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**A FACTUAL SURVEY OF  
AUTOMOBILE USAGE**



AUTOMOBILE MANUFACTURERS ASSOCIATION

NEW CENTER BUILDING, DETROIT

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# AUTOMOBILE MANUFACTURERS ASSOCIATION

NEW CENTER BUILDING - DETROIT, MICHIGAN

June, 1941

Mr. Leon Henderson, Administrator,  
Office of Price Administration  
and Civilian Supply,  
Washington, D.C.

Dear Mr. Henderson:

In anticipation of the problems in civilian transportation that the defense effort would bring to the motor vehicle user, to business and industry, and to Government, the Automobile Manufacturers Association in the fall of 1940 undertook a factual survey of passenger car use with a view to assembling information that would be helpful to all concerned in dealing with the subject.

Through the U.S. Public Roads Administration and the highway authorities of several States, the Association obtained permission to analyze in detail a group of reports which constitute the most important data yet collected concerning the day-by-day use of automobiles by the public. This was supplemented by a later study undertaken specifically for the Association.

As a result of this cooperation, we are privileged to submit herewith a report of the major findings.

Among the subjects dealt with in this report are these:

For what principal purposes are most of the country's  
26 million passenger cars operated?

To what extent is industrial production, including  
defense, dependent upon their operation?

What proportion of the cars, and how much of their  
mileage, are employed for going to work or on  
business?

What problems of maintenance, repair and replacement  
are indicated for the older cars?

Which occupational groups use the newer cars?

We believe the data presented in this report will be of interest and assistance to you and your associates in the Government who have to do with problems of civilian supply as they relate to automobile use.

Very truly yours,



Alvan Macauley, President,  
Automobile Manufacturers Association

## WHERE THE FACTS WERE OBTAINED

This report embraces findings from three resources:

1. The principal survey covered 76,000 car owners, representing a cross section of 3,400,000 motorists in six representative States.

The information was gathered on questionnaires during the years 1936-1938 by the highway departments of these States, while they were engaged, in cooperation with the United States Public Roads Administration, in making the great highway planning surveys out of which the master plan for future highway development has evolved.

The planning surveys comprehend the whole range of highway transport problems; planning, financing, construction, and use. They are continuing projects, supplying the facts needed to make possible an orderly and efficient development of facilities adequate to the long-range demands of the nation's highway traffic.

The data analyzed in the present report comprise only one segment of the road use section of the studies, which in turn represent but one phase of the planning surveys as a whole.

The six States, which were selected in consultation with the Public Roads Administration, are Connecticut, Georgia, Indiana, Michigan, Nebraska and Oregon.

These were chosen, first, to be as representative as possible of the nation as a whole; and second, to offer the most complete and comparable material for detailed analysis.

Facts were gathered by the State authorities themselves. Information from the State compilations was tabulated and analyzed especially for this report by the Automobile Manufac-

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turers Association. All statistical summaries were submitted for review to the State authorities, and to the United States Public Roads Administration. The conclusions drawn in this report are the industry's own.

2. The second survey dealt with in this report was conducted during the winter of 1940-1941 by the Opinion Research Corporation. It covered the entire country, with a much smaller but nevertheless scientifically controlled sample.

Because of a different method of inquiry, the second survey was able to go further in developing details of numerous driving habits, yielding answers not duplicated in the State reports. The two add up to the same general result. Minor discrepancies, where they exist, are primarily attributable to the fact the Opinion Research poll was made in mid-December, when recreational driving probably was somewhat below average.

3. Supplementing the two special surveys were road use reports from 29 States in addition to the six covered by the detailed analysis. (See Figure No. 1.) These 29 reports, while not analyzed in the same close manner as the six, have produced a broad segregation of automobile driving into business-necessity purposes on the one hand, and social-recreational on the other.

Close agreement on major findings was reached through these three sources, indicating that a perspective of considerable accuracy has been obtained.

## I. The Work Cars Do

Over city streets and the network of roads and highways covering the United States, automobiles last year made approximately 15 billion round trips, for a total of 498 billions of passenger-miles of travel.

From the road use reports of 35 States; from analysis of questionnaires in six regionally typical States, and from a survey made by the Opinion Research Corporation, emerges evidence that:

***1. More than half of that mileage, and three-fourths of those trips, were for purposes connected with earning a livelihood, or closely related economic pursuits, which this report classifies as "necessity driving."***

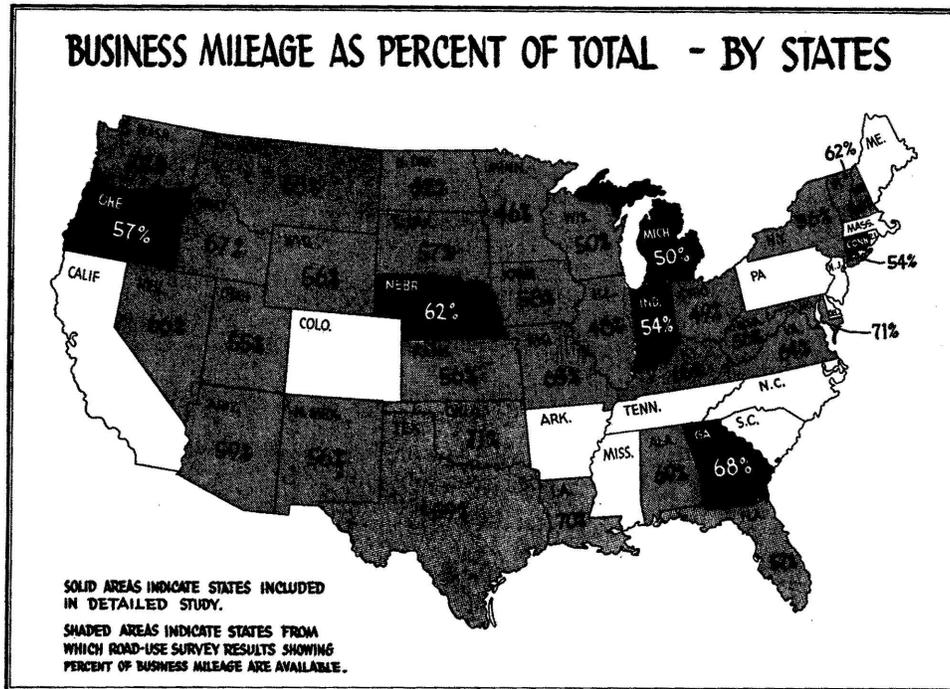
2. Ninety-six per cent of the twenty-six million passenger cars in the country are engaged in that necessity driving.

3. Applied to the estimates of total travel in 1940, this means that private car owners amassed 274 billion passenger miles of necessity usage last year, in more than 11 billion round trips.

These 274 billion passenger-miles, exclusive of recreational driving, are equivalent to almost three and one-half times the total passenger mileage of all other forms of transportation combined. (See Figure No. 2.) The 73 billion estimated for railroads, buses, Pullman cars, airplanes and electric railways, furthermore, include all kinds of travel, recreational as well as business.

