

conveniences in the house as well as for improvement in the structures. For example, the average value of the farm dwelling in Michigan in 1930 was only \$1,657. Only 24.1 per cent of all the farm houses in the state had water piped into the house. Water piped into the bathroom was absent from many houses for in 33 counties less than 5 per cent of the farm dwellings were equipped in this manner and in only 22 of the 83 counties did the percentage exceed 10. Approximately one-fifth of the farm dwellings were lighted with electricity in 1930. Corresponding information is not available for dwellings of urban families. In all probability they are more adequately equipped with modern conveniences but are much more likely to have the disadvantage of overcrowding.

Home Ownership by Michigan Families

Home ownership has been accepted as a desirable status for the family but in Michigan only 58.1 per cent of the families owned their homes in 1930. For rural farm families the percentage of ownership was 77.7, for non-farm families it was 57.4, and for urban families it was 51.3. Home ownership is a worthy goal but for various reasons it cannot be attained by families with low or uncertain incomes. It is therefore necessary to do everything possible to provide less expensive and more adequate housing facilities for a large number of families who are renters. The solution of this problem cannot be left to trial and error. Social planning on a national, state, and community basis is necessary. Already the National Government has recognized this problem and provided some financial assistance. It is to be expected that states and communities will cooperate in the endeavor to provide living conditions which will at least meet minimum standards of health and decency for the low income groups of the population.

Unemployment a Serious Problem

Another problem is unemployment. This subject will be treated in a following chapter so it suffices to say here that family life cannot thrive under a condition of extreme insecurity. Regular employment is needed. When this is not possible, unemployment insurance or some other economic provision for family income is necessary to prevent family disorganization and maladjustment. A majority of urban families especially are dependent upon a wage system and if it fails some substitute must be found for it.

Destructive Influences Affecting Family Life

Intemperance is another social problem that seriously affects family life. Under intemperance such matters as excessive drinking,

gambling, and drug addiction should be mentioned. These forms of intemperance are detrimental to family life because they deplete its economic resources, encourage unfavorable moral conditions, and cause a deterioration of personality in the persons indulging in intemperance.

Such destructive influences have led, as may be expected, to the extreme disorganization of many families through divorce or desertion. In 1887 the census statistics report that the divorce rate for Michigan was 0.47 per 1000 population, whereas in 1932 it was 1.5 per cent.² No statistics for desertion are available on a broad basis as often this form of family disorganization does not become a matter of record.

It has become evident in recent years that the legal causes of divorce are not necessarily, and frequently are not, the real causes. The real causes lie much deeper in human motives and are the result of a complex network of influences. Since this is true, it is impossible markedly to reduce the divorce rate by the passage of laws prohibiting divorce or limiting the legal grounds for obtaining it. It has become increasingly evident also that divorce does not erase family maladjustments. It is only one means of trying to adjust to them. If a divorce occurs it creates other problems such as economic provision for the family, marital adjustments of persons who are divorced, and possible loss of social status. Similar results follow in the wake of desertion, though there is the possibility that in some instances the family can be reestablished.

Constructive Influences Affecting Family Life

Fortunately there are certain constructive influences promoting the well-being of family life. Child study clubs have been organized in numerous communities. There is a growing recognition of the relationship and interdependence between the home and the school. Welfare agencies dealing with family problems are becoming more effective in their work. A few communities have established family guidance bureaus to give counsel and instruction regarding family affairs. Lastly, there is a growing recognition of the importance and advisability of instruction in problems of marriage and the family in high schools and colleges. This may prove to be one of the most important changes affecting family life in the present generation.

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CHAPTER SEVEN

THE COMMUNITY

by C. R. Hoffer

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The Community Helps to Determine Behavior

The community can be and most frequently is considered as a group of people with common activities and interests living in a definite contiguous area. It is thus a social unit created partly by natural factors such as topography, soil, and distance and partly by social factors like race, nationality, customs, traditions, occupational activities, education, and religion. The interplay of these various forces creates what is known as community life, that is, common activities and experiences of the people. Out of these experiences attitudes and ideals develop. Thus it happens that the community is very important in the determination of behavior. In general, individuals tend to accept standards of conduct which prevail in their communities. To the matrix of community life each individual makes his or her contribution, but the framework of his ideals is fashioned in a community environment.³

Community Influences Are Important in Adjustments to Social Changes

The role of the local community in a changing civilization can scarcely be over-estimated because in community groups such as Parent-Teacher Associations, study clubs, and others, changes in social conditions may be evaluated and interpreted so that they will be more likely to promote rather than to retard human well-being. Wherever a well developed community life prevails social changes seldom produce derogatory effects. It is especially important in a nation devoted to the principles of democracy in government and other phases of social organization that community life be maintained and developed, for through its influence self-reliant, dependable citizenship is created. In order even to have a democratic government, the determination of broad social policies must be made by the citizenry. All institutions and agencies in the community, through intelligent direction, can contribute to this end. One reason in favor of the formation of a community school district, as recently advocated, is the fact that such a district facilitates the cooperation of community agencies. Such a school can more effec-

tively work with agencies of trade, religion, and recreation in promoting a well developed community life. In concrete terms, such a district will ordinarily include a corporate village, town, or city, the suburban fringe adjacent to it, and the rural families related to the incorporated area through trade and various other social contacts. Preliminary surveys in selected areas in Michigan show that these communities actually exist. But, pending the development of such a school district, there is nothing to prevent any school under its present system of organization from stimulating interest in community development.

Changes in Community Life Are Inevitable

There are certain processes in community life which need to be more generally recognized. One of these is the phenomenon of social change. Community life is never static. Changes are constantly occurring. A major influence in creating social change is invention. For example, the effect of the automobile, along with other means of transportation and communication, has been far-reaching. Before the era of the automobile, communities were in a large measure self-sufficing and each, therefore, controlled in a larger measure than it does now its ultimate destiny. The automobile has given families a means of going beyond the boundary of the local community for trade or recreation. As a result trade facilities of the smaller communities have changed. However, assuming a stable economic base, there is no evidence in Michigan, at least, to indicate that small trade centers forming the nucleus of community life will pass away. *Table 17* supplies the statistical evidence for this statement.²

TABLE 17.—Increase or Decrease of Population in Rural Trade Centers from 1900 to 1930²

Population of Trade Center	No. of Trade Centers in Group (1930)*	No. Trade Centers Increasing in Population	Average Increase Per Trade Center	No. Trade Centers Decreasing in Population	Average Loss Per Trade Area	Net Increase of Population for Each Group
5,001—10,000.....	20	19	2,491	1	6,182	41,151
2,501—5,000.....	25	19	1,365	6	562	22,559
2,001—2,500.....	16	14	889	2	102	12,243
1,501—2,000.....	26	23	672	3	172	14,945
1,001—1,500.....	60	44	365	16	154	13,598
501—1,000.....	95	62	309	33	161	13,831
1—500.....	138	77	202	61	129	7,598
Total.....	380	258	589	122	213	121,026

*Suburban centers are excluded.

While it is true that some trade centers decreased in population, as the foregoing table shows, they did not pass out of existence. In

most instances, the decrease in population was comparatively small and was associated usually with a decrease in the population of the surrounding rural area. The one instance of a town in the 5,001-10,000 group having a decrease of over 6,000 is explained by the fact that in 1900 this was an important center for the lumber industry which since that date has disappeared.

With a Decrease in Trade Facilities, Schools and Other Institutions Have Become More Important

Merchandising services in rural trade centers have been limited in variety and number, but those agencies offering goods or services needed regularly by the population in the community remain.² As a result of this decrease in services of trade, other agencies like the school and the church have increased in their relative importance in the control of community life. This change is especially noticeable in rural or semi-rural communities.

Communities Need a Stable Basis of Economic Support

Changes affecting the economic basis of community life constitute another important influence. This is most clearly illustrated when the source of economic support of a community disappears entirely, as, for example, when a lumbering community declines with the depletion of timber supply or when a mining community becomes stranded because the mines cease to be productive. Ordinarily a single-industry community is in more danger of such a catastrophe than one with diversified industries. Agricultural communities, it may be pointed out, are fortunate in having the advantage of a dependable source of income though the amount may fluctuate from year to year as weather and market conditions change. However, regardless of the type of industry prevalent in the community it is a wise policy to insure insofar as possible a stable basis of support.

A Community Becomes Disorganized When People Lose Hope in Its Improvement

When changes in community life become drastic or prolonged another process tends to manifest itself. It is called disorganization and indicates an attitude of hopelessness on the part of the population so far as the improvement of their community is concerned. Numerous circumstances cause such an attitude to develop. The principal ones, however, are loss of economic resources, rapid influx of population, rapid emigration of population, unemployment, deterioration of moral standards, and lack of leadership.

Fortunately a state of disorganization is transitory and sooner or later new hopes and faith in the community arise unless it passes

out of existence entirely. These attitudes lead to social organization, a third important process in community life.

Social Organizations Are Necessary in Community Development

Social organization implies the grouping of individuals in a community to accomplish certain purposes. This has resulted in numerous organizations. Some of these have existed for many generations and tend to become, as indeed many have, institutions. Examples of such groups are the family, the school, the church, and the government. Besides these, there are many organizations which appeal to the interests of certain individuals and in sociological terminology are usually called interest groups. These are numerous in most communities. They may be classified according to *Table 18*.³

TABLE 18.—Interest Groups Which Satisfy Community Needs*

Need or Activity	Community-wide Organization	Special Organization
Religious	Church or churches	Religious organizations for men, women, young people, and children.
Economic	A community-wide organization, such as a Chamber of Commerce or community club	Organizations for special occupational or business interests
Educational	School and Parent-Teacher Association	Special interest groups, such as study clubs of various kinds
Recreational	No major organization (usually)	Athletic groups and teams, lodges for men and for women, special recreational groups
Philanthropic	A community-wide organization, such as The American Red Cross or Community Chest	Fraternal groups, health organizations, groups temporarily engaged in philanthropic endeavor

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The Number of Organizations a Community Needs Cannot Be Arbitrarily Determined

There has been a belief that some communities have had too many organizations and that they, therefore, compete with one another. It is extremely difficult, however, to determine with certainty if this is true. The ultimate test of an organization is the benefit individuals receive from it. So long as an existing or proposed organization does not compete with or duplicate the benefits prospective members receive from organizations already in existence there can be no objection to it. The personality of individuals is developed and enriched by participation in the activities of organizations. In fact, there are certain interests of individuals in both urban and rural communities which could benefit by organization. One of these is the welfare of individuals as consumers. The purposes of

an organization to promote this interest would be to distribute information and to stimulate discussion of matters pertaining to the field of consumption. It also appears that many communities lack adequate organization for the promotion of public health despite the fact that the importance of health education is unquestioned.

Institutions Need to Support Community Development Projects

Since the community is an indispensable unit in modern life, it necessarily must have the support of the various individuals and organizations within it. No family can logically expect to reap the benefits of good community influences and still refuse to support community enterprises of various kinds. Moreover, the family should attempt to interpret the nature and importance of community life to children. Likewise the school has a responsibility in creating an understanding and appreciation of community life and the processes by which it may be achieved. Although the aim of the church as a social institution is to promote the development of religious interests, in doing so it necessarily must show how religion affects community life and how in turn community influences affect religion. Even local government which is a very stable and basic institution is dependent in a measure upon community life. Governmental units within progressive communities can advance more rapidly than those which lack such influences. It is, therefore, important and advantageous for government to provide community facilities like playgrounds, libraries, and buildings for community activities of various kinds.

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CHAPTER EIGHT

THE GOVERNMENT

by R. S. Ford

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Among the many new developments in the field of government, there are three definite trends that predominate, namely (1) the expansion of governmental activities and the great increase in governmental costs, (2) changing relationships between the various layers of government, and (3) the modifications and improvements in public administration.

The background of these trends is to be found in the changing attitude toward the state. In the early nineteenth century, the sphere of the state was narrow because it was merely the protector of the individual and of property rights, interfering very little with private enterprise. With the expansion of governmental functions, however, public revenues are expended for an ever-increasing variety of activities. At present public funds are being drawn upon for welfare and relief, for conservation and development of the country's economic resources, for improving the means of transportation, for special encouragement to certain industries, for direct subsidies to shipping and agriculture, for free and universal education, for the improvement of public health and encouragement of wholesome recreation, and for social security in the form of old age pensions and unemployment insurance.

Structure of Government

The impact of recent social and economic changes has been felt in the functions, but not in the structure of government. The governmental structure displays a strong resistance to change because of rigid constitutional limitations, the sanction of long usage of particular forms of government, and political opposition to any change in governmental units.

The present structure of government in the United States and in the State of Michigan is substantially the same as it was in the early eighteenth century. The basic principles of rural government in Michigan can be traced to the territorial laws. The county-township system was initiated by the legislative council of the Michigan Territory under the broad terms of the Act of Congress of 1825.²

The nature of the governmental structure is illustrated through the number of governmental units. It has been estimated that there are more than 175,000 units of government in this country.¹ Of this number, 8,906 units are in the State of Michigan. The distribution for the nation and state is as follows:

TABLE 19.—Number of Governmental Units in the United States, and the State of Michigan, 1930-1933

Class	Nation	Michigan
The Nation.....	1	
The States.....	48	1
Counties.....	3,053	83
Incorporated Places (cities, villages, etc.).....	16,366	472
Towns and Townships.....	20,262	1,268
School Districts.....	127,108	7,069
Other Units.....	8,580	13
Total.....	175,418	8,906

Changing Governmental Relationships

The changes in governmental functions are intertwined with changing governmental relationships between the three great layers of government—federal, state, and local. For many years, there has been a strong tendency toward increasing centralization of governmental power and responsibility. Certain activities have been transferred from the local government to the state and from the state to the government at Washington. At the same time a swing toward decentralization is evidenced by the municipal home rule movement.

Very few governmental functions are confined to any one of the three levels of government. Services such as welfare, health, education, and the construction and maintenance of highways should not be confined solely to the state, county, or municipality. Such services, to be performed adequately, often require the cooperation, not only of the state and local governments, but of the federal government as well.

The changing relationships among the various levels of government are reflected to a considerable degree in the development of grants-in-aid. "The theory of the grant-in-aid is that those functions that are essential to the general welfare as distinguished from the local welfare and which cannot be paid for locally, or which are paid for locally at sacrifices so great as to be inimical to the general welfare, should be paid for by the state."⁷ It is customary for federal or state grants-in-aid to be accompanied by some degree of federal or state supervision, or both. In order to receive such aid,

therefore, it is necessary for the local governments to conform to certain standards which are set by the granting agency.

The grant-in-aid policy is linked closely to the whole matter of readjustment of the functions of federal, state, and local governments. The redistribution of functions among the three levels of government is necessary because state and local governments have been unable to cope with the complex problems that have been forced upon them during recent years. This has been due to the inadequate tax base, to the nature of the services to be performed, and to the spread of problems beyond the boundary lines of local or state governments. For example, in the case of education, the general property tax can no longer be relied upon to produce sufficient revenue for the maintenance of a satisfactory level of education; this is partly due to the constitutional limitation on the rate of tax in Michigan. It has been necessary, therefore, for the state to increase the grants-in-aid for education with revenues derived from state funds such as the retail sales tax. Furthermore, education is being recognized more and more as a state function rather than as a local one.

Another illustration is afforded in the case of welfare relief. Historically, the support and care of the poor was considered to be a local problem, but the tremendous increase in unemployment during the depression, along with the sharp decline in local revenues, made it imperative that the state government assume some degree of responsibility.⁵

The major portion of the cost of the emergency relief program in Michigan has been met through federal contributions. During the fiscal year ending June 30, 1935, the federal government through the Federal Emergency Relief Administration supplied \$57,244,461 out of a total of \$79,583,029, or 72 per cent; while the state and local governments furnished 15 per cent and 13 per cent, respectively, of the total.⁸

Federal, state, and local cooperation are now closely united in the fields of education and highway development. Similar changes may be anticipated in the fields of public welfare and public health administration under the new social security act. Under this act, federal grants-in-aid are to be made to the states for old age assistance, aid to dependent children, maternal and child health, services to crippled children, child welfare, and public health services.

The Tax Burden in Michigan

An understanding of the financial significance of government in Michigan can best be gained by a study of the total tax burden. In

Table 20, the combined tax levies—federal, state, and local—are shown for the period 1923-1935. This does not show the total cost of government because funds are also obtained by borrowing.

TABLE 20.—Tax Revenues in Michigan from 1923 to 1935

Year	Federal*	State†	Local‡	Total
1923.....	\$187,596,278.87	\$48,038,414.23	\$154,045,250.20	\$389,679,943.30
1924.....	221,380,005.15	52,381,514.70	164,215,253.34	437,976,773.19
1925.....	195,726,494.83	55,667,446.27	173,799,158.03	425,193,099.13
1926.....	225,629,148.44	71,047,451.29	202,146,115.62	498,822,715.35
1927.....	197,998,109.42	72,296,219.78	217,477,020.83	487,771,350.03
1928.....	173,978,227.00	90,139,600.04	227,946,567.28	492,064,394.32
1929.....	151,423,451.65	93,843,833.12	234,894,644.76	480,161,929.53
1930.....	137,076,199.64	109,502,542.89	236,980,325.51	483,559,068.04
1931.....	107,364,630.09	106,065,685.73	224,876,171.55	438,306,487.37
1932.....	59,976,859.56	98,527,649.14	192,951,747.46	351,456,256.16
1933.....	54,351,489.71	68,933,333.26	155,826,382.96	279,111,205.93
1934.....	101,316,367.03	101,029,076.95	154,509,813.78	356,855,257.76
1935.....	135,853,971.41	111,559,064.10	147,474,141.17	394,887,176.68

*U. S. Revenue Collections in Michigan.

†Total taxes, licenses and fees collected by the state.

‡Total tax on real and personal property levied by the local units of government.

To illustrate the source of tax revenues as shown in the second column of the above table, a chart is included. It will be observed that the chart represents tax revenue sources for the year 1935, which amounted to approximately \$112,000,000. These revenues include not only the amount that is spent for the operation of state government, as such, but the amounts returned to the local units for education and highways.

Modifications and Improvements in Public Administration

The modifications and improvements in public administration have been directed toward the elimination of waste, the achievement of administrative efficiency, the simplification of performing certain governmental services, and the handling of emergency problems in the most expeditious manner.

Many administrative changes are being proposed at present. These are simply a continuation of the changes initiated during the decade 1920-1930, described by Dr. Leonard D. White as "a decade of administrative improvement, perhaps the most effective and promising in the history of the United States".¹⁰

During the period of the economic depression, which started in 1929, many new administrative agencies were developed for dealing with emergency problems. The legislation creating some of these agencies, such as the National Recovery Administration and the Agricultural Adjustment Administration, has been invalidated by the Supreme Court. On the other hand, new activities undertaken

by the Federal Government during recent years have been upheld by the Supreme Court, as for example, the Tennessee Valley Authority and the Social Security legislation.

One of the most significant trends at present lies in the effort to extend civil service. Elimination of the spoils system and abandonment of antiquated methods in all levels of government will tend to improve the personnel of government.

