the need for special service
3. Flexibility of service (changes in routes)
4. Responsiveness to administrative leadership
5. Integration with total school program
6. Adequacy of supervision of pupils
7. Standards of cleanliness
8. Maintenance of good public relations

1. Low initial costs
2. Low annual costs
3. Low long term costs
4. Accuracy of estimating costs

-41-

In the operation of a school transportation system, it is necessary to keep those who are in charge of the operation, as well as the pupils' parents and the pupils themselves, informed regarding the operational procedures. The school system must ensure that the channels of communication are set up in such a way that any information that should be known about its transportation system and services can be disseminated speedily and effectively to reach everyone concerned. The school system must also ensure that all inquiries, requests, suggestions, and recommendations are given prompt and appropriate attention and that they are handled efficiently.

Method for Dissemination of Information

Bulletins

To explain the school system's transportation policy to school administrators, teachers, drivers, parents, students, and other associated with the operation.

Meetings

To provide an opportunity for those associated with the school transportation operation to share their views regarding more effective operation.

Public press

To inform parents of policy changes; route, stop, and schedule changes; and of the safety record of the operation.

Conferences

To discuss with each driver solutions to disciplinary problems that arise, new or revised policy decisions that affect drivers, contractors, etc.

Circular letters

To inform parents of new routes that are planned or of changes that are to be made in routes, stops, and schedules.

Telephone calls

To provide quick contact between bus drivers and the school, or between parents and the school in the event of emergency situations.

Radio, Television

To inform the public of the procedures schools will follow in cases of severe weather conditions or other natural phenomena.

Method for Dissemination
of Information

Letters

Examples of Purposes for Which Used

To reply to inquiries made by parents and others regarding transportation policy and procedure.

Public address system

To instruct students who are assembled to enter the bus regarding rules and regulations they are to follow while waiting for and while riding in the bus.

PLANNING BUS ROUTES

I. Materials and Information Needed

In establishing 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 pupil 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 current 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. Indicate the time schools start and dismiss at all attendance centers.
4. Each pupil must be provided with a comfortable seat as stated in Section 321.373 (4), Code of Iowa. Normally, this means three elementary pupils can occupy one 39 inch seat whereas only two high school pupils can be seated comfortably in the same space. As a general rule of thumb, in figuring the number of pupils per bus load, multiply the number of seats by three when transporting all elementary pupils and multiply the number of seats by two when transporting all high school pupils. If both elementary and high school pupils are transported in

the same bus, an approximate estimate would be two elementary for each high school pupil. Thus, for example, on a 54 capacity bus, the approximate number of pupils per bus would be:

All High School Pupils	- 36
All Elementary Pupils	- 54
Combination of both	- 46-47

5. A sheet of acetate should be placed over the map and secured with tape. The proposed routes can then be drawn with colored pens on the acetate. If changes are necessary, the lines can be wiped off without marring the map.

II. Bus Route Principles

After locating attendance centers and the pupils to be transported, it is possible to define bus routes to serve them. In drawing bus routes the principles listed below should be kept in mind. They are based primarily on consideration for the safety, welfare, and convenience of the pupils to be transported. It is recognized that local conditions may require some deviation from them.

1. Routes should be set up on a "shoe-string" or "spoke" basis when feasible. A "shoe-string" or "spoke" route is one which provides for the first pupil pick-up at the point farthest from the schoolhouse and then proceeds as directly as possible to the schoolhouse. In general, the larger the district, the easier it is to organize routes on the "spoke" basis.

The advantage of the "spoke" route is that it holds to a minimum the number of miles a pupil must ride in the bus. On a pure "spoke" route a pupil will not ride in the bus a greater distance than the distance from the pupil's home to the schoolhouse. The "spoke" route is the most economical if the driver of the bus lives in the vicinity of the first pupil pick-up and works in or near the attendance center during the day.

2. In certain situations, it may be more efficient to use "circular" or "loop" routes. With this type of route, the first passenger who boards the bus in the morning should be the first one to disembark in the evening.
3. In other situations, a combination of the "spoke" and "loop" routes may be the most efficient type. These are sometimes referred to as a "button-hook" route. The route starts at the school as a "spoke" type but then changes into a "loop" after four or five miles of travel.

4. 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.
5. 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.
6. If possible, routes should be arranged so 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.)
7. 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.
8. 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 flashing warning lights between stops. In suburban areas the designated stops should be established so that students could be grouped rather than having the bus stop at most of the driveways. (Also, see #12.)
9. Bus stops should not be located at intersections if it can be avoided. It is difficult to control traffic from four directions.
10. Maximum riding time for any pupil should be kept within the reasonable limits of 75 minutes for high school pupils, and 60 minutes for elementary pupils. This is a maximum. A riding time of more than 60 minutes for any pupil should be rare. A rough "rule of thumb" by which the time required to run a given route can be ascertained is to "double the number of miles and add the number of pupils stops". From this, subtract one minute for each ten minutes of the total time. Thus, a twenty mile route with twenty pupil stops will require about 54 minutes to complete. ($20 \times 2 + 20 = 60 - 6 = 54$.)
11. Routes should be established so that it will eliminate the necessity for school buses to traverse rail grade crossings at unprotected points or where the visibility is obstructed.

*See paragraph #12

12. Bus stops should not be located at points where the clear vision distance in each direction is not sufficient to give the motorist adequate time to stop. The distance will vary in terms of traffic speed at the point involved. At the present time, Iowa law requires at least 300 feet of clear vision in each direction. In areas of high speed traffic, however, this is not sufficient and the distance should be 700 to 1,000 feet.
13. A sufficient number of buses should be provided to transport all pupils without requiring groups of pupils to wait for a bus in the evening after school is dismissed.
14. 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.
15. Consideration for economy should be limited only by requirements for safety and reasonably efficient and convenient service to the pupils to be transported.
16. Once routes have been tentatively designed from the map, a survey should be conducted by the school transportation supervisor in person so that he may observe any factors which might indicate a route change. That is, make sure that necessary "turn-arounds" are safe and suitable in all weather conditions and that the bus stop locations meet the clear vision distance requirement. After this survey, a time study should be made by driving over the route in the same equipment that will be used in the actual operation. The driver(s) who will operate over the route should regard the trip as a "dry run": All scheduled stops should be made; "live" and "dead" mileage should be recorded; distance and time between stops should be indicated, etc. These data, if obtained accurately, will permit the development of a schedule which probably will need little revision once it is placed into effect. The schedule as finally established should allow the driver enough time to operate in a safe manner. Allowances should be made for inclement weather conditions. In certain localities, it may be feasible to plan alternative routes in the event of road or bridge washouts and the like. After the route has been definitely established, a map of the route and schedule, showing individual stops, should be posted in the bus for the information of substitute drivers.

*See paragraph #4

III Route Service

In addition to laying out the routes, consideration should be given to the several methods of serving the routes. The plans for serving the routes will determine the number of buses and drivers required as well as the quality of the service. Following are the three principal types of trips:

1. The single trip involves a morning and an afternoon trip by one bus on each route. This type adapts well to sparsely settled areas. It also meets the needs of schools where the instructional program requires both elementary and secondary pupils to arrive at the same time. The single trip plan requires a maximum number of buses and drivers because each route is covered but once and each bus serves only one route.
2. The double trip calls for each bus to cover two or more different routes morning and afternoon carrying children of all grades on each trip. This plan is suited to districts of dense population where distances are not great. Under this plan, however, program adjustments in the instructional schedule are necessary to avoid idle waiting time at the school.
3. The dual trip plan, also known as dual routing, calls for two or more morning trips and two or more afternoon trips over the same route by each bus. This arrangement is only practical where the route distances are short. High school pupils may be brought to school on the first morning trip with elementary children arriving on the second trip. If it is desired that the elementary day be shorter than the high school day, the elementary children may be scheduled to leave on the first trip in the afternoon. Districts whose program requires a day of equal length for both groups may transport the high school pupils on the first trip in the morning and return them on the first trip in the afternoon.

Either the double or dual trip plan may reduce by as much as fifty percent the number of buses and drivers needed to meet the transportation requirements. This would represent a substantial savings in the costs of transportation. It should be emphasized, however, that where routes are necessarily long, it is usually not possible to use double or dual trips. The requirements of the instructional program must in no way be neglected simply to accommodate dual or double routes.

IV Feeder Routes

After route locations have been determined, it might be discovered 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. Such spurs may be eliminated and the large school bus

kept on the main road through provision of one or two small feeder buses. These could be station wagons. These small units could transport pupils living on side roads to meet the large bus on its main route thus eliminating these extra miles and saving some time for the bus. These feeder units might well be operated by properly qualified high school students who live in the rural areas. The use of feeder units will permit a more complete application of the "spoke" route principle.

V Loading and Unloading

Continuous supervision of the bus rider is a responsibility of the school so buses should not arrive before the building is open and an adequate number of the teaching staff are on duty. Hazards from other vehicles will be largely avoided by discharging pupils on the building side of the loading area. The unloading itself should be accomplished in an orderly manner without crowding or pushing. It may be desirable for a staff member to be assigned to meet the buses with the main function being to supervise children on the way from the buses to the building. At dismissal time, the buses should be stationed at definitely assigned points in the loading area prior to the dismissal bell. The loading area is a point of considerable pupil congestion at dismissal time so adequate supervision should be provided to insure the orderliness and safety of the loading operation.

VI Spare Bus

A spare bus is one that is in excess of the number assigned to regular bus routes. One or more spares may contribute to operational efficiency in several ways. Transportation for educational or activity trips is made available without any disruption of the regular schedules. A spare may also be used to replace a regular bus during planned maintenance work. Another use of the spare bus is as a replacement in cases of emergency due to mechanical failure or being damaged in an accident.

There is no established "rule of thumb" for the number of spare buses needed per fleet. This would depend on the local situation. That is, the adequacy of the maintenance facilities, the availability of parts distributors and the promptness of the service provided by the parts companies, and the number of extra curricular trips permitted by the administration. It is generally agreed, however, that the capacity of the spare buses should be at least equal to the capacity of the largest size bus in the fleet.

PLANNING SCHOOL SITES FOR SCHOOL BUS SAFETY

1. In the selection of school sites, major consideration should be given to the safety of pupils riding school buses. These vehicles will be forced to utilize the roads in and around the school site plus public highways leading into the school area. High density traffic flow near school exits and entrances due to the proximity of super highways, periodic commercial traffic or massive commuter traffic from industrial plants should be avoided. It must be recognized in many cases that the area designated for the school site has been selected prior to the hiring of an architect. It is suggested, therefore, that this material be issued to boards of education and municipal planning authorities alerting them to the dangers inherent within the process of site selection. It is also suggested the boards of education discuss the selection with the superintendents of schools, traffic engineers and the State Office of School Plant Planning and solicit their help in evaluating possible school sites.
2. The location of the school plant on a site should be determined to plan safe means of entrance and egress for all pupils. When boards of education are considering school sites, the state, county and local roads servicing the area should have a minimum 30 foot paved width where loading and unloading is contemplated off the main thoroughfare. If it is necessary to load or unload students on the main thoroughfare in front of the school, at least a 40 foot wide paved road should be provided.
3. It is possible that boards of education may have land donated to them that could be classified as unsafe for busing due to its traffic density, type of terrain or lack of safe loading and unloading facilities. The cost of eliminating these unsafe conditions may exceed the purchase price of a more desirable parcel of property. In such instances it might be wiser not to accept the donated land but attempt to secure a site that would provide for the safety of students that would have to be transported to the school for years to come.
4. All school bus traffic should be considered as one way traffic flow preferably with the service door side of the bus always next to the loading and unloading zone.
5. Wherever possible, separation should be maintained between bus traffic and the regular flow as constituted by parent, pupil, service and administrative traffic.
6. Whenever possible, roads should not be constructed that completely circle a school. Areas that students must cross to engage in outside activities should be free of all vehicular traffic.

7. All school bus roads entering into or exiting from main arteries should have a minimum 100 foot radius turn on inner edge of pavement. Within the school site, roads should have at least a 60 foot radius on inner edge of pavement on all curves. At least a 50 foot tangent section should be provided between reverse curves. The reason is self evident when we understand that school buses are approximately eight feet wide and thirty-five feet long. In order to minimize driveway entrance and exit widths, island construction may be required. Driveway openings must conform to local requirements, and in particular, driveway openings on State highways should be approved by the State Highway Department.
8. It is recommended that curbing, with suitable drainage, be constructed on all roads utilized by the school bus within the school site. A minimum of 30 feet should be maintained for one-way traffic and 36 feet for two-way traffic. Roads should be wider on all curves.
9. It is desirable to separate student, administrative and parent parking from the loading zone utilized by the school bus.
10. In the construction of parking areas, it might be advantageous if only the visitor parking areas were located in close proximity to the school. Care should be exercised in the placement of these areas to preclude the visitor from crossing the school bus traffic pattern.
11. Architects, prior to the designing and layout of roads and parking lots, should consult with the school administration on the following items:
 - A. Total number of pupils and school personnel.
 - B. Number of present and projected pupils to be transported.
 - C. Number of buses.
 - D. Method of transportation.
 - a. District.
 - b. Contract.
 - E. Type of schedule.
 - a. Staggered.
 - b. Single (one opening and closing time).
 - F. Extra-curricular activities that would necessitate use of school buses.
12. Where buses are parked on the school grounds, consideration should be given to the reflective surfaces of windows, doors and windshields in order to prevent undue glare from these parked vehicles being transmitted to the students in the classroom.
13. Attention should be given in planning school bus parking and loading areas to encourage diagonal parking. Positioning of buses in slant formation provides the safest method of loading and leaving school grounds. Where this is not possible, bumper to bumper would be the next solution. Either type of parking should exclude the necessity for backing the school bus.

14. In the construction of sidewalks for students walking to school, consideration should be given to the elimination of crosswalks in front of buses.
15. In the analysis of many architects' plans for school buildings, bus canopies were included for consideration. In the majority of cases such units were not considered feasible for schools with large enrollments. Canopies are advantageous in schools where handicapped children are in attendance.
16. In the construction of curbs, where school buses will be utilized, consideration should be given to the performance specifications set forth by the State Highway Department.
17. In areas that will be constantly utilized by heavy-weight school buses, we should adhere to the type of pavement and base as advocated by the State Highway Department.
18. All roads within the school site should be graded to avoid dips and hollows that would impair the vision of motorists using the roadways. It is suggested that a maximum standard of not more than a five percent grade be allowed for roads on school sites. At entrance and exit points a maximum grade of two percent should be adhered to.
19. Vehicular traffic should never be required to swing a blind corner on any school site.
20. In the planning of a school and the location of roads, conditions should never be set up that would require school buses to be backed on the school premises.
21. All pupil loading and unloading areas should be provided for within the school site.
22. Wherever possible parents should be assigned a separate student pickup point some distance from the school bus loading areas. Accident-prone conditions are created by parents picking up and discharging students haphazardly in the area in front of and adjacent to the building. The condition is greatly increased during inclement weather.
23. In the provision of loading facilities, consideration should be given to separate areas especially designed for the handicapped and trainable students including entrance ramps and handrails.
24. In the planning of all roads and loading areas, architects should take into consideration the emergency vehicle which must have access to the school at all times.
25. Care should be taken in the planting of trees and shrubbery on the school site so as not to obstruct the vision of the motorist.
26. Where necessary, traffic control devices should be provided to assist school traffic in entering the regular traffic flow.

