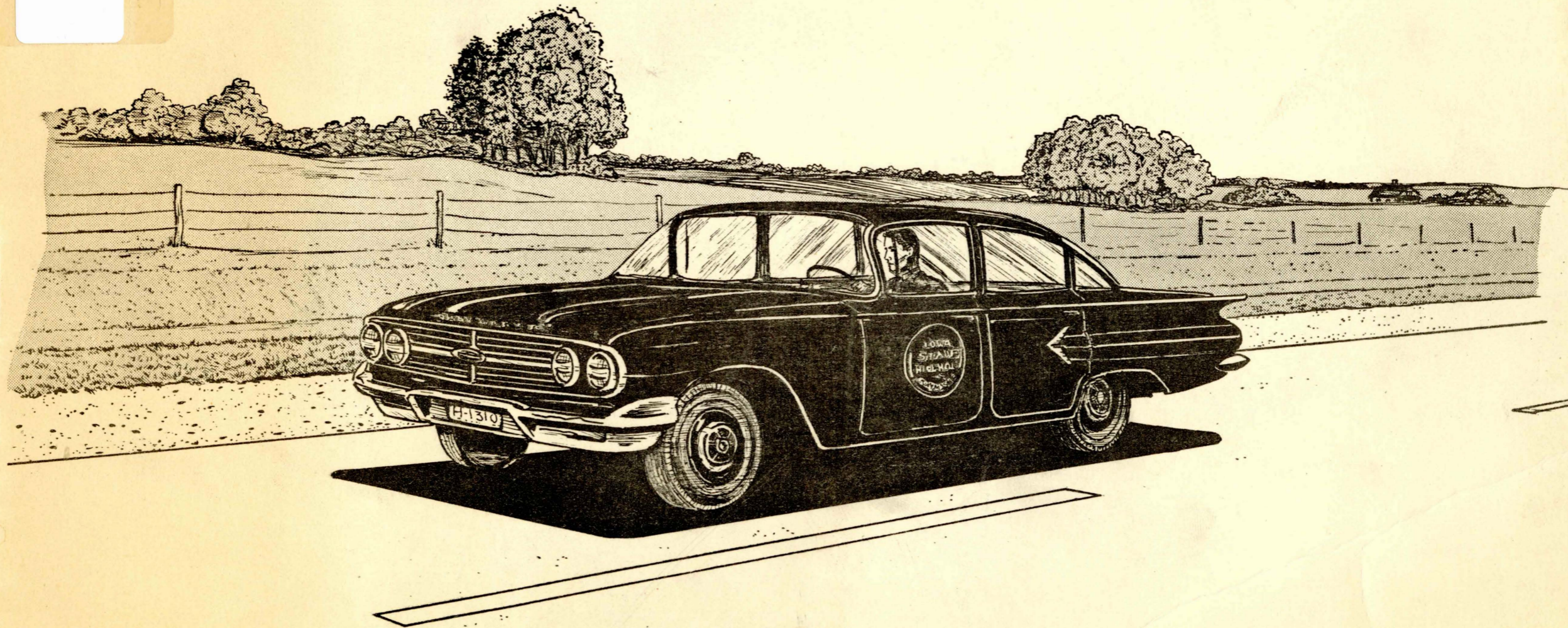


TL
151.5
.H63
1960

PASSENGER VEHICLE and STATION WAGON Cost Analysis



DIVISION OF SERVICES

IOWA STATE HIGHWAY COMMISSION

17-H53SE
2:C824



COST ANALYSIS
OF
PASSENGER CARS, STATION WAGONS AND PICKUPS

Developed For
Highway Commission

By
J. F. Hoag

Division of Services
Iowa State Highway Commission
Ames, Iowa
October, 1960

October 18, 1960

Mr. L. M. Clauson
Chief Engineer
Iowa State Highway Commission
Ames, Iowa

Dear Mr. Clauson:

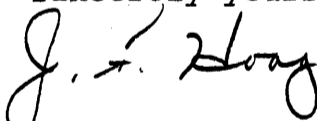
The attached report is the result of analyzing the use and cost data for all passenger cars, station wagons and pickup trucks.

The study was conducted for the Highway Commission at the request of Chairman, Harry J. Bradley, Jr.

The individuals who cooperated in helping conduct this study were:

C. M. Daniel, Applied Science Representative,
IBM Corporation
J. S. Hoffman, Assistant Electronic Computing Engineer
Jack Percival, Assistant to Engineer of Services.

Sincerely yours,



J. F. Hoag
Engineer of Services

JFH/nm

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
REPORT OF STUDY.	
Operating Costs.	2-8
Depreciation Costs	9-14
Pickups.	14-15
Compact Vehicles	15
Number of Cylinders.	15
Transmission	15-16
Last Fiscal Year Operation	16
Other States	17
CONCLUSIONS.	18
APPENDIX	
Code Manual.	A-1
Table A.	A-2-24
Table B.	A-25-26
Table C.	A-27-28
Table D.	A-29
Table E.	A-30
Table F.	A-31
Table G.	A-32
Table H.	A-33
Table I.	A-34
Table J.	A-35
Table K.	A-36
Table L.	A-37

INTRODUCTION

A study of the cost of operation of Highway Commission vehicles including all passenger cars, station wagons and pickups (except those purchased through government surplus) in the fleet as of July 1, 1960, has been completed.

The study has been conducted in two phases considering separately operation costs and depreciation costs.

Operation costs were derived from the data recorded monthly on data processing cards. The data identified by the "A" number assigned to each vehicle include miles driven and cost records of fuel, tires, antifreeze, parts and labor. Labor costs include service provided by both the Commission and commercial garages.

The present value of each vehicle was determined using information from the following sources:

1. Appraisals by licensed new and used car dealers.
2. Actual receipts from sealed bid sales of our older vehicles.
3. The wholesale value of an average vehicle as listed in the National Automobile Dealers Association Used Car Guide (Hereafter referred to as NADA).

The original cost of each vehicle was determined by the actual cost of an outright purchase, or the actual cost of a like vehicle if a trade-in were involved.

Listings showing the operating costs, depreciation costs, mileage and miles per gallon of fuel of all vehicles were made, enabling each vehicle to be analyzed individually. We have, also, grouped these vehicles by make, age, size, number of cylinders and transmission types, so that various classes of vehicles can be compared.

It was our desire to determine:

1. The age or mileage when it is most economically feasible to replace the vehicle.
2. A minimum mileage a vehicle must be driven to economically justify having the vehicle.
3. The type of vehicles the Commission should be purchasing.
4. The number of vehicles we should have in the fleet.

It must be kept in mind that we are speaking of average vehicles, and average groups of vehicles, and that some individual cases may deviate from the data shown. This difference is usually due to the care given the vehicle by the operator.

REPORT OF STUDY

OPERATING COSTS

The information obtained for each vehicle includes the costs and mileage for the life of the vehicle as of July 1, 1960. The costs were listed for fuel, parts, labor and total operating costs. Costs of operation for each vehicle on a per mile basis were computed for fuel, other operating costs and total operating costs. The mileage per gallon of fuel was also computed. Listings of these results are shown in Table "A" of the Appendix.

Table B is a summary of Table A, showing operating and depreciation costs of all vehicles, broken down into groups by make, size, number of cylinders, type and transmissions, as of July 1, 1960, based on August NADA values.

Table C is a summary of the same groups based on August 1, 1959, NADA values.

It is evident from these two compilations that the operating costs and overall costs of practically all vehicles increased from 1959 to 1960.

As an example, we take one group, Chevrolet station wagons, six cylinder, regular transmissions for both years, and compare below:

		Cost Per Mile					
		Operating Cost		Depreciation Cost		Total Cost	
Number of Vehicles	Mfg. Year	1959	1960	1959	1960	1959	1960
4	1955	3.27	3.43	1.48	1.50	4.75	4.93
3	1956	2.68	3.37	1.72	1.83	4.40	5.20
6	1957	2.75	3.44	1.21	1.31	3.96	4.75
10	1959	1.87	2.32	0.59	1.65	2.46	3.97

This information would indicate that overall costs increase each year of operation.

The vehicles were then grouped by model year. The results of this summary are listed in Table "D" of the Appendix and are shown graphically as Figure 1 on the following page.

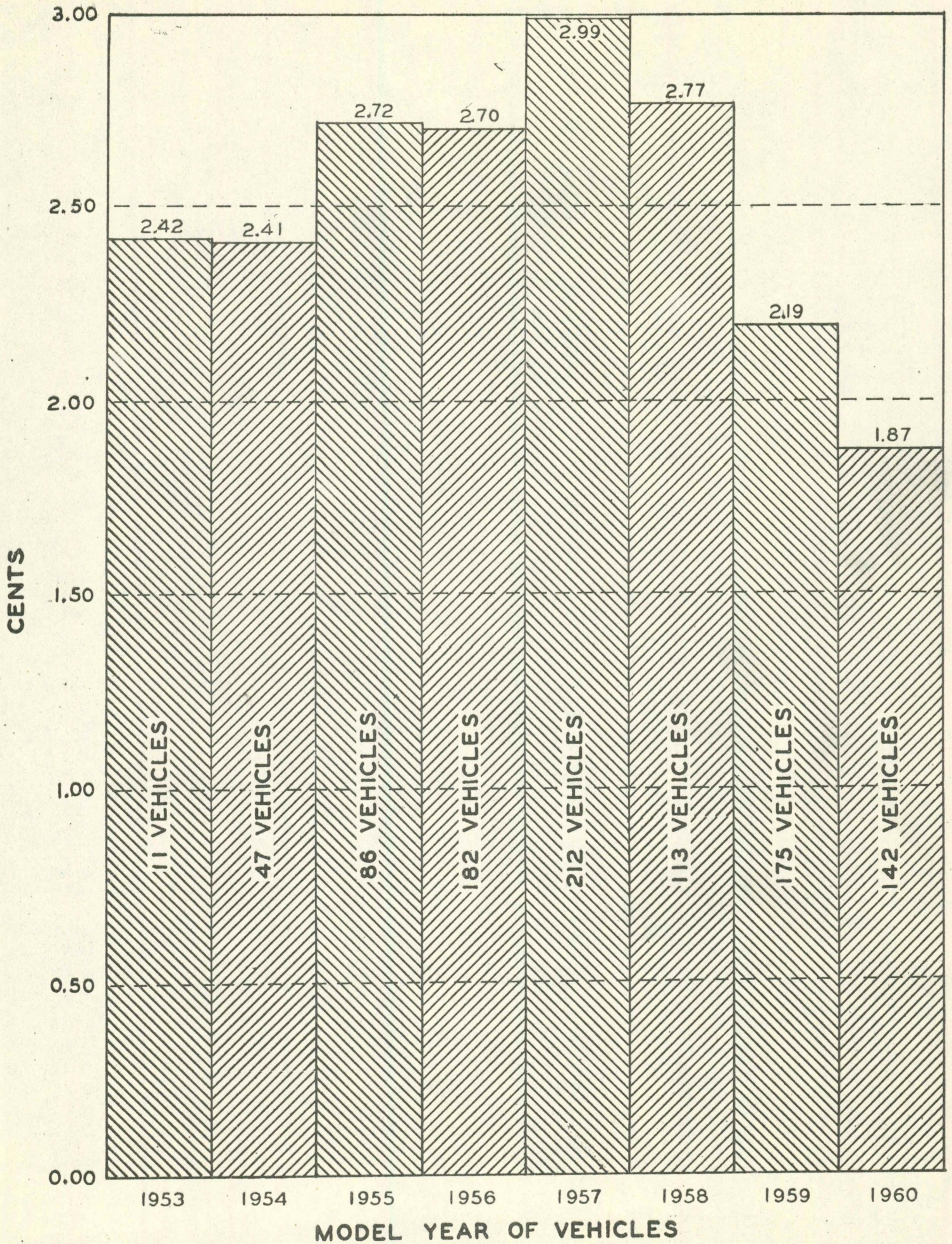
A review of this graph indicates that the average operating cost increased annually for the first four years of the vehicle life. Normally, it would be expected that the operating cost of a vehicle would continue to increase each year after the first four years; however, this is not borne out by our data. It is believed that the operating cost dropped after four years of use for two reasons:

1. The vehicles are screened and only the best are kept for future use.

2. Many vehicles that reach this age are kept operating with as little repair work performed on them as possible.

OPERATING COST CENTS/MILE
FOR PASSENGER CARS & STATION WAGONS
BY MODEL YEAR

FIGURE 1



According to the "Buyers' Digest of New Car Facts for '60", published by the Ford Motor Company, "a car priced at \$2,300 when new if driven 15,000 miles a year, will cost about \$60 for maintenance the first year, about \$112 in the second year and jump to \$180 in the third year, or beyond 30,000 miles of normal use. The publication indicates that the maintenance costs rise after that to reach a peak of \$325 per year at 60,000 miles. Even though a car is conscientiously maintained, wear will continue at a faster and faster rate and at increasing costs in time and trouble as well as in money."

It is also interesting to note that over one-half of our fleet is operating at a cost of 2.70 cents or more per mile. Two and seven-tenths of a cent is the average operating cost per mile for our fleet of passenger cars and station wagons.

The 1960 models operate at a cost of 1.87 cents per mile, and the 1959 models at a cost of 2.19 cents per mile, while the 1958 models cost 2.77 cents per mile and the 1957's cost 2.99 cents per mile.

The vehicles were then grouped by mileage. The results of this summary are listed in Table "E" of the Appendix and are shown graphically as Figure 2 on the following page. The vehicles were categorized by mileage in 10,000 mile groups.

From this graph it is evident that with increased mileage, the operating cost of a vehicle increases. The largest increment of increase in operating cost occurs after a vehicle reaches 30,000 miles where the operating costs increase from 2.38 to 2.86 cents per mile. The data would indicate that the operating costs decrease after 60,000 miles. Again, it is believed that this decrease is the result of screening the vehicles and performing only the repairs necessary to keep the vehicle in operation.