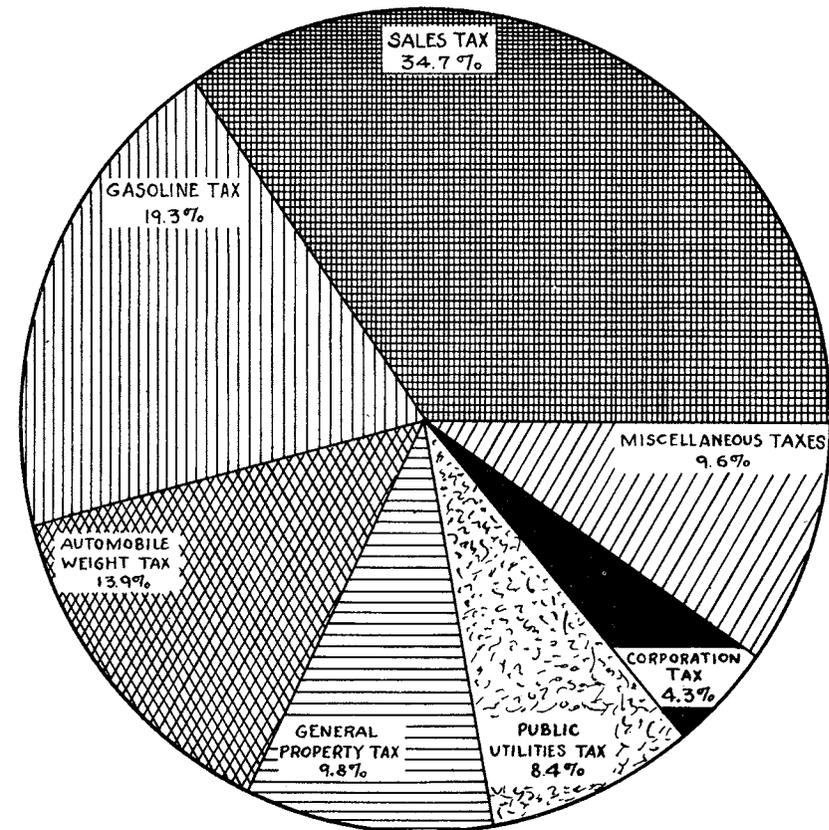


FIGURE 71. SOURCES OF TAX REVENUES, MICHIGAN, 1935

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CHAPTER NINE

TRANSPORTATION AND COMMUNICATION

by John S. Haitema

Director of Research

Department of Public Instruction

Backward Glance

Thirty-five years ago the child “preparing for life” looked at a world altogether different from this. The automobile was unknown; the need for paved highways was not recognized; telephones were seldom of more than local use and had practically no social significance; the telegraph was largely an instrument to bring “bad news or great joy”, to be used only in emergencies; radio was not even dreamed of; parcel post service was not yet born; the airplane was yet in the “Darius Green” stage.

Significance of Change

The whole of society has been revolutionized by growth in these fields. City and farm are no longer very greatly differentiated. Communication with Europe is easier now than it was with a neighbor 20 miles away in 1900. Transportation by airplane from California to New York can now be obtained in a shorter time than Old Dobbin could then travel 100 miles. A new social order and new opportunities for employment have been the result. It is hardly necessary to stress that education must be vitally affected by these changes. The philosophy underlying the phrase *a rural education for rural life* must be re-evaluated. The growth of transportation and communication makes necessary emphasis on ideals of family life. Political and social subdivisions are affected by the expansion in transportation and communication. The radio, which brings the voice of the President speaking in Washington to the listener in California, has its effect on both state and federal government.

Important Fields of Transportation and Communication

Some important fields in transportation and communication are the automobile industry, the airplane, the highways, the railway mail service, the telegraph, the telephone, the radio, and the newspaper.

The Automobile Industry

Yesterday and Today

In 1903 Detroit had a population of about 300,000. Horse and wagon and street cars were the accepted means of transportation. That year the Ford Motor Company was organized with a capital of \$28,000. During its first year the company sold 1,708 cars. Today it is capitalized at \$100,000,000 and has a production capacity of 8,000 cars per day. To the investments and output of this company must be added those for the General Motors Corporation, the Chrysler Corporation, and many other manufacturers. Truly stupendous totals!

PASSENGER AUTOMOBILE REGISTRATIONS

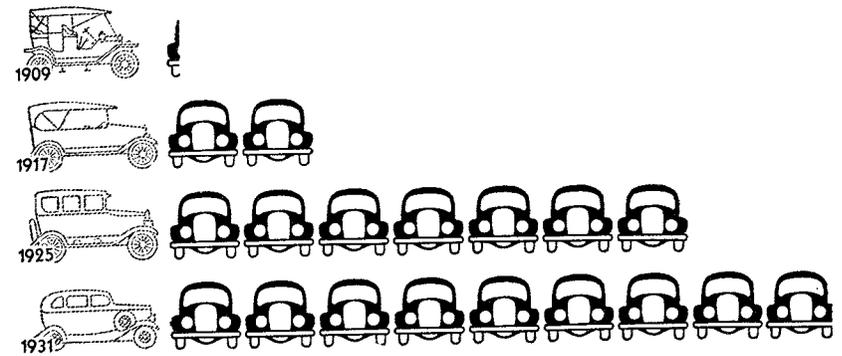


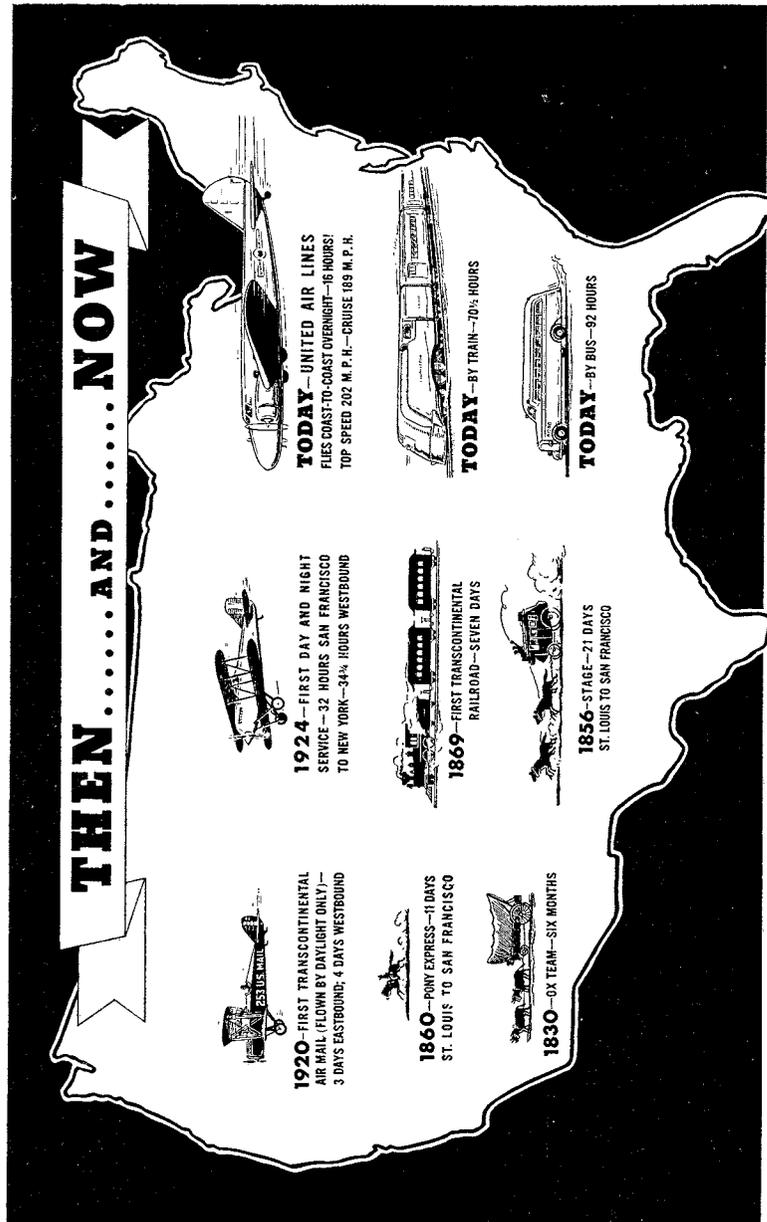
FIGURE 73. GROWTH OF AUTOMOBILE REGISTRATIONS IN THE UNITED STATES

Industrial Importance

The automobile industry is of special significance to Michigan because the industry is centered in this state. In 1904 the number of workmen was 13,333. By 1920 the number had increased to over 703,560. In 1935, it is estimated that more than six millions of people in the United States were employed directly or indirectly in highway transportation.

New Industries and Positions Created

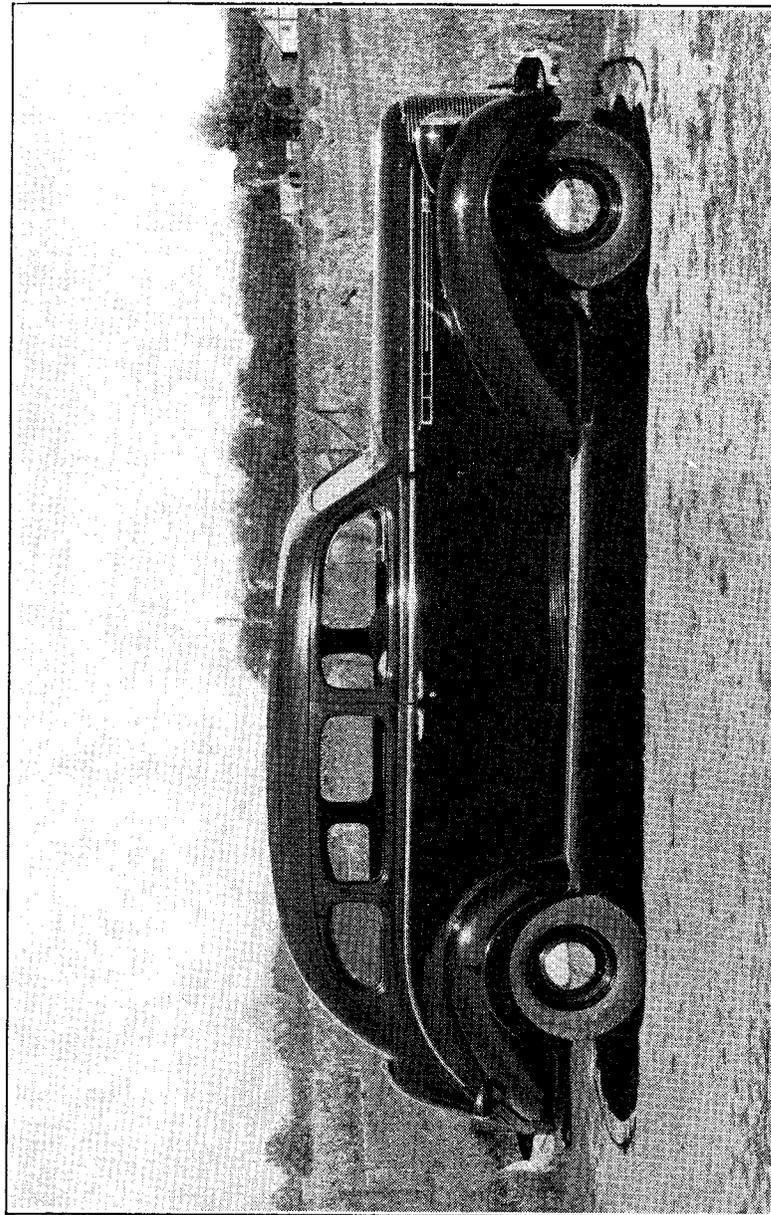
Development of the automobile industry has been responsible for the birth of new sciences and the discovery of new engineering principles. It has created important executive positions and opened new careers to men and women. Hundreds of chemists and



FROM THE UNITED AIR LINES

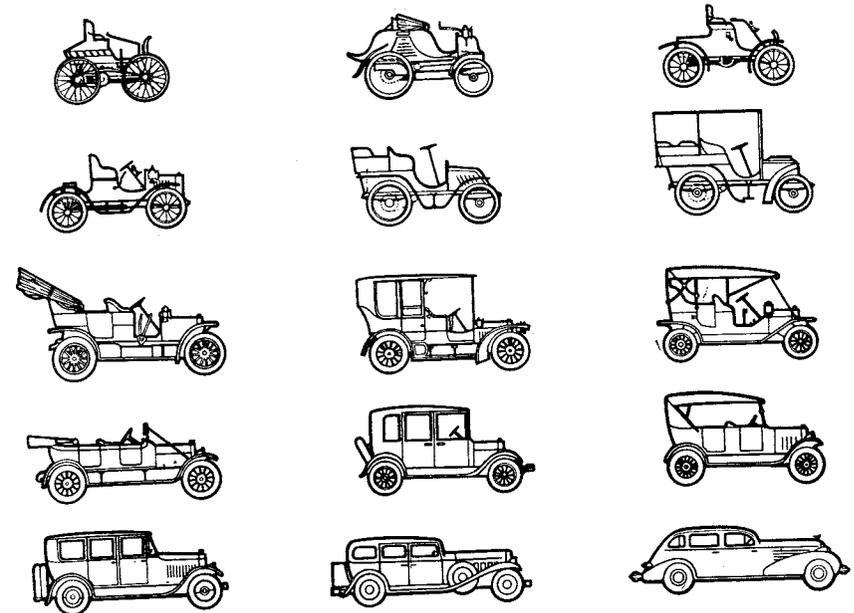
FIGURE 72. HISTORY OF TRANSCONTINENTAL TRAVEL

physicists are devoting their talents to the correlation of agriculture, science, and industry as they affect the automobile. The story of the soy bean and the important part it plays in automobile production reads like a fairy tale.



74. AUTOMOBILES TODAY HAVE STREAMLINED BODIES WHICH CUT DOWN AIR RESISTANCE AND ALSO ADD TO THEIR BEAUTY

FROM THE CHRYSLER CORPORATION



FROM THE GENERAL MOTORS CORPORATION

FIGURE 75. EVOLUTION OF THE AUTOMOBILE

Effect Seen in Education

As a result of the growth of the automobile industry many technical and vocational schools have sprung up. Specific research courses are now offered in leading colleges and universities. Many scholarships are available to persons with a special bent and interest in this field.

Bus Transportation

The bus business is comparatively new. It goes back hardly more than a dozen years. In 1922-24, for example, more than 5,000 bus companies came into being. Only a few years ago transportation requirements in cities were met by street cars. But in 1935 there were 393 cities in the United States served exclusively by buses. The number served exclusively by street cars had dwindled down to 74. The growth of buses as public carriers is apparent from the following figures: in 1929 there were 189 cities served exclusively by buses; in 1930 there were 300; and in 1935 there were 393 such

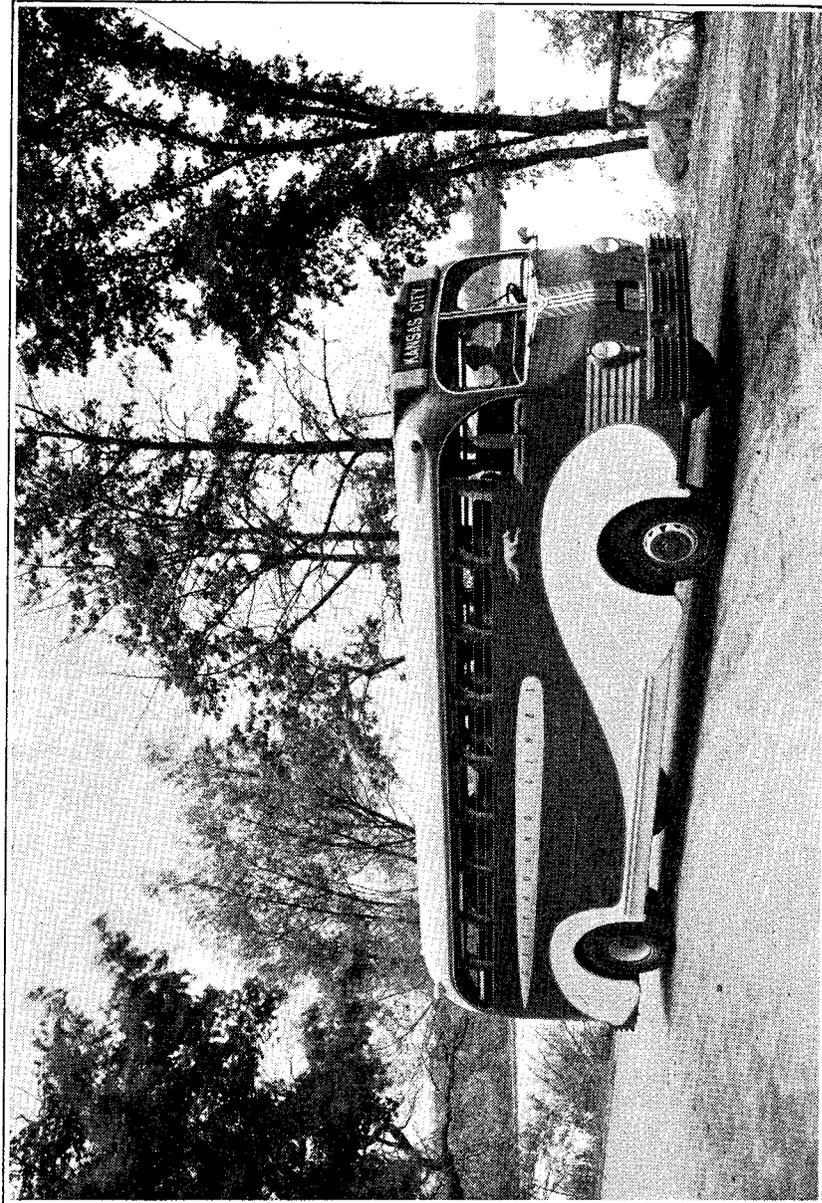
cities. In 1935 the total of public carrier bus miles for city and intercity buses, sight-seeing, and irregular service was over 3½ billion miles. The bus business involved over \$400,000,000 and over 106,000 employees.

Michigan and Public Carrier Buses

Michigan is naturally deeply concerned in the development of bus transportation in other states because it is the manufacturing center for the industry. But even in Michigan there are 109 public carrier bus companies which operate 1556 buses and give carrier service on 311,147 miles. In addition to public carrier buses in Michigan, the bus transportation of school children reaches a high total. It is estimated that on January 1, 1936, at least 200 schools were using a total of 800 buses, covering 6,000 miles of route. These buses carried at least 30,000 children at an approximate cost of \$400,000.

School Bus Service Developed

Transportation of school children is not new. Greenfield, Massachusetts began carrying its school children to a central school as early as 1869. But naturally horse drawn conveyances that traveled



FROM THE GREYHOUND MANAGEMENT COMPANY

76. A LONG DISTANCE CRUISER BUS



FROM THE MICHIGAN EDUCATION ASSOCIATION

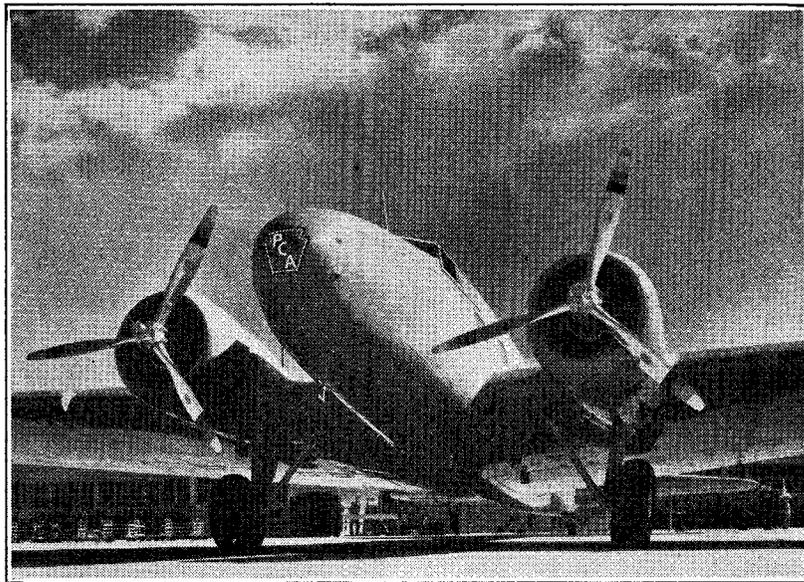
77. FROM HORSE AND WAGON TO HEATED MOTOR BUS IS THE EVOLUTION OF TRANSPORTATION OF SCHOOL CHILDREN

5 to 7 miles in 45 to 60 minutes were used. In the United States, in 1935, 28,000 school buses were operated to transport more than two and one-half million children, in addition to those who traveled in public carriers.

