AN EVALUATION OF THE SYSTEM OF PUPIL TRANSPORTATION IN COMANCHE COUNTY, TEXAS

THESIS

Presented to the Graduate Council of the
North Texas State College in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

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Sidney, Texas

August, 1950

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CHAPTER I

INTRODUCTION

The Problem

Since every school in Comanche County operates some form of pupil transportation, the purpose of this study is to determine the efficiency of the system of pupil transportation in Comanche County and to find the means of operating school transportation more efficiently.

School consolidation in Comanche County has made pupil transportation one of the most important problems that administrators of the county have to deal with. The tendency is toward larger school attendance areas. As the attendance area gets larger, more pupils will be transported. Increased demands are mounting; replacement of worn-out vehicles and equipment is imperative; a more efficient coverage of the attendance area seems necessary; and finance is lacking.[1]

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[1]Records and Reports, County Superintendent's Office, Comanche County, Texas

Scope of Study

The Gilmer-Aiken Laws place the responsibility of operating the pupil transportation system with the County School Board and the County Superintendent.[2] Therefore, this study will be confined to Comanche County as a unit for pupil transportation.

The following factors have been chosen as those most likely to affect the efficiency of pupil transportation in Comanche County: (1) administrative responsibility, (2) operating personnel, (3) establishment of routes, (4) ownership of vehicles, (5) types of conveyance, and (6) financial structure.

Definition of Terms

Good gives the following definitions of certain terms pertaining to a system of pupil transportation which are more or less standardized in definition and are understood to have about the same nation-wide implications:

(1) Transportation - An area of study dealing with mechanical locomotion; generally includes automotive and aeronautical and nautical conveyances.

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[2]Fifty-First Legislature, State of Texas, Senate Bill No. 116, Article V, Section 2.

(2) Transportation, emergency - Pupil transportation provided under unusual circumstances at unscheduled periods.

(3) Transportation, parental - Pupil-transportation service supplied by the parent or guardian of the child.

(4) Transportation, pupil - The movement of school children from home to school and return by means of a conveyance of whatever sort, usually a bus.

(5) Transportation, area - Transportation district.

(6) Transportation contract - A written agreement between school authorities and an individual or corporation, stipulating the compensation and amount of service to be rendered for a specified period in providing transportation of pupils to and from school, usually over a designated route.

(7) Transportation program - Transportation service that the school district is required to provide, as established by statute or practice.

(8) Transportation district - An area from which pupils are brought to a school building.

(9) Transportation saturation index - A figure that represents the extent of existing pupil-transportation service compared with the complete service; usually the ratio between the number that would be transported as the result of an objectively defined minimum program and pupils actually transported.

(10) Transportation report - A report prepared at periodic intervals by the driver of school bus, or other agent, for the principal or superintendent, giving the number of pupils transported, routes taken, traffic conditions, discipline of pupils, number of buses in service, condition of buses, number of days of service, and other pertinent information.

(11) Transportation survey - A complete study of pupil-transportation conditions and requirements.

(12) Transportation pupil - A child who rides to school as distinguished from a child who walks.[3]

The following explanations and definitions of terms are used by the State of Texas in the Foundation School Program Division:

(1) County Unit for transportation administration - The county is regarded as the unit for the administration of transportation.

(2) Destination of bus routes - Probably one of the most difficult jobs facing the County School Board; a responsibility of the County School Board; after study and analyzation of each local situation, the bus route is established according to factors involved.

(3) Maps to be furnished - To assist the County School Boards in studying and planning routes, maps will be furnished each county; a full scale map and a half-scale map will be completed according to instructions and filed with the State Commissioner of Education; tabulation of mileage on each route by types of roads shall be made; they will become a part of the permanent file of the county and shall serve as a basis for all transportation studies.

(4) Driver's salaries - This item must be determined by the County School Board and is the amount of money paid for services rendered as bus drivers; governing factors are the number of pupils transported, length of route, and other local conditions; no minimum figure is listed for salaries, but computing cost for the state, the maximum figure used is $90.00 per month.

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[3]Carter V. Good, Dictionary of Education, p. 431.

(5) Fuel and repairs - Actual cost of these items will be allowed, based on original invoices filed in the office of the County Superintendent. Fuel is the substance that is used to keep the buses in motion and in good running condition.

(6) Reimbursement on bus costs - One-fifth of the approved cost of transportation equipment may be included in operational costs; bus inventory forms and bus-indebtedness forms must be filled out and sent into the State Office; state assumes in its approved costs for reimbursement only those costs of conventional type equipment; district-owned equipment which has been paid for will be figured out and approved in line with State Board of Control price for similar equipment; district-owned equipment which has outstanding obligation against it will be set up for approval at the regular invoice price.

(7) Bus operation - Invoices, actual running of school buses, and that which is necessary to insure its running.

(8) Extra-curricular mileage - Use of buses in transporting pupils to and from activities such as athletic contests, field trips, class excursions, etc., charge of ten cents per mile is paid into County Board Transportation Fund by local districts from local funds.

(9) Transportation fund allotments - The allotment of funds will be by districts; disbursement from the County Board Transportation Fund will be made by the County Board to the districts, in event an actual County Unit is not the plan.

(10) Approved bus - An approved bus is interpreted to mean a bus which has passed the safety check by the highway patrolman and has been approved by the County Superintendent and the State Commissioner of Education.

(11) Approved routes - An approved route is interpreted to mean a route which has been set-up by the County School Board to conform to the county plan for county transportation. This route must be approved by the County School Board and the State Commissioner of Education.

(12) Approved transfers required - No transportation allotment will be made on a student who attends school in another district when his grade is taught in his home district, unless a student is transferred and the transfer is approved by the County Board and the State Commissioner of Education.

(13) Attendance reports - An attendance report for pupils transported will be called for at the end of the first six months of the 1949-50 term but with the school permitted to file a full nine months report if it prefers.

(14) Contract with commercial bus lines - A school district may contract with commercial bus lines to transport children and be paid transportation by the State, provided the school enters into a contract with the bus company, requires that they meet all the standards of any regular school bus, and provided the County School Board shall approve the route, and provided this plan is the most economical and feasible system of transportation.

(15) Density of scholastic population - The density of scholastic population refers to resident-enumerated scholastics for the county, white and negro combined.

(16) Duplication service - The County Board must certify that there is particular need for duplicate service and this certificate must be approved by the State Commissioner of Education before transportation aid shall be granted for a pupil being transported out of his home district.

(17) Nearest practical route - The nearest practical route is interpreted to mean the nearest commonly traveled public road from the pupil's home to the school attended.

(18) Per pupil month - The per pupil month shall be an attendance of at least thirteen days out of a twenty teaching day month.

(19) Privately owned buses - Buses owned by others than the school - If a County Board or School District has been contracting with individuals who own school buses, for the transportation of children, this will be permitted for the present, but the County Board will be encouraged to replace all privately owned buses with school owned buses as rapidly as possible. The approved cost for a privately owned bus shall be computed in the same manner as the approved cost for school owned buses. The same limitations as to transportation allotments for the privately owned buses shall apply as applies to district owned equipment.

(20) Purchase of equipment - All purchases of buses, bus chassis, bus bodies, tires and tubes, by a school district participating in the Foundation School Program, made on or after June 8, 1949, must be made through the State Board of Control. The State Commissioner of Education must approve the purchase of all buses, bus chassis, and bus bodies. Requisition forms and supporting data forms are furnished, calling for information if equipment less than five years old is being replaced.

(21) Sale of equipment - All transportation equipment to be sold by school districts participating in the Foundation School Program must be sold under regulations prescribed by the State Board of Control and the proceeds applied against the purchase price of new equipment.

(22) Transportation allotment - Transportation allotment of a pupil is made on the budget of the pupil's home district. The pupil's home district must comply with the minimum teachers' salary schedule and show budgetary need, before an allotment can be made.

(23) Use of private cars - Transportation in a private car shall be granted only in those cases of extreme sparsity of population, and then only upon official approval of the State Commissioner of Education. This equipment must be approved by the highway patrolman and must be driven by a driver under regular contract and bond to the County Board.

(24) Filing time - Date set by the State for turning-in of application for transportation.[4]

Source of Data

The data for this study were secured from the following sources:

1. Records in the office of the County Superintendent.
2. Records in the office of accredited high school districts.
3. Gilmer-Aiken Laws
4. Texas Education Agency Memoranda

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[4]Foundation School Program Division, Memorandum Number Six, July, 1949, pp. 1-3.

Further information was obtained from interviews with school administrators, county superintendents of schools, and officials of the Texas Education Agency. Other information was obtained from publications dealing with transportation in the public schools of the nation.

Treatment of Data

From studies already made, a set of standards will be set up, and the pupil-transportation system of Comanche County will be compared with them. This comparison will show any weakness that may exist in the transportation system of Comanche County, Texas, and the interpretation of these data will point the way to establishing a more efficient transportation system.

Related Studies

In making a study pertaining to the cost of transportation of school children in Texas, Roper pointed out the necessity of County Boards making a study of transportation problems in each county in Texas, and then making fair effort to eliminate any factors that were causing transportation cost to be higher than necessary. He concluded in this study that:

> Neither the Gilmer-Aiken Law nor the Flathman Formula is an adequate system for determining the cost of transportation in Texas.
>
> Schools should make an adequate appraisal of their transportation systems. In order to do this, they should keep an accurate expense record of their transportation costs for each bus that a school operates. These records should be kept up-to-date and available for use of the County Superintendent, County School Board, and the State Department of Education.[5]

Fowler, in his study of transportation in the East Texas Oil Field, found that the following things had a great deal to do with the operation of an efficient transportation system:

> 1. A system of good roads is indispensable to adequate transportation.
> 2. More efficient and cheaper transportation may be secured by organizing several school districts under one transportation system, with a centrally located station so that the bus routes may be planned where the maximum number of children may be transported over the minimum number of miles.
> 3. Permanent expense records and accurate cost of every item of operation for each school bus will help school officials to reduce transportation cost to a minimum.[6]

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[5]Tyra Jess Roper, "To Determine the Adequacy of the Gilmer-Aiken Law and the Flathman Formula in Determining Cost of Pupil Transportation in Texas", (Unpublished Master's Thesis, North Texas State College, Department of Education, 1949), p. 57.

