AN ABSTRACT OF THE THESIS OF

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This questionnaire study was made to determine the status of school transportation in Oregon and to serve as a basis for formulating new legislation or revising existing regulations of school transportation in Oregon. This thesis was based on data of school districts transporting a total of more than 22,893 pupils, of which 11,860 were elementary pupils and 11,033 were high school pupils, to and from school.

Only two of the thirty-six counties in Oregon do not provide transportation of children. The counties transporting the largest number of children are in order as follows: Multnomah, Clackamas, Klamath, Washington, and Marion.

Not all children transported to school in Oregon are carried by motor bus; 387 are transported in street cars, boats, horse-drawn vehicles, bicycles, trains, and speeders in order to meet the need of local conditions.

Approximately half the districts permit bus equipment to be used for transporting athletic teams where this transportation does not conflict with the regular schedule. Where district-owned busses are used for this purpose the expenses incident thereto must be paid by the student body or athletic group receiving the benefit.

The most popular makes of busses in Oregon from the standpoint of the number in use in order are as follows: Chevrolet, Ford, Dodge, G.M.C., and International. Approximately 60% of the school busses in Oregon are under contract with the district; about 30% are district-owned or district-leased; the remaining 10% are accounted for by other plans of ownership or lack of data pertaining to their ownership.

The estimated value of approximately 45% of the school busses is between $500 and $1,000. Most of the busses reported carry approximately a capacity load; over-crowding

of a serious nature seemed to be present in about 4% of the busses studied.

Approximately 45% of the busses in Oregon travel between 2,5000 miles and 7,000 miles per school year. The length of bus routes varies widely. Busses operate for the entire school year. Ninety per cent of the drivers in Oregon are over twenty-one years of age; only 5% are under twenty-one years of age.

Relatively few drivers in Oregon are bonded. The drivers of approximately 18% of the busses are bonded in some manner. The most common type of bond posted is the withholding of a specified number of days' pay by the district in order to assure the faithful performance of the duties of the drivers.

The drivers of school busses in Oregon are above the average in formal training since approximately 90% are graduates of elementary school; of this number many have attained high school and college training. Very few drivers perform any duty for the district other than driving the bus. No district requires the drivers to wear a special uniform. The turn-over of drivers of school busses is heavy during the first five years. An appreciable number seek this as a source of permanent employment in connection with another business or vocation. Very few district require their drivers to have training in first aid. Approximately 32% of the districts give their drivers written instruction pertaining to their duties and responsibilities.

Much confusion exists in regard to the problem of school bus insurance. All costs pertaining to school transportation in Oregon vary widely due to factors of a local nature.

The accident record is one death and nine injuries during the period of this study. In fourteen accidents involving the bus the damage was nominal.

Of the districts reporting, 40% voiced the need for new legislation pertaining to school transportation prior to the enactment of the present requirements. However, in general the people of Oregon are satisfied with their school transportation system as it now exists since 79% of the districts contributing to this study so stated.

A SURVEY OF SCHOOL TRANSPORTATION IN OREGON

by

PAUL JOSEPH RYAN

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CHAPTER I

INTRODUCTION

Each year the duty of transporting children to and from school becomes a major problem confronting the officers of school districts in Oregon. The consolidation of districts into larger units of school administration demands efficient transportation if the larger area is to be served well. The directors of the districts in planning transportation facilities must keep in mind two facts: first, that it is through the medium of transportation that they fulfill their obligation to provide an equal opportunity for an education; second, that the safety of the children being transported must be assured.

The term school transportation as herein used refers specifically to transportation provided at public expense, which expense is met through the medium of taxation. Children have been transported to and from school at the expense of parents since the beginning of public education. However, it is only recently that the American public has accepted the principle of providing transportation for school children at public expense. Two factors have influenced this trend of thought: first, school transportation can be cared for more efficiently as a public enterprise because the

economies effected by consolidation more than pay for the costs of transportation; second, the costs are now considered to be a legitimate part of the community tax program for public education.

In Oregon the administration of school transportation has been left where it rightly belong—in local school districts and non-high districts. Throughout the state there is ample evidence that these districts have approached the problem judiciously in order to build the present facilities which are now adequate in the majority of districts. Some of the less fortunate districts are faltering under the burden of a poor school transportation system. However, efficient administration and careful planning will assist these districts in building a better system of transportation. At present, there is no panacea that will equalize the burden of costs for all districts, although the elimination of obselete and worn-out equipment, the reorganization of routes, and the introduction of measures of sound management will lighten the costs of transportation. The only other avenue of hope which remains is state aid for transportation, and this has not gained impetus in Oregon.

To districts which are enjoying success with their school transportation program we must look for help and advice, because, in most cases, their program of transportation has not always been an easy one to carry on. Therefore, through a concerted program of cooperation all dis-

tricts can minimize their school transportation problems. Throughout the entire state of Oregon, school transportation is a timely topic, and in many districts, where the present costs are a staggering burden, a difficult problem.

A. Purpose and Value of This Study

The purposes of this study then are three-fold: first, to present the findings of the survey which the writer has made; second, to give where necessary an analysis of these findings with the hope that these facts may be, in a measure, helpful to those responsible for school transportation throughout the state of Oregon; and third to serve the State Department of Education, Salem, Oregon, and the Public Utilities Commission, Salem, Oregon, in formulating and revising legislation pertaining to school transportation in the state of Oregon.

B. Procedure Used

The information for this study was gathered by a questionnaire of forty-five questions sent out by the State Department of Education to all county school superintendents in Oregon, who then distributed the questionnaires to clerks or other officers of districts which provided transportation in their respective counties. The questionnaire was first prepared to include approximately one hundred questions, and was then presented to Mr. D. A. Emerson, State Department of Education, Salem, Oregon, and Dr. W. W. Parr,

Professor of Secondary Education, Oregon State College, for criticism and revision. As a result nearly all questions of the revised questionnaire were to be answered from objective data. After this treatment the questions were grouped under appropriate headings and compiled in final form.

C. Limitations

Three factors limit the value of this study: first, incomplete responses to questions in the questionnaire; second, incorrect answers to questions; and third, duplication of information. In so far as possible information reported from two different districts covering the same bus was included in this study only once. In most instances the clerks or other school-district officers reporting noted that the same information might be reported from another district. In addition the county superintendents assisted by notations where duplication might occur.

Many of the questions answered incorrectly were so answered because the respondent misread the question or words of the question. Certain of these incorrect answers were obvious by interpreting other questions.

The per cent of the questionnaires returned is impossible to determine accurately since they were distributed through the county school superintendents. The study made no attempt to discriminate between districts. The study was designed and planned to cover all districts in Oregon which supplied school transportation to pupils.

CHAPTER II

REVIEW OF SIMILAR STUDIES

A. Henderson's Study[1]

In 1930 Harold J. Henderson made a similar study entitled "School Transportation in Oregon". This study was presented to the faculty of the Graduate School of the University of Oregon in partial fulfillment of the requirements for the degree of Master of Science.

The purpose of this study was to present a short history of school transportation in the United States and in Oregon; a statement and analysis of the legal, administrative, and cost aspects of school transportation with a view toward determining what these conditions and practices are; and to suggest standards to those interested or to those contemplating the adoption of school transportation.

The information for this study was gained from a questionnaire calling for information on thirty-seven different items, and sent to school clerks and superintendents in Oregon in whose districts a minimum of approximately $1,000 was spent per year for transportation. Sixty-four of the 157 questionnaires sent out to the school clerks were returned, fifty-eight of which were usable entirely or in part.

The summary and conclusions of Henderson's study are as follows: "This questionnaire study was conducted to

present a short history of school transportation in the United States and in Oregon; to state and analyze the legal, administrative, and cost aspects of school transportation with a view toward determining the conditions and practices; and to suggest standards for the administration of this transportation. The study dealt with motor-bus transportation, especially as it related to the consolidation of schools. The study was based upon transportation systems conveying 3,422 high-school students and 1,988 elementary-school pupils, a total of approximately 90 per cent of the number of pupils transported to and from school in Oregon.

"The history of transportation in the United States has experienced a steady and healthy growth since its inception in Massachusetts in 1869. Approximately $40,000,000 is spent annually in transporting children to and from school at public expense. The growth of transportation in Oregon has been proportionately greater than that in the United States as a whole, about 6,000 children now being hauled annually in this state.

"The advantages of consolidation and transportation readily outweigh their disadvantages and objections; and the advent of larger consolidated schools with the attending transportation should make for better rural school and better rural citizenry. A portion of this transportation cost should be assumed by the state so that the rural chil-

dren will have more nearly equal educational opportunities and advantages as compared with the urban children.

"The present transportation law in Oregon in many cases works a hardship on the high-school districts transporting children who live outside the limits of the district. It has the effect of discouraging rather than encouraging the transportation of high-school students living at some distance from the high school and places these students at a disadvantage as compared to those living near the school in the ease with which a high-school education may be obtained. Enlarging the high-school district or granting allowances from some state source or fund on the basis of the actual cost of such transportation would help to equalize the irregularities now existing in the present law as revealed in actual practice.

"School districts have no power to furnish transportation in the absence of legislative permission, but where such permission is granted, the usual method is to allow the local school-governing body to effect this transportation. Equality of educational opportunities and the safety of the children are two of the principal considerations underlying transportation legislation. School districts are not liable, school-board members may be individually liable, and drivers are usually held liable for accidents resulting to children conveyed.

"The statutes in general grant local school officers wide discretion as to when and how transportation shall be provided. Transportation of pupils living long distances from school is fast being recognized as a function of school boards in the fulfillment of their obligations to provide school facilities. Courts have recognized the rights of parents in the enforcement of statutory provisions and to permit the district to compensate parents for transporting their children.

"Prior to adopting transportation, a survey should be made measuring the transportation need, laying out the routes, making a time schedule, determining whether to purchase and operate the busses by the school district or to contract for this service; choosing the make and size of busses; and determining the availability and qualifications of the drivers. Safety should be a primary consideration in the administration of transportation. Public ownership is recommended to be better than private ownership due to the administrative responsibility and control involved. The ownership of transportation facilities, however, is influenced by local conditions as the amount of money available for the outlay or that transportation is something of an experiment in that locality.

"The school bus should meet the same requirements and standards of economy, durability, safety, cleanliness and comfort that the school building does. The size and type

of bus should meet the requirements of the particular route to which use it is to be put. If the length of the route and the number of children to be carried warrant, then the large sized bus is the most economical to operate.

"Bus routes should be so planned as to give the greatest service to the largest number without working a hardship on anyone. For efficient transportation, the school busses should always be available to the orders of the principal for any auxiliary use that he proposes.

"The first requisite to successful transportation is centralized control and centralized responsibility. School boards should delegate authority pertaining to transportation to the principal or the superintendent. Transportation is as much a part of the school system as any other phase. Therefore, it should be in complete control of the school authorities at all times.

"Every contract for bus transportation should include the bond, the contractual agreement, and the specifications. An irresponsible individual should not be given the contract even though his bids were the lowest. Only individuals of good character, steady and dependable, physically, mentally, and morally competent, should be employed as drivers. Rules for the drivers should be strictly enforced. While teachers are satisfactory drivers, their teaching efficiency is lessened thereby, and in most cases it is better to appoint others.

"For efficient transportation, every school or owner of a school bus should keep an accurate cost system. Cost records are useful in detecting elements of waste and in suggesting future economies. The costs of transportation vary greatly in Oregon, but the variation is not as great as it has been, due, no doubt, to the experience of the past few years. A unit which takes into consideration the factors of the number of children, the distance, and the time, such as the cost per pupil per mile per day is recommended for accurate cost accounting and for comparative purposes. It is well to remember that cheap transportation will probably be dangerous transportation, although, in Oregon, the standards for both school-owned and for contract busses are very high and the service rendered very efficient.