Airways

Airway Service in Michigan

The first transport airplanes began to operate in Michigan in May, 1928, the first route being established between Detroit and Chicago via Jackson, Battle Creek, and Kalamazoo. This line was later expanded, one route going north from Kalamazoo to Grand Rapids and Muskegon and another northeast from Kalamazoo to Bay City via Lansing and Saginaw. There was also an extension from Detroit north to Pontiac, Flint, and Bay City. Prior to the



FROM THE PENNSYLVANIA-CENTRAL AIR LINES

78. A 200-MILE PER HOUR TRANSPORT PLANE

Ten of these planes are now being flown over the Washington-Detroit-Lansing-Milwaukee route

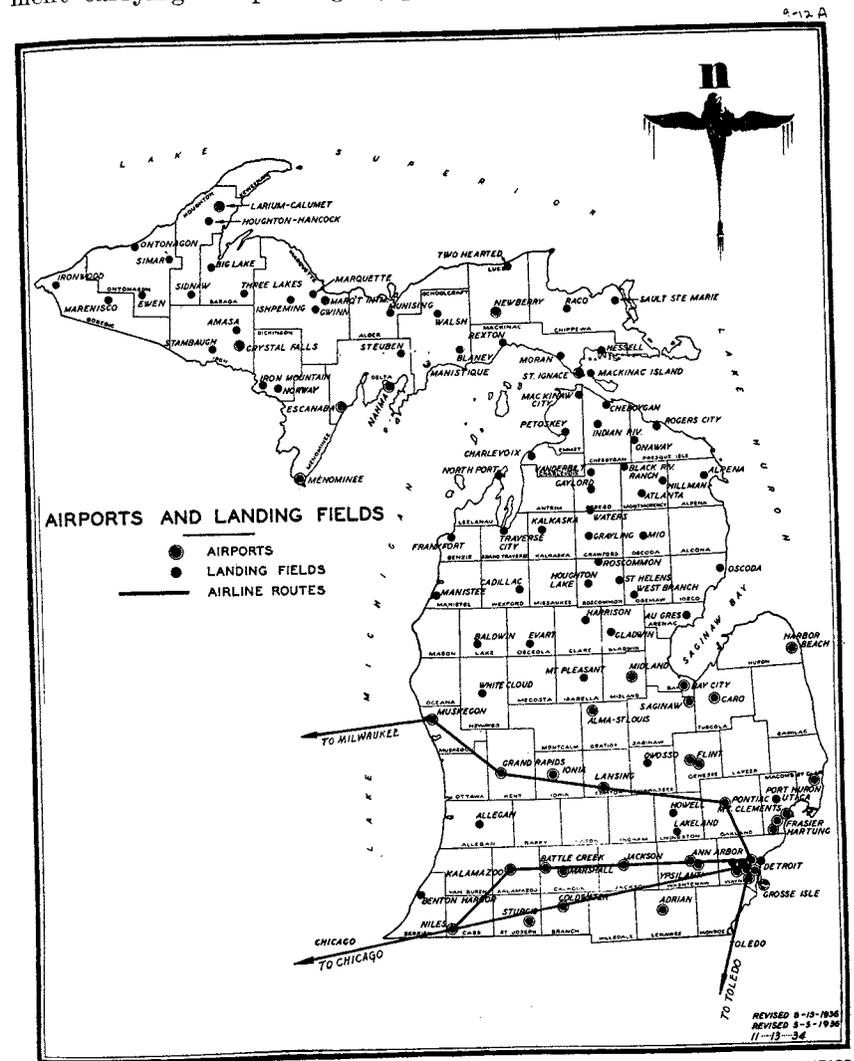
establishment of this transport and air mail service, the original Stout Airlines operated between Detroit and Grand Rapids via Lansing for about a year starting in 1926. This line did not have a mail contract. The Kohler Air Service, established in 1930 with a route extending from Detroit to Milwaukee via Lansing, Grand Rapids, and Muskegon, was bought by the Pennsylvania Airlines in 1934. In 1935 there was regular transport operation between Pontiac and St. Ignace via Bay City, Alpena, and Rogers City. A new line is now being established to operate between Detroit and Cincinnati.

Airway Operators

At the present time there are two transport lines operating in Michigan,—the American Airlines operating between Detroit and Chicago, and the Pennsylvania-Central Airlines between Detroit and Milwaukee, and also between Detroit and Washington, D. C.

Equipment Used

The Pennsylvania-Central Airlines use twin motor Boeing equipment carrying ten passengers, pilot, and co-pilot. The American



FROM THE STATE DEPARTMENT OF AERONAUTICS

FIGURE 79. AIRPORTS AND LANDING FIELDS

Airlines use Douglas equipment, both sixteen passenger and twenty-four passenger type. It is estimated that approximately two hundred and fifteen persons are now employed in the transport service in Michigan.

Michigan Leader in the Field

Michigan is recognized as a leader in the aeronautic world, particularly in airplane and engine production. The first tri-motored airplanes were built and flown here. The first scheduled air freight was flown from Michigan. The state provides a series of airway beacons and weather reporting stations along the Detroit-Milwaukee and the Detroit-Chicago airways.

Supervision and Airports

Michigan licenses and has direct supervision over all schools of aviation, aviation instructors, airports, landing fields, and airport managers. The 122 completed ports and landing fields make Michigan rank fourth in the United States. Approximately 50 airports are located in Northern Michigan's resort, hunting, and fishing territory. Michigan is the fifth state in number of airplanes and licensed pilots.

Highways

Highways, Transportation, and Communication Closely Related

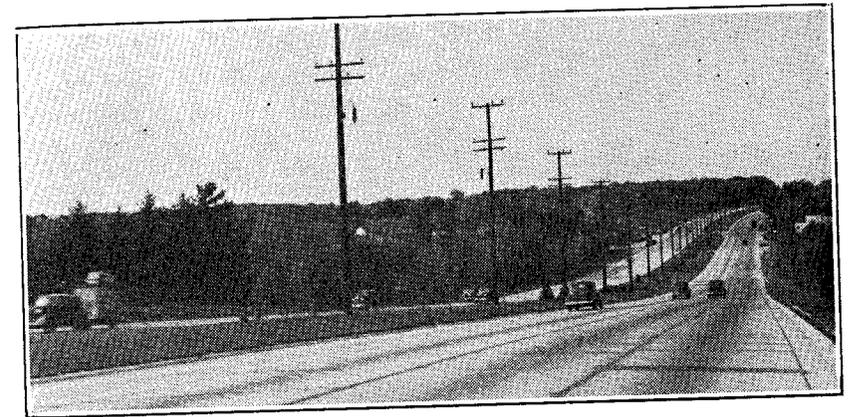
It is self-evident that development of transportation and communication go hand in hand with the development of highways. The problem is to keep a proper balance between these public services. For example, in 1915, the first year the state began to register its motor vehicles, 11,845 automobiles were licensed. That same year, highway reports show 6,319 miles of improved roads in the trunk line systems of the state. In 1936 more than a million and a half motor vehicles were registered, and the trunk line system of roads had been extended to 9,456 miles. Many changes in the methods and materials used in road surfacing, largely brought about by the increased use of automobiles and trucks, have been designed to promote both safety and speed of travel. Surface treatments considered most desirable in 1915 and in 1936 were:

	1915	1936
macadam	339 miles	.....
bituminous macadam	6 miles	176 miles
cement concrete	54 miles	3783 miles
brick	1 mile	14 miles
other types .....	.....	1187 miles

Early recognition of the importance of adequate roads to the development of motor transportation, indicated by a slogan current about 1930, "Get Michigan out of the mud", has placed the state in a leading position for its highway development.

Many Highways Started as Indian Trails

The beginnings of the Michigan Trunk Line Highway System can be traced to old Indian trails. Many of Michigan's trunk lines bearing the heaviest traffic today were developed along approximately the same routes as those first traveled by the Indians. The present U. S. 112 originally was the Potawatomi trail between Detroit and Chicago; U. S. 10 between Detroit and Saginaw was an early Ottawa trail. Other trunk line highways, first trail-marked by the Indians, are U. S. 16, between Detroit and Grand Rapids; U. S. 25 and U. S. 23, along the eastern coast of the Lower Peninsula; U. S. 12 from Ann Arbor to Jackson, Kalamazoo, and Niles; and in the Upper Peninsula, U. S. 2 between St. Ignace and Sault Ste. Marie; and M. 35 between Escanaba and Marquette.



FROM THE STATE HIGHWAY DEPARTMENT
 80. U. S. 10. IN OAKLAND COUNTY
 Broad highways with landscaped center sections separating opposing traffic lanes are the engineers' answer to the motor vehicle transportation problem between industrial centers

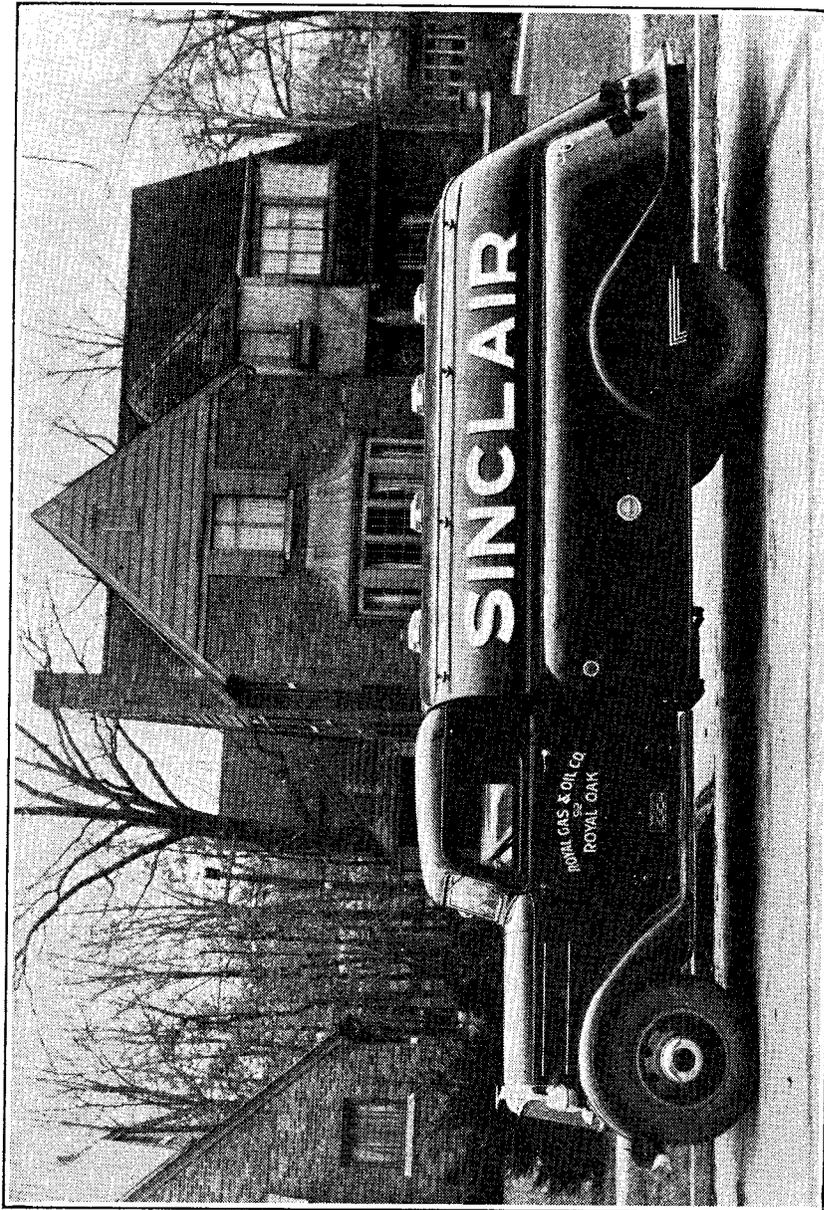
Michigan Legislature Takes an Interest

Michigan's first legislation looking toward state advice and supervision in highway matters was passed by the Legislature in 1901. During the following two years a few short stretches of roads were built for experimental and educational purposes by companies manufacturing road machinery. Subsequent to the amending of the Constitution of Michigan, the Legislature passed the State Reward Law. This created the State Highway Department. By the year 1912, according to the Fourth Biennial Report, the state had

approximately 70,000 miles of public wagon roads, not counting the streets of incorporated villages and cities.

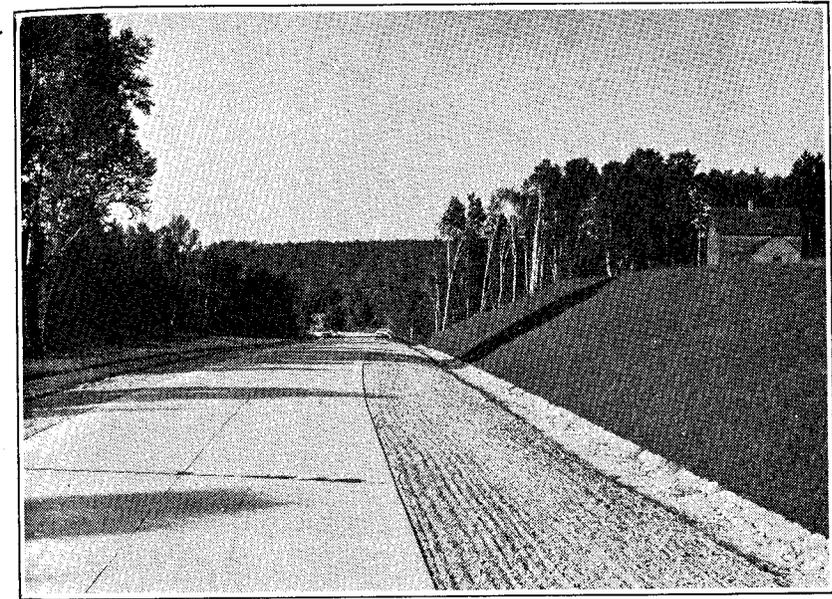
Through Routes Established

In response to the demand for through routes, the Legislature passed Michigan's first State Trunk Line Law in 1913. This act provided for the laying out of some 3,000 miles of trunk line highways. During the first year under the new act, 682 miles were built, and by January, 1915 there were 2,919 miles completed. In 1925 this mileage had increased to 6,368 miles.



FROM THE REO MOTOR CAR COMPANY

81. A TANK TRUCK



FROM THE STATE HIGHWAY DEPARTMENT

82. A MODERN HIGHWAY

Wide shoulders, adequate drainage, and a modern hard surface make this road a sharp contrast to the highways of a few years ago

Township Roads Taken Over by County Road Commissions

Another major change in road administration was completed only this year. On April 1, 1936 the county road commissions throughout the state completed the taking over of all township roads. This change was the result of the McNitt Act, passed by the legislature in 1930, and added some 62,000 miles of township roads to the county system. At present there are approximately 90,000 miles of federal, state, county, and local roads in Michigan.

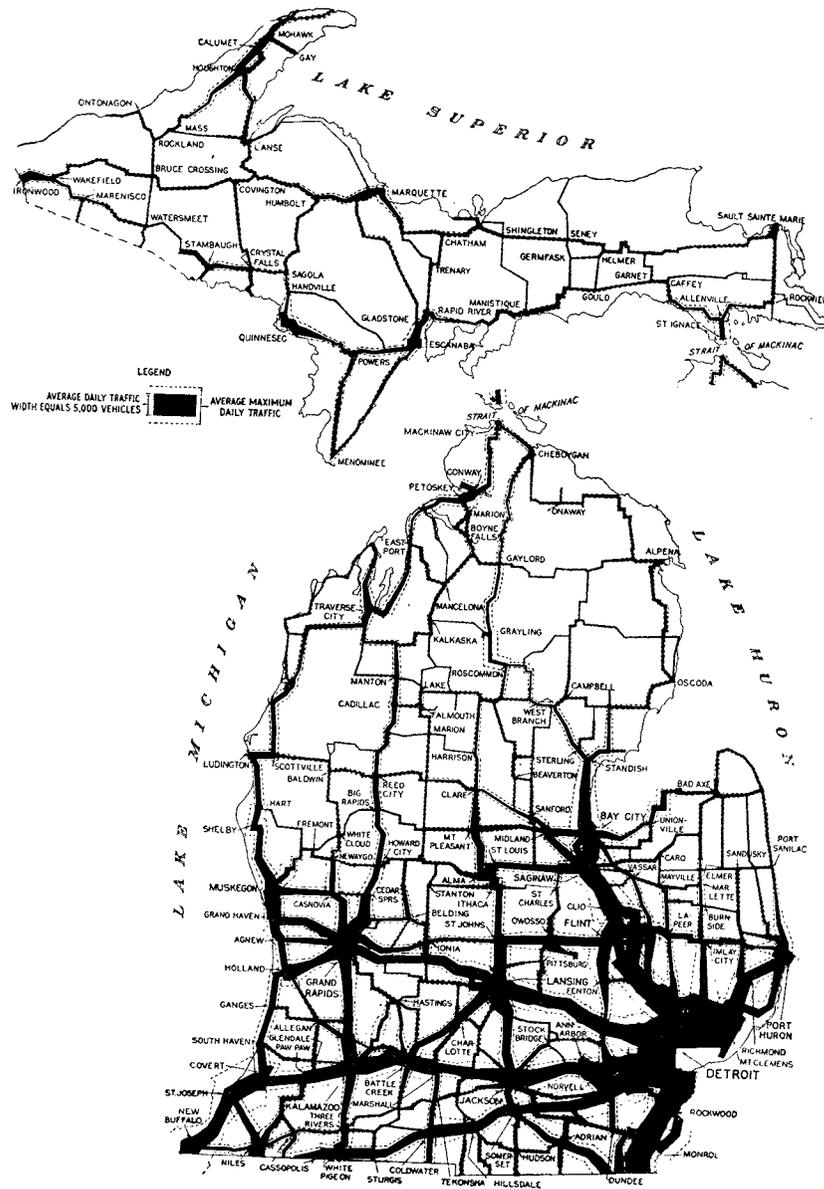
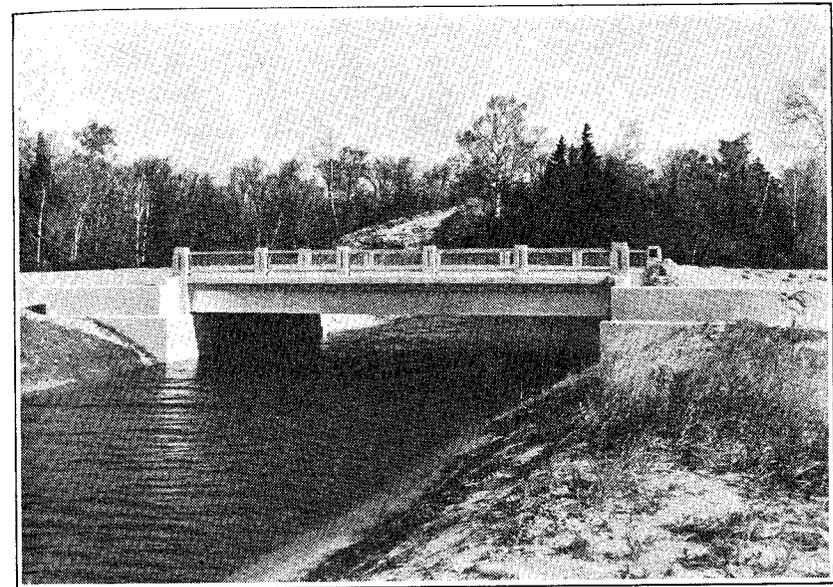


FIGURE 83. AVERAGE DAILY TRAFFIC ON MICHIGAN TRUNK LINE HIGHWAYS

Present Plans

A recent inventory of the state trunkline system revealed that an expenditure of approximately two hundred million dollars would be required to bring the federal and state trunkline system up to a standard which would meet present day needs. Obviously financial restrictions will not permit all of these improvements to be made in a year or even in ten years.

However among the department's objectives are: surfacing of nearly 4,000 miles of gravel trunkline routes to get Michigan out of the dust; extension of the system of scenic highways along the 16,042 miles of Great Lakes shoreline; reconstruction and relocation of obsolete highways for present day safety requirements;



84. BRIDGE CROSSING BREVORT LAKE OUTLET
On Relocation of U. S. 2, northwest of St. Ignace. Notice the simple lines of the structure and its appearance of rugged stability.

rebuilding hundreds of narrow bridges; construction of grade separations at the more heavily traveled grade crossings, and construction of diagonal routes such as, the Clare-Frankfort Diagonal which will save 56 miles between Detroit and other Michigan playgrounds, the Holland-Toledo Diagonal, and the New Buffalo-Port Huron Diagonal which will become a part of the new direct route between Chicago and Montreal.

Maintenance programs have been expanded to include the application of dust layer on the entire gravel mileage, and snow removal on all the state trunklines.

Waterways

Early Plans of Inland Waterways Development

During the last period of territorial government, 1825-1837, the people of Michigan became deeply interested in the subject of state ownership and operation of the works of internal improvement. In March, 1837, this political thought crystallized into an act authorizing the construction and operation of inland waterways. Steps were taken immediately toward the construction of the Clinton & Kalamazoo Canal, which commenced at Mt. Clemens and was to terminate near the mouth of the Kalamazoo River. The second undertaking was the Saginaw Canal connecting the Saginaw and Maple Rivers. The third was building a canal around the Sault Ste. Marie Rapids at the Soo. The fourth was the improvement of the St. Joseph, Kalamazoo, and Grand rivers.