[6]Charles G. Fowler, "School Transportation in the East Texas Oil Field", (Unpublished Master's Thesis, Department of Education, North Texas State College, 1938), p. 26.

Penick, in a study on how to develop a more efficient transportation system for high school students in Donley County, found that no school bus transportation system in the county was so well operated that it could not be improved. He concluded: "The per capita cost of transportation decreases with the increase of the number of pupils per bus load."[7]

Braboy, in his study of eight class "B" schools in Wise County, Texas, used the Rugby Score Card to evaluate the eight schools studied. He found that all schools checked were deficient in some of the items. The following items were covered: (1) regularity of service, (2) security, (3) comfort, (4) convenience, (5) conveyance, and (6) operating personnel. He concludes:

> In conclusion then, it is felt that the class "B" school transportation system of Wise County, Texas for the year 1946-47 does not maintain a sufficiently high standard of pupil-transportation service.[8]

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[7]L. B. Penick, "Transporting High School Pupils in Donley County, Texas", (Unpublished Master's Thesis, Department of Education, North Texas State College, 1948), p. 26.

[8]John R. Braboy, "An Evaluation of Eight Class "B" School Transportation Systems of Wise County, Texas", (Unpublished Thesis, Department of Education, North Texas State College, 1948), p. 119.

Johns, in a study of transportation, came to the following conclusions:

> No plan of state support for school transportation is adequate unless it:
> 1. Provides adequate transportation service for all pupils who need it.
> 2. Encourages efficiency and discourages extravagance in local transportation management.
> 3. Is based on an equitable formula which takes into consideration substantial variations in necessary transportation cost resulting from the factors beyond the control of local boards.
> 4. Is based on a complete objective formula, leaving nothing to the subjective judgement of state officials.
> 5. Is a part of a balanced comprehensive foundation program of education financed by an equitable taxing system.[9]

These studies, with the exception of Roper's study, were made prior to the enactment of the Gilmer-Aiken Laws. Roper covered only one of the six phases covered in this study.

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[9]R. L. Johns, "Determining Pupil Transportation Cost", Nation's Schools, XLIII, (Feb., 1949), pp. 48-49.

CHAPTER II

FACTORS INVOLVED IN THE EVALUATION OF A SYSTEM OF PUPIL-TRANSPORTATION

The purpose of this chapter is to establish an instrument for measuring the transportation system in Comanche County. Standards from studies will be presented dealing with the six items selected to be studied in Comanche County. Some standards set up by authorities will be presented in sections where studies are not sufficient to make sound conclusions, and quotations from authorities will be used only when they are in complete agreement with each other.

Administrative Responsibility

School transportation is becoming an increasingly important factor in the successful operation of the total school program. Lambert concludes, "School transportation has added materially to the responsibility of the school administrator, and that in order to do this work well the administrator must be in command of the controlling facts and principles of transportation. The growth of school transportation has been spectacular, and it is distinctly a modern educational development."[1]

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[1]Asael C. Lambert, School Transportation, p. vii.

Butterworth concluded in a study on the effects of the size of the school district on pupil transportation that:

> In the United States we have, in general, operated upon the principle that governmental functions should be carried on as near to the people as economy and efficiency permit. Some problems of government can be dealt with economically and efficiently only by the state; others may be handled best by the county; and still others by smaller units. Even the federal government has a growing need and list of responsibilities that we think it can deal with most effectively. (Underscoring mine).[2]

In applying this principle to pupil-transportation two analyses should be made: (1) What are the various types of duties to be performed, and (2) Which unit of government is best able to perform each type of duty?[3] According to Butterworth, the various duties include determination of what is reasonable cost on transportation; how can best results be obtained in purchasing school buses; driver selection; determination of transportation policies; laying out the routes; selection of equipment; inspection and repairing vehicles; and holding driver institutes.[4]

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[2]Julian E. Butterworth, "What Effects Has the Size of District on Pupil Transportation", The Nation's Schools, XXXXIV, No. 2, (August, 1949), 42.

[3]Ibid., p. 42.

[4]Ibid., p. 42.

Butterworth recommends the county or the "enlarged district" as best to carry on the transportation program and assume the responsibilities of administration through the County Board of Education.[5] Lambert also recommends this procedure.[6] They conclude that the state can best determine a few of the over-all factors governing transportation, such as, subsidizing the transportation program, purchasing the equipment through requisition by the local unit, stating qualifications of drivers, determining the "distance" factor in establishing bus routes, and rendering approval of the routes. Butterworth, in his study of transportation in Edgefield and Lancaster Counties in South Carolina, concluded that the County Board of Education could administer more efficiently the transportation program in counties that are not regarded as county units.[7]

Noble, in his work with the American Association of School Administrators, tried to find a method for selecting the proper type of administrative unit for

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[5] Ibid., pp. 42-43.

[6] Lambert, op. cit., p. 1.

[7] Butterworth, op. cit., pp. 42-43.

transportation. He recommended that whenever possible, the county shall be adopted as the basis of any program of education pertaining to instruction, organization, or administration.[8]

According to a bulletin published by the Arkansas State Department of Education in 1930, one finds a clear-cut definition of the county unit, which is presented as follows:

> -----may be defined as a school district having the same boundary as the county. This district is controlled by one County Board of Education elected by the people exercising powers similar to those exercised by school boards under the local district system. Under the County Unit system all the resources of the county are pooled for the education of all the children of the county.[9]

According to the Council of State Governments, several studies have shown that in the administration of the transportation program greater economy can be expected when school administrative units operating transportation programs are large enough to need a fleet of at least sixteen to twenty buses, and that public ownership and operation can be much more economical than private ownership when administrative units of adequate

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[8]C. S. Noble, Pupil Transportation in the United States, p. 71.

[9]Howard A. Dawson and Others, Larger School Units for Arkansas Consolidated Schools and School Units, p. 13.

size have been established. Drivers of privately-owned buses are less cooperative with school officials than drivers of school-owned buses.[10]

In Texas, under the Gilmer-Aiken Law (Senate Bill 116) the County Superintendent and The County Board of Education of each county are charged with the responsibility of setting up the most economical system of transportation for the county. This system is outlined in Section II, Article V, Senate Bill 116:

> Section II. Transportation. The County Superintendent and County School Board for the several counties of this State, subject to the approval of the State Commissioner of Education, are hereby authorized to annually set up the most economical system of transportation for the purpose of transporting pupils from their districts, and within their districts. The County shall be regarded as the unit, and state warrants for transportation shall be made payable to a County Transportation Fund in each county for the total transportation earned within the county to the extent allowed under the provisions of this Act, and which shall not exceed the total actual approved cost thereof. (Underscore mine).[11]

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[10]Council of State Governments, The Forty-Eight School Systems, p. 194.

[11]Fifty-First Legislature, State of Texas, Senate Bill 116, Article V, Section 2.

Fowler, in his study of transportation in the East Texas Oil Field, found "that a more efficient and cheaper transportation may be secured by organizing several school districts under one transportation system, with a centrally located station in order that the bus routes may be planned so that the maximum number of children may be transported over the minimum number of miles."[12]

The law in Texas, studies presented in this section, and agreement of authorities indicate that the following things constitute a sound administrative unit for transportation in Texas:

1. The County Board of Education and the County Superintendent should be in charge of administering the transportation in each county in Texas.

2. The County Board of Education delegates authority needed to the County Superintendent in administering the transportation program.

3. The administrative unit should be large enough to serve at least sixteen to twenty school buses.

4. The transportation unit should establish the most economical system of school transportation possible.

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[12]Charles G. Fowler, "School Transportation in the East Texas Oil Field", (Unpublished Master's Thesis, Department of Education, North Texas State College, 1938), p. 79.

Operating Personnel

The selection of the school bus drivers constitutes a problem in personnel management which is not unlike that found in other occupations. The school administrator is faced with the task of first setting up the necessary qualifications for the position and then rigidly adhering to said qualifications as a basis for the selection of drivers.[13]

Noble recommends two basic principles that should be followed in the selection of school bus drivers:

1. No person shall be permitted to operate a school bus without a permit or certificate of elgibility.
2. Each applicant for such a permit or certificate shall present satisfactory evidence to the issuing agency with regard to his character, physical fitness, age, driving ability, experience, and knowledge of the duties to be performed.[14]

According to Lambert, drivers of school buses should be mature men of proven judgement and dependability.[15] In general, it is poor policy to use school teachers and high school students as drivers of school buses. Evidence to substantiate this trend of thinking

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[13] M. C. S. Noble, Pupil Transportation in the United States, p. 356.

[14] Ibid., p. 357.

[15] Lambert, Op. cit., p. 19.

is presented by the Foundation School Program Division of the Texas Educational Agency in an item which said, "Full time principals and superintendents are not to be used as bus drivers."[16]

Lambert recommends the following concerning the selection of school bus drivers:

> The driver of a school bus should be selected with care. Mature men of proven judgement who are liked and respected by children are required. Neither young boys nor old men in their late sixties should be used as bus drivers. Offering meager wages to the lowest bidder is not the way to get good school-bus drivers. Under contract systems the school board should impose upon the contractor definite conditions as to the use of satisfactory drivers.[17]

The position of the school bus driver is an all-important one to the successful operation of a school. It seems that in more recent years, except in large cities, the very foundation of most school systems is their pupil-transportation program. Reeder, in his works in establishing a set of standards for school bus drivers, made the following conclusions:

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[16]Foundation School Program, Memorandum No. 12, p. 1.

[17]Lambert, Op. cit., p. 40.