"School-owned busses show a lower per pupil per mile per day rate than those privately owned and contracted. The cost of the transportation by the parents is too high in Oregon, and needs to be studied and anlyzed.

"The average school bus in Oregon is a Ford bus seating thirty-three pupils, with an initial cost of $2145, driven nineteen miles in one round trip for 171 days in the school year by a man driver other than a student, teacher or janitor at a salary of $343 annually."

B. Roberts' Study[4]

Professor Roy W. Roberts made a study of pupil transportation in Arkansas covering the year 1930-31. This study shows that factors affecting the cost of pupil transportation are the length of the bus route, the number of pupils transported, the cost (new) of the bus, and the kind of bus drivers. The data from which these conclusions are drawn were secured from 261 Arkansas districts receiving state aid for pupil transportation in 1930-31. The cost of transportation was estimated for 355 school-owned and 393 contract busses operating in these districts from itemized statements of cost submitted to the State Department of Education and from other data secured from the districts by correspondence and visitation.

An analysis of the factors relating to the pupils shows that the number transported per day has an important effect on the cost of transportation. The cost per day for contract transportation is less for smaller loads and more for larger loads than the cost of school-owned transportation.

From the data in this study it is not possible to attribute any change in cost due to construction or the road, and it is clear that if the type of road has any effect on cost of transportation, this effect is small compared to pupils transported and miles travelled.

Where busses travel to the end of the route empty the

cost increased about thirty-five cents per day for these busses.

An analysis of the factors relating to the school busses shows that the cost of transportation per bus day decreases up to 140 days per year and has little effect on the cost per day. The seating capacity is remotely related to the transportation cost.

School-owned busses operate at a cost per bus per day of $4.39 as compared to $4.66 for contract busses. No important relation was found between cost of bus and cost of pupil transportation, but a high degree of relationship was found between the cost (new) of the bus and the cost of pupil transportation. The changes in the number of pupils transported are irregular and indicated as a rule that medium priced busses transport more pupils than the higher priced ones.

About two-thirds of the school busses had been in use two years or less. There is a tendency after two years for the cost of operation to decrease as the age of the bus increases and the same tendency is noted in the salary of the bus driver. The maintenance cost also increases as the bus advances in age.

There is little relationship between age of bus driver and the number of days the bus operated, number of pupils transported or number of miles bus travels, but there is some tendency for school boards to pay higher salaries for

older drivers of school-owned busses. School bus drivers are selected from pupils, patrons, and teachers. School patron drivers of school-owned busses receive an average salary of $250 per annum, pupils $157, and teachers $189.

The age and occupation of the bus driver affects the cost of transportation through differences in salary paid to operators.

Such factors as topography, area, current expense of district, and purchasing supplies, and years district has furnished transportation show no important relation to cost of pupils transportation.

The most important factors found to have a significant effect on the cost of pupil transportation are the two managerial factors—cost of bus and occupation of driver—and the two factors over which the school authorities have little control—the length of the bus route and number of pupils transported per day.

In this study Roberts found that school bus operators spent in that year 3.8 cents per bus mile for gasoline and oil, and 1.8 cents per bus mile for maintenance.

C. Walton's Study(5)

In the rural sections of California high schools have made a phenomenal development on account of the union high school law under which the territory of several elementary districts is incorporated into one union high school dis-

trict. The elementary district government rests with a board of three trustees for each district; the high school districts are governed by a board of five trustees.

High school districts began offering bus transportation about eighteen years ago, and gradually it has been introduced in elementary schools. In many districts the wasteful practice of busses going over the same road, one for high school pupils and one for elementary pupils, has developed.

The cost for five high school busses is given in the following table as reported by C. L. Walton:

COSTS FOR FIVE HIGH SCHOOL BUSSES

Year	1928-29	1929-30	1930-31	1931-32	1932-33	1933-34	1934-35
Total mileage	26,237	32,166	28,493	26,617	30,814	29,617	31,142
Total number of passengers	35,556	45,799	47,568	52,110	56,072	45,461	42,232
Drivers' salaries	1,725	2,002	1,648	1,779	1,670	1,336	1,349
Supplies, services and repairs	2,104	1,997	1,974	1,812	2,045	1,563	1,764
Operating cost per mile	14.7	12.4	12.7	13.0	12.1	9.9	10.0
Operating cost per passenger	10.8	8.8	7.6	6.9	6.6	6.4	7.4
Insurance							
Depreciation							
Total cost per mile	22.0	18.6	18.9	18.7	15.9	13.0	9.3
Total cost per passenger	16.2	13.1	11.3	9.9	8.7	8.5	9.3

Safety of operation depends to a large extent on the type of driver employed. All drivers must pass a state examination. Any driver known to be careless must be replaced without delay.

One of the drivers is retained as a full-time mechanic. This mechanic warms up and checks the busses for defects. During the summer months the motors are repaired, and the busses are repainted.

California regulations for busses now forbid overloading and require every safety precaution possible such as spare tire, tools, two stop lights, windshild wipers, rear-vision mirrors, four-wheel brakes, school bus signs in letters four inches high, signaling devices, fire extinguishers, safety kit, and proper heating and ventilating devices.

Under these regulations "the driver shall be held responsible for the orderly conduct of pupils transported. Continued disorderly conduct or persistent refusal to submit to the authority of the driver shall be sufficient reason for refusing transportation to any pupil." While such regulations cost money, they may prove to be real economies if they prevent expensive accidents and injuries to pupils.

D. Welborne's Study

This article gives interesting national statistics pertaining to school-bus transportation. According to the study American schools to the number of 28,231 owned or contracted for the use of 77,825 busses for the transportation of pupils. These busses carried 2,918,657 pupils during 1935, over 924,597 miles of route at a cost of $52,621,881. The average cost of school bus service, based on figures compiled in five states, was $18 per pupil. The highest cost per pupil was in Wyoming $66.32 while lowest in North Carolina $10.85.

Approximately 70% of the 77,825 school busses contained in this statistical study are believed to be privately owned and operated under contract with school districts, but there is an increasing trend toward school-district ownership.

During 1935 manufacturers sold 9,403 busses, valued at about $23,000,000 to American schools. This was an all-time high record, more than double the peak of 4,582 in 1934.

At the rate new school equipment is going into service, it won't be long before the last one of the 1920 home-made type of school bus will be out of service.

This survey study was accomplished with the cooperation of state superintendents of public instruction, transportation superintendents and various other public officials.

E. Mullins' and Hamon's Study[3]

Every state in the union transports children at public expense, and transportation has been generally accepted as a legitimate part of the tax program of the counties. The feasibility of consolidation and transportation has been demonstrated. Through this plan a high school education has been made available to thousands of children who otherwise would not have had such an opportunity. The soundness of the policy is generally accepted, but the problems of its administration have not been definitely standardized.

While transportation is not a direct expenditure for education, it is a necessary auxiliary to education. A program of distribution of state funds for the aid of schools must, therefore, necessarily consider the cost of transportation.

The general accepted philosophy of state aid in the support of schools is to equalize the burden of school support and the educational opportunity to children in the various school units. If this principle is to be effective in New Mexico, a more definite program governing the distribution of state funds for transportation is necessary.

Some of the most outstanding defects of the present method of state aid for transportation are: (1) transportation for pupils living less than statutory distance from school and otherwise committing the state to the principle

of rewarding local inefficient practices; (2) no recognition of efficient management in some counties and possible inefficient management in others; and (3) the difference in unit costs resulting from density of population.

The need for transportation in any county may be determined by density of population. If the rural population were distributed uniformly over the entire state, determining need on the basis of density of population would be an easy matter.

The writers suggest a technique which remedies the defects of the present plan. The system they produced takes into consideration the fact that large areas in New Mexico are not inhabited or are very thinly settled.

CHAPTER III

AN ANALYSIS OF QUESTIONNAIRE DATA RELATIVE TO SCHOOL TRANSPORTATION IN OREGON

A. General Information

After the questionnaires had been returned, the information was transferred to eighteen master summary sheets to facilitate the use of the data in preparing the necessary tabulations and tables.

In 335 usable questionnaires, information relative to 681 busses was received. Forty-two questionnaires were deemed unusable because of incomplete answers, duplication of information, illegibility, and other causes.

Out of the thirty-six counties in Oregon, only two counties, Wheeler and Wallowa, have no transportation for pupils to or from school. The total number of pupils transported, as reported for this study, is 22,893. Since all districts which reported did not state the exact number, and since all districts in Oregon did not report, the figure given above is less than the actual number of pupils being transported. However, with the above facts in mind, an approximation of the total number of pupils transported in round numbers is about 25,000.

The five counties transporting the largest number of pupils rank as follows: first, Multnomah 2,544 pupils, 11.1%; second, Clackamas 2,451 pupils, 10.8%; third, Klamath 1,646 pupils, 7.2%; fourth, Washington 1,628 pupils, 7.1%;

fifth, Marion, 1,257 pupils, 5.6%.

At the expense of the district, 11,352 elementary pupils, 49.5% are transported; and 5,602 high school pupils, 24.6%, are transported. Non-high districts provide transportation for 4,470 pupils, 19.5% of the total.

In Oregon many districts have discontinued their schools, and now contract tuition and transportation of their pupils to other districts. Under this and other arrangements 508 elementary pupils, 2.2%, and 961 high school pupils, 4.2%, are transported.

Nearly every county reporting contained districts which reported inadequate busses. From this one can deduce that the number of pupils being transported to and from school has increased during the past years. There is every reason to believe that the number will continue to increase in proportion to the increased enrollment in the Oregon schools.

TABLE I

GENERAL DATA RELATIVE TO THE SOURCE OF SUPPORT, NUMBER OF PUPILS TRANSPORTED, AND GRADE LEVEL OF THOSE WHO BENEFIT BY TRANSPORTATION

County	Dist. Elem.	High School	Non-High	Other District Elem.	Other District H. S.	Total	% of Total
Benton	126	34	241	0	54	455	1.9
Baker	13	7	129	0	0	149	.7
Clackamas	855	789	522	64	221	2451	10.8
Clatsop	695	69	48	5	29	846	3.7
Columbia	467	183	281	1	0	932	4.1
Coos	298	204	396	17	0	915	3.9
Crook	120	0	0	0	15	135	.6
Curry	211	48	6	0	0	265	1.2
Deschutes	74	197	5	17	7	300	1.3
Douglas	393	188	99	24	0	704	3.0
Gilliam	13	0	0	0	0	13	.1
Grant	0	0	13	0	0	13	.1
Harney	13	12	0	0	0	25	.2
Hood River	182	325	0	0	0	507	2.2
Jackson	564	99	192	52	8	915	3.9
Jefferson	36	11	0	0	0	47	.2
Josephine	581	151	211	20	4	967	4.2
Klamath	1085	561	0	0	0	1646	7.2
Lake	85	16	13	20	0	134	.6
Lane	518	220	3	15	17	773	3.4
Lincoln	425	214	0	0	0	639	2.8
Linn	45	73	58	0	100	276	1.2
Malheur	397	126	190	1	0	714	3.2
Marion	284	293	415	4	261	1257	5.6
Morrow	243	105	112	98	15	573	2.5
Multnomah	1690	388	466	0	0	2544	11.1
Polk	82	14	96	18	0	210	.9
Sherman	123	77	6	5	4	215	.9
Tillamook	580	187	6	10	0	783	3.4
Umatilla	191	60	0	24	7	282	1.2
Union	9	8	202	40	0	259	1.1
Wallowa	0	0	0	0	0	0	.0
Wasco	199	71	215	44	32	561	2.4
Washington	508	459	474	2	185	1628	7.1
Yamhill	247	413	71	27	2	760	3.3
Wheeler	0	0	0	0	0	0	.0
Total	11352	5602	4470	508	961	22893	
Per Cent	49.5	24.6	19.5	2.2	4.2	100.0	

Of the districts which provide transportation 113, or 33.8%, transport 91 to 100 per cent of the pupils enrolled in school. The information relative to the per cent of pupils transported in 24 districts or 7.2% of the total was not stated. Table II shows complete information as to the per cent of pupils enrolled which are transported.