Plans Did Not Materialize

The Clinton and Kalamazoo Canal from Mt. Clemens to Rochester, a distance of 16 miles was the only part completed. It was never used except for a few trips of one small boat. The Saginaw Canal did not proceed much farther than a beginning. A small amount of improvement was made for a few of the principal rivers.

The Building of the Canal around Sault Ste. Marie

The canal around the Sault Ste. Marie Rapids was included in the general plan and \$50,000 was appropriated for surveys and commencement of construction work. These rapids are about half a mile wide and three-fourths of a mile long. The fall ranges from 17 to 21 feet with the varying stages of water.

First Canal on Canadian Side

The first canal was built on the Canadian side of the river by the Northwest Fur Company in 1797-98. The lock was 38 feet long, 8 feet 9 inches wide, with a lift of 9 feet. A path was made along the shores for oxen to tow the bateaux and canoes through the upper part of the rapids.

First Ship Canal on American Side

The first ship canal on the American side of the river was built in 1853 to 1855, some 750,000 acres of land in Michigan having been granted by the United States Congress for its construction. The canal was 1 1/12 miles long, 64 feet wide at the bottom, and 100 feet wide at the water surface. There were two tandem locks of masonry, each 350 feet long by 70 feet wide, with a lift of about 9 feet. The depth in the canal was about 13 feet and in the locks about 11 1/2 feet at the stage of water then prevailing. The State of Michigan operated the canal until 1880 when it was transferred to the United States. At the present time five locks are in operation.

The Weitzel Lock, 515 feet long, 80 feet wide but narrowing to 60 feet at the gates, with a 12-17 feet depth of water, was built by the United States in the years 1870 to 1881. During the same period the canal was correspondingly deepened and widened to 160 feet, and the stone slope walls were replaced with timber piers having a vertical face.

The Canadian Canal, 1 1/8 miles long, 150 feet wide, and 23 feet deep, with lock 900 feet long and 60 feet wide, was built on the north side of the river in the years 1888 to 1895.

The Poe Lock, 800 feet long, 100 feet wide, and having 18-22 feet of water depth, was built by the United States in the years 1887 to 1896.

The Davis Lock, 1,350 feet long and 80 feet wide and having a depth of 24 1/2 feet, was built by the United States in the years 1908 to 1914.

The Fourth Lock, of same dimensions as Davis Lock, was built by the United States in the years 1913 to 1919.

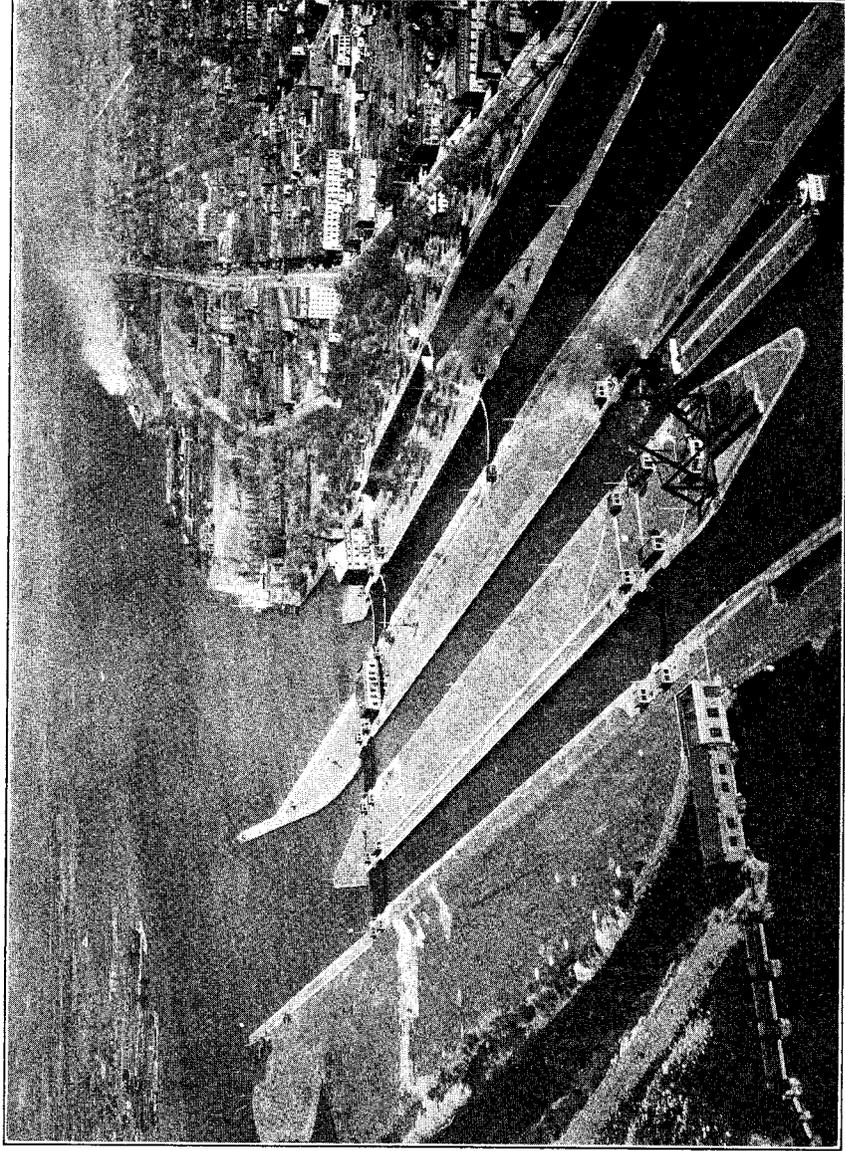
Since 1892 the canal leading to the Weitzel and Poe Locks has been deepened in its upper reach to 24 feet. The new canal leading to the Davis and Fourth Locks has a *least* depth of 24 feet. The length between the upper and lower entrances is about 1 3/4 miles.

The Great Lakes

The Great Lakes, excepting Lake Ontario, all border the State of Michigan and provide a valuable means of transportation. They are of a national and international character and can hardly be considered as inland waterways of the state in any respect.

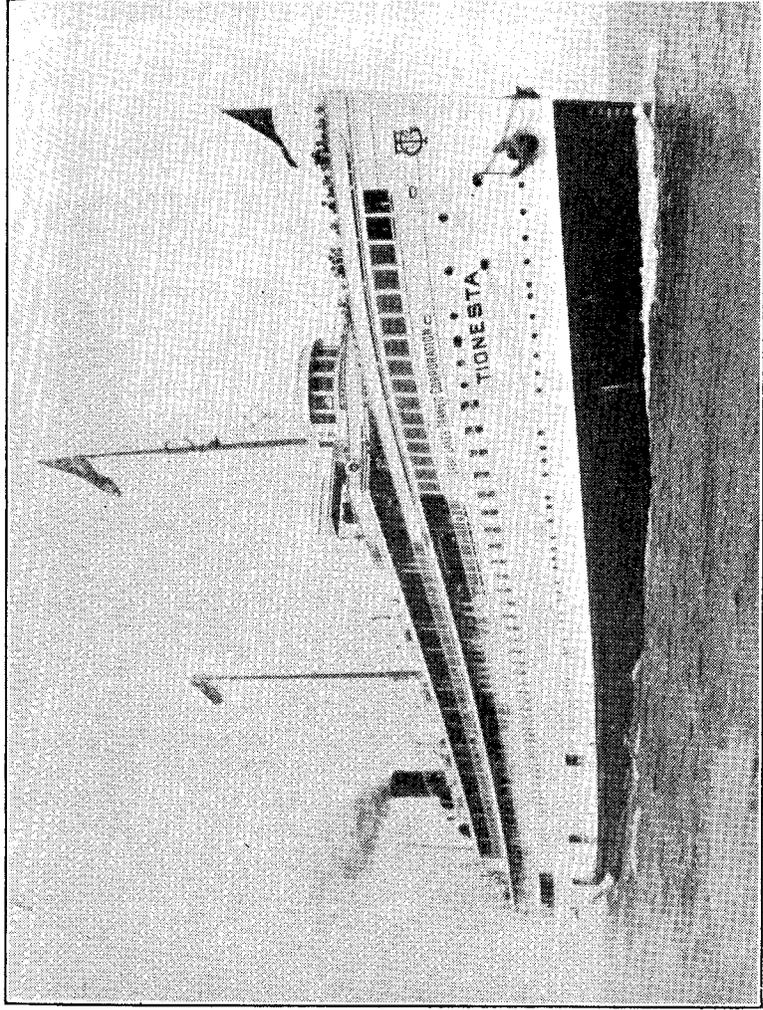
Tonnage Carried on Great Lakes

The importance of the Great Lakes as a transportation highway can be appreciated when attention is called to the fact that in 1929



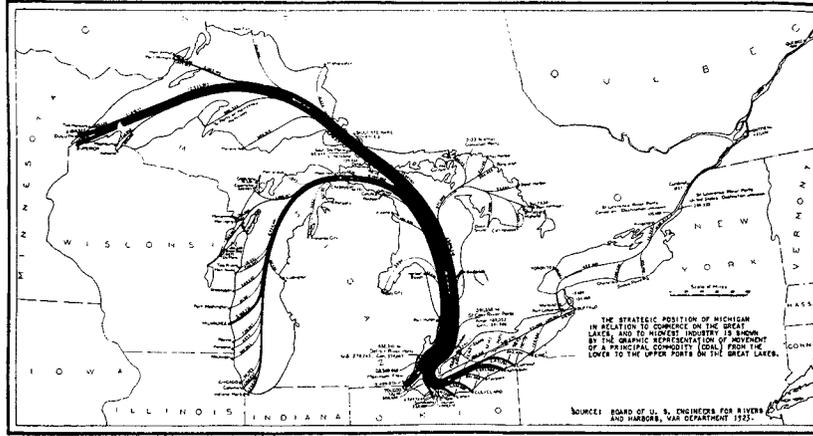
85. THE FAMOUS LOCKS AT SAULT STE. MARIE
More freight passes through these locks in one year than is carried through the Panama Canal
in nine years

FROM THE CHAMBER OF COMMERCE, SAULT STE. MARIE



86. GREAT LAKES STEAMERS INVITE TRAVEL FOR RECREATION
FROM THE GREAT LAKES TRANSIT CORPORATION

the tonnage transported reached a maximum of 138,574,441 net tons. The registration of vessels during this year consisted of 551 United States and 273 Canadian ships. The Great Lakes is a waterway of first importance to those states lying in the north central part of the country and is of particular value to Michigan.



FROM THE STATE PLANNING COMMISSION

FIGURE 87. STRATEGIC POSITION OF MICHIGAN

The movement of a principal commodity (coal) from the lower to the upper ports of the Great Lakes is shown

Railways

Railways Have a Long History in Michigan

In 1830, Michigan, although still a territory and but little more than a wooded fringe to our nation, granted its first charter for the construction of a railroad. This was issued to the Detroit & Pontiac Railroad, now a part of the Grand Trunk Railway System. In 1832 a charter was issued to the Detroit & St. Joseph Railroad, which later became the Michigan Central Railroad. The next road to receive a charter was the Erie & Kalamazoo, the southern terminus of which was Port Lawrence, now Toledo, and the northern terminus, Marshall, on the Kalamazoo River. The Erie and Kalamazoo later became one of the component parts of the Michigan Southern. Charters for other railways rapidly followed.

The Erie and Kalamazoo Railroad was the first of these railroads to complete a section, Port Lawrence to Adrian, upon which in 1836, operation was started. The cars were drawn not by steam locomotives but by horses. The first section on the Detroit & St. Joseph Railroad (Michigan Central) extending from Detroit to Ann Arbor began to operate in October, 1839. The Detroit & Pontiac, although

the first to obtain its charter, was open only as far as Birmingham in 1839. The first railway locomotive to be used in Michigan was placed on the Erie and Kalamazoo in August, 1837.

State Ownership of Railways Provided for in 1835

Prior to the admission of Michigan territory as a state the opinion began to prevail that the state should own its transportation systems and derive whatever benefits might arise from their operation. The Constitution of 1835 made provision for state ownership. In March, 1837, the Legislature created a Board of Commissioners on Internal Improvements, with authority to construct three railways across the state. They were spoken of as the Northern, Central, and Southern. The Northern railway was to start at Port Huron and pass west through Flint and Grand Rapids, to Grand Haven. The Central railway was to run from Detroit through Ann Arbor, Jackson, and Kalamazoo, to St. Joseph. The Southern railway was to extend from Monroe, through the southern tier of counties to New Buffalo on Lake Michigan. Authority was granted for purchasing such existing railways as were needed or could be used in carrying forward the plan. The various works undertaken by the state were as follows: Central Railroad, Southern Railroad, Northern Railroad, Havre Branch Railroad, and the Tecumseh Branch of the Southern Road.

State Abandons Railway Project

In 1846, for various reasons, the Legislature authorized a sale of all state railway properties. These were sold to private corporations, which continued the extension of the three main east and west lines until each arrived at its respective terminal on Lake Michigan. Direct connection of the Michigan railroads with Chicago was accomplished in 1852.

Extending Branch Railways

Following the completion of the three main lines across the state, railway development in the Lower Peninsula consisted very largely of extending branch lines into the timber country or building independent logging roads incidental to the lumbering industry. Many of these were later connected and now are component parts of the railways of the state.

The Upper Peninsula has two main lines of railway extending from the east to the west, the Minneapolis, St. Paul and Sault Ste. Marie Railroad from Sault Ste. Marie west across the state, through the towns of Manistique and Escanaba to Wisconsin, and the Duluth,

South Shore & Atlantic Railroad, now a part of the "Soo" system, which extends from Sault Ste. Marie, along the south shore of Lake Superior, to Iron Mountain then on to Duluth, Minnesota. In addition to the above, the Chicago & Northwestern Railroad and some of the other main lines of Wisconsin extend north into the Upper Peninsula.

Present Status of Railroads

At the present time, 1937, there are in Michigan 8,141 miles of steam railroads owned by 18 companies. These railways normally employ 46,000 men, who earn annually \$69,000,000. Prior to the

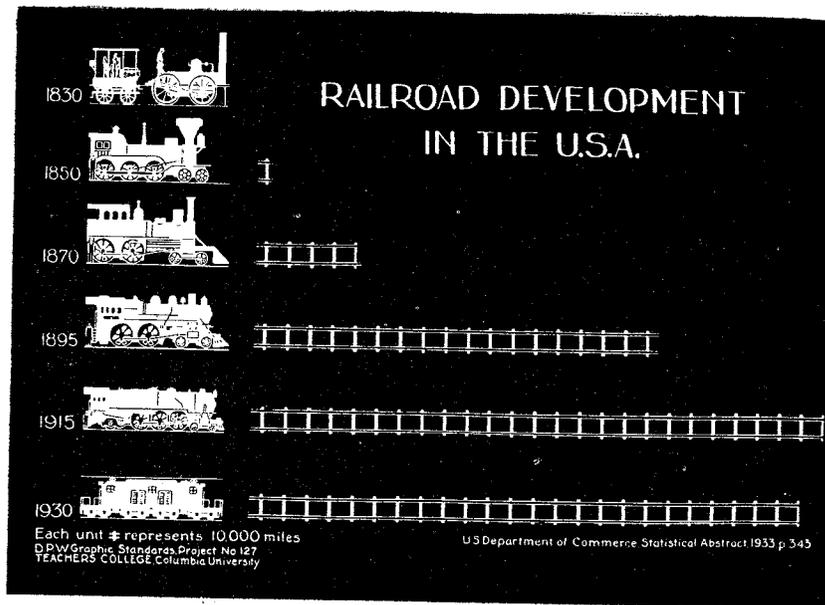


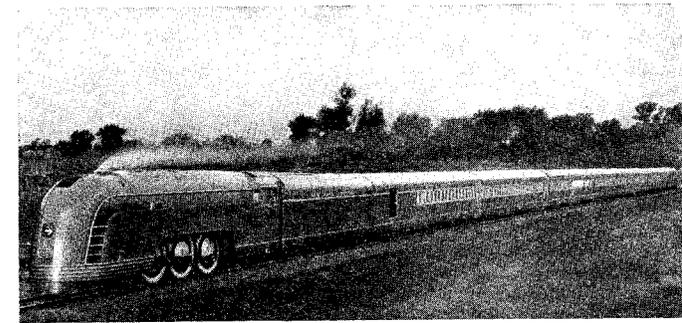
FIGURE 88. MUSHROOM GROWTH OF RAILROAD MILEAGE IN AMERICA. In 1850 our railroads were about 10,000 miles long. By 1915 they reached a total of more than 250,000 miles. Since 1916, several thousand miles of track have not been used, mainly because of automobiles.

advent and use of the automobile with our modern system of state highways, railways were the only means of transportation. They have served the people of Michigan for nearly a century. Even today they provide more than one-half of the common carrier passenger transportation of the state. They carry between 75 and 80 per cent of the freight transported. Railroads have been a large factor in the development of the natural resources, the education, and the general culture of the state. Their value among Michigan's industries should be recognized.

Railway Mail Service

What Railway Mail Service Is

The Division of Railway Mail Service is under the supervision of the General Superintendent, Railway Mail Service, Washington, D. C. Its function is supervision of the distribution, transportation, and dispatch of mails in the postal service. This service includes air mail and the distribution of mails in transit for the purpose of effecting the earliest practicable delivery at its destination.



FROM THE NEW YORK CENTRAL R. R.
89. THE STREAMLINED MERCURY

Michigan and the Railway Mail Service

Michigan played an important part in the early development of the Railway Mail Service which was organized April 4, 1869. The country was then divided into six divisions, Michigan being placed in the fifth Division. On August 7, 1877 the ninth Division, of which the Lower Peninsula of Michigan is a part, was organized.

The First "Fast Mail"

The first "Fast Mail" left New York City at 4:00 a. m. September 16, 1875, via the New York Central and the Lake Shore, Michigan Southern Railways and arrived at Chicago at 6:00 a. m. the following morning. It passed through Adrian, Hudson, Hillsdale, Coldwater, Sturgis, and other southern Michigan points at an early hour September 17th. The 27-hour run, then considered exceptionally fast, can easily be done in 16½ hours today.

Detroit River Service

One of the unique activities of the Post Office Department is the Detroit River Service, established in 1895, which delivers mail to crews on lake vessels passing through the Detroit River. By this

means the crews receive and dispatch their mail without the necessity of changing the speed of their ships. Carriers, drawing alongside in speed boats, make the transfer of mails.

Rural Free Delivery

The first bill to establish Rural Free Delivery in the United States was introduced in Congress January 5, 1892, by the Honorable James O'Donnell of Jackson, Michigan, but failed to pass. In 1894 the first appropriation was made to put this service into effect. The result was to reduce the number of post offices in Michigan from approximately 2500 in 1902 to 1214 in 1936.

Speed of Mail Service Today

Mail delivery has been so speeded that a letter may be sent from Detroit on the following schedules:

Detroit to	Detroit to	Detroit to
New York City	Washington, D. C.	San Francisco
By rail—13 hours	By rail—15 hours	By rail—56 hours
By air—3 hours, 5 min.	By air—3½ hours	By air—12 hours

Mail by Air

Since 1911 the air mail service has developed rapidly. Today it is one of the most important divisions of the postal service. It is a far cry from the days when letters were conveyed across the continent by stage coaches, wood-fired locomotives, and pony express riders. In the early days of the postal system months intervened for the carrying of a letter across the continent. Only a few years ago it took at least five days for the fastest mail trains to travel the distance. Today by means of air mail service, a letter may be carried to San Francisco from New York in less than 16 hours. In colonial days the cost of sending a one-ounce letter by slow transit from New York City to Philadelphia was between 40 and 50 cents, whereas the present air mail service is 6 cents for each ounce or fraction thereof to any point in the United States.

Volume of Air Mail

In the fiscal year 1933 the volume of air mail transported in the United States was about 7,000,000 pounds. This had grown to approximately 11,000,000 pounds in 1935. In June, 1936, more than ten tons of air mail was handled at the Detroit air mail field alone.