Automobile performance records are like fingerprints, in that no two are exactly alike. Each car at the end of a year has its own different speedometer reading of miles traveled, its own individual record of trips made, reflecting the varying distances

FIGURE 1



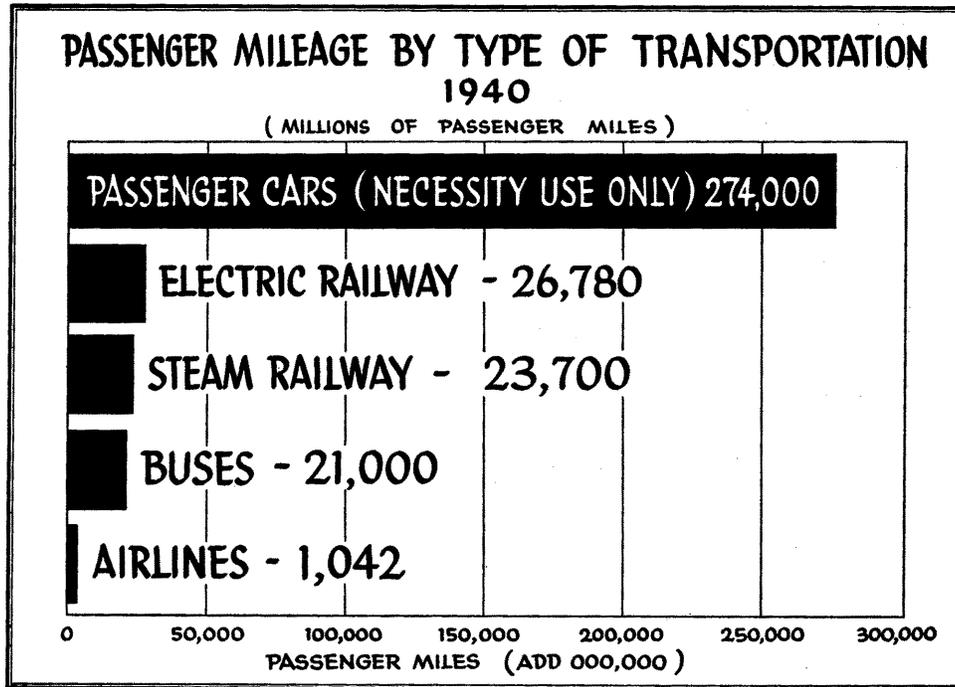
from each other of home, job, school, church, shopping centers and other community institutions as selected by each automobile owner.

Examination of large numbers of car owner's records discloses, however, that despite the individual variations there exist distinct patterns of usage for each car group and each occupational group of owners.

Yet, necessity use was found, in terms of mileage and trips, to predominate among all groups of cars and car owners in the country.

The average annual mileage per car for necessity purposes, for example, was found to range from 46 per cent of total mileage in one State up to 71 per cent of the total in two States, with the other 32 States scattered in between. (See Figure No. 3.) Of the total reporting, 30 States found the average of business

FIGURE 2



mileage to be 54 per cent of the total driving, or more.

The Opinion Research survey reported an even higher percentage of necessity driving for the test week's mileage, but since the count was made during mid-December, a seasonal decline in recreational travel could have affected the result.

Corroborating the mileage records is evidence that necessity objectives are responsible for three-fourths of all trips taken. In the six representative States, the average numbers of round trips per car in a year were:

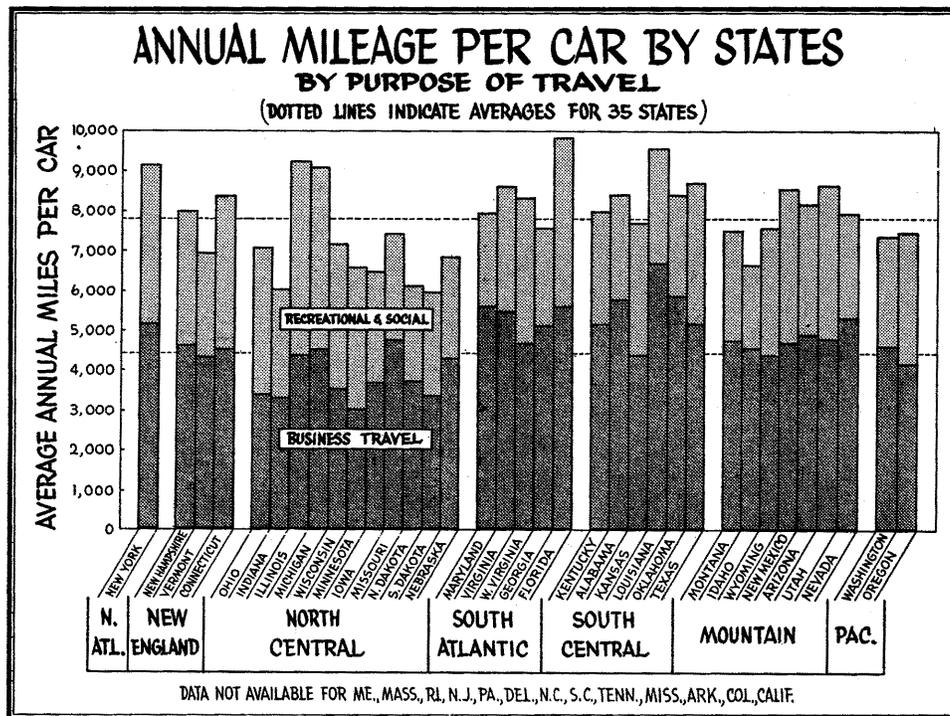
<u>State</u>	<u>Average Total Trips Annually</u>	<u>No. Necessity Trips Annually</u>	<u>Per Cent of Total Necessity Use</u>
Connecticut . . . .	644	487	75.7%
Georgia . . . . .	612	514	83.9
Indiana . . . . .	557	425	76.3
Michigan . . . . .	518	383	73.9
Nebraska . . . . .	541	424	78.4
Oregon . . . . .	487	394	80.9

These two measures of car use, mileage and number of trips, have separate significance.

The amount of mileage driven is the factor that controls gasoline and oil consumption, and to a great extent the wear of the car, repair and parts replacement, tax revenues yielded to Government, and other major economic considerations.

But to measure the need for automobile operation in continuing the present organization of family and individual living, or to meet modifications made necessary by the current national effort for defense, the number of times each day or week or year that a car is driven to the factory, the office, the market or the school, may be found the most substantial yardstick.

FIGURE 3



## II. Most Driving Is Local

The finding that three trips out of every four are for necessity purposes (see Figure No. 4) ties into the conclusion which the Public Roads Administration presented in 1939, in its report, "Toll Roads and Free Roads," to the effect that motor trips in this country are predominantly short and local.

Even outside of cities, it was found, trips less than five miles in length constitute the major portion of all that are made.

Short trips tend to be the frequent ones, closely integrated with routine movement within the community. Longer journeys, on the other hand, are generally less frequent and usually identified with social and recreational uses of the motor car, such as vacation trips, week-end tours, Sunday driving.