It should, also, be remembered that the operation cost as shown are average costs for the entire life of the vehicle. The 2.86 cents per mile cost found between 30 and 40 thousand miles is the average cost for the vehicle.

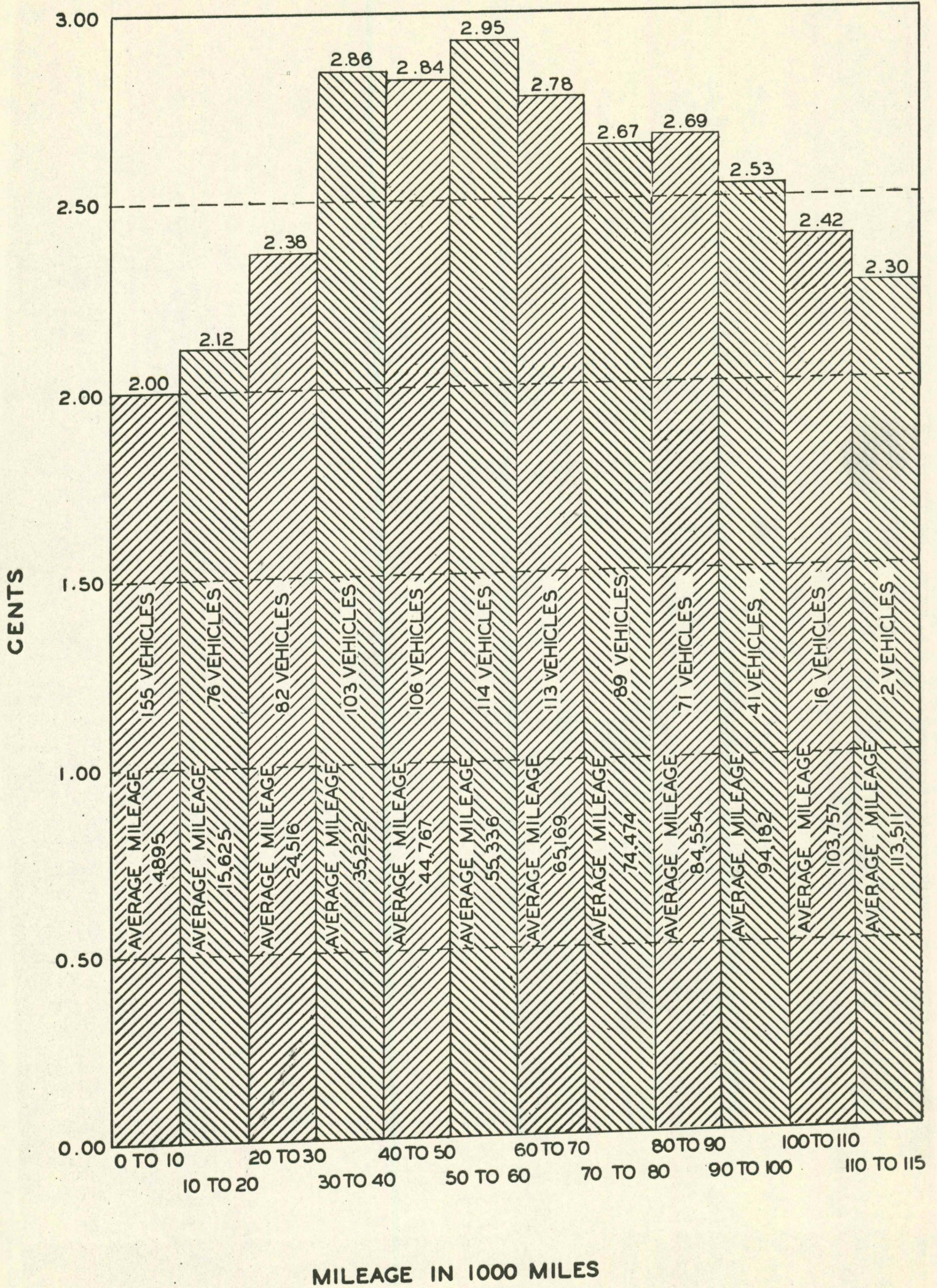
Quoting the "Buyers' Digest of New Car Facts for '60", "the average American motorist today drives about 10,000 miles a year--". "The market facts indicate that it is smart to trade on a two-to-three year cycle, and even more often when mileage is high. In any case it is wise to consider trading any car that has reached 20,000 miles."

The entire fleet of passenger cars, station wagons, pickups, carryalls and panel trucks were driven a total of 19,095,795 miles during the last fiscal year. This means that for each 0.1 of a cent decrease in operation cost per mile, a savings of \$19,095.80 can be realized by reducing our fleet operating costs. If the operating costs could be decreased from an average of 2.70 cents per mile to 2.12 cents per mile, which is the average cost of operation between 10 and 20,000 miles for passenger cars and station wagons, a savings of \$110,756 per year could be realized.

Perhaps an ever bigger savings could be realized if only current model cars were used. Current model cars would require only preventative maintenance, such as oil changes and minor tune ups. This would relieve the mechanics so they would have more time to work on maintenance equipment and provide some preventative maintenance.

OPERATING COST PER MILE / 10,000 MILES FOR PASSENGER CARS AND STATION WAGONS

FIGURE 2



nance which at this time is practically nil, an intangible savings which we cannot measure.

Last summer a study was made as to the need for additional mechanics. This study was prompted as a result of a reply to letter from a Resident Engineer who was questioned by the Engineer of Services for letting a 1957 vehicle deteriorate beyond repair. His letter indicated that the county mechanic could not service the 53 vehicles assigned to his residency.

As a result of this study, the following are the recommendations for the additional mechanics needed.

iv.	County	No. Major Garages	Other Facilities	Quantity: A Equip.	Quantity: B Equip.	No. Mech.	Add. Mechs. Recom.
11	Marshall	1	Resident Engineer	36	42	1	1
	Polk	3	2 Resident Engineer, Material Lab	118	140	7	
	Story	Not considered -- Repair Shop handles overload					
	Warren	2		34	64	1	1
12	Calhoun	1		14	37	1	
	Grundy	1		11	30	0	1
	Hamilton	1		17	51	1	
	Hardin	1		14	43	1	
	Webster	1		25	57	1	
13	Boone	1		21	56	1	
	Carroll	1		18	51	1	
	Dallas	2		23	51	1	
	Greene	1	Resident Engineer	41	55	2	
14	Jasper	3		20	44	1	1
	Poweshiek	2		28	64	0	1
	Tama	1		24	54	1	
21	Cerro Gordo	1	Dist. Office, Res. Engr., Material Lab.	44	43	2	
	Chickasaw	1	Resident Engineer	28	41	1	
	Floyd	1	District Crew	22	49	1	
	Mitchell	1		16	44	1	
	Worth	1		14	35	1	
22	Emmet	1		18	40	1	
	Hancock	1	Resident Engineer	30	41	1	
	Kossuth	1		28	78	1	
	Winnebago	1		13	38	1	
23	Bremer	1		15	50	1	
	Butler	1		20	58	1	
	Franklin	1		14	41	1	
	Humboldt	1		16	36	1	
	Wright	1		25	45	1	
24	Allamakee	1		26	56	1	
	Fayette	2		27	82	1	1
	Howard	1		15	42	1	

Div.:	County	No. Major :Garages	Other Facilities	Quantity: :A Equip.:	Quantity: :B Equip.:	No. Mech.:	Add. :Mechs. :Recom.
	:Winneshiek	: 1	:Resident Engineer	: 33	: 49	: 1	: 1
31	:Cherokee	: 1	:Resident Engineer	: 31	: 33	: 1	:
	:Plymouth	: 2	:	: 25	: 63	: 1	: 1
	:Woodbury	: 1	:Dist.Office, Res.Engr.	:	:	:	:
	:	:	:Material Lab, 4 small	:	:	:	:
	:	:	:garages	: 103	: 130	: 2	: 2
32	:Crawford	: 1	:Resident Engineer	: 50	: 48	: 1	: 1
	:Ida	: 1	:	: 10	: 23	: 0	: 1
	:Monona	: 2	:	: 19	: 43	: 1	:
33	:Buena Vista	: 1	:	: 19	: 41	: 1	:
	:Clay	: 1	:	: 13	: 30	: 1	:
	:Palo Alto	: 1	:	: 12	: 25	: 0	: 1
	:Pocahontas	: 1	:	: 14	: 33	: 0	: 1
	:Sac	: 2	:	: 16	: 39	: 1	:
34	:Dickinson	: 1	:	: 13	: 32	: 1	:
	:Lyon	: 1	:	: 15	: 35	: 1	:
	:O'Brien	: 2	:Resident Engineer	: 32	: 40	: 1	: 1
	:Osceola	: 1	:	: 11	: 27	: 0	: 1
	:Sioux	: 2	:	: 16	: 42	: 0	: 1
41	:Harrison	: 1	:	: 21	: 59	: 1	:
	:Pottawattamie	: 2	:Dist.Office, Res.Engr.	:	:	:	:
	:	:	:Material Lab	: 89	: 132	: 4	:
	:Shelby	: 1	:	: 19	: 46	: 1	:
42	:Fremont	: 1	:	: 15	: 41	: 1	:
	:Mills	: 1	:	: 14	: 44	: 1	:
	:Montgomery	: 1	:Resident Engineer	: 36	: 34	: 1	: 1
	:Page	: 1	:	: 27	: 61	: 1	:
	:Taylor	: 1	:	: 13	: 37	: 1	:
43	:Clarke	: 1	:	: 23	: 52	: 1	:
	:Decatur	: 1	:	: 12	: 32	: 1	:
	:Madison	: 1	:	: 16	: 42	: 1	:
	:Ringgold	: 1	:	: 12	: 31	: 1	:
	:Union	: 1	:Resident Engineer	: 67	: 41	: 1	: 1
44	:Adair	: 1	:	: 16	: 45	: 1	:
	:Adams	: 1	:	: 10	: 30	: 0	: 1
	:Audubon	: 1	:	: 13	: 33	: 1	:
	:Cass	: 1	:Res.Engr., Dist.Crew	: 69	: 70	: 2	: 1
	:Guthrie	: 2	:	: 25	: 62	: 1	: 1
51	:Henry	: 1	:	: 16	: 38	: 1	:
	:Jefferson	: 1	:Dist.Office, Res.Engr.	:	:	:	:
	:	:	:Mat'ls.Lab., Dist.Crew	: 49	: 51	: 1	: 1
	:Lee	: 1	:	: 23	: 50	: 1	:
	:Van Buren	: 1	:	: 19	: 42	: 1	:
52	:Keokuk	: 1	:	: 20	: 43	: 1	:
	:Mahaska	: 1	:	: 24	: 41	: 1	:
	:Marion	: 1	:	: 18	: 45	: 1	:
	:Wapello	: 1	:Resident Engineer	: 26	: 42	: 1	:

Div.:	County	No. Major: :Garages :	Other Facilities	Quantity: :A Equip.:	Quantity: :B Equip.:	No. Mech.:	Add. :Mechs :Recom
53	:Appanoose	: 1	:	: 21	: 49	: 1	:
	:Davis	: 1	:	: 15	: 43	: 1	:
	:Lucas	: 1	:Resident Engineer	: 27	: 37	: 1	:
	:Monroe	: 1	:	: 18	: 42	: 1	:
	:Wayne	: 1	:	: 12	: 36	: 1	:
54	:Des Moines	: 1	:	: 17	: 33	: 1	:
	:Louisa	: 1	:Resident Engineer	: 34	: 39	: 1	:
	:Muscatine	: 1	:	: 19	: 44	: 1	:
	:Washington	: 1	:	: 22	: 50	: 1	:
61	:Johnson	: 1	:	: 24	: 57	: 1	:
	:Jones	: 1	:	: 19	: 55	: 1	:
	:Linn	: 1	:Dist. Office, Res. Engr.	:	:	:	:
	:	:	:Mat'ls. Lab., Dist. Crew	: 70	: 75	: 2	: 1
62	:Cedar	: 1	:	: 21	: 58	: 1	:
	:Clinton	: 1	:	: 20	: 63	: 1	:
	:Jackson	: 1	:Resident Engineer	: 35	: 69	: 2	:
	:Scott	: 1	:Res. Engr., Mat'ls. Lab.	: 72	: 60	: 2	: 1
63	:Clayton	: 1	:	: 17	: 51	: 1	:
	:Delaware	: 1	:Resident Engineer	: 39	: 46	: 1	: 1
	:Dubuque	: 2	:	: 31	: 76	: 2	:
64	:Benton	: 2	:	: 25	: 74	: 1	: 1
	:Black Hawk	: 1	:Resident Engineer	: 40	: 54	: 1	: 1
	:Buchanan	: 1	:	: 14	: 42	: 0	: 1
	:Iowa	: 1	:	: 21	: 46	: 1	:

106 29

Lack of preventative maintenance for equipment became apparent last May 9, 1960, when 110 vehicles were inspected through a safety check. Of these vehicles, 54 failed to pass this safety check.

The following is a list of defects found in these 54 vehicles:

Brakes	4
Lights	15
Steering	26
Tires	6
Exhaust	7
Broken Windshield	3
Windshield wipers	3
Miscellaneous	2
Total	66

Should current model vehicles be used, the 29 additional mechanics recommended could probably be decreased by at least 13. This would represent a minimum savings of at least \$65,000 per year based on an average salary of \$5,000 for each mechanic. This, of course, does not include the savings which would result by providing preventative maintenance for other maintenance equipment. The stocking of fewer repair parts would also result in a savings.

DEPRECIATION COSTS

The information used to determine the present value of the vehicles and thus determine the depreciation was as follows:

1. Cash derived from the sale by sealed bids for our older vehicles.
2. Appraisals made by new and used licensed car dealers.
3. NADA Used Car Guide.