> Need for improvement of the position. The bus driver is one of the most recent school employees, and this short history would help explain the fact that the position is not as well developed as older positions such as those of teachers, principals, and superintendents. He is, or at least he should be, an important school employee and everywhere the position should be placed on a high plane. Although it is not necessary for him to become a "genius" or to have had a large amount of training for his work, there is every reason for him to have many of the qualifications of other school employees.[18]

The importance of the bus driver is portrayed by Reeder in the following three-fold duties:

1. The school bus driver is important because he is the guardian of the safety of pupils who ride the bus. He must transport the pupils safely.
2. The bus driver is in a position to exercise a large educational influence upon the pupils whom he transports, by his every action.
3. He uses and has charge of equipment which is valued at several hundred or several thousand dollars.[19]

The qualifications to be demanded of the holder of any position can be decided upon after examination of the duties which he is expected to perform, as Reeder emphasized in pointing out the importance of the position of the bus driver. The bus driver should:

1. Transport the pupils safely with proper regard for their health and comfort.
2. Exercise a desirable educational influence over the pupils.
3. Maintain proper custody over the bus which he operates.[20]

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[18] Ward G. Reeder, Manual for the School Bus Driver, p. 5.

[19] Ibid., p. 5

[20] Ibid., p. 7

Butterworth concluded that the quality of operating personnel is unquestionably an important potential of good service.[21]

Braboy, in his study of eight class "B" schools in Wise County, Texas found that:

> It is concluded from the data presented that the operating personnel of the pupil transportation system in Wise County, Texas, is excellent. Out of a total of twenty-eight bus drivers in the system, only three were criticized to any extent.[22]

Greer found in his study of the cost of district-owned buses as compared to contracted buses that district-owned buses were more expensive than contracted buses.

> Although, throughout the district, contracted buses were much more economical from the standpoint of operation costs, their drivers co-operated less satisfactorily with school officials than did the drivers of district-owned vehicles. However, slightly more discipline problems seemed to arise in connection with the district-owned buses, and more complaints were received from patrons as to service rendered by district-owned buses than was true with contracted vehicles.[23]

At the National Conference on School Bus Standards, the Committee on the Selection of School Bus Drivers

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[21]Julian E. Butterworth, Administering Pupil Transportation, p. 187.

[22]John Robert Braboy, "Transportation Systems of Wise County, Texas", (Unpublished Master's Thesis, Department of Education, North Texas State College), p. 118.

[23]William A. Greer, "A Comparison of the Cost of Operating Contracted and District-Owned School Buses in District Four, Texas", (Unpublished Master's Thesis, Department of Education, North Texas State College), p. 93.

submitted a report which included the following statement:

> It is the opinion of this committee that, in the last analysis, the safety and efficiency of pupil-transportation service will depend largely upon the manner in which the school bus is operated and, therefore, the selection and training of bus drivers is a matter of prime importance. No school bus is safe in the hands of a driver who is physically or emotionally unfit or who fails to observe sound driving practices. The school bus driver should be selected with as great care as teachers and in accordance with defensible standards. Rules and regulations should be promulgated by the responsible state agency to guide local school boards in exercising this important function.[24] The driver is a key factor in economical school bus operation.[25]

> (With advancing years) Vision is more likely to fail than to improve, and general health is likely to become poorer. Tests made in Massachusetts State College show that brake reaction time grows increasingly slower after twenty-three years of age, changing from an average of .41 seconds at age twenty-three to an average of .47 at age of sixty-five. Other tests reveal a distance loss of coordination between eye and hand in steering an automobile after the age of fifty-five years. It is significant, too, that 97.8 per cent of the drivers of public buses and 96.4 per cent of drivers of commercial trucks are between the age of twenty-one and forty-five.[26]

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[24]National Committee on Safety Education, Our School Buses, p. 5.

[25]Noble, Op. cit., p. 346.

[26]Safety In Pupil Transportation, Research Bulletin, Vol. XIV, No. 5, p. 206, Washington, D.C. Research Division, National Education Association, November, 1936.

> In North Carolina a study of school bus accidents reveals that pupil drivers had a better record for safe driving than the adult drivers; furthermore, these pupil drivers were employed on the basis of a uniform salary scale of $9.50 per driver per month.[27]

Studies presented in this unit, Gilmer-Aiken Laws, and agreement of authorities, justify the following conclusions about sound practices concerning operating personnel:

1. Teachers do not usually make good bus drivers.

2. Drivers should be mature people of proper judgement and dependability.

3. The bus driver should have a permit to operate a bus.

4. Bus drivers should possess satisfactory evidence of good character, physical fitness, age, driving ability, experience, and knowledge of the duties to be performed.

5. Means of training for school bus drivers should be provided. Training is one of the more important phases of driving.

6. Drivers should be able to maintain proper custody over the bus.

7. Drivers should be able to exercise desirable educational influences over the children.

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[27]Report of the State School Commission for the Scholastic Years 1937-38. p. 24, Raleigh, North Carolina, State School Commission, 1939.

Noble, in making a survey of the state transportation systems in the United States, found that an overwhelming majority of these systems left the planning of the bus routes to the initiative of the local district.[28] As long as this condition prevails, unsafe and unduly expensive transportation is apt to occur.

According to Reeder, transportation routes are frequently so poorly planned that they result in a waste of funds, and such waste guarantees criticism on the part of intelligent taxpayers. He states that waste comes from such practices as:

1. Unnecessary traveling of empty buses.
2. Needless retracing of routes.
3. Routing buses over poor roads.[29]

The establishment of school bus routes should be in a state of constant revision in order to transport the pupil to school with the expenditure of the least amount of money and the safest and most comfortable passage to school.[30]

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[28]M. C. S. Noble, Pupil Transportation in the United States, p. 379.

[29]Ward G. Reeder, The Administration of Pupil Transportation, p. 15.

[30]Noble, Op. cit., p. 530.

> If safe and economical routes are to be established, some form of supervision by the state educational department will be necessary. To date, the most progressive provisions for state supervision of school bus routes are found in New Mexico, North Carolina, and Oklahoma. While it is to be expected that other states will adopt provisions similar to those of the aforesaid states, mention should also be made of a transportation program. In brief, there is need for a definite statement of the desirable characteristics of a good school bus route. If such a statement can be prepared and then organized into a point scale for measuring the efficiencey of routes, it is believed that progress in the development of satisfactory routes will be greatly accelerated.[31]

Lambert recommended that routes must be laid out with minimum travel and maximum accessibility. Safety, comfort, adequacy, and economy are the necessary guides to practical management of a successful transportation system.[32]

The planning and establishment of transportation routes, according to Reeder, should receive the attention of school officials several weeks before the opening of the school year.[33] School officials and employees who spend extra time and effort in attempting to improve their transportation routes are certain to be rewarded in the greater happiness, comfort, and safety of the

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[31] Ibid.

[32] Lambert, Op. cit., p. ix.

[33] Ward G. Reeder, The Fundamentals of Public School Administration, p. 427.

pupils, in greater economy of operation, and in larger community support and good will. The chief step in route planning is the preparation of a map of the district.

According to Nobel, school bus routes may be classified into two major types, namely:

1. Regular routes. The term regular route refers to those routes which are used daily and each regular school bus route includes the complete course which the bus must transverse in order to carry pupils to school in the morning and return them to their homes in the afternoon.

2. Special routes. The term special route refers to routes which are followed when some point of special interest rather than the school objective is the objective. Thus, those routes which are followed when pupils are transported to museums, athletic contests, et cetera, may be classified as special routes.[34]

Both regular routes and special routes may be composed of either an arterial route or an arterial route supplemented by a feeder route or routes. When the entire pupil load is transported to and from school in a single vehicle, the route followed is called an arterial route. Feeder routes are the routes used by smaller vehicles, frequently delivery trucks or passenger cars, which merely transport a part of the total pupil load to some point on the arterial route, according to Reeder.[35]

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[34]Nobel, Op. cit., p. 530.

[35]Reeder, Op. cit., pp. 25-29.

The shoestring route begins at or near an outer boundary of the attendance area and proceeds toward the school, collecting first those children who live furtherest from school, while the circular route begins near or at the school and ends at the school, circling the school district and picking-up those children whose waiting station is nearest the school, first, and proceeding on around the district, picking-up last, those children whose waiting station is again nearest the school.

The Council of State Governments says that:

> State policies relating to transportation are still far from uniform.. Some states require that all children who live more than a certain distance from a school (usually two or three miles) be transported at public expense or that other satisfactory provisions be made for educating such children. Other states leave the matter entirely to local systems. Some states provide specific policies regulating the establishment of bus routes, while others set up only a very few broad and general suggestions. Although considerable progress has been made in development of sound policies among the states for certain phases of transportation, still further attention needs to be given to this problem. Fewer than one-half of the states have at least on full-time person on the state department staff whose major responsibility is in the field of transportation. There are so many problems in this area with which local school systems need assistance, and there are so many possibilities of improving economy, efficiency, and safety that it would seem that all states could benefit materially by providing competent service in this field.[36]

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[36]Council of State Governments, Op. cit., pp. 101-5.

Fowler found in his study in the East Texas Oil Field Area that "A system of good roads is indispensable to adequate transportation."[37]

Materials in this section were taken from studies and statements of leading authors in the field of transportation. Statements from these textbooks are used only when they are in complete agreement. All information presented on establishing bus routes justifies the following conclusions:

1. Backtracking and re-tracing should be avoided when possible.

2. Routes should be planned by the county administrator in cooperation with interested parties.

3. Duplication of routes should be eliminated.

4. Bus routes should be planned for minimum travel and maximum accessibility.

5. Policies for establishment of routes should be uniform.

6. Routes should be planned in such a way that they travel over the best roads available and still give adequate service to the entire transportation area.

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[37]Fowler, Op. cit., p. 79.