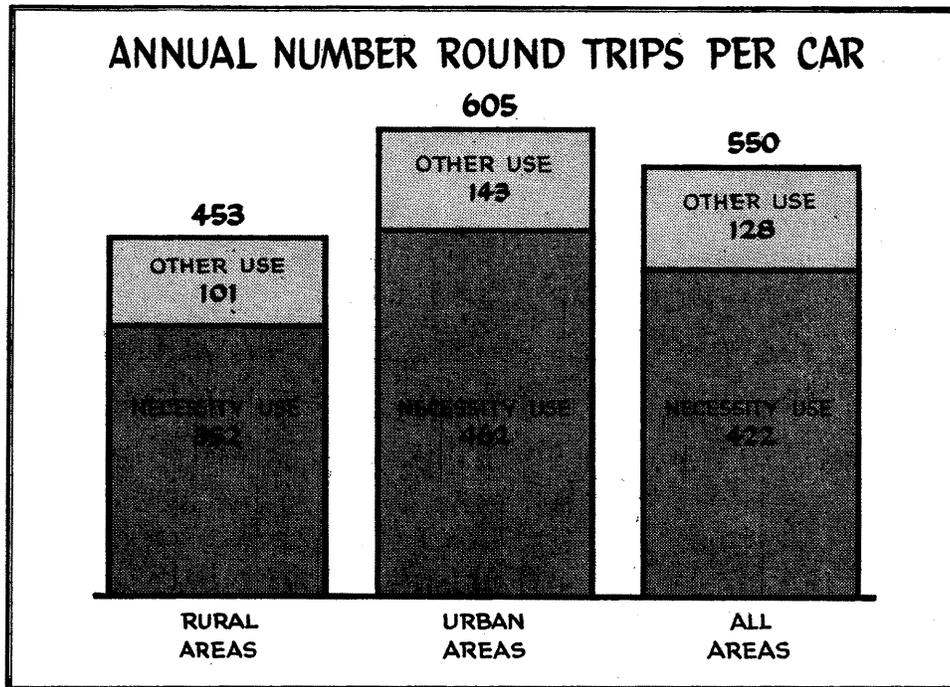
Evidence produced in the present study eliminates need for assumptions. Driving records by motorists in the six key States (none of which, incidentally, was included among those covered by the 1939 report) confirm the fact that the preponderance of short trips represents also a preponderance of necessity driving.

It is now shown that one-third of all car owners make from 200 to 400 round trips a year for necessity purposes. This 200-400 bracket appears to be dominated by cars making one trip per day to and from work, or on business.

Rural and urban areas both show about one-third of their cars in the 200 to 400 trips-a-year class.

Apart from this central third of the cars, one-fourth of all urban-owned cars make more than 600 necessity trips a year. In rural areas only 15 per cent come in this high frequency classification.

FIGURE 4



In urban districts only two cars out of ten report fewer than 200 trips annually for necessity purposes, but two out of five rural cars do so.

Six out of ten cars owned in urban areas are regularly driven to work and back, and of these, 60 per cent are so used once a day.

One car out of every seven used in reaching the job makes between 600 and 800 trips annually for this purpose. This places them in the "twice-a-day" class; whether as workers who return to their homes at the noon hour, or those whose wives or other members of the household may take and pick them up, using the car for other purposes during the remainder of the day.

More than one-fourth of the cars used to get to work carry other workers besides the driver, the Opinion Research survey reports. These cars average approximately five persons for every

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two cars, including the drivers. (For further details on this function of car use, see Chapter VII, Page 27.)

The effect of occupation upon frequency and length of trips is pronounced. The highway surveys found that all of 30 per cent of the farm-owned cars are in the 200 to 400 annual round trip category, and 47 per cent average under 200.

By contrast, only one car-owning physician out of ten reports fewer than 200 necessity trips a year, and 31 per cent—nearly one-third—make more than 1,000. The average length of round trips for necessity driving is 12.5 miles for farm cars, 10 miles for doctors.

Commercial travelers have so much greater trip mileage that, in the five States where occupation of driver was recorded, they average 28.8 miles per trip.

Among commercial travelers eleven per cent report more than 1,000 round trips a year for necessity purposes, while nearly half are grouped between 200 and 600 trips.

The Opinion Research study found that 34 per cent of all cars had made no journey as long as 200 miles during the year preceding the interviews. For another third the longest trip was between 200 and 600 miles.

Approximately three-fourths of all long trips, this survey found, are for social and recreational purposes, but the sum total of trips of 200 miles or more amounts to only 12 per cent of total mileage driven in a year.

### III. Variations by Size of Community

In all groups of communities a fairly regular minimum of “must” service for motor cars is found. While the State reports disclose wide variation between rural and urban-owned cars in total mileage (See table page 14), the average necessity mileage was 4,331 per car registered in unincorporated areas, and 4,636 miles a year in the cities.

Total mileage figures show that the bigger a community, the more miles its automobiles tend to run. Cars owned in the unincorporated areas of 31 States reporting to the Public Roads Administration traveled an average of 6,606 miles annually per car. On the other hand, owners living in the cities of 100,000 population or more, showed an average of 8,994 miles.

But the same reports, and also the analyses of the six-State questionnaires, place a major part of the extra city car miles in the social and recreational column, leaving a considerable uniformity in necessity uses.

The term “unincorporated areas” suggests farm cars. Actually, this population group, as established by U.S. Census Bureau, includes almost as many non-farmers—suburban residents, persons living in small villages or open country but not deriving livelihood from the land—as it does farmers.

Preliminary 1940 Census figures show the movement of population toward suburban areas outside cities proper has been very great in the past decade. The unincorporated county areas surrounding the 92 largest cities increased in population 14 per cent between 1930 and 1940, whereas the cities themselves increased only three per cent.

This decentralization in itself has resulted in additional mil-

lions of persons becoming dependent upon private cars for transportation to jobs, to supply points and for other essential travel.

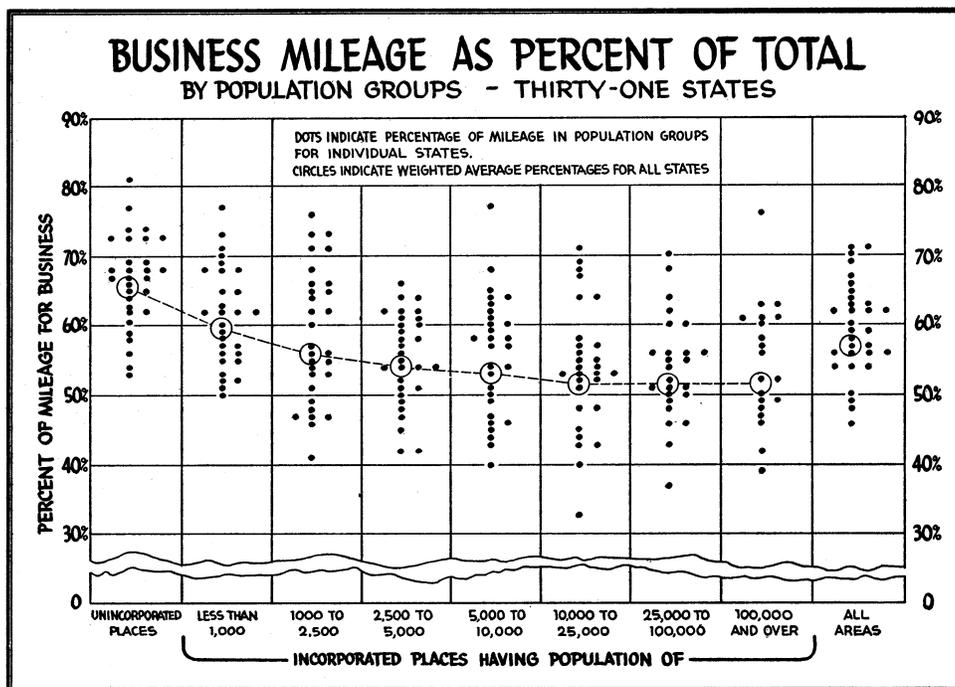
The Opinion Research study concludes:

“So far as automobile-owning families are concerned, the picture of workers’ homes clustered about mill or factory is obsolete. On the contrary, 70 per cent of workers in car-owning families go to work by automobile.”