Appraisals of fourteen vehicles were made by two new and two used licensed car dealers. The appraisals were based on the value of these vehicles to the dealer for resale. We assume that the dealer appraisals provided for overhead costs and a profit. The appraisals are as follows:

A" #	Mileage	Make	Year	Transmission	Cylinders	Model	Appraised Value				Ave. Appraisal	NADA Wholesale Value
							A	B	C	D		
503	97,200	Ford	1955	S	6	4 Door	275	200	250	229	238	325
940	63,000	Ford	1956	S	6	4 Door	450	275	300	406	358	450
435	99,200	Ford	1957	S	6	4 Door	550	400	425	500	469	645
514	65,725	Chevrolet	1957	A	8	U. Coupe	625	400	525	629	545	800
543	55,300	Ford	1957	A	8	4 Door	725	500	525	576	581	760
657	35,100	Chevrolet	1957	A	8	4 Door	750	650	750	689	710	900
857	37,300	Chevrolet	1958	A	8	4 Door	975	900	1100	853	957	1155
881	36,900	Chevrolet	1958	A	8	U. Coupe	825	700	875	788	797	1055
891	36,300	Ford	1958	A	8	4 Door	900	1000	1100	960	990	1100
001	41,100	Plymouth	1959	A	8	4 Door	1075	1000	1150	900	1031	1310
076	19,100	Studebaker	1959	A	8	4 Door	950	1075	1150	878	1013	1480
142	15,000	Ford	1959	A	8	4 Door	1175	1300	1450	1060	1246	1535
205	24,700	Studebaker	1959	S	6	4 Door	1000	900	850	679	857	1225
804	6,000	Plymouth	1960	A	8	4 Door	1650	1675	1825	1528	1670	1865

and B New Car Dealers
and D Used Car Dealers

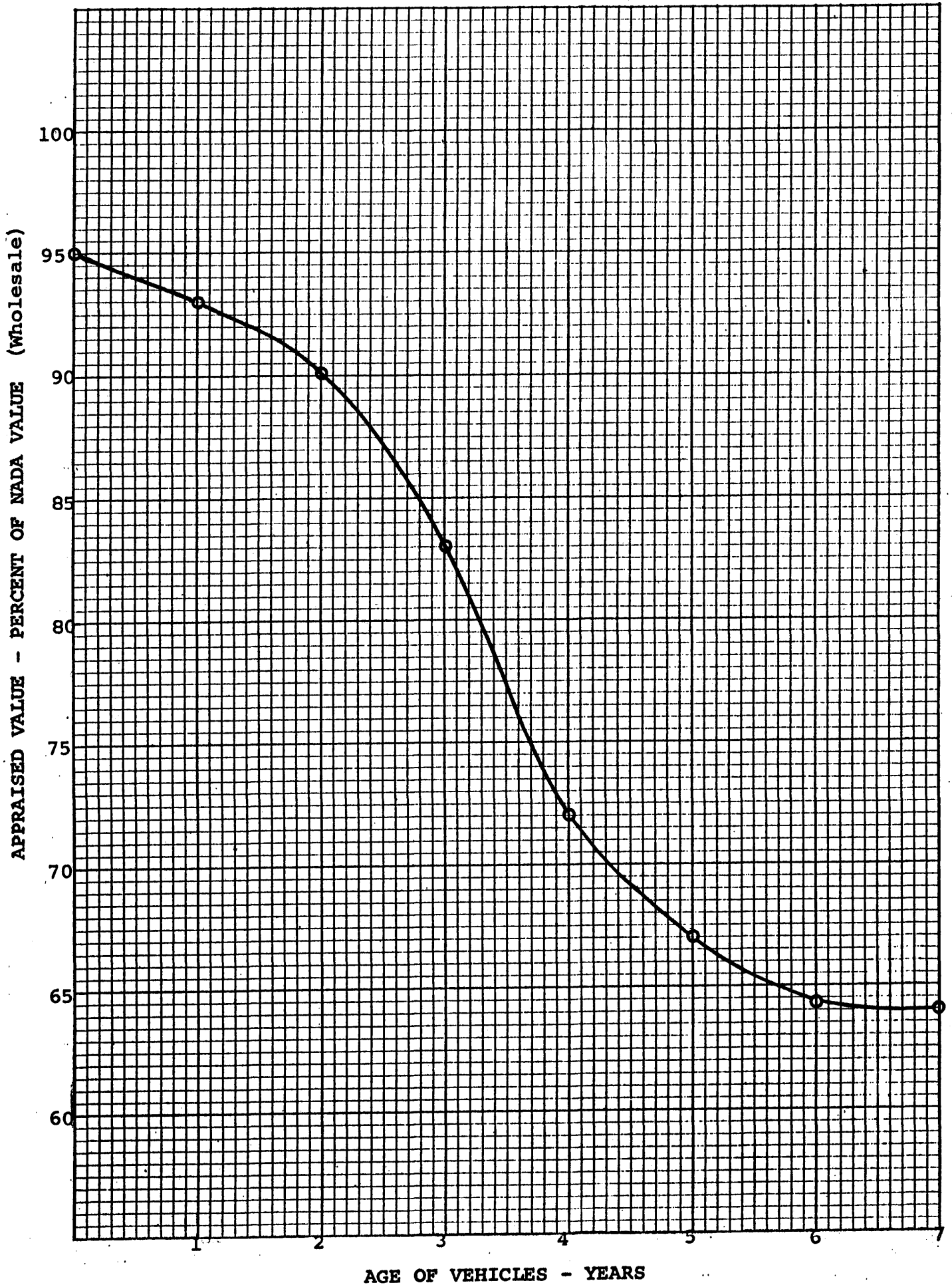
Using the high appraisal value for each vehicle, a curve was plotted comparing the percent of the August, 1960, NADA wholesale value to the appraisal. The curve is shown as Figure 3 on the following page.

The "average" values listed in the NADA Official Used Car Guide are based upon reports of actual transactions by dealers and wholesale auctions throughout each area for which a guide is designated. The listed values include an allowance for radio and heater.

In reviewing the appraisals, it was determined that they were approximately \$120.00 below the average wholesale value listed in NADA irrespective of the age of the car. We feel that there are three reasons

COMPARISON OF APPRAISED VALUE
TO
NADA VALUE BY AGE OF VEHICLE

Figure 3



for the low appraisals.

1. The Highway Commission vehicles do not include radios as allowed for in the wholesale value listed.

2. The decals on the doors have to be removed and doors repainted.

3. The general condition of the vehicles is not as good as the average privately owned car. This is especially true of the older cars which have been used on construction.

It should be noted from the curve in Figure 3 that the percentage of wholesale value to appraisal value drops quite rapidly after a vehicle reaches three years of age. Because of the low appraisals received on Studebakers, they were excluded from the curve.

Using the percentages found on the curve in Figure 3, the present value, depreciation cost per mile, total depreciation and operation cost per mile were computed by model year. These results are listed in Table D of the Appendix and are shown as Figure 4 on the following page.

It should be noted from the graph in Figure 4 that depreciation cost per mile increases from 1.69 to 2.27 cents per mile for the current models compared to the one year old models. The depreciation cost decreases after the second year due to the increased mileage and the low original cost of the vehicle. The 1956 and earlier models were purchased for less than \$1250 each as compared to an average of \$1860 for the 1960 models.

The 1960 model cars were purchased in the spring, hence have a lower mileage (average 4745 miles per vehicle) than could be expected had they been purchased in the fall. Had they been driven a full year, the depreciation cost per mile would have been still lower.

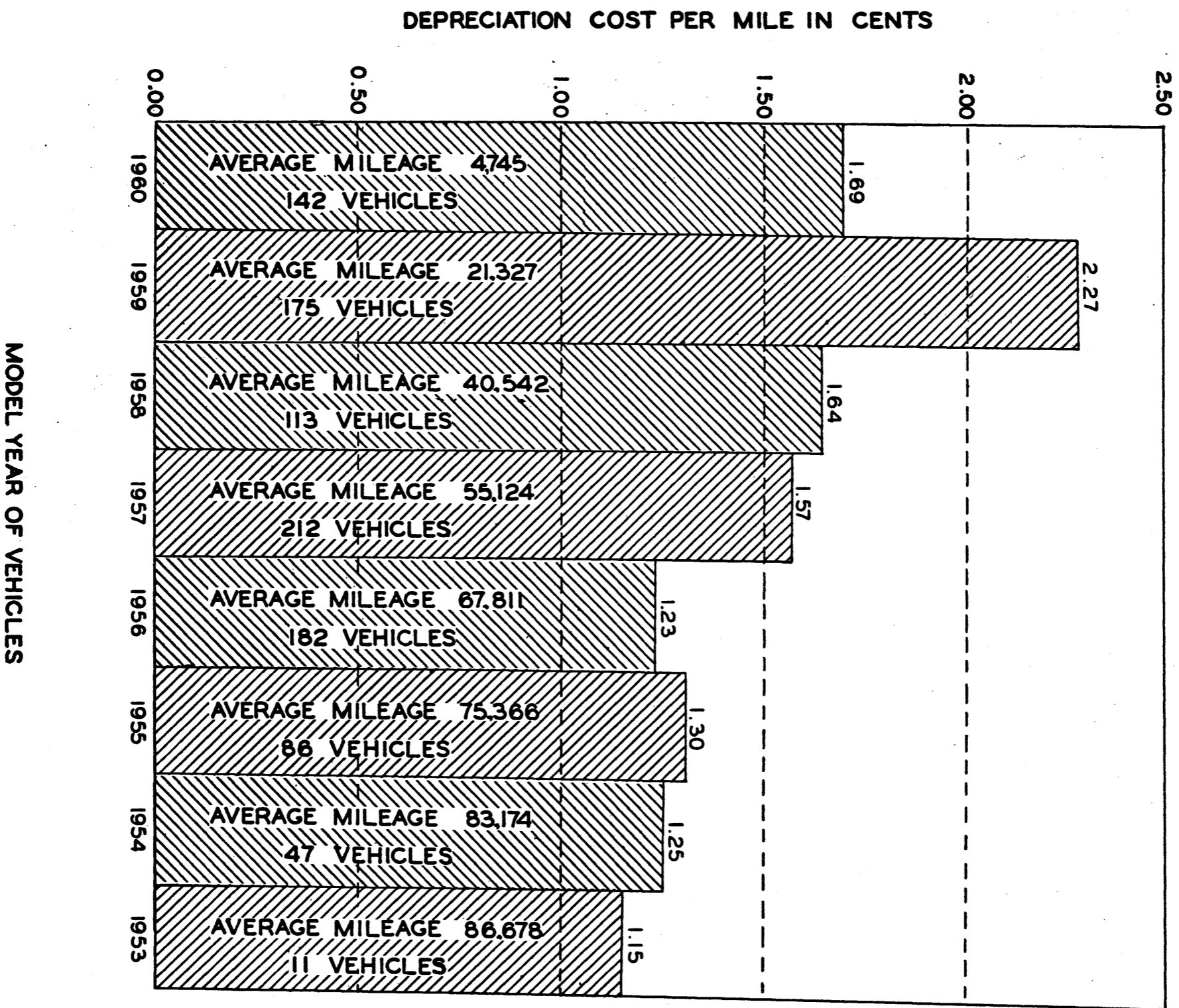
The depreciation cost by mileage group is listed in Table E of the Appendix. This is also shown as Figure 5 on the following page. The graph in Figure 5 indicates the cars having 15,000 miles or less are the most expensive depreciation wise. Since these vehicles are not reaching this mileage until well into the second year. It, therefore, appears that to be economically utilized, a car should be driven at least 15,000 miles the first year. To accomplish this, it would be necessary to purchase new model vehicles during November and December rather than in the spring.

The low depreciation cost the first year is the result of the low purchase price received by the Commission. The low purchase price results from the fact that 1) the commission does not pay Federal excise tax on vehicles which are kept a minimum of thirteen months. (This tax amounts to 10 percent of the manufacturers' cost). 2) there is also no sales tax paid on state purchased vehicles. 3) the Commission is able to purchase at a lower price through quantity buying.