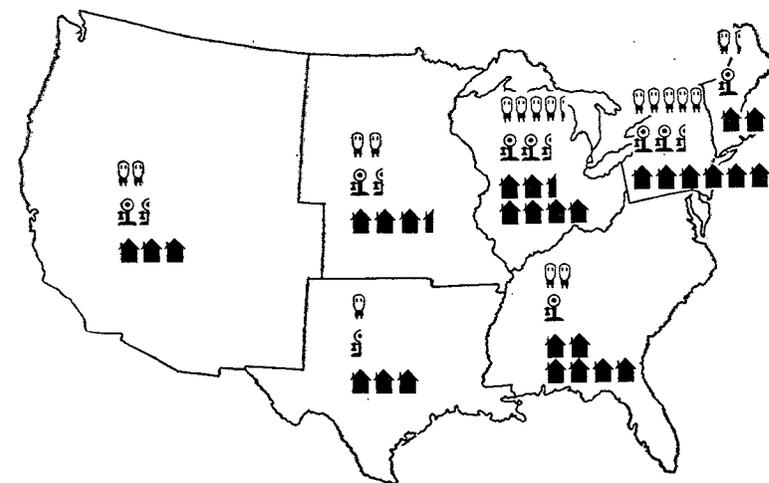
The Telephone in Michigan

Telephone Companies in Michigan

Sixty years ago Michigan was without telephones, for the telephone had just been invented. Today there are more than 660,000 telephones in the state, operated by 188 companies. Each company maintains service for its community or group of communities without local competition, but the lines of all connect with those of the Michigan Bell Telephone Company for the interchange of world-wide long distance service.

How Extensively the Telephone is Used

The largest telephone company operates 560,000 telephones through 250 exchanges. Over those lines alone there are more than 900,000,000 local calls and more than 20,000,000 long distance calls yearly. This company uses more than 4,000,000 miles of wire and has a total plant investment of \$175,000,000.



Each symbol represents 1 million families, or telephones, or radios

©Res. Div., Nat. Educ. Assn.

FIGURE 90. THE MAP CLEARLY POINTS OUT THE NUMBER OF HOMES, TELEPHONES, AND RADIOS IN DIFFERENT SECTIONS OF THE UNITED STATES

The Origin of Telephones in Michigan

William A. Jackson brought to Michigan the first pair of telephones. Most people considered them merely toys. The first pair, tested between a railroad office and a freight shed, was successful enough to make possible the organization of the Telephone and Tele-

graph Construction Company. The first exchange was established in Detroit in 1878. It had 73 subscribers. Possibly the first international service was established in 1880 between Detroit and Windsor.

The Telephone Establishes World-wide Contact

From any one of Michigan's 660,000 telephones, calls can be made to any of 32,100,000 telephones in 68 different countries, as well as to many ships at sea. In fact one can call 93 per cent of the 34,600,000 telephones in the world.

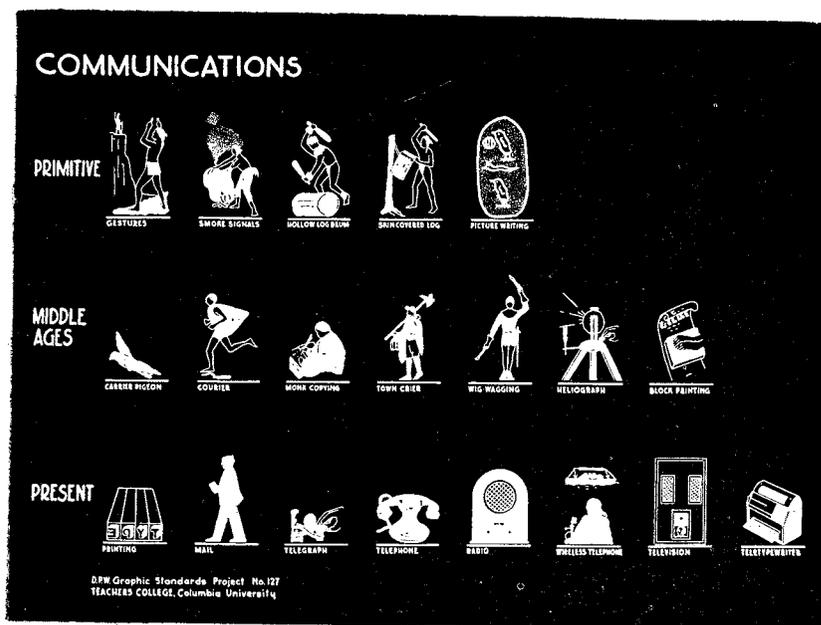


FIGURE 91. HISTORY OF COMMUNICATION FROM PRIMITIVE TO PRESENT TIMES

Note the contrast between the instruments under now and those commonly employed thousands of years ago to send messages

Telegraph

Historical Sketch of Telegraph

Very closely associated with the telephone is the telegraph. The first practical telegraph was built by Samuel B. Morse, a distinguished American painter, 100 years ago. The first telegraph line was opened May 24, 1844 between Washington, D. C. and Baltimore with the message, "What hath God wrought?" It was not until October

24, 1861 that the first transcontinental telegraph was completed. The original Pony Express made the trip from San Francisco to St. Joseph, Missouri in 7 days and 17 hours. The telegraph now can flash a message in seven minutes. Thomas A. Edison, father of the telegraph, spent his youth in Port Huron.

Development of the Telegraph

The development of communication and transportation go hand in hand. The Pony Express made improved roads necessary. Then came the railroad and the telegraph. Each development meant more and better means of communication. Today there is not a county in the United States which is not reached by the telegraph. In the early days the average number of messages that could be handled by one person on a wire was ten an hour; now seventy-five messages to as many as ten people can be handled on each wire in the same length of time.

Radio

Radio's Rapid Growth

Twenty years ago the radio was little known. In 1922 there were but 60,000 radio sets in the United States. During the next three years this figure had jumped to 4,000,000, and in 1936 it is estimated that at least 22,000,000 radios were in use.

Historical Sketch of Radio

Perhaps the most interesting summary of the development of radio is found in the 1936 yearbook "Broadcasting", part of which follows:

640 B. C. Thales of Miletus observed that amber after being rubbed, acquired the electric property of attracting straws.

1895 Marconi sent and received his first wireless signals across his father's estate at Bologna, Italy.

1899 (March 27) Marconi flashed the first wireless signals across the English Channel.

1901 (Dec. 12) Marconi at Newfoundland intercepted the first transatlantic signal.

1906 Dr. Lee de Forest invented the audion, a three-element vacuum tube, having a filament, plate, and grid.

1916 (Nov.) Station 2 z.k. New Rochelle, N. Y. operated by George Cannon and Charles Logwood broadcast music between 9 and 10 p. m. daily except Sunday.

1920 (August 20) Station WWJ Detroit, operated a radio-
phone. (Regular broadcasting license issued Oct. 13, 1921).

1920 (Nov. 2) Radio Broadcasting begins with KDKA, Pitts-
burgh sending out the Harding-Cox election returns.

1921 (July 2) Dempsey-Carpentier fight was broadcast from
Boyle's Thirty Acres in Jersey City through a temporarily in-
stalled transmitter at Hoboken, N. J., Major J. Andrew White
was the announcer. This event gave broadcasting a tremendous
boost.

1922 (Sept. 7) WEAF broadcast the first commercially spon-
sored program of the Queensborough Corporation, a real estate
organization.

1923 (Jan. 4) The first chain broadcast featured a telephone
tie-up between WEAF, New York and WNAC, Boston.

1924 National Republican Convention at Cleveland and Na-
tional Democratic Convention at New York were broadcast for
first time over nation-wide networks.

1926 (Feb. 23) Creation of Federal Radio Commission. (End
of chaos, caused by wild growth of broadcasting.)

1926 (Nov. 1) National Broadcasting Company was organized.

1927 (Sept. 18) Columbia Broadcasting System went on the
air.

1929 (Dec. 25) Christmas Day was celebrated for the first
time by an international exchange of radio programs between
the United States, England, Germany, and Holland.

1934 (July 11) Federal Communications Commission organ-
ized to succeed Federal Radio Commission and also to regulate
wire telephone and telegraphy.

1935 (Oct. 27) Most comprehensive international program,
"Youth Sings Across Borders," was rebroadcast throughout
America with pickups from 31 countries.

1935 (Nov. 11) Radio maintained two-way communication
with Capt. Stevens and Capt. Anderson on 72,000 feet climb into
stratosphere throughout eight-hour flight, broadcast via N.B.C.

Importance of Radio

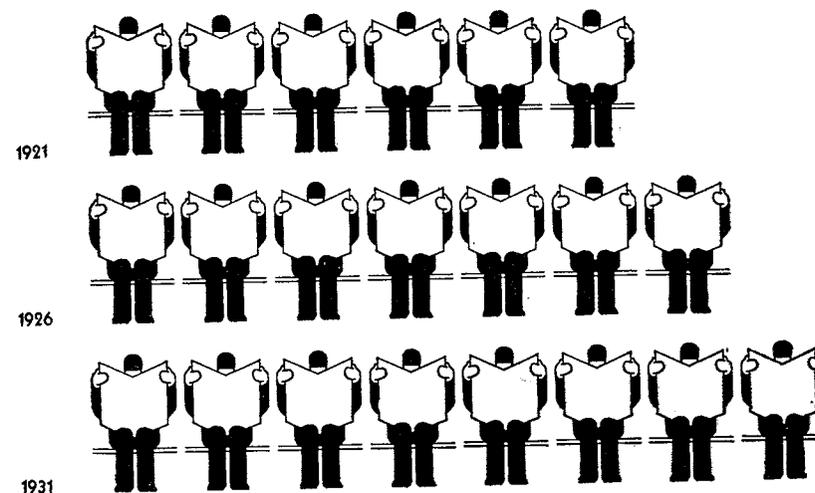
One can hardly appreciate the tremendous influence radio has
upon our civilization, and particularly its bearing upon education.
Isolated regions have been brought into touch with world events.
Great music and drama and famous artists have come into direct
contact with anyone willing to listen to the radio. Candidates for
public office can talk to us in person in our own homes. The air

is laden with beautiful music, but is also rent with less desirable
material. The educational possibilities of radio have as yet hardly
been touched.

Michigan a Pioneer

WWJ at Detroit is generally considered the first commercial
station to take the air with a daily advertised schedule of program
features. Its service, begun August 20, 1920, helped to stimulate a
new industry. This enterprise has a total capital investment in the
United States of more than \$3,000,000,000.

CIRCULATION OF DAILY NEWSPAPERS



Each symbol represents 5 million circulation

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FIGURE 92. CIRCULATION OF DAILY PAPERS IN THE UNITED STATES

Newspapers

One of the oldest and most effective means of communication is
the newspaper. Michigan has been generously supplied with 430
newspapers and periodicals. Among the newspapers are 74 dailies,
2 tri-weeklies, 14 semi-weeklies, and 355 weeklies. To this list should
be added 69 trade publications and 68 general periodicals. The
circulation of the daily papers reaches 1,450,000. The circulation of
weekly religious papers is almost 100,000. Thousands of people
employed and hundreds of business enterprises stimulated through
advertising are only two of the significant services of newspapers.

Even more important is the influence exerted by these newspapers and periodicals on the thought and action of practically every citizen in the state.

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CHAPTER TEN

MICHIGAN AS AN INDUSTRIAL STATE

by William Haber

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and

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Unemployment Compensation Commission

The Transition From Agriculture to Mass Production Industry

The present economic life of Michigan is primarily industrial. Slightly more than 56 per cent of the state's population is concentrated in 14 industrial cities of the state and more than two-thirds of all gainfully employed persons are engaged in the fabrication and distribution of goods. But this dominance of industry is of relatively recent origin. In 1880, 42.2 per cent of all gainful workers in the state were engaged in agriculture. Even in 1900, only 33.2 per cent were employed in manufacturing and mechanical industries, and only 22 per cent were actually engaged in manufacturing. Nearly 70,000 of the 301,000 workers in manufacturing and mechanical industries in 1900 were connected with building. Agriculture remained the largest single group until after 1900, when mass production, new industrial techniques, and new methods of financing industrial operations combined to create a rapid expansion of industry. By 1910, manufacturing and mechanical workers outnumbered workers in agriculture, and the importance of agriculture decreased with each succeeding decade, while industry and trade expanded.

During the five decades from 1880 to 1930, the total number of gainfully employed workers increased without interruption from 569,000 to 1,927,000, a gain of 239 per cent. The number of workers increased faster than the general population of the state, which increased 196 per cent between 1880 and 1930. Gainfully employed persons rose from 34.8 per cent of all persons to 39.8 per cent. Moreover, the number of workers in each industrial group except agriculture, forestry and fishing, and mining increased in each decade. The number in manufacturing and mechanical industry rose from 192,000 in 1880 to 786,000 in 1930, an increase of 308 per cent. Agriculture, however, rose from 240,000 in 1880 to 321,000 in 1910

and then declined to 247,000 in 1930, almost to the 1880 level. The 1880 figure had constituted 42.2 per cent of all gainful workers and 14.7 per cent of the total population, but the number employed on farms in 1930 constituted only 12.8 per cent of the employed population and 5.1 per cent of the total population.

Declining Occupations: Agriculture, Forestry and Fishing, and Mining

Figure 93 and Table 21 bring out very sharply the trends in the total number of workers in each of ten major occupational groups and the ratio of each group to the total. Agriculture is unique in that this group alone represented a progressively lower percentage of all workers employed throughout the five decades, although the actual number engaged in agriculture did not begin to decline until after 1910.

TABLE 21.—Industrial Distribution of Michigan's Working Population from 1880 to 1930 (Source: U. S. Census Reports)

Industry or Occupational Group	Number of Gainful Workers in Each Group					
	1880	1890	1900	1910	1920	1930
Agriculture.....	240,319	274,040	302,978	321,877	272,443	247,652
Forestry and Fishing.....	10,305	15,206	11,215	13,948	17,931	12,541
Extraction of Minerals.....	7,074	19,255	23,448	36,502	28,798	20,510
Manufacturing and Mechanical.....	192,241	249,760	301,145	362,414	618,425	786,031
Transportation and Communication.....	20,006	36,896	51,790	70,480	90,394	134,973
Trade.....	30,572	37,652	60,168	104,414	144,044	236,391
Public Service.....	3,095	5,545	7,280	11,636	19,953	35,546
Professional Service.....	19,895	31,363	37,764	52,127	72,119	123,786
Domestic and Personal Service.....	40,758	61,130	77,175	91,126	96,141	172,120
Clerical.....	4,939	28,728	33,027	48,474	113,766	157,797
Total Workers.....	569,204	759,575	905,990	1,112,998	1,474,014	1,927,347

Industry or Occupational Group	Workers in Each Group as Percentage of All Gainful Workers					
	1880	1890	1900	1910	1920	1930
Agriculture.....	42.2	36.1	33.5	28.9	18.5	12.8
Forestry and Fishing.....	1.8	2.0	1.2	1.2	1.2	0.7
Extraction of Minerals.....	1.2	2.5	2.6	3.3	2.0	1.1
Manufacturing and Mechanical.....	33.8	32.9	33.2	32.6	41.9	40.8
Transportation and Communication.....	3.5	4.9	5.7	6.3	6.1	7.0
Trade.....	5.4	4.9	6.7	9.4	9.8	12.3
Public Service.....	.5	.7	.8	1.0	1.4	1.8
Professional Service.....	3.5	4.1	4.2	4.7	4.9	6.4
Domestic and Personal Service.....	7.2	8.1	8.5	8.2	6.5	8.9
Clerical.....	.9	3.8	3.6	4.4	7.7	8.2
All Occupations.....	100.0	100.0	100.0	100.0	100.0	100.0

Forestry and fishing, never constituting more than two per cent of all gainfully employed, fluctuated between 10,000 workers in 1880 and 18,000 in 1920, but in 1930 the 12,000 persons engaged in these pursuits represented less than one per cent of all employed workers.

There was both an actual and a relative increase in the number of workers engaged in mining from 1880 to 1910. The actual number of workers increased five-fold in the 30 year period, but these workers never included more than 3.3 per cent of all gainfully employed persons. From a peak of 36,000 in 1910 the number of mine workers in 1930 had fallen to 20,000—or only 1.1 per cent of all employed workers.

The Expansion of Manufacturing

Workers in manufacturing and mechanical industries comprised 33.8 per cent of all gainful workers in 1880 and this ratio fluctuated very little until the war decade (1910-1920). At the end of this decade, 42 per cent of Michigan's workers were in this group. The 1930 figure was slightly lower (40.8 per cent), but this was a result of the large amount of unemployment among manufacturing workers at the time of the census. The actual number of persons employed in this group has increased steadily from 192,000 in 1880 to 786,000 in 1930. The rate of increase was sharpest between 1910 and 1920, when war-time production assisted in adding some 256,000 workers in this group, a gain of 70.6 per cent over the previous decade. In the next decade an all-time peak of 786,000 was reached, although the rate of increase was proportionately less than that for trade and clerical occupations.

The number of workers in factory occupations increased even faster than the total number in manufacturing and mechanical industries. The number employed in building and construction, for example, increased by only 62 per cent between 1900 and 1930; the number in other manufacturing and mechanical occupations, most of them factory workers, increased by 191 per cent. Details are shown in the following tabulation:

Year	Total: Manufacturing and Mechanical Industries		Building and Construction		Other Manufacturing and Mechanical Industries	
	Number	Per Cent Increase	Number	Per Cent Increase	Number	Per Cent Increase
1900.....	301,145	.....	69,749	.....	231,396	.....
1910.....	362,414	20.4	81,692	17.1	280,722	21.3
1920.....	618,425	70.6	83,509	2.2	534,916	90.6
1930.....	786,031	27.1	113,046	35.4	672,985	25.8
Total Increase 1900-30.....	484,886	161.0	43,297	62.1	441,589	190.8

Other Expanding Occupations

Any increase in manufacturing and specialized production in general must result in a corresponding increase in the number of persons engaged in clerical work, professional pursuits, public service, and other non-manual occupations which are necessary adjuncts to expanding manufacture. The number of workers engaged in transportation and communication, which for the most part represents but another part of the process of specialized production and distribution, has also increased in almost direct proportion to an increase in manufacture.

The greatest relative increase in total number of workers occurred in clerical occupations, which employed about 5,000 workers in 1880 but increased to more than 157,000 in 1930—a gain of more than 3,000 per cent. In the single decade between 1910 and 1920 they more than doubled in number—from 48,000 to 113,000. Clerical workers in 1880 accounted for only 0.9 per cent of all employed workers, but by 1930 they represented 8.2 per cent, more than half as many as were employed in agriculture, forestry, and fishing.

Trade, transportation, and communication have employed a steadily increasing number of Michigan's workers, increasing from 50,000 in 1880 to 234,000 in 1930. They formed a progressively larger proportion of all gainful workers, the ratio rising from 8.9 per cent in 1880 to 15.9 per cent in 1930.