(In 1936 special traffic studies made in the city of Detroit spotted the point of origin of cars parking in various industrial areas of the city. A very pronounced scattering of home sites and relatively small “colonization” close to places of employment was shown by the resulting charts.)

When the drivers covered by the Opinion Research study were asked how they would get to their jobs is not by automo-

FIGURE 5



bile, 13 out of each hundred said they couldn't go at all. On the assumption, individually, that mass transportation agencies would be capable of carrying them all, half the car owners said they would get to work by bus, street car or train. Only one-third, half of whom live within one to five miles from their jobs, said they would walk.

Necessity mileage among cars owned in the unincorporated areas constituted 65.6 per cent of their total mileage, according to the 31-State data. This is higher than in any other population group. Here is the record, on the basis of averages per car:

<u>Population Group of Place of Ownership</u>	<u>Average Annual Miles Per Car</u>		<u>Necessity Mile- age % of Total</u>
	<u>Total</u>	<u>Necessity Use</u>	
Unincorporated Areas ..	6,606	4,331	65.6
Incorporated Areas With Population of:			
Less than 1,000 .....	7,436	4,404	59.2
1,000- 2,500 ....	7,843	4,399	56.1
2,500- 5,000 ....	8,236	4,431	53.8
5,000- 10,000 ....	8,221	4,363	53.0
10,000- 25,000 ....	8,293	4,267	51.5
25,000- 100,000 ....	8,360	4,311	51.6
100,000 and over .....	8,994	4,636	51.5
All Areas (31 States) ...	7,796	4,417	56.7

The mileage records in Connecticut, Georgia, Indiana, Michigan, Nebraska and Oregon, which are broken down a little more finely to give eleven population classifications ranging from cities over one million population (Detroit, Michigan, only one in sample) down to the unincorporated areas, tell the same story.

Total mileage per car averaged 9,738 for Detroit owners, contrasted with 6,971 for cars owned in the unincorporated

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areas of the six States. But necessity driving was 4,753 and 4,491 per car, respectively.

Thus, while slightly lower, necessity mileage is a greater part of the total among owners at the rural end of the population scale than in the large communities (See Figure 5).

In almost all cities, local transportation has become primarily automotive. A recent summary brought together by the Automobile Manufacturers Association found that in cities up to the 500,000 population class, as many as 70 per cent or more of the people entering the business sections of the city on a typical day (excluding pedestrians) do so by private automobile. Another survey disclosed that there now are 2,100 American towns and cities, ranging in population from 2,500 up to the 25,000-50,000 class, which have dispensed with, or have grown up without intra-urban mass transportation systems of their own. Their combined populations of 11,844,000 persons depend, for routine movements other than afoot, upon private cars.

All the findings and surveys come together on the fact that, with all of the variations in mileages and trips, automobile travel in communities of all sizes, from farm to village to town to metropolis, is preponderantly for necessity purposes.

## IV. Effects of Occupation on Car Use

While mill workers, doctors, salesmen, and farmers all have different objectives in their automobile driving, it would be difficult to single out any one group of owners to say they have more or less need for their cars than the others.

In the analysis of the questionnaires from five of the States (Connecticut did not record occupational data), it was possible to sort out seven broad occupational classifications, which cover more than half of all car owners interviewed.

The groups are farmers, industrial and construction workers, commercial travelers, physicians, lawyers, real estate and insurance salesmen, and other salesmen (unclassified but not including retail clerks).

Since the questionnaires were not originally intended to produce exact occupational classifications, the samples were not balanced to produce a conclusive statistical verdict. However, important general facts stand out. Occupations divide owners into two broad groups, each with distinctive driving characteristics. (See Figure No. 6.)

The first group, including the owner whose work is on the farm, in the factory, or on some other job which ordinarily does not require him to use his automobile during production hours, has an annual mileage near or below the national average. Car owners in this group use their vehicles to get back and forth to work, to reach stores and schools and churches, but do not regularly drive them during the course of their daily work.

The second group, which has an annual mileage far above the average, covers exactly those occupations which may be logically expected to involve use of a car regularly in the conduct of a business or profession.

The traveling salesman's average annual mileage is shown at 18,791 miles, or more than double the average per car of all drivers. But the average for medical men also is very high, and doctors top all the analyzed occupations in the number of round trips, having an average of 947 trips yearly per car.

The legal, insurance and real estate groups and unclassified salesmen also are found in the high mileage class.

Below is the comparison of total miles driven annually per car, analyzed by occupations:

<u>Occupation</u>	<u>Average Annual Mileage Per Car</u>
Commercial Travelers .....	18,791
Physicians .....	12,932
Legal Profession .....	12,898
Insurance-Real Estate Salesmen .....	12,618
Salesmen (unclassified) .....	12,303
Workers .....	7,657
Farmers .....	5,750
All Other Occupations (*) .....	8,650
Average Mileage, All Groups .....	8,139

(\*) A cross-section of car users, whose occupational definition was not susceptible to accurate classification.

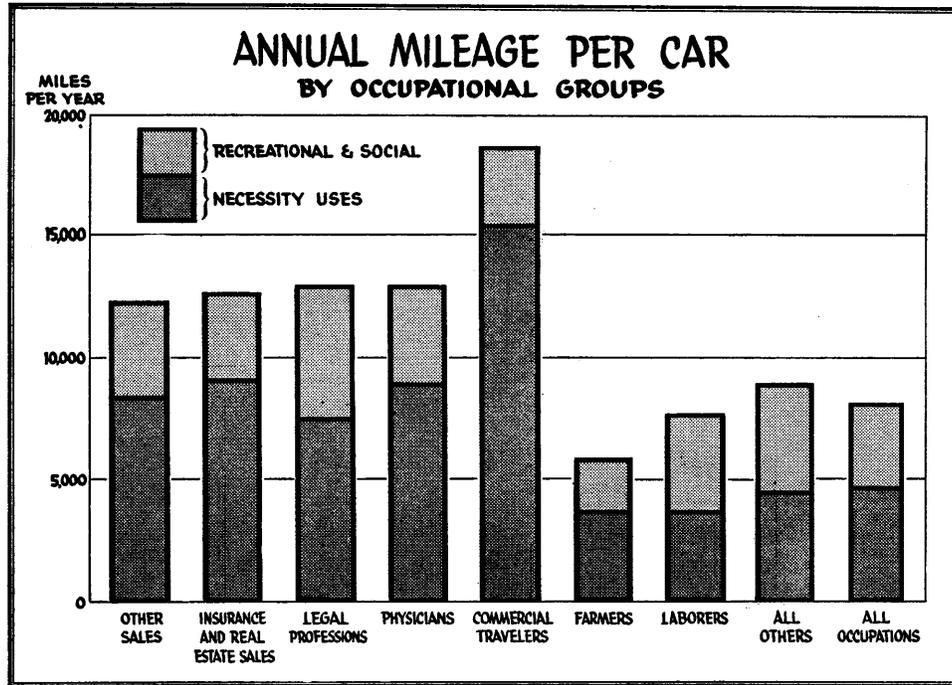
In every group listed above, necessity driving claims half or more of both mileage and number of trips. Here is the record:

<u>Occupation</u>	<u>Necessity Mileage Per Cent of Total</u>	<u>Necessity Trips Per Cent of Total</u>
Commercial Travelers .....	80.9	86.5
Physicians .....	66.8	89.0
Legal Profession .....	61.6	77.4
Insurance-Real Estate Salesmen .....	71.8	85.8
Other Salesmen .....	66.6	81.5
Workers (industrial and construction) .....	49.4	72.3
Farmers .....	66.8	78.3
All Others .....	50.7	76.6

Part of the reason for differences in total mileage among these groups is undoubtedly economic.