The "Buyers' Digest of New Car Facts for '60" states, "Even in the first year, a new car in the low price range depreciates about 27 percent just because it is no longer 'new' and because part of the original cost no longer figures in resale value. (Such as Federal excise tax, transportation, dealer service, new car warranty.) In the second year depreciation averages 16 percent, then 12 percent,

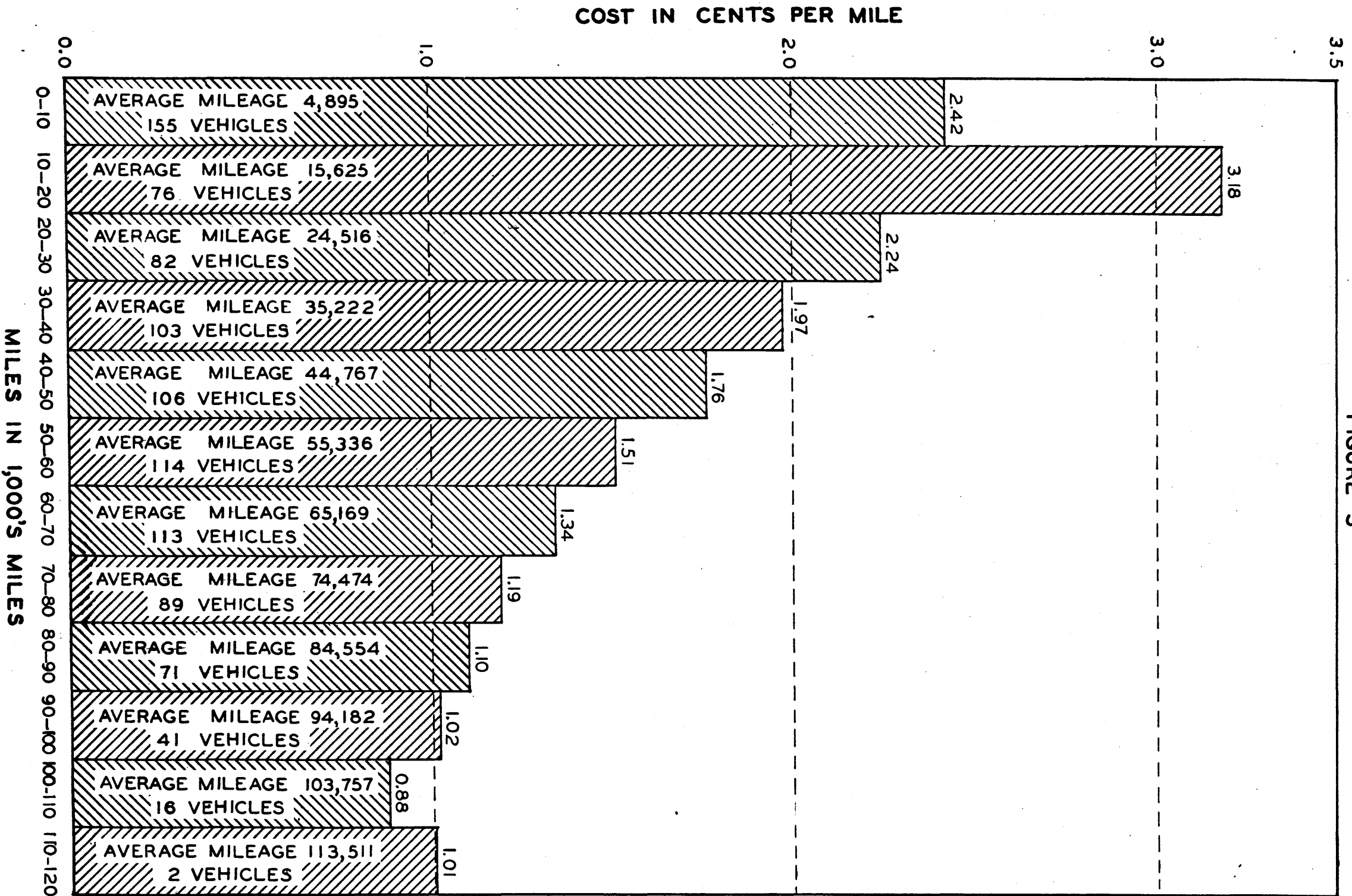
AVERAGE DEPRECIATION COST PER MILE
FOR PASSENGER CARS & STATION WAGONS
BY MODEL YEAR

FIGURE 4



**AVERAGE DEPRECIATION COST PER MILE
BY MILEAGE GROUPS
PASSENGER CARS & STATION WAGONS**

FIGURE 5



10 percent, etc." It would seem that the depreciation cost for Commission vehicles would be considerably less than 27 percent for the first year because of quantity purchasing and no Federal excise tax.

The depreciation cost portion of this study cannot be verified without actually selling some of the newer vehicles. The appraisals received were lower than the NADA wholesale value, which is the average price paid by used car dealers through auction. In no case has the NADA retail value (the average price received by the dealers) been considered in this study. We are unable to determine whether better prices could be received through public auction, sealed bids or trade-ins.

However, in reviewing the records of all vehicle purchases in the past several years, it was found that in many cases the State probably did not realize full value for the old car when "traded-in" on a new car. There were some cases where an outright purchase and trade-in transactions in the same year amounted to approximately the same net cost to the Commission. This was dependent, of course, on availability of vehicles and competition at the time of letting. Our present policy for all passenger cars is to sell outright and purchase without trade-in.

In order to complete this study to our satisfaction, it would seem worthwhile to experiment by purchasing 120 new vehicles whereby 60 would be sold or traded at the end of thirteen months and the second 60 vehicles sold or traded at the end of the second year. Each group of 60 vehicles could be sold in lots of 20 in the following three manners.

1. Sealed bids
2. Public auction
3. Trade-in

It is interesting to note that the average price paid for the 1960 model vehicles was \$1863.80. The average mileage each vehicle was operated during the last fiscal year was 13,156 miles. If each vehicle averaged 15,000 miles per year and the 1960 models could be sold for \$150 less than original cost, the depreciation cost would only be one cent per mile. If the difference were \$300, the depreciation cost would be two cents per mile. Since the average operating cost for 15,000 miles is 2.12 cents per mile, this would mean the total operating and depreciation cost during the first year would be 3.12 or 4.12 cents per mile for the \$150 and \$300 depreciation costs, respectively. This is considerably less than the present average operating cost of 4.21 cents per mile.

PICKUPS

The operating costs of pickups has been summarized and listed by year and mileage group in Tables F and G of the Appendix respectively. In analyzing the operating costs of pickups, it was found that operating costs compare favorably with that of the station wagons and passenger cars. However, while the purchase price is only about \$1560 and less than passenger cars, the depreciation cost the first two to three years is considerably higher. However, it should be noted, that after reaching an age of five years, the re-sale value of pickups is higher than for passenger cars. This information has

been substantiated by the sealed-bid sales of Commission pickups.

If the present system of purchasing and selling passenger vehicles is continued, then consideration should be given to placing pickups in construction for the inspectors. Because of the nature of the construction of the pickup, it is felt that they would prove less expensive in the long run, especially on grading projects.

COMPACT VEHICLES

While the operating cost of compact cars compare very favorably with the regular size vehicles, it appears that the depreciation costs would more than compensate for any savings gained in the operating cost. The operating cost for regular size vehicles is 1.90 cents per mile for the 60 models and 2.45 cents per mile for the 59 models as compared to the operating costs for the compact cars of 1.73 cents per mile for 60 models and 2.11 cents per mile for the 59 models.

The appraisals on compact cars indicate a value of only 85 percent of NADA wholesale value. This is about 10 percent lower than for regular size vehicles. If we use this percentage as being correct, the 60 model compacts would cost 5.06 cents per mile and the 59 model would cost 2.80 cents per mile for depreciation only. The regular size vehicles depreciated at the rate of 1.65 cents per mile for 60 models and 2.18 cents per mile for the 59 models. These summaries are listed by year and mileage group in Tables H, I and J of the Appendix.

The data seems to indicate that regular size vehicles are overall more economical to own on a one or two year basis than compact cars. However, with the more numerous makes of compact cars now being produced, the re-sale value of regular size vehicles may decrease, and this aspect of the study may become obsolete with the changing market value of various types of vehicles. It should, also, be noted that many complaints have been received from some employees who are required to drive compact cars.

NUMBER OF CYLINDERS

A summary of the cost by number of cylinders, by make and year is listed in Table K of the Appendix. We are unable to determine which is more economical to purchase and operate. As an example, the Lark, 6 cylinder 1960 models cost 1.58 cents per mile to operate as compared to 1.90 cents per mile for the 8 cylinder 1960 models. However, the depreciation based on 95 percent NADA value is 2.88 cents per mile for 6 cylinder as compared to 0.77 cents per mile for the 8 cylinders. As a second example, the 1960 model Ford, 6 cylinder cost 1.86 cents per mile as compared to 1.81 cents per mile for 8 cylinders. The depreciation is 2.27 cents per mile for the 6 cylinder as compared to 1.84 cents per mile for the 8 cylinder. It is noted that the 6 cylinder models average less than one-half the mileage driven for the 8 cylinder, a fact which would increase the depreciation cost on a per mile basis. Findings for the 1960 model Chevrolets were just the opposite of the results found for the 1960 model Ford.

TRANSMISSION

A summary of transmission data by make and by year is listed in Table L of the appendix. Here again, we are unable to draw a conclusive decision as to cost of operation by transmission type.

The 1960 model Chevrolet straight shift costs 1.76 cents per mile to operate and the automatic costs 1.96 cents per mile. The depreciation was found to be 0.59 and 1.27 cents per mile, respectively.

The 1960 model Ford straight shift costs 1.90 cents per mile to operate as compared to 1.63 cents per mile for the automatic transmission. The depreciation costs were 2.30 and 1.17 cents per mile respectively.

If we review Table B in the Appendix, it will be noted that seven 1960 model 8 cylinder Fords with straight transmission cost \$1867.00 each. The market value as of August, 1960, was \$1705.25 based on 95 percent NADA wholesale value. Nine 1960 model 8 cylinder Fords with automatic transmission cost \$1851.90 each (\$15.10 less than the straight shift) and the market value is \$1805.00 (\$99.75 more than the straight shift).

For these reasons, no definite conclusion can be reached with respect to the desirable type of transmission to purchase.

LAST FISCAL YEAR OPERATION

The fleet of 968 passenger cars and station wagons were driven a total of 12,735,266 miles for an average of 13,156 miles per vehicle during the last fiscal year. The average lifetime mileage that each vehicle was driven as of July 1, 1960, was 45,820 miles for an average operating cost of 2.70 cents per mile and a total operating and depreciation cost of 4.21 cents per mile. (Market value of all vehicles computed from curve in Figure 3)

It is interesting to review the average mileage the vehicles were driven by model year. These averages are as follows:

<u>Model Year</u>	<u>No. of Vehicles</u>	<u>Average Mileage</u>
53	11	10,700
54	50	9,750
55	84	11,000
56	181	13,200
57	217	15,450
58	113	17,300
59	176	16,320
60	142	4,740

In reviewing the vehicles driven last year, it was found that 197 vehicles were driven less than 10,000 miles. Thirty-two of these vehicles were driven less than 5000 miles. It would appear that each department is operating its own pool since most of the departments had at least one vehicle operating less than 10,000 miles. Thirty-eight of these 197 vehicles driven less than 10,000 miles were Ames assigned. One section in one department had nine vehicles that operated less than 10,000 miles. Five of these nine were operated less than 3,200 miles during the last fiscal year. One 1959 vehicle in this department was driven only 646 miles. As a result of the low mileage, it cost 84.73 cents per mile (including depreciation) to own and operate this vehicle.

If the average mileage per vehicle could be increased to 15,000 miles, it would appear that the fleet of passenger cars and station wagons could be decreased from 968 to 850 vehicles with the possibility of further reductions in the future.

OTHER STATES

Information received from Maryland State Roads Commission is shown below.

1. They have 280 passenger cars in the fleet and are striving to replace one-third of the fleet each year.
2. They paid \$1956.00 for 1960 models and traded in their old cars.
3. Their fleet averages 19,000 miles per year per vehicle.
4. The value received for old cars is according to age and condition, rather than mileage.
5. The four-door sedan is the most economical.
6. Compact cars are being tested but thus far have not proven better economically.
7. They have been buying 6 cylinder cars, but are currently specifying 8 cylinders with automatic transmissions.
8. They use a decal on the side and this affects the re-sale price.
9. General Motors and Ford cars seem to be the most economical and dependable.

CONCLUSIONS

1. The present policy of replacing vehicles is basically sound, if vehicles are to be kept more than one year. If the present policy is continued, vehicles should be screened at from 25,000 to 30,000 miles, and those vehicles which are in need of major repairs should be considered for replacement.
2. A considerable savings could be realized if vehicles can be driven a minimum of 15,000 miles per year and replaced within a period of from 13 to 24 months after purchase. From the standpoint of depreciation, vehicles should be replaced every year in order to get the full benefit from the low purchase price.
3. The fleet should be composed of standard size vehicles. The body styles, number of cylinders, and transmission types apparently have little effect on the overall net cost to the State.
4. Vehicles should be purchased in the fall to realize the advantage of a full year's use at the low first year depreciation cost. If cars are replaced on an annual basis, the old cars should be sold in January or February to take advantage of seasonal fluctuations in the used car market, according to our findings from the NADA Used Car Guide.
5. There are too many vehicles in the fleet with the result that many are not being driven sufficient number of miles to justify their assignment.
6. Pickups have a better re-sale value after five years than do passenger cars. Pickups should be considered for construction inspection if cars are to be kept beyond one or two years.

A P P E N D I X

CODE MANUAL

Make

1. Chevrolet
2. Ford
3. International
4. Plymouth
5. Studebaker
6. Dodge
7. GMC

Size

1. Regular
2. Compact

Cylinder

6. Six Cylinder
8. Eight Cylinder

Type

0. 2 door deluxe
1. 4 door sedan, standard
2. 2 door sedan
3. Coupe business
4. Utility sedan
5. Pickup truck
6. Panel truck
7. Station wagon
8. Carryall
9. 4 door sedan deluxe