TABLE 22.—Increase in Number of White Collar Workers from 1880 to 1930

Occupation	1880	1910	Per Cent Increase 1880-1910	1930	Per Cent Increase 1910-1930
Professional.....	19,895	52,127	162	123,786	137
Technical Engineers.....	273	1,006	268	10,566	950
Teachers and Professors.....	9,038	21,232	135	42,358	99
Designers.....	58	1,655	2,753	6,472	291
Chemists, Assayers, etc.....	42	711	1,593	2,119	198
Photographers.....	452	1,184	162	1,673	41
Trained Nurses.....	*	2,338	.....	11,657	399
Clerical.....	4,939	48,474	881	157,797	225
Stenographers and Typists.....	*	9,104	.....	31,202	243
Bookkeepers, Cashiers, and Accountants.....	*	15,270	.....	37,188	143
Clerks (except in stores).....	*	18,991	.....	79,441	318
Trade.....	30,572	104,414	241	236,391	126
Public Service.....	3,095	11,636	276	35,546	205
Total.....	58,501	216,651	270	553,520	155

*Not listed separately in 1880

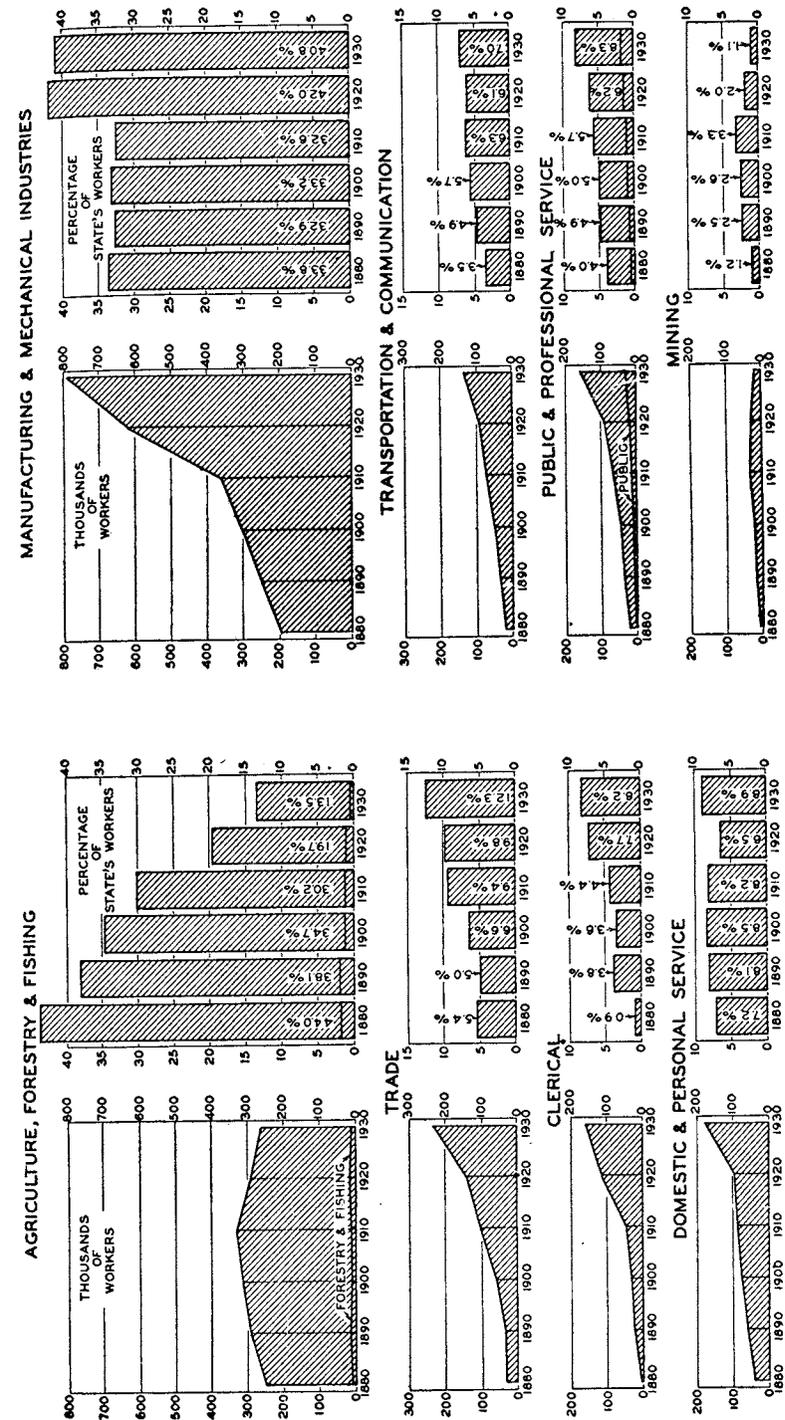
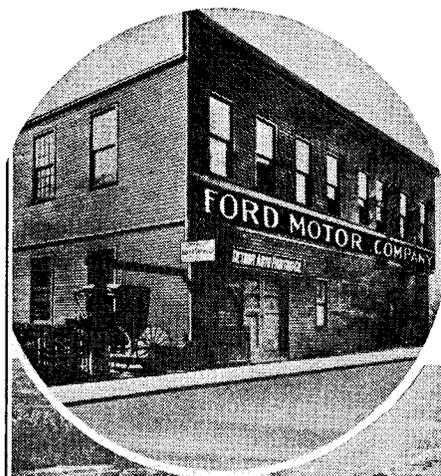
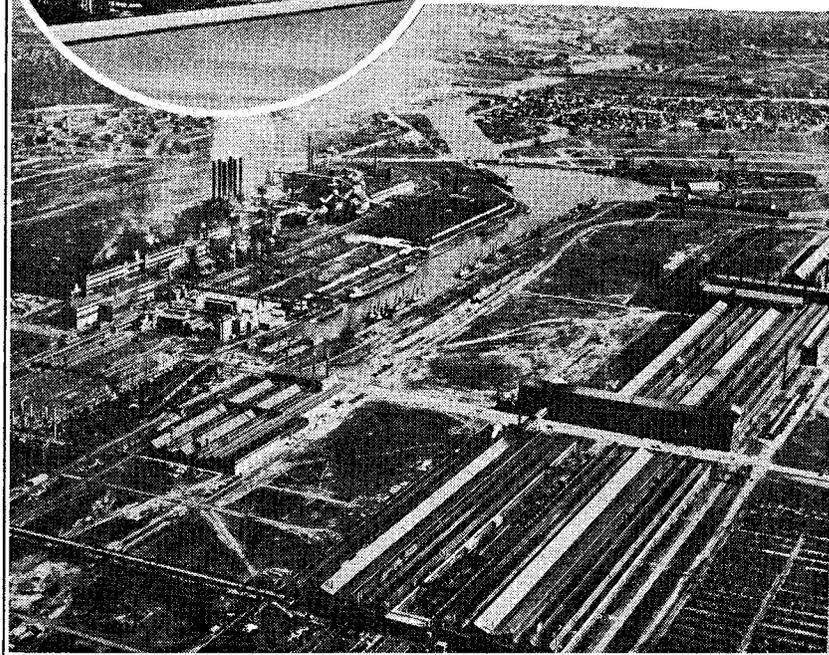


FIGURE 93. CHANGES IN OCCUPATIONAL COMPOSITION OF MICHIGAN'S WORKING POPULATION: 1880-1930
FROM THE STATE EMERGENCY WELFARE RELIEF COMMISSION



Left—About 1903, Henry Ford built this small two-story wooden structure where the earliest models of his automobile were manufactured. This factory, equipped with hand tools and a few machines, was worth not more than \$100,000. It could produce only a few cars per year.

Below—The Ford Plant with its 35 branch assembly plants is one of the largest in the world and employs more than 100,000 men. Millions of dollars have been invested in this plant. The Ford Motor Company turns out more than a million cars and trucks each year.



FROM THE FORD MOTOR COMPANY

FIGURE 94. IN OUR MACHINE AGE—A MICHIGAN INDUSTRY

The tabulation above summarizes the increase in total number engaged in selected non-manual occupations. The per cent of increase from 1880 to 1910 and from 1910 to 1930 is also shown. The total number of white-collar workers in 1880 was 58,000; by 1910 they had increased to 216,600, a 250 per cent gain; in 1930 they numbered 553,500, an increase of 156 per cent over the 1910 total. The increasing relative importance of these workers in the industrial life of the state is attested by the fact that while in 1880 they comprised only 10 per cent of all gainful workers, in 1910 they constituted 20 per cent and in 1930, 29 per cent.

The rate of increase of various occupations within a general classification in some instances was far in excess of the average for the group or for all white-collar workers. As indicated above, clerical employees increased in greater numbers than any other group except those engaged in trade. By 1910 they had increased more than 880 per cent over the 1880 figure of 5,000. In 1930 they numbered 157,800, a gain of 226 per cent over the 1910 total. Of the professional group, the most rapidly growing class were technical engineers, who increased in number from 273 in 1880 to 1,006 in 1910 and to 10,556 in 1930, a 950 per cent gain in the last two decades. Designers gained by over 2,750 per cent between 1880 and 1910 and by nearly 300 per cent in the two following decades. The gain of these two occupations in the twenty years following 1910 indicated the growing importance of manufacturing industry during that period. Chemists and assayers increased by 1,593 per cent in thirty years and by almost 200 per cent in the latter half of the fifty-year period, but like engineers and designers their actual numbers were relatively small. The number of trained nurses rose nearly 400 per cent between 1910 and 1930.

The changing occupational character of Michigan's population has resulted in a decrease in the percentage of persons who are self-employed as farmers and small business men, and an increase in the proportion who are dependent on wages. This growing dependence on wages rather than self-employment inevitably results in an increased risk of unemployment and insecurity for many of the state's workers. Certain aspects of this insecurity are discussed at the close of the chapter.

Trends in Sex and Age of the Working Population

The ratio of gainfully employed persons to total population has shown a general increase since 1880. In that year 35 per cent of Michigan's citizens were listed as gainful workers. In 1920 and 1930, 40 per cent of the population were gainfully employed (Table

23). Each gainful worker in 1880 supported an average of 2.9 persons, but in 1930 there was one worker for every 2.5 persons. This increase in the proportion of gainful workers has two principal causes: (1) a rapid movement of women into many occupations which take them away from home, and (2) a decrease in the percentage of children in the population.

TABLE 23.—Gainful Workers as Per Cent of Michigan Population Over Ten and Over Fifteen Years of Age 1880-1930

YEAR	Population 10 Years Old or Over			Population Over 15 Years of Age		
	Total	Gainfully Employed	Per Cent Gainfully Employed	Total	Gainfully Employed	Per Cent Gainfully Employed
Both Sexes:						
1930.....	3,891,914	1,927,347	49.5	3,351,024	1,920,772	57.3
1920.....	2,895,606	1,474,014	50.9	2,511,393	1,460,860	58.2
1910.....	2,236,252	1,112,998	49.8	1,928,557	1,093,705	56.7
1900.....	1,896,265	905,990	47.8	1,600,858	879,293	54.9
1890.....	1,619,035	764,437	47.2	1,398,808	751,661	53.7
1880.....	1,236,686	569,204	46.0	1,028,800*	554,115*	53.9
Male:						
1930.....	2,036,395	1,567,525	77.0	1,763,045	1,562,452	88.6
1920.....	1,536,629	1,228,631	80.0	1,342,135	1,218,740	90.8
1910.....	1,163,835	926,815	79.6	1,008,333	912,303	90.5
1900.....	983,089	772,299	78.6	834,202	752,776	90.2
1890.....	851,163	668,489	78.5	739,725	658,274	89.0
1880.....	659,101	514,191	78.0	553,281*	502,581*	90.8
Female:						
1930.....	1,855,519	359,822	19.4	1,587,979	358,832	22.6
1920.....	1,358,977	245,383	18.1	1,169,258	242,120	20.7
1910.....	1,072,417	186,183	17.4	920,224	181,402	19.7
1900.....	913,176	133,691	14.6	766,656	126,517	16.5
1890.....	767,872	95,948	12.5	659,083	93,387	14.2
1880.....	577,585	55,013	9.5	475,519*	51,534*	10.8

*Data for 1880 includes persons 16 years of age and over

Women workers have represented an increasing proportion of the state's gainful workers in each decade since 1880. In 1880 only 55,000 of the 569,000 workers in Michigan were women; there was only one woman worker for every nine male workers. By 1930, there was one gainfully employed woman to every four male workers. The number of women workers was 550 per cent greater than in 1880 although the number of women over ten years of age had increased only 221 per cent since that year.

The great majority of the women gainfully employed in 1880 were employed either in domestic and personal service or in manufacturing and mechanical industries. These two groups accounted for 44,000 of the 55,000 women workers in that year, or over 80 per cent of the total. Women workers constituted 76 per cent of all workers in manufacturing and mechanical pursuits. During the half century which followed, women found employment in increasing numbers in trade, clerical occupations, professional service, and transportation and communication (Table 24).

TABLE 24.—Trends in the Number and Percentage of Women Workers in Principal Occupational Groups

	1880	1890	1900	1910	1920	1930
Total Number of Gainfully Employed Persons.....	569,204	759,575	905,990	1,112,998	1,474,014	1,927,347
Gainfully Employed Women.....	55,013	95,948	133,691	186,183	245,383	359,822
Women Workers as Per Cent of All Gainful Workers.....	9.7	12.6	14.8	16.7	16.7	18.7
Occupational Group	Number of Women in Major Occupational Groups					
	1880	1890	1900	1910	1920	1930
Agriculture.....	973	6,097	8,892	10,461	8,774	6,586
Forestry and Fishing.....		4	5	8	38	10
Mining.....			13	120	216	130
Manufacturing and Mechanical Industry.....	13,143	24,828	35,556	49,011	55,587	55,882
Transportation and Communication.....	117	380	1,286	3,995	7,864	10,599
Trade.....	1,146	2,102	6,345	15,173	24,735	40,306
Public Service.....	117	173	225	344	650	682
Professional Service.....	8,294	12,986	16,468	25,745	35,256	57,471
Domestic and Personal.....	30,996	44,575	55,385	61,932	59,259	109,839
Clerical.....	227	4,803	9,516	19,394	53,004	78,317
All Occupations.....	55,013	95,948	133,691	186,183	245,383	359,822
Occupational Group	Women as Per cent of All Workers in Each Group					
Agriculture.....	.4	2.2	2.9	3.3	3.2	2.7
Forestry and Fishing.....		*	*	*	.2	
Mining.....			.1	.3	.8	.6
Manufacturing and Mechanical Industry.....	6.8	9.9	11.8	13.5	9.0	7.1
Transportation and Communication.....	.6	1.0	2.5	5.7	8.7	7.9
Trade.....	3.7	5.6	10.6	14.5	17.2	17.1
Public Service.....	3.8	3.1	3.1	2.9	3.3	1.9
Professional Service.....	41.7	41.4	43.6	49.4	48.9	46.4
Domestic and Personal.....	76.0	72.9	71.8	67.9	61.6	63.8
Clerical.....	4.6	16.7	28.8	40.0	46.6	49.6
Occupational Group	Women Workers in Each Group as Percentage of All Women Workers					
Agriculture.....	1.8	6.3	6.7	5.6	3.6	1.8
Forestry and Fishing.....		*	*	*	*	*
Mining.....						
Manufacturing and Mechanical Industry.....	23.9	25.9	26.6	26.3	22.7	15.5
Transportation and Communication.....	.2	.4	.9	2.2	3.2	2.9
Trade.....	2.1	2.2	4.8	8.2	10.1	11.2
Public Service.....	.2	.2	.2	.2	.3	.2
Professional Service.....	15.1	13.5	12.3	13.8	14.4	16.0
Domestic and Personal.....	56.3	46.5	41.4	33.3	24.1	30.5
Clerical.....	.4	5.0	7.1	10.4	21.6	21.8
All Occupations.....	100.0	100.0	100.0	100.0	100.0	100.0

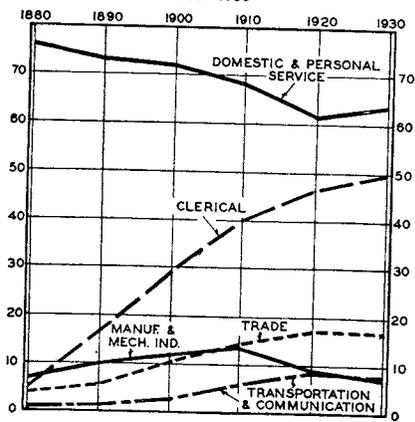
*Less than .1 per cent

The proportion of women workers increased most rapidly in clerical occupations. In 1880, only 4.6 per cent of the clerical workers in the state were women and these represented less than half of one per cent of all gainfully employed women. By 1930, 49.6 per cent of the workers in clerical occupations were women and these occupations employed nearly 22 per cent of all women workers. A similar increase occurred in occupations connected with trade;

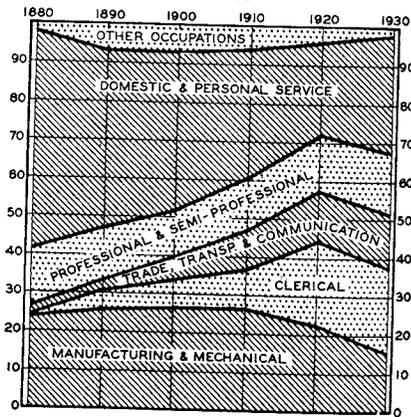
less than 4 per cent of all workers employed in trade in 1880 were women, but over 17 per cent in 1920 and 1930. Meanwhile, the proportion of domestic and personal service workers who were women had been declining from 76 to 64 per cent, and the percentage of women in professional and semi-professional pursuits rose only slightly—from 42 to 46 per cent. In manufacturing and mechanical occupations the percentage of women workers increased from 6.8 per cent in 1880 to 13.5 per cent in 1910, but declined to barely 7 per cent in 1930. The lower part of *Table 24* shows the changes in the percentage of all women workers who were engaged in each group of occupations in each decade. Domestic and personal service, which employed 56.0 per cent of all women in 1880, employed less than 31 per cent in 1930. Manufacturing and mechanical industries, which employed nearly 24 per cent in 1880, employed only 15 per cent in 1930. The proportion employed in professional pursuits remained fairly constant—about 15 per cent. A rapidly increasing proportion of all women workers were drawn into trade, transportation and communication, and clerical occupations. These three groups represented less than 3 per cent of all women workers in 1880, about 13 per cent in 1900, and nearly 36 per cent in 1930.

The increasing importance of women in the state's working population creates certain economic problems which have not yet been wholly solved. The woman worker frequently considers her employment as a temporary source of income rather than a permanent vocation and often works for a wage which would not be adequate to support an entire family. Since the family remains

WOMEN AS PERCENT OF WORKERS IN SELECTED OCCUPATIONS 1880-1930



PERCENTAGE DISTRIBUTION OF ALL WOMEN WORKERS BY OCCUPATIONS 1880-1930



FROM THE STATE EMERGENCY WELFARE RELIEF COMMISSION

FIGURE 95. PERCENTAGE DISTRIBUTION OF WOMEN WORKERS IN MICHIGAN

the economic unit of social life, this may in some cases tend to force male workers, who must support several dependents, out of those jobs which can be handled with equal efficiency by women. Employment in those occupations in which men remain dominant must, therefore, expand rapidly enough to employ the available labor supply, and its failure to do this has created some of the unemployment problems of recent years.

Reduction of Child Labor

A large part of the increase in the ratio of gainful workers to total population is due to the fact that children too young to work make up a smaller part of the total population than was true in earlier decades. Children under 10 years of age, and the great majority of those between 10 and 15 years of age are not gainfully employed and are not listed as gainful workers by the census. In 1880, 24.5 per cent of Michigan's residents were less than 10 years old; in 1930 less than 20 per cent were in this age group. The percentage of persons less than 15 years of age similarly decreased from 35.4 per cent in 1880 to 33 per cent in 1900, and to less than 31 per cent in 1930. If the number of gainful workers is compared to the number of persons over 15 years old, the percentage gainfully employed has not increased as rapidly as the ratio of gainful workers to total population. The percentage of males over 15 years old who were gainfully employed was actually lower in 1930 than at any time in the past half century, and in the total population of both sexes over 15 years old the percentage of persons gainfully employed decreased between 1920 and 1930.

TABLE 25.—Number and Proportion of Children 10 to 15 Years of Age Gainfully Employed in Michigan, 1900-1930

Year	Population 10 to 15 Years of Age		
	Total	Gainfully Employed	Per cent Gainfully Employed
Both Sexes:			
1930.....	540,890	6,575	1.2
1920.....	384,213	13,154	3.4
1910.....	307,695	19,293	6.3
1900.....	295,407	26,697	9.0
Male:			
1930.....	273,350	5,073	1.8
1920.....	194,494	9,891	5.1
1910.....	155,502	14,512	9.3
1900.....	148,887	19,523	13.1
Female:			
1930.....	267,540	1,502	0.6
1920.....	189,719	3,263	1.7
1910.....	152,193	4,781	3.1
1900.....	146,520	7,174	4.9

One of the most important changes in the character of the state's employed population has been the great reduction in child labor since the beginning of the century. In 1900, 9 per cent of the children between 10 and 15 years of age in Michigan were gainfully employed. These workers included 13 per cent of the boys in this age group and nearly 5 per cent of the girls. Each decade between 1900 and 1930 saw a decrease in the total number of child workers and an even more rapid decrease in the percentage of children who were working. The number of children between 10 and 15 years of age increased from 295,000 in 1900 to 540,000 in 1930 but the number gainfully employed declined from 26,700 to 6,575. In 1930 only 1.2 per cent of the children between 10 and 15 years of age were gainful workers.