EVALUATION CHECKLIST FOR SCHOOL BUS DRIVEWAYS
IN THE VICINITY OF THE SCHOOL

NAME OF THE SCHOOL: _____ DATE _____

LOCATION OF THE SCHOOL: _____

	YES	NO	DOES NOT APPLY
1. School loading and unloading areas are provided within the school site.	_____	_____	_____
2. When loading and unloading of school children takes place on main thoroughfare in front of the school, the roadway has a minimum width of 40 feet of hard surface.	_____	_____	_____
3. The driveway leading to and from the loading and unloading area for school buses has a minimum width of 30 feet of paved surface.	_____	_____	_____
4. If diagonal parking is provided for buses in the loading and unloading area, a minimum width of 60 feet of paved surface is available.	_____	_____	_____
5. Parking for loading and unloading of children at school is bumper-to-bumper () or diagonal (); in either case, the necessity for backing does not exist.	_____	_____	_____
6. The school bus is not required to back anywhere on school property.	_____	_____	_____
7. All school bus movement on the school grounds is one-way in a counter-clockwise direction.	_____	_____	_____
8. School bus traffic does not completely encircle the school building.	_____	_____	_____
9. The driver has proper sight distance at all points along the driveway.	_____	_____	_____
10. Crosswalks for students do not exist within the entrance to the school bus driveway.	_____	_____	_____

	YES	NO	DOES NOT APPLY
11. Separation is maintained between school bus traffic and all other traffic such as parent, student, staff, and service personnel.	_____	_____	_____
12. Vehicular pickup points for non-bus passengers are on separate driveway from that used by school buses.	_____	_____	_____
13. Curbing and suitable drainage are provided along driveways used by school buses.	_____	_____	_____
14. Curbing and driveway construction comply with state highway specifications.	_____	_____	_____
15. At ingress and egress areas to the school there is a minimum radius on inner edge of driveway pavement from 50 to 100 feet.	_____	_____	_____
16. Within the school site there is a minimum radius on inner edge of driveway pavement of 60 feet.	_____	_____	_____
17. Between reverse curves, at least a 50-foot tangent section is provided.	_____	_____	_____
18. At ingress and egress points a maximum grade of 2-percent is adhered to. (2 ft. rise per each 100 ft.)	_____	_____	_____
19. A maximum grade of 5-percent is adhered to on the school bus driveway within the school site. (5 ft. rise per each 100 ft.)	_____	_____	_____

NOTE: A "yes" answer for each of the items indicates a well-planned traffic pattern for school buses.

Signature of Person making the report: _____

MANAGEMENT AND CONTROL OF PUPIL PASSENGERS (Discipline)

1. Conduct on the Bus

The local school district should formulate, disseminate and enforce procedures to be followed by students when they are riding the bus. The school bus is an extension of the classroom and it is often referred to as a "classroom on wheels." The school day begins when the student enters the bus and the school day ends when he leaves the bus. Although the primary responsibility for a pupil's conduct rests with the school administrator, the school bus driver is responsible for the health, safety and welfare of each passenger while in transit. Thus, the school bus driver has the same type of responsibility for the student as the classroom teacher. Since the driver can be liable for negligence, he should be permitted to recommend those actions which will result in improved safety for the passengers, himself, the vehicle and other highway users. It is important that these concepts be communicated to school administrators, to parents and to student passengers.

A highly commendable practice used by some school districts is to have each bus driver make personal contact with each patron on his/her route prior to the beginning of school. The drivers inform the parents of the time schedule, the rules of passenger conduct and discipline procedures.

2. Behavior Problems

Behavior problems may develop regardless of all efforts to avoid them. The following are steps which may be helpful in some cases.

- a. The pupil's seat is changed.
 - b. A conference is held between the pupil and either his teacher or the principal.
 - c. The parent is approached for assistance.
 - d. Transportation privileges are withdrawn pending an agreement on corrective action to be taken.
- However, pupils must never be put off a bus en route to school or home for behavior problems.

A Sample Letter, "Rules Governing Pupils Riding School Buses", and "Bus Driver's Report of Misconduct" forms are included on the following pages. This type of procedure is used by many school districts.

Sample Letter

Date _____

Dear Mr. and Mrs. _____

According to our records your child is scheduled to be a regular passenger on one of our school buses. His or her transportation is provided through your school district by the authority of the Board of Education.

The safety of every child on our school buses is of great concern to all of us. While every precaution is taken to see that the children arrive at their destination safely, the cooperation of the parents is needed in this endeavor. Driving a bus is a difficult and responsible task and anything that happens on the bus to divert the driver's attention from his driving responsibility immediately endangers the safety of the riders. It is, therefore, absolutely necessary that the children riding the bus conduct themselves in the best possible manner.

In general, any activity which worries or distracts the driver is objectionable. If the bus driver is worried about the activity in the bus, he or she cannot be a safe driver. Furthermore, transportation equipment is expensive and pupils are expected to cooperate in its maintenance and preservation. In order to operate a safe, efficient and economical transportation system, it is absolutely necessary that all passengers observe the attached set of rules.

In case of a rule infraction, the bus driver will try to resolve the problem without recommending suspension of the pupil from transportation service. If it becomes necessary to deny transportation privileges to your child, the procedures described below will be followed.

When a violation occurs, the bus driver will complete the attached form, "Notice to Parents", and the original copy will be given to your child for delivery to you. You will note that he or she will not be permitted to ride the bus until you have contacted the school principal at the child's attendance center. Transportation privileges will be denied on the third infraction of the rules.

We sincerely hope you will help us make our school buses safe for all of the children who ride them.

Sincerely yours,

Superintendent

RULES GOVERNING PUPILS RIDING SCHOOL BUSES

1. Pupils are under the authority of the bus driver.
2. Pupils shall be on time for the bus both morning and evening.
3. Pupils shall remain seated while the bus is in motion.
4. Pupils shall not extend their hands, arms or head through the bus windows.
5. Pupils shall converse in normal tones; loud or vulgar language is prohibited. When the bus is crossing a railroad track all conversation must stop until the bus has crossed the tracks.
6. Pupils shall not open or close the bus windows without the permission of the driver.
7. Pupils shall keep the bus clean, and refrain from damaging it.
8. Pupils shall be courteous to the driver, to fellow pupils and to passers-by.
9. Pupils shall enter and leave bus, at school loading stations and at highway bus stops, in orderly fashion and in accordance with instructions.
10. Pupils shall refrain from crowding or pushing.
11. Pupils shall refrain from talking to the driver while the bus is in motion.
12. Each pupil shall go directly to his or her seat upon entering the bus.
13. Roughhousing on the bus is prohibited.
14. Pupils shall keep feet off the seats.
15. Pupils shall keep sharp objects off the upholstery.
16. Pupils shall not throw objects about in the bus nor out through the windows.
17. Books and other property shall be properly stored out of the way, and the aisle shall be clear at all times.
18. Shooting paper-wads or other material in the bus is not permissible.
19. Pupils shall avoid playing or loitering on the highway when waiting for the bus.
20. Pupils shall cross the road in accordance with instructions from the driver.
21. Other misconduct.

BUS DRIVER'S REPORT OF MISCONDUCT

Date: _____ Bus # _____

To: _____
(Name of Parents)

THIS IS TO NOTIFY YOU THAT YOUR CHILD

Name _____ Grade _____

has been cited to the principal of your attendance center, for the following reasons.

I am recommending to the principal that he/she be denied the privilege of riding the bus until you have contacted the principal at your attendance center.

(Signature of Driver)

(For Principal)

Parent Conference: Father _____ Mother _____ Both _____ Date _____

Recommendation _____

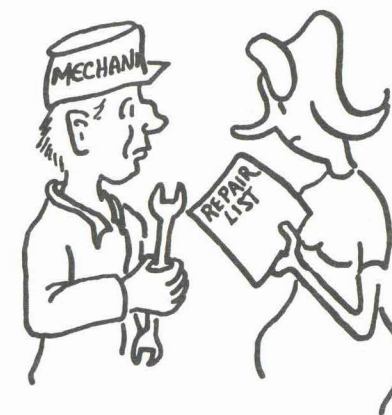
Action Taken _____

Principal's Signature

S
E
C
T
I
O
N

VI

MAINTENANCE



The School Bus Garage

The Maintenance and Inspection Program

Record Forms

SCHOOL BUS GARAGES

Since in many school districts pupil transportation costs rank second to teachers' salaries, local boards of education must scrutinize the transportation program to effect economies without sacrificing service and safety. One of the decisions to be made by the board is the type of maintenance program they wish to follow. Perhaps savings can be accomplished through a district maintenance program.

A school district should not make a decision to adopt a self-maintenance program without making a careful study of the local situation. Factors to be considered are:

1. Cost of service being provided by the local repair shops.
2. Availability of facilities for a maintenance shop.
3. Availability of maintenance personnel.
4. Other machine and tool maintenance costs. (all schools need repair and maintenance of tractors, trucks, driver education cars, mowers and other equipment. Savings can be made by servicing such equipment in that shop)
5. The amount of self-maintenance to be programmed. (Smaller districts, under 15 buses, may want to contract major maintenance work but, even so, they can save money by following a preventive-type maintenance program. Larger districts would save more with a complete self-maintenance program.)

NOTE: SECTION 297.7, CODE OF IOWA, PROVIDES THAT "BEFORE ERECTING ANY SCHOOL BUILDING AT A COST OF MORE THAN FIVE THOUSAND DOLLARS, THE BOARD OF DIRECTORS SHALL CONSULT WITH THE BUILDING CONSULTANT IN THE DEPARTMENT OF PUBLIC INSTRUCTION AS TO THE MOST APPROVED PLAN FOR SUCH BUILDING."

Planning for the Bus Garage

Before preparing preliminary plans for the bus garage, careful consideration must be given to certain factors including but not limited to:

1. Number and size of buses for the present and for the foreseeable future.
2. Number of service stalls and service to be provided: fuel, oil, tires, wash, maintenance repairs and other.
3. Number of storage stations, if any.
4. Heating, ventilation, electrical and utility services needed.

5. Does location and type of gasoline storage tank meet the State Fire Marshal's Regulations.

Selection of the Site

Few schools have sufficient ground area to permit the location of a bus garage on the school site. Even so, authorities in this field feel quite strongly that the garage site be located not closer than one block to the school site. The erection of a bus garage next to a school building limits the expansion of the garage or the extension of the school building, increases fire hazards and makes it necessary for school buses to cross playgrounds or other areas accessible to pupils, thereby increasing hazards to pupil safety. Placement of the bus garage on a site physically separated from the school site eliminates a potential nuisance from the vicinity of the school grounds.

If the garage is constructed on the school site, the garage design should harmonize with the architectural design of the school building. Also, drives and turn-arounds should not interfere with play areas nor separate the school building from the playgrounds. Shrubbery should not be planted so as to interfere with the view from the driveway.

General Design of Bus Garage

1. Walls, partitions, and roof should be of approved fire resistive materials.
2. Garages should be one story in height.
3. A bus garage should be planned as a series of bus storage stations, each to house a bus, or a series of buses, and to be served by an overhead door eleven (11) or twelve (12) feet wide and not less than ten (10) feet in height.
4. Repair and wash stalls should not be less than sixteen (16) feet wide and storage stalls should be twelve (12) feet wide.
5. Minimum inside depth of garage should be forty (40) feet. For stalls in tandem, this depth should be 75 feet.
6. Wash stalls should be separated from repair stalls by a masonry wall, approximately ceiling height.
7. A concrete threshold for entrance doors is essential and a concrete apron of suitable size and slope should be provided in front of the entrance doors.
8. Floors should be concrete, reinforced with wire mesh, and properly pitched to floor drains or gutters. Concrete floors should be troweled to a smooth surface and contain a hardener to prevent

chipping and to check the penetration of grease. The grade of the floor should be four to six inches above surrounding grade, particularly in front of doors.

9. Roof structure must be of sufficient strength to support overhead track for removing motors or lifting other objects.
10. Storage space for supplies should be provided. If a fleet of considerable size is maintained, there should be a separate stock room for parts. This room should be large enough for office desk and file space.
11. Lavatory and toilet facilities should be provided for mechanics and drivers.
12. It is practical to have a waiting room for drivers adjacent to the office area.
13. It is ideal to have a classroom large enough to accommodate all the drivers at one time for training purposes. This classroom can be in combination with the waiting room. Depending upon the roof height above the offices and parts room area, an upper story classroom can be erected at this location.

Other features

1. One repair stall should be equipped with either a hydraulic lift or a grease pit. Of the two types, the hydraulic lift seems to be preferred. Pits should be four (4) feet deep, not less than twenty (20) feet long nor more than three (3) feet six (6) inches wide between the curbs. If a lift is used, it should be of dual type and of at least 10-ton capacity. Also, if lift is preferred, the ceiling height for the stall used for this purpose should be of sufficient height to allow lift of proper working height.
2. The heating plant should provide for a minimum temperature of 60 degrees in repair and wash stalls and a minimum of 45 degrees for bus storage stalls.
3. Wash stall should be fitted with hot and cold water hose bibs and with two drains.
4. Repair stalls should be equipped with an exhaust pipe with flexible connection to remove motor exhaust fumes from building.
5. Where large fleets are to be maintained provisions may be made for closing off one stall for painting.
6. The air compressor should be of sufficient size to meet requirements of lift, paint sprayers and other equipment.

7. Gasoline and oil service facilities should be convenient both to the buses and to the office where records are kept.
8. Liberal allowance must be made for both natural and artificial lighting of repair stalls. Yard lights mounted on the building may be needed.
9. Electrical service to the garage should be 220-volt, with 60 ampere entrance switch. If DC type welder is to be used, provisions should be made for appropriate electric current supply.

NOTE: The suggestions in this section are not intended to be complete.

THE MAINTENANCE PROGRAM

A - Organization

Organization details and administrative routines will vary from school to school depending upon the size of the bus fleet, available personnel and maintenance facilities. In any case, however, the maintenance and accounting systems must be well organized with precise routines set up if they are to function effectively.

Planned maintenance involves making minor repairs and adjustments which, if not done, might develop into major difficulties thereby necessitating extensive and expensive repairs. The foremost objective of a planned maintenance program is keeping the vehicle in safe operating condition. Preventing road failures, maintaining the vehicle in efficient operating condition, lowering maintenance costs by reducing the need for major repairs or overhaul, and preserving the life of all components of the vehicle are still additional objectives of a planned maintenance program.

Your maintenance program should place heavy emphasis on preventive aspects. The term, preventive maintenance, may be defined as a program which aims to prevent failure of the vehicle or any of its parts. Corrective maintenance means to make repairs after a breakdown has occurred.

Preventive maintenance is less costly than corrective maintenance. It will result in increased safety, increased efficiency, lower repair costs, and longer vehicle life. You cannot eliminate all corrective maintenance, of course, but a good preventive maintenance program will hold corrective maintenance to a minimum.