Ownership of Vehicles

The most controversial part of school transportation procedures has been regarding which plan of bus ownership is the best. The following plans of school bus ownership are in existence:

> The Contract Plan. Under the contract plan the school district enters into an agreement with one or more individuals or with a public carrier to provide pupil transportation. Under it all costs are borne by the contractor who provides all equipment, drivers, and supplies; in return he receives a stated sum, usually a monthly payment, during the school year. The plan was almost always used in the early days of transportation and it is still used most widely. Approximately two-thirds of the school buses of the United States are still operating under this plan. However, the plan is being rapidly supplanted by one of the following plans.
>
> The School-Ownership Plan. Under this plan the school district purchases the conveyances, employs drivers, furnishes all supplies, and makes all other provisions for the operation and maintenance of the conveyances. At present, approximately one-fourth of the school buses of the United States are operated under this plan. The tendency in both theory and practice is toward the use of it and away from the use of the contract plan described in the preceding paragraph.
>
> The Joint-Ownership Plan. Under this plan the contractor furnishes a part of the conveyance (usually the chassis) and is responsible for its operation and upkeep, while the school district provides the other part (usually the bus-body) and looks after its upkeep. During the summer months the bus body is frequently removed from the chassis and is stored in order that the chassis may be used for other purposes. Approximately one-tenth of the school buses of the United States are operated under this plan.[38]

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[38]Reeder, Op. cit., pp. 160-61.

From the evidence submitted in certain studies conducted by Noble regarding the ownership of school buses, he arrives at the following conclusions:

(1) Differences of opinion as to the more desirable method of operation do exist.

(2) Advocacy of contract methods is greatest in cities employing fleets of less than five vehicles.

(3) Although it is admitted that in certain cities, ample justification for the use of contract methods of operation exists, school-ownership and operation of buses seems to be the method which should be generally adopted.[39]

Pursuing conclusion number three, above, Noble points out the following advantages for the general use of school-owned buses:

(1) The annual per capita costs of transportation under contract methods are approximately twice as great as the annual per capita costs under school-owned buses.

(2) Progressive school administrators in all sections of the nation have proved themselves thoroughly capable of providing efficiently administered and supervised systems of pupil transportation.

(3) Many economies which are common to school-ownership of buses in larger school systems would also occur in smaller school systems, as in either case private profits would be eliminated through school-ownership.

(4) School authorities should prove just as capable as private interests in providing flexibility in the program of pupil transportation since

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[39]Noble, Op. cit., p. 137.

flexibility is primarily a matter of efficient administration.

(5) School-owned vehicles should provide greater privacy and comfort for the exceptional child because such vehicles would be under the direct control of the school authorities and would not be used for transporting the general public.[40]

With the selection of the method of pupil transportation limited to the choice between school-ownership, joint-ownership, and the contract plan, many aspects of selection and issues are involved. Each plan has proved satisfactory in certain districts and unsatisfactory in other districts. Although there are many issues involved in adopting the plan to use, the three chief issues offered for consideration by Reeder are as follows:

(1) Which plan contributes most to a desirable educational program for the pupils?

(2) Which plan is most economical?

(3) Which plan is most convenient to the school officials?[41]

Greer found in his study of the cost of district-owned buses as compared to contracted buses that district-owned buses were more expensive than contracted buses.

> Although, throughout the district, contracted buses were much more economical from the standpoint of operation costs, their drivers co-operated less satisfactorily with school officials than did the drivers of district-owned vehicles. However, slightly

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[40] Ibid., pp. 137-138.

[41] Reeder, Op. cit., p. 161.

> more discipline problems seemed to arise in connection with district-owned buses, and more complaints were received from patrons as to service rendered by district-owned buses than was true with contracted vehicles.[42]

Braboy cites similar issues in determining the type of ownership and states that the type of ownership to be preferred must be based upon definite answers to the issues involved.[43] We are told by Lambert that uncertainties over the relative advantages and economy of district-owned systems of transportation over contract systems are disappearing.[44] On educational and administrative grounds the case for district ownership and operation of transportation systems is clear. This is particularly true where large amounts of equipment and service are required. Reputable cost studies that have appeared in recent years have strengthened the case for district ownership on the grounds of financial economy. Considerations of local patronage and the alleged opportunity for superintendents to escape responsibility through the contract system should be minor grounds for deciding this issue. In every case of practical local administration, the transportation system must be made adequate, flexible, economical and safe.

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[42]Greer, Op. cit., p. 93.

[43]Braboy, Op. cit., p. 13.

[44]Lambert, Op. cit., p. 119.

According to Noble, studies which were conducted in 1934 by Engum on a survey he conducted in sixty-nine consolidated school districts in Minnesota, school-ownership provides a greater degree of safety in transporting school children.[45] Engum checked two hundred and forty-five buses, separately, in these districts on the basis of deficiencies of thirty construction items and found that the per cent of deficiencies was greatest in privately owned vehicles, next greatest in jointly-owned vehicles, and smallest in school-owned vehicles.

Roberts, in his study of the cost of transportation in Arkansas, reaches the same conclusion as did Engum in that contractors do not actually bid on a cost plus profit basis, but place their bids in terms of the maximum allowance for transportation.[46]

Figure I presents in summary form the evidence found by Engum in his survey of school bus construction in relation to ownership.

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[45]Noble, Op. cit., pp. 200-201.

[46]Roy W. Roberts, An Analysis of the Cost of Pupil Transportation in Arkansas, pp. 190-191.

Item	Type of Bus: District owned	Jointly Owned	Privately Owned
1. Number of buses inspected	42	55	148
2. Maximum defects possible, checking on thirty construction items	1,260	1,650	4,440
3. Actual Number defects discovered	144	381	1,351
4. Per cent of deficiencies	11.4	23.8	30.4

Source: Summary of Table II found in: Engum, T. C., A Survey of School Bus Construction in Sixty-Nine Consolidated School Districts in Minnesota. St. Paul, Minnesota: State Department of Education, 1934, p. 8. (Mimeographed).

Figure I--Deficiencies of school bus construction in sixty-nine consolidated school districts in Minnesota, 1934.[47]

[47]Noble, Op. cit., p. 200.

The following conclusions can be drawn from the materials presented in this section, which are based on studies, state laws, and items in which all authors are in agreement:

1. The school-ownership plan is a more desirable type of conveyance than the private or joint ownership plan.

2. The school district is too small to operate an economical transportation system.

3. The administrative unit must own and operate more than five buses before an economical transportation system can be set-up.

4. Drivers of joint and privately owned school buses are less cooperative than drivers of school owned buses.

Types of Conveyance

The majority of our schools throughout the nation are confronted with a major problem--provision of safe, dependable, ample-sized buses to handle the ever-increasing enrollments being transported to the consolidated schools.

"In many cases not enough money is available to buy the necessary school buses to supplement or replace those that are over-crowded and unsafe."[48]

The Council of State Governments finds that "most states have established some essential minimum safety standards."[49] Other states, however, have left this important matter entirely, or almost entirely, to local school systems. Studies reveal that there are a number of minimum safety standards which should be prescribed in every state in the interest of providing needed safeguards for transported pupils. Safety of school transportation should be of great concern to all states and local school systems. As pointed out by the National Commission on Safety Education, pupil transportation should be planned to insure maximum safety, efficiency, and economy.[50]

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[48]Douglas R. Nininger, "140,000,000 Miles of School Bus Transportation Without A Fatal Accident", School Management, May, 1950, p.4.

[49]Council of State Governments, Op. cit., p. 103.

[50]National Commission on Safety Education, Op. cit., p. 8.

General standards are listed by Reeder which the school buses should meet, namely:

(1) Safety, especially for the pupils, is the first standard which school officials should keep in mind, when purchasing a bus. This standard has led to the adoption of steel construction, safety glass, emergency doors, standard colors, and innumerable other features.

(2) Comfort is second only to safety in its importance as a standard for school buses; in fact, there is a close relationship between comfort and safety. The lack of comfort, caused, for example, by extreme temperatures, poor ventilation, and improper seating provision can injure health and thereby affect the safety of the occupants of the bus just as much as can an accident.

(3) Durability is another factor to be considered in purchasing or renting a school bus. By durability of a product is meant its ability to stand wear and tear. Because of greater durability a high priced bus may be cheaper in the long run than a low priced one. From investment in durability there will come a longer life of the bus, fewer failures of service, smaller and less frequent bills for repair and replacement, and fewer annoyances in general for everyone connected with transportation.

(4) Economy is still another general standard to be kept in mind in selecting and operating school buses, especially the chassis. Economy is closely related to durability. A bus which is not durable will require larger expenditures for repairs and replacements. Likewise, the type of motor, the weight of the bus per pupil, and many other features determine economy.

(5) Availability of repairs is a final consideration to be kept in mind in selecting a school bus. It is a good policy to secure, other factors being equal, a bus, especially the chassis, which is represented by a dealer in or near the school district. Large inconvenience is apt to result if a bus is laid up for repairs more than a few hours, and that is certain to result when replacement parts must be secured from the manufacturer.[51]

Noble reports that "during the National Conference on School Bus Standards, greatest emphasis was placed upon the characteristics of safety and economy in formulating acceptable standards."[52]

Figure II, page 40, presents the report blank for school bus standards in Texas.

From studies, state laws and regulations, and items in which several authors are in agreement, the following conclusions can be drawn:

(1) Safety, especially for the pupils, is the first standard which school officials should keep in mind when purchasing buses. This standard has led to the adoption of steel construction, safety glass, emergency doors, standard colors, etc.

(2) The bus should be durable.

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[51]Ward G. Reeder, The Administration of Pupil Transportation, pp. 100-2.

[52]Noble, Op. cit., p. 284.