Radio

0. No
1. Yes

Transmission

1. Standard
2. Overdrive
3. Automatic

TABLE A

COST PER MILE AS OF JUNE 30, 1960

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi./Gal.	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Depr.		Total Opr. & Depr.
7651							60	96.05	6.42	28.45	169.02	8,701	1952.90	07 60	1900.00	01.10	00.84	01.94	00.61	02.55	15
7652							60	93.84	11.51	62.15	170.67	8,577	1952.90	07 60	1900.00	01.09	00.90	01.99	00.62	02.61	16
7653							60	74.63	3.94	22.67	103.34	7,090	1952.90	07 60	1900.00	01.05	00.41	01.46	00.75	02.21	16
7654							60	64.60	10.04	17.34	93.86	6,006	1952.90	07 60	1900.00	01.08	00.48	01.56	00.88	02.44	16
7650							60	83.98	8.39	58.18	153.25	8,118	1952.90	07 60	1900.00	01.03	00.86	01.89	00.65	02.54	16
5072							53	909.56	299.44	653.38	2061.85	93,936	1400.00	07 60	160.00	00.97	01.22	02.19	01.32	03.51	18
5451							54	743.92	469.45	874.19	2346.60	74,550	1400.00	07 60	204.80	01.00	02.15	03.15	01.60	04.75	17
5248							54	711.91	317.25	367.50	1659.26	80,195	1400.00	07 60	204.80	00.89	01.18	02.07	01.49	03.56	19
5449							54	912.90	419.20	444.19	2104.20	103,046	1400.00	07 60	204.80	00.89	01.15	02.04	01.16	03.20	19
5506							55	818.82	528.66	758.40	2445.18	84,086	1425.00	07 60	298.15	00.97	01.94	02.91	01.34	04.25	17
5568							55	1192.96	386.19	553.70	2385.18	115,295	1425.00	07 60	298.15	01.03	01.04	02.07	00.98	03.05	16
5933							56	703.02	336.41	445.31	1753.27	61,667	1248.10	07 60	421.20	01.14	01.70	02.84	01.34	04.18	15
5932							56	928.66	237.30	531.78	2042.53	88,897	1248.10	07 60	421.20	01.04	01.26	02.30	00.93	03.23	16
7605							60	55.42	8.72	44.57	144.73	5,382	1955.80	07 60	1885.75	01.03	01.66	02.69	01.30	03.99	17
7606							60	69.36	4.54	42.49	118.79	6,275	1955.80	07 60	1885.75	01.11	00.78	01.89	01.12	03.01	15
7607							60	42.16	9.87	26.99	81.47	3,573	1955.80	07 60	1885.75	01.18	01.10	02.28	01.96	04.24	14
7608							60	69.53	6.39	42.49	121.18	7,114	1955.80	07 60	1885.75	00.98	00.72	01.70	00.98	02.68	17
7609							60	85.51	38.6J	107.13	157.13	8,942	1955.80	07 60	1885.75	00.96	00.80	01.76	00.78	02.54	18
7610							60	94.18	16.72	60.05	174.12	7,814	1955.80	07 60	1885.75	01.21	01.02	02.23	00.90	03.13	14
7611							60	56.78	23.14	50.66	148.53	4,912	1955.80	07 60	1885.75	01.16	01.86	03.02	01.43	04.45	15
7612							60	70.55	11.08	56.44	156.62	7,805	1955.80	07 60	1885.75	00.90	01.11	02.01	00.90	02.91	19
7613							60	76.33	5.47	45.31	130.11	7,742	1955.80	07 60	1885.75	00.99	00.69	01.68	00.90	02.58	17
7614							60	48.45	12.19	27.69	90.23	4,601	1955.80	07 60	1885.75	01.05	00.91	01.96	01.52	03.48	16
7615							60	65.96	4.54	32.00	104.90	6,209	1955.80	07 60	1885.75	01.06	00.63	01.69	01.13	02.82	16
7616							60	38.25	5.64	20.20	66.39	4,032	1955.80	07 60	1885.75	00.95	00.70	01.65	01.74	03.39	18
7617							60	35.09	3.44	24.01	63.64	3,281	1955.80	07 60	1885.75	01.07	00.87	01.94	02.14	04.08	16
7618							60	46.07	10.49	21.25	80.01	3,933	1955.80	07 60	1885.75	01.17	00.86	02.03	01.78	03.81	15
7619							60	74.29	6.47	27.90	110.46	6,712	1955.80	07 60	1885.75	01.11	00.54	01.65	01.04	02.69	15
7620							60	83.64	8.72	27.43	121.49	6,889	1955.80	07 60	1885.75	01.21	00.55	01.76	01.02	02.78	14
7621							60	35.53	7.15	26.33	70.38	3,527	1955.80	07 60	1885.75	01.01	00.99	02.00	01.99	03.99	17
7622							60	39.78	21.47	56.97	119.77	3,948	1955.80	07 60	1885.75	01.01	02.02	03.03	01.77	04.80	17
7623							60	60.35	3.44	21.95	88.25	5,295	1955.80	07 60	1885.75	01.14	00.53	01.67	01.32	02.99	15
7624							60	59.67	4.49	28.04	93.91	5,952	1955.80	07 60	1885.75	01.00	00.58	01.58	01.18	02.76	17
7625							60	52.02	11.16	12.85	77.52	4,368	1955.80	07 60	1885.75	01.19	00.58	01.77	01.60	03.37	14
7626							60	57.63	8.29	46.56	114.68	5,702	1955.80	07 60	1885.75	01.01	01.00	02.01	01.23	03.24	17
7627							60	29.07	3.44	20.44	54.25	2,396	1955.80	07 60	1885.75	01.21	01.05	02.26	02.92	05.18	14
7628							60	32.47	4.04	22.68	60.29	2,700	1955.80	07 60	1885.75	01.20	01.03	02.23	02.59	04.82	14
7629							60	91.80	11.41	49.84	157.40	8,645	1955.80	07 60	1885.75	01.06	00.76	01.82	00.81	02.63	16
6727							57	408.17	114.84	168.41	728.27	29,287	1380.60	07 60	664.00	01.39	01.10	02.49	02.45	04.94	12
6517							57	558.19	256.04	189.26	1189.79	39,215	1444.20	07 60	664.00	01.42	01.61	03.03	01.99	05.02	12
6522							57	555.89	209.08	229.55	1145.16	46,406	1444.20	07 60	664.00	01.20	01.27	02.47	01.68	04.15	14
6730							57	554.88	112.50	383.71	1221.67	44,539	1380.60	07 60	664.00	01.25	01.49	02.74	01.61	04.35	14
6726							57	660.80	152.15	286.46	1284.37	52,199	1380.60	07 60	664.00	01.27	01.19	02.46	01.37	03.83	13

TABLE A

COST PER MILE AS OF JUNE 30, 1960

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi/Gal	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Depr.		Total Opr. & Depr.
6728							57	715.14	191.63	380.27	1506.57	58,070	1380.60	07 60	664.00	01.23	01.36	02.59	01.23	03.82	14
6729							57	712.71	132.43	258.54	1351.41	57,836	1380.60	07 60	664.00	01.23	01.11	02.34	01.24	03.58	14
6514							57	678.81	120.28	337.36	1305.51	61,724	1444.20	07 60	664.00	01.10	01.02	02.12	01.26	03.38	15
6515							57	810.22	258.08	518.92	1742.72	66,244	1444.20	07 60	664.00	01.22	01.41	02.63	01.18	03.81	14
6519							57	814.61	216.62	380.17	1633.78	64,260	1444.20	07 60	664.00	01.27	01.27	02.54	01.21	03.75	13
6518							57	922.36	319.91	374.61	1920.85	70,912	1444.20	07 60	664.00	01.30	01.41	02.71	01.10	03.81	13
6520							57	901.51	467.59	487.73	2090.80	79,874	1444.20	07 60	664.00	01.13	01.49	02.62	00.98	03.60	15
6516							57	1236.24	151.63	162.70	1893.73	100,810	1444.20	07 60	664.00	01.23	00.65	01.88	00.77	02.65	14
6878							58	440.12	149.01	225.52	973.38	38,670	1490.70	07 60	949.50	01.14	01.38	02.52	01.40	03.92	15
6879							58	463.76	62.94	162.33	820.55	36,413	1490.70	07 60	949.50	01.27	00.98	02.25	01.49	03.74	13
6881							58	448.65	105.35	236.38	937.02	36,849	1490.70	07 60	949.50	01.22	01.32	02.54	01.47	04.01	14
6876							58	604.62	215.29	310.30	1202.58	54,093	1490.70	07 60	949.50	01.12	01.10	02.22	01.00	03.22	15
6880							58	633.11	88.27	199.02	1056.60	57,216	1490.70	07 60	949.50	01.11	00.74	01.85	00.95	02.80	15
6877							58	589.39	195.30	292.52	1202.16	60,763	1490.70	07 60	949.50	00.97	01.01	01.98	00.89	02.87	18
6647							57	407.09	245.80	273.97	1017.68	33,934	1733.90	07 60	859.05	01.20	01.80	03.00	02.58	05.58	14
6652							57	481.70	93.62	192.73	864.29	34,207	1733.90	07 60	859.05	01.41	01.12	02.53	02.56	05.09	12
6506							57	650.24	301.21	323.70	1352.70	45,467	1773.50	07 60	859.05	01.43	01.55	02.98	02.01	04.99	12
6508							57	612.90	296.42	392.09	1418.34	49,274	1773.50	07 60	859.05	01.24	01.64	02.88	01.86	04.74	14
6645							57	707.54	315.42	446.37	1685.52	46,567	1733.90	07 60	859.05	01.52	02.10	03.62	01.88	05.50	11
6650							57	553.65	127.47	294.17	1108.76	41,140	1733.90	07 60	859.05	01.35	01.35	02.70	02.13	04.83	13
6646							57	884.69	1041.30	1235.61	3559.33	54,048	1733.90	07 60	859.05	01.64	04.95	06.59	01.62	08.21	10
6651							57	656.94	230.97	539.57	1522.24	52,372	1733.90	07 60	859.05	01.25	01.66	02.91	01.67	04.58	14
6507							57	769.08	299.22	452.76	1701.80	62,130	1773.50	07 60	859.05	01.24	01.50	02.74	01.47	04.21	14
6509							57	813.45	315.68	777.03	2117.19	64,046	1773.50	07 60	859.05	01.27	02.04	03.31	01.43	04.74	13
6649							57	931.92	564.60	925.11	2718.96	63,884	1733.90	07 60	859.05	01.46	02.80	04.26	01.37	05.63	12
6511							57	1017.41	504.31	813.97	2730.36	77,696	1773.50	07 60	859.05	01.31	02.20	03.51	01.18	04.69	13
6510							57	1155.15	1228.83	1062.10	3841.80	85,208	1773.50	07 60	859.05	01.36	03.15	04.51	01.07	05.58	13
6475							57	218.42	50.31	266.38	548.07	18,716	1647.80	07 60	813.40	01.17	01.76	02.93	04.46	07.39	15
6459							57	409.35	65.69	254.53	807.99	33,643	1699.00	07 60	813.40	01.22	01.18	02.40	02.63	05.03	14
6466							57	396.76	141.57	451.30	1120.25	32,931	1647.80	07 60	813.40	01.20	02.20	03.40	02.53	05.93	14
6472							57	473.12	216.56	588.06	1380.11	38,901	1647.80	07 60	813.40	01.22	02.33	03.55	02.14	05.69	14
6474							57	482.48	121.54	368.17	1169.85	39,356	1647.80	07 60	813.40	01.23	01.74	02.97	02.12	05.09	14
6479							57	501.53	377.91	658.61	1604.92	39,175	1647.80	07 60	813.40	01.28	02.82	04.10	02.13	06.23	13
6481							57	438.77	136.94	369.64	1105.87	34,783	1647.80	07 60	813.40	01.26	01.92	03.18	02.40	05.58	13
6497							57	462.13	158.02	292.23	1014.54	36,453	1647.80	07 60	813.40	01.27	01.51	02.78	02.29	05.07	13
6657							57	418.20	102.41	310.22	898.50	34,999	1595.10	07 60	813.40	01.19	01.38	02.57	02.23	04.80	14
6659							57	451.69	106.41	338.87	1041.77	35,524	1595.10	07 60	813.40	01.27	01.66	02.93	02.20	05.13	13
6663							57	473.28	309.47	624.17	1563.10	39,604	1595.10	07 60	813.40	01.20	02.75	03.95	01.97	05.92	14
6678							57	373.63	74.96	212.16	786.75	30,751	1595.10	07 60	813.40	01.22	01.34	02.56	02.54	05.10	14
6686							57	418.71	173.71	420.16	1104.58	34,157	1595.10	07 60	813.40	01.23	02.00	03.23	02.29	05.52	14
6688							57	368.44	51.68	238.28	729.41	31,719	1595.10	07 60	813.40	01.16	01.14	02.30	02.46	04.76	15
6457							57	588.88	81.16	365.70	1208.63	49,664	1699.00	07 60	813.40	01.19	01.24	02.43	01.78	04.21	14
6458							57	571.46	97.34	390.86	1293.49	45,351	1699.00	07 60	813.40	01.26	01.59	02.85	01.95	04.80	13