A good school bus maintenance program requires:

1. Drivers and servicemen who are maintenance-minded.
2. Careful organizations of maintenance duties and responsibilities.

Maintenance-minded school bus drivers are developed through training and close supervision. A maintenance-minded driver will not be happy about his bus unless it is in tip-top shape. He will take a considerable amount of pride in his well-kept bus.

The average school bus driver needs instruction, in theory and in practice, in the art of driving his bus with respect and consideration with the view towards getting the utmost from it in terms of economy of

operation and long vehicle life. He needs instruction in the art and importance of spotting defects and developing weaknesses as he drives the bus on the route. A good driver will attempt to spot and report, accurately and fully, unusual noises and changes in the way the vehicle drives, rides, and operates.

All responsibilities in the maintenance program must be definitely allocated and clearly understood by everyone concerned. Preventive maintenance requires proper lubrication at the proper time and place. If failure of a part is to be prevented, the maladjustment or developing weakness must be discovered in time. If failure occurs, repairs must be made without delay. All this requires adequate inspection and reporting procedures. Daily, monthly and annual inspection schedules are essential. Recommended inspection schedules are attached.

Repair responsibilities must also be clearly established. If local commercial garages are to do the repair work, detailed procedures must be set up to insure that repairs are properly made at the proper time. This is sometimes difficult to accomplish but it is necessary effort. Garagemen should know that the school will not accept less than first class work. If the school employs its own servicemen, training and supervision is necessary to insure adequate results.

Good maintenance doesn't cost---it pays.

B - Maintenance Records

The system of maintenance records should be tailored to the requirements of the individual school transportation system. The number of reports and records needed will depend upon the size of the operation and the number of persons associated with it. Preparation and maintenance of any record should be justified by the use made of it. No record should be kept which does not contribute directly to the efficient management of the school transportation operation. Following are examples of the general classification of records that each school district should maintain: (See Section X for sample record forms)

1. Records on condition of each piece of equipment.
2. Records of repairs and service performed.
3. Parts used and labor costs for specified work.
4. The cost of each bus.
5. The cost of the entire school bus fleet.

C - Maintenance and Service Personnel

In many situations, the use of a school-system-operated maintenance garage is cost-effective.

1. Staffing. The garage staff may consist of only one driver-mechanic or of many mechanics, helpers, and servicemen, depending on the size of the operation. The type of service rendered by the garage staff may range from lubrication, tire work, simple repairs, and washing, to major overhauls and body work of all types. Whatever type of service is required, each mechanic and other maintenance or service personnel should be thoroughly familiar with the equipment which they are servicing. Moreover, they should be safety- and maintenance-conscious and have high standards of workmanship. Maintenance and service personnel should be skilled in the art of planned maintenance. This involves making minor repairs and adjustments which might develop into major difficulties if left unattended, thereby necessitating extensive and expensive repairs.

The staffing for school-system-operated garages varies widely. However, a staffing pattern frequently used is the following:

- a. For a fleet of 10 buses, one full-time mechanic capable of completing in a competent manner all necessary repair work, including major overhauls.
- b. For a fleet of 10 to 20 buses, one full-time mechanic and one assistant mechanic capable of competently assisting with repair work and taking full responsibility for lubrication, tire repairs, washing the vehicle, and comparable tasks.
- c. For a fleet of more than 20 buses, a competent mechanic for approximately 15 to 18 buses, assisted by one helper for each two mechanics may be considered, as determined by the head mechanic or supervisor of transportation.

2. Instructional Program for Maintenance and Service Personnel.

- a. The school system should develop and make available to maintenance and service personnel the required maintenance and service publications for the equipment being serviced.
- b. The school system should arrange for pre-service and in-service training for maintenance and service personnel at regular intervals. They should also require or encourage maintenance personnel to attend state-sponsored workshops or training institutes. The training program should include, but should not necessarily be limited to the following subjects.

1. Preventive maintenance and other maintenance procedures.
2. Repair procedures for each type of school bus in the district and its special equipment.
3. Servicing procedures for equipment.
4. How to perform inspections of the vehicle and its equipment.
5. How to remove or otherwise recover the vehicle which has been involved in an accident or road failure.
6. How to complete necessary maintenance records.
7. Planning and forecasting the supply of parts and other equipment.

D - Inspections

1. All bus drivers are required by Federal Highway Safety Program Standard No. 17 to perform daily pretrip inspections of their vehicles and to report promptly and in writing any defects discovered that might affect the safety of the vehicle operation or result in mechanical breakdown.
2. All school buses are inspected semiannually by Department of Public Instruction Representatives and State Troopers. Form TR-F-27A, School Bus Chassis Inspection, must be in the bus for checking by the inspectors. These cards are made out and signed by the mechanic as he completes his summer check of the bus. These forms are available from the Area Education Agency.
3. Scheduled servicing and thorough periodic inspections by the maintenance staff should be carried out in accordance with the recommendations of the manufacturer's service manuals, making allowances for any unusual operating conditions in the district. A general recommendation is that buses be serviced and carefully inspected every month, but not less than once each 1,000 miles of use. Certain checks, brake linings for example, should be made at less frequent intervals according to manufacturer's recommendations. Inspections must be thorough and complete if the maintenance program is to be successful.

E - Cleaning and Washing

Cleanliness is an important factor in contributing to good health. The interior of the bus should be kept in a clean and sanitary condition at all times. A clean bus provides healthful surroundings and promotes pupil pride in the vehicle and the school. It is just as important, however, to keep the bus clean on the outside. Many people will judge schools by the appearance of the buses which serve them. Also, dirty windows, headlamps, stop lamps and flashing warning lamps can be a contributing factor to a school bus accident.

A COMPARISON OF THE CHARACTERISTICS OF REPAIRING WITH AND WITHOUT A PREVENTIVE MAINTENANCE PROGRAM

<u>With Preventive Maintenance</u>	<u>Without Preventive Maintenance</u>
1. Adjustments are made before wear results from maladjustment.	1. Adjustments neglected until wear has resulted.
2. Worn parts are replaced before failure damages other parts.	2. No worn parts are replaced until they break.
3. Small, or inexpensive parts suffice to restore to good order.	3. Costly parts, or whole units, are required.
4. Everything on bus works well or is promptly restored to good order.	4. Several things are not working "quite right" or do not work at all.
5. Work is done at a convenient time and place. Major repairs are accomplished during vacation periods.	5. Work is done when breakdown occurs. Work is done where breakdown occurs or towing is involved.
6. There is a fairly even flow of work for mechanics.	6. Mechanics are rushed at one time and idle the next.
7. Parts are on hand when replacements are scheduled.	7. Parts frequently have to be ordered after breakdowns occur.
8. It is possible to predict repair costs with some degree of accuracy.	8. The need for repairs is relatively unpredictable. A snow storm may produce a number of failures.
9. There are no interruptions in the school schedule due to breakdowns.	9. Trips are delayed or missed while repairs are made.
10. The risk of accidents due to mechanical failures is reduced.	10. The risk of accidents due to mechanical failure is increased.
11. The public has confidence in the transportation service.	11. The public is skeptical of the safety and reliability of the transportation service.

PREVENTIVE MAINTENANCE REPAIRS COMPARED WITH THE RESULTS OF NEGLECT

Condition	Preventive Maintenance	Results of Neglect
Cut in tire	Vulcanizing job	Blow-out, new tire or more serious consequences
Leak in oil filter	New gasket	Loss of oil, engine overhaul
Worn points	Replace points	Towing and replace points
Loose lug bolts	Tighten bolts	Wheel comes off, front end repairs, possible accident
Poor brake adjustment	Correct the adjustment	Uneven wear, scoring drums, new linings and grinding of drums
Loose steering link	Tighten connections	Possible accident
Leak in muffler	Replace muffler	Possible asphyxiation or carbon monoxide poisoning

SCHOOL BUS
MONTHLY OR 1000 MILE INSPECTION REPORT

Bus Number _____ Driver _____

Date of Inspection _____ Speedometer Reading _____

<u>BODY</u>		<u>ENGINE</u>	
1 CHECK ALL INSTRUMENT PANEL GAUGES		27 INSPECT MOTOR SUPPORTS: FRONT, REAR	
2 CHECK ALL LIGHTS, SIGNALS, AND WIRING		28 CHECK OIL AND AIR FILTERS	
3 CHECK HORN; FIRST AID KIT		29 CHECK MUFFLER, MANIFOLD AND EXHAUST LINE	
4 CHECK FLARES; FUSEES; FLAGS		30 INSPECT FAN BELT	
5 INSPECT HEATER AND DEFROSTER EQUIPMENT		31 INSPECT GENERATOR AND DISTRIBUTOR	
6 INSPECT FIRE EXTINGUISHER		32 CHECK BATTERY AND STARTER	
7 INSPECT WINDSHIELD WIPERS		33 CHECK COOLING SYSTEM	
8 CHECK AND ADJUST REAR VIEW MIRRORS		34 CHECK CARBURETOR AND FUEL LINE	
9 CHECK CLEANLINESS: INTERIOR; EXTERIOR		35 OTHERS	
10 INSPECT WINDOWS; WINDSHIELD; DOOR GLASS			
11 CHECK SEATS AND UPHOLSTERY (SEATS MUST BE TIGHT TO FLOOR)			
12 INSPECT EMERGENCY DOOR, LATCHES, WARNING SIGNAL			
13 INSPECT SERVICE DOOR, CONTROLS, STEPS			
14 CHECK STOP ARM			
<u>TIRES</u>			
15 CHECK FOR CUTS, BRUISES, UNEVEN WEAR, AIR PRESSURE			
<u>FRONT END</u>			
16 CHECK SPINDLES; WHEEL ALIGNMENT; TIE RODS; DRAG LINKS			
17 CHECK SPRINGS; CLAMPS; SHACKLES			
18 CHECK STEERING MECHANISM			
<u>REAR AXLE</u>			
19 CHECK SPRINGS; CLAMPS; SHACKLES			
<u>CLUTCH</u>			
20 CHECK PEDAL CLEARANCE & ADJUSTMENT			
21 CHECK CLUTCH FOR SLIPPING OR DRAGGING			
<u>TRANSMISSION</u>			
22 CHECK SHIFTING FOR NOISE			
23 CHECK FOR LEAKS AND CRACKS			
<u>BRAKES</u>			
24 CHECK PEDAL CLEARANCE AND PRESSURE			
25 CHECK FLUID			
26 CHECK EMERGENCY BRAKE			

I certify that I have completed the inspection of this bus as indicated above.

Date _____ Signature Mechanic _____

Note: Place a check mark (✓) in the column when each item is completed. If an item is unsatisfactory leave column blank until repairs are made. If there is more than one item on a line circle the ones that are unsatisfactory. A check mark in the column will indicate that the circled items have been completed.

SCHOOL BUS
ANNUAL INSPECTION SHEET

Bus Number _____ Make _____ Year Model _____ Driver _____
Date of Inspection _____ Speedometer Reading _____

MOTOR		BRAKES	
1 INSPECT FOR OIL OR GREASE LEAKS AND ANY UNUSUAL NOISES		41 REMOVE WHEELS, INSPECT LINING, LINKAGE, DRUMS, WHEEL BEARINGS, HYDRAULIC CYLINDERS AND LINES	
2 TIGHTEN CYCLINDER HEAD BOLTS			
3 TIGHTEN MANIFOLDS--STOP LEAKS		42 INSPECT BOOSTER AND HOSES	
4 INSPECT MUFFLER AND EXHAUST LINE		43 CHECK AIR COMPRESSOR, GOVERNOR, GAUGE	
5 INSPECT AND ADJUST FAN BELT		44 CHECK EMERGENCY RELAY VALVE	
6 TIGHTEN ENGINE BLOCK TO BASE		45 CHECK CHAMBERS, TRAVEL & ADJUSTMENT	
7 TIGHTEN ENGINE SUPPORT BOLTS		46 INSPECT EMERGENCY BRAKE LINING, RATCHET AND PAWL	
8 TIGHTEN LOWER CRANKCASE BOLTS			
9 ADJUST VALVES AND TAPPETS		CHASSIS	
10 INSPECT IGNITION CABLES		47 CHECK ALL WHEELS FOR TRUENESS	
11 CHECK BATTERY: CLEAN, TIGHTEN, REFILL		48 TIGHTEN RIM LUGS, CHECK STUDS	
12 CLEAN AND ADJUST DISTRIBUTOR POINTS		49 TIGHTEN BODY BOLTS AND CLIPS	
13 INSPECT AND ADJUST CARBURETOR		50 TIGHTEN FENDERS, BUMPER	
14 CHECK AND CLEAN GENERATOR AND STARTER		51 INSPECT UNIVERSAL JOINTS AND FLANGES; TIGHTEN ALL BOLTS	
15 OIL GENERATOR AND STARTING MOTOR			
16 CHECK VOLTAGE REGULATOR, CONNECTIONS AND CHARGING RATE		52 CHECK PROPELLER SHAFT CENTER BEARING	
17 CLEAN FUEL PUMP; AIR CLEANER		53 CHECK & ADJUST RADIUS RODS	
18 CLEAN OR REPLACE OIL FILTER		BODY	
19 CLEAN AND ADJUST SPARK PLUG GAPS		54 INSPECT WINDSHIELD WIPERS; TEST HORN	
COOLING SYSTEM			
20 DRAIN AND FLUSH RADIATOR		55 CHECK SEATS AND UPHOLSTERY (SEATS MUST BE TIGHT TO FLOOR)	
21 INSPECT & TIGHTEN HOSE CONNECTIONS		56 INSPECT AND ADJUST REARVIEW MIRRORS	
22 INSPECT WATER PUMP & COOLING SYSTEM		57 INSPECT HEATER & DEFROSTER EQUIPMENT	
23 TIGHTEN RADIATOR STAY RODS AND HOLD-DOWN BOLTS		58 INSPECT FIRE EXTINGUISHERS	
STEERING AND FRONT END		59 INSPECT WINDSHIELD, WINDOWS, GLASS	
24 CHECK WHEEL BEARINGS, KNUCKLE PINS BUSHINGS, SPINDLES, STEERING ARMS, TIE ROD ENDS, DRAG LINK; ALIGN FRONT WHEELS		60 INSPECT EMERGENCY DOOR, LATCHES, HINGES, WARNING SIGNAL	
		61 INSPECT SERVICE DOOR, CONTROLS, RUBBER	
25 TIGHTEN STEERING HOUSING TO FRAME		62 CHECK STOP ARM	
26 TIGHTEN PITMAN ARM		63 CHECK ALL INSTRUMENT PANEL GAUGES	
27 ADJUST PLAY IN STEERING POST		64 FLARES, FUSEES, FLAGS, FIRST AID KIT (REPLACE WHEN NECESSARY)	
28 INSPECT SPRINGS FOR FAULTY LEAVES		65 CHECK FLOOR COVERING, SAFETY SHIELD	
29 TIGHTEN SPRING CLIPS & U-BOLTS		66 INSPECT BODY MOUNTING SILLS & BOLSTERS	
30 TIGHTEN SPRING SHACKLES & HANGERS		67 TIGHTEN TANK SUPPORT BANDS	
CLUTCH		68 CHECK VISIBILITY OF ALL SIGNS AND LETTERING	
31 CHECK PEDAL CLEARANCE & ADJUSTMENT		69 CHECK ALL LIGHTS, SIGNALS, WIRING	
32 CHECK CLUTCH FOR SLIPPING OR DRAGGING		TIRES	
TRANSMISSION		70 CHECK FOR CUTS, BRUISES, UNEVEN WEAR	
33 CHECK SHIFTING AND FOR NOISE		71 CHECK TREAD (REPLACE IF SMOOTH)	
34 CHECK FOR LEAKS AND CRACKS			
REAR END		CHANGE OIL AND GREASE	
35 INSPECT DIFFERENTIAL FOR LEAKS		LUBRICATE ACCORDING TO CHART	
36 INSPECT DIFFERENTIAL PINION FOR PLAY			
37 TIGHTEN DIFFERENTIAL HOUSING BOLTS			
38 TIGHTEN REAR AXLE FLANGE BOLTS			
39 TIGHTEN SPRING CLIPS & U-BOLTS			
40 TIGHTEN SPRING SHACKLES & HANGERS			

I certify that I have completed the annual inspection of this bus as indicated above.