SCHOOL BUS INSPECTION REPORT

_____ COUNTY

SCHOOL DISTRICT_____
OWNER_____
DRIVER_____
CHAUFFEUR'S NUMBER_____
LICENSE NUMBER_____
MOTOR NUMBER_____
MAKE OF BUS_____
YEAR MODEL_____
WIDTH OF BUS_____

RATED SEATING CAPACITY_____
AVERAGE NUMBER OF PASSENGERS_____
AVERAGE DAILY MILEAGE_____
NUMBER OF TRIPS DAILY_____
AVERAGE DAILY DRIVING TIME_____
LENGTH OF BUS ROUTE COMPLETE_____
NUMBER OF MILES UNPAVED_____
SCHOOL BUS PATROL OPERATING_____

The bus shall not be approved unless the following items of equipment are in safe operating condition:

IDENTIFICATION
- Color (School Bus Chrome)_____
- (S) Signs (four sides) _____
- (S) Signs (8 In.) _____

EXIT FACILITIES
- Steps (firm) _____
- Door hand rails (firm)_____
- Emergency Door
  - Unobstructed _____
  - Inside release _____
  - Safety latch _____

LIGHTS & SIGNALS*
- (S) Headlights (two) _____
- Traffic beams (two)_____
- (S) Tail light (one) _____
- (S) Stop light (one) _____
- (S) Horn (loud) _____
- (S) Rear Red Reflectors (two) _____
- (S) License plate light (white) _____
- (S) Mechanical Stop Signal Operated By Driver

(S) FIRE EXTINGUISHER
- Mounted (near driver)_____
- Filled_____
- Working_____

FIRST AID KIT
- Ample supplies _____(Yes) _____(Fair) _____(No)

(S) *Additional Equipment Required on bodies of 80 or more inches overall width:
- 2 front clearance lights (amber)_____
- 2 side marker lights near front (amber)_____
- 2 side reflectors near front (amber)_____
- 2 side marker lights near rear (red)_____
- 2 side reflectors near rear (red)_____
- 2 rear clearance lights (red)_____
- 2 rear reflectors (red)_____

BRAKES
- (S) Foot (pedal travel 3 in. from floor) _____
- (S) Foot (locks all four wheels) _____
- (S) Emergency (holds bus on steep grade) _____

VISION
- Unobstructed (right & left) _____
- Rear View Mirror (in place)_____
- Windshield Wiper (working) _____
- Windshield clear _____

EXHAUST
- (S) Muffler (no holes) _____
- (S) Pipes (no holes) _____
- (S) Connections (no leaks) _____
- Tail pipe extends from under bus _____

(S) STEERING (Law requires safe condition)
- Steering Wheel Play (not over 5 in.)_____
- Steering Shaft Nut (tight & safetied)_____
- Drag Link Connections (tight & safetied)_____
- Tie Rod Connections (tight & safetied)_____
- King Pins (firm & safetied)_____

(S) TIRES (Law requires safe condition)
- Pressure_____
- Tread _____(OK) _____(Fair) _____(Slick)
- Breaks _____(None) _____(Minor) _____(Dangerous)

FIRST AID TRAINING OF DRIVER
- None—
- Standard—
- Advanced—
- Instructor—

DATE OF INSPECTION_____ 19

This bus meets the above requirements and is in safe operating condition.

Approved_____
Deputy State Superintendent

_____
Signature of Patrolman

(S) Items so designated are required by law.

Figure II

(3) The bus should be comfortable.

(4) The bus must operate economically.

(5) The bus should be kept in good state of repairs with frequent inspections.

Financial Structure

Butterworth declares that "the three important factors constituting the criteria for a successful transportation program are safety, efficiency, and cost."[53] He says that "it seems the trend might be toward lower costs, as the tendency is toward larger units which have a direct relationship to the cost factor."[54] One might expect that the enlarged unit would give lower costs for the following reasons advanced by him:

> (1) The larger unit will usually be able to purchase supplies and equipment more cheaply because of the larger quantities involved. For instance, the larger the number of vehicles involved the easier it will be to introduce a purchasing program staggered to make uniform demands upon bus factories, with consequent savings. It should be recognized, on the other hand, that the enlarged unit might do the purchasing for the constituent districts without taking over the administration of the entire program. Arrangements also might be made so that small districts could participate in a state contract for maintenance materials.

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[53] Butterworth, Op. cit., p. 43.

[54] Ibid.

(2) The enlarged district should be able to lay out routes that will require the shortest possible haul.

(3) The enlarged unit should be able to provide major repair service at one center more economically than the constituent districts could provide them.

(4) In building garages the large district could probably make some economies by constructing larger storage units.

(5) In the large district there would be, usually, a sufficiently big job to justify the employment of a supervisor who, because of his superior knowledge, could bring about more efficiency or more economy or both.[55]

The total cost of transportation of pupils has been an item of growing importance in educational expenditures in the past two decades. With improvement in the efficiency of transportation, its more effective administration, and the larger number of pupils transported, costs per pupil have tended to decrease. This is pointed out by a number of studies presenting costs over a period of years. In North Carolina in 1935, transportation costs were decreased from $13.09 to $7.00 per pupil largely by shifting the administration from the school districts to a state government agency.[56]

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[55] Ibid.

[56] Paul R. Mort and Walter C. Reusser, Public School Finance, pp. 244-5.

> Pupil transportation is distinctly a modern educational development. Only a little more than a generation ago very few pupils were being transported at public expense, and only an insignificant portion of the school budget was devoted to transportation. In 1945-1946, more than five million public school pupils were transported at a total expenditure of $129,756,735 and at an average cost of $25.66 per pupil. The percentages of pupils transported ranged from 37.9 per cent in North Carolina to 2.2 per cent in Nebraska, and the cost per pupil varied from $11.97 in North Carolina to $134.80 in Nebraska.[57]

Some states provide specific financial assistance for transportation; others provide general funds, some of which may be used for transportation; still others make no provision either directly or indirectly for state financial assistance for transportation. Some states specify that state funds can be used only for transporting children who live beyond certain specified distance. The safe and efficient transportation of five million school children costs more than 130 million dollars annually and evidence points to increases in the years ahead both in number of pupils transported and in enlarged services.[58]

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[57]Council of State Governments, Op. cit., p. 101.

[58]William H. Morris, "Strengthening American Education Urged in Annual Report", School Life, Vol. 30, No. 6, March 1948, p. 11.

Reeder tells us that:

> The efficiency of any service is determined largely by the adequacy of the financial support which is given the service. So it is with pupil transportation. When improvements are secured, they are usually accomplished by the expenditure of more money. When they are not accomplished by larger expenditures, they must be accomplished by more efficient management and by more efficient expenditure of present revenues. In any attempt, therefore, to improve transportation, one of the first matters to observe is whether more adequate financial support of it is necessary.[59]

The reasonable cost of transportation for any district is determined by factors selected by C. D. Hutchins, Supervisor of Transportation of the Ohio State Department of Education and classified by him into two types, which are presented by Reeder as follows:

Non-Controllable Factors:

(1) Number of pupils transported (the larger the number, the less the cost per pupil).

(2) Density (transported pupils per square mile).

(3) The condition of the roads.

Controllable Factors:

(1) Pupils transported per bus.

(2) Average investment per pupil.

(3) Number of trips per bus.

(4) Seating arrangement (per cent facing forward).

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[59]Reeder, Op. cit., p. 147.

(5) Per cent of bus capacity used.

(6) Average number of bids per route.

(7) Per cent of buses owned by the board.[60]

It will be observed that the non-controllable factors are largely or entirely beyond the control of the administrative unit, while the controllable factors are matters of management and may be controlled by school officials.

In studying costs for pupil transportation, the cost units which are usually used are as follows:

(1) The cost per bus. This cost may be stated on a per year, a per month, or a per day basis.

(2) The cost per pupil. This cost may be stated on a per year, a per month, or a per day basis.

(3) The cost per mile. This cost may be stated on a bus-mile basis, which is the cost of sending the bus one mile or a pupil-mile basis, which is the cost of transporting one pupil one mile.[61]

The units of cost as presented by Noble go somewhat more into detail and are:

(1) Center in the "pupil", the "bus", the "mile", and the "route".

(2) Expressed in terms of "daily", "monthly", or "annual" costs.

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[60] Ibid., p. 151.

[61] Ibid., p. 153.

(3) Concerned with either total expenditures, expenditures for current expense, or expenditures for capital outlay. Thus, we find such units as the total cost of transportation, the cost per route, the cost per bus, the cost per bus-mile, the cost per seat-mile, and the cost per pupil-mile.[62]

Any evaluation of unit costs indicated that the investigator should be guided by the following facts when selecting units of cost as a basis of measurement:

(1) The use of any one of the various units of cost does not yield a complete "cost story"; a battery of units, therefore, is usually preferable to a single unit.

(2) Selection of the cost-unit or units should be governed by the purpose of the investigation.

(3) In general, daily costs as unit of measurement, comparison and prediction are superior to monthly and annual costs.

(4) The prevailing tendency is to employ two-factor rather than single-factor units.[63]

In the United States, local responsibility for the financing and operation of transportation facilities follows three major plans:

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[62]Noble, Op. cit., p. 172.

[63]Ibid., pp. 172-3.

> In the New England states, the towns or townships constitute the local administrative units; in the southern states lying east of the Mississippi River, the county is the administrative unit; and in other sections of the nation, pupil transportation is primarily the responsibility of the local school districts. Among the exceptions to these three major plans are: Delaware, in which transportation facilities are maintained entirely by the state except where local supplements are provided by referendum vote; North Carolina, in which the state owns and maintains all buses but places upon counties the responsibility of purchasing additional buses; and Louisiana in which the parish is the local unit of administration.[64]

Figure III, page 48, exhibits a sample cost statement as presented by Reeder.

Roper concluded, in his study of the Gilmer-Aiken Laws as compared with the Flathmen Formula, that "schools should keep an accurate expense record of their transportation cost for each bus that is operated."[65]

Fowler found, in his study of transportation in East Texas, that "permanent expense records and accurate cost of every item of operation will help school officials to reduce transportation cost."[66]

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[64] Ibid., pp. 195-6.