TABLE A

COST PER MILE AS OF JUNE 30, 1960

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Cost	Value Date	Value	Cost Per Mile in Cents					Mi./Gal
								Fuel	Parts	Labor	Total Opr. Cost					Fuel	Other Opr.	Total Opr.	Depr.	Total Opr. & Depr.	
6182	N	H	6	C		1	56	698.45	259.71	575.28	1666.56	64,903	1095.40	07 60	342.00	01.08	01.49	02.57	01.16	03.73	16
6184	N	H	6	C		1	56	685.91	163.76	342.44	1453.22	63,985	1095.40	07 60	342.00	01.07	01.20	02.27	01.18	03.45	16
6242	N	H	6	C		1	56	604.80	119.12	423.91	1336.76	61,811	1299.50	07 60	342.00	00.98	01.18	02.16	01.55	03.71	17
5960	N	H	6	C		1	56	752.42	270.66	390.68	1594.03	66,415	1123.40	07 60	342.00	01.13	01.27	02.40	01.18	03.58	15
6185	N	H	6	C		1	56	720.97	220.92	366.83	1511.59	64,050	1095.40	07 60	342.00	01.13	01.23	02.36	01.18	03.54	15
5965	N	H	6	C		1	56	851.50	471.82	463.54	2032.12	75,165	1123.40	07 60	342.00	01.13	01.57	02.70	01.04	03.74	15
5970	N	H	6	C		1	56	802.40	165.67	474.43	1695.44	75,456	1123.40	07 60	342.00	01.06	01.19	02.25	01.04	03.29	16
6019	N	H	6	C		1	56	752.78	280.43	565.46	1728.24	75,156	1109.60	07 60	342.00	01.00	01.30	02.30	01.02	03.32	17
6023	N	H	6	C		1	56	786.25	214.13	318.42	1570.28	74,385	1109.60	07 60	342.00	01.06	01.05	02.11	01.03	03.14	16
6024	N	H	6	C		1	56	845.07	448.04	904.10	2396.06	77,736	1109.60	07 60	342.00	01.09	01.99	03.08	00.99	04.07	16
6029	N	H	6	C		1	56	775.37	326.64	692.03	1937.37	70,319	1109.60	07 60	342.00	01.10	01.66	02.76	01.09	03.85	15
6031	N	H	6	C		1	56	865.28	327.97	573.91	2018.35	74,913	1109.60	07 60	342.00	01.16	01.53	02.69	01.02	03.71	15
6040	N	H	6	C		1	56	775.03	140.26	455.94	1520.94	75,467	1109.60	07 60	342.00	01.03	00.99	02.02	01.02	03.04	17
6041	N	H	6	C		1	56	760.07	166.83	416.51	1537.83	74,807	1109.60	07 60	342.00	01.02	01.04	02.06	01.03	03.09	17
6047	N	H	6	C		1	56	825.99	223.63	394.19	1697.94	74,134	1109.60	07 60	342.00	01.11	01.18	02.29	01.04	03.33	15
6048	N	H	6	C		1	56	847.42	474.92	706.36	2280.58	76,906	1109.60	07 60	342.00	01.10	01.87	02.97	01.00	03.97	15
6049	N	H	6	C		1	56	857.93	581.26	794.33	2460.27	79,243	1109.60	07 60	342.00	01.08	02.02	03.10	00.97	04.07	16
6050	N	H	6	C		1	56	777.30	272.85	432.10	1688.10	70,629	1109.60	07 60	342.00	01.10	01.29	02.39	01.09	03.48	15
6055	N	H	6	C		1	56	762.23	307.03	388.09	1656.62	72,935	1109.60	07 60	342.00	01.05	01.22	02.27	01.05	03.32	16
6056	N	H	6	C		1	56	780.24	177.27	658.34	1815.97	74,382	1109.60	07 60	342.00	01.05	01.39	02.44	01.03	03.47	16
6161	N	H	6	C		1	56	830.42	269.54	581.21	2072.61	70,102	1095.40	07 60	342.00	01.18	01.78	02.96	01.07	04.03	14
6166	N	H	6	C		1	56	787.20	466.11	665.36	2094.22	73,432	1095.40	07 60	342.00	01.07	01.78	02.85	01.03	03.88	16
6181	N	H	6	C		1	56	725.17	183.12	264.32	1367.50	70,995	1095.40	07 60	342.00	01.02	00.91	01.93	01.06	02.99	17
6186	N	H	6	C		1	56	870.40	161.46	514.75	1739.77	76,083	1095.40	07 60	342.00	01.14	01.15	02.29	00.99	03.28	15
6187	N	H	6	C		1	56	764.97	113.19	478.25	1597.26	72,005	1095.40	07 60	342.00	01.06	01.16	02.22	01.05	03.27	16
5959	N	H	6	C		1	56	845.75	218.45	576.20	1936.34	75,931	1123.40	07 60	342.00	01.11	01.44	02.55	01.03	03.58	15
5954	N	H	6	C		1	56	738.99	221.50	465.93	1642.61	71,027	1123.40	07 60	342.00	01.04	01.27	02.31	01.10	03.41	16
6018	N	H	6	C		1	56	804.95	578.80	490.43	2101.32	82,861	1109.60	07 60	342.00	00.97	01.57	02.54	00.93	03.47	17
6020	N	H	6	C		1	56	954.74	575.19	764.72	2576.25	88,051	1109.60	07 60	342.00	01.08	01.85	02.93	00.87	03.80	16
6164	N	H	6	C		1	56	928.28	336.43	668.06	2179.63	83,431	1095.40	07 60	342.00	01.11	01.50	02.61	00.90	03.51	15
6169	N	H	6	C		1	56	952.35	243.36	706.42	2157.01	83,718	1095.40	07 60	342.00	01.14	01.44	02.58	00.90	03.48	15
6241	N	H	6	C		1	56	901.14	591.07	672.42	2465.36	86,270	1299.50	07 60	342.00	01.04	01.82	02.86	01.11	03.97	16
5961	N	H	6	C		1	56	906.61	376.86	633.17	2165.73	82,695	1123.40	07 60	342.00	01.10	01.52	02.62	00.94	03.56	16
6016	N	H	6	C		1	56	959.48	662.96	558.59	2581.09	81,555	1109.60	07 60	342.00	01.18	01.98	03.16	00.94	04.10	14
5963	N	H	6	C		1	56	993.99	642.11	474.16	2387.56	93,017	1123.40	07 60	342.00	01.07	01.50	02.57	00.84	03.41	16
5964	N	H	6	C		1	56	1024.09	431.44	498.50	2212.02	96,844	1123.40	07 60	342.00	01.06	01.22	02.28	00.81	03.09	16
5967	N	H	6	C		1	56	959.85	794.09	732.52	2699.34	92,656	1123.40	07 60	342.00	01.04	01.87	02.91	00.84	03.75	16
6171	N	H	6	C		1	56	1059.45	602.74	879.39	2947.56	97,459	1095.40	07 60	342.00	01.09	01.93	03.02	00.77	03.79	16
6173	N	H	6	C		1	56	1048.39	457.45	761.74	2524.31	100,524	1095.40	07 60	342.00	01.04	01.47	02.51	00.75	03.26	16
6174	N	H	6	C		1	56	1227.38	502.80	577.25	2664.74	109,033	1095.40	07 60	342.00	01.13	01.31	02.44	00.69	03.13	15
7883	N	H	6	C		1	60	37.57	3.39	23.22	65.53	3,834	1694.30	07 60	1615.00	00.98	00.73	01.71	02.07	03.78	17
7884	N	H	6	C		1	60	17.00	2.19	14.48	54.70	1,719	1694.30	07 60	1615.00	00.99	02.19	03.18	04.61	07.79	17
7885	N	H	6	C		1	60	35.19	2.19	21.60	59.88	3,631	1694.30	07 60	1615.00	00.97	00.68	01.65	02.18	03.83	18

TABLE A

COST PER MILE AS OF JUNE 30, 1960

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi./Gal.	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Depr.		Total Opr. & Depr.
7395	5	2	8	7	0	1	59	307.36	78.86	192.93	627.29	25,479	1869.90	07 60	1436.85	01.21	01.25	02.46	01.70	04.16	14
7396	5	2	8	7	0	1	59	311.26	102.79	156.90	612.59	27,788	1869.90	07 60	1436.85	01.12	01.08	02.20	01.56	03.76	15
7387	5	2	8	7	0	1	59	353.91	119.79	156.01	713.02	32,047	1869.90	07 60	1436.85	01.10	01.12	02.22	01.35	03.57	15
7389	5	2	8	7	0	1	59	363.91	101.30	318.87	838.99	31,711	1869.90	07 60	1436.85	01.15	01.50	02.65	01.37	04.02	15
7391	5	2	8	7	0	1	59	419.65	103.84	125.70	711.16	35,875	1869.90	07 60	1436.85	01.17	00.81	01.98	01.21	03.19	15
7392	5	2	8	7	0	1	59	347.99	95.41	189.12	725.75	30,849	1869.90	07 60	1436.85	01.13	01.22	02.35	01.40	03.75	15
7393	5	2	8	7	0	1	59	384.69	157.59	228.34	858.67	33,978	1869.90	07 60	1436.85	01.13	01.40	02.53	01.27	03.80	15
7397	5	2	8	7	0	1	59	376.55	79.03	151.79	679.54	34,900	1869.90	07 60	1436.85	01.08	00.87	01.95	01.24	03.19	16
7390	5	2	8	7	0	1	59	475.67	146.24	185.20	910.67	41,327	1869.90	07 60	1436.85	01.15	01.05	02.20	01.05	03.25	15
7394	5	2	8	7	0	1	59	423.64	83.46	280.01	845.39	41,850	1869.90	07 60	1436.85	01.01	01.01	02.02	01.03	03.05	17
7655	5	2	8	7	0	1	60	79.35	23.44	14.58	122.84	8,637	1891.60	07 60	1852.50	00.92	00.50	01.42	00.45	01.87	18
7656	5	2	8	7	0	1	60	63.07	23.39	20.14	109.60	7,405	1891.60	07 60	1852.50	00.85	00.63	01.48	00.53	02.01	20
7657	5	2	8	7	0	1	60	72.93	36.39	44.43	175.38	7,184	1891.60	07 60	1852.50	01.02	01.42	02.44	00.54	02.98	17
7658	5	2	8	7	0	1	60	58.82	36.53	22.50	119.85	6,059	1891.60	07 60	1852.50	00.97	01.01	01.98	00.65	02.63	18
7659	5	2	8	7	0	1	60	71.91	4.85	11.80	91.66	7,968	1891.60	07 60	1852.50	00.90	00.25	01.15	00.49	01.64	19
7831	5	2	8	7	0	1	60	32.30	26.54	19.41	78.60	3,858	1894.60	07 60	1852.50	00.84	01.20	02.04	01.09	03.13	20
7832	5	2	8	7	0	1	60	25.84	21.27	27.20	75.18	2,515	1894.60	07 60	1852.50	01.03	01.96	02.99	01.67	04.66	17
7833	5	2	8	7	0	1	60	34.51	28.81	16.89	86.62	4,113	1894.60	07 60	1852.50	00.84	01.27	02.11	01.02	03.13	20
7834	5	2	8	7	0	1	60	42.33	30.09	16.32	90.76	4,246	1894.60	07 60	1852.50	01.00	01.14	02.14	00.99	03.13	17
7835	5	2	8	7	0	1	60	31.79	30.34	20.28	83.41	3,422	1894.60	07 60	1852.50	00.93	01.51	02.44	01.23	03.67	18
7836	5	2	8	7	0	1	60	26.69	30.80	13.65	72.44	2,867	1894.60	07 60	1852.50	00.93	01.60	02.53	01.47	04.00	18
5925	8	1	8	1	0	3	56	1093.67	690.28	852.45	3102.93	73,923	1999.00	07 60	493.20	01.48	02.72	04.20	02.04	06.24	11

AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY MAKE, MODEL YEAR, SIZE, CYLINDERS, TYPE AND TRANSMISSION

TABLE B

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi/Gal	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Dept.		Total Opr. & Depr.
14	2	1	6	7	0	1	56	763.84	397.31	578.54	2000.42	59,886	1350.12	07 60	363.60	01.28	02.06	03.34	01.65	04.99	13
8	2	1	6	7	0	1	57	855.87	684.52	690.42	2508.99	69,910	1531.75	07 60	684.75	01.22	02.37	03.59	01.21	04.80	14
4	2	1	6	7	0	1	60	45.30	7.46	31.45	85.53	4,623	1950.20	07 60	1881.00	00.98	00.87	01.85	01.50	03.35	17
6	2	1	6	9	0	1	54	742.38	351.67	646.90	1933.38	78,153	1448.33	07 60	185.60	00.95	01.52	02.47	01.62	04.09	18
17	2	1	6	9	0	1	55	784.46	432.76	635.73	2066.09	79,022	1425.00	07 60	298.15	00.99	01.62	02.61	01.43	04.04	17
23	2	1	6	9	0	1	56	824.26	379.37	618.85	2052.48	75,642	1210.96	07 60	363.60	01.09	01.62	02.71	01.12	03.83	16
33	2	1	6	9	0	1	57	652.59	338.50	534.68	1723.84	59,450	1521.70	07 60	589.30	01.10	01.80	02.90	01.57	04.47	15
1	2	1	8	1	0	3	53	1035.95	390.65	849.40	2561.79	106,585	1450.00	07 60	156.80	00.97	01.43	02.40	01.21	03.61	17
2	2	1	8	1	0	3	54	779.68	369.27	677.51	2081.74	67,229	1460.20	07 60	195.20	01.16	01.94	03.10	01.88	04.98	15
24	2	1	8	1	0	3	59	253.87	68.58	163.67	546.91	21,595	1974.90	07 60	1427.55	01.18	01.35	02.53	02.53	05.06	14
7	2	1	8	4	0	1	60	75.72	21.64	35.25	134.43	6,893	1867.00	07 60	1705.25	01.10	00.85	01.95	02.35	04.30	15
9	2	1	8	4	0	3	60	45.56	4.66	13.82	65.23	4,010	1851.90	07 60	1805.00	01.14	00.49	01.63	01.17	02.80	15
7	2	1	8	7	0	3	57	809.58	402.51	652.61	2131.36	57,895	1755.20	07 60	817.55	01.40	02.28	03.68	01.62	05.30	12
22	2	1	8	7	0	3	58	629.64	265.95	428.87	1535.65	42,289	1815.18	07 60	1080.00	01.49	02.14	03.63	01.74	05.37	11
45	2	1	8	9	0	3	57	634.81	250.29	451.60	1553.16	52,693	1629.23	07 60	693.05	01.20	01.75	02.95	01.78	04.73	14
19	2	1	8	9	0	3	58	445.77	116.46	246.94	958.43	38,154	1619.90	07 60	1039.50	01.17	01.34	02.51	01.52	04.03	15
1	2	1	8	9	1	3	56	470.70	363.00	729.44	1904.76	58,634	1617.60	07 60	457.20	00.80	02.45	03.25	01.98	05.23	21
11	2	2	6	1	0	1	60	18.70	4.37	19.91	43.83	2,470	1562.80	07 60	1543.75	00.76	01.01	01.77	00.77	02.54	22
1	4	1	6	2	0	1	55	737.63	475.36	869.21	2274.44	67,796	1150.00	07 60	180.90	01.09	02.26	03.35	01.43	04.78	16
1	4	1	6	7	0	1	55	693.13	731.26	732.97	2439.07	52,994	1475.00	07 60	257.95	01.31	03.29	04.60	02.30	06.90	13
2	4	1	6	9	0	1	55	641.31	426.14	594.02	1853.27	59,793	1425.00	07 60	244.55	01.07	02.03	03.10	01.97	05.07	16
45	4	1	8	1	0	3	60	50.49	4.74	30.42	90.46	4,674	1945.80	07 60	1857.25	01.08	00.86	01.94	01.89	03.83	16
1	4	1	8	9	0	3	56	613.42	741.64	605.12	2119.38	39,048	1889.40	07 60	424.80	01.57	03.86	05.43	03.75	09.18	11
16	4	1	8	9	0	3	58	367.66	72.23	244.14	770.13	30,991	1950.60	07 60	882.00	01.19	01.30	02.49	03.45	05.94	14
11	5	2	6	1	0	1	60	53.56	5.28	29.66	91.21	5,779	1672.30	07 60	1505.75	00.93	00.65	01.58	02.88	04.46	18
95	5	2	6	1	0	2	59	181.28	36.70	105.99	357.93	18,793	1605.24	07 60	1139.25	00.96	00.94	01.90	02.48	04.38	18
10	5	2	6	2	0	1	59	152.28	41.77	87.46	310.98	15,049	1467.40	07 60	1055.55	01.01	01.06	02.07	02.74	04.81	17
25	5	2	6	1	0	3	59	273.07	71.17	199.24	615.50	24,004	1889.00	07 60	1376.40	01.14	01.42	02.56	02.14	04.70	15
12	5	2	6	7	0	1	59	345.56	97.12	188.88	700.93	30,435	1869.68	07 60	1436.85	01.14	01.16	02.30	01.42	03.72	15
11	5	2	8	7	0	1	60	49.04	26.58	20.65	100.57	5,297	1893.23	07 60	1852.50	00.93	00.97	01.90	00.77	02.67	18

TABLE C

AVERAGE COST PER MILE AS OF JUNE 30, 1959
BY MAKE, MODEL YEAR, SIZE, CYLINDER, TYPE AND TRANSMISSION

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi./Gal.	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Dept.		Total Opr. & Depr.
17	2	1	6	9	0	1	55	657.11	331.75	512.96	1683.90	67,583	1425.00	07 59	371.85	00.97	01.52	02.49	01.56	04.05	17
23	2	1	6	9	0	1	56	658.65	249.38	454.90	1537.69	61,143	1210.96	07 59	504.00	01.08	01.43	02.51	01.16	03.67	16
33	2	1	6	9	0	1	57	473.35	207.83	359.60	1186.90	44,361	1521.70	07 59	888.10	01.07	01.61	02.68	01.43	04.11	16
1	2	1	8	1	0	3	53	732.33	199.27	587.69	1696.46	84,572	1450.00	07 59	214.40	00.87	01.14	02.01	01.46	03.47	20
2	2	1	8	1	0	3	54	581.41	329.46	547.62	1627.22	56,000	1460.20	07 59	294.40	01.04	01.87	02.91	02.08	04.99	16
24	2	1	8	1	0	3	59	71.94	13.24	37.17	134.19	6,114	1974.90	07 59	1887.90	01.18	01.01	02.19	01.42	03.61	14
7	2	1	8	7	0	3	57	571.72	231.40	360.25	1371.07	41,880	1755.20	07 59	1020.90	01.37	01.90	03.27	01.75	05.02	12
22	2	1	8	7	0	3	58	375.35	110.08	208.18	818.22	25,826	1815.18	07 59	1557.00	01.45	01.72	03.17	01.00	04.17	12
45	2	1	8	9	0	3	57	442.93	158.36	305.09	1052.76	37,357	1629.23	07 59	991.85	01.19	01.63	02.82	01.71	04.53	14
19	2	1	8	9	0	3	58	248.94	36.98	113.84	466.04	21,529	1619.90	07 59	1489.50	01.16	01.00	02.16	00.61	02.77	15
1	2	1	8	9	1	3	56	378.08	244.88	531.01	1458.93	47,517	1617.60	07 59	622.80	00.80	02.27	03.07	02.09	05.16	21
1	4	1	6	2	0	1	55	680.68	275.94	565.25	1708.15	63,261	1150.00	07 59	284.75	01.08	01.62	02.70	01.37	04.07	16
1	4	1	6	7	0	1	55	636.35	574.48	574.28	2013.08	49,355	1475.00	07 59	405.35	01.29	02.79	04.08	02.17	06.25	13
2	4	1	6	9	0	1	55	547.05	407.78	552.73	1667.90	52,350	1425.00	07 59	365.15	01.04	02.15	03.19	02.02	05.21	16
1	4	1	8	9	0	3	56	373.43	580.38	421.68	1456.74	21,533	1889.40	07 59	615.60	01.73	05.04	06.77	05.92	12.69	10
16	4	1	8	9	0	3	58	163.18	31.80	112.84	338.22	13,795	1950.60	07 59	1417.50	01.18	01.27	02.45	03.86	06.31	14
92	5	2	6	1	0	2	59	38.93	4.81	15.51	61.02	4,374	1605.21	07 59	1478.70	00.89	00.51	01.40	02.89	04.29	19
9	5	2	6	2	0	1	59	26.53	2.30	10.28	40.28	2,760	1467.40	07 59	1441.50	00.96	00.50	01.46	00.94	02.40	18
25	5	2	8	1	0	3	59	88.77	12.71	48.32	171.15	7,853	1889.00	07 59	1832.10	01.13	01.05	02.18	00.73	02.91	15
12	5	2	8	7	0	1	59	22.75	3.12	11.45	38.14	2,063	1869.68	07 59	1813.50	01.10	00.75	01.85	02.72	04.57	15

AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY VEHICLE MODEL YEAR

TABLE D

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi/Gal	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Dept.		Total Opr. & Depr.
11							53	844.33	412.20	653.09	2145.06	88,678	1156.81		132.65	00.95	01.47	02.42	01.15	03.57	
47							54	780.83	418.50	579.90	2005.15	83,174	1190.01		150.46	00.94	01.47	02.41	01.25	03.66	
86							55	796.60	406.46	599.43	2048.24	75,366	1234.68		253.19	01.06	01.66	02.72	01.30	04.02	
182							56	751.81	336.71	528.56	1833.90	67,811	1177.39		344.23	01.11	01.59	02.70	01.23	03.93	
212							57	671.31	288.17	479.40	1647.54	55,124	1603.49		737.74	01.22	01.77	02.99	01.57	04.56	
113							58	498.90	155.41	326.66	1123.95	40,549	1713.37		1050.17	01.23	01.54	02.77	01.64	04.41	
175							59	224.67	54.65	138.97	466.62	21,327	1728.73		1244.76	01.05	01.14	02.19	02.27	04.46	
142							60	49.21	8.04	27.72	88.64	4,745	1863.80		1783.62	01.04	00.83	01.87	01.69	03.56	

**AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY MILEAGE GROUP**

TABLE E

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi/Gal	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Dept.		Total Opr. & Depr.
155								51.87	18.77	31.95	98.03	4,895	1851.99		1733.31	01.06	00.94	02.00	02.42	04.42	
76								160.58	35.27	108.58	331.63	15,625	1672.11		1175.08	01.03	01.09	02.12	03.18	05.30	
82								269.40	71.69	177.39	582.33	24,516	1701.15		1151.69	01.10	01.28	02.38	02.24	04.62	
103								427.17	151.02	311.84	1005.92	35,222	1690.16		995.35	01.21	01.65	02.86	01.97	04.83	
106								536.97	202.59	373.49	1270.70	44,767	1588.01		801.62	01.20	01.64	02.84	01.76	04.60	
114								665.64	273.51	489.33	1632.43	55,336	1469.24		636.14	01.20	01.75	02.95	01.51	04.46	
113								732.65	327.82	527.63	1810.03	65,169	1335.50		461.47	01.12	01.66	02.78	01.34	04.12	
89								805.98	367.70	563.93	1985.87	74,474	1256.74		373.97	01.08	01.59	02.67	01.19	03.86	
71								894.44	464.52	639.09	2273.68	84,554	1264.38		336.83	01.06	01.63	02.69	01.10	03.79	
41								964.34	499.69	652.81	2382.47	94,182	1250.46		287.79	01.02	01.51	02.53	01.02	03.55	
16								1074.16	473.99	651.53	2507.34	103,757	1221.93		306.60	01.04	01.38	02.42	00.88	03.30	
2								1216.21	410.36	684.14	2615.58	113,511	1482.80		330.87	01.07	01.23	02.30	01.01	03.31	

PICKUP - AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY MODEL YEAR

TABLE F

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value Cost	Value Date	Value	Cost Per Mile in Cents					Mi/Gal	
								Fuel	Parts	Labor	Total Opr. Cost					Fuel	Other Opr.	Total Opr.	Dept.	Total Opr. & Depr.		
1							50	1001.30	370.78	575.69	2059.01	106,764	1367.70				00.94	00.99	01.93			
4							51	924.33	304.72	841.86	2253.06	72,228	1466.80				01.28	01.84	03.12			
4							52	755.28	378.73	592.80	1808.33	73,015	1523.12				01.03	01.45	02.48			
11							53	832.16	286.51	550.42	1821.82	79,385	1262.90				01.05	01.24	02.29			
38							54	859.08	326.55	545.13	1945.35	85,551	1331.75				01.00	01.27	02.27			
36							55	874.84	298.32	500.18	1873.29	73,878	1123.69				01.18	01.36	02.54			
44							56	874.53	323.80	479.32	1880.30	71,952	962.09				01.22	01.39	02.61			
33							57	782.67	266.02	462.06	1690.43	64,256	991.77				01.22	01.41	02.63			
25							58	551.35	142.03	250.41	1070.81	46,275	1252.25				01.19	01.12	02.31			
34							59	285.88	59.46	123.20	512.30	23,814	1467.45				01.20	00.95	02.15			
28							60	44.91	14.41	42.69	106.21	3,995	1405.54				01.12	01.54	02.66			

PICKUP - AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY MILEAGE GROUP

TABLE G

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value	Date	Value	Cost Per Mile in Cents					Mi./Gal.
								Fuel	Parts	Labor	Total Opr. Cost					Fuel	Other Opr.	Total Opr.	Dept.	Total Opr. & Depr.	
34								55.43	36.74	58.54	142.63	4,562	1412.37			01.22	01.91	03.13			
11								204.07	61.15	140.84	461.48	16,347	1451.13			01.25	01.57	02.82			
14								309.37	78.75	199.34	641.08	24,645	1345.75			01.26	01.34	02.60			
22								422.34	100.01	195.45	807.83	34,727	1331.68			01.22	01.11	02.33			
18								545.91	161.86	293.42	1121.99	44,899	1127.01			01.22	01.28	02.50			
24								677.26	219.54	443.85	1504.54	55,257	1077.47			01.23	01.49	02.72			
33								790.45	269.24	488.49	1745.10	65,143	1101.46			01.21	01.47	02.68			
29								850.84	287.06	468.98	1804.11	74,220	1094.39			01.15	01.28	02.43			
29								948.27	334.55	546.19	2065.29	85,037	1223.32			01.12	01.31	02.43			
21								1041.92	388.87	640.93	2313.74	94,944	1209.30			01.10	01.34	02.44			
16								1146.10	377.66	598.28	2394.42	106,695	1159.23			01.07	01.17	02.24			
7								1110.25	370.78	559.43	2243.99	112,696	1160.47			00.99	01.00	01.99			

AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY MODEL YEAR WITHOUT COMPACT VEHICLES

TABLE H

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value	Date	Value	Cost Per Mile in Cents					Mi./Gal.
								Fuel	Parts	Labor	Total Opr. Cost					Fuel	Other Opr.	Total Opr.	Depr.	Total Opr. & Depr.	
11							53	844.33	448.60	653.09	2145.06	88,678	1156.81		132.65	00.95	01.47	02.42	01.15	03.57	
47							54	780.83	421.65	579.90	2005.15	83,174	1190.01		150.46	00.94	01.47	02.41	01.25	03.66	
86							55	796.60	409.63	599.43	2048.24	75,366	1234.68		253.19	01.06	01.66	02.72	01.30	04.02	
181							56	749.92	335.68	526.77	1826.89	67,777	1172.85		343.41	01.11	01.59	02.70	01.22	03.92	
212							57	671.31	289.97	479.40	1647.54	55,124	1603.49		737.74	01.22	01.77	02.99	01.57	04.56	
113							58	498.90	157.14	326.66	1123.95	40,549	1713.37		1050.17	01.23	01.54	02.77	01.64	04.41	
34							59	289.44	84.09	181.69	618.69	25,278	1979.31		1427.55	01.15	01.30	02.45	02.18	04.63	
120							60	48.83	6.86	28.19	87.31	4,600	1878.65		1802.78	01.06	00.84	01.90	01.65	03.55	

AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY MILEAGE GROUP WITHOUT COMPACT VEHICLES

TABLE I

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi./Gal.	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Dept.		Total Opr. & Depr.
122								49.16	9.70	29.34	89.79	4,611	1880.41		1792.75	01.07	00.88	01.95	01.90	03.85	
14								196.86	36.17	153.25	426.25	16,346	1910.12		1252.80	01.20	01.41	02.61	04.02	06.63	
33								308.74	92.56	229.25	716.22	25,281	1745.93		1078.87	01.22	01.61	02.83	02.64	05.47	
87								437.98	160.79	327.40	1045.32	35,496	1668.14		932.00	01.23	01.71	02.94	02.07	05.01	
103								539.82	205.91	378.54	1283.71	44,865	1579.62		783.71	01.20	01.66	02.86	01.77	04.63	
114								665.64	269.61	489.33	1632.43	55,336	1469.24		636.14	01.20	01.75	02.95	01.51	04.46	
113								732.65	326.86	527.63	1810.03	65,169	1335.50		461.47	01.12	01.66	02.78	01.34	04.12	
88								802.71	364.03	560.65	1973.17	74,480	1248.31		372.61	01.08	01.57	02.65	01.18	03.83	
71								894.44	462.10	639.09	2273.68	84,554	1264.38		336.83	01.06	01.63	02.69	01.10	03.79	
41								964.34	499.63	652.81	2382.47	94,182	1250.46		287.79	01.02	01.51	02.53	01.02	03.55	
16								1074.16	485.63	651.53	2507.34	103,757	1221.93		306.60	01.04	01.38	02.42	00.88	03.30	
2								1216.21	416.18	684.14	2615.58	113,511	1482.80		330.87	01.07	01.23	02.30	01.01	03.31	