The data in this survey do not directly reflect income dis-

FIGURE 6



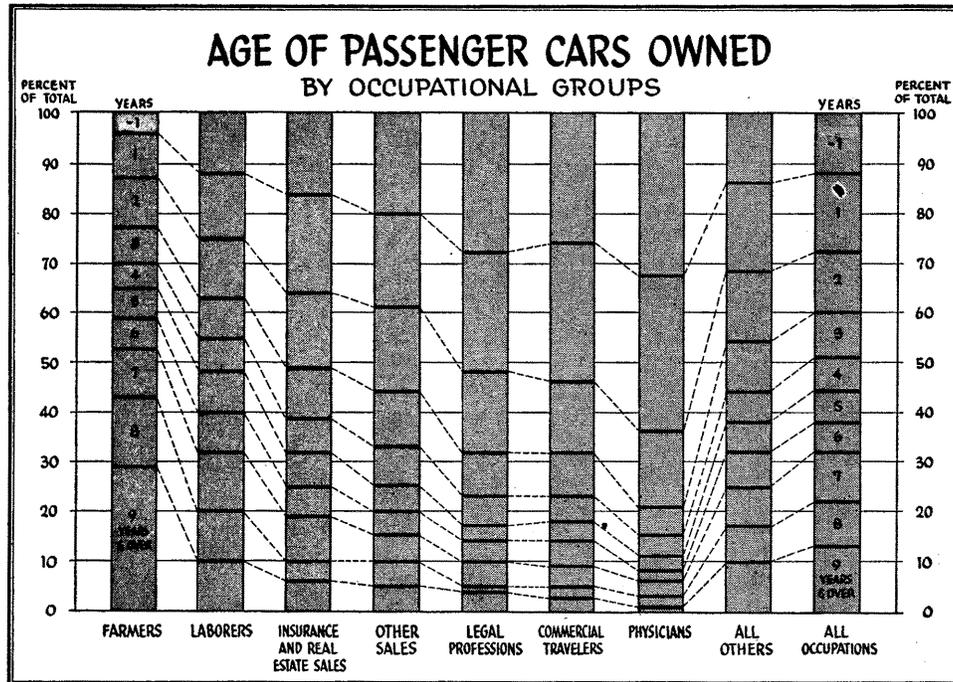
tribution. (See Figure No. 7.) A factor of importance is that the information was collected before the pressure of defense production stepped up the use of cars by industrial workers and others who now are employed more days per week and year.

Two of the occupational groups singled out in the State surveys, farmers and physicians, although at opposite ends of the driving scale, present an interesting comparison.

While the doctors' annual total of 12,932 miles per car is more than twice as high as the 5,750 miles driven yearly by the farmer-owned car, and the doctors reported 947 round trips a year, which is two and a half times the 392 trips averaged by the farm car, on a percentage basis 66.8 per cent of the doctor's mileage, and 66.8 of the farmer's mileage—exactly the same figure for the five States surveyed—are for economic purposes.

On a trip basis, the physician's necessity use runs up to 89 per cent of the total, since a doctor is called upon to go out at

FIGURE 7



all hours of the night and day. But the relative frequency of business trips for the farm car is impressive too—four out of five trips are for necessity purposes. (\*)

The Opinion Research Corporation survey yielded a similar picture on a national scale, although the methods of occupational classification were so different that direct comparisons can not be made. It was found that among farmers the principal necessity usage is for business trips and shopping. Wage earners, in general, travel the longest distances in reaching their job. And the only car owner groups found driving primarily for recreational and social purposes are retired persons, widows, students and domestic workers.

(\*) The survey found that 98.4 per cent of farmer-owned cars are operated in part or entirely for business purposes. A survey conducted in Illinois, Iowa, Nebraska, Kansas and Missouri by the CORN BELT FARM DAILIES, showed that 98.9 per cent of the farmers surveyed purchased their cars either for business use, or for business and pleasure combined.

## V. The Doctor's Car—An Occupational Case Study

Group-average figures do not wholly spell out the picture of car operation from an occupational standpoint.

The five-State sample of medical men's cars was found to be sufficiently compact to make possible a more detailed distribution. Here are the results:

Nine out of ten doctors who own automobiles use them in their professional work.

Out of every 100 who so use their private automobiles (See Figure 8):

Sixteen have more than 1,500 trips annually for necessity driving.

Fifteen make from 1,000 to 1,500 trips per year.

Ten report from 800 to 1,000 round trips.

Twenty-eight range from 400 to 800 trips annually.

Twenty-two list from 200 to 400 round trips—(this contains the once-a-day group, where presumably a round of patients is visited in a single trip).

Nine report fewer than 200 round trips a year.

Judged by the frequency of use, the doctor's car is as much a part of his professional equipment as a stethoscope or thermometer.

For all car-owning physicians, the average number of round trips annually was found to be 947, of which 842, or 89 per cent, are credited to professional and other necessity purposes. This is the highest occupational group average found in the surveys.

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The great bulk of these trips is concerned with transportation to and from the office, and on professional calls. The average was 808, which is equivalent to slightly more than 15 round trips a week.

It was found that in the rural areas, one-half of the necessity trips made by doctors averaged more than 15 miles in length. In the larger cities, four out of ten cars average this distance.