[65] Tyra Jess Roper, "To Determine the Adequacy of the Gilmer-Aiken Law and the Flathman Formula, in Determining Cost of Pupil Transportation in Texas", (Unpublished Master's Thesis, Department of Education, North Texas State College,) p. 57.

[66] Fowler, Op. cit., p. 79.

The expenditures for a given school bus for the school year are listed herewith:

Driver's salary	$275.00
Gasoline	80.40
Motor Oil	15.00
Lubrication	9.00
Tires	20.75
Battery charging	5.00
Parts and repairs	10.50
Washing and storage	40.75
Insurance	40.00
Depreciation	140.00
Total	$636.40

The conditions of service under which the above bus operated are as follows:

Length of school term in months	9
Length of school term in days	180
Number of pupils transported	40
Miles the bus traveled during the school year	4500
Miles the bus traveled each school day	25

The unit costs for the bus are as follows:

Annual cost for the bus	$636.40
Monthly cost for the bus	70.71
Daily cost for the bus	3.54
Annual cost per pupil	15.91
Monthly cost per pupil	1.77
Daily cost per pupil	.088
Cost per bus mile	.141
Cost per pupil mile	.0035

Figure 3.--Cost statement for a given school bus for the school year.[67]

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[67] Reeder, Op. cit., p. 155.

Penick, in his study of transportation in Donley, states that "the per capita cost of transportation decreases with the larger number of pupils per load."[68]

From studies presented in this section the following conclusions can be reached:

1. The per capita cost of transportation decreases with the larger number of pupils per bus load.

2. Permanent expense records and accurate cost of every item of operation will help school officials reduce the cost of transportation.

3. The enlarged transportation district, operating more than sixteen buses, contributes toward economy of operation.

4. Then longer the bus route the more expensive the operation cost will be.

5. School bus routes should take care of the maximum number of children by traveling the minimum number of miles.

The purpose of this chapter is to establish an instrument for measuring the transportation system of Comanche County. Studies already made in the field of

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[68]L. B. Penick, "Transporting High School Pupils in Donley County, Texas", (Unpublished Master's Thesis, Department of Education, North Texas State College), p. 26.

transportation, the Gilmer-Aiken Laws, and some standards set up by authorities will be used to supplement studies where studies are not sufficient to make sound conclusions, and quotations from authorities will be used only when they are in complete agreement with each other.

This study is limited to six areas of transportation. They are administrative responsibility, operating personnel, establishment of routes, ownership of vehicles, types of conveyances, and financial structure. A summary of conclusions drawn in each of the six areas of transportation in light of the data presented in this chapter is as follows:

Administrative Responsibility

1. The County Board of Education and the County Superintendent should be in charge of administering the transportation program in each county in Texas.

2. The County Board of Education delegates authority needed in administering the transportation program to the County Superintendent.

3. The administrative unit should be large enough to serve at least sixteen to twenty buses.

4. The purpose of the County Unit is to establish the most economical system of school transportation.

Operating Personnel

1. Teachers do not make good bus drivers.

2. Drivers should be mature men of proper judgement and dependability.

3. The bus driver should have a permit to operate a bus.

4. Bus drivers should possess satisfactory evidence of good character, physical fitness, age, driving ability, experience and knowledge of the duties to be performed.

5. Means of training should be provided for school bus drivers. Training is one of the more important phases of driving.

6. Drivers should be able to exercise desirable educational influences over the children and maintain proper custody over the bus.

Establishment of Routes

1. Backtracking and re-tracing should be avoided when possible.

2. Routes should be planned by the county administrator in cooperation with interested parties.

3. Duplication of routes should be eliminated.

4. Bus routes should be planned for minimum travel and maximum accessibility.

5. Routes should be planned in such a way that the buses travel over the best roads available and still give adequate service to the entire transportation area.

Ownership of Vehicles

1. The school-ownership plan is the most dependable and most economical type of conveyance.

2. The local school district is usually too small to operate an economical transportation system.

3. The administrative unit must own and operate more than five (the ideal is about sixteen) buses before an economical transportation system can be set-up.

4. Drivers of joint and private owned buses are less cooperative than drivers of school owned buses.

Types of Conveyances

1. Safety, especially for the pupil, is the first standard which school officials should keep in mind when purchasing buses. This standard has led to the adoption of steel construction, safety glass, emergency doors, standard colors, etc.

2. The bus should be durable.

3. The bus should be comfortable.

4. The bus must operate economically.

5. The bus should be kept in good state of repairs with frequent inspection.

Financial Structure

1. The per capita cost of transportation decreases with the larger number of pupils per bus load.

2. Permanent expense records containing the accurate cost of every item of operation will help school officials reduce the cost of operation.

3. The enlarged transportation district, operating more than sixteen buses, contributes toward reduced cost of transportation.

4. The longer the bus route the more expensive the operational cost will be.

5. School bus routes should take care of the maximum number of children by traveling the minimum number of miles.

CHAPTER III

PUPIL TRANSPORTATION IN COMANCHE COUNTY DURING THE 1949-50 SCHOOL TERM

Millions of school children are transported to and from school daily in the United States. Families in sparsely settled areas have always wanted their children to continue living at home, and at the same time, have educational opportunities not provided in schools within walking distance. "The underlying purpose of better advantages has remained constant over the years. Factors affecting it, however, have changed and are responsible for the rapid growth of the school transportation system."[1]

Because pupil transportation has become such an important school service in such a short period of time there has been a great deal of variation in practice in the organization and procedures involved in providing the service. In early years, when only a small number of schools operated vehicles at public expense, almost all responsibility was vested in the local school unit.[2]

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[1]Shirley Cooper, "Why Do We Transport Children To School", The School Executive, Vol. LXIX, No. 8, April, 1950, pp. 11-12.

[2]Glenn Featherston, "School Bus Drivers", Pamplet No. 100, U. S. Office of Education, 1946, p. 2.

Administrative Responsibility

Pupil transportation is administered in Comanche County as a delegated function to the local unit trustees. Legal provisions charge the County Board of Education and the County Superintendent of Schools with the responsibility of administering a successful and economical system of pupil transportation for the county. This responsibility is delegated by the proper authorities to the trustees of each of the sixteen local school units.

The administration of transportation, hiring of operating personnel, establishment of routes, ownership of vehicles, and spending of the money is left to the local district. In cases requiring an official act of the County Board, the recommendations of the local district are the basis of the action of the County Board.

There are 925.5 square miles in Comanche County. There are thirty-eight buses in Comanche County transporting 2,852 pupils. Five of the sixteen local units in the county operate accredited high schools, and children must be transported from the remainder of the districts to these five high schools.

Since the passage of the Gilmer-Aiken Laws, every effort has been made to establish the most economical transportation system possible with the existing local

control system. Very carefully kept financial records can be found in the County Superintendent's office. However, there is still not enough uniformity of administration in the local school districts in regard to transportation.

Operating Personnel

The selection of school bus drivers is a delegated function from the County Board of Education to the trustees of the local school district. Drivers are selected annually and are carefully chosen upon the basis of qualifications for a period of nine months or for a period equal to the length of the school term.

In many instances, teachers and high-school boys meet the qualifications set forth and are employed to drive the school bus. During the school term of 1949-50 there were six high-school boys, twelve teachers, and twenty men of other occupations driving the thirty-eight buses in the county. All of the drivers except the six high-school pupils were mature men above twenty-one years of age.

A bus driver institute is held in the county each year to teach the drivers the proper knowledge of duties they must perform. They must also pass an examination in order

to receive their chauffer's license. They must possess a valid chauffer's license and a red cross first aid certificate in addition to having attended the driver institute.

The responsibility for administering the school transportation is so close to the people that every driver must exercise desirable influences over the children and maintain proper custody of the bus or he will be replaced. Replacements did occur during 1949-50; some of them were for failure to take proper care of buses, etc.

Establishment of Routes

A regulation by the Texas Education Agency prevents backtracking and re-tracing if it is less than three-fourths of a mile. However, there are several instances of re-tracing over routes for more than a mile.

The local trustees establish bus routes for the local district without regard to other adjoining districts. All routes are presented to the County Board of Education for approval.

There were three cases of overlapping bus routes in Comanche County during 1949-50. One of these could not be avoided under the existing district system. However, the two remaining have been ordered abandoned by the County Board of Education and the Texas Education Agency.

In some instances, it becomes necessary to plan and establish more than one bus route per bus in order to cover satisfactorily the attendance area. Many local districts operate more than one bus. Bus routes are planned for minimum travel and maximum accessibility, under uniform policies adopted by the local trustees. The County Board of Education accepts the recommendations of the local district trustees as long as the district and its pupils are served without creating a disturbance.

All routes are planned in such a way that the buses travel over the best roads available and still give service to the entire transportation district.

Ownership of Vehicles

District-ownership, private-ownership, and joint-ownership plans are found in operation in Comanche County. There are twenty district-owned, ten jointly-owned, and eight privately owned buses in Comanche County. Of the ten jointly-owned buses, four districts own the body and the individual owns the chassis. There are six buses owned jointly by the county unit and by the local unit. Three of the privately-owned buses are owned by teachers, and the other five are owned by citizens of the community.

Only two of the local school districts operate more than five buses, and these two districts operate less than ten buses each.

The location of small elementary school districts and small high school districts close to the larger high school districts prevents any of the districts from being able to route buses over a wide enough area to operate them in the most economical manner possible.

Drivers of jointly and privately owned buses are the least cooperative with the County Superintendent. They receive the maximum salary of $90.00, and get the remainder of their earnings to apply on expense of operating buses. There is nothing in the law that prevents them from using these buses as family cars and turning bills in against the transportation fund. There is no limit as long as they stay within their earnings.

Types of Conveyances

In purchasing school buses, the local trustees are guided by the needs of the district in specifying the type of vehicle needed to the County Superintendent and the State Board of Control. They take into consideration the seating capacity and other desirable features necessary to successfully serve their given situation.

The trustees are required by law, through the State Board of Control, to meet certain safety features such as: steel construction, safety glass, emergency doors, standard colors, etc.