Date _____ Signature _____

Place a check mark in column when each item is completed. (✓)

S
E
C
T
I
O
N

VII

HEALTH AND SAFETY



Instructions for School Bus Passenger Safety
Emergency Evacuation Drills
School Bus Patrols

INSTRUCTIONS FOR SCHOOL BUS PASSENGER SAFETY

Since more than forty percent of the school children enrolled in Iowa's schools are transported, it is important that they and others who ride school buses be taught effective and safe pedestrian and passenger practices. It should be remembered that even though some pupils are not transported to school each day practically all pupils will ride school buses at one time or another on extracurricular activity trips so they also need the instruction.

Federal Highway Safety Program Standard No. 17, relating to Pupil Transportation Safety, requires each pupil who is transported in a school vehicle to be instructed in safe riding practices and to participate in emergency evacuation drills at least twice each year.

The safety of the pupils transported to school is a responsibility shared alike by pupil passengers of all buses, classroom teachers, school bus drivers, school administrators in charge of pupil transportation, parents, and the motoring public using the same roads traversed by school buses.

The instructional staff of each school district has a responsibility to incorporate a continuing, effective and well-planned unit of school bus safety into the educational program at each grade level. The program must be designed so that it will develop within each pupil the habits, attitudes, skills, and knowledge that are so vital to the safe and efficient use of the school bus at all times.

The minimum areas that should be included in the course are:

1. Walking to the Bus Stop
2. Waiting at the Bus Stop
3. Boarding the bus
4. Behavior on the bus
5. Leaving the bus
6. Walking from the Bus Stop
7. Emergency Evacuation Drills

A Teachers Guide and a Curriculum Guide on this topic can be obtained from the Transportation Division, Iowa Department of Public Instruction.

The program should include emergency evacuation drills at least twice each year. The first drill should be conducted during the first week of school.

Some school districts have reported success in the use of student safety patrols. If student patrols are used, it is essential that they be instructed thoroughly in their duties and responsibilities. The passenger and student patrol members must understand, however, that the driver is in charge of the bus.

INSTRUCTIONS FOR CONDUCTING EMERGENCY EXIT DRILLS

Due to the increased number of pupils being transported in present-day traffic, and the ever-increasing number of accidents on the highways there is a need to instruct pupils to vacate a school bus in case of an emergency. In an emergency it is possible for children to jam the emergency door by all trying to get out of the door at the same time. In order to help avoid a situation of this type, schools should organize and conduct emergency exit drills for all students who ride school buses.

There are several different drills:

1. Everyone exits through the rear emergency door.
2. Everyone exits through the front entrance door.
3. Front half exits through the front door and rear half exits through the rear door.

There is possible danger (Drill 1) when a child jumps from the rear emergency door exit. It is possible to sprain an ankle, break a leg, or even be ruptured.

Reasons for actual emergency evacuation:

1. Fire or danger of fire. A bus should be stopped and evacuated immediately if the engine or any portion of the bus is on fire. Passengers should move a distance of 100 feet or more from the bus and remain until the driver of the bus has determined that no danger remains. Being near an existing fire and unable to move the bus away, or near the presence of gasoline or other combustible material should be considered as "danger of fire," and students should be evacuated.
2. Unsafe position. In the event that a bus is stopped due to accident, mechanical failure, road conditions, or human failure the driver must determine immediately whether it is safer for passengers to remain in the bus or to evacuate.
3. The driver must evacuate if:
 - a. The final stopping point is in the path of any train or adjacent to any railroad tracks.
 - b. The stopping position of the bus may change and increase the danger. If, for example, a bus should come to rest near a body of water or precipice where it could still move and go into the water or over a cliff, it should be evacuated. The driver should be certain that the evacuation is carried out in a manner which affords maximum safety for the children.

- c. The stopping of the bus is such that there is danger of collision. In normal traffic conditions, the bus should be visible for a distance of 300 feet or more. A position over a hill or around a curve where such visibility does not exist should be considered reason for evacuation.

Important factors pertaining to school bus evacuation drills:

1. Safety of children is of the utmost importance and must be considered first.
2. All drills should be supervised by the principal or by persons assigned by him to act in a supervisory capacity.
3. "Emergency drills" for school buses should be organized in a manner similar to fire drills held regularly in schools. School bus drills should be held more often during fall and spring months, preferably when bus arrives at the school building with the pupils.
4. Drills should be held on school property and not on bus route.
5. Types of bus drills held should be varied.
6. Drivers should stay in bus during evacuation drills. Be sure that the emergency brake is set, ignition off, and transmission in gear.
7. Do not permit children to take lunch boxes, books, etc., with them when they leave the bus--getting the child off safely in the shortest time possible and in an orderly fashion is the objective of a school bus evacuation drill.
8. The pupils should go to a distance of at least 100 feet from the bus in an "emergency drill" and remain there in a group until given further directions by the leader.
9. All children should be given an opportunity to participate, including those children who only ride a bus on special trips.
10. Each pupil should be instructed in the proper safety precautions while riding the bus and in drill procedure.
11. Instruct students in how and where to get help. Instructions and telephone numbers should be posted or otherwise carried in the school buses.

SCHOOL BUS PATROLS

The following is taken from a recent publication of the Oregon Department of Education:

A 10-year-old with the presence of mind to put on the brakes and turn off the engine saved a school bus in Grants Pass, Oregon, from rolling forward down a steep hill. Jack Wytcherly, one of 40 students on the bus, was sitting in a front seat when the driver, 53-year-old Mrs. Ruth Bond, suffered a fatal heart attack. The boy moved quickly to the driver's seat and stepped on the brake pedal, then set the hand brake and turned off the engine. Another student, age 17, tried unsuccessfully to revive Mrs. Bond with mouth-to-mouth resuscitation, while other students set up emergency flashers to warn motorists. State police praised them all for coolheadedness.

Some school districts are being prepared for such emergency procedures through the use of School Bus Patrols.

In the selection of Bus Patrols you should select those pupils who are among the first to load in the morning and the last to leave the bus at night. This will sometimes require that two groups be selected for each bus, a morning crew and an afternoon crew. Each Patrol should be equipped with a white Sam Browne belt and a badge.

The Patrols selected should be carefully advised that they will be under the direction of the bus driver at all times - except if the driver is injured or sick.

In those cases they should have had specific instruction as to procedures to follow in control of the pupils and in securing help.

Each bus should have:

Two front Patrols and one rear Patrol on each crew.

Each Patrol should be carefully instructed on the following items:

1. Open front door.
2. Open rear door.
3. Turn off ignition key.
4. Apply emergency brake carefully.
5. Operate fire extinguisher.
6. Place flares.
7. Turn on lights.
8. Guide the bus to safe place if driver is injured or sick.

No school Bus Patrol, under ANY circumstance, will act without the direction or consent of the driver - UNLESS the driver is physically unable to give instructions. If the bus driver is unable to give directions, the Bus Patrol shall use extreme caution in carrying out his or her patrol duties.

Recommended Procedure for Emergency Unloading of School Buses

Emergency Duties

1. Bus Driver
 - a. Apply emergency brake.
 - b. Turn off ignition.
 - c. Stay in bus.
 - d. Supervise Bus Patrols.
 - e. Signal Patrol to open rear door.
 - f. Supervise exit of students.
2. Front Bus Patrols (Patrol No. 1)
 - a. Set out flags or flares legal distance front and rear.
 - b. Assist with unloading.
 - c. Direct students to safe place.(Patrol No. 2)
 - a. Start unloading.
 - b. Help small children.
 - c. Direct pupils to safe place.
3. Rear Bus Patrol (Front Unloading)
 - a. Keep pupils moving toward front door.
 - b. Control panic among pupils.(Rear Unloading)
 - a. Open emergency door when directed by driver.
 - b. If driver is injured - use good judgment as to when to exit from rear door.
 - c. Have another student help.
 - d. Watch for traffic hazards.
 - e. Direct pupils to safe place.

Recommended Procedures in Case of Fire

1. Driver orders unloading - front, or rear, or both.
2. Flags or flares to be placed.
3. Bus Patrols assist where they can be of help to the driver.
4. Bus Patrol should know how to use fire extinguishers.
5. Pupils should be directed to safe place away from bus.
6. Watch for traffic hazards.

Recommended Procedure in Case of Accident

1. Driver not injured
 - a. Driver directs the placing of flags or flares.
 - b. Driver orders unloading - front or rear - or both.
 - c. Patrols help driver spot injured pupils.
 - d. Patrols assist driver in first aid.
 - e. One bus patrol and one other pupil takes telephone number card and goes to the nearest house for help.
 - f. Driver and other Bus Patrols stay with the bus and pupils until help arrives.
2. Driver injured
 - a. If bus is still moving, front Bus Patrol moves into driver's seat and guides bus to shoulder of road.
 - b. Patrol stops engine.
 - c. Patrol applies emergency brake.
 - d. Front Patrols supervise unloading of pupils.
 - e. One Bus Patrol and one other pupil takes telephone number card and goes to the nearest house for help.

Preparation for Emergencies

In addition to the required items such as flags, flares, axe, fire extinguishers and first aid kit, each bus, whether under contract or owned by the school district, shall carry a supply of telephone number cards.

These cards shall contain the names and telephone numbers of the persons who should be called in case of accident or emergency.

There shall be at least three numbers provided - listed as first, second, and third choice.

There shall also be provided additional information which can be used by a pupil in securing aid of an emergency type - wrecker, fire department, doctors, ambulances, local police departments, county traffic departments, and State Traffic Patrols.

A copy of this card should be fastened above the visor level at the front of the bus. The extra copies to be carried by the Bus Patrol when going for help can be carried in the compartment.

Local arrangements should be made to have the department first contacted use short wave police radio in obtaining help from other departments, if time can be saved in getting help to the scene of the difficulty.

S E C T I O N

VIII

SPECIAL SERVICES



Use of School Buses for Extracurricular Activities

Transportation of Handicapped Children

USE OF SCHOOL BUSES FOR EXTRACURRICULAR ACTIVITIES

It is a widely accepted belief that school buses can and should contribute to the instructional program. This is based upon a philosophy of education that one learns by doing and that educational experiences are more effective than rote learning from the pages of a textbook.

In establishing general policies for using school buses for activity trips, the local board of education should adopt specific provisions for this type of operation. The board should not go into administrative detail but the policies should be rather definite. The following general procedures should be practiced by the administration:

1. Trip Sponsors

All trips by school buses for student groups should be made under the supervision of a faculty sponsor who should assume general responsibility for the pupils of the group as though they were working in a classroom. The duties of the sponsor would be many and varied, but in general the sponsor should see that each group plans in detail:

- a. Where it is going.
- b. What is expected to be accomplished by the trip.
- c. Which specific persons are to serve as assistants to the sponsor and specifically what their duties are to be.
- d. The general rules of conduct and procedures that are to be followed.
- e. A time schedule.
- f. A specific place for the trip to begin and end.

2. Dispatching Buses

Each trip should require a specific authorization in writing from the superintendent of schools acting as a representative of the board of education. This written authorization should specify the date, destination of trip, name of student group or other group making the trip, the faculty sponsor, the bus to be used, and the driver who is to drive the bus. This authorization, when prepared and signed by the superintendent of schools, becomes a dispatch order. It should be prepared at least three days prior to the trip date so that final plans can be completed with definite assurance that the trip will be made.

3. Servicing Buses

When a bus has been dispatched for an activity trip, the bus servicemen should be notified at least three days in advance of the trip date so they can make a special inspection of the bus and perform any service operations needed by the bus before the trip is made. The bus should not leave on any authorized trip until there has been filed in the administrative office an inspection and service report prepared and signed by an authorized serviceman, stating that the bus has been examined and serviced for the specific trip to which it has been assigned on a given date. This is the only way to insure proper preparation of equipment for additional service. Special trips will, unless careful procedures of preparing equipment for special trips are followed, throw regular inspection and service off balance. This leads not only to abuse of buses, but is conducive to unsafe operation as well. The school principal or transportation supervisor should be given the responsibility of seeing that no bus leaves on a dispatched trip until the proper servicemen has certified that the bus has been inspected and serviced for the trip. This provision should be strictly enforced and no variations from the policy should be permitted.

4. Selecting the Driver

Extraordinary care should be exercised in selecting the driver for the instructional trip. Not all drivers who are safe on regular routes turn out to be safe through heavy and varying traffic and road conditions.

5. Briefing the Drivers

When buses are used for instructional trips the driver may be unfamiliar with the route over which he travels. This can be a safety hazard.* It can best be offset by a thorough briefing of the driver on details of the trip. At least one day in advance of the trip date, the school principal, the faculty sponsor of the trip, or the transportation supervisor should go over plans of the trip with the driver who is to drive the bus. A road map should be studied, the proposed route should be carefully marked out on the map, and desirable alternates at certain points should be discussed. If the trip is to be made to a congested urban area, or if no one connected with the school is familiar with the proposed route, information should be sought from the police department of the city to be visited or from the state highway department. The need for the driver to have as much information as possible about his proposed route cannot be overemphasized. He should be assisted by a capable student or other person who has studied the road map with the driver so route directions can be followed without hesitation or improper turns. A school bus that is "hunting its way" through congested traffic is a hazard to itself and to traffic in general. Every effort should be made to avoid this kind of situation.

Parking facilities should be considered when going to cities. Special permits to park the bus, as well as special police escorts, can often be obtained from police departments by asking for them in advance. Traffic officials are anxious to do everything possible to expedite the safe movement of school buses, and their cooperation should be sought and appreciated by school officials. Commercial bus lines do not dispatch drivers without a thorough briefing on the trip they are to make, and many require all drivers except their most experienced ones to ride a route before they drive it. School officials should use equal care in dispatching school bus drivers over routes with which they are not familiar.

6. Cost Accounting for Instructional Trips

Since bus operation for instructional purposes is supplementary to the regular transportation program, accurate records should be kept of all such operations. This is necessary for proper cost accounting. For each bus, at least the following information should be available:

- a. The number of miles traveled by the bus off its regular route.
- b. Cost of gasoline, oil, and all other operating expenses on activity trips.
- c. Cost of driver's salary for driving on activity trips.
- d. Proration of depreciation to regular transportation and to activity trips on the basis of mileage ratios in each type of operation.