TABLE II

PER CENT OF TOTAL ENROLLMENT FOR WHICH TRANSPORTATION IS PROVIDED

Per Cent of Total Enrollment Transported	Districts	
	Number	Per Cent
91-100	113	33.8
81-90	17	5.0
71-80	26	7.7
61-70	23	6.9
51-60	16	4.8
41-50	28	8.4
31-40	32	9.6
21-30	20	5.9
11-20	21	6.2
1-10	15	4.5
None Stated	24	7.2
Total	335	100.0

The explanation of the mode being the 91% to 100% group is due to the number of small districts which provide transportation for pupils living beyond a reasonable walking distance from school. Where the bus will accommodate, pupils living within walking distance from school are permitted to use the bus. These factors largely explain the position of the mode in Table II.

The task of fixing boundaries within the district, outside of which transportation will not be provided, may lead to eruptions of disapproval from school patrons whose children are denied the use of this service. Therefore the cooperation and goodwill secured by allowing the bus to be used by all pupils, where the facilities are not overcrowded, more than pays for the additional time spent in making more stops.

Not all pupils in Oregon are transported to and from school by motor busses. Local conditions and natural obstacles such as rivers, bays, and mountains require the use of conveyances other than motor busses. Table III shows the findings in regard to these conveyances.

TABLE III

NUMBER OF PUPILS AND TYPES OF CONVEYANCES OTHER THAN MOTOR BUSSES IN WHICH PUPILS ARE TRANSPORTED

Conveyances	Number of Pupils	Districts		
		Transporting Pupils Stated in Column 1	Using This Conveyance, but No. of Pupils not Stated	Total Districts
Street car	249	2	0	3
Water craft	90	9	2	11
Horse-drawn	36	10	2	12
Bicycle	6	2	0	2
Train	4	3	1	4
Speeder	2	1	1	2
Total	387	27	6	33

No attempt was made to learn the extent of use of private cars. The purpose of this question, when included in the questionnaire, was to determine the extent of use of other types of transportation units in use. Passenger cars, the operating costs of which are paid entirely or in part by the district, are included in this study as a school bus. The heading, horse-drawn, also includes those who rode mounts. The information was requested as horse-drawn, but some of the responses inferred that this additional condition was included.

Street cars were used in two districts. Since such a service is not generally available, the number of districts using this avenue is limited. The use of water craft was more prevalent in Coos County, though not entirely confined to this county. The conditions which require the use of these conveyances will be eliminated by the continuation of the road-building program of the state of Oregon. Since natural barriers are hard to conquer, the use of some specially adapted conveyances will be retained indefinitely. Good roads, as they further spread over the state, will reduce the use of these conveyances to a minimum.

TABLE IV

THE MINIMUM DISTANCE FOR WHICH TRANSPORTATION IS PROVIDED

Distance in Miles	Districts	
	Number	Per Cent
Over 3	97	28.9
2.5-2.9	10	2.9
2-2.4	31	9.2
1.5-1.9	22	6.6
1-1.4	78	23.3
.5-.9	38	11.3
.1-.4	15	4.7
No Minimum	25	7.4
No Answer	19	5.7
Total	335	100.0

Table IV was compiled from the responses received from the following question: What is the minimum distance from school for which transportation is provided? In approximately 100 questionnaires the word "minimum" was interpreted to mean "maximum" or the most distant point for which transportation was provided. The question was checked by comparing the response with the answer given for the length of the bus route. Where the two answers were similar, the incorrect interpretation of the word "minimum" is obvious. Therefore, the writer feels that this condition impairs the value of the information reported in Table IV.

Ninety-seven districts or 28.9% do not provide transportation unless the pupils live more than three miles from school. Seventy-eight districts or 23.3% reported

the minimum distance as being 1 to 1.4 miles from school. Twenty-five districts or 7.4% reported that no minimum distance had been fixed. This information was not supplied from 19 districts or 5.7%.

Many districts which have determined a minimum distance for which transportation will not be provided reported by supplementary remarks that this ruling was not enforced rigidly unless the busses were overcrowded. In summarizing, the problem of establishing a minimum distance for which transportation will not be provided is of little moment to most school districts in Oregon. Where overcrowding is not a problem it is an issue on which Oregon school districts do not invite trouble.

Table V shows that 136 districts or 40.6% permit busses to be used for transporting athletic teams. However, most of the responses stated that the expense of such trips was paid by the student body or athletic group receiving the benefit of the service. One hundred and seventy-nine districts or 53.4% reported that the busses were not used for transporting athletic teams. Twenty districts or 6% did not supply the information for this question.

TABLE V

THE EXTENT TO WHICH BUSSES ARE USED IN TRANSPORTING ATHLETIC TEAMS

Busses Used	Districts	
	Number	Per Cent
No	179	53.4
Yes	136	40.6
No Response	20	6.0
Total	335	100.0

Where the teams travel long distances for games it is necessary for the school to maintain a separate bus to transport them or to secure the service through other sources. Generally the use of busses in transporting athletic teams conflicts with the intended purpose of transporting pupils to and from school. Since the athletic group is small, the district or particular school can usually finance the trips more economically by using private cars or facilities of commercial agencies rather than the heavy equipment of the district even though it is available for use.

Table VI shows that 414 busses or 60.8% of the total number of school busses in Oregon are under contract with the district which they serve. Two hundred and sixteen busses or 31.8% are owned and operated by the district; eight busses or 1.1% operate under a plan whereby the pupils pay a part or pay entirely the expense of their transportation. Twenty-seven busses or .4% either operate

under another plan or did not state any answer forthis question.

From the standpoint of the number in use the makes of busses rank as follows: first, Chevrolet with 188 busses or 27.6%; second, Ford with 164 busses or 24.1%; third, Dodge with eighty-eight busses or 12.9%; fourth, G.M.C. with fifty-two busses or 7.6%; fifth, International with thirty-four busses or 4.8%; sixth, Reo with nineteen busses or 2.8%; seventh, Graham with sixteen busses or 2.3%; eight, Studebaker with eleven busses or 1.6%; ninth, Plymouth with eleven busses or 1.6%; and tenth, Buick with ten busses or 1.4%. The remaining busses are nearly evenly divided among the other makes represented. The make of twenty-six busses or 5.7% was not stated.

A comparison of the district-owned busses with the contract busses reveals that the district tends to buy better equipment than does the contractor. However, the distinction is not strong enough to be pertinent.

TABLE VI

THE OWNERSHIP AND MAKE OF SCHOOL BUSSES
IN OREGON

Make of Bus	Contracted	District		Other Plan or No Data	Pupils Pay	Total	Per-Cent
		Owned	Leased				
Chevrolet	126	54	4	1	3	188	27.6
Ford	105	53	1	1	4	164	24.1
Dodge	46	39	1	0	2	88	12.9
G.M.C.	30	20	0	1	1	52	7.6
International	7	26	1	0	0	34	4.8
Reo	14	4	1	0	0	19	2.8
Graham	8	7	0	1	0	16	2.3
Studebaker	10	1	0	0	0	11	1.6
Plymouth	10	0	0	0	1	11	1.6
Buick	6	0	0	4	0	10	1.4
White	1	1	0	6	1	9	1.2
Fageol	3	3	0	0	0	6	.9
Diamond T.	5	1	0	0	0	6	.9
Federal	1	4	0	0	0	5	.7
Pontiac	4	0	0	0	0	4	.6
Chrysler	3	0	0	0	0	3	.5
Durant	1	1	0	0	0	2	.3
Nash	2	0	0	0	0	2	.3
Willys Knight	1	0	0	0	1	2	.3
Yellow Coach	0	0	0	0	2	2	.3
Graham Paige	1	0	0	0	0	1	.2
LaFayette	1	0	0	0	0	1	.2
Mack	1	0	0	0	0	1	.2
Hudson	1	0	0	0	0	1	.2
Packard	0	0	0	0	1	1	.2
Star	0	1	0	0	0	1	.2
Moreland	0	0	0	1	0	1	.2
Whippet	1	0	0	0	0	1	.2
Non Stated	26	1	0	12	0	39	5.7
Total	414	216	8	27	26	681	100.0
Per Cent	60.8	31.8	1.1	.4	2.3		

Table VII shows that sixty-nine busses or 10.1% are 1927 or older models. Fifty-four busses or 7.9% are 1928 models. One hundred and five busses or 15.4% are 1929 models. Sixty-six busses or 9.7% are 1930 models. Sixty-one busses or 8.9% are 1931 models. Thirty-eight busses or 5.6% are 1932 models. Thirty-one busses or 4.6% are 1933 models. Sixty-four busses or 9.4% are 1934 models. Eighty-six busses or 12.6% are 1935 models. Fifty-eight busses or 8.6% are 1936 models. Three busses or .4% are 1937 models. Information relative to forty-six busses or 6.8% of the total was not supplied.

The oldest bus in service, as reported in this study, was a 1917 model.

TABLE VII

MAKE AND YEAR MODEL OF SCHOOL BUSSES
IN OREGON

Make of Bus	1917 to 27	28	29	30	31	32	33	34	35	36	37	No Data	Total
Chevrolet	14	12	29	17	20	16	11	25	20	16	2	6	188
Ford	7	4	32	19	27	12	8	16	28	7	0	4	164
Dodge	9	8	14	10	3	2	3	12	14	12	0	1	88
G. M. C.	4	9	5	7	1	3	4	5	5	7	0	2	52
International	4	5	3	1	4	2	2	2	7	4	0	0	34
Reo	3	4	1	3	3	0	0	0	2	1	1	1	19
Graham	2	7	5	0	0	0	1	0	0	0	0	1	16
Studebaker	2	0	2	2	0	0	0	0	1	1	0	1	11
Plymouth	0	0	2	0	0	2	0	2	3	2	0	0	11
Buick	7	0	1	1	0	0	0	0	0	0	0	1	10
White	7	0	1	0	0	0	0	0	0	0	0	1	9
Fageol	2	0	1	0	1	1	0	0	0	0	0	1	6
Diamond T.	0	0	1	0	0	0	0	1	2	2	0	0	6
Federal	0	0	0	3	0	0	1	0	1	0	0	0	5
Pontiac	1	0	1	0	0	0	0	0	0	2	0	0	4
Chrysler	0	2	1	0	0	0	0	0	0	0	0	0	3
Durant	1	0	1	0	0	0	0	0	0	0	0	0	2
Nash	0	0	0	1	0	0	0	0	0	0	0	1	2
Willys Knight	0	0	2	0	0	0	0	0	0	0	0	0	2
Yellow Coach	0	0	2	0	0	0	0	0	0	0	0	0	2
Graham Paige	0	1	0	0	0	0	0	0	0	0	0	0	1
LaFayette	0	0	0	0	0	0	0	0	0	1	0	0	1
Mack	1	0	0	0	0	0	0	0	0	0	0	0	1
Hudson	1	0	0	0	0	0	0	0	0	0	0	0	1
Packard	0	0	0	0	0	0	0	0	0	0	0	1	1
Star	1	0	0	0	0	0	0	0	0	0	0	0	1
Moreland	1	0	0	0	0	0	0	0	0	0	0	0	1
Whippet	0	1	0	0	0	0	0	0	0	0	0	0	1
None Stated	2	1	1	2	0	0	1	1	3	3	0	25	39
Total	69	54	105	66	61	38	31	64	86	58	3	46	681
Per Cent	10.1	7.9	15.4	9.7	8.9	5.6	4.6	9.4	12.6	8.6	.4	6.8	

TABLE VIII

ESTIMATED VALUE OF DISTRICT-OWNED AND LEASED BUSSES AS OF JUNE 1, 1936

Estimated Value	Busses	
	Number	Per Cent
$3000 and over	1	.4
2750-2999	5	2.2
2500-2749	6	2.7
2250-2499	4	1.8
2000-2249	8	3.6
1750-1999	6	2.7
1500-1749	18	8.0
1250-1499	8	3.5
1000-1249	33	14.7
750-999	8	3.6
500-749	48	21.5
250-499	52	23.2
0-249	12	5.4
None Stated	15	6.7
Total	224	100.0

Table VIII shows the value of district-owned school busses as of June 1, 1936. Fifty-two busses or 23.2%, the largest number contained in any group, are included in the group from $250 to $499. Forty-eight busses or 21.5%, the second largest number in a group, are included in the group from $500 to $749. The facts give an indication of the prevailing type of district-owned and district-leased busses in general use in Oregon.