The school buses are selected by the State Board of Control on the basis of bids. They have very rigid requirements. The buses must be durable. Forward facing seats are the only type purchased by the Board of Control. Standard makes of trucks are bought by the schools through the Board of Control. The newer buses are more economical.

Every bus must be inspected once each year by the Texas State Highway Patrolman for safety. No transportation aid can be paid on buses not approved by the patrolman. Drivers, school men, and mechanics check their buses, but buses are not always in the best state of repair, especially the older buses.

Financial Structure

Comanche County Pupil Transportation System spent $64,618.50 in operating thirty-eight buses over an attendance area of 925.5 square miles. These buses earned $57,040.00 during the 1949-50 school term.

The maximum amount that can be earned in Comanche County is $3.50 per month for each child transported. The more pupils that a bus can transport, the more it can earn under the present Gilmer-Aiken Laws.

Maintenance and operational cost are paid by the local school boards upon approval of the County Superintendent. His approval is based upon a monthly report giving the amount of money spent for salaries, gas and oil, bus repair, tires, batteries, insurance, bus payments, and other items. Each item must be supported by a bill properly executed.

The largest school district in Comanche County operates eight buses, and the smallest operates one bus. The entire county operates thirty-eight buses.

Twenty of the school buses in Comanche County are forty-eight passenger buses, five forty-two passenger buses, three sixty passenger buses, two thirty-six passenger buses, three private automobiles (five passenger), and five twenty passenger school buses. Some of the smaller buses make two or more routes. Some of them travel as high as fifty miles per trip or one hundred miles per day after few pupils.

Comanche County has approximately two-hundred too many pupils of scholastic age to receive transportation aid on the basis of a sparsely settled county. It is hard to operate on the aid alloted the county due to the fact that some sections of the county are very sparsely settled. However, school bus routes do operate over the routes as they exist on the district basis serving the maximum number of children.

CHAPTER IV

APPLICATION OF CRITERIA TO COMANCHE COUNTY TRANSPORTATION PROGRAM

Any prophecy as to the future of pupil transportation in the United States may be predicated upon the following assumption:

> Pupil transportation has already developed to such an extent that it is possible to discern what might be designated as some of the acceptable characteristics of a satisfactory program.[1]

In the light of this assumption, it is desired that the Comanche County system of pupil transportation be evaluated according to the criteria formulated in this study.

Administrative Responsibility

The County Board of Education and the County Superintendent should be in charge of administering the transportation program in each county in Texas.

Pupil transportation is administered in Comanche County as a delegated function to the local unit trustees. Legal provisions charge the County Board of Education and the County Superintendent of School with the responsibility

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[1]M. C. S. Noble, Pupil Transportation in the United States, p. 518.

of administering a successful and economical system of pupil transportation for the county. This responsibility is delegated by the County School Board to each of the sixteen local school districts.

According to this criterion the County Board should establish and operate the most economical transportation possible. Instead, they are delegating responsibility of operation to the local units, which are too small to operate economical transportation systems.

The County Board of Education should delegate authority needed in administering the transportation program to the County Superintendent.

The administration of transportation, hiring of operating personnel, establishment of routes, ownership of vehicles, and spending of the money earned is left to the local school district trustees. In cases requiring an official act of the County Board, the recommendations of the local board are the basis of the action of the County Board.

According to this criterion the County Superintendent should be in charge of all phases of transportation as a delegated responsibility from the County Board. However,

most of the responsibility for administration of the system of pupil transportation is given to the local trustees of the sixteen active districts.

The administrative unit should be large enough to serve at least sixteen to twenty buses.

There are 925.5 square miles in Comanche County. There are thirty-eight buses in Comanche County transporting 2,852 pupils. Five of the sixteen local school districts operate accredited high schools, and high school children must be transported from the remainder of the districts to these five high school districts.

According to this criterion there should be at least sixteen buses in one unit in order to operate a most efficient transportation system. The county is large enough to operate an economical transportation unit. However, none of the local districts have enough buses to operate an economical unit.

Operating Personnel

Teachers do not make good bus drivers.

The selection of school bus drivers is a delegated function from the County Board of Education to the trustees of the local school district. Drivers are selected annually

and are carefully chosen upon the basis of qualifications for a period of nine months or equal to the length of the school term.

In many instances teachers and high-school boys meet the qualifications set forth and are employed to drive the school bus. During the school term of 1949-50 there were six high-school boys, twelve teachers, and twenty men of other occupations driving the thirty-eight school buses in the county. All of the drivers except the six high school pupils were mature men above twenty-one years of age.

According to this criterion Comanche County is not employing all of its drivers from men most likely to do a good job.

Drivers should be mature men of proper judgement and dependability.

All of the drivers, except the six high-school pupils were mature men, above twenty-one years of age.

According to this criterion Comanche County is hiring men of proper judgement and dependability.

The bus driver should have a permit to operate a bus.

All drivers possess a valid chauffer's license. This license permits them to drive buses.

According to this criterion Comanche County ranked high because one hundred per cent of the drivers did possess a permit to drive a bus.

Bus drivers should possess satisfactory evidence of good character, physical fitness, age, driving ability, experience and knowledge of the duties to be performed.

Evidence is shown that the local trustees pay very close attention to the character, physical fitness, driving ability, experience and knowledge of the duties to be performed. Three drivers were fired during this school term because they failed to meet these standards.

According to this criterion Comanche County does have operators with good character, physical fitness, driving ability, experience, and knowledge of the duties to be performed.

Means of training should be provided for school bus drivers. Training is one of the more important phases of driving.

A bus driver institute is held in the county each year to teach the drivers the proper duties he must perform. They must also pass an examination in order to get their chauffer's license.

According to this criterion Comanche County is meeting the standard by providing means of training.

Drivers should be able to exercise desirable educational influences over the children and maintain proper custody over the bus.

The responsibility for administering the school transportation program is so close to the people that every driver must exercise proper influence over the children and maintain proper custody of the bus or he will be replaced. Replacements did occur this year because of failure to take proper care of buses and exercise proper educational influences over the children.

The county transportation system operating on a district basis is meeting this criterion in a satisfactory manner.

Establishment of Routes

Backtracking and re-tracing should be avoided when possible.

A regulation by the Texas Education Agency prevents backtracking or re-tracing if it is less than three-fourths of a mile. However, there are instances of re-tracing over routes for over a mile.

According to this criterion Comanche County could eliminate more re-tracing and backtracking.

Bus routes should be planned by the County Superintendent in cooperation with interested parties.

The local trustees for each of the sixteen school districts establish the school bus route without regard to adjoining districts.

According to this criterion Comanche County does not have a sound method of establishing bus routes.

Duplication of bus routes should be eliminated.

There were three cases of overlapping bus routes in Comanche County during the 1949-50 school term. One of these could not be avoided under the existing district system. However, the other two have been ordered abandoned by the Texas Education Agency and the County School Board.

Comanche County is meeting the standards set up in this criterion in a satisfactory manner.

Bus routes should be planned for minimum travel and maximum accessibility.

In some instances it becomes necessary to plan and establish more than one bus route per bus in order to cover satisfactorily the attendance area. Many local districts operate more than one bus. Bus routes are

planned for minimum travel and maximum accessibility under uniform policies adopted by the local trustees of the sixteen districts.

According to this criterion the county system of transportation is as satisfactory as possible under the local district system.

Routes should be planned in such a way that the bus travels over the best roads available and still gives adequate service to the entire transportation area.

All routes are planned in such a way that the buses travel over the best roads available and still give service to the entire transportation district.

According to this criterion the method used in routing buses over the best possible roads is satisfactory.

Ownership of Vehicles

The school-ownership plan is the most dependable and most economical type of conveyance.

District-ownership, private-ownership, and joint-ownership plans are found in operation in Comanche County. There are twenty district-owned, ten jointly-owned, and eight privately-owned buses in Comanche County. Of the ten jointly-owned buses in Comanche County, four districts own the body and individuals own the chassis. There are six

buses owned jointly by the county unit and by the local unit. Three of the privately owned buses are owned by teachers, and the other five are owned by private citizens of the community.

According to this criterion all buses in the county should be owned and operated by the operating unit.

The local school district is usually too small to operate an economical transportation system.

Only two of the local school districts operate more than five buses, and these two districts operate less than ten buses each.

All of the school districts in Comanche County are too small to operate an economical transportation system by themselves.

The administrative unit must own and operate more than sixteen buses before an economical transportation system can be established.

The location of small elementary school districts and small high school districts close to the larger high school districts prevents any of the districts from being able to operate buses over a wide enough area to operate them in the most economical manner possible.

School districts should be able to operate about sixteen to twenty buses in order to establish an economical transportation unit.

When compared to this criterion, none of the local school districts are large enough to operate the most economical transportation system possible.

Drivers of joint and private-owned buses are less cooperative than drivers of school-owned buses.

Drivers of joint and private owned buses are the least cooperative with the county Superintendent. They receive the maximum salary of $90.00 per month, and get the remainder of their earnings to apply on expense of operating buses. There is nothing in the law to prevent them from using these buses as family cars and turning the bills in against the transportation fund. There is only one limit, and that is to stay within what they earn.

According to this criterion drivers of school buses owned by the school district are more cooperative than other drivers.

Types of Conveyances

Safety, especially for the pupil, is the first standard with which school officials should keep in mind

when purchasing school buses. This standard has led to the adoption of steel construction, safety glass, emergency doors, standard colors, etc.

In purchasing the school bus, the local trustees are guided by the needs of the district in specifying the type of vehicle needed to the County Superintendent and the State Board of Control. They take into consideration the seating capacity and other desirable features necessary to serve successfully their given situation.

The trustees are required by the Gilmer-Aiken Law, through the State Board of Control, to meet certain safety features such as: steel construction, safety glass, emergency doors, standard colors, etc.

When conditions were compared with this criterion, we found that this standard was met in the local school districts.

The bus should be durable.