Unless records are carefully prepared, accurately kept, and closely analyzed, neither the public nor school administrators will know what the extracurricular activity trip program is costing and will not be able to provide good management and control.

Specific factors that should be considered in determining whether a particular trip should be authorized are:

1. Distance of trip
2. Time involved in completing trip and the effect upon regular bus schedules.
3. Costs
4. Availability of a qualified driver.
5. Weather and road conditions.
6. Availability of school personnel to act as chaperones.
7. Insurance coverage

It is not the responsibility of the transportation supervisor to make decisions as to the educational value of any activity trip. This is a function of the personnel on the instructional staff. The supervisor of transportation must, however, work cooperatively with other school personnel in providing activity trip service, and should not hesitate to recommend changes in policy to the administration when necessary to improve this service.

REQUISITION FOR SPECIAL BUS TRANSPORTATION

Date of trip _____ Class or Group _____

Destination _____ No. of Pupils _____

Teacher(s) in charge _____

Nature of Trip _____

Time of Departure _____ Arrive Destination _____ Leave Destination _____ Arrive School _____

Do you need extra transportation for equipment? Yes _____ No _____

Is this trip part of a regular class study? Yes _____ No _____

Has educational preparation for the trip been made? Yes _____ No _____

Date of Application _____

Signature of person making application _____

Trip Approved: Yes _____ No _____

Signature of Person designated by the
administration to approve special trips _____NOTE: Requisition must be in the transportation department ten (10) days
prior to date of trip. (This form is to be submitted in duplicate)CONFIRMATION OF REQUEST FOR SPECIAL BUS TRANSPORTATION

Service will be available as requested: Yes _____ No _____

Buses and Drivers Assigned:

_____	_____
_____	_____
_____	_____

Service will be available with limitations as listed below:

Date _____

Signature of Transportation Official _____

PLANNING FOR THE TRIP

The primary purpose for supplying school bus service on educational trips is to provide an educational opportunity which otherwise would not be available to those pupils who will make the trip. Adequate planning and preparation on the part of both teacher and pupils are necessary for a successful trip. Classroom instruction and discussion prior to the trip should include:

1. Clarifying the purpose of the trip.
2. Describing information the pupils can collect during the trip.
3. Determining the problems the pupils can solve as a result of the trip.
4. Listing the specific points to observe during the trip.
5. Providing material for recording information or collecting specimens such as notebooks and non-breakable containers.
6. Suggesting proper clothing for the trip.
7. Reviewing school bus conduct rules.
8. Developing standards for safety and behavior. This would include organizing a "buddy system" and using identification slips with phone numbers.
9. Arranging for lunches if necessary.
10. Providing a "Parent Approval" Form to each student. (To be eligible for the trip, the parent must sign the form granting permission to the student to accompany the class on the specific trip.)

EVALUATION OF FIELD TRIP

Determining the educational value of a trip is very significant to attain maximum efficient use of school buses on special trips. This can be accomplished by the following:

1. Through discussion, the teacher can determine what information was gained from the trip and what concepts were developed.
2. By listing the new vocabulary along with drawings and illustrations of activities, facilities and feelings observed on the trip.

The teacher should also consider these questions:

1. Did the children develop new appreciations and attitudes?
2. Has the trip affected their conduct and behavior by deepening their concept of civic responsibility?
3. Are they more eager to explore for information and discover things for themselves?
4. Did the trip stimulate pupils to do more reading and to participate in other related activities such as making models and writing reports or stories?

EDUCATIONAL TRIP EVALUATION

DATE _____

TRIP _____

UNIT OF STUDY _____

List highlights of the tour.

In what follow-up activities were your students engaged as a result of this trip?

Would you recommend this trip? Yes _____ No _____

Teacher _____

Grade _____

School _____

NOTE: This form is due in the office within one week following the tour.

TRIP REPORT

Name of Company Visited John Doe DairyStreet Address Rock Road DriveCity Tall Corn, Iowa

Type of Business _____

Recommended for Grade 3 One-way Travel Time: 80 minutesSize of Group: 1 class Length of Visit: 60 minutesGuide Furnished: Yes Restrooms available: YesVISITATION LIMITATIONS:

9:00 a.m. - 12:00 p.m., and 1:00 p.m. - 4:30 p.m.

Monday through Friday

WHAT MAY BE OBSERVED:

Groups will be taken on a tour of the plant to observe receiving, processing, bottling and storage of fresh food products.

OTHER INFORMATION

On completion of the tour, each member will receive an ice cream bar or milk. Free advertising material will be given to members of the group.

TRANSPORTATION OF HANDICAPPED CHILDREN

At the beginning of each school year an orientation of bus drivers responsible for handicapped children should be held between drivers, special education faculty, school nurse(s), principal(s), and other personnel responsible for adapting the school program to meet the educational needs of students.

Orientation should include information about pertinent physical, mental, and emotional data that a driver may need to know in assisting a handicapped student in riding a bus successfully with his peers.

Following are suggested concerns, but not inclusive of all concerns, which the professional staff will be aware of and share with drivers when it is necessary for the welfare of the handicapped student:

1. A communication system must be clearly defined so that information can be shared quickly and efficiently, even on a day to day basis, if necessary, between drivers and personnel responsible for the educational program of handicapped students. It would be very helpful if the buses were equipped with a two-way radio system.
2. All physically handicapping conditions that may require assistance from the driver such as getting off or on the bus because of weather conditions, braces, prosthesis, visual, hearing, or mental or physical disability should be known prior to the first bus run or as quickly as possible.
3. Extra precautions needed such as "to the door" assistance and "road crossing" assistance should be understood and executed.
4. Techniques and procedures should be clearly outlined and understood for children that may cause an emergency. The bus driver needs to be aware of children with epilepsy, diabetes, cerebral palsy, etc. Pertinent information should be known by the driver at all times.
5. Drivers will need to know the proper way of lifting those students with braces, etc., or techniques for strapping students in the seat for assuring safe riding in consideration of handicapping condition. Techniques should conform to that advocated by the therapist in charge. Drivers should also be aware of the objectives of the therapy program. For example, if the child can walk independently but prefers the luxury of being carried, the driver should abide by the program established for the benefit of the child.
6. If there are pupils who for any reason need social or emotional support, instructors of these students should assist drivers in understanding and developing techniques in making commuting to-and-from school successful and to reinforce the educational objectives for a particular student.

7. Socialization is necessary for all children, and bus drivers should share in the responsibility of assisting the handicapped to remain as "normalized" as possible with other students, by developing a posture of expectation, kindness, and understanding of each individual's need while under his/her responsibility to and from school or other school-related activities.

S
E
C
T
I
O
N

IX

PURCHASING



Purchasing School Buses (Preparing Bid
Specifications)

Purchasing Supplies and Equipment
(Federal Excise Tax)

Procedures for Registration of School
Vehicles

PURCHASING SCHOOL BUSES

I. Introduction

School buses and other vehicles used in the pupil transportation program represent a large investment so it behooves local district officials to make every effort to see that the taxpayer's money is expended in a prudent manner. Bid proposals for the purchase of this equipment must be written in such a way that each bidder may prepare a proposal which is comparable to a competitor's bid. This also makes it easier for the board to compare the bids and make a sound decision.

Before writing bid specifications, the purchaser must be familiar with State and Federal requirements. State standards are made available to local administrators as changes are made and copies of the standards may be obtained from the Department of Public Instruction (Bulletin TR-B-3R(Revised)). Chassis and school bus body manufacturer's representatives are usually aware of any changes in Federal requirements.

There are several types of school bus bodies that are approved and available in Iowa. The conventional type bus body is built on a truck chassis with the engine under the hood located ahead of the driver's seat and windshield. Transit buses are of two types, pushers and pullers. In the pusher bus, the engine is in the rear; in the puller type, the engine is located up front at the side of the driver. In addition, family type passenger vehicles such as station wagons, club wagons and carry-alls of less than ten capacity are used in the pupil transportation program.

The suggestions contained in this chapter are solely for the conventional type school bus body and chassis since ninety percent of the vehicles used in Iowa are of this type. Although transit type buses, as well as the various types of small vehicles, present certain special problems which are not covered here, some of the major considerations set forth would also apply in developing specifications for these other types of vehicles.

School bus equipment should be selected to meet the particular needs of the purchaser. Consequently, the buyer should appraise local needs in terms of the operating area terrain, prevailing weather conditions, types of roads over which the vehicle will be operating, traffic conditions, probable operating speeds, and the chassis ratings required to provide the capacity necessary in given route situations.

II. The Conventional School Bus Chassis

In selecting the chassis, it is first necessary to specify the type and capacity of the school bus body desired inasmuch as this decision will affect the (1) length of frame cowl to axle, (2) gross vehicle weight, and (3) the capacity of various chassis components, such as axles, springs, and engine sizes.

Each chassis component should be specified in terms of the job to be required of it. By specifying the proper chassis components, the purchaser will insure the greater longevity of each component. A school bus chassis is no stronger than its weakest component. Long-range and true economy requires that proper equipment be specified.

The purchaser must make decisions in at least the following areas in preparing school bus specifications.

1. Gross Vehicle Weight

The chassis selected will be required to carry a given weight: the school bus body, the transported pupils, etc.; therefore, it is necessary to relate the gross weight of the vehicle to be purchased to the manufacturer's G.V.W. rating of the chassis. The added weights of optional equipment such as plywood flooring, automatic transmission, air brakes, etc., will increase the G.V.W. of a given bus.

WEIGHT FEDERAL CERTIFICATION REQUIREMENTS

A Federal Law, Part 568, requires the school bus body manufacturer to certify the Front and Rear "Gross Axle Weight Rating" and Total "Gross Vehicle Weight Rating" of completed buses.

When the body company receives a chassis equipped with axles, springs, or tires of insufficient size to support the required pupil capacity rating, the company cannot legally supply the capacity size of body requested. It is important, therefore, that careful attention be given to these items in the bid purchase proposal.

Body weights vary widely from one bus manufacturer to another. Also, special body models may vary in weight and require larger axle or tires. Therefore, it is advisable to check with the body company representatives to be certain that you are specifying axles and tires of adequate size. In fact, some districts purchase the school bus body prior to asking for bids on the chassis. This enables the chassis dealer to bid on a specific bus body model.

DEFINITION OF TERMS

Front GAWR - Front Gross Axle Weight Rating. This is the maximum value in pounds that can be placed on the front wheels. It is based on the capacity of the front tires or front axle, whichever is least.

Rear GAWR - Rear Gross Axle Weight Rating. This is the maximum value in pounds that can be placed on the rear wheels. It is based on the capacity of the rear tires or rear axle, whichever is least.

GVWR - Gross Vehicle Weight Rating. This is the maximum total value in pounds that a fully loaded vehicle may weigh. This value is determined in different ways by the various chassis manufacturers.

GVW - Gross Vehicle Weight - This is the estimated value in pounds which a vehicle will weigh when filled to rated seating capacity with 120 pound passengers and with a 150 pound driver.

2. The Power Train

The following chassis components are generally considered to be an integral part of the power train: engine, clutch, transmission, drive shaft, and axles.

a. The Engine

Acceleration is a factor which is normally given too little consideration in analyzing the requirements for a school bus. The time required to operate over a given route is not normally determined by the top speed of the vehicle but by its ability to reach its normal operating speed from a standing start; in other words, its acceleration. Even the lowest powered bus will operate at a top speed equivalent to the safe speed limit for buses, but good acceleration may require additional horsepower or shifting into a lower gear. In other words, the size and weight of the vehicle and geographic terrain in which the vehicle is to operate will figure heavily in developing the specifications for the engine. The engine should have the horsepower required to pull the fully loaded vehicle over the local school bus route in light of whether or not the route consists of level hard-surfaced roads over which traffic is light, hills, or steep grades with varying types of surfaces. A bus to be operated on the level will not need the same horsepower requirements as a bus operated on hills or steep grades. The acceleration requirements for vehicles that will be entering and/or transporting pupils on high-speed highways or in areas of heavy traffic must also be given careful consideration. The use of governors, power steering, air brakes, and automatic transmissions places demands on the engine power supply which can reduce the amount of acceleration potential of a given engine and thus represents an important factor to be considered. There has been a tendency for districts to specify greater engine horsepower. This enables buses to maintain speeds on long grades and thus avoid line-ups of impatient drivers. Improved acceleration would also shorten the time to run the route.

b. The Clutch

The life of the clutch depends in large part upon the skill, training, attitude, and experience of the school bus driver. Chassis of 55 and greater capacity having a mechanical type transmission must be equipped with a 13-inch diameter single plate clutch or a 12-inch diameter two plate clutch. Vehicles under 55 capacity must be equipped with at least a 12-inch diameter clutch.

c. Transmission

The operating conditions again enter into the selection of this important chassis component. The chassis manufacturer's recommendation should be considered in selecting this component in

terms of local terrain and other road conditions over which the vehicle will operate. The transmission should provide for a minimum of four (4) forward speeds, and some situations will require a five (5) forward speed transmissions depending upon the chassis or capacity of the vehicle. The five forward speed transmission is available normally in these types: (a) direct wide ratio, (b) direct close ratio, and (c) overdrive in fifth. Factors to be seriously considered before specifying an overdrive for a school bus are the speed at which the vehicle is required to operate and the distance between stops.

Automatic transmissions may pay for themselves over the life of the vehicle in terms of fewer needed repairs. Selection of the proper transmission goes hand-in-hand with the selection of the engine of the vehicle. The number of forward speeds available in transmissions varies from 4 to 5 in 48 passenger chassis and up.

d. Drive Shaft

The torque capacity of the drive shaft assembly should equal the maximum engine torque as developed through the lower transmission gear ratio. Drive shafts shall be equipped with protective metal guards to prevent their whipping through the floor or dropping to the ground if broken.

e. Axles

The selection of front and rear axles involves consideration of a number of factors such as local road conditions and the size and weight of the vehicle being purchased. As stated previously under the section on "Gross Vehicle Weight", the size of the axles must meet Federal Regulation, Part 568.

A single speed rear axle with sufficient capacity to carry the load of any school bus is available from all the various chassis manufacturers. A two-speed axle should only be specified for vehicles that operate on the open highway where the distance between stops is great. Ordinarily by the time the school bus driver can gain speed enough to make a shift into a ratio permitting the bus engine to operate at a slower speed, another pupil stop is reached. Little may be gained by installation of a two-speed axle if its primary use is on a route that requires a large number of stops. In such cases a larger engine may be a better investment than a two-speed axle.

3. Brakes

Adequate brakes are an especially important consideration in selecting a school bus chassis. Brakes normally available for school buses are of three types: (1) hydraulic with vacuum booster, (2) air over hydraulic, and (3) full compressed air. The line pressures of vacuum-assisted hydraulic brakes will often go as high as 2,000 pounds per square inch, whereas "sudden" stops with full compressed air brakes rarely require more than 115 pounds per square inch line pressure. Full compressed air brakes require less energy on the part of the driver for maximum application and may provide, when kept properly adjusted, greater stopping ability.