By utilizing a more comprehensive grouping, the following facts relevant to district-owned and district-leased school busses are determined: one hundred and twenty busses or 53.7% are included in the group from $0.00 to $999; sixty-five busses or 28.9% are contained in the group

from $1,000 to $1,999; and twenty-four busses or 10.7% have an estimated value of more than $2,000. The information pertaining to the estimated value of fifteen busses or 6.7% was not supplied.

TABLE IX

THE CAPACITY LOAD OF SCHOOL BUSSES IN OREGON

Number of Pupils	Busses	
	Number	Per Cent
75 and over	4	.6
70-74	1	.1
65-69	3	.5
60-64	17	2.5
55-59	16	2.4
50-54	37	5.4
45-49	56	8.2
40-44	66	9.7
35-39	57	8.4
30-34	108	15.8
25-29	66	9.7
20-24	60	8.8
15-19	23	3.4
10-14	31	4.5
5-9	92	13.5
0-4	10	1.5
No Answer	34	5.0
Total	681	100.0

Table IX shows the pupil capacity of school busses. One hundred and eight busses, which is the largest number in any group and which represents 15.8% of the total, are included in the group of thirty to thirty-four pupils. Table IX shows that relative large busses are popular from the standpoint of the number in use. Five hundred and fourteen busses or 75.5% of the total have a capacity of

fifteen or more pupils; seventy-eight busses or 11.5% of the total have a pupil capacity of fifty or more. One hundred and thirty-three busses or 19.5% of the total are passenger cars and miscellaneous small capacity types with a capacity of less than fifteen pupils. No capacity was stated for thirty-four busses or 5% of the total.

TABLE X

THE EXTENT OF OVER AND UNDER LOADING OF SCHOOL BUSSES IN OREGON

Load	Busses	
	Number	Per Cent
10	27	3.9
5-9	27	3.9
0-4 Over Capacity	60	8.8
Capacity	118	17.4
0-4 Under Capacity	170	24.9
5-9	138	20.3
10-14	49	7.2
15	32	4.7
No Answer	60	8.9
Total	681	100.0

Table X shows that 170 busses or 24.9% of the total carry four pupils less than a capacity load; one hundred and eighteen busses or 17.4% of the total carry a capacity load. Serious overcrowding, more than ten pupils over capacity, was reported for twenty-seven busses or 3.9% of the total. Thirty-two busses or 4.7% of the total reported loads under capacity by fifteen or more pupils. The load was not reported for sixty busses or 8.9% of the total.

TABLE XI

NUMBER OF MILES EACH BUS HAS TRAVELLED SINCE PURCHASED

Miles	Busses	
	Number	Per Cent
70,000+	16	2.5
60,000-69,999	24	3.5
50,000-59,999	34	5.1
40,000-49,999	69	10.1
30,000-39,999	74	10.8
20,000-29,999	59	8.5
10,000-19,999	86	12.7
0- 9,999	74	10.8
No Data	245	36.0
Total	681	100.0

Of the total number of busses 244 or 35.9% have travelled 25,000 miles or more; 192 busses or 28.1% have travelled less than 25,000 miles. The number of miles which 245 busses or 36% travelled was not stated. Only two of the busses reported in this study have travelled more than 100,000 miles. Forty-four busses, which was the largest number in any group, were contained in the group of 15,000 to 19,999 miles—the modal group. The range of the miles travelled was from a new bus with no mileage to a bus with approximately 122,000 miles.

TABLE XII

MILES EACH BUS TRAVELLED DURING THE 1935-36 SCHOOL YEAR

Miles	Busses	
	Number	Per Cent
15,000+	7	1.0
12,500-14,999	7	1.0
10,000-12,499	44	6.5
7,500- 9,999	97	14.2
5,000- 7,499	172	25.3
2,500- 4,999	135	19.7
0- 2,4999	59	8.8
No Data	160	23.5
Total	681	100.0

Table XII shows the miles each bus has travelled during the 1935-36 school year. Of the total number of busses 463 or 67.3% travelled less than 10,000 miles. Fifty-eight busses or 8.4% of the total travelled 10,000 or more miles during the school year. The distance travelled by 160 busses or 23.3% of the total was not stated. The group which included the largest number of busses was the group between 5,000 and 7,499 miles—the modal group. The modal group accounted for 172 of the 681 busses or 25.1%. Only two busses travelled more than 18,500 miles. The range of miles travelled was from 430 miles to 22,600 miles.

TABLE XIII

LENGTH OF BUS ROUTES IN OREGON

Miles	Busses	
	Number	Per Cent
60+	23	3.4
54-59.9	10	1.5
48-53.9	24	3.5
42-47.9	15	2.2
36-41.9	33	4.7
30-35.9	64	9.3
24-29.9	89	13.0
18-23.9	112	16.4
12-17.9	126	18.4
6-11.9	122	17.7
0- 5.9	42	6.1
No Data	21	3.8
Total	681	100.0

In determining the length of the bus route, the distance included is the number of miles out from school to the farthest point and back to school. The responses to the question are shown in Table XIII. The group between 12 and 17.9 miles contains the largest number of busses and is the modal group. The modal groups contains 126 busses or 18.4% of the total. Above the modal group are 370 busses or 54% of the total; below the modal group are 164 busses or 23.8% of the total number of busses. Information relative to the length of the route of twenty-one busses or 3.8% was not given. The range of the length of the bus routes was from 1.5 miles to sixty-six miles.

TABLE XIV

NUMBER OF DAYS BUSSES OPERATED
DURING 1935-36 SCHOOL YEAR

Days	Busses	
	Number	Per Cent
175 and Over	345	50.7
170-174.9	166	24.4
165-169.9	50	7.3
160-164.9	35	5.2
155-159.9	0	.0
150-154.9	0	.0
145-149.9	1	.1
140-144.9	2	.2
135-139.9 and Under	12	1.8
None Stated	70	10.3
Total	681	100.0

Table XIV shows that 345 busses or 50.7% of the total operated over 175 days during the 1935-36 school year. One hundred and sixty-six busses or 24.4% operated between 170 and 174.9 days; 511 busses or 75.1% of the total operated 170 or more days during this period. This information was not supplied for seventy busses or 10.3% of the total.

B. Qualifications of Drivers

The task of selecting competent drivers is one of the major decisions which school board members must decide. A safe driver is good assurance as to the safety of the children. In Oregon the drivers of school busses receive small salaries, but from the following tables the facts reveal the drivers to be reliable and safe operators.

TABLE XV

AGE OF SCHOOL BUS DRIVERS

Age	Drivers	
	Number	Per Cent
Under 21	38	5.7
Between 21 and 40	377	55.3
Over 40	244	35.8
None Stated	22	3.2
Total	681	100.0

Table XV shows the ages of the drivers employed to drive school busses in Oregon. Of this number thirty-eight drivers or 5.7% are under twenty-one years of age; 377 drivers or 55.3% are between the ages of twenty-one and forty; 244 or 35.8% are over forty. The ages of twenty-two drivers or 3.2% of the total was not stated.

TABLE XVI

NUMBER OF DRIVERS WHO ARE BONDED

Bonded	Drivers	
	Number	Per Cent
Yes	119	17.3
No	500	73.4
None Stated	62	9.1
Total	681	100.0

Table XVI shows that in Oregon 119 drivers or 17.5% of the total are bonded; 500 drivers or 73.4% are not under bond. This information was not stated for sixty-two drivers or 9.1% of the total. The most common type of bond posted is the retention of a certain number of days' pay by the district to insure the performance of the drivers' duties.

TABLE XVII

THE EDUCATION OF DRIVERS OF SCHOOL BUSSES IN OREGON

School Level Completed	Drivers	
	Number	Per Cent
Grade school	288	42.3
High school	274	40.3
College	28	4.1
College student	8	1.2
Normal school	6	.9
Trade school	3	.4
Business college	1	.1
None stated	73	10.7
Total	681	100.0

Table XVII shows that 288 drivers or 42.3% of the school bus drivers completed a grade-school education; 274 drivers or 40.3% are high-school graduates; twenty-eight drivers or 4.1% are college graduates; three drivers or .4% completed trade-school training; six drivers or .9% are normal-school graduates; eight drivers or 1.2% are college students. One driver completed a business-college training. The school training of seventy-three drivers or 10.7% of the total was not stated.

TABLE XVIII

ADDITIONAL DUTIES BUS DRIVERS PERFORM FOR THE SCHOOL DISTRICTS

Extra Duties	Drivers	
	Number	Per Cent
No Duties	424	62.2
Janitor	39	5.7
Teacher	14	2.0
Clerk	14	2.0
High school student	9	1.3
Mechanic	8	1.2
Extra or assistant janitor	7	1.0
General utility, Odd jobs	2	.3
Director	4	.6
Mechanic-Janitor	1	.2
Principal	1	.2
Cafe cook	1	.2
Playground supervisor	1	.2
No Answer	156	22.9
Total	681	100.0

Table XVIII shows that 424 bus drivers or 62.2% perform no other duty for the school district; and that 101 drivers or 14.8% do perform additional duties. No answers were received for 156 drivers or 22.9% of the total. Thirty-nine of the 101 drivers who do perform additional duties are janitors; fourteen are clerks; and the remaining twenty-seven, in addition to driving the school bus, perform many different kinds of services for the district.

TABLE XIX

STATUS OF REQUIREMENT AS TO UNIFORMS OF SCHOOL BUS DRIVERS IN OREGON

Uniforms Required	Drivers	
	Number	Per Cent
Yes	0	0
No	663	97.3
No Answer	18	2.7
Total	681	100.0

Table XIX shows definitely that no district in Oregon requires drivers of school busses to wear any prescribed or designated type of uniform. However, many districts, through printed instructions to drivers, specify that drivers must be neat and clean. Logically the school board should not retain a driver who is slovenly.

TABLE XX

THE NUMBER OF YEARS DRIVING EXPERIENCE OF BUS DRIVERS PRIOR TO FIRST ELECTION

Years	Drivers	
	Number	Per Cent
24+	18	2.6
20-23.9	71	10.4
16-19.9	27	4.0
12-15.9	131	19.2
8-11.9	147	21.6
4-7.9	99	14.6
0-3.9	59	8.7
Student permit	1	.1
No Data	128	18.8
Total	681	100.0

Table XX shows that 147 drivers or 21.6%, the largest number in any group, are included in the group 8 to 11.9 years of driving experience; 247 drivers or 36.3% have had a greater number of years of driving experience than those of the modal group; 158 drivers or 23.3% have had fewer years of driving experience than those of the modal group. The number of years of driving experience for 128 drivers or 18.8% of the total was not stated. Only one driver included in this study was reported as a driver who used a student permit.