In the small towns, where distances are relatively less, a higher proportion of the doctor's trips are shorter. The following table records the percentage distribution of trip length by size of community:

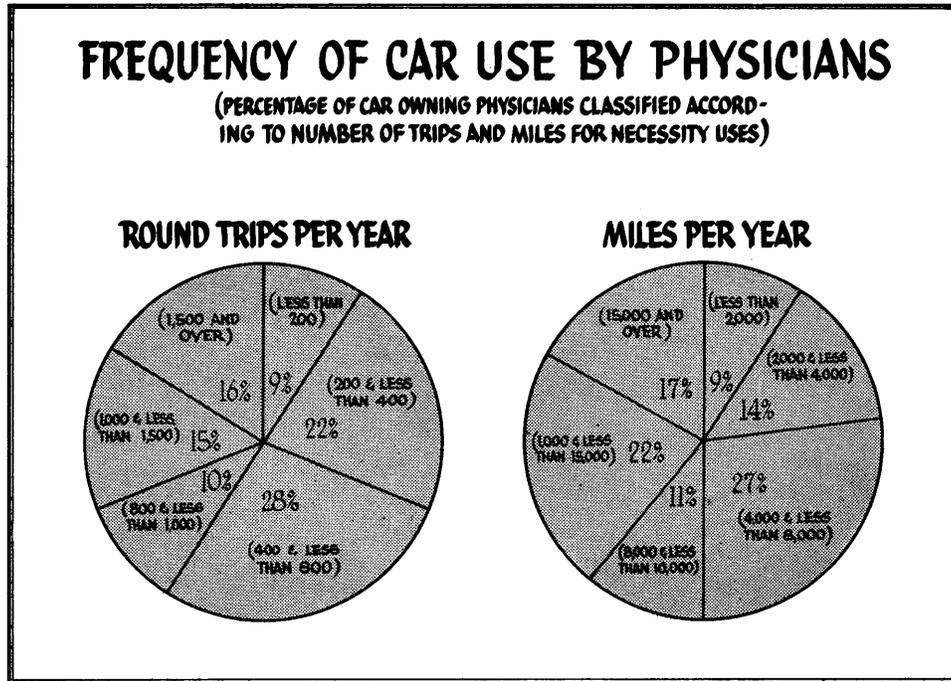
Aver. No. Miles Per Round Trip	Rural Areas	1,000 to 5,000	5,000 to 25,000	25,000 to 100,000	100,000 and Over	Average for All Areas
Less than 5 . . . .	7%	17%	41%	20%	6%	17%
5 to 10 . . . . .	29	20	25	21	26	24
10 to 15 . . . . .	14	28	13	16	28	21
15 to 20 . . . . .	12	5	8	9	12	10
20 to 25 . . . . .	14	8	3	4	13	9
25 or more . . . .	24	22	10	30	15	19

As might be expected from this record, the mileage of doctors' cars ranks high among all groups of car owners. The average distance traveled in a year was shown to be 12,932 miles per car, of which necessity driving accounted for 8,640 miles. Most of this—8,428 miles—was in calling on patients, or in reaching the office or hospital from home.

In towns ranging in population from 5,000 to 25,000, doctors reported lower mileage, following the trend which is typical of all cars in such communities. But the frequency of trips is higher in the smaller towns.

Although the doctor uses his car nine times for necessity transportation for every social and recreational trip, the latter

FIGURE 8



is likely to be three or four times longer. The average length of pleasure trip for doctors seems to be 40 miles, compared with general average of 10 miles per trip for all necessity driving. But all of his social and recreational driving combined adds up on the average to only 4,292 miles a year, less than a third of his total.

## VI. Effect of Car Age on Use

In the life cycle of an automobile the number of miles traveled (See Figure No. 9) and of trips made declines sharply with the advancing age of the car.

During its life span, a typical car changes hands two, three or more times, often moving from one occupational group to another.

Occupations which require high mileage and constant use tend to have new or "young" cars, trading frequently.

Eighty-nine per cent of doctors' cars at the time of survey were found to be less than five years of age, and 33 per cent were one year old or less.

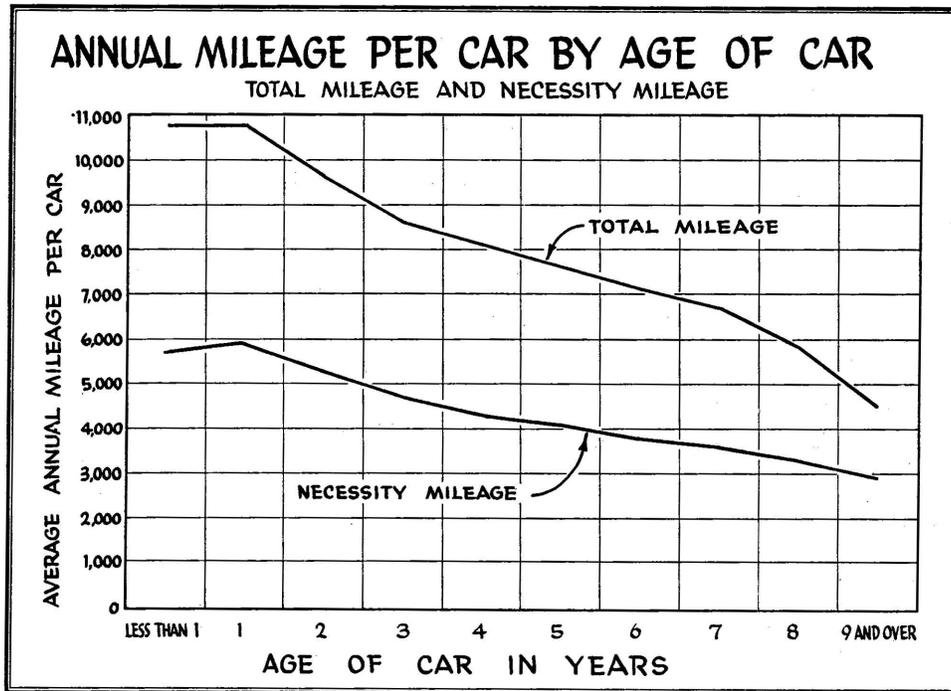
In the six-State surveys, new cars which had been in operation one full year were found to be driven on the average of 10,768 miles annually. But vehicles nine years old or older average only 4,770 miles a year. Intervening ages show a progressive decline.

But in general the cars which are nearing the end of their operating life show a much higher ratio of necessity mileage and trips.

Here is the record from the six-State analysis:

<u>Age of Car</u>	<u>Average Annual Mileage</u>	<u>Necessity Miles % of Total</u>	<u>Average No. Round Trips</u>	<u>Necessity Trips % of Total</u>
1 year . . . . .	10,768	54.7%	619	77.0%
2 years . . . . .	9,628	54.7	620	77.5
3 years . . . . .	8,592	54.2	593	77.2
4 years . . . . .	8,106	53.5	604	77.6
5 years . . . . .	7,624	52.8	545	75.2
6 years . . . . .	7,083	53.0	524	74.8
7 years . . . . .	6,718	53.9	496	75.5
8 years . . . . .	5,804	56.6	468	77.1
9 and over . . . . .	4,770	61.2	417	78.5

FIGURE 9



The noticeable jump in percentage of necessity usage for cars nine years old and over suggests that among those of extreme age the ratio may approach 100 per cent.

Records for the decade ending with 1939 show that during that time 85 per cent of all new cars sold at retail were absorbed as replacements for scrapped vehicles.

During the depression decade, when the combined registration of cars and trucks averaged approximately 27,000,000, the number of new vehicles per year required to replace scrapped units averaged 2,388,184. ("Automobile Facts and Figures," 1940, page 7.) At the present time the automotive transport system is based upon the operation of approximately 26,000,000 passenger cars and 4,000,000 trucks.

Estimates as to the production of new units required to maintain existing rolling stock commonly are based on the

assumption that the rate of retirement of worn-out cars is the same today as it was during these previous years. That may be unduly conservative, since the registration figures as of July, 1940, showed that one car in four was nine years old or older.

Eighteen per cent of all cars in use were 10 years old or older; 12 per cent 11 years or older, and six per cent 12 years or older. More than four and one-half million passenger cars in service were manufactured prior to 1931.