Heavy duty brakes of larger capacity are desirable for hilly or mountainous country as well as for those vehicles which are to be operated in heavy traffic where a great deal of stopping is required.

Actually, a performance standard (the capability of the braking system to stop the complete unit at a given speed within a given distance) represents a more satisfactory guideline for brake performance than the square inch of brake lining area in the opinion of a number of automotive engineer.

The federal government is in the process of developing brake standards for school buses. When these standards become effective, every school bus chassis manufactured after the effective date will be required to be equipped with brakes meeting the new requirements.

4. Springs

Proper springs and/or suspension assemblies on a chassis are extremely important both in regard to safe operation of the vehicle and in the extent of its operating life. "Progressive" or "Variable Rate" type springs are required in all cases on rear axles. Springs or suspension assemblies should be of ample resiliency under all load conditions and of adequate strength to sustain loaded bus without evidence of overload. Springs or suspension assemblies should be designed to carry their proportional share of gross vehicle weight.

5. Tires

All tires on a school bus must be of the same size and ply rating. They must be of a size that will adequately support the load they must carry. Proper tire size for school buses is another requirement of Federal Regulation, Part 568, as the size of the tires must be considered in computing the gross vehicle weight. Recaps are permissible as replacements on equipment now in operation on the rear wheels only.

III. The Conventional School Bus Body

In selecting the school bus body, it is first necessary to specify the type and capacity desired inasmuch as this decision will affect a number of the other body and/or chassis characteristics such as: (1) length and type of chassis, (2) chassis components, and (3) seating arrangements.

The purchaser must consider his school bus body needs in terms of capacity and certain other related factors such as: (1) safety and comfort, (2) ease of maintenance, (3) type of terrain and local road conditions, (4) availability of parts and services, (5) maneuverability in traffic, (6) driver visibility, (7) quality of construction, and (8) reasonableness of cost. He must examine the various types of bus bodies and select the most suitable one in terms of his needs.

All school bus bodies sold in Iowa must meet the "Static Load Test" for school bus body structure.

Since the majority of the body components must meet specific requirements, there are fewer decisions to be made so preparing body bids is not quite as complicated as writing bid specifications for the chassis. The purchaser must or should, however, make decisions in at least the following areas in preparing bid specifications:

1. Entrance Door

There are three types of school bus entrance doors: (1) split-leaf (center split), (2) folding jack-knife (center hinged), and (3) sedan (solid one-piece door). The split type door, with both sections opening outward, appears to be the most popular. This is sometimes called the "Panic Type Door."

2. Emergency Door

This door may be located either in the center of the rear end or in the rear half of the left side of the bus. If located on the left side, the rearmost seat may extend the width of the bus allowing for an additional seating space. The rear area under this seat can be utilized as an excellent storage compartment.

3. Floors

Many purchasers specify that the floor be insulated with plywood. This tends to make the bus warmer and helps keep out the dust. Some officials contend that it also prolongs the life of the floor covering.

4. Heating and Defrosting

The question of heaters and defrosters is closely related to the climatic conditions of a given locality.

BTU heater ratings are not always reliable guides to heating efficiency. It is the chassis engine that produces the heat, and this production of heat will be essentially the same for different bus bodies. A more important consideration is the circulation of warmed air.

The bus should have an adequate number of heaters. Rear underseat heaters are recommended in those areas where the cold is intense during the winter months. A right-hand front heater is needed to melt tracked-in ice and snow in the step-well area and to assure good defrosting of the entrance door windows and right front windshield.

Relative to effective defrosting, fans or blowers should have enough power to defrost the entire front windshield. This is essential to provide good driver vision at all times. A fogged windshield is a definite safety hazard.

In evaluating a school bus heating and defrosting system, answers are needed to such questions as: Will heat be effectively delivered to all passengers in the bus, including those at the rear? Are heater motors easily accessible for maintenance checks? Are heater controls conveniently located and easy for the driver to operate? What type of blowers circulate the warmed air?

SCHOOL BUS SPECIFICATIONS INFORMATION

FOR BID PROPOSALS

Name of Purchaser _____

Address _____

Date _____

General Instructions

1. Bids to be opened at _____ on _____, 19____ at the following
hour date year
location _____.
2. The school bus body and/or chassis shall comply with all Federal, State, and local specifications requirements, rules, regulations, and standards.
3. The purchaser may enumerate in the General Instructions for bids any special provisions for inspecting equipment prior to or after delivery and/or purchase.
4. The purchaser may enumerate in the General Instructions for bids any warranty requirements.
5. The purchaser may enumerate in the General Instructions for bids any specific delivery requirements.
6. The purchaser may enumerate in the General Instructions for bids any desired payment arrangements.
7. The purchaser should normally reserve the right, subject to State and local provisions, to reject any and all bids for adequate cause.

SCHOOL BUS CHASSIS INFORMATION

(A suggested checklist for preparing specifications information for bid proposals on the conventional type school bus chassis)

PLEASE NOTE:

Using a 60-passenger conventional school bus as an example, the following checklist has been completed for purposes of illustration only.

(SOME OF THE ITEMS LISTED MAY BE SUBJECT TO CHANGE BY FEDERAL STANDARDS)

For a different capacity bus, the figures as shown for the wheel base, axle sizes, brakes, clutch, engine size, springs, tires, and rim size may have to be changed to be compatible with the size of the vehicle that is being purchased.

Chassis Item	Specifications information	Bidder's Proposal
1. Pupil capacity of vehicle	60 passenger	
Manufacturer's recommended rated G.V.W.*	21,000 pounds	
2. Wheel Base (in inches)	To accommodate 60 passenger body--	
3. Alternator	Having at least an output of 100 amperes with a minimum charging rate of 40 amperes at engine idle speed (12 volt system)	
4. Axles*		
1. Front	Minimum of 6,000 pounds	
2. Rear	Minimum of 15,000 pounds	
5. Battery	12-volt heavy duty minimum of 85 amp. hours mounted under hood on a rack that will accommodate a 90 amp. hour battery	

Chassis Item	Specifications information	Bidder's Proposal
6. Brakes	Hydraulic equipped with a vacuum booster plus a minimum of 1,000 cubic inch reservoir tank and an illuminated gauge mounted on the dash which indicates inches of mercury. Minimum brake lining in front - 15" x 3" Minimum brake lining in rear - 15" x 5"	
7. Engine (Insert no. of cubic inches desired)	8 cylinders with minimum displacement of ____ cubic inches	
8. Tires*		
1. Front	Must meet Federal Regulation, Part 568, but not less than 9:00 x 20 - 10 ply tube type with conventional tread	
2. Rear	Must meet Federal Regulation, Part 568, but not less than 9:00 x 20 - 10 ply tube type mud & snow tread.	
9. Wheels and Rims	Cast spoke or disc type Minimum rim size - 6.5	
10. Springs*	Rated spring capacity at ground to equal or exceed axle rating. Rear springs must be of progressive or variable rate type	
11. Air Cleaner	Oil Bath or dry element type with minimum capacity of 1 quart.	

OTHER Required Items	Specifications information	Bidders to Indicate Compliance with "Yes" or "No"
12. Oil Filter	Replaceable Element type with minimum capacity of 1 quart	
13. Gauges	Speedometer, odometer, ammeter, voltmeter, oil-pressure gauge, fuel gauge, water temperature gauge, and vacuum gauge, upper-beam headlamp indicator, and turn signal indicators. (Lights in lieu of gauges are not acceptable)	
14. Shock Absorbers	Heavy duty, double action type, on front and rear	
15. Drive Shaft	Each segment of the drive shaft must be protected by a metal guard	
16. Horn	Dual Electric	
17. Clutch	13-inch Diameter	
18. Fuel Tank	I.C.C. Tank and fittings with minimum capacity of 30 gallons	
19. Bumper (Front)	Heavy duty construction, beveled at each end and attached to frame. Must extend forward of grille, headlamps and fenders.	
20. Color	Wheels, grille, and front bumper to be black. The hood, cowl and fenders to be National School Bus Glossy Yellow	
21. Transmission (Insert 4 or 5 speed or automatic transmission if desired)	_____speed- Syncromesh except first and reverse gear	

OTHER Required Items	Specifications information	Bidders to Indicate Compliance with "Yes" or "No"
22. Tow Hooks	Attached to the frame rails or the front end of the frame.	
23. Undercoating	Undersides of front fenders	
24. Steering Mechanism	Heavy-duty, truck type power steering - power steering components to be compatible with G.V.W. Rating	
25. Choke and Throttle	Dash mounted control	
26. Voltage Regulator	Repairable type. Full transistor except for field relay which may be either a solid state or controlled contact limit.	
27. Parts Manual	To be supplied for Model Delivered	
28. Service Manual	To be supplied for Model Delivered	
29. Warranty	Written copy to be delivered with bus.	
30. General	Must meet all other Federal and State Requirements not herein listed.	
List other optional items desired.		

* G.V.W., axles, springs, and tires must meet requirements of Federal Regulation, Part 568.

BID FORM FOR SCHOOL BUS CHASSIS

SCHOOL BUS BODY INFORMATION

(A suggested checklist for preparing specifications information for bid proposals on the conventional type school bus body)

BID DUE _____
(Date)

The undersigned hereby proposes and agrees to furnish and deliver to

_____, _____,
(Name of District) (Address)

the following:

Make and Model of Chassis	for Capacity of Body	Number of Units Bid	\$ _____ (Base Price Per Unit)
			\$ _____ (Total Base Price)

TOTAL NET PRICE - F.O.B. TO BODY PLANTS
(List Location of Plant and Net Price
including freight to each plant)

_____ (Plant location)	\$ _____ (Net price delivered)
_____ (Plant location)	\$ _____ (Net price delivered)
_____ (Plant location)	\$ _____ (Net price delivered)
_____ (Plant location)	\$ _____ (Net price delivered)
_____ (Plant location)	\$ _____ (Net price delivered)
_____ (Plant location)	\$ _____ (Net price delivered)

(Company Name)

(Street)

(City) (State) (Zip)

(Representative's Signature)

(Date)

PLEASE NOTE:

Using a 60 passenger conventional school bus as an example, the following checklist has been completed for purposes of illustration only.

(SOME OF THE ITEMS LISTED MAY BE SUBJECT TO CHANGE BY FEDERAL STANDARDS)

You may wish to specify, for example, a different type of service door, more heaters and at other locations, plywood flooring, a specific type of rear view mirror, a different type windshield, etc. If so, you should change the items accordingly.

Bidders to indicate compliance with "Yes" or "No". If proposal is different, please describe.

Body Item	
1. Body Size	
60 capacity 3-3 seating plan Maximum body length of 332 inches	
2. Color	
Entire body and roof to be painted National School Bus Glossy Yellow. Bumpers, body trim, and lettering to be black.	
3. Defroster Fans	
Two dash mounted 6" defroster fans. Two speed with separate switches.	
4. Doors	
Entrance door to be split-type with doors opening outward. Manually operated with sealed-double glass in upper panels of the door. Header pad located directly above the entrance on the inside. Emergency door to be located in the center of the rear end. Header pad located directly above the opening on the inside.	

Body Item	Bidders to indicate compliance with "Yes" or "No". If proposal is different, please describe.		
5. Emergency Equipment			
a. Flares			
Three (3) triangular warning devices with reflective and fluorescent material on both faces. Each side of the triangle to be at least 17 inches and not more than 22 inches.			
b. Fusees			
Three (3) 30-minute stand-up fusees stored in a cannister with a lid.			
c. Fire Extinguisher			
At least five (5) pound capacity, dry chemical type with a minimum rating of 10-B:C and equipped with a calibrated or marked gauge.			
d. First-Aid Kit			
A grade "A" metal kit with 36 units to conform to Iowa Standards.			
6. Floor Covering	(Indicate material and thickness)		
Heavy duty .125 inch with ribbed center aisle thickness of .1875 inch. All floor seam separations to be covered with durable metal stripping.			
7. Heaters	(Indicate output)	TOTAL	B.T.U.
Hot water type. One at rear, one at right front, and one at left front. One heat duct to stairwell with heat directed downward on steps with sufficient heat to keep steps clear of ice.			
Heater shut-off valve controlled from driver's seat.			
Heater lines in the interior of the bus must be shrouded.			

Body Item	Bidders to indicate compliance with "Yes" or "No". If proposal is different, please describe.
8. Identification (required lettering)	
a. Words "School Bus" in 8-inch letters, front and rear	
b. Bus number, 5 inches high, on right side of bus below name of school district	
c. Name of school district in 5-inch letters on both sides of the bus	
d. The rated pupil seating capacity of the bus printed to the left of the entrance door in 2-inch letters and above the right windshield on the inside	
9. Lamps and Signals	
As specified in the 1974 Iowa Standards	
10. Mirrors	
a. Inside - Clear View Safety glass 6" x 30"	
b. Left and right outside rear view mirrors with area of not less than 50 square inches	
c. 8" Convex Cross - over mirror	
11. Seats	
a. Anchored with Grade 5 or better bolts and nuts with lock washers	
b. Cushions to be constructed of polyurethane material with thickness of approximately 5 inches. Cushion securely attached to seat retainer.	

Body Item	Bidders to indicate compliance with "Yes" or "No". If proposal is different, please describe.
c. All exposed tops, siderails, and the complete back of the seat extending to seat level cushion to be padded with an energy-absorbing material of polyurethane foam or an equivalent.	
d. Drivers seat to be adjustable, with a retractable safety belt, and foam cushion.	
12. Stanchions and Guard Rails To be padded with an energy-absorbing material extending to within 3 inches of ceiling and to within 3 inches of floor.	
13. Steps Assist Rail located inside the doorway. Steps to be covered with 3/16-inch rubber metal-backed treads with at least 1½-inch white nosing.	
14. Stirrup Steps One step and one handle located on each side of front of body.	
15. Stop Signal Arm Vacuum type with separate vacuum tank with minimum capacity of 1,000 cubic inches. Stop arm control valve is to be activated by a switch that makes contact with entrance door handle.	
16. Storage Compartment Enclosed space in driver's compartment for storing materials and bus driver records.	
17. Sun Shield Adjustable, double bracketed and minimum dimensions of 6" x 30"	

Body Item	Bidders to indicate compliance with "Yes" or "No". If proposal is different, please describe.
18. Tow Hook or Hooks Attached to chassis frame and located under rear bumper.	
19. Undercoating Entire underside of body to be coated with rust-proofing compound.	
20. Ventilator Static-type, non-closable	
21. Windows Split-sash type with sealed double glass in the window adjacent to the service door on the right side of the bus, the driver's window and the window adjacent to it on the left side.	
22. Windshield Safety glass - flat-tinted (Indicate one or two piece as desired)	
23. Windshield Washers Electric to conform to body manufacturer's recommendations.	
24. Windshield Wipers Two electric positive action, variable speed with separate motors and switches.	
25. General Must meet all other Federal and State requirements not herein listed. List other optional items desired.	