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CHAPTER ELEVEN

UNEMPLOYMENT IN MICHIGAN

by William Haber

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and

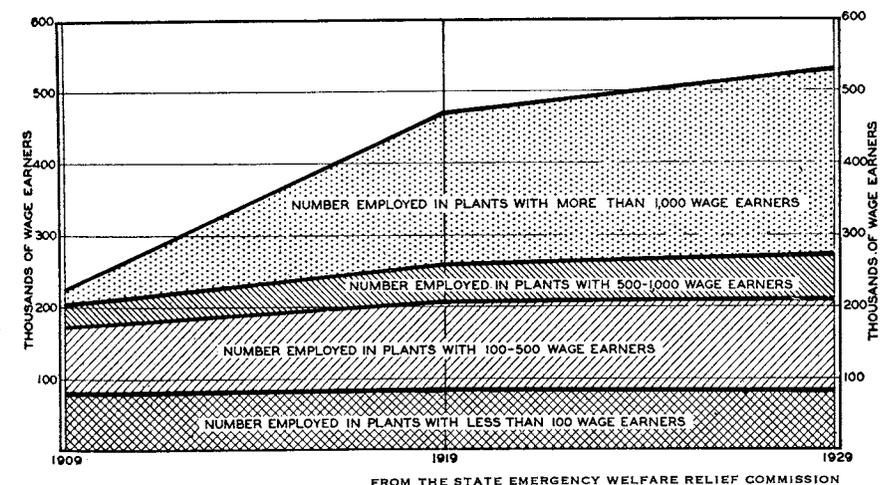
Paul Stanchfield

Acting Director

Unemployment Compensation Commission

The Declining Importance of Small Establishments and Non-factory Occupations

The rise of large scale industry has rapidly revolutionized the character of the individual worker's job. Among the most important changes has been the shift from small shops employing a limited number of relatively skilled workers to gigantic factories employing hundreds or thousands of workers under one roof, with the great majority of them working at repetitive tasks in which skill is of minor importance. The great mass of factory workers are semi-skilled or unskilled machine tenders rather than skilled artisans and the size of individual establishments has eliminated much of the personal relationship between worker and employer. In the two decades preceding the depression there was a rapid concentration of manufacturing in large establishments.



FROM THE STATE EMERGENCY WELFARE RELIEF COMMISSION
 FIGURE 96. NUMBER OF WAGE EARNERS EMPLOYED IN MICHIGAN MANUFACTURING PLANTS OF VARIOUS SIZES—1909, 1919, 1929

Figure 96 and Table 26 show that plants hiring less than 100 wage earners employed nearly 36 per cent of Michigan's factory workers in 1909, 18 per cent in 1919, and only 16 per cent in 1929. In 1909 less than one quarter of Michigan's factory workers worked in plants containing over 500 employees. Ten years later the ratio was nearly 56 per cent, and by 1929 three factory workers out of every five were in plants with more than 500 workers.

TABLE 26.—Distribution of Workers in Michigan Manufacturing Plants by Size of Establishment: 1909, 1919, and 1929

Size of Establishment	1909		1919		1929	
	Number of Workers	Per cent of Total	Number of Workers	Per cent of Total	Number of Workers	Per cent of Total
All sizes	231,499	100.0	471,242	100.0	530,035	100.0
Less than 20 wage earners	28,054	12.1	25,321	5.4	25,535	4.8
20 to 100 wage earners	54,516	23.5	58,995	12.5	59,532	11.2
100 to 500 wage earners	91,443	39.5	124,056	26.3	126,886	24.0
500 to 1000 wage earners	31,173	13.5	53,182	11.3	60,885	11.5
Over 1000 wage earners	26,313	11.4	209,688	44.5	257,197	48.5

This change in the size of manufacturing plants is important not only because it removes a personal contact between the employer and his men which may, in small plants, discourage lay-offs, but at the same time it has changed the relative bargaining power of the worker and his employer.

Along with the increase in the size of establishment, there has been an increase in the use of machinery. This is best indicated by the increase in primary horse-power. Table 27 shows that in 1909 there were 2.58 horse-power per worker; this increased by 1929 to 4.45 horse-power per worker, a rise of 72 per cent in mechanization.

TABLE 27.—Increase in Primary Horse-power in Michigan Industries: 1909-1929*

Year	Wage Earners	Horse-power	Horse-power Per Wage Earner
1909	231,499	598,288	2.58
1919	471,242	1,202,128	2.55
1929	530,035	2,356,749	4.45

*Sources: U. S. Census of Manufactures, 1909, 1919, 1929

With the increase in mechanization in industry, the worker's job and skill may be replaced at any time by a machine. For the older worker in industry, this usually means loss of employment or employment at a semi-skilled or unskilled job. A worker whose skill has been replaced by a machine may be retained to operate

this machine, but usually as a semi-skilled or unskilled worker. The younger worker may develop some other skill.

Machines may create demand for new types of skilled workers, and also raise many workers from the unskilled class to the semi-skilled class. Many unskilled operations that in the past were done manually are now performed with machines, which usually require more skill and technique than before. In the last few decades, there has been a decrease in the proportion of skilled and unskilled jobs in industry, and an increase in the proportion of semi-skilled machine-tending operations. Workers in such jobs are more easily replaced than skilled craftsmen, and in many trades more subject to the risk of unemployment. The declining importance of skills thus results in greater insecurity for many individual wage-earners.

The Extent and Character of Past Unemployment in Michigan

Any systematic planning for economic security must be founded on a thorough study of the nature of the unemployment problem as it has existed in the past, both before and during the depression. Even at the height of "prosperity" unemployment was far more common than is generally realized. Between 1922 and 1929 an average of about 8 per cent of the nation's workers were out of work, and in the best of these years from 1,500,000 to 2,000,000 workers were jobless. Since 1930 the number of idle workers has risen to unheard-of totals. Revised estimates of the American Federation of Labor indicate that over 14 million American workers were unemployed in 1932 and 1933, over 12 million in 1934, and nearly 11.5 million in October, 1935. Michigan, with its highly specialized industrial structure, suffered sooner and more severely than most other states.

The threat of unemployment has been especially serious in Michigan, and will probably continue to be for many years. The proportion of its workers who are operating their own businesses or farms is smaller than in most other states, the trend to large scale industry is further advanced, and stable employment is rendered difficult by the dominance of a single industry—automobile manufacture—with its dependence on seasonal markets and a highly unstable demand for its products.

Between 1930 and 1933 the percentage of unemployment in Michigan was higher than in any other state, and much higher than the national average. In 1932 over 43 per cent of the state's non-agricultural workers were unemployed, and in 1933 nearly 46 per cent. Estimates prepared by the Committee on Economic Security for the years 1930-33 are presented in Table 28.

TABLE 28.—Average Percentage of Non-Agricultural Unemployment in Michigan and the United States (1930-1933)

Year	Per cent of Gainful Workers Unemployed	
	Michigan	United States
April, 1930.....	13.9	8.5
Average, 1930.....	18.0	12.1
1931.....	29.7	23.3
1932.....	43.1	34.6
1933.....	45.9	33.2
Average, 1930-1933.....	34.3	25.8

Seasonal and Cyclical Unemployment Before the Depression

Unemployment has been a serious problem in Michigan since manufacturing became the state's most important industry. The two decades before the depression were marked by increasing irregularity of manufacturing employment. The mass production industries have operated with pronounced seasonal peaks and lulls, and smaller industries have not escaped. As feeder plants for large factories their production levels may of necessity follow those of the larger plants or, if operating for a more extensive market, they may be subject to irregular production conditioned by the changing volume of orders.

There is a clear-cut distinction between cyclical unemployment, which results from periodic economic depressions, and seasonal unemployment which occurs even in normal years because of uneven production rates. Seasonal unemployment in general—especially in the larger plants where the vast majority of workers are concentrated—is due to the fact that many of our industries do not find it profitable to operate at peak capacity throughout the year under existing market conditions. The time of peak production is, in general, geared to the seasonal demands of the market. In the automobile industry, for example, the season decided upon for introduction of new models will bring a sharp rise in production over the slack period caused by declining sales of the old model in the preceding months. Workers who are needed during the peak season but not during the balance of the year must either remain unemployed or find work in some other industry.

Our knowledge of past unemployment is not complete. Even for manufacturing industries, the State Department of Labor and Industry has no record earlier than 1930 and for some industries and some non-manufacturing industries there are virtually no complete statistics. Even the limited facts which are available, however, are

enough to indicate certain general facts which outline the nature of the problem.

1. Loss of working time because of seasonal unemployment was greater in the post-war period than before the war, suggesting that the trend to large plants and semi-automatic jobs has done much to reduce the individual worker's security.

2. Statistics on employment fluctuations in the Detroit area show that during the years 1920-31 *two out of every five factory workers* who were employed in the peak employment month of a given year were jobless in the month of lowest employment. In the depression years since 1931, seasonal irregularities were even greater.

3. The automobile industry, which is of dominant importance in Michigan, was especially subject to seasonal unemployment between 1924 and 1933, with from 17 to 43 per cent of the workers who actually worked in the industry during some part of the year unemployed in the month of least employment.

4. Peak and slack periods in employment mean a financial loss not only to the worker who is laid off but also to the worker who stays on the job. Even the worker who is kept on the job may suffer a serious reduction in his working hours and income.

5. Semi-skilled and unskilled workers are especially subject to unemployment, and at the same time least likely to have enough savings to tide them over until a new job is found.

6. Technological employment—the displacement of workers by machinery and new production methods—is another persistent factor in unemployment.

7. A majority of the workers who suffer financial losses because of seasonal and technological unemployment are out of work for periods of less than a year—a period which, under present conditions, is long enough to force them to apply for public relief, but short enough to be covered, at least in large part, by an unemployment insurance plan.

Seasonal Unemployment

A fairly accurate test of the growing importance of seasonal unemployment in Michigan is provided by data on monthly fluctuations in manufacturing employment which have been collected in the periodic U. S. Census of Manufactures. *Table 29* indicates the maximum number of persons who were employed in Michigan factories in the months of peak employment in 1909, 1914, 1919, and

1929. By comparing this number with the number employed in the month of least employment the number of workers who suffered at least one month of unemployment during the year can be computed. The difference between the peak month and the second lowest month indicates the minimum number who were unemployed two months or more; the remainder of the table is computed in the same way.

Data are available only for the years in which the National Census of Manufactures was taken but it is enough to indicate that seasonal fluctuation in employment has increased in the post-war period. In 1909 and 1914 the difference between maximum and minimum employment was only 15 and 13 per cent. In 1919, the difference was over 19 per cent, and in 1929 it was 29 per cent. The percentage of the workers employed in the peak month who were unemployed for two months or more was 13 per cent in 1909, 11 per cent in 1914, nearly 19 per cent in 1919 and over 26 per cent in 1929.

All of the unemployment estimates shown on the table are conservative, since they represent the difference between the peak month and other months in order of rank and do not include workers who were employed in the peak month but replaced by some other worker in other periods.

TABLE 29.—Seasonal Unemployment among Workers in Michigan Manufacturing Industry 1909-1929*

Extent of Unemployment	1909		1914		1919		1929	
	Employed during peak month but unemployed part of year							
	Number	Per cent of Peak Employment	Number	Per cent of Peak Employment	Number	Per cent of Peak Employment	Number	Per cent of Peak Employment
Number Employed during Peak Month	250,078	100.0	287,103	100.0	522,876	100.0	587,002	100.0
Unemployed								
1 Month or more...	38,399	15.4	37,326	13.0	101,383	19.4	170,206	29.0
2 Months or more...	31,848	12.7	32,425	11.3	97,671	18.7	157,105	26.8
3 Months or more...	27,805	11.1	18,704	6.5	94,755	18.1	90,534	15.4
4 Months or more...	26,991	10.8	17,571	6.1	91,855	17.6	54,832	9.3
5 Months or more...	25,267	9.3	16,649	5.8	79,951	15.3	49,085	8.4
6 Months or more...	21,020	8.4	14,036	4.9	61,158	11.7	38,186	6.5
7 Months or more...	18,055	7.2	13,237	4.6	42,724	8.2	35,111	6.0
8 Months or more...	14,274	5.7	12,939	4.5	24,961	4.8	29,197	5.0
9 Months or more...	9,768	3.9	9,279	3.2	15,826	3.0	28,408	4.8
10 Months or more...	8,166	3.3	6,063	2.1	7,071	1.4	14,355	2.4
11 Months or more...	3,349	1.3	4,927	1.7	2,253	0.4	7,583	1.3

*From reports of the U. S. Census of Manufactures, covering Michigan firms with annual production of \$5,000 or more

Technological Unemployment—Machinery versus Man Power

Apart from seasonal unemployment, there are many other important factors which threaten the security of the industrial worker.

One of these is technological unemployment—the displacement of workers by improved industrial methods and labor saving machinery. In all periods but especially during the last two decades, industrial efficiency has encouraged the use of machinery which makes it possible to turn out a given amount of product with fewer man hours of labor. Changing technology has had a telling effect both upon the worker who has been displaced by the machine and the productivity of the worker who remains.

The exact extent to which such changes are responsible for unemployment is subject to debate but its importance is recognized by every student of labor problems. Examples of technological change in the automobile industry were noted in the Henderson Report. One-piece stamping of the under-body has saved 50 hours in the manufacture and assembly of parts. In one plant a one-piece top brought a saving of 43 hours of labor. The labor cost of a door in one plant has been reduced from \$4.00 to 15 cents, in the brief space of five years, by the use of fewer parts and the installation of a welding machine. Welding of back and quarter panels, once requiring six welders and 12 finishers, now is completed by two men with a welding machine and one helper for finishing. The installation of conveyors in handling stock has long been recognized as a potent and efficient means of eliminating man power. The use of a quick change holding jig in the rough boring of connecting rods has enabled one man to turn out more work than the combination of four men and four machines before the new method was put into operation.

Increased mechanization of the automobile industry has meant the loss of earnings to thousands who are dependent upon the industry for a living. A survey by the U. S. Department of Labor showed that during April, the peak production month of 1935, the automobile parts factories increased production 16 per cent over April, 1934, the peak month of that year. Over the same period there was a 12.5 per cent decrease in employment and only 6.2 per cent increase in hourly earnings, while weekly earnings increased only 1.8 per cent. During this same period the automobile plants increased production by 35 per cent and decreased employment by 4.2 per cent, but hours were increased only 7.3 per cent and hourly earnings increased only 2.1 per cent per worker.

Labor productivity has continued to increase during the depression. The National Industrial Conference Board has estimated that the average worker in manufacturing could turn out one-quarter more work in an hour in 1935 than in 1929. The increased markets which accompany industrial recovery will no doubt give further impetus to the installation of improved equipment which would not

have been profitable during the depression. Technological unemployment need not necessarily be permanent but it does compel the individual worker to change from his accustomed occupation to some new type of work. The intervening period may be long enough to exhaust his savings and other resources. Technological unemployment has a special bearing on the status of the skilled worker in industry. Jobs once highly specialized can now be filled from the larger supply of semi-skilled and unskilled workers. American industrial history contains many examples of skilled crafts which have been wiped out by mechanical innovations.

The worker who is displaced by the machine, like the worker who suffers a seasonal lay-off, finds that his income is interrupted while his living costs go on. If his savings are insufficient, as they usually are, he must at present turn to public or private relief agencies. The adoption of a systematic unemployment insurance plan is a possible alternative in dealing with these problems.

Short-time Unemployment

An unemployment insurance plan cannot give full protection to workers who are idle for very long periods, but it can be effective during the first five or six months of the unemployment period. For this reason it is important to know what proportion of all unemployment continues for relatively short periods.

The Michigan Unemployment Census of 1935 provided a partial answer to this question. *Table 30* shows the percentage of all unemployed workers in various occupational groups who had been out of work for periods of less than six months and less than one year.

TABLE 30.—Per Cent Unemployed in Various Occupational Groups for Selected Periods of Unemployment*

Occupational Group	Per cent Unemployed Less Than 6 Months	Per cent Unemployed Less Than One Year
Professional.....	37.9	56.8
Proprietors.....	42.2	56.2
Clerical.....	37.2	54.0
Skilled.....	37.7	54.0
Semi-Skilled.....	38.5	61.5
Unskilled.....	36.9	50.6

*Michigan Unemployment Census, 1935

These figures show that in every occupational group between 37 and 42 per cent of the unemployed had been jobless less than six months, and that from 50 to 62 per cent had been idle less than one

year. Nearly two-thirds of the semi-skilled group, which is especially important in an insurance plan, had been out of work less than 12 months.

In considering these percentages it is important to note that a census at any given time will inevitably show a rather large percentage of prolonged unemployment. Workers who are jobless for three months during the year would have only one chance in four of being unemployed at the time of enumeration, while workers unemployed for more than a year would be included whenever the census was taken. If the data could be arranged so as to show the amount of unemployment suffered by those who were not unemployed at the census date, it is probable that most of the unemployment was of less than 6 months' duration.

Total Extent of Unemployment in Michigan, 1929-35

That unemployment is a potential threat to the security of the great majority of industrial workers is conclusively shown by a study of employment conditions in Michigan during the depression years. It has already been noted in *Table 28*, above, that the average percentage of unemployment in Michigan during the years 1930-33 was higher than in any other state. Data collected by the Department of Labor and Industry, the U. S. Census of Manufactures, and the President's Committee on Economic Security make it possible to estimate what unemployment meant in terms of the number of workers who were affected. At the time of peak employment in 1929 nearly 580,000 workers were working in Michigan's factories. Even in this boom year the average employment was 49,500 less than the peak, and in December, the low month, employment was 163,000 below the peak. Even if it is assumed that no workers were unemployed in the peak month (which is actually not true) an average of 8.5 per cent of Michigan's manufacturing wage-earners were unemployed during the year, and over 28 per cent in the low month.

Assuming that the available labor supply did not change between 1929 and 1935, the average number of unemployed factory workers would have been over 170,000 in 1930, 245,000 in 1931, 295,000 in 1932, and 269,000 in 1933. The *average unemployment* during 1932 presented 51 per cent of the 1929 peak, and in October 1932 nearly twice as many factory workers were unemployed as were actually working in Michigan's factories. Even in 1935 the average unemployment among manufacturing workers can be estimated at nearly 90,000, and the maximum unemployment at 155,000.

Manufacturing unemployment is only part of the problem. Estimates prepared by the Committee on Economic Security show that in 1933 the average number of unemployed non-agricultural workers in Michigan was 798,000, nearly three times the total for manufacturing workers which is shown in *Table 31*.