The school buses are selected by the State Board of Control on the basis of bids. They have very rigid requirements. The bus must be durable. The newer buses are the most economical and more durable.

This standard was found to be excellent in all new buses.

The bus should be comfortable.

Seven buses have seats running parallel with the bus. The remainder face forward. Some buses are over crowded and children are uncomfortable.

According to this criterion, all buses could be made comfortable, if over-crowded conditions could be avoided.

The bus should be kept in good state of repairs with frequent inspection.

Every bus must be inspected once each year by the Texas Highway Patrol for safety. No transportation aid can be paid on buses not approved by the patrolman. Drivers, school men, and mechanics check their buses.

According to this criterion buses are inspected and kept in the best state of repair possible.

Financial Structure

The per capita cost of transportation decreases with the larger number of pupils per bus load.

The Comanche County Pupil Transportation System spent $64,618.50 during the 1949-50 school term in operating thirty-eight buses over an attendance area of 925.5 square miles. These buses earned $57,947.00 during the 1949-50 school term.

The maximum amount that can be earned in Comanche County is $3.50 per month for each child transported. Under the Gilmer-Aiken Laws, the more pupils a bus can transport, the more it can earn. Small buses will not pay their way, and large buses do earn enough to pay expenses. In applying this criterion to available data, it was found that most of the buses in Comanche County did not transport enough children to pay expenses under the Gilmer-Aiken Laws.

Permanent expense records containing the accurate cost of every item of operation will help officials reduce the cost of operation.

Maintenance and operational costs are paid by the County Superintendent. Each local district must make a report to him giving a bill for each check issued. This report includes drivers' salaries, gas and oil, bus repair, bus parts, tires and tubes, batteries, and other items.

In applying this criterion to available data, Comanche County was found to have a very good set of books for 1949-50 school term. No information is available for previous years.

The enlarged transportation district, operating more than sixteen buses, contributes toward reduced cost of transportation.

Pupil transportation in Comanche County must be provided for over an area of 925.5 miles. The county has approximately two hundred too many scholastics to receive transportation on the basis of a sparsely settled area. The state allotment did not furnish enough money to operate transportation in 1949-50.

In applying this criterion to Comanche County we find Comanche County without a unit transportation system in light of what has been proven to be the best system of transportation.

CHAPTER V

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Findings

From this study of the system of pupil transportation in Comanche County, Texas, it has been found that:

1. The responsibility for administration of the system of pupil transportation in Comanche County, Texas, is delegated to the trustees of the sixteen local school districts, even though the Gilmer-Aiken Law states that County Board is responsible for administration.

2. There are thirty-eight buses transporting 2,852 pupils. The county contains an area of 925.5 square miles. The County Board follows the wishes of the local school board in administration of transportation.

3. Local school districts are too small for economical transportation and do not operate enough buses to establish the most economical system of pupil transportation possible.

4. During the school term of 1949-50 six high-school boys, twelve teachers, and twenty men of other occupations drove the thirty-eight school buses.

5. A driver institute is provided in the county for training bus drivers each year.

6. The trustees of the sixteen school districts establish routes necessary to take care of pupils within their district, with no regard to other districts.

7. There are three cases of overlapping of bus routes in Comanche County. Two have been ordered eliminated by the County Board and the Texas Education Agency.

8. Bus routes are planned so that buses travel over the best roads possible so that they give service to the entire district.

9. Comanche County has twenty district-owned, ten jointly-owned, and eight privately-owned school buses.

10. In order to operate an economical transportation system, the unit must be able to operate from sixteen to twenty buses.

11. Safety, especially for the pupil, is the first standard with which the Gilmer-Aiken Law deals, in purchasing school buses.

12. During the 1949-50 school term, the transportation system of Comanche County, operating thirty-eight buses over an attendance area of 925.5 square miles, cost $65,618.50, while earning only $57,047.00.

Conclusions

The following conclusions have been drawn:

1. The responsibility for administration of the system of pupil transportation in Comanche County, Texas, should be vested in the County Board of Education and not in the Local school trustees in order to conform to sound practices and the Gilmer-Aiken Laws.

2. The most economical system of transportation for Comanche County must be based upon the County Unit System as intended by the Gilmer-Aiken Laws and in order to be large enough to operate efficiently.

3. The present system of transportation in Comanche County is not economical because it does not conform to sound practices of school administration.

4. Operating personnel could best be chosen by the County School Board and the County Superintendent on the basis of well established standards.

5. The most economical bus routes can be established from the county as a whole rather than by individual districts.

6. Larger buses should be purchased and operated where roads will permit.

7. The County School Transportation System should own and operate its own buses in order to conform to sound administrative practices and the Gilmer-Aiken Laws.

8. The conveyance should be bought with special consideration given to the route on which it is to be used.

9. Comanche County is not receiving enough transportation aid to meet expenses under the plan used in 1949-50. It can be concluded that either the present plan is not economical, or the county is not receiving enough transportation aid.

10. A very complete set of records for the 1949-50 school term can be found in the County Superintendent's Office.

Recommendations

The following recommendations are offered in the light of information developed in this study:

1. The County School Board should work out a plan to organize Comanche County into one unit of school transportation.

2. All equipment should be owned and operated by the County Unit.

3. A transportation officer should be appointed to supervise the operation and maintenance of school buses in transporting pupils to and from school, as well as for extra-curricular travel.

4. A full-time mechanic with assistants should be employed, and gasoline pumps should be operated at the central garage, enabling the wholesale purchase of fuel.

5. If other counties have similar conditions, the County School Board should make a study of the transportation problems in their respective counties and make an effort to eliminate any factors hindering the most efficient operation.

BIBLIOGRAPHY

Books

Butterworth, Julian P., and Ruegsegger, Virgil, Administering Pupil Transportation, Minneapolis, Nashville, Education Publishers, Inc., 1941.

Cyr, Frank, and Others, Minimum School Bus Standards, Scranton, International Textbook Company, 1946.

Eddleman, James Christian, The Regulation of Pupil Transportation in the United States, Lexington, Kentucky, The University of Kentucky, 1934.

Good, Carter V., Dictionary of Education, Prepared under the Auspicies of Phi Delta Kappa, New York, and London, McGraw-Hill Book Company, Inc., 1945.

Lambert, A. C., School Transportation, Stamford University, California, Stamford University Press, 1938.

Mort, Paul R., Principles of School Administration, New York, McGraw-Hill Book Company, 1946.

Mort, Paul R. and Reusser, Walter C., Public School Finance, New York, McGraw-Hill Book Company, 1941.

Nobel, Marcus Cicero Stephens, Pupil Transportation in the United States, Scranton, International Textbook Company, 1940.

Reeder, Ward G., The Business Administration of A School System, Boston, Ginn and Company, 1929.

Reeder, Ward G., Manual for the School Bus Driver, Columbus, Ohio, The Educator's Press, 1939.

Reeder, Ward G., School Boards and Superintendents, New York, McGraw-Hill Book Company, 1946.

Articles

Butterworth, Julian E., "What Effect Has the Size of Districts Had on Pupil Transportation", The Nation's Schools, XXXXIV (August, 1949), 81.

Cooper, Shirley, "Why Do We Transport Children to School", The School Executive, XXXXIX, No. 8, (April, 1950), 28.

Featherstone, Glenn A., School Bus Drivers, United States Department of Education, Pamplet No. 100, Washington, D. C., U. S. Government Printing Office, (1946).

Foundation School Program, Memorandum Number Six, (July, 1949).

Foundation School Program, Memorandum Number Twelve, (July, 1949).

Johns, Roe Lyell, "Determining Pupil Transportation Costs", Nation's Schools, XLIII, (February, 1949), 58.

Morris, William H., "Strengthening American Education Urged in Annual Report," School Life, XXX, No. 6, (May, 1959).

Nininger, Douglas R., "140,000,000 Miles of School Bus Transportation Without a Fatal Accident," School Management, (May, 1950).

Records and Reports, County Superintendent's Office, Comanche County, Texas.

Bulletins

American Association of School Administrators, Schools In Small Communities, Seventeenth Yearbook of the American Association of School Administrators, 1943.

Council of State Governments, The Forty-Eight School Systems, 1938.

Fifty-First Legislature, State of Texas, Senate Bill 116, May, 1949.

National Committee on Safety Education, Our School Buses, 1939.

Report of the State School Commission for the Scholastic Years 1937-38, Raleigh, North Carolina, State School Commission, 1939.

National Education Association, Safety In Pupil Transportation, Research Bulletin, Vol. XIV, No. 5, Washington, D. C., Research Division, 1936.

Roberts, Roy W., An Analysis of the Cost of Pupil Transportation in Arkansas, University of Arkansas, Bulletin No. 316, Fayetteville, Agricultural Experiment Station, 1935.

Unpublished Material

Atkins, Elmer L., "A Study of the Transportation Set-Up in District Five, Texas", Unpublished Master's Thesis, Department of Education, North Texas State College, 1936, p. 64.

Braboy, John Robert, "An Evaluation of Eight Class "B" School Transportation Systems of Wise County, Texas", Unpublished Master's Thesis, Department of Education, North Texas State College, 1948, p. 145.

Fowler, Charles Gatteys, "School Transportation in the East Texas Oil Fields", Unpublished Master's Thesis, Department of Education, North Texas State College, 1938, p. 88.

Greer, William Arthur, "A Comparison of the Cost of Operating Contracted and District Owned School Buses in District Four, Texas", Unpublished Master's Thesis, Department of Education, North Texas State College, 1939, p. 101.

Penick, L. B., "Transporting High School Pupils in Donley County, Texas", Unpublished Master's Thesis, Department of Education, North Texas State College, 1938, p. 46.

Roper, Tyra Jesse, "To Determine the Adequacy of the Gilmer-Aiken Law and the Flathman Formula in Determining Cost of Pupil Transportation in Texas", Unpublished Master's Thesis, North Texas State College, 1949, p. 60.