AVERAGE COST PER MILE AS OF JUNE 30, 1960

TABLE J

BY MAKE AND MODEL YEAR WITH COMPACT VEHICLES 85 PERCENT NADA WHOLESALE VALUE

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value	Date	Value	Cost Per Mile in Cents					Mi/Gal
								Fuel	Parts	Labor	Opr. Cost					Fuel	Other Opr.	Total Opr.	Dept.	Total Opr. & Depr.	
4	1						53	861.63	74.08	694.66	2225.51	88,735	1162.50		128.80	00.97	01.54	02.51	01.16	03.67	
7	2						53	834.44	393.53	629.34	2099.08	88,646	1153.57		134.85	00.94	01.43	02.37	01.15	03.52	
11	1						54	818.10	439.57	663.54	2215.03	88,594	1175.00		145.74	00.92	01.58	02.50	01.16	03.66	
36	2						54	769.44	414.85	554.35	1941.02	81,518	1194.60		151.91	00.94	01.44	02.38	01.28	03.66	
31	1						55	837.29	419.50	621.70	2144.01	77,033	1181.40		245.73	01.09	01.69	02.78	01.21	03.99	
51	2						55	781.14	397.58	578.20	1985.57	75,551	1256.54		259.39	01.03	01.60	02.63	01.32	03.95	
4	4						55	678.34	431.30	697.55	2105.01	60,094	1368.75		231.98	01.13	02.37	03.50	01.89	05.39	
29	1						56	785.27	331.41	528.29	1887.28	71,037	1140.61		350.93	01.11	01.55	02.66	01.11	03.77	
151	2						56	744.03	335.41	525.96	1813.36	67,341	1174.29		341.42	01.10	01.59	02.69	01.24	03.93	
1	4						56	613.42	335.41	605.12	2119.38	39,048	1889.40		424.80	01.57	03.86	05.43	03.75	09.18	
119	1						57	669.75	258.37	450.21	1575.71	53,686	1612.35		794.67	01.25	01.69	02.94	01.52	04.46	
93	2						57	673.29	331.68	516.75	1739.46	56,963	1592.17		664.89	01.18	01.87	03.05	01.63	04.68	
56	1						58	503.05	149.62	337.14	1119.47	43,409	1637.30		1090.12	01.16	01.42	02.58	01.26	03.84	
41	2						58	544.43	199.06	344.56	1268.16	40,373	1724.68		1061.23	01.35	01.79	03.14	01.64	04.78	
16	4						58	367.66	73.12	244.14	770.13	30,991	1950.60		882.00	01.19	01.30	02.49	03.45	05.94	
10	1						59	374.79	93.61	224.92	790.94	34,117	1989.90		1427.55	01.10	01.22	02.32	01.65	03.97	
24	2						59	253.87	276.30	163.67	546.91	21,595	1974.90		1427.55	01.18	01.35	02.53	02.53	05.06	
141	5						59	209.05	50.80	128.66	429.95	20,374	1668.31		1097.40	01.03	01.08	02.11	02.80	04.91	
31	1						60	66.02	8.61	37.85	117.79	6,175	1955.23		1888.50	01.07	00.84	01.91	01.08	02.99	
44	2						60	35.01	7.17	19.10	62.61	3,415	1756.03		1686.68	01.03	00.80	01.83	02.03	03.86	
45	4						60	50.49	4.73	30.42	90.46	4,674	1945.80		1857.25	01.08	00.86	01.94	01.89	03.83	
22	5						60	51.30	15.78	25.15	95.89	5,538	1782.76		1502.37	00.93	00.80	01.73	05.06	06.79	

A-35

**AVERAGE COST PER MILE AS OF JUNE 30, 1960
BY MAKE, BY YEAR, BY NUMBER OF CYLINDERS**

(COMPACTS 95 PERCENT NADA WHOLESALE VALUE)

TABLE	Veh No.	K	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi/Gal	
										Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Depr.		Total Opr. & Depr.
	4	1			6				53	861.63	1997.36	694.66	2225.51	88,735	1162.50		128.80	00.97	01.54	02.51	01.16	03.67	
	6	2			6				53	800.86	726.44	592.66	2021.97	85,656	1104.16		131.20	00.93	01.43	02.36	01.14	03.50	
	1	2			8				53	1035.95	726.44	849.40	2561.79	106,585	1450.00		156.80	00.97	01.43	02.40	01.21	03.61	
	11	1			6				54	818.10	490.53	663.54	2215.03	88,594	1175.00		145.74	00.92	01.58	02.50	01.16	03.66	
	34	2			6				54	768.84	403.66	547.10	1932.74	82,358	1178.98		149.36	00.93	01.42	02.35	01.25	03.60	
	2	2			8				54	779.68	411.28	677.51	2081.74	67,229	1460.20		195.20	01.16	01.94	03.10	01.88	04.98	
	31	1			6				55	837.29	410.69	621.70	2144.01	77,033	1181.40		245.73	01.09	01.69	02.78	01.21	03.99	
	51	2			6				55	781.14	399.53	578.20	1985.57	75,551	1256.54		259.39	01.03	01.60	02.63	01.32	03.95	
	4	4			6				55	678.34	495.77	697.55	2105.01	60,094	1368.75		231.98	01.13	02.37	03.50	01.89	05.39	
	29	1			6				56	785.27	331.75	528.29	1887.28	71,037	1140.61		350.93	01.11	01.55	02.66	01.11	03.77	
	150	2			6				56	745.85	334.13	524.60	1812.75	67,399	1171.34		340.65	01.11	01.58	02.69	01.23	03.92	
	1	2			8				56	470.70	334.13	729.44	1904.76	58,634	1617.60		457.20	00.80	02.45	03.25	01.98	05.23	
	1	4			8				56	613.42	334.13	605.12	2119.38	39,048	1889.40		424.80	01.57	03.86	05.43	03.75	09.18	
	1	8			8				56	1093.67	334.13	852.45	3102.93	73,923	1999.00		493.20	01.48	02.72	04.20	02.04	06.24	
	8	1			6				57	753.95	425.87	563.74	2037.59	63,266	1539.80		703.42	01.19	02.03	03.22	01.32	04.54	
	111	1			8				57	663.69	245.59	442.03	1542.42	52,995	1617.57		801.24	01.25	01.66	02.91	01.54	04.45	
	41	2			6				57	692.26	393.64	565.07	1877.04	61,491	1523.66		607.92	01.13	01.92	03.05	01.49	04.54	
	52	2			8				57	658.34	270.03	478.66	1630.99	53,393	1646.19		709.80	01.23	01.82	03.05	01.75	04.80	
	56	1			8				58	503.05	148.64	337.14	1119.47	43,409	1637.30		1090.12	01.16	01.42	02.58	01.26	03.84	
	41	2			8				58	544.43	190.97	344.56	1268.16	40,373	1724.68		1061.23	01.35	01.79	03.14	01.64	04.78	
	16	4			8				58	367.66	73.12	244.14	770.13	30,991	1950.60		882.00	01.19	01.30	02.49	03.45	05.94	
	10	1			6				59	374.79	93.61	224.92	790.94	34,117	1989.90		1427.55	01.10	01.22	02.32	01.65	03.97	
	24	2			8				59	253.87	71.79	163.67	546.91	21,595	1974.90		1427.55	01.18	01.35	02.53	02.53	05.06	
	104	5			6				59	177.91	38.59	104.75	354.08	18,341	1592.03		1131.20	00.97	00.96	01.93	02.51	04.44	
	37	5			8				59	296.58	77.39	195.88	643.21	26,090	1882.73		1396.00	01.14	01.33	02.47	01.87	04.34	
	6	1			6				60	96.13	19.61	38.52	157.54	8,946	1952.90		1900.00	01.07	00.69	01.76	00.59	02.35	
	25	1			8				60	58.79	7.38	37.69	108.25	5,509	1955.80		1885.75	01.07	00.89	01.96	01.27	03.23	
	28	2			6				60	21.44	4.31	16.76	43.82	2,355	1697.47		1644.00	00.91	00.95	01.86	02.27	04.13	
	16	2			8				60	58.75	9.89	23.19	95.50	5,271	1858.50		1761.35	01.11	00.70	01.81	01.84	03.65	
	45	4			8				60	50.49	4.79	30.42	90.46	4,674	1945.80		1857.25	01.08	00.86	01.94	01.89	03.83	
	11	5			6				60	53.56	4.99	29.66	91.21	5,779	1672.30		1505.75	00.93	00.65	01.58	02.88	04.46	
	11	5			8				60	49.04	24.90	20.65	100.57	5,297	1893.23		1852.50	00.93	00.97	01.90	00.77	02.67	

A-36

AVERAGE COST PER MILE AS OF JUNE 30, 1960

BY MAKE, BY YEAR, BY TRANSMISSION TYPE

(COMPACTS 95 PERCENT NADA WHOLESALE VALUE)

TABLE I

Veh. No.	Make	Size	Cyl.	Type	Radio	Trans.	Year	Operation Costs				Miles	Original Value		Cost Per Mile in Cents					Mi/Gal	
								Fuel	Parts	Labor	Total Opr. Cost		Cost	Date	Value	Fuel	Other Opr.	Total Opr.	Dept.		Total Opr. & Depr.
4	1					1	53	861.63	2798.06	694.66	2225.51	88,735	1162.50		128.80	00.97	01.54	02.51	01.16	03.67	
6	2					1	53	800.86	859.89	592.66	2021.97	85,656	1104.16		131.20	00.93	01.43	02.36	01.14	03.50	
1	2					3	53	1035.95	859.89	849.40	2561.79	106,585	1450.00		156.80	00.97	01.43	02.40	01.21	03.61	
11	1					1	54	818.10	502.66	663.54	2215.03	88,594	1175.00		145.74	00.92	01.58	02.50	01.16	03.66	
34	2					1	54	768.84	404.02	547.10	1932.74	82,358	1178.98		149.36	00.93	01.42	02.35	01.25	03.60	
2	2					3	54	779.68	411.46	677.51	2081.74	67,229	1460.20		195.20	01.16	01.94	03.10	01.88	04.98	
31	1					1	55	837.29	410.70	621.70	2144.01	77,033	1181.40		245.73	01.09	01.69	02.78	01.21	03.99	
51	2					1	55	781.14	399.53	578.20	1985.57	75,551	1256.54		259.39	01.03	01.60	02.63	01.32	03.95	
4	4					1	55	678.34	495.77	697.55	2105.01	60,094	1368.75		231.98	01.13	02.37	03.50	01.89	05.39	
29	1					1	56	785.27	331.75	528.29	1887.28	71,037	1140.61		350.93	01.11	01.55	02.66	01.11	03.77	
150	2					1	56	745.85	334.13	524.60	1812.75	67,399	1171.34		340.65	01.11	01.58	02.69	01.23	03.92	
1	2					3	56	470.70	334.13	729.44	1904.76	58,634	1617.60		457.20	00.80	02.45	03.25	01.98	05.23	
1	4					3	56	613.42	334.13	605.12	2119.38	39,048	1889.40		424.80	01.57	03.86	05.43	03.75	09.18	
1	8					3	56	1093.67	334.13	852.45	3102.93	73,923	1999.00		493.20	01.48	02.72	04.20	02.04	06.24	
8	1					1	57	753.95	425.87	563.74	2037.59	63,266	1539.80		703.42	01.19	02.03	03.22	01.32	04.54	
111	1					3	57	663.69	245.59	442.03	1542.42	52,995	1617.57		801.24	01.25	01.66	02.91	01.54	04.45	
41	2					1	57	692.26	393.64	565.07	1877.04	61,491	1523.66		607.92	01.13	01.92	03.05	01.49	04.54	
52	2					3	57	658.34	270.03	478.66	1630.99	53,393	1646.19		709.80	01.23	01.82	03.05	01.75	04.80	
56	1					3	58	503.05	148.64	337.14	1119.47	43,409	1637.30		1090.12	01.16	01.42	02.58	01.26	03.84	
41	2					3	58	544.43	190.97	344.56	1268.16	40,373	1724.68		1061.23	01.35	01.79	03.14	01.64	04.78	
16	4					3	58	367.66	73.12	244.14	770.13	30,991	1950.60		882.00	01.19	01.30	02.49	03.45	05.94	
10	1					1	59	374.79	93.61	224.92	790.94	34,117	1989.90		1427.55	01.10	01.22	02.32	01.65	03.97	
24	2					3	59	253.87	71.79	163.67	546.91	21,595	1974.90		1427.55	01.18	01.35	02.53	02.53	05.06	
22	5					1	59	257.70	74.62	142.78	523.68	23,442	1686.82		1263.53	01.10	01.13	02.23	01.81	04.04	
94	5					2	59	180.64	38.22	106.59	358.67	18,691	1605.29		1139.25	00.97	00.95	01.92	02.49	04.41	
25	5					3	59	273.07	69.99	199.24	615.50	24,004	1889.00		1376.40	01.14	01.42	02.56	02.14	04.70	
6	1					1	60	96.13	18.38	38.52	157.54	8,946	1952.90		1900.00	01.07	00.69	01.76	00.59	02.35	
25	1					3	60	58.79	7.33	37.69	108.25	5,509	1955.80		1885.75	01.07	00.89	01.96	01.27	03.23	
35	2					1	60	32.30	7.77	20.46	61.94	3,262	1731.38		1656.25	00.99	00.91	01.90	02.30	04.20	
9	2					3	60	45.56	5.11	13.82	65.23	4,010	1851.90		1805.00	01.14	00.49	01.63	01.17	02.80	
45	4					3	60	50.49	4.68	30.42	90.46	4,674	1945.80		1857.25	01.08	00.86	01.94	01.89	03.83	
22	5					1	60	51.30	15.78	25.15	95.89	5,538	1782.76		1679.12	00.93	00.80	01.73	01.87	03.60	

STATE LIBRARY OF IOWA



3 1723 02117 0998