BID FORM FOR SCHOOL BUS BODY

BID DUE _____
(Date)

The undersigned hereby proposes and agrees to furnish and deliver to

_____,
(Name of District) (Address)

the following:

Capacity of Body	No. of Units Bid	\$ _____ (Base Price Per Unit)
		\$ _____ (Total Base Price)

Less Trade-in allowance (List equipment traded in)

\$ _____
(Total trade-in allowance)

Total Net Price -F.O.B. Factory \$ _____

Total Net Price - Delivered to district \$ _____

Indicate approximate delivery time from date of receipt of chassis at the body
factory _____.

(Company Name) (Model and Make of Body)

(Street) (Representative's Signature)

(City) (State) (Zip) (Date)

PURCHASING SUPPLIES AND EQUIPMENT

The primary purpose of any purchasing program is to secure the best quality at the lowest prices. Low price only without any control by specifications may create a costlier item in the long run.

School districts as a political subdivision are exempt from the following taxes on purchases made for school-owned equipment:

1. State sales tax
2. Federal gasoline tax
3. Federal excise tax on the following:
 - a. bus chassis
 - b. bus body
 - c. motor oil and lubricants
 - d. diesel fuel
 - e. tires and tubes

It is necessary that you sign an exemption certificate to secure the savings on federal excise taxes. Copies of these forms can be obtained from the Internal Revenue Service District Office. In addition, you can obtain and sign Form 637 and be assigned a designated number to give to companies in lieu of signing the exemption certificate. (Please Note: You do not get a refund for this tax; you simply do not pay it in the first place.)

In every instance, the school district has an obligation to secure the best material possible in the most economical fashion. Safety in the pupil transportation system should never be sacrificed just to save a few dollars. What price is a human life? Check with neighboring districts to see what they are doing in formulating specifications for school buses and the purchasing of supplies and parts.

All purchasing procedures should be part of the board policy with responsibility and control completely outlined. To insure sound procedures, the use of purchase orders is suggested as this will provide a quick and accurate control of your purchasing program.

PROCEDURES FOR REGISTRATION OF SCHOOL VEHICLES

All correspondence and requests for forms pertaining thereto should be directed to the Motor Vehicle Registration Division, Department of Public Safety, Lucas State Office Building, Des Moines, Iowa 50319. All completed forms mentioned below are to be filed with the Motor Vehicle Registration Division.

1. If a new vehicle is purchased, submit the following:

Statement of Origin which is furnished by the dealer. Duly assigned to purchaser.
Application for Certificate of Title and Registration.
State Inspection Form
Odometer certification if gross weight is under 16,000 pounds.

2. If a used vehicle is purchased, submit the following:

Send in the Certificate of Title with transfer showing on reverse side in your name and complete the application for Title.
Give information if you have Official plates on hand that may be reassigned.
If no extra plates, request plates to be issued.
State Inspection Form
Odometer certification if gross weight is under 16,000 pounds.

3. Selling a school owned vehicle:

Upon selling a tax supported vehicle, assign official title to the purchaser.
Furnish inspection form.

4. Leasing Vehicle:

Upon leasing a vehicle to a tax supported body, the lessor is required to register the vehicle at his local county treasurers office.

5. General information:

- a. All Official plates are issued on a permanent basis. They will remain in the possession of the school district for all future use and will be used for reassignment to any new vehicles the school district may purchase.
- b. Advise if you have a set of plates on hand which may be reassigned. If a trade-in, you should have plates. If so, give the license number. The Motor Vehicle Registration Division must have all this information correct before they can issue a Certificate of Title.
- c. All Certificates of Title are to be kept in your files. Registration receipt to be carried in vehicle to be shown if requested by a peace officer.
- d. If plates you are now using are damaged, you may apply for duplicates of the same number at no charge.

S E C T I O N



ACCOUNTING AND REPORTING



The Accounting System

Computing the Pro Rata Cost of Transportation

Reports to be Filed with the Transportation Division

School Bus Accident Reports

Violation of School Bus Stop Law (Sample Letter)

INTRODUCTION

Any system of accounting should be a servant and not a master. It is useful only insofar as it provides essential records. Following is a recommended minimum list of essential information which should be provided by a system of records and reports for school transportation:

1. List of pupils transported on each bus, with scheduled time for loading and unloading at each stop.
2. Any change of status of any pupil during the school year.
3. All necessary pupil information for filing State Transportation Reports.
4. Complete monthly and annual record of operating costs for each bus.
5. Monthly and annual record of total mileage of each bus.
6. Record of mileage of each bus on extracurricular activities, field trips and excursions.
7. A permanent index record on each bus showing make, model, specifications, cost, depreciation base, and also essential annual figures such as operating and maintenance cost, depreciation, mileage, etc.
8. A grouping of all transportation expenditures in one ledger, in addition to the regular record of all expenditures in the Warrant Distribution Register.
9. Records giving complete information regarding school bus accidents.

A number of sample forms are included in this bulletin. In some cases, a brief explanation is given on the same page of the illustration.

It is not presumed that every school will use all the forms shown or that they would be used exactly as shown. Neither is it presumed that all forms which might be used are shown here.

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

BUS ROUTE SCHEDULE

Bus No. _____ Driver _____

[illegible]

This form should be filled out after the first few days of school so that the time schedule may be fairly well-established in terms of normal road and weather conditions. One copy should be posted in the bus and one copy filed in the superintendent's office.

Parents should be notified of the loading and unloading times for their children.

(To be filed, when necessary, with Superintendent)

Driver _____

Bus No. _____

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Date of first trip:

a. _____

c. _____

Date of last trip:

4. Remarks:

This form may be filed at irregular intervals, as necessary, or it may be used as a weekly bus driver's report.

Bus Number _____ Seating Capacity _____

Make of Chassis _____ Make of Body _____

Purchased From _____ Year Model _____

Motor Number _____ Date Received _____

Purchase Order No. _____ Total Cost _____

Depreciation Base _____ Tire Size: (Front) _____ (Rear) _____

[illegible]

This form provides for a permanent record of essential information on each bus. Depreciation base should be computed and recorded on the form at the time the bus is purchased. The lower part of the form provides for an annual record of costs and mileage throughout the life of the bus.

SPECIAL TRIP AUTHORIZATION AND DRIVER REPORT

This is authorization for Bus No. _____ driven by _____

to make the following trip(s).

Superintendent or Principal

Date _____

Destination	Date of Trip	Nature and Purpose of Trip	Miles Round Trip	Number Trans-ported
1	2	3	4	5

I certify that the above trips were made as authorized and reported.

Driver

(Authorization and columns 1, 2, and 3 of form are filled in by the superintendent's office and given to driver. Driver fills in columns 4 and 5 and submits the form after completion of trips.)

The use of this form provides for control by the administrator over the use of school buses for purposes other than transporting pupils to and from school. It also provides for an accurate record of extra-curricular mileage on each bus.

MONTHLY FLEET REPORT

Month of _____ Year _____

[illegible]

SIGNED _____
TRANSPORTATION SUPERVISOR

MONTHLY BUS OPERATING RECORD

School District _____ Bus No. _____
 Month _____, 19____ Speedometer Reading First of Month _____

Day	Miles	Gasoline		Oil & Gr.		Repairs	Tires	Other Expenses	Total
		Gal.	Amt.	Qts.	Amt.				
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
Total									
Total Bus Expense _____		Speedometer Reading End of Month _____							
Total Mileage _____		Driver _____							

The driver or mechanic should make the daily entry for items purchased or installed. This provides a record for unit cost accounting on each individual bus.

ANNUAL SUMMARY OF MONTHLY BUS OPERATING RECORD

School Year _____ Driver(s) _____
 Bus No. _____ Make _____ License No. _____

Month	Miles	Gasoline		Oil & Gr.		Repairs	Tires	Other Expense	Total
		Gal.	Amt.	Qts.	Amt.				
1st									
2nd									
3rd									
4th									
5th									
6th									
7th									
8th									
9th									
10th									
11th									
12th									
Total									

This form is to be used as an annual summary of the monthly records on that particular bus.

REPORT OF BUS ROUTE HAZARDS

Date_____

Driver_____

School District_____

To: Office of Pupil Transportation

A survey of my school bus route shows that the hazard/s indicated below exist at the following location:

County Road No._____

State Road No._____

(Give exact location of hazard)

HAZARDS:

1. Road extremely narrow.
2. Road rough and bumpy.
3. Road needs surfacing.
4. Road treacherous after any rain.
5. Dangerous ravine without guard rail.
6. Deep ditch or wash.
7. Blind Curve.
8. Bad culvert.
9. Narrow bridge.
10. Bridge needs repair.
11. Bad road intersection.
12. _____
13. _____
14. _____
15. _____

Signature of School Bus Driver

COMPUTING THE PRO RATA COST OF TRANSPORTATION

Section 285.1(12), Code of Iowa, specifies the costs that may be included in determining the per pupil cost of transportation. Not to be included is that portion of the cost of the operation of any school bus used in transporting pupils to and from extra curricular activities.

The average cost of transportation per pupil is determined by dividing the total operating cost, not including the cost of transportation for extra curricular activity trips, by the average number of pupils transported.

The following items are to be included in the operating costs:

1. Depreciation. Iowa law provides that one-seventh of the cost of school buses shall be figured as depreciation each year in computing the pro rata cost of pupil transportation. This does not mean that a bus must be kept for seven years, nor does it necessarily mean that a bus cannot be used more than seven years. The practical life of a school bus is bound to vary somewhat among districts, depending upon such local factors as road conditions, annual mileage, and maintenance practices.

However, since total operating and maintenance costs are charged off each year, regardless of age, it stands to reason that the depreciation charge should be terminated at the end of the seventh year. In other words, a bus used more than seven years should never be depreciated out at more than 100% of its original net cost.

On the other hand, if local conditions make it advisable to trade in a bus on less than seven years, and if the trade-in allowance does not equal the uncollected depreciation, the district should be entitled to accrue the difference of "loss" to the depreciation base on the new bus.

Following are the two general procedures to use in computing school bus depreciation:

- a. If a bus is used seven years or more:

Depreciate the cost of the bus at 1/7th each year for seven years only.

When the bus is traded in, start out with a new depreciation base in the amount of the net cost of the new bus (actual price less trade-in allowance.)

Note that if a bus is used more than seven years, no depreciation is charged on it after the seventh year.

- b. If a bus is used less than seven years:

Figure what this bus still "owes" you in uncollected depreciation. Add this amount to the net cost of the new bus. The sum of these two figures should then be used as the depreciation base on the new bus. However, the depreciation base on any bus shall not be allowed to exceed an amount equal to 125% of the gross cost of the bus.

A school should make every effort to establish a maintenance program which will ensure a school bus life of at least seven years. If buses are consistently traded in on less than seven years, the depreciation base will eventually build up to a point where pro rata costs become excessive. This is the reason for the 125% "ceiling" mentioned above.

2. Bus Driver Salaries. This should also include all benefits such as IPERS, FICA, Insurance, etc.
3. Gasoline
4. Grease, Oil and Lubricants
5. Tires and Tubes
6. Repairs, Parts and Labor. Salaries for maintenance personnel should be included as "labor." If the mechanic also drives a bus regularly, a pro-rated part of the salary should be included under Item 2, Bus Driver Salaries.
7. Insurance. This should include the annual cost of insurance for school transportation vehicles and the maintenance or storage facilities for the buses.
8. Storage. If the district rents the school bus garage or storage facilities, include the annual cost for rent. If the district owns these facilities, three (3) percent of the original cost should be charged off for depreciation.
9. Other Expenses. Salaries for clerical and administrative personnel should be included along with other costs that do not fit in the other categories. (The salaries should include the benefits listed under Item 2 above). Tools and other maintenance equipment should be charged off at one-seventh per year for seven years. This amount would be listed under this heading.

The average number of pupils transported is determined by dividing the total aggregate weeks of all pupils transported by the number of weeks school was in session. The average number transported cannot exceed the total number transported and, normally, will always be less.

In determining the aggregate weeks, multiply the number of pupils who were eligible for transportation service and who were enrolled during the entire school term by the number of weeks school was in session. This includes those pupils who were provided a seat but did not use it every day. (In most cases, the school term would be 36 weeks.) For those pupils who were eligible for transportation but enrolled or dropped out after school was commenced, use the actual number of weeks enrolled for each pupil.

For example, if there were 210 pupils eligible for transportation on the first day of school and, of these, 200 were enrolled for the full 36 weeks, you would multiply the 200 by 36. If the other ten pupils dropped out or moved away at the end of the first semester of school, these ten would be multiplied by 18 weeks. If five students moved into the district after school had been in session for ten weeks and they were eligible for transportation service, you would multiply these five by 26 weeks. Thus, the total number of pupils transported would be 215 (210 plus 5). The total aggregate weeks would be:

$$\begin{array}{rcl} 200 \times 36 & = & 7,200 \\ 10 \times 18 & = & 180 \\ 5 \times 26 & = & 130 \\ \hline & & 7,510 \end{array}$$

The average number of pupils transported would be:

$$7,510 \div 36 = 208.61$$

REPORTS TO BE SUBMITTED TO THE TRANSPORTATION DIVISION

<u>DATE REPORT IS DUE</u>	<u>NAME OF REPORT</u>
Beginning April 15 and continuing throughout the year. (Driver must have permit before he can legally drive)	Form TR-F-6-497B, Application for School Bus Driver's Permit
June 1	Form TR-F-20 (NP), Claim for Transportation Reimbursement for Nonpublic School Pupils
July 1	Form TR-20-1 (Revised), Annual Transportation Report
July 1	Form TR-F-10, Application for Careful Driver's Award
January 20	Form TR-F-20 (NP), Claim for Transportation Reimbursement for Nonpublic School Pupils
January 31	Form TR-F-11, School Bus Driver's Report
Immediately following an accident involving a school bus.	Form TR-F-14R, or Department of Public Safety Form D-48, Accident Report
Within 30 days after date of bus inspection.	Letter or statement that repairs of the defects found at the time of inspection have been made
<hr/>	
Prior to the day of the first school bus inspection or the first day of school, whichever is the earlier.	Form TR-F-27A, School Bus Chassis Inspection Card (This form to be placed in the <u>bus and not mailed to the department</u>)

SCHOOL BUS ACCIDENT REPORTS

Section 321.266, Code of Iowa, provides, "The driver of a vehicle involved in an accident resulting in injury to or death of any person shall immediately by the quickest means of communication give notice of such accident to the sheriff of the County in which said accident occurred, or the nearest office of the Iowa highway safety patrol, or to any other peace officer as near as practicable to the place where the accident occurred.

"The driver of a vehicle involved in an accident resulting in injury to or death of any person or total property damage to an apparent extent of one hundred dollars or more shall also, within twenty-four hours after such accident, forward a written report of such accident to the department of public safety." (underscoring supplied)

Rule 22.58, Department of Public Instruction, provides, "The superintendent of schools shall make a report to the division of transportation, department of public instruction, on any accident involving any vehicle in use as a school bus. The driver of the bus shall cooperate with the superintendent in making such report. The report shall be made on the department of public safety Form D-48, "Driver's Confidential Report of Motor Vehicle Accident, State of Iowa", or on Form TR-F-14R, School Bus Accident Report, Iowa department of public instruction."