Following is a tabulation of the ages of cars in use July 1, 1940, and their percentage ratio to the total number of passenger automobiles registered:

Year of Manufacture	Number in Use <sup>(1)</sup>	Per Cent of Total Cars		Age of Car in Years
		Simple	Cumulated	
1940	.... 2,321,239	9.15	100.00	Less than 1
1939	.... 2,422,671	9.55	90.85	1
1938	.... 1,745,888	6.88	81.30	2
1937	.... 3,498,466	13.79	74.42	3
1936	.... 3,233,875	12.75	60.63	4
1935	.... 2,220,362	8.75	47.88	5
1934	.... 1,696,971	6.69	39.13	6
1933	.... 1,250,152	4.93	32.44	7
1932	.... 864,957	3.41	27.51	8
1931	.... 1,438,197	5.67	24.10	9
1930	.... 1,483,787	5.85	18.43	10
1929	.... 1,674,351	6.60	12.58	11
1928	.... 773,170	3.05	5.98	12
1927	.... 302,555	1.19	2.93	13
Prior to 1927	.... 441,333	1.74	1.74	14 and Over
Year Not Given	. 188,489	—	—	
Total—All Cars	<u>25,556,463</u>	—	—	

(1) As of July 1, 1940—Data from R. L. Polk & Co. as shown in “Automotive Industries” issue of March 1, 1941.

The large proportion of the rolling stock which is near the end of its practicable operating life includes the cars that, as a group, average six miles out of every ten, and eight trips out of ten, on necessity travel—going to work, marketing, etc. Owner-

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ship of these cars appears from registration data to be quite largely among farmers.

The armament production program has added very materially to the number of men going to work; in many cases has increased the distances they have to travel; while defense plant locations are in many cases not reached by adequate mass transportation. New cars and old, efficient or inefficient, are now harnessed in great numbers to an increased load.

Extent to which cars, regardless of age, are integrated as essential equipment in the daily lives of millions of persons, is reflected in the Opinion Research Corporation answers to inquiries as to what car owners themselves think about their driving.

It was learned that more than half regard their cars as indispensable for going to work or out on business, with a substantial portion concluding: "Oh, I couldn't make out at all without a car."

## **VII. Major Purpose of Driving — Making a Living**

Singled out from the total of necessity uses, driving to work and using the car on the job account for roughly one-half of all automobile usage in the United States. These two objectives consume more mileage than all social and recreational travel combined. (See Figure 10.)

The Opinion Research poll found that 64 per cent of all cars are used for travel to and from places of employment to a greater or less extent. Half of all cars are used for this purpose regularly.

The same survey disclosed that 56 per cent of all cars are used on business trips, nine out of ten of these at least once a week, and six out of ten every working day.

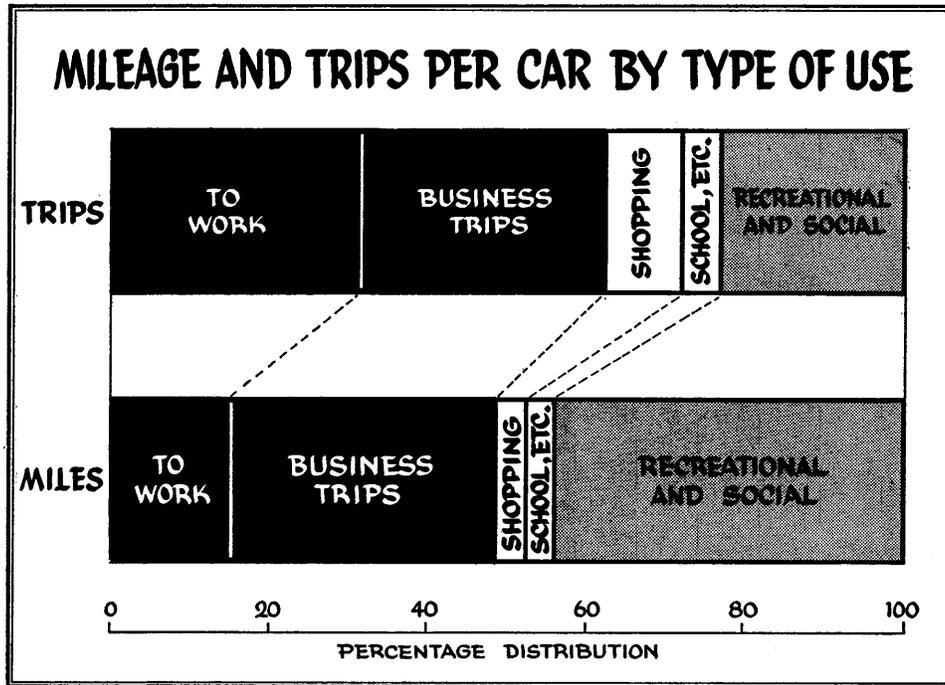
In conducting that poll, the interviewers paid careful attention to the distinction between these two types of driving.

This distinction was not particularly important in the State road use questionnaires, and in replying many motorists are believed to have interpreted "business trips" to include driving to place of business. Hence driving on business probably is overstated in the results, at the expense of the "driving to work" classification.

But when the two are combined, the State surveys corroborate the Opinion Research findings to show that the driving in connection with making a living is the major purpose of automobile travel.

The six-State analysis discloses that driving to work and on business together account for approximately three out of every five trips made by all cars (See Figure 10), while only one trip

FIGURE 10



out of five is devoted to social and recreational purposes. The fifth trip is for marketing, going to school or to church, or to a transportation terminal.

In Connecticut, driving to work and on business accounts for 55 per cent of total trips. The corresponding percentages are 59 per cent in Georgia; 69 in Indiana; 60 in Michigan; 61 in Nebraska, and 65 in Oregon.

The surveys were made during a period of much lower employment than at present, yet the number of round trips per car for driving to work and on business averaged 352 annually in Connecticut; 361 in Georgia; 385 in Indiana; 311 in Michigan; 386 in Nebraska, and 318 in Oregon.

## VIII. The Family Shopping by Automobile

Six out of seven automobiles today are used for family shopping. Almost all of these are so employed at least once a week, and two-thirds of them oftener. (See Figure No. 11.)

The Opinion Research study indicates that a full 14 per cent of all the 23 million private car owners in the country (3,000,000 cars are believed to be owned in multiple-car families, commercially, or by government) might have to abandon their present principal purchasing locations, or move their homes, if for any reason they should be deprived of automobiles. That means approximately three and a quarter million families.

Distance between home and store is a dominant reason for this. Only nine per cent would abandon shopping centers they now use which are one to two miles from home, but 22 per cent of those who depend on stores five to eight miles from home state they would have to give them up. Thirty-one per cent of those who drive more than eight miles for their shopping say they would not be able to continue using present marketing points without their cars.

Two-thirds of the car owners do their principal marketing two or more miles from home. Forty-five out of each hundred travel three or more miles, and thirty out of each hundred drive five miles or more to shop.