TABLE XXI

THE NUMBER OF YEARS AS DRIVER FOR DISTRICT

Years	Drivers	
	Number	Per Cent
14+	8	1.1
12-13.9	13	1.9
10-11.9	16	2.4
8-9.9	27	3.9
6-7.9	72	10.6
4-5.9	91	13.3
2-3.9	223	32.8
0-1.9	191	28.3
No Data	40	6.0
Total	681	100.0

Table XXI shows the number of years that drivers have served the district. The modal group is 2 to 3.9 years and contains 223 busses or 32.8% of the total. Above the modal group are 227 busses or 33.2% of the total; and below the modal group are 191 busses or 28% of the total. The range of the years of service as driver is from one year to twenty-six years. No data was given relative to the tenure of forty drivers.

The table indicated that the turnover of drivers is heavy during the first five years since many drivers seek the position as temporary employment. However, the showing of the drivers who have served more than five years indicated that a large per cent of the drivers seek this as a permanent way to earn a living. The fact that many

drivers perform this service in addition to their private business or vocation largely accounts for the permanency of the drivers.

TABLE XXII

THE STATUS OF THE REQUIREMENT FOR FIRST-AID TRAINING FOR SCHOOL BUS DRIVERS

Training	Drivers	
	Number	Per Cent
Yes	15	2.2
No	637	93.6
No Answer	29	4.2
Total	681	100.0

Table XXII shows that fifteen drivers or 2.2% are required to have training in first aid; 637 drivers or 93.6% are not required to have first-aid training. This information was not reported for twenty-nine drivers or 4.2% of the total.

TABLE XXIII

THE STATUS OF THE PRACTICE OF GIVING SCHOOL BUS DRIVERS WRITTEN INSTRUCTIONS

Written Instructions	Drivers	
	Number	Per Cent
Yes	219	32.2
No	428	62.8
No Answer	34	5.0
Total	681	100.0

Table XXIII shows that 219 drivers or 32.2% of the total are given written instructions by the district in regard to rules to be obeyed. Four hundred and twenty-eight drivers or 62.8% are not given any written instructions. This information was not supplied for thirty-four drivers or 5% of the total.

C. Insurance

According to the facts reported to this study school districts do not follow a standardized practice in regard to school bus insurance, since school districts have a favored legal status. However the directors as individual persons are not so fortunate; therefore directors, when acting as administrative officers of the district, must be mindful that they become individually liable to persons damaged if the damage is the result of their negligence.

With regard to property damage and liability insurance on school busses the directors must consider that they owe a moral obligation if not a legal one in the event that school district equipment is responsible for injury to persons or to the property of others. With this fact in mind directors should weigh the advantages of insurance against their obligations to determine its worth.

Table XXIV shows the type of insurance carried by districts and contractors on school bus equipment. One hundred and twenty-three busses or 22.2% of the total carry liability, property damage, and fire and theft insurance. One hundred and thirty-nine or 20.4% of the total number of busses carry liability, property damage, fire and theft, and collision insurance. One hundred and thirty-eight or 20.3% of the total number of busses carry liability and property damage insurance. Ninety-one busses or 13.4% carry liability insurance. Twenty-six busses or 3.8%

TABLE XXIV

THE TYPES OF INSURANCE CARRIED ON OREGON SCHOOL BUSSES

Type of Insurance	Busses Covered	
	Number	Per Cent
Liability, Property Damage, Fire and Theft	152	22.2
Liability, Property Damage, Fire and Theft, Collision	139	20.4
Liability, Property Damage	138	20.3
Liability	91	13.4
Liability, Property Damage, Collision	26	3.8
Fire and Theft	23	3.4
Liability, Fire and Theft	20	3.0
Miscellaneous Insurance Property Damage, Fire and Theft (4) Liability, Collision (3) Property Damage (2) Liability, Fire and Theft, Collision (2) Collision (1) Property Damage, Fire and Theft, Collision (1) Property Damage, Fire and Theft (1)	14	2.0
No Insurance	3	.5
Information not Given	75	11.0
	681	100.0

carry liability, property damage, and collision insurance. Twenty-three busses or 3.4% carry liability, property damage, and collision insurance. Twenty busses or 3% carry liability, and fire and theft insurance. Fourteen busses or 2% are protected by insurance of miscellaneous combinations. Seventy-five busses or 11% did not report any information in regard to the insurance carried. Three busses or .5% reported that no insurance was carried.

The question of school bus insurance brought forth considerable comment from the districts reporting to this study. The manner in which the question and comments was received indicated that the problem of insuring school busses was clouded with misunderstanding and confusion. The following reaction from Gresham is typical of the attitude concerning insurance.

"School bus transportation is here in huge quantities and in all probability will stay. Except for a few traffic regulations requiring proper color, lights and signs, and a law stating where the busses may not run there has been no legislation covering them.

"There ought by all means be a law clarifying the entire situation as regards school bus insurance against personal and property damage. The only thing covering this now is an old law that says that the school district can not be held liable for injury to students if the directors use due diligence in the care of material and equipment, and in the selection of employees. If care and diligence are not used, the directors are personally liable. At least once Attorney General Van Winkle has rendered an opinion interpreting this section of the law to cover injuries sustained in school bus travel. But insurance for school busses goes merrily on. In Gresham we do not carry any insurance on busses except against fire and theft. As nearly as I can find out by inquiry most other districts do, and some of them spend enough in such premiums to buy

a bus a year.

"I do not mean that children should not be given full protection while in school busses. But I do not know of any case in which any indemnity was ever paid to the child nor to the parents of the child injured or killed in a bus accident. The case is fought out on the line that the school district cannot be sued and that the directors do use care in the selection of the driver and that the vehicle was kept in good repair. There is only one thing that gives any protection to school bus passengers and that is the caution of the driver. I have never thought that insurance, which is intended to relieve a driver of the financial responsibility of his carelessness, ever had any tendency to make a driver more careful. It probably has no influence either way on his driving.

"Be that as it may, the insurance companies do not hesitate to collect premiums from school treasuries. Well-meaning school boards pay them. They figure that if a school district can't be held liable but a school director can, so much the more reason for taking out the insurance. The premium, if paid, should be paid by the district. But the matter ought to be kept clear—the protection is for the financial protection of the directors and not the safety of the child. School directors do not carelessly run faulty machines, nor hire incapable drivers. In Consequence nearly any case can easily be beaten by the insurance company's lawyer. It is very nice insurance.

"Now, either insurance should be carried, and those who don't carry it are skating on thin ice; or insurance premiums should not be paid, and a lot of good school money is being paid out that doesn't need to be. I think that a law should be passed clearing up the whole matter. In debating the matter I believe that the welfare of the schools only, and not that of the insurance companies, should be considered. School directors financial safety lies herein—they must be proved negligent, and knowingly careless in the care of machines and in the selection of drivers before they can be held liable. So the present law has been interpreted, but school directors either do not know about the interpretation or else it is not put strongly enough. Admittedly, the word "bus" is not in the law; it is the old law made to fit the new conditions, and the circumstances seem to me to justify a law covering the situation specifically. And I believe that school districts should be relieved of paying these premiums, and the liability removed from both the district and the directors, except where the fault is plain. The only real safety for children lies in the careful selection of the driver, and the strength of the vehicle any way."

D. Cost data for the 1935-36 school year relative to initial cost and operating costs of district-owned busses; the contract price of privately-owned busses; and salaries of drivers of school busses in Oregon.

Since many of the districts contributing to this study did not give cost figures, it was deemed undesirable to present extensive analysis of these costs. The writer is of the opinion--the result of dealing with the questionnaire upon which this study was based—that reliable figures relative to the cost of school bus operation cannot be obtained through the use of a questionnaire. A more exact technique is imperative if the results are to be reliable.

TABLE XXV

THE INITIAL COST OF DISTRICT-OWNED BUSSES

Cost	Busses	
	Number	Per Cent
$3600 and Over	4	1.8
3400-3599	0	.0
3200-3399	3	1.3
3000-3199	8	3.6
2800-2999	14	6.3
2600-2799	10	4.5
2400-2599	14	6.3
2200-2399	16	7.2
2000-2199	20	9.0
1800-1999	8	3.6
1600-1799	35	15.7
1400-1599	30	12.9
1200-1399	6	2.7
1000-1199	8	3.6
800-999	8	3.6
600-799	8	3.6
400-599	10	4.5
200-399	3	1.3
0-199	0	.0
None Stated	19	8.5
Total +1 bus $4200	224	100.0

Table XXV shows the initial cost of district-owned school busses. The range of initial cost is from $200 to $4200. The group $1,600 to $1,799 which contains thirty-five busses or 43.6% is the modal group. Ninety-seven busses or 43.6% are above the modal group; and seventy-three busses or 32.2% are below the modal group. This information was not supplied for nineteen busses or 8.5% of the total.

TABLE XXVI

THE OPERATING COST OF DISTRICT-OWNED AND DISTRICT-LEASED SCHOOL BUSSES FOR THE 1935-36 SCHOOL YEAR

Costs	Busses	
	Number	Per Cent
$2000-2199	1	.5
1800-1999	9	4.0
1600-1799	1	.5
1400-1599	9	4.0
1200-1399	30	13.4
1000-1199	58	25.8
800-999	33	14.8
600-799	43	19.2
400-599	22	9.8
200-399	10	4.5
0-199	0	.0
None Stated	8	3.5
Total	224	100.0

Table XXVI shows the operating costs of district-owned and district-leased school busses. The range of the operating costs is from $200 to $2,199. The group $1,000 to $1,199 contains fifty-eight busses or 25.8% which is the largest number in any group. Above the modal group are fifty busses or 22.4% and below 108 busses or 46.3%. The operating cost of eight busses or 3.5% was not stated. The operating cost of 164 busses or 73.2% is between $600 and $1,399.

TABLE XXVII

THE CONTRACT PRICE OF PRIVATELY OWNED SCHOOL BUSSES

Contract Price	Busses	
	Number	Per Cent
$3250-3499	2	.4
3000-3249	1	.2
2750-2999	0	.0
2500-2749	0	.0
2250-2499	2	.4
2000-2249	12	2.8
1750-1999	15	3.5
1500-1749	31	7.2
1250-1449	12	2.8
1000-1249	39	9.1
750-999	44	10.2
500-749	39	9.1
250-499	48	11.2
0-249	17	4.0
Mileage Basis	19	4.4
Pupils per Day	5	1.2
Pupils per Month and Year	14	3.3
None Stated	130	30.2
Total	430	100.0

Table XXVII shows the contract price or the basis for determining the contract price of privately-owned school busses. The range is from $0,00 to $3,499. The group $250 to $499 contains forty-eight busses or 11.2%, the largest number in any group. The reason for the mode being low is explained by the large number of passenger cars which are under contract with school districts to transport a small number of pupils relatively short distances. Many of these cars serve families living on stub routes which are uneconomical to serve with the regular schedule.

The group $750 to $999 contains forty-four busses or 10.2% of the total. This group, which is next in size to the modal group, is more representative than the modal group since it includes heavier equipment with more pupil capacity than passenger cars have.

Thirty-eight privately-owned busses or 8.9% of the total do not operate on a fixed contract price, but have an agreed basis of determining the contract cost such as a mileage basis, pupils per day, and pupils per month or year. No data were supplied for 130 busses or 30.2% of the total.

