THE RECOVERY OF WORK AND WAGES
and
MICHIGAN’S REPRESENTATION
at
THE CENTURY OF PROGRESS

MICHIGAN
MANUFACTURER AND FINANCIAL RECORD

DETROIT, AUGUST 26, 1933
SIMPLE as 1-2-3
To Get a HARD FINISH Concrete Floor

Scaling or dusting of concrete floors is out of date. It just won’t happen if the topping mix is right. Here’s the modern way to make a topping that will produce the floor the owner wants:

**FIRST**: Put two parts of coarse aggregate (\(\frac{3}{8}''\) to \(\frac{3}{4}''\) size) in your topping mix, with one part portland cement and one part coarse-grain sand.

**SECOND**: Go easy on mixing water—not more than 5 gallons per sack.

**THIRD**: Float at once, but don’t steel trowel until absolutely necessary (under average conditions, 30 to 40 minutes). Trowel only enough to produce a true, even surface. When hard, cure under wet cover.

That’s all there is to it—and the right way usually costs no more than the old-fashioned way. Write the Portland Cement Association if you want more information. It’s yours—for the asking.

Wrong
See that white line?
It's a “dust on” type of finish, too soft, too porous to stand the gaff of wear. Picture shows a cross-section cut from a slab that crazed in ten days after finishing.

Right
See the coarse material in the surface of this section? This is the kind of concrete floor that gives lasting satisfaction. Yet it is simple to lay and ordinarily costs no more than the old-fashioned method.

PORTLAND CEMENT ASSOCIATION
33 WEST GRAND AVENUE, CHICAGO    *    CONCRETE FOR PERMANENCE
3 Reasons Why
You should place your advertising in
MICHIGAN MANUFACTURