

University of Montana

ScholarWorks at University of Montana

Graduate Student Theses, Dissertations, &
Professional Papers

Graduate School

1956

A survey of School District No. 1 Powell Wyoming transportation costs

Jack Jimmy Hendrickson
The University of Montana

Follow this and additional works at: <https://scholarworks.umt.edu/etd>

Let us know how access to this document benefits you.

Recommended Citation

Hendrickson, Jack Jimmy, "A survey of School District No. 1 Powell Wyoming transportation costs" (1956). *Graduate Student Theses, Dissertations, & Professional Papers*. 6025.
<https://scholarworks.umt.edu/etd/6025>

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.

A SURVEY OF SCHOOL DISTRICT NO. 1,
POWELL, WYOMING, TRANSPORTATION COSTS.

by

JACK J. HENDRICKSON

B. S. Eastern Montana College of Education, 1954

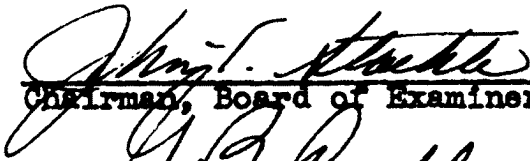
Presented in partial fulfillment of the
requirements for the degree of

Master of Education

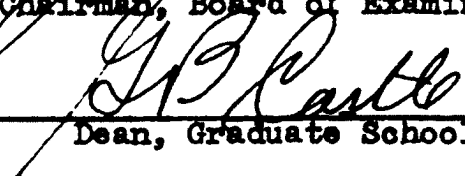
MONTANA STATE UNIVERSITY

1956

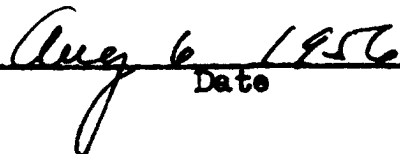
Approved by:



Chairman, Board of Examiners



Dean, Graduate School



Date

UMI Number: EP36826

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI EP36826

Published by ProQuest LLC (2013). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code



ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM AND ITS BACKGROUND	1
The problem	1
Statement of the problem	1
Importance of the study	1
Organization of materials	2
Background and present status of problem	2
Source of data	4
Collection and treatment of data	4
Definitions of terms used	5
II. REVIEW OF THE LITERATURE	7
III. SURVEY OF TRANSPORTATION COSTS	12
Powell, School District No. 1, Park County, Wyoming	13
Wheatland, School District No. 9, Platte County, Wyoming	15
Torrington, School District No. 3, Goshen County, Wyoming	16
IV. COMPARISON OF TRANSPORTATION COSTS	19
Average number of transported pupils per bus in three Wyoming districts and western states.	19
Average miles traveled per bus per day	21
Average number of pupils transported per bus mile	23

CHAPTER	PAGE
Per cent of total pupil enrollment traveling	
on buses in each district	24
Cost per bus mile	25
Operating costs per pupil per year for three	
Wyoming districts and mountain states based	
on total expenditures and pupils transported .	28
Annual and daily costs per pupil transported	
per bus mile	31
Listings on nineteen privately owned buses and	
the cost to School District No. 1, if	
purchased	32
V. SUMMARY AND CONCLUSIONS	34
Summary	34
Conclusions	36
BIBLIOGRAPHY	38
APPENDIX A	41
APPENDIX B	43

LIST OF TABLES

TABLE	PAGE
I. Transportation Costs of Nineteen Contracted Buses in School District No. 1, Powell, Wyoming for 1954-1955	15
II. Transportation Costs of District-Owned Buses in School District No. 1, Powell, Wyoming for 1954-1955	16
III. Transportation Costs of District-Owned Buses in School District No. 9, Wheatland, Wyoming for 1954-1955	17
IV. Transportation Costs of District-Owned Buses in School District No. 3, Torrington, Wyoming, for 1954-1955	18
V. Average Number of Transported Pupils Per Bus in Three Wyoming Districts and Western States	21
VI. Average Miles Traveled Per Day Per Bus	23
VII. Average Number of Transported Pupils Per Bus Mile Per Day	25
VIII. Per Cent of Total Pupil Enrollment Traveling on Buses in Each District	26
IX. Cost Per Bus Mile	27

TABLE	PAGE
X. Operating Costs Per Pupil Per Year For Three Wyoming Districts and Mountain States Based on Total Expenditures and Pupils Transported	30
XI. Annual and Daily Costs Per Pupil Transported Per Bus Mile	32
XII. Listings on Nineteen Privately Owned Buses and the Cost To School District No. 1, If Purchased	33

CHAPTER I

THE PROBLEM AND ITS BACKGROUND

There has been general concern over the cost of the public school transportation system by the Board of Education in Powell, Wyoming. Having been presented with the proposition that totally district-owned and operated transportation might be less expensive to the school district than a contracted bus system as now exists in School District No. 1, the Board has yet to make a decision on this matter.

THE PROBLEM

Statement of the problem. The purpose of this study was to compare transportation costs of the Powell school district's contracted transportation with the costs of the two other school districts in Wyoming and with national and state averages.

Importance of the study. This study provides an analysis of the public school transportation costs in Powell, Wyoming, School District No. 1, for the school year 1954-1955. It has included such items as "cost per bus mile", "average miles per bus", "number of pupils per bus", and other divisions of expenses which have shown how the total expenditure for transportation is acquired.

This study may assist the Board of Education of School District No. 1 in making a decision concerning future operation of public school transportation in their district.

Organization of materials. The tables of figures having to do with transportation costs have been arranged in a way that will enable the reader to compare for himself the various phases discussed and illustrated in this study. As each area of transportation is developed it has also been illustrated in some manner to provide a visual picture of the problem of expense and it is hoped by these comparative methods a solution or partial answer as to the less expensive manner of transportation has been found.

Background and present status of problem. In School District No. 1, the elementary and high school district are coterminous. Each school day it was necessary to transport 762 students to and from the Powell Public Schools. This group of students comprised slightly over one-third of the student enrollment from grades one through twelve.

The town of Powell has a total population of approximately 4,300 persons; another 3,520 persons, according to the 1950 census, live outside of Powell but in the school district.¹

¹United States Bureau of the Census, Seventeenth

A good portion of tax support comes from two oil companies, namely, Conoco and Standard Oil, which maintain refineries and have a great many wells in this area which is included in School District No. 1.

Another asset to the Powell area is State Highway No. 14, which is one route to the Cody Entrance to Yellowstone Park.

Powell is also the center of an irrigated farming area where crops such as beans, sugar beets, alfalfa and hay are raised for commercial purposes in the summer months, and during the winter a good portion of the farmers feed cattle for choice meat consumption.

Powell, which is the center of a consolidated school district, operated twenty-one buses which transported 762 students daily. At the present time the school district is maintaining this bus system by the use of two publicly owned buses and nineteen separately contracted buses.

Initial costs of a changeover from primarily privately-owned and contracted buses to district-owned buses is not the important problem here. The problem was a projected one: if these twenty-one school buses were district-owned, could the Powell school district operate them more economically than

Census of the United States: 1950. Characteristics of the Population, Vol. II (Washington: Government Printing Office, 1952), p. 50-8.

under the existing contract system?

Source of data. The costs of transportation were acquired by means of a form which was sent out to several school districts of similar size in Wyoming to that of District No. 1, and the exact figures obtained from the schools of Torrington, School District No. 3, Goshen County, Wyoming, and Wheatland, School District No. 9, Platte County, Wyoming, were used for comparative purposes because of their transportation similarity in number of buses used in their systems and the number of pupils transported.

Also used were the latest national figures concerning transportation obtained from the Department of Rural Education, National Education Association, Washington, D.C., and from the U. S. Department of Health, Education and Welfare, Washington, D.C.

The State Department of Public Instruction in Cheyenne, Wyoming furnished various data concerning transportation which have also been used in this survey.

Collection and treatment of the data. A form, devised to enable school personnel in various Wyoming schools, having similar transportation situations, to supply the needed information for comparison purposes, was sent to thirteen school districts. Examination of the six forms returned showed that School District No. 3, Goshen County,

and School District No. 9, Platte County to be the most similar to School District No. 1, Park County, Powell, Wyoming, so far as quantity of transportation vehicles and number of pupils transported.

The form used was an information sheet on which figures could be written showing the various transportation costs of each district. These figures, which were listed under separate headings private and publicly owned buses included:

Private owned: Miles per day
Total days operated
Amount paid to owner
Size of bus
Children transported per day

Public owned: Miles per day
Total days
Wage of driver
Gas
Repairs and equipment
Insurance
Size of Bus
Children transported per day
Cost if new bus.

There are many phases which have their effect upon the costs and needs of transportation and after investigation these phases have been included in this survey and their importance suggested and illustrated with the aid of tables.

DEFINITIONS OF TERMS USED

School District No. 1. A legally organized district in Park County in the state of Wyoming in which Powell is

the center of school organization.

Board of Education. A Board of School Trustees is a group or committee of citizens of a school district, chosen by the eligible voters of a school district to direct the affairs of the public schools of that district, in accordance with state laws.

Privately owned buses. This term has been given and is properly used to describe buses which transport school children, but are owned and operated by private citizens in the community and which are contracted by the school district for this service to the school district.

District-owned buses. Those buses which are owned and maintained by the school district are termed district-owned buses.

CHAPTER II

REVIEW OF THE LITERATURE

When transportation of school students was a new and experimental idea, the horse-drawn wagon was found to be the vehicle in use as far back as 1840.¹ It was from necessity that this mode of transportation was procured through private individuals in order that students from surrounding areas might take advantage of what they felt was a better school, that is, a larger school, which offered more to the children. The Department of Rural Education reports that, "The development of the motor vehicle with the resultant construction of good highways made possible extensive transportation of school pupils."²

With the advent of bus transportation as a common and acceptably safe means of bringing school children from surrounding areas into a centralized school plant where many facilities could be afforded them which were otherwise impossible, two conditions became obvious. The number of consolidated schools continued to increase greatly and the demand for additional, economically feasible transportation

¹Austin Ruel Meadows, Safety and Economy in School Bus Transportation (Montgomery, Alabama: The Wetumpka Printing Company, 1940), p. 14.

²Ibid., p. 27.

for these children became an important part of the school budget.

Also enlightening was the fact brought out by the Department of Rural Education that, "between 1920 and 1948 the number of pupils transported increased from less than one-half million to more than six million. The connection between the decrease in the small attendance area and the increase in pupil transportation is obvious."³

Because there are today on the highways, twice daily, approximately 140,000 school buses bringing some eight and one-half million students to and from their source of education, school bus transportation can well be termed big business.⁴

In a study made in 1938, R. C. Williams, Director of Research of Iowa State Department of Public Instruction, reported that, "The median annual cost per pupil for school bus transportation was \$21.30 in districts which owned the complete vehicle; . . . and \$29.00 for districts using privately owned contracted buses. . . ."⁵

The Supervisor of Pupil Transportation in the Ohio

³Ibid., p. 28.

⁴Department of Rural Education, "Transportation Statistics For School Year 1954-1955" (Washington, D.C.: National Education Association, 1956). (Personal letter.)

⁵Meadows, op. cit., p. 182.

State Department made a study of school bus transportation in the State of Ohio based upon ownership of buses in 1938. Following the data he had gathered, he made these recommendations concerning school bus ownership:

Boards requiring the use of five or more school buses should own them and provide a school owned garage for their care. This plan of using Board owned school buses has certain advantages which include:

1. The cost of transportation is about thirty per cent less than the cost of similar service provided by contractor owned buses.
2. The Board has greater control over the system of transportation. . . .⁶

Because of the large number of buses necessary for the transportation of school children in School District No. 1, means of co-ordinating all transportation problems should be given special study and evaluation. Some ideas presented here may not be immediately applicable or advisable, but in the future may prove to be advantageous to Powell's transportation situation.

Several important advantages and disadvantages of privately contracted buses and publicly owned buses are briefly stated as follows:

Private Contract System

Advantages:

1. Relieves school officials of part of the management responsibilities for transportation. The contractor owns the equipment and can be held responsible for its maintenance.

⁶Ibid., p. 186.

2. Enables school officials to estimate accurately at the beginning of the school year how much transportation will cost during the year.

Disadvantages:

1. Generally costs more than public-ownership operation.
2. Not as readily controlled by school officials as the publicly owned system. This is largely true because of the feeling of independence on the part of drivers when they own the buses they drive.
3. High standards of service harder to maintain. Control measures are harder to enforce with independent owner-operators.
4. Maintenance of bus equipment in a safe condition more difficult.
5. Not as flexible to changing conditions as the publicly owned system. When the annual contract is signed, the contract system tends to be fixed for the year, regardless of changes in route conditions.

Publicly Owned System

Advantages:

1. Easier to control by school officials.
2. Can be integrated with the total school program and used to enrich instructional program.
3. Enables school officials to control maintenance of equipment and to train and supervise drivers.
4. More flexible to changing conditions.
5. Usually costs less than the private contract system.
6. Fits into the general pattern of public ownership of school buildings and other school facilities.

Disadvantages:

1. Increases the management responsibilities of school officials in that they become responsible for maintaining and operating the buses.
2. Cost of transportation cannot be finally determined until the end of the school year.⁷

⁷National Education Association, Pupil Transportation, A Yearbook by the Department of Rural Education (Washington, D.C.: National Education Association, 1953), pp. 98-99.

Publicly owned transportation having been shown in almost every case to be less costly than privately contracted transportation, it would seem reasonable to assume that some additional personnel could be arranged to carry out and take care of any responsibilities added to those already assumed by the school district. At the time of this study the Powell school system added a person to the administrative staff whose part responsibility was to coordinate pupil transportation. Much has already been done along the lines of safety as well as economics as concerned with transportation and a well planned program of publicly owned transportation would seem very possible in the future.

Findings concerning school bus transportation have led to the statement that, "more than two-thirds of the school buses in the United States are publicly owned and the trend, based upon experience, is toward public ownership."⁸

Chapters III and IV present transportation data gathered from three school districts in Wyoming. These findings are related to the literature herein reviewed and tend to show the same advantages to publicly owned transportation.

⁸Ibid., p. 100.

CHAPTER III

SURVEY OF TRANSPORTATION COSTS

Forms enabling the school districts to provide detailed information on transportation costs were sent to thirteen schools in Wyoming, and six were returned to the author. From the six forms returned, those two school districts which provided all their transportation with district owned buses were selected for this survey. This made possible a comparison of costs under district ownership and operation with the contract transportation in Powell. Of the twenty-one school buses operating in School District No. 1, nineteen were privately owned while only two were owned and operated by the district.

The bus routes in Powell were awarded on a bid basis and the Board of Education did not necessarily have to accept the lowest bidder. The Board posted notices of new bus routes including detailed specifications as to size of bus and distance of route. Low bids could be rejected if the board thought that specifications would not be met by the bidder.

The breakdown of expenses on privately owned buses in Powell which would include gas, repairs and equipment, and insurance, was impossible to obtain. This stems from the fact that most owners did not keep a regular account of their

gas and repairs and because some bus owners may have bought their insurance as a group. The total costs and costs per bus which were incurred by the school district for pupil transportation are shown on Table I.

Powell School District during the fiscal year 1954-1955, allocated \$63,140.15 in payment to nineteen different bus contractors for furnishing transportation for nineteen different bus routes. Traveling a total of 1137.8 miles per day, these nineteen buses transported 668 students to and from school. When all students were returned to their homes, the buses and drivers were free of obligations to the school district. Only with special arrangements could the school use these buses for any of their extra-curricular needs. The district would then be obligated to pay additional compensation to the driver for his services and the use of the bus for any services other than the daily transportation of students.

However, there are certain regulations which the Board of Education stipulated and enforced relating to drivers and buses and their qualifications. In a compilation of rules and regulations concerning operation of School District No. 1 were the following:

August 6, 1951--To have all school buses inspected by State Highway Department officials prior to the opening of school.

May 20, 1953--To require all bus drivers to take a physical exam in addition to the reaction drivers skill test set up by the Wyoming State Highway Department.¹

The buses were ready for service when they passed inspection and the drivers qualified. However, it has been pointed out in the previous chapter that a closer check on the buses would be possible if they were district owned and maintained by the district. In the Yearbook on Pupil Transportation, the following statement can be found: "School buses must also be maintained to avoid mechanical failures during scheduled operation and to reduce total operating costs Preventive maintenance differs from repair or replacement maintenance in that it depends upon careful inspection. . . ."²

When looking over the breakdown of expenses for the two district owned buses, one can see that the amount spent for repairs on both was \$1,092.38. Also, included in this group of statistics is the cost of a new bus which was listed as \$4,381.20 and the wages of the two drivers which amounted to \$1,350.00. These three groups of expenses were the only large items as can be seen upon examination of Table II.

¹Operating Procedures, A Booklet on School Information Prepared by the Administrative Staff (Powell, Wyoming: School District No. 1, 1955), p. 8.

²National Education Association, Pupil Transportation, A Yearbook by the Department of Rural Education (Washington, D.C.: National Education Association, 1953), p. 149.

TABLE I

TRANSPORTATION COSTS OF NINETEEN CONTRACTED
BUSES IN SCHOOL DISTRICT NO. 1,
POWELL, WYOMING FOR 1954-1955

Bus No.	Miles Per Day	Total Days	Amount Paid to Owner	Size of Bus	Pupils Transported Per Day
1	42	178	\$ 2,880.00	48	29
2	37.2	178	2,563.20	36	31
3	75	178	3,519.00	48	33
4	48	178	3,096.00	48	39
5	47	178	3,060.00	48	37
6	47	178	2,988.00	48	38
7	46	178	3,024.00	48	36
8	74	178	3,748.50	48	39
9	47	178	3,060.00	48	34
10	67	178	3,660.75	48	31
11	48	178	3,028.50	48	30
12	68	178	3,492.00	48	44
13	69.2	178	3,468.60	42	37
14	98.4	178	4,434.30	48	38
15	84	178	4,044.30	48	39
16	69	178	3,492.00	48	37
17	40	178	2,784.00	42	32
18	58	178	3,370.50	48	37
19	73	178	3,426.50	36	27
Totals	1137.8		\$63,140.15		668

Transportation costs for School District No. 9, Wheatland, Wyoming, and School District No. 3, Torrington, Wyoming have been placed on Tables III and IV respectively.

A few notations can be made at this time concerning some of the data. In 1954-1955, Wheatland operated a total of eleven buses, all district owned, and transported a total of 337 students each day. These eleven buses traveled 435.3

miles a day for 175 days during the school year, making a total of 76,177.5 miles traveled during the entire year.

Torrington school transportation involved thirteen buses with three buses making two trips daily. These buses were No. 2, No. 3, and No. 7, and thus, Torrington could be considered as having sixteen buses in some instances when comparing pupils per bus and other data which will be used later. These thirteen buses traveled 637.4 miles per day for 176 days, making their total 112,182.4 miles per year to transport 741 students each day.

TABLE II
TRANSPORTATION COSTS OF DISTRICT OWNED
BUSES IN SCHOOL DISTRICT NO. 1,
POWELL, WYOMING FOR 1954-1955

Bus Number	20	21	Totals
Miles Per day . .	28	4	32
Total Days	178	178	
Wage of Driver . .	\$900.00	\$450.00	\$1,350.00
Gas	\$335.04	\$ 62.84	\$ 397.88
Repairs and Equipment	\$520.38	\$572.00	\$1,092.38
Insurance	\$ 74.65	\$ 62.50	\$ 137.15
Size of Bus	48	42	
Pupils Transported Per Day	39	55	94
Cost for New Bus .	\$4,381.20		\$4,381.20

TABLE III

TRANSPORTATION COSTS OF DISTRICT OWNED BUSES IN SCHOOL DISTRICT NO. 9,
WHEATLAND, WYOMING FOR 1954-1955

Bus No.	Miles Per Day	Total Days	**Wage of Driver	***Gas	Repairs and Equip.	Insur.	Size of Bus	Pupils Trans. Per Day	Cost for New Bus
1	44.4	175	\$589.75	\$284	\$ 23.76	\$ 46.55	48	32	
2	71	175	760.50	331	230.99	29.17	48	40	
3	28.1	175	591.50	194	37.98	29.17	48	31	
5	51	175	589.75	247	127.15	54.05	48	27	
6	33.3	175	525.00	218	84.93	29.17	48	36	
7	50.6	175	600.25	204	37.08	51.94	16	10	
8	31	175	591.50	218	139.86	29.17	48	43	
9	39	175	591.50	347	88.01	53.35	44	29	\$4,208.00
10	28.5	175	572.25	154	31.78	28.13	42	30	
11	28.7	175	570.50	176	72.19	28.13	42	30	
14	29.7	175	602.00	177	40.42	29.17	48	29	
*435.3									
Totals	76,177.5		\$6,584.50	\$2550	\$914.15	\$408.00		337	\$4,208.00

*Total per day.
 **Yearly wages.
 ***The amount in this column includes gas, oil, and grease.
 The figures are rounded off to the nearest dollar.

TABLE IV
 TRANSPORTATION COSTS OF DISTRICT OWNED BUSES IN SCHOOL DISTRICT NO. 3,
 TORRINGTON, WYOMING FOR 1954-1955

Bus No.	Miles Per Day	Total Days	**Wage of Driver	Gas	Repairs and Equip.	Insur.	Size of Bus	Pupils Trans. Per Day	Cost for New Bus
1	42	176	\$110	\$675.74			61	55	
***2	58	176	110	158.45			55	80-50	
***3	48	176	105	172.42			42	50-48	
4	32	176	110	208.30			42	45	\$4,897.18
5	56.8	176	120	387.25			42	55	
6	52	176	120	305.92			42	26	
***7	56	176	110	196.65			55	65-60	\$5,151.66
8	57.6	176	105	303.37			42	34	
9	50	176	105	237.20			42	32	
10	48	176	105	297.54			42	38	
11	51.2	176	105	297.75			54	55	
12	24.8	176	110	173.82			42	34	
13	61	176	110	154.48			11	14	\$ 500.00
*637.4			\$ 1,425						
Total	112,182.4		\$12,825	\$3,568.89	\$7,610.43	\$572.85		741	\$10,548.84

*Total miles per day.
 **Wage of driver per month.
 ***Bus makes two trips daily.

CHAPTER IV

COMPARISON OF TRANSPORTATION COSTS

After compiling the totals and separate listings under the various headings for each of the three school districts involved in this study in Chapter III, an even further breakdown of these statistics can be made as to per cent of pupils traveling on buses in each district and other phases of transportation which have their effect upon the cost of maintaining an adequate transportation program in relation to the needs of each district. Chapter IV will be a discussion, with the aid of tables, of comparable data obtained from the sources previously mentioned.

The first table in this chapter deals with the average number of pupils per bus and includes figures on both state and national levels. Table V includes the number of buses used by the three school districts involved, and similar data for the state of Wyoming along with other western states and the nation.

In 1954-1955 Powell operated twenty-one school buses, nineteen of which were privately owned. The number of pupils transported on these buses was 762, or an average of 36.3 pupils per bus.

During the same school year, Wheatland had a total of

eleven district-owned buses, all of which were maintained by the district. They transported a total of 337 pupils per day for an average of 30.6 pupils per bus.

All of the thirteen buses of Torrington were district owned and carried a total of 741 pupils each day. However, three of these buses had two routes each day and thus the Torrington average shows 46.3 pupils per bus if, for this comparison, the three extra trips were thought of as three extra buses. Using the actual number of buses, the average number of students transported was 57 per bus.

The State of Wyoming had in operation in 1954-1955, a total of 706 vehicles, including both privately and publicly owned buses, which carried 17,317 pupils each day. The state as a whole indicated an average of 24.5 pupils per bus. This was about ten less, on an average, than the three schools investigated.

The average for the nation per bus was sixty pupils. This can also be attributed to the fact that some of the 140,000 vehicles used to carry 8,500,000 students made more than one trip, thus increasing the average number of pupils per vehicle. As the footnote to Table V states, the national average number of pupils per bus is out-of-line with the other averages. Looking at the average number of pupils per bus for Powell, it would indicate that the buses are transporting as many pupils on the average for each bus as might

be expected.

The corresponding figures for the other states include both publicly and privately owned buses.

TABLE V
AVERAGE NUMBER OF TRANSPORTED PUPILS PER BUS IN
THREE WYOMING DISTRICTS AND WESTERN STATES

	Buses	Total Pupils Transported	Average
Powell			
Contracted	19	668	35.2
District Owned	2	94	47
Wheatland	11	337	30.6
Torrington	*13 (16)	741	*57 (46.3)
**Western States			
Arizona	606	43,000	70.9
Colorado	2,067	59,350	28.7
Idaho	1,092	63,994	58.6
Montana	728	32,572	44.7
Nevada	288	7,615	26.4
New Mexico	1,109	41,369	37.3
Utah	539	52,802	97.96
Wyoming	706	17,317	24.5
National Average	140,000	8,500,000	***60

*Three buses make two round trips a day.

**Statistics for eight western states.

***"Many buses operate more than one trip, thus increasing the average number of pupils per vehicle."¹

Table VI shows the average miles traveled per bus per day and the total number of miles traveled by all of the

¹Department of Rural Education, "Transportation Statistics For School Year 1954-1955" (Washington, D.C.: National Education Association, 1956). (Personal letter.)

buses for one day. The average mileage for the twenty-one buses in Powell was 55.7 miles per day totaling the mileage to 1169.8 miles per day. However, when breaking this down into the two groups, the contracted buses traveled an average of 59.4 miles per day as there were nineteen buses carrying pupils a total of 1137.8 miles each day. Looking at the two district owned buses the figures show them traveling an average of 16 miles per day as the two together traveled a total of 32 miles per day.

Wheatland's eleven buses traveled a total distance of 435.3 miles per day for an average of 39.6.

The thirteen buses which transported the pupils to Torrington traveled an average of 49 miles per day. However, three of these buses made two trips each day. If the three extra trips per day were handled by three more buses the average miles per day for each bus would have been 39.7. The total distance traveled each day for the thirteen buses was 637.4 miles.

Table VI shows that Powell's contracted buses traveled much farther per day. One of the district owned buses traveled only four miles a day which explains the low average miles per day for the two buses operated by the district.

However, upon an examination of the breakdown for the privately owned buses which were contracted by School District No. 1, as shown on Table I in Chapter III, there are

some figures which should be mentioned again. Bus No. 3 traveled 75 miles per day, Bus No. 14 traveled 98.4 miles, Bus No. 15 traveled 83 miles, and Bus No. 19 traveled 73 miles per day. Tables V and VI show that the privately owned buses in School District No. 1 traveled an average of 59.4 miles to pick up an average number of pupils per bus of 35.2.

TABLE VI
AVERAGE MILES TRAVELED
PER BUS PER DAY

	Number Of Buses	Total Miles Traveled Per Day	Average Miles Traveled Per Day
Powell			
Contracted	19	1137.8	59.4
District Owned	2	32	16
Wheatland	11	435.3	39.6
Torrington	*13 (16)	637.4	*49.0 (39.7)

*Three buses make two round trips a day.

Indicated on Table VII is the average number of pupils transported per bus mile. The two district owned buses of Powell transported an average of 2.94 pupils per mile. This average is much higher because the route of one of the two buses was to the southside of town which was more densely populated with school age children than was the rural area. The contracted buses of Powell transported only .65 pupils per bus mile as compared with the district-owned buses of

Torrington which carried an average of 1.16 pupils per mile. This indicates that the school district of Torrington had nearly twice as many pupils per bus mile as Powell so far as the rural area was concerned.

Wheatland's average number of students transported per bus mile was .77 which is also higher than that of Powell.

Comparing the miles traveled per day for Torrington, (637.4) by all district-owned buses, with that of Powell's nineteen privately owned buses (1137.8), the figures show that the Powell buses traveled almost twice the distance for about the same number of pupils as did the Torrington buses. This, of course, added to Powell's costs as compared to Torrington's costs for transporting about the same number of pupils: 762 for Powell as compared to 741 for Torrington.

If the pupils per day and miles per day were totaled for Powell to include both contracted and district owned buses, the average would have been 1.54 pupils per bus mile which is still higher than either the Wheatland or Torrington averages.

Table VIII gives the total school population for School District No. 1, Powell, Wyoming, as 1,867 pupils. Of this total student body, 762 pupils rode the buses daily to and from school. This represented 40.8 per cent of the total school enrollment.

TABLE VII

AVERAGE NUMBER OF PUPILS TRANSPORTED
PER BUS MILE PER DAY

	Pupils Per Day	Miles Per Day	Pupils Per Bus Mile
Powell			
Contracted	668	1137.8	.65
District Owned	94	32	2.94
Wheatland	337	435.3	.77
Torrington	741	637.4	1.16

School District No. 9, Wheatland, Wyoming, had 1,001 pupils enrolled in school, of which 337 or 33.6 per cent were transported.

Torrington, Wyoming, in School District No. 3, had the highest percentage, 41.4 per cent, of pupils riding buses. Out of a student body of 1,790 pupils, 741 rode the buses daily. All of these figures include both elementary and high school students. The per cent of pupils riding buses was about the same in all three school districts.

The figures on Table IX show the total number of miles traveled each year for the three school districts, their total expenditures and the cost per bus mile.

Powell, School District No. 1, Park County, Wyoming, spent a total of \$66,117.56, not including capital outlay, to provide public school transportation during the school year, 1954-1955. The nineteen privately owned and the two

district-owned buses traveled a total distance of 208,224.4 miles during the year. The cost to the district per bus mile at Powell for privately-owned buses was \$.31 for 202,528.4 miles and \$.52 per bus mile for district-owned buses traveling 5,696 miles.

TABLE VIII
PER CENT OF TOTAL PUPIL ENROLLMENT TRAVELING
ON BUSES IN EACH DISTRICT

District Number and Town	Children Attending School	Children Riding on Buses	Per Cent
No. 1 - Powell	1,867	762	40.8
No. 9 - Wheatland	1,001	337	33.6
No. 3 - Torrington	1,790	741	41.4

Compared to these figures, Wheatland, School District No. 9, Platte County, Wyoming, averaged \$.14 per bus mile, and Torrington, School District No. 3, Goshen County, Wyoming, spent \$.22 per bus mile. The expenditures for transportation in Wheatland totaled \$10,456.65 for which the buses traveled 76,177.5 miles during the year. Public school transportation in Torrington cost the district a total of \$24,577.17 to operate while their vehicles traveled some 112,182.4 miles.

It must be kept in mind that both Wheatland and Torrington districts owned and operated their school transportation. Powell contracted nineteen of the twenty-one buses they used in 1954-1955. The total expenditure of \$66,117.56 for Powell was more than twice that of Torrington, while operating only eight more buses. The total expenditure for Powell was approximately six times that of Wheatland while it operated about twice as many buses.

The cost per bus mile is high for the district-owned buses for Powell because while one bus traveled only four miles a day, the other had a route of fourteen miles and traveled twenty-eight miles per day.

The cost per mile of the contracted buses in Powell was \$.31, much higher than Wheatland, \$.14, and Torrington, \$.22.

TABLE IX
COST PER BUS MILE

	Total Miles Traveled	Total Expenditures	Cost Per Bus Mile
Powell			
Contracted	202,528.4	*\$63,140.15	\$.31
District Owned	5,696	*\$ 2,977.41	\$.52
Wheatland	76,177.5	*\$10,456.65	\$.14
Torrington	112,182.4	*\$24,577.17	\$.22

*Total expenditures does not include capital outlay.

The cost per pupil per year for the three school districts involved were: Powell, \$91.53 per pupil per year for the nineteen contracted buses and \$31.67 for the two district-owned buses; Wheatland, \$31.03 per pupil per year; and Torrington, \$33.17 per pupil per year as shown on Table X.

Data received from the Department of Rural Education of the National Education Association showed that the national average cost per pupil per year was \$35.00 as figured by their latest statistics.

From the U. S. Department of Health, Education and Welfare, the latest figures on the state of Wyoming show that total expenditures amounted to \$1,293,476.00 for transporting 17, 317 students or \$74.65 per pupil per year.² These costs reflect the fact that Wyoming is one of the states in which it is necessary for school buses to travel many miles for a small number of pupils.

Also available for the state of Wyoming, are figures concerning district-owned buses. In the Biennium Report for 1952-1954, which is the latest compilation of such data, the figures on transportation for 1953-1954 show that of the 706

²E. Glenn Featherston, Statistics On Pupil Transportation, 1953-1954 (Washington, D. C.: U. S. Department of Health, Education and Welfare, 1954). (Mimeographed.)

vehicles used for transportation in Wyoming, only 321 were district-owned.³

Data on the other states listed on Table X show that costs are high in other states. The cost per pupil for Montana was very high and of the 728 vehicles used, 451 were privately owned and only 277 district-owned. New Mexico also showed a high cost per pupil rate and of the 1,109 vehicles used in that state only fifteen were publicly owned, leaving 1,094 contracted for transportation. As a comparison, Arizona showed \$31.32 per pupil per year and the information on the ownership of the buses in that state was that out of a total of 606 vehicles used, 475 were publicly owned while only 131 were contracted. In Idaho the cost per pupil was \$38.90, with 697 publicly owned vehicles and 395 contracted, making a total of 1,092 used for transportation in that state.⁴

Although the national figures being compared here include data on both district and privately owned buses, the information gathered concerning both Wheatland and Torrington transportation costs involved only district-owned

³State Department of Public Instruction, Wyoming Public Schools Biennium Report: 1952-1954. Transportation. Table 9A, (Issued by the State Superintendent of Public Instruction, Cheyenne, Wyoming, 1955), p. 100.

⁴Featherston, loc. cit.

transportation. Therefore, when comparing these figures with the transportation costs of Powell, the important point to remember is that nineteen of the twenty-one buses used by this school were contracted by the school district. This leads to the conclusion that there is a high degree of correlation between the high cost of transportation in Powell and the fact that the buses used were primarily contracted rather than owned and operated by the school district.

TABLE X

OPERATING COSTS PER PUPIL PER YEAR FOR THREE WYOMING DISTRICTS AND MOUNTAIN STATES BASED ON TOTAL EXPENDITURES AND PUPILS TRANSPORTED

	Total Pupils Transported	Total Expenditures	Cost Per Pupil
Powell			
Contracted	668	\$ 63,140.15	\$91.53
District Owned	94	2,977.41	31.67
Wheatland	337	10,456.65	31.03
Torrington	741	24,577.17	33.17
Arizona	43,000	\$ 1,346,855.00	31.32
Colorado	59,350	3,068,405.00	51.70
Idaho	63,994	2,499,472.00	38.90
Montana	32,572	2,781,416.00	85.39
Nevada	7,615	343,992.00	45.17
New Mexico	41,369	2,888,558.00	69.74
Utah	52,802	1,047,837.00	19.96
Wyoming	17,317	1,293,476.00	74.65
National Average	8,500,000	\$295,000,000.00	\$35.00

(Not including capital outlay.)

Table XI shows the annual cost per transported pupil per bus mile and the daily cost per transported pupil per bus mile. These figures were arrived at by dividing the cost per transported pupil per year by the miles per day to get the daily cost and then dividing the cost per transported pupil per year by the total miles per school year. Because of rounding off numbers, quotients and products may not check exactly.

The cost per pupil per bus mile per year for the nineteen contracted buses in Powell was slightly over \$.08. This was about one cent more than Wheatland's cost and about three cents higher than Torrington's.

For the two district-owned buses at Powell the annual cost per transported pupil per bus mile was more than \$.98, or about eleven times the cost per pupil for the contracted buses in Powell. This is due to the fact that certain expenditures such as insurance and the wage of the driver, are basic expenditures whether a bus travels five miles or fifty miles a day. In reference to this fact, Table II, page 16, shows that wages of the two drivers for the district-owned buses were \$900 for the driver whose bus traveled twenty-eight miles a day and \$450 for the driver whose bus traveled only four miles in a day. The ratio of mileage is seven to one while the ratio of wages is only two to one.

TABLE XI

ANNUAL AND DAILY COSTS PER TRANSPORTED
PUPIL PER BUS MILE

	Daily Cost	Total Days	Annual Cost
Powell			
Contracted	\$.00045	178	\$.08017
District Owned	.00555	178	.98962
Wheatland	.00040	175	.07128
Torrington	.00029	176	.05203

The original cost of each contracted bus and the cost to the school district if these buses should be sold by the owners, are listed on Table XII. The cost to the district was based upon ten per cent depreciation each year taken from the purchase price of the bus. The ten per cent depreciation is a state regulation which allows the school district to put aside ten per cent of the cost of the bus each year for ten years, enabling the district to purchase a new bus from this fund, at the end of a ten year period. The state regulation states that buses used for transporting school students shall not be more than ten years old.

On this basis the cost to the school district at Powell would have been \$39,629.00 for all nineteen buses.

With fleet insurance and bids on gasoline along with purchasing parts for maintenance and repair at a wholesale or school price, the district probably could have maintained

and operated these buses at less expense than could individual owners.

TABLE XII

LISTINGS ON NINETEEN PRIVATELY OWNED BUSES and the
COST TO SCHOOL DISTRICT NO. 1, IF PURCHASED

Bus No.	Year and Model	Size of Bus	Purchase Price	Cost to District	
1	Chevrolet-	1948	48	\$3300	\$ 660
2	Chevrolet-	1947	36	3000	300
3	Dodge-	1947	48	3450	345
4	Ford-	1950	48	3600	1,440
5	Chevrolet-	1952	48	4300	2,580
6	Ford-	1954	48	5200	4,160
7	Chevrolet-	1952	48	4300	2,580
8	Chevrolet-	1948	48	3300	660
9	Chevrolet-	1954	48	5200	4,160
10	Ford-	1948	48	3300	660
11	Ford-	1948	48	3300	660
12	Studebaker-	1953	48	5200	3,640
13	Ford-	1947	42	3000	300
14	Chevrolet-	1954	48	5200	4,160
15	International-	1953	48	5320	3,724
16	Ford-	1952	48	4300	2,580
17	Ford-	1954	42	5000	4,000
18	Chevrolet-	1948	48	3300	660
19	Ford-	1952	36	3950	2,370
Total					\$ 39,639

CHAPTER V

SUMMARY AND CONCLUSIONS

The average number of pupils per bus in the eight western states cited previously was somewhat higher in most cases than the three districts investigated in Wyoming. This may have been due to the fact that many of the buses made more than one route per day and an overloading of buses might have taken place in some instances. Powell compared very favorably so far as this phase of transportation was concerned.

The average mileage per bus in Powell was more than fifteen miles longer than the routes of Wheatland and nearly seven miles longer than the average route of Torrington. As has been pointed out these figures indicate that Powell buses traveled more miles to pick up the same number of students per bus.

The nineteen contract buses of Powell transported about half as many students per bus mile as compared to Torrington. Wheatland's routes had an average of ten per cent more students per bus mile than Powell. The district-owned buses of Powell transported nearly three pupils per bus mile.

The percentage of students traveling on school buses

in each of the three districts differed very slightly. This was one reason why the two schools were chosen for comparison purposes.