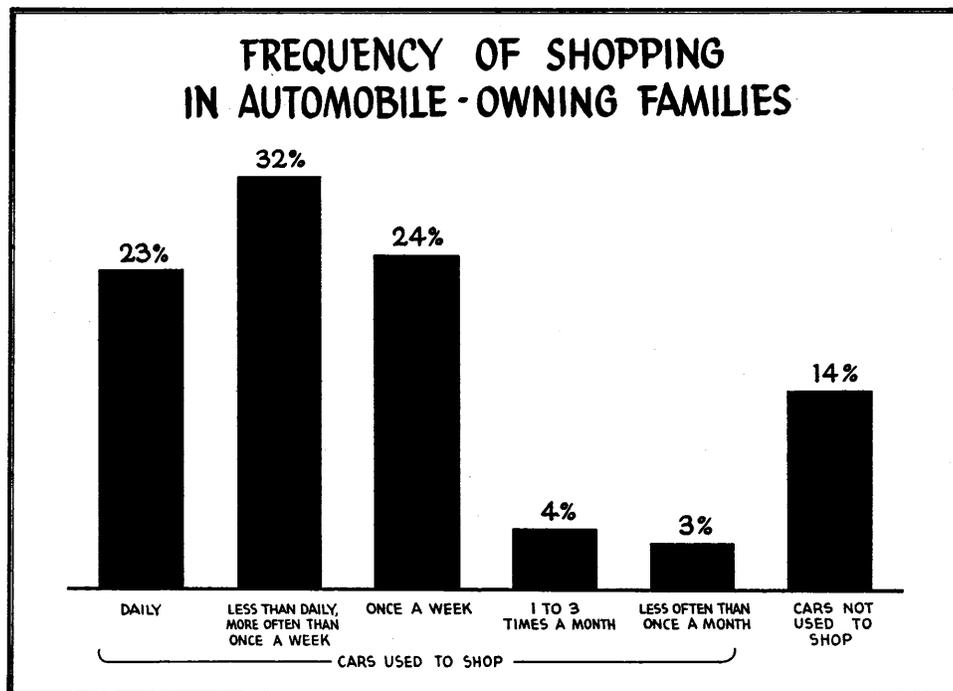
Farmers lead in dependence on the automobile for marketing. Of the one in twelve cars that, according to their owners, are used more for marketing than anything else, 61 per cent are farm cars. One-third of the surveyed farm car owners report that without cars they could not get to their present supply points at all. Another ten per cent could do so as long as the farm truck remained in commission.

An important factor in the market picture is that fully a third of all car owners habitually drive to at least one secondary shopping point. Of these, three out of ten say the secondary market is from eight to 18 miles from home. Seven per cent, roughly one out of every fourteen cars in the country, go more than 30 miles.

In part these long shopping distances reflect the movement to suburban zones that has developed during the past decade.

It is a significant fact that the 1940 U. S. Census of Population finds that the non-urban population of the country is now made up almost equally of farmers and non-farmers. The latter, whether living in open country, incorporated or unincorporated villages and satellite towns around big cities, number more than 27 million.

FIGURE 11



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Results of the six-State highway surveys tend to support these findings from the Opinion Research poll, but do not present exact records of shopping mileage and trips.

In part this is because much driving has more than one necessity purpose. For instance, the father enroute to work may take the children to school, and on the way home may stop to pick up the groceries. But in filling out questionnaires for the State surveys, owners in numerous cases recorded only the major purpose of each trip. Hence these surveys produced only "minimum" records of mileage and trips for shopping purposes.

The Opinion Research poll, on the other hand, recorded a test week of driving in mid-December, when the ratio of shopping mileage probably was higher than average. Its findings of 11 per cent of all mileage devoted to family shopping may be regarded therefore as a "maximum," and the correct measure probably lies between that figure and the six-State survey average of four-plus per cent.

The latter, by itself, is equivalent to one mile of shopping travel for each car in the country each shopping day.

## **IX. Hauling and Other Uses**

Related to shopping is a type of automobile use defined in the State questionnaires as “hauling and to market.” This is predominantly farm driving.

Nine out of every hundred farm passenger cars are used for this purpose.

One half of the farm cars so used, engage in hauling once a week or oftener. One car out of ten makes more than 300 round trips a year, and one in six makes between 100 and 200 a year, or two to four a week.

These trips average 12.6 miles each. Very few of these cars travel more than 2,000 miles annually for this purpose—only 18 out of 100—but another 19 per cent average 1,000 to 2,000, and 46 per cent pile up distances between 200 and 1,000 miles.

Other groups of owners also use their cars for hauling on an occasional basis.

Two per cent of wage earners' cars, three per cent of cars owned by the unclassified group of salesmen, two per cent of commercial travelers' cars, show such driving.

Cars owned by skilled craftsmen of various trades, carrying their tools or materials to the job, and those of salesmen carrying samples evidence this hauling function performed by many automobiles.

## **X. Taking the Children to School**

One in every five automobiles is used in driving to and from school, according to records of two States, Connecticut and Georgia, which were specially analyzed as to school driving.

The average round trip for this purpose is 5.9 miles. Three out of four cars used to transport children to school report average trips of more than two miles in length, and over half of them average four miles or more per round trip.

The annual school mileage for automobiles so used is 795, or ten per cent of their total driving for the year.

School driving is found in the cities as well as in rural areas.

The Opinion Research survey found that, on a country-wide basis, one third of the families having children of school age use their cars frequently for this purpose.

In answering the State questionnaires many motorists appear to have failed to report secondary purposes of their trips. Therefore, in general, figures on school use appear to be on the conservative side since the youngsters often may ride with the father en route to work, or with the mother making a shopping trip.

The role of the private family car is auxiliary to the great school-bus systems which carry three and a quarter million children each school day.

It is a substantial auxiliary, however, since all the cars reporting use for this purpose average 135 school trips a year.

## **XI. Driving by Days of the Week— Use of the Car for Church**

With one-half of all automobile mileage chargeable to purposes of making a living, the distribution of necessity driving of all sorts over the several days of the week acquires importance.

This phase was inquired into by the Opinion Research study, and the following distribution was found:

Monday through Friday: 65 per cent of all passenger car mileage is tied up with earning a living.

Saturday: 45 per cent of mileage used going to work or on business, but 22 per cent used for shopping, against half as much shopping mileage on other week days.

Sunday: Despite the fact that this is the day when much of the recreational driving is done, 21 per cent of the total recorded was devoted to purposes connected with work.

This survey was made before the systematic effort to extend the 40-hour work week and eliminate the week-end "blackout," so that an allowance needs to be made for the increasing number of Saturday and Sunday working shifts.

In making the six-State analysis, mileage involved in driving to church was also recorded, with the finding that this use is important, both in mileage and frequency of trip, to one-fourth of the cars surveyed.

Average length of the trip to church for all six States is 5.1 miles.

Of the owners who use their cars to take themselves and families to Sunday worship, exactly one-half were found to average between 50 and 60 round trips a year. This represents a regular use, Sunday after Sunday.

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Another twenty per cent of the cars driven to church were found to average in excess of 60 trips annually, and 30 per cent averaged less than 50. These ratios apply, with minor variations, throughout occupational and population groups studied.

However, the automobile is more important for church-going to farmers than to other groups studied.

Three out of ten farmer-owned cars are used for this purpose, and a quarter of these have more than 500 miles of church driving annually, reflecting the relatively greater rural distances.

Forty-three per cent of the farm cars which are driven to church average between 50 and 60 round trips a year.