Reporting of Fatal School Bus Collisions

The National Highway Traffic Safety Administration requests the support of each State to immediately notify, by telephone, the National Response Center in Washington, D. C., at 800/424-8802 or 8803, of each fatal school bus accident where one or more school bus occupants are killed or where one or more of the school bus occupants are injured so critically that death seem imminent. School districts are urged to either call the Washington number above or the transportation division of the department of public instruction so that proper notification can be given to the federal agency.

Other Actions To Be Taken

All school bus accidents should be promptly reported to an authorized agent of the insurance carrier as failure to do so may jeopardize the protection afforded by the policy.

All occupants of a school bus involved in an accident should be examined by a qualified nurse or physician as soon as possible after the accident has occurred. If this cannot be accomplished, the parents should be advised to have their youngsters checked by the family physician.

VIOLATION OF SCHOOL BUS STOP LAW

_____ School District

Section 321.372, Code of Iowa, sets forth the procedures that apply to the operation of a vehicle when approaching a school bus that is Receiving or Discharging Pupils.

On _____ 19 _____ A.M. A vehicle bearing
(Date) (Time) P.M.

_____ at _____
(Location)

was observed by our school bus driver violating the law as checked in the box below.

_____ DRIVER MEETING SCHOOL BUS:

"The driver of any vehicle when meeting a school bus on which the amber warning lamps are flashing shall reduce the speed of said vehicle to not more than twenty miles per hour, and shall bring said vehicle to a complete stop when school bus stops and stop signal arm is extended and said vehicle shall remain stopped until stop arm is retracted after which driver may proceed with due caution". (On a highway providing two or more lanes in each direction, the driver of a vehicle need not stop upon meeting a school bus traveling in the opposite direction.)

_____ DRIVER OVERTAKING SCHOOL BUS:

"The driver of any vehicle overtaking a school bus shall not pass a school bus when red or amber warning signal lights are flashing and shall bring said vehicle to a complete stop not closer than fifteen feet of the school bus when it is stopped and stop arm is extended, and shall remain stopped until stop arm is retracted and school bus resumes motion, or until signaled by driver to proceed".

The School Bus Stop Law was enacted by the Iowa Legislature to protect the lives and welfare of school children who are transported to school. The purpose of this letter is to make sure you understand your obligations with respect to the operation of school buses on Iowa's highways.

Your active interest and cooperation in seeing that the law is obeyed will be appreciated.

SIGNATURES: _____
(Bus Driver)

Superintendent or Transportation Supervisor

S
E
C
T
I
O
N

XI

EVALUATION OF THE SCHOOL
TRANSPORTATION OPERATION

Needs This	Now Effective	Needs Improving	Remarks

Guide for Evaluating the Transportation Program
Evaluating the Efficiency and Economy of the
Transportation Program

GUIDE FOR EVALUATING THE PUPIL TRANSPORTATION PROGRAM

	YES	NO
I. SCHOOL BOARD POLICY		
a. The board of education has adopted specific policies regarding the pupil transportation program.	_____	_____
b. The policies are in written form. The policies include but are not limited to the following:	_____	_____
1. A policy designating the distance at which transportation is to be provided		
2. A specific and detailed policy regarding the use of buses for educational and activity trips		
3. A policy on discipline procedures for both passengers and bus drivers		
4. A policy setting forth the operating rules for bus drivers		
5. A policy providing for a long-range plan for purchasing and replacing buses		
II. SAFETY EDUCATION		
a. The school has a definite program for teaching children to become safe bus passengers.	_____	_____
b. The bus safety education program includes:	_____	_____
1. Classroom instruction		
2. Assembly programs		
3. Demonstration and practice on the bus		
4. Emergency evacuation drills		
c. There is a definite training program for members of the pupil patrol. (Do not mark this item if a school bus safety patrol is not used.)	_____	_____
III. TRANSPORTATION RECORDS		
a. A separate transportation accounting system is maintained.	_____	_____
b. A cost analysis for the operation of each bus in the fleet is made at least annually.	_____	_____
c. The records show the following information:	_____	_____
1. Original cost and date of purchase of the bus		
2. Total miles operated to date		
3. Miles operated per day on regular routes		
4. Number of pupils transported on regular routes		
5. Cost of gasoline, oil, and grease		
6. Cost of tires and tubes		
7. Cost of labor and repair parts		
8. Cost of insurance (buses and garage)		
9. Rents paid for garage or storage		

10. Operating expense of the bus garage (fuel, electricity, water)
11. Dates worked and wages paid to drivers
12. Other administrative costs

- d. Records are kept for instructional and other non-route trips and include the following information:
 1. Number of miles traveled on each trip
 2. Cost of gasoline, oil, and other operating expenses
 3. Cost of driver's wages for non-route trips.
- e. Specific information on school bus accidents are maintained. These should be as detailed as possible.

IV. BUS ROUTES

- a. An up-to-date spot map in a scale large enough to be functional is maintained showing the following information:
 1. Location of all roads
 2. Type of roads (gravel, dirt, hard-surfaced)
 3. Location of all attendance centers
 4. Location of all pupils in a manner which clearly indicates which are kindergarten, elementary, and secondary school pupils.
 5. Exact route of each bus
 6. Location of all rail crossings
 7. Location and nature of other major route hazards
- b. Children are picked up and discharged only at designated stops.
- c. Bus stops are designated only when there is adequate clear vision in each direction.
- d. A definite time schedule showing the time the bus can be expected at each stop has been established and is posted in each bus.
- e. Traffic patterns for approaching, parking on, and leaving school grounds are established.
- f. Emergency routes are established to be used in case of road embargos.
- g. Riding time for the passengers does not exceed limits established by the state agency.

V. PROCEDURES

- a. There is a definite procedure for handling requests for the use of buses for instructional and activity trips.
- b. Requests for the use of buses for these trips are in writing.
- c. There is a direct and easy method for drivers to report disciplinary problems.

- d. A complete inventory of supplies and repair parts is made at least once a year.

VI. PARENTS AND PUPILS

- a. Parents are informed of policies pertaining to the transportation program.
- b. A copy of the bus time schedule is sent to home prior to the opening of school.
- c. Rules and regulation for pupil conduct are specific and well understood; they are sent to the home of each child who is transported.
- d. The privilege of riding on a bus is denied any child who proves to be a chronic disciplinary problem until arrangements are made by the child and the parents with the school administrator.

VII. THE BUS DRIVER

- a. When drivers are hired, they are given a written contract.
- b. Rules and regulations regarding their duties and responsibilities are given to the drivers in written form or in a driver's handbook.
- c. The board has adopted a salary schedule for drivers.
- d. Salaries paid to bus drivers are adequate to insure competent drivers.
- e. Qualifications - physical, mental, and moral - have been established for bus drivers.
- f. There is a definite program for training school bus drivers which includes both classroom instruction and behind-the-wheel practice.
- g. Conferences or Safety Meetings for the drivers are held at regular intervals.
- h. Substitute drivers meet the same requirements as regular drivers.
- i. Drivers with a safe driving record are recognized by the administration through an awards program.

VIII. VEHICLES

- a. All vehicles used for transporting pupils meet the minimum standards for construction of school buses as adopted by the State of Iowa.
- b. Vehicles are purchased only after requesting bids.
- c. A written set of specifications describing the equipment to be purchased is furnished to the bidders.
- d. When possible, purchases of new buses are made at times to assure delivery before the next school term begins.
- e. Spare buses are available and can easily be assigned to a bus route in case of need.
- f. The capacity rating of the spare buses are at least the equivalent of the largest buses used on the regular routes.

IX. MAINTENANCE

- a. School officials emphasize and make all necessary provisions for carrying out a preventive maintenance program. ____ ____
- b. The driver performs a pre-trip inspection of his bus and reports in writing any defect discovered. ____ ____
- c. Each bus is inspected regularly by a mechanic for detecting mechanical defects and immediate repairs are made when defects are found. ____ ____
- d. The buses are kept clean - inside and out. ____ ____
- e. Maintenance records are maintained showing maintenance and repair work done for each bus. ____ ____

X. GARAGE

- a. Garage or other shelter is provided to keep buses out of the weather when not in use. ____ ____
- b. The bus garage is heated if it is used for repair work. ____ ____
- c. Washing facilities are available so buses can be kept clean. ____ ____
- d. The garage is equipped with a telephone. ____ ____

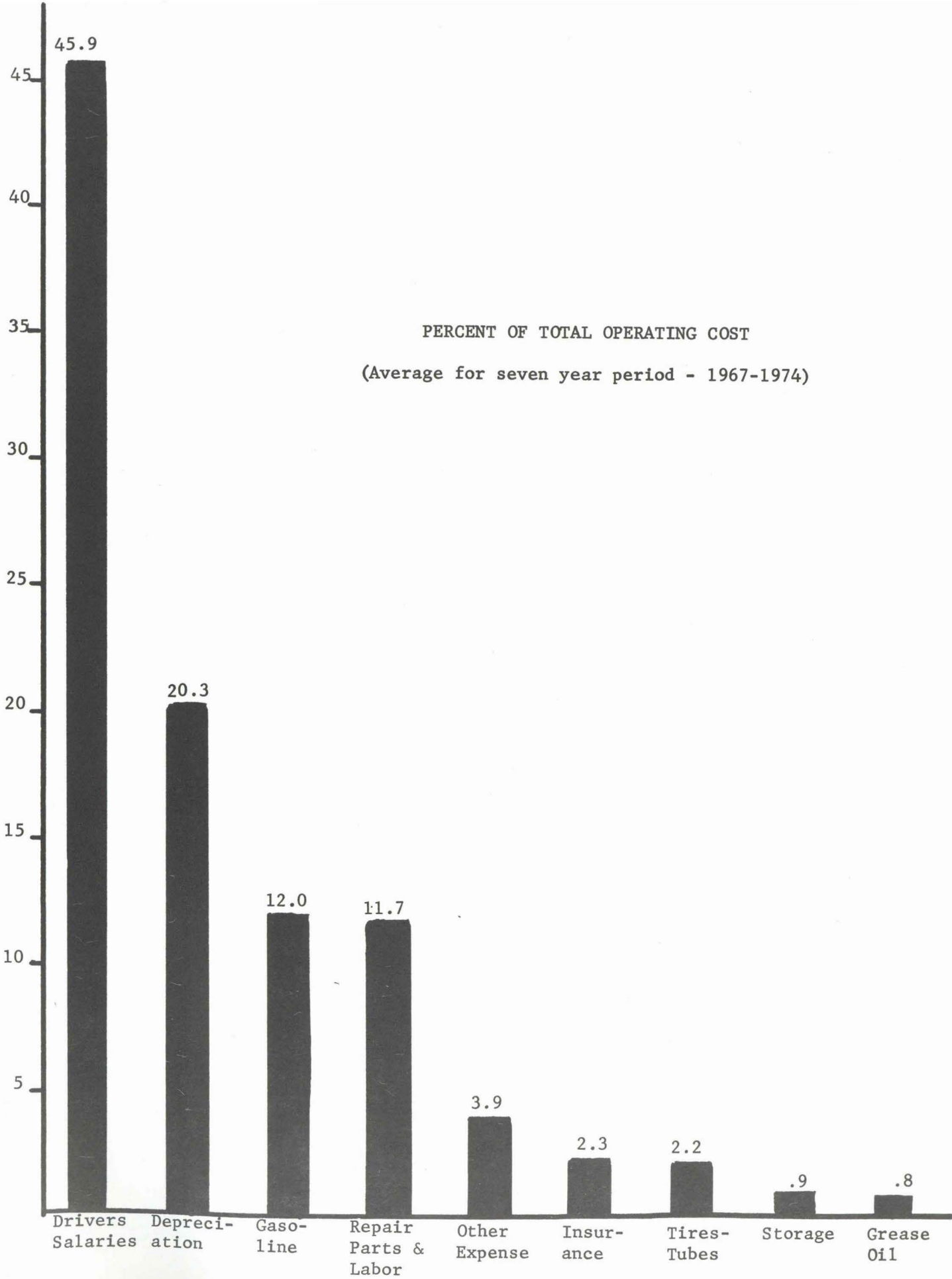
EVALUATING THE EFFICIENCY AND ECONOMY OF THE PUPIL TRANSPORTATION PROGRAM

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

- 1. The method used in making this determination is a debatable one. 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 bus cost is the best method to use if all factors are considered.
- 4. In comparing the average cost per pupil transported between school districts, the following factors must be considered:
 - a. The type of road surface on which the buses travel.
 - b. Topography of the school district.
 - c. The number of multiple runs made by buses.
 - d. The length of the bus routes.
 - e. The pupil population density.
 - f. The percentage of buses which have been in service beyond the depreciation period of seven years.
 - g. The pupil capacity of the school buses.
 - h. The ratio between the number of high school and elementary pupils transported.
 - i. The number of unoccupied seat spaces.
 - j. The number of special routes for kindergarten and special education students.
 - k. The wage level in the community. (There is a considerable spread in salaries paid to school bus drivers, and on a statewide basis, this one item represents about 45 percent of the total operating cost.)

B. POSSIBLE STEPS THAT 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 cost 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.



APPENDIX

RESOURCE MATERIALS

The following 16 mm. films, slides and publications are available:

FILMS:

How To Follow Safely	}	Defensive Driving Series National Safety Council
Don't be a Sitting Duck		
What Right of Way		
The Art of Being Passed		
How To Pass Safely		
Stay Right-Stay Safe		
The Smith System		
Safety on the School Bus		
Driving Under Special Conditions		
Law & Tragedy of School Bus Accidents		
Chrome Yellow - Extra Caution		
Safety on the School Bus With Strings Attached		
Caution: Valuable Load		
Safety Facts About Crossing Tracks		

SLIDES:

School Bus Safety for Drivers	}	National Safety Council
Get 'Em Out Safely		
Adverse Weather Driving		
School Bus Safety - Loading & Unloading		

PUBLICATIONS:

Minimum Standards for Construction of School
Transportation Equipment
School Bus Drivers Handbook
School Bus Maintenance Manual
Teachers Guide for School Bus Passenger Safety
Training & Supervision of the School Bus Driver

Direct your request to the State Department of Public Instruction,
Transportation Division, Grimes State Office Building, Des Moines,
Iowa 50319.

BIBLIOGRAPHY

- Department of Public Instruction, "Transportation Handbook".
Madison, Wisconsin: the Department, 1969.
- Featherston, E. Glenn and D. P. Culp, "Pupil Transportation -
State and Local Programs". New York, N.Y.: Harper & Row,
Publishers, Inc., 1965.
- Isenberg, Robert M., "Guide for Analyzing a Pupil Transportation
Program". Washington, D.C. Department of Rural Education,
National Education Association, 1953.
- National Conference on School Transportation, "Standards for
School Bus Operation". Washington, D.C. National Education
Association, 1970.
- National Safety Council, "Fleet Safety Memo No. 59". Chicago,
Illinois: The Council, 1959.
- National Safety Council, "School Transportation - A Guide for
Supervisors". Chicago, Illinois: The Council, 1967.
- Sanders, Frank, Jr., "School Bus Driver Liability For Pupil
Injuries - An Analysis of Cases Alleging Negligence," School
Business Affairs, February, 1968.
- University of the State of New York, State Education Department,
"School Business Management Handbook". New York, N.Y.: the
Department, 1955.

STATE LIBRARY OF IOWA



3 1723 02117 1715