TABLE 31.—Estimates of Unemployment Among Manufacturing Workers and Workers in All Non-Agricultural Occupations in Michigan, 1929-35

Year	Manufacturing Industries*				All Non-Agricultural Workers†		
	Employment Index	Em-ployed	Unem-ployed (1929 Peak=O)	Unem-ployed as Per cent of 1929 Peak	Em-ployed	Unem-ployed	Per cent Unem-ployed
1929 Average.....	104.5	530,000	49,500	8.5			
Peak Month (April)...	114.2	579,500					
Low Month (Dec.)...	82.2	416,800	162,700	28.1			
1930 Average.....	80.6	409,000	170,500	29.4	1,386,000	305,000	18.0
Peak Month (April)...	102.8	521,500	58,000	10.0			
Low Month (Oct.)...	70.5	357,500	222,000	38.3			
1931 Average.....	65.9	334,000	245,000	42.3	1,202,000	508,000	29.7
Peak Month (May)...	81.7	414,500	165,000	28.5			
Low Month (Nov.)...	50.5	256,000	323,500	55.8			
1932 Average.....	56.1	285,000	295,000	50.9	980,000	742,000	43.1
Peak Month (Feb.)...	66.1	335,500	244,000	42.1			
Low Month (Oct.)...	40.9	207,500	372,000	64.2			
1933 Average.....	59.4	310,000	269,500	46.5	941,000	798,000	45.9
Peak Month (Aug.)...	71.0	360,000	219,500	37.9			
Low Month (Apr.)...	48.9	248,000	331,500	57.2			
1934 Average.....	83.7	425,000	154,500	26.7			
Peak Month (April)...	98.4	499,000	80,500	13.9			
Low Month (Oct.)...	72.2	366,000	213,500	36.8			
1935 Average.....	96.8	491,000	88,500	15.3			
Peak Month (Mar.)...	104.2	528,500	51,000	8.8			
Low Month (Sept.)...	83.6	424,000	155,500	26.8			

*Department of Labor and Industry, State of Michigan
†Committee on Economic Security

CHAPTER TWELVE

OCCUPATIONS

by George H. Fern

Assistant Superintendent of Public Instruction

Earning a Living

Economic history of the world is a record of the ceaseless efforts of man, at first to gain a bare subsistence, and later to improve his standard of living. Struggle has been the life of existence. Man's struggle now is with nature and the forces of the physical world from which he attempts to wrest a living. This in an industrial age and we are confronted with the problems of modern industry. Back of the myriad forms which our economic activities take there is one single purpose. Stated simply, this is the effort on the part of man to obtain from his environment a suitable living.^{3*}

Vocational Specialization

This constant struggle through the ages has led to our highly specialized modern industry which, with its inventions, applications of science, improvements in technique, better methods of organization, and other devices whereby products can be increased or costs reduced, has created many problems for man. The number of vocations by which men earn their living has been steadily increased. With the progress of the centuries labor has become repeatedly subdivided until today occupational specialization is outstanding. Increasing density of population and mass production have made specialization necessary. With this division of labor have come division of interests and also conflicts. There are few phases of life which have not been influenced by modern industry.³

"During the present century all fields of employment have become subject to sweeping economic and social changes. These changes are still going on. Some of them are common to all lines of employment and some are peculiar to particular occupations or fields of employment. These changes have caused corresponding shifts in the demands on workers which have increased their difficulties and their need for help. These difficulties and needs are, generally speaking, of two kinds: those common to workers in all fields—industry, agriculture, homemaking and commerce; and those peculiar to workers in different lines."¹⁸

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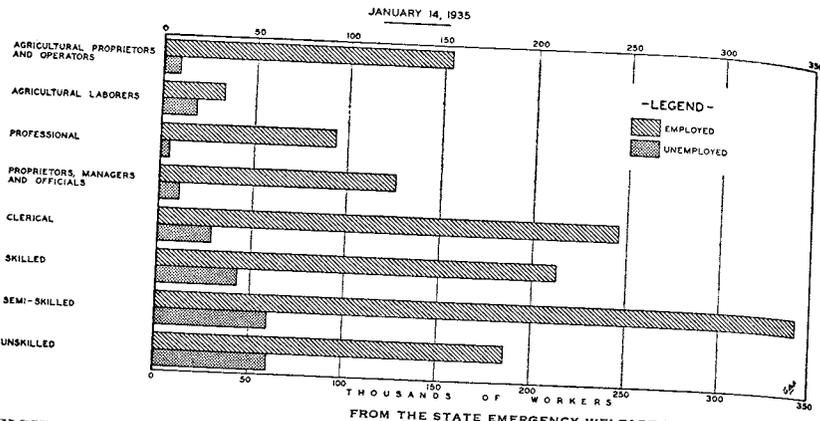


FIGURE 97. OCCUPATIONAL CLASSIFICATION OF EMPLOYED AND UNEMPLOYED WORKERS
FROM THE STATE EMERGENCY WELFARE RELIEF COMMISSION

Employed Workers

On January 14, 1935, 13.4 per cent of the workers in Michigan were employed in agriculture. There were 153,957 proprietors and operators and 33,364 laborers* (Figure 97). Over half (52.1 per cent) of the workers in rural townships were proprietors and operators (Figure 98). These rural townships were the place of residence for 82.9 per cent of the unskilled farm laborers.

Semi-skilled, with 342,108 employed workers, was the largest occupational group of employed. The majority of these (232,585) resided in first-class cities. In first-class cities over 30 per cent of the employed workers were classified as semi-skilled, and in rural areas less than 9 per cent were in this group. The next largest occupational group in the state was clerical, with 245,746 workers, of which 172,809 resided in first-class cities. The skilled workers were more highly concentrated in cities and their metropolitan areas. In the first-class cities 18.5 per cent were in skilled occupations; in rural townships only 5.4 per cent were skilled.

Workers in the Automobile Factories

The occupations of workers in the automobile industry are presented in detail as an example of the range of occupations covered by the various social-economic groups, particularly in the manufacturing industries. The automobile industry** was chosen because of its size and major industrial importance in Michigan. The small numbers of workers employed in certain occupations in the automo-

*In addition, 48,165 unpaid family workers were classified as farm laborers.
**The data presented do not include industries allied to automobile manufacture.

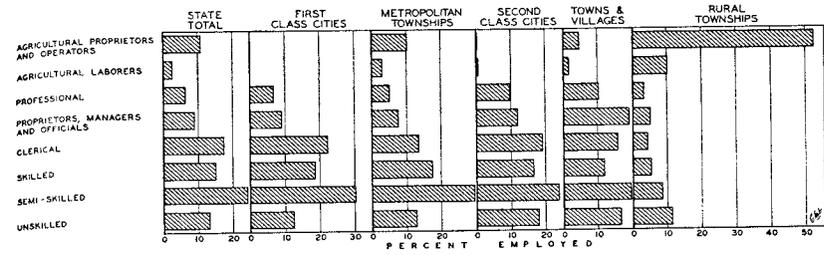


FIGURE 98. OCCUPATIONAL CLASSIFICATION OF EMPLOYED WORKERS Percentage Distribution in each Type of Community
FROM THE STATE EMERGENCY WELFARE RELIEF COMMISSION

bile industry were combined with workers in similar types of occupations to avoid diffusion of small numbers.

There were 342,301 workers who specified the automobile industry as the industry of their present or usual occupation. Of these, 45,056 were unemployed and 297,245 employed.

Most of the gainful workers in the automobile industry were residents of first-class cities (81.4 per cent). This percentage for the professional and clerical workers was 84.2 and 86.5 respectively. However, a smaller proportion of the proprietors, managers, and officials (74.5 per cent) and the unskilled (75.6 per cent) resided in first-class cities. The percentage distribution of workers by occupation, with few exceptions, was similar for each type of community. The exception to be noted was the group of unskilled gainful workers, who accounted for 9 per cent of the state total, 13 per cent of the workers in second-class cities, and 17 per cent of the workers in rural townships.

On the census date about half (149,180) of those employed in the automobile industry were in semi-skilled occupations (Figure 99). Over one-fourth (28.3 per cent) were skilled workers; only 8.4 per cent were unskilled and 9.9 per cent clerical. The distribution of employed workers by occupation was similar for all types of communities, except that the proportion of unskilled was much larger in second class cities and rural townships than in any other type of communities.

In the automobile industry 13.2 per cent of the workers were unemployed and 77.8 per cent of these resided in first-class cities. Of the 45,056 unemployed, 26,557 (58.9 per cent) were semi-skilled, 21.3 per cent skilled, and 12.3 per cent unskilled. The rate of unemployment was highest for those with the least skill, and lowest among proprietors, managers, officials, and professional workers.

Occupational groups in first-class cities suffered less unemployment than groups in other types of communities. The per cent of unemployment in metropolitan townships for the various occupational groups followed very closely that of the first-class cities and in both the first-class cities and the metropolitan townships 14.6 per cent of the semi-skilled were unemployed.

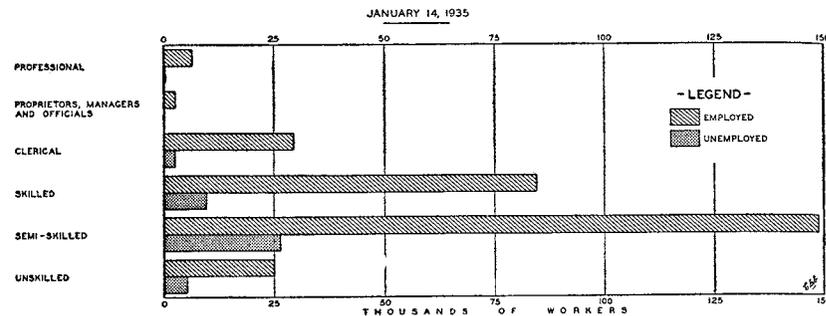


FIGURE 99. OCCUPATIONAL CLASSIFICATION OF WORKERS IN THE AUTOMOBILE INDUSTRY

Unpaid Family Workers

There were 77,233 unpaid family workers* in Michigan¹² on January 14, 1935. The majority of these (47,784) resided in rural townships; and of these, 44,952 were classified as agricultural laborers. Nearly all of the unpaid family workers were in three occupational groups: (1) unskilled (68.4 per cent), (2) semi-skilled (21.3 per cent), and (3) clerical (9.5 per cent). There were 43,759 male and 33,474 female workers. Most of the male workers (95.2 per cent) were unskilled, but among the female workers only 33.3 per cent were unskilled. The males were nearly all unskilled farm laborers while half of the females were semi-skilled employees in boarding houses.

Man and the Machine

In the minds of many people the replacement of workers by machines is responsible for the difficulty of securing and maintaining employment. This is not strictly true. Machines displace workers but standards are raised for the workers retained to operate these machines. Also the higher wages earned by those workmen who have been retained in the factories have created a nationwide demand for automobiles, airplanes, radios, electrical refrigerators,

*Unpaid family workers are not included in tables, charts, and text giving data for "gainful" workers or for "employed" workers.

and for countless other contributions to comfort. These machines must not only be built but must constantly be serviced. The automatic feeding of a senseless machine does not substitute for work requiring skill of hand, accuracy of eye, and balanced judgment. Furthermore, the highest type of skill is called for in the designing and building of such machines. Modern industry has given new opportunities to human skill, raised the grade of human labor, and given a new stimulus to the mind of the worker. As man has progressed his mental faculties have become increasingly more important than his skill but both are involved in varying degrees in economic labor. The intelligent is more useful than the unintelligent worker. Developed minds are required not only for the invention of machines, but also for their adjustment, their ordinary use, and their occasional repair.³

The truth of the matter is that for each individual worker displaced by a machine there exists or arises an equally good job or perhaps a better one. If one type of skill is eliminated other types are called into existence. New demands create new occupations. New occupations create new jobs. The adaptation of our economic life to the facts and implications of machine technology is one of our major problems.

The machine has given human beings generally more free time for the pursuit of higher objectives, thus affording them greater opportunity for genuine spiritual development. Practically everyone realizes that the industrial age, when properly organized and directed, will result in a great increase in leisure time but no one holds that more leisure is desirable. If freeing people from the drudgery of producing economic goods only leaves them idle, demoralization is certain. Finding ways and means to stop the progress of the machine is not the difficulty. Rather it is a problem of social and occupational adjustments, and the actual creative use of time set free from the machine.

Progress cannot be stifled as long as man is endowed by nature with the gifts of investigation and creation. Man's inventive genius has already equipped his world with the instruments to elevate life and living to constantly ascending planes. A temporary confusion in the economic distribution of the unprecedented bounty which science has produced does not mean that a high standard of living must be abandoned if civilization is to survive. Social and industrial evolution has no backtrack. Nature's urge is "Onward".

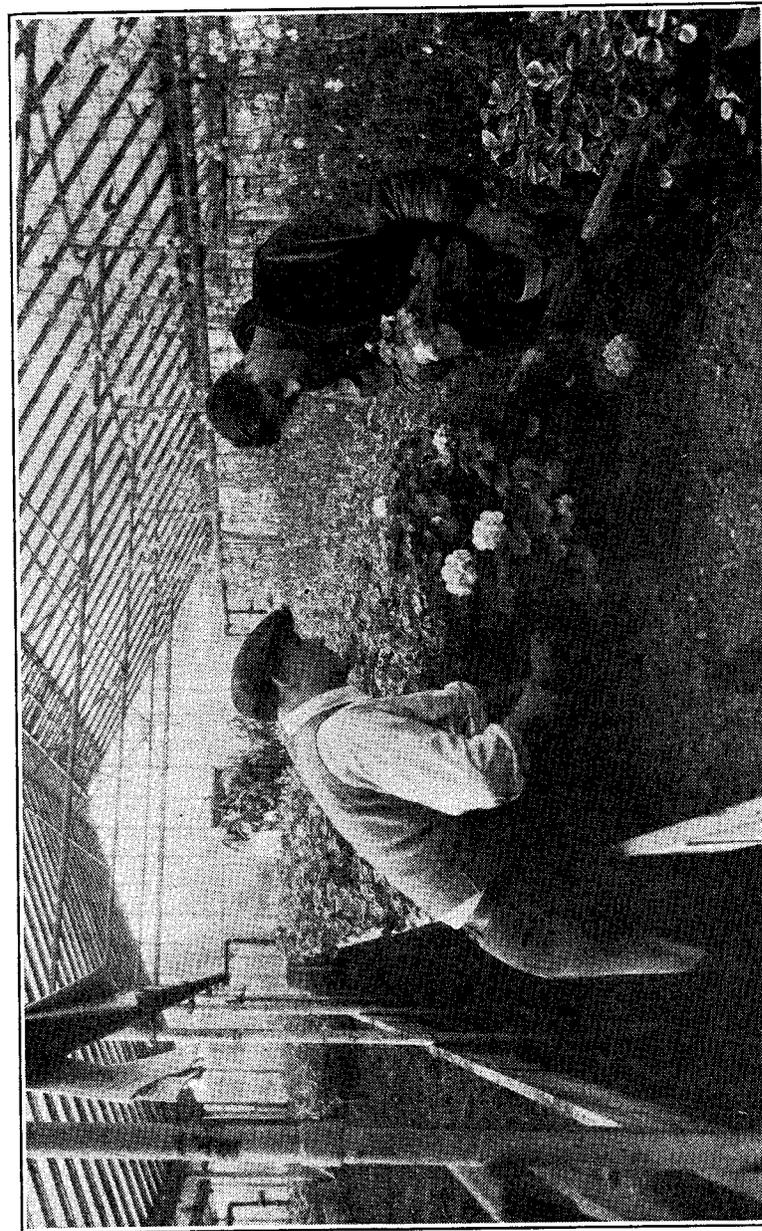
Two generations ago a skilled craftsman was, himself, creator and producer. The cobbler envisioned the shoes he was to make.

Under his hands the dream became reality and he surveyed the finished product not only with pride but with the equally important realization of his position in the scheme of life. It is true that now the machine and mass production have reduced much labor to a repetitive process of deadly monotony. Unless a worker can envisage the various processes of labor as a whole and see in that whole his contribution to human progress and the service of mankind, his work will have no purpose, his life no motivating and unifying force. Through education man must be helped to see that his social level is elevated to the position of service to all humanity instead of the narrow circle of his own community. Man must be made to see that the machine is not the center of industrial activity. Lillian M. Gilbreth accurately defines the machine when she calls it "the extension of man's personality".

Vocational Guidance and Selection

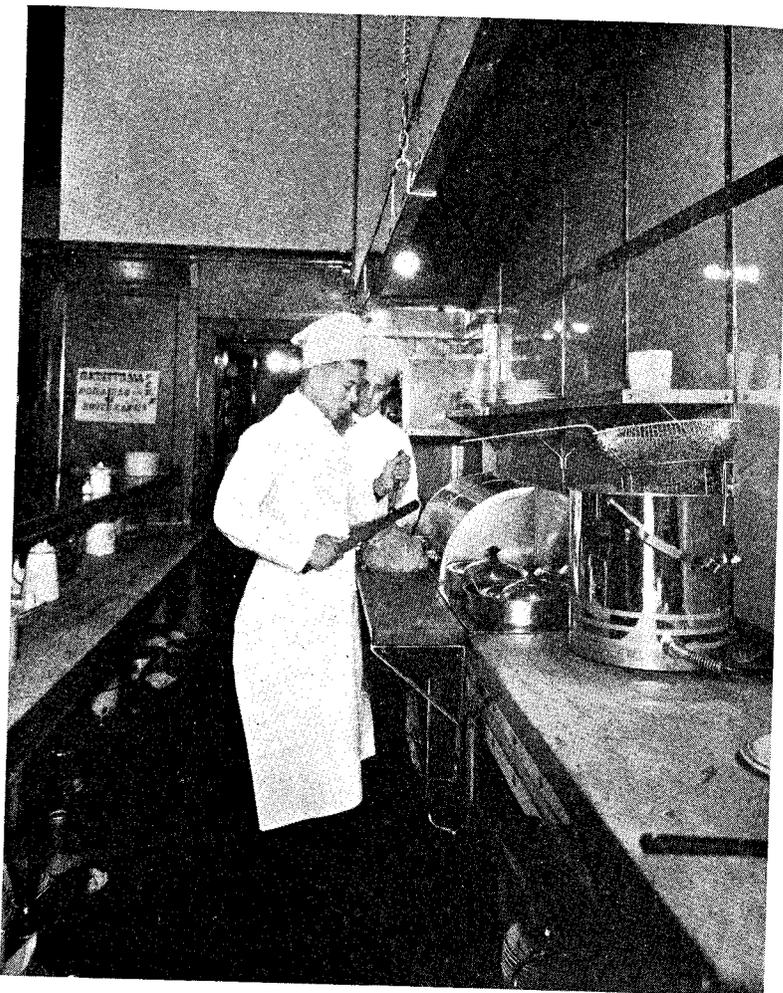
There has been a growing forward trend during the past twenty years to revolutionize and modernize educational methods. There are one hundred years of change between the vision of Horace Mann and the functional needs of our people today. We hear much talk of guidance, home guidance, social guidance, curriculum guidance, and vocational guidance. General guidance accurately defined is simply individualized education. Vocational guidance should not be set apart as a school subject. Rather, school subjects with their essential activities should become vehicles by which this guidance is carried to students. Opportunity for contact with and participation in the occupational activities of the world should be provided by schools. Counseling should be done by persons who have experienced the social and economic problems of employment and unemployment. To develop each individual completely in whatever capabilities he may possess is the dream of every true educator. The function of vocational guidance is to assist the individual in ascertaining the type of work for which he is best suited and to select a vocation for a life career.

In these days of industrial and social evolution the securing of a means of livelihood represents a grave problem. Every individual is faced with the great reality of life in earning his daily bread. This selection of the proper life work is highly important. The obvious reason is that any worker will derive infinite satisfaction from a well loved task or set of tasks. He will feel that there is no sharp delineation between work and play—that work can be absorbing, satisfying, and dramatic. This revelation produces a more subtle but highly salutary effect upon the worker's psychic equilibrium. Happiness coordinates mind and muscle. A happy, intelligent



100. AN APPRENTICE AT WORK. HIGH SCHOOL PROGRAM, DOWAGIAC PUBLIC SCHOOLS

worker makes an excellent citizen. He is industrious, saving, cooperative—his leisure hours are spent in constructive and enjoyable occupation.



FROM THE DOWAGIAC PUBLIC SCHOOLS
101. FOOD PREPARATION AND DISTRIBUTION OFFERS MANY OPENINGS TO THE APPRENTICE

Industry is demanding more and more that its workers be people who have been taught to think and who have a good foundation of technical and general knowledge which will enable them to make necessary adjustments on entering employment and later readjustments to meet the continual changes in modern industry. Industry is so complex and so changing that workers must, through education and training, become versatile enough to change from one occupa-

tion to another within a given field in order to protect themselves from unemployment. Unemployed workers must, through training and continued training, be adjusted occupationally and socially to the changing conditions of industry.

It has become increasingly more difficult for both the beginner and the unemployed who is seeking employment to select an occupation. "In a fluctuating and shifting economic world all occupations are more or less in a process of flux and change. They are continually shifting in the tools, machines, processes, methods, and materials utilized; in the number and character of their pay-roll jobs; in the kind and degree of skill, knowledge, and personal qualifications demanded of workers; in standards of admission to employment; in standards of efficient performance of duties; in the methods used for testing, selecting, and inducting new recruits; in the age levels for the admission and retirement of workers; in the geographical location of employment in the occupation; and in the prospects in the occupation for steady employment and promotion. While all this shifting has been going on, the number of occupational or job designations, as returned by enumerators and listed by the United States Census Bureau, rose from about 7,000 to more than 27,000 during the 20-year period ending with the census of 1930. Not only has this amazing growth in the number of gainful occupations complicated and confused the picture for those who try to study them before making a choice, but the inroads of the large concerns in every field of business make it more difficult to get the first-hand experience or information about an occupation common in simpler days or even to secure adequate and reliable second-hand information about many employments."¹⁸

The two greatest decisions any individual must make are, first, choosing a life career; second, choosing the environment which will give him as an individual the opportunity to grow and expand daily for the good of humanity and himself.

Increasing Age of Entrance into Employment

The provisions affecting juvenile employment and compulsory school attendance, and the mechanization of industry with the trend toward more mature workers have increased the difficulty in securing employment at former age levels. Today the majority of employers in Michigan and elsewhere hesitate to employ anyone under 18 years of age.

New Responsibilities Imposed upon Public Schools

One can easily trace the influence of older methods of education in present practices both as to the subject-matter taught in the public