The cost per bus mile in Powell was more than twice the amount spent in Wheatland and compared to Torrington, Powell spent about one-third more per bus mile. The district-owned buses of Powell were much more expensive to operate because of the short distance traveled each day and the fixed expenditures which must be included whatever the mileage of the bus.

The cost per pupil per year for the contracted buses in Powell was on the average \$40.00 higher than that for eight western states, including Wyoming, which operated both contracted and district owned school transportation. The national average cost per pupil per year was only \$35.00, or approximately \$55.00 less than the contracted buses at Powell. The two district-owned buses of Powell operated at a cost of \$31.67 per pupil per year which was about \$3.50 less than the national average, and considerably less than the cost per pupil as figured for the contracted buses in the same school system.

By all comparisons and by the statistics found in this survey, there are certain conclusions which can be made or formulated after the phases of transportation herein presented have been fully examined. Therefore, on the basis of

the survey of transportation costs of School District No. 1, Park County, Powell, Wyoming, the following conclusions can be made:

(1) For 1954-1955 the cost per bus mile for the nineteen contracted buses used by School District No. 1 was \$.31, which was \$.09 more per mile than for the school district at Torrington, Wyoming, whose transportation system is very similar to the one in Powell so far as quantity of buses, students transported and miles traveled. If the total bus program at Powell had been operated as an entirely district owned transportation system at Torrington's cost of \$.22 per bus mile, the total expenditure would have been \$45,809.37, instead of \$66,117.56. This would have saved \$20,308.19 for the Powell school district.

(2) If the transportation program for 762 students in Powell could have been operated and maintained at \$33.17 per pupil as in Torrington, the total expenditure would have been \$25,275.54. Or, when figuring the cost per pupil as found for the two district-owned buses at a rate of \$31.67 per pupil, the total would have been \$24,132.54. These figures can be compared with the total expenditures for transportation at Powell, of \$66,117.56. However, because the Powell buses travel more miles to pick up about the same number of pupils, the total

expenditures must necessarily be larger. Also, having to maintain and operate more buses would add to the expenses which would mean this figure is not an exact comparison.

(3) Most closely comparable are the statistics in Table XI, page 32, which designate the annual and daily cost per transported pupil per bus mile for the three districts. If the students at Powell had been transported at Wheatland's annual cost per pupil per bus mile, \$2,579.45 would have been saved. Using the annual cost as figured for Wheatland to be \$.07128 and multiplying this number times the total miles traveled per day by all twenty-one buses at Powell, (1169.8), and further multiplying this product by the total number of pupils transported, (762), the total product would be \$63,538.11. This total expenditure is \$2,579.45 less than the actual cost. By means of the same assumption and method, when figured at the rate of annual cost per pupil per bus mile for Torrington, the saving would have been \$19,738.66.

The Board of Education will have to decide whether the possible savings on the operation of buses will be enough to offset the capital outlay necessary to convert their pupil transportation to district ownership and operation.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. BOOKS

Meadows, Austin Ruel. Safety and Economy in School Bus Transportation. Montgomery, Alabama: The Wetumpka Printing Company, 1940. 287 pp.

B. PUBLICATIONS

Featherston, E. Glenn. Statistics on Pupil Transportation, 1953-1954. Washington, D.C.: U. S. Department of Health, Education and Welfare, 1954. (Mimeographed.)

National Education Association. Pupil Transportation. A Yearbook by the Department of Rural Education. Washington, D.C.: National Education Association, 1953. 190 pp.

Operating Procedures. A Booklet on School Information Prepared by the Administrative Staff. Powell, Wyoming: School District No. 1, 1955. 101 pp.

School Laws of the State of Wyoming, 1948. 289 pp.

State Department of Public Instruction. Wyoming Public Schools Biennium Report: 1952-1954. Transportation. Table 9A. Cheyenne, Wyoming: State Department of Public Instruction, 1955. 124 pp.

Transportation. Handbook for School Administrators and School Boards. Salem, Oregon: State Department of Education, 1952. 27 pp.

United States Bureau of the Census. Seventeenth Census of the United States: 1950. Characteristics of the Population, Vol. II. Washington: Government Printing Office, 1952.

C. UNPUBLISHED MATERIALS

Department of Rural Education. "Transportation Statistics For School Year 1954-1955." Washington, D.C.: National Education Association, 1956. (Personal letter.)

Swenson, Wilbur. A Survey Of Hill County School Transportation, 1949-50. Professional Paper, Montana State University, 1951. 88 pp.

APPENDIX A

Box 708
Powell, Wyoming
March 24, 1956

Dear Sir;

In order that I might make a survey of the transportation costs in Wyoming, I would greatly appreciate your cooperation in designating the various costs listed on the attached forms in regard to your own school transportation costs.

If you have for your district-owned buses, complete breakdowns for each bus which would give the identical information requested, you might enclose those forms, omitting the section for district-owned buses, and filling out the statistics for contracted buses only.

I am making this survey for the purpose of compiling comparable costs to be used as the basis for my professional paper as a requirement for an M.E. degree in education. Thank you for your consideration. And, if you should like to have the results of my study, I would be glad to send them to you upon completion and at your request.

Sincerely yours,

Jack J. Hendrickson
Teacher
Powell Public Schools

Enc: 2

APPENDIX B

School District No. _____

Transportation Costs
School Year 1954-1955

_____, Wyoming

District Owned Buses

Name or Number of Bus	Miles Per Day	Total Days	Wage of Driver	Gas	Repairs and Equip.	Insur.	Size of Bus	Pupils Trans. Per Day	Cost if New Bus
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

School District No. _____

Transportation Costs
School Year 1954-1955

_____, Wyoming

Privately Owned Buses

Name or Number of Bus	Miles Per Day	Total Days Operated	Amount Paid to Owner	Size of Bus	Pupils Transported Per Day
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.