TABLE XXVIII

SALARIES OF DRIVERS OF DISTRICT-OWNED SCHOOL BUSSES IN OREGON

Salary	Drivers	
	Number	Per Cent
$120-129	1	.5
110-119	2	.9
100-109	7	3.1
90-99	7	3.1
80-89	12	5.3
70-79	14	6.3
60-69	25	11.2
50-59	33	14.7
40-49	31	13.8
30-39	57	25.5
20-29	23	10.3
10-19	3	1.3
0-9	0	.0
None Stated	9	4.0
Total	224	100.0

Table XXVIII shows the salaries of drivers of district-owned school busses in Oregon. The salaries paid drivers range from $10 to $129. The group $30 to $39 which contains fifty-seven drivers or 25.5% is the modal group. One hundred and thirty-two drivers or 58.9% receive a salary greater than those in the modal group; and twenty-six drivers or 11.6% receive a salary smaller than those in the modal group. The salary of nine drivers or 4% was not supplied.

Many districts contributing to this study indicated by supplementary remarks that the salaries of drivers were too low to attract drivers experienced and competent in

handling heavy transportation units. In addition some districts expressed the opinion that there was a need for a special drivers' examination for those who served in this capacity. A few districts in Oregon specified that all drivers were required to have previous experience as a truck driver before being eligible as drivers of school busses. Nearly all districts condemned the practice of hiring a driver through competitive bids. Since the position does not demand the full time of drivers, many problems arise regarding their remuneration.

E. Safety Provisions and Accidents

The safety of children is a consideration of major importance to school officers planning and providing the transportation program. The directors must keep safety as a guiding principle for their actions in planning transportation to offset the pressure from tax payers to keep taxation for school purposes from sharp increases. It is true that acquiring the elements that make a transportation safe increases the initial cost for the outlay and operating costs, but in the long run, through the elimination of costly accidents, the expenditures are real economy.

That the economies effected by consolidation will care for the costs of transportation is a statement purported to be true by the proponents of consolidation. From this standpoint, if the saving from consolidation is not sufficient to provide safe transportation then consolidation is

not justifiable. Consolidation must offer patrons more than transportation—it must offer safe transportation.

In the past, delay in enacting safety requirements concerning the safety of children transported in school busses has permitted the occurrence of ghastly accidents which have claimed the lives of a number of children. Such tragedies have resulted in safety movements which have culminated in setting higher standards for school busses and safety provisions pertaining thereto. In Oregon in 1937 a program has been launched to bring about this end prior to the occurrence of any such disaster. The program in Oregon endeavors to bring about the transition gradually in order to spare districts from the heavy burden of providing the specified equipment at one time. It is a forward-looking program which will culminate in a better and safe school bus program for the state. A copy of these regulations as drawn on July 17, 1937 appears in the appendix of this study. Undoubtedly these requirements will be amended and strengthened as experience and use demands. In this connection it is hoped by the writer that the statistics in this study will support the present regulations, and be of assistance to those responsible for the program in bringing about changes if necessary.

In an article entitled "Safety Rules For School Bus Riders and Drivers",[2] the following points are made by R. J. Maaske: The number of school pupils being transported each year is increasing because of the demand of rural families for transportation of their children. Even though the district provides reliable bus equipment and good drivers through owning the busses and hiring drivers or through contractors there are certain additional safety aids which should be observed. The principal should call a conference with drivers and pupils receiving transportation and discuss the following rules. In addition, these rules should be posted in the bus.

RULES FOR BUS RIDERS

1. In approaching the stopping place for the bus, always walk toward the traffic. Do not play on the road while waiting for the bus.
2. Be on time; the bus has a definite schedule and cannot wait.
3. In entering the bus, avoid crowding and distrubing others. If you live at the end of the bus route take one of the back seats.
4. When the bus is in motion, do not stand, extend your arms out of windows, move about, or leave or enter the bus.
5. While on the bus, you are in the driver's charge and must obey him.
6. Damage done to seats or other bus equipment must be paid for by the pupil.
7. Help keep the bus clean, sanitary and orderly.
8. See that your conversation is clean, and never loud or boisterous.
9. Always treat your fellow pupils with courtesy.
10. In leaving the bus, remain seated until it stops. If you cross the road, do so in front of the bus after making sure the highway is clear.

RULES FOR DRIVERS

1. Check periodically on the condition of the bus, particularly the brakes, tires, lights and cleanliness.
2. Observe carefully the time schedule for different points on your route, and be on time.
3. Be sure the door is closed before starting the bus; avoid jerky starts and sudden stops; go slowly over bumps and rough places; do not turn or swerve suddenly.
4. Do not (a) leave the bus with the motor running, (b) drive backward on the school grounds, (c) fill the gasoline tank while children are in the bus, (d) allow anyone except teachers and pupils to ride.
5. Observe carefully all signs, signals, rules of the road and courtesies to other drivers.
6. Take the proper precautions in signaling before stopping or turning and keep well to your side of the road. See that the road is clear before allowing the children to cross.
7. Keep your person neat and clean, and your conduct above criticism.
8. In case of an accident or breakdown, remain with the bus and send two responsible children to the nearest place for help.
9. Bring the bus to a full stop before taking on, or letting off children; pull as far off the hard surface as road conditions will permit.
10. Report to the principal any unmanageable pupils only when you feel unable to handle the situation.

TABLE XXIX

THE COLOR OF SCHOOL BUSSES IN OREGON

Color	Busses	
	Number	Per Cent
Orange	242	36.3
Yellow	143	21.0
Green	73	10.6
Black	56	8.1
Blue	39	5.6
Gray	22	3.1
Tan	16	2.3
Red	14	2.0
Brown	12	1.7
Cream	7	1.1
Silver	4	.5
None Stated	53	7.7
Total	681	100.0

Table XXIX shows the color of the school busses in use in Oregon. Orange is the most popular color with 242 busses or 36.3% of the total; yellow is second with 143 busses or 21% of the total. The colors orange and yellow include approximately 57% of the busses in Oregon.

The number of busses and the per cent of the total for the remaining colors represented are as follows: green, seventy-three busses or 10.6%; black, fifty-six busses or 8.1%; blue, thirty-nine busses or 5.6%; gray, twenty-two busses or 3.1%; tan, sixteen busses or 2.3%; red, fourteen busses or 2%; brown, twelve busses or 1.7%; cream, seven busses or 1.1%; silver, four busses or .5%. The color of fifty-three busses or 7.7% of the total was not stated.

TABLE XXX

THE TYPE OF BRAKES ON SCHOOL BUSSES IN OREGON

Type of Brake	Busses	
	Number	Per Cent
Mechanical	438	64.3
Hydraulic	184	27.0
Air	6	.9
Mechanical and booster	5	.7
Hydraulic and air	3	.5
Hydraulic and mechanical	2	.3
Mechanical and air	2	.3
No Answer	41	6.0
Total	681	100.0

Table XXX shows that 438 school busses or 64.3% are equipped with mechanical brakes; 184 or 27% are equipped with hydraulic brakes; eighteen busses or 2.7% of the total are equipped with combinations of air, hydraulic and mechanical brakes. Information pertaining to brakes was not supplied for forty-one busses or 6% of the total.

TABLE XXXI

THE STATUS OF THE REQUIREMENT OF A DEFINITE METHOD OF LOADING AND DISCHARGING PUPILS

Method Required	Busses	
	Number	Per Cent
Yes	372	54.6
No	257	37.7
No Answer	52	7.7
Total	681	100.0

Table XXXI shows that 372 busses or 54.6% are required to load and discharge their pupils according to a prescribed method which was designed by the district to secure additional safety. Two hundred and fifty-seven busses or 37.7% do not have a required method. However even though the district does not demand a definite plan to be followed, the majority of drivers administer their bus so that there is a procedure followed—usually the first pupils picked up in the morning take the rear seats. A standardized procedure for all school busses would be an improvement over present existing conditions. No answer was received from fifty-two busses or 7.7% of the total in regard to this information.

TABLE XXXII

TYPE OF GLASS USED TO ENCLOSE SCHOOL BUSSES

Type of Glass	Busses	
	Number	Per Cent
Plate	408	60.0
Safety	213	31.3
No Glass	1	.1
No Answer	59	8.6
Total	681	100.0

Nearly every adult who rides in an automobile is protected by safety glass. Parents, when choosing a family car, are determined to purchase one which from the standpoint of construction and equipment offers the maximum of safety. That safety glass affords greater protection from fatal and disfiguring cuts is an indisputable fact.

School bus equipment is costly; nevertheless directors who have been selected to purchase equipment should not allow the additional cost of safe equipment to sway their judgment. School busses must be safe vehicles in which to carry children, and until their safety is assured school officers have not fulfilled their obligation.

Table XXXII shows that 408 busses or 60% of the total are enclosed with plate glass; 213 busses 31.3% are protected by safety glass. One bus reported that no glass was used. The type of glass used in fifty-nine busses or 8.6% of the total was not reported.

used on school busses the questionnaire asked for three types: namely, home-made, steel, and passenger car. However the information as reported did not conform to these classes. Table XXXIII shows the responses received.

This table shows that 121 passenger cars or 17.8% of the total are used for school busses; and that seventy-seven busses or 11.3% of the total have home-made bodies. However to offset the above facts 295 busses or 43.3% have steel bodies. Miscellaneous body types account for 161 busses or 23.7% of the total. Not in all instances are home-made bodies and passenger cars undesirable, but in general there is a tendency to over-load both types and particularly the passenger cars. By supplementary remarks written on the questionnaire many districts stated that their past experience with the use of passenger cars for school busses had been unsatisfactory. No data pertaining to the type of body of twenty-seven busses or 3.9% of the total was reported.

The most definite criticism in this respect was pointed at the home-made bodies which were referred to as "death traps" and "cracker boxes". One person commented that it was only by the "grace of God" that some ghastly accident had not occurred as a result of the flimsy construction of home-made bus bodies.

TABLE XXXIII

TYPES OF BODIES USED ON SCHOOL BUSSES IN OREGON

Type of Body	Busses	
	Number	Per Cent
Steel	295	43.3
Passenger car	121	17.8
Home-made	77	11.3
Steel and Wood	66	9.7
Factory	55	8.0
Wood	34	5.0
Pannel delivery	4	.6
Station wagon	1	.2
Ambulance	1	.2
No Answer	27	3.9
Total	681	100.0

Many earnest comments were received in regard to the question concerning the type of body. Districts, which were using home-made bodies, expressed a desire for legislation condemning their use even though securing necessary financial outlay might be a problem. In general the attitude of districts contributing to this study was in agreement as to the undesirability of both home-made bus bodies and passenger cars.

TABLE XXXIV

THE ACCIDENT RECORD OF SCHOOL BUSSES IN OREGON

Accidents	Busses	
	Number	Per Cent
No accidents reported	630	92.5
Involved in accidents	20	2.9
No Data	31	4.6
Total	681	100.0

Table XXXIV shows that 630 school busses or 92.5% of the total had no accidents; twenty busses or 2.9% of the total reported accidents. No answer was received concerning thirty-one busses or 4.6% of the total.

TABLE XXXV

THE ANALYSIS OF THE TWENTY ACCIDENTS IN WHICH SCHOOL BUSSES WERE INVOLVED

Extent of Injuries	Number of Pupils
Deaths	1
Injuries sustained	9
Total	10

Damage to Bus	Number of Busses
$0-39	7
40-79	3
80-119	0
120-159	1
160-199	1
200-239	0
240-279	2
Total	14

An analysis of Table XXXV shows one death and nine injuries resulting from accidents. The damage to busses was nominal. In ten of fourteen accidents the damage to the bus was less than $80; in two accidents the damage was between $100 and $200; and in the other two accidents the damage was between $240 and $279.

F. Miscellany

In the final section of the questionnaire questions which called for opinions of those reporting were called for in order to learn the attitude toward the existing school-bus conditions. The writer intended to secure an indication of the general reaction throughout the state of Oregon. The responses to these questions are presented in the following tables.

TABLE XXXVI

THE NEED FOR ADDITIONAL LEGISLATION GOVERNING SCHOOL TRANSPORTATION IN OREGON

Response	Districts	
	Number	Per Cent
No	132	40.2
Yes	74	22.6
No Answer	122	37.2
Total	328	100.0

Table XXXVI shows that 132 districts or 40.2% of the total number of districts reporting to this study stated that additional legislation was not necessary. Seventy-four districts or 22.6% of the total indicated that additional legislation was necessary. No response was received from 122 districts or 37.2% of the total.

TABLE XXXVII

STATE OF SATISFACTION WITH PRESENT SCHOOL BUS SERVICE

Response	Districts	
	Number	Per Cent
Yes	258	78.6
No	28	8.6
No Answer	42	12.8
Total	328	100.0

Table XXXVII shows that 258 districts or 78.6% of the total number of districts reporting are satisfied with their present school bus service. Twenty-eight districts or 8.6% of the total are not satisfied with their school transportation. No answer concerning this information was received from forty-two districts or 12.8%.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. Summary

This questionnaire study was made to determine the status of school transportation in Oregon and to serve as a basis for formulating new legislation or revising existing regulations of school transportation in Oregon. This thesis was based on data of school districts transporting a total of more than 22,893 pupils, of which 11,860 were elementary pupils and 11,033 were high school pupils, to and from school.

Only two of the thirty-six counties in Oregon do not provide transportation of school children. The counties transporting the largest number of children are in order as follows: Multnomah, Clackamas, Klamath, Washington, and Marion.

Not all children transported to school in Oregon are carried by motor bus; 387 are transported in street cars, boats, horse-drawn vehicles, bicycles, trains, and speeders in order to meet the need of local conditions.

Approximately half the districts permit bus equipment to be used for transporting athletic teams where this transportation does not conflict with the regular schedule. Where district-owned busses are used for this purpose the expenses incident thereto must be paid by the student body

or athletic group receiving the benefit.

The most popular makes of busses in Oregon from the standpoint of the number in use in order are as follows: Chevrolet, Ford, Dodge, G.M.C., and International. Approximately 60% of the school busses in Oregon are under contract with the district; about 30% are district-owned or district-leased; the remaining 10% are accounted for by other plans of ownership or lack of data pertaining to their ownership.

The estimated value of approximately 45% of the school busses is between $500 and $1,000. Most of the busses reported carry approximately a capacity load; over-crowding of a serious nature seemed to be present in about 4% of the busses studied.

Approximately 45% of the busses in Oregon travel between 2,500 miles and 7,000 miles per school year. The length of bus routes varies widely. Busses operate for the entire school year. Ninety per cent of the drivers in Oregon are over twenty-one years of age; only 5% are under twenty-one years of age.

Relatively few drivers in Oregon are bonded. The drivers of approximately 18% of the busses are bonded in some manner. The most common type of bond posted is the withholding of a specified number of days' pay by the district in order to assure the faithful performance of

the duties of the drivers.

The drivers of school busses in Oregon are above the average in formal training since approximately 90% are graduates of elementary school; of this number many have attained high school and college training. Very few drivers perform any duty for the district other than driving the bus. No district requires the drivers to wear a special uniform. The turn-over of drivers of school busses is heavy during the first five years. An appreciable number seek this as a source of permanent employment in connection with another business or vocation. Very few districts require their drivers to have training in first aid. Approximately 32% of the districts give their drivers written instructions pertaining to their duties and responsibilities.

Much confusion exists in regard to the problem of school bus insurance. All costs pertaining to school transportation in Oregon vary widely due to factors of a local nature. The contract price of school busses is generally stated in a definite sum. However some contractors have an agreed basis for determining their remuneration, such as a mileage or some pupil index.

Even though the state of Oregon has been lax in requirements pertaining to the safety of pupils, the accident record of the state is very satisfactory with one death and nine injuries during the period covered in this

study. In fourteen accidents involving the bus the damage was nominal in all cases. The regulations pertain to school busses drawn by the Commissioner of Public Utilities of Oregon in 1937 as a result of a grant of legislative authority largely care for the existing deficiencies in regard to safety.

Of the districts reporting, 40% voiced the need for new legislation pertaining to school transportation prior to the enactment of the present requirements. However, in general the people of Oregon are satisfied with their school transportation system as it now exists since 79% of the districts contributing to this study stated.

B. Conclusions

The data presented in this survey are believed to warrant the following conclusions:

1. Districts planning to purchase new busses should anticipate an increase in demand for transportation during the estimated life of the bus.
2. In purchasing new equipment districts should pay attention to the requirements in effect pertaining to school busses.
3. Safe busses and competent drivers are factors in the control of school authorities in assuring the safety of the children.
4. Drivers of school busses should be given written instructions pertaining to their responsibilities and duties, such as having children cross the road in front of the bus, maintaining the bus, obeying rules of the road, and other similar guides essential to the safe operation of their vehicles.
5. If over-crowding of busses is not a problem, minimum distances for which transportation will not be provided should not be established.
6. In general district-owned busses are superior to busses used by contractors.
7. District-ownership of busses is increasing in favor in Oregon.

8. There are too many old busses used in transporting school children.
9. As the demand for transportation increases there appears to be a tendency toward relatively large busses in Oregon.
10. The advantages, disadvantages, types of policies, and existing requirements and obligations relative to insurance of school busses are not clearly understood by officers of Oregon school districts.
11. There is a need for improvement in school transportation in Oregon, in the direction of accepting the rules and regulations pertaining to school busses as compiled and issued by the Public Utilities Commissioner of Oregon.

C. Recommendations

The findings of this study and the resulting conclusions suggest the need of the following recommendations:

1. That all districts investigate the possibilities of district ownership of school busses as a means of providing safe and economical transportation.
2. That wherever possible school busses be utilized to their fullest extent by operating over carefully planned routes. By using a map of the area to be covered all routes should be located to determine if any further improvements could be made in the existing bus routing.
3. That contracts for school transportation be awarded for periods longer than one year. Depreciation charges for long-term contracts will be less per year.
4. That a law be enacted which requires other vehicles to stop while school busses are discharging children. This rule would replace the one in the Operators' Manual for Oregon requiring vehicles passing school busses to do so at a speed not to exceed fifteen miles per hour.
5. That the qualifications of bus drivers be increased, even though higher salaries would have to be paid.
6. That the existing requirement for front bumpers should be revised so as to include rear bumpers; and further, that these bumpers be installed so as to prevent

"hitching".

7. That the problem of school bus insurance be given intensive study by an authoritative agency and recommendations concerning the need and advisability of the different types of insurance be submitted in pamphlet form to officers of districts responsible for the administration of schools in Oregon.
8. That a knowledge of first aid is essential for the drivers of school busses.
9. That the State Department of Education select an adequate system of accounting applicable to school busses in Oregon. Through the use of reliable cost data sound operating policies can be drawn.
10. That safety glass be used throughout all school busses in Oregon.

BIBLIOGRAPHY

1. Hendrickson, Harold J., School Transportation in Oregon, unpublished Master of Science thesis, University of Oregon, Eugene, 1930.

2. Maaske, Roben J., "Safety Rules for School Bus Riders and Drivers", The Nations Schools, Vol. 17, April 1936, pp. 54-55.

3. Mullins, R. J. And Hamon, R. L., "Delivered by Bus", The Nations Schools, Vol. 16, December 1935, pp. 47-49.

4. Roberts, R. W., "Factors Affecting Cost of Pupil Transportation", Journal of Education Research, Vol. 29, January 1936, pp. 332-338.

5. Walton, C. L., "Better Transportation at Lower Cost", The Nations Schools, Vol. 16, November 1935, pp 62-64.

6. Welborne, C. L., "Carrying 'Em to School Cost of Pupil Transportation in Five States; Cenaus of School Bus Operation for January". Bus Transportation, Vol. 15, February 1936, pp. 75-76.

APPENDICES

State Department of Education
C. A. Howard, Superintendent of Public Instruction
Salem, Oregon December 4, 1936

TO THE SUPERINTENDENT, PRINCIPAL OR CLERK OF SCHOOL DISTRICTS PROVIDING TRANSPORTATION:

In order to determine the extent, control, and regulation of pupils attending the public schools of Oregon, the following questionnaire is being sent to all districts in which transportation is provided. The superintendent, principal or clerk of each district is asked to give the information requested on this blank and return it to the county superintendent's office by December 20, 1936. The questionnaire is so worded that very brief answers may be given. In order that we may arrive at valid conclusions concerning the present extent of transportation, the effectiveness of local regulations, and the need for further state regulations, it is very important that all information called for be given as accurately as possible.

You will find on the right-hand side of each page five columns, one for each bus that may be operated within your district. Except for the first five questions and those calling for miscellaneous information, the answers to the questions may be given by checking or writing in the proper space in one or each of the columns. If more than five busses are operated in your district, an additional copy of the questionnaire may be used and the number of the busses on the second copy should be changed.

Sincerely yours,
C. A. HOWARD
Supt. Public Instruction

DAE:MA

BY --D. A. Emerson
Secondary Education--
School Statistics

School District _____ _____ _____
Address District Number County

This questionnaire was filled out by J_____ _____
Name Official Position

1. Give total number of pupils attending your schools for whom transportation was provided during the school year 1935-36.

At expense of your district
Elementary pupils .....
High school pupils .....
At expense of nonhigh school district
At expense of other districts
Elementary pupils .....
High school pupils .....

2. What percentage of the pupils enrolled are transported? .....

3. (a) Are there any pupils transported by conveyances other than motor busses? .....
(b) If so, state the number .....
(c) Give type of conveyances. (water craft, horse-drawn) .....

4. What is the minimum distance from school for which transportation is provided? .....

5. Are busses used to transport athletic teams? .....

	Bus #1	Bus # 2	Bus # 3	Bus # 4	Bus # 5
6. Is bus owned by your district?					
7. Is bus owned privately and under contract with the district?					
8. Is bus owned privately and operated privately? (pupils pay directly for the service)					
9. Make of bus?					
10. Year model?					
11. Estimated value of district-owned busses as of June, 1936?					
12. Capacity of each bus? (number of pupils which the bus will accommodate					

	Bus # 1	Bus # 2	Bus # 3	Bus # 4	Bus # 5
with seats?					
13. What is the average number of pupils hauled at one time in each bus? (give approximate number if exact figures are not obtainable)					
Elementary					
High school					
14. Total mileage each bus has traveled since it was purchased new?					
15. Miles traveled during 1935-36 school year?					
16. Give the length of route in miles. (out from school to farthest point and back to school)					
17. Where is the bus housed? (at the school, driver's residence or rented garage in town)					
18. Number of days busses were operated during 1935-36 school year?					
QUALIFICATIONS OF DRIVERS					
19. Age of drivers? (check in columns)					
Under 21					
Between 21 and 40					
Over 40					
20. Are the drivers bonded? ...					
21. Extent of drivers' education? (indicate whether grade school graduate only, high school graduate, etc..					
22. If the driver performs any duty for the school district state the duty.....					

	Bus # 1	Bus # 2	Bus # 3	Bus # 4	Bus # 5
23. Are drivers required to wear any specified uniform? (yes or no)					
24. Approximate number of years driving experience prior to first election as bus driver?					
25. Number of years as driver of bus for this school? ..					
26. Is training in first aid required of the bus driver? (yes or no)					
27. Are bus drivers given special instruction other than verbal directions in dealing with transportation problems? (yes or No)					
INSURANCE					
28. Check kinds of insurance carried:					
Liability					
Property damage					
Fire and theft					
Collision					
_____					
29. If liability insurance is carried what is the maximum amount per pupil? ..... $_____					
COSTS(1935-36 school year)					
30. Total operating cost of bus? (Oil, grease, gas repairs, driver's salary, storage, depreciation, insurance, tires, license)					
31. If bus is owned privately and under contract with district, give contract price					

	Bus # 1	Bus # 2	Bus # 3	Bus # 4	Bus # 5
32. Give the initial cost of district-owned busses....					
33. What is the driver's salary of district-owned busses?					
34. Color of bus?					
35. Type of brake? (hydraulic, mechanical, air)					
36. Is a definite method of loading and unloading required? (yes or no)					
37. Type of glass used? (safety or plate)					
38. Type of body? (home-made, steel, passenger car)....					
ACCIDENTS					
40. Number of accidents during 1935-36 school year..					
Number of accidents resulting in death.....					
Number of pupils injured.....					
Extent of damage to bus.....					

MISCELLANEOUS

41. Do you believe that additional state regulations governing school transportation should be enacted?

_____
Yes or no

42. What new regulations do you suggest?

43. Is your bus service satisfactory and adequate? _____
Yes or no

44. If not what are the deficiencies?

45. Please send any printed or mimeographed forms which you use in the administration of your transportation system.

P.U.C. OREGON ORDER NO. 4678

BEFORE THE PUBLIC UTILITIES COMMISSIONER
OF OREGON

In the matter of the adoption of classifications, rules and regulations relating to safety of operation and equipment, qualifications and maximum hours of service of drivers, accident reports and intervals of inspection governing persons operating motor vehicles engaged in transporting students or their instructors to or from school.	FA-1873

The above entitled matter came on regularly for hearing before the commissioner on Thursday, the 10th day of June, 1937, at Salem, Oregon, at which time, pursuant to notice given, there appeared various representatives of school districts, bus body manufacturers, chassis manufacturers and school bus operators and were given an opportunity to be heard, and

Whereas, the Commissioner having given due consideration to the testimony and evidence submitted at this hearing, and being fully advised in the premises, does now find and determine that the rules and regulations attached hereto, and by this reference made a part hereof, shall govern the transportation of students or their instructors to or from school over the public highways of the State of Oregon,

NOW, THEREFORE, BE IT ORDERED That the rules and regulations hereto attached, and by reference made a part of this order, be and the same are hereby adopted and declared the rules and regulations governing the transportation of students or their instructors to or from school over the public highways of the State of Oregon by virtue of authority vested in me by the laws of the state of Oregon.

Dated at Salem, Oregon, this 17th day of July, 1937

N. G. Wallace
Commissioner of Public
Utilities of Oregon

ATTEST:

ELLA BLILER

Secretary

(Official Seal

RULES AND REGULATIONS GOVERNING AND REGULATING THE OPERATION OF MOTOR VEHICLES ENGAGED IN TRANSPORTING STUDENTS OR THEIR INSTRUCTORS TO OR FROM SCHOOL.

SECTION I, GENERAL

1. The following rules and regulations are prescribed governing the transportation of students or their instructors to or from school over the public highways of the State of Oregon pursuant to the provisions of Section 55-1343, Oregon Code 1935 Supplement, as amended by Chapter 479, Oregon Laws, 1937, and Sections 55-1346 and 55-1347, Oregon Code 1935 Supplement, and Section 55-1348, Oregon Code 1935 Supplement as amended.

2. It is the duty of each person operating motor vehicles used in transporting students or their instructors to or from school over the public highways of the State of Oregon to make these regulations effective and to fully instruct their employees in relation thereto.

3. The rules and regulations hereinafter set out are general in character and are minimum requirements.

SECTION II, CLASSIFICATION

1. The requirements herein contained shall apply to each motor vehicle and motor bus of more than seven (7) passenger capacity engaged and used in transporting students or their instructors to or from school over the public highways of the State of Oregon and hereinafter designated "school bus".

SECTION III, OPERATION

1. A school bus shall be operated in conformance and the driver shall comply with the requirements of the Oregon Motor Vehicle Law of the State of Oregon, and the rules and regulations hereinafter set out.

2. The use of intoxicating liquors by any driver or operator while on duty is prohibited.

3. The use of tobacco by any driver or operator of school busses is prohibited when the school bus is occupied by any passenger.

SECTION IV, SCHOOL BUS SPECIFICATIONS

1. General Construction

a. Body framing shall be entirely of metal construction and the roof, body and doors shall be completely covered with steel or aluminum paneling. The body shall be strong enough to withstand great impact through accident or collision and the top frame work and covering must be of sufficient strength to support the weight of the vehicle.

b. A traffic guard rail of sufficient strength to resist impact and to prevent body crushing shall be provided extending along the length of both parallel body sides. This rail shall be located approximately at the seat line for maximum protection of the passengers.

2. Body Dimensions

a. The width of the body shall be a minimum of sixty-six inches (66") inside and a maximum of ninety-six inches (96") outside.

3. Headroom

a. Each school bus shall have a minimum inside clearance of sixty-five (65") inches from the floor to bottom of top bow and shall provide headroom for seating position of not less than thirty-six inches (36") above the top of the undepressed cushion line regardless of the contour of body walls.

4. Seating

a. No aisle seats shall be used and the width of the aisle shall not be less than eleven inches (11") measured between the top of the seat cushions. Seats shall be spaced to provide a minimum of twenty-three inches (23") measured from the seat back at the top of the seat cushion to the back of the seat ahead at the same level. All seats shall face forward.

b. The driver's seat shall be individual type with sufficient room behind the steering wheel to permit comfortable and safe driving.

5. Windows and Windshield

a. Each school bus shall be equipped with safety glass in all glass openings.

6. Floors

a. Floors shall be covered with a nonslipable rubber matting or a similar water proof covering and cemented to the floor surface.

7. Entrance Door

a. The entrance door shall be at the front right of the bus and shall provide a minimum lateral clearance of twenty-five inches (25") and shall be operated mechanically by the driver.

b. The entrance door shall enclose the step and shall be equipped with a glass panel in the lower portion of the door to provide roadside vision for the driver.

8. Emergency Door

a. The emergency door shall be in the rear center of the body and hinged on the left, right or bottom. It shall provide a minimum horizontal clearance of twenty-four inches (24"), and a minimum vertical clearance of forty-two inches (42").

b. The door must be conspicuously marked on the inside by the words "Emergency Door" in letters not less than two inches (2") in height.

c. The door is to be equipped with a hand operating lever affording instant and easy release of door in case of emergency and shall be protected against accidental release. The upper panel of the door shall be of glass providing adequate rear vision to the driver.

9. Color

a. The body, fenders, and hood of each school bus shall be painted yellow except the moldings and trimmings may be in black.

10. Chassis

a. No school bus shall carry more children than a number whose total weight equals the weight of the chassis plus 20%.

b. The chassis shall be of the proper wheel base to accommodate the body and load providing complete and safe control of the vehicle under all road conditions.

11. Lights

a. Exterior lights and lighting equipment must comply with all of the requirements of the Oregon Motor Vehicle Law, and in addition thereto each school bus shall be equipped with one rear stop light and one four inch (4") red reflector installed on the rear of the bus.

b. Sufficient interior dome lights shall be provided to provide adequate light according to the size of the bus.

12. Hand Rails

a. A substantial hand rail shall be located at the rear corner of the entrance step well.

13. Ventilation

a. All school busses shall be equipped with controlled ventilating systems of sufficient capacity to maintain the proper quantity of air under operating conditions without the opening of windows except in extremely warm weather.

14. Heating

a. Each school bus shall be equipped with an adequate heating system but no bus shall be heated in any manner which will permit exhaust gases from the motor to pass through conductors within the body of the bus.

15. Mirrors

a. Each school bus shall be equipped with an interior nonglare type mirror, rear view type, at least three inches (3") by twelve inches (12") in size,

so placed as to give the driver a clear view of the emergency door at all times, and of the highway to the rear.

b. Each school bus shall be equipped also with an exterior rear view mirror, permanently set, or fixed, attached to the body in such manner as to give the driver a clear view toward the rear of the bus.

16. Gasoline Tank

a. The tank, including intake and vent, shall be installed outside the bus body shell on either side.

b. The tank shall be so installed that no twist of the frame shall transfer any torsional strain into the tank structure.

c. Filler caps or gasoline supply tanks must fit snugly, in such a manner as to prevent leakage.

d. All filler caps must be of fireproof type.

e. In no case shall the tank filler extension pass through the floor or body side to outside of body unless fully isolated by steel paneling which shall encircle said extension to eliminate entirely all fire hazard.

17. Bumpers

a. Each school bus shall be equipped with a suitable front bumper of a heavy type.

18. Fire Extinguisher

a. Each school bus shall be equipped with a pressure and nonfreezing type of fire extinguisher of not less than one (1) quart capacity which shall be located in the forward end of the bus easily accessible to the driver and near the entrance door. Frequent inspection shall be made to see that the extinguisher is in a usable condition.

19. Exhaust Pipe

a. The exhaust pipe shall extend continuously beyond the rear of the body to a point approximately three inches (3") from the panel of the body.

SECTION V, ACCIDENT REPORTS

All accidents arising from the operation of a school bus resulting in injury to any person, or in damage to any property, shall be immediately reported to the Public Utilities Commissioner of Oregon at Salem in writing. Such report shall set forth:

1. The time and place of accident.

2. The names and addresses of the drivers or operators of all vehicles involved.

3. The names and addresses of companies or persons owning all vehicles involved.

4. The state license number, make and type of all vehicles involved.

5. The number of passengers, if any, in each of the vehicles involved.

6. The names and addresses of all persons injured or killed.

7. The names and addresses of all witnesses, if any.

8. A full and complete report of the accident; cause, party or parties responsible, if any; condition of roads; weather conditions; speed of vehicles involved, etc.

Whenever the original report is insufficient in the opinion of the commissioner he may require the driver of the school bus involved in the accident to file supplemental report of the accident upon forms furnished by him.

SECTION VI, INSPECTION

No school bus, as herein defined, shall be operated unless the same has been inspected by the Oregon State Police Department at the beginning of each school year and found to comply with the provisions of the Oregon Motor Vehicle Law and the rules and regulations of the Commissioner and subsequently approved by the Commissioner as being safe for operation upon the

public highways. School bus inspection reports shall be made upon special forms supplied by the Commissioner and a copy thereof shall be filed with the Commissioner of Public Utilities before the school bus is placed in operation.

SECTION VII, EFFECTIVE DATES

The provisions of Paragraphs 11 to 19, inclusive, of Section IV, and the provisions of Section V and Section VI shall become effective September 1, 1937.

The provisions of Paragraphs 1 to 10, inclusive, of Section IV shall become effective September 1, 1938, excepting that the said provisions thereof shall not apply to school busses of all steel construction placed in operation prior to January 1, 1938.

SECTION 32, MOTOR TRANSPORTATION ACT

PENALTIES. Every person who violates or who procures, aids or abets violation of any of the provisions of this act and any person who refuses or fails to obey any order, decision, rule or regulation made under or pursuant to this act, shall be deemed guilty of a misdemeanor and, upon conviction, shall be punished by a fine of not less than $10 nor more than $1,000, or by imprisonment for not more than three months, or by both such fine and imprisonment. Circuit courts, district courts, and justices of the peace shall have concurrent jurisdiction of offenses punishable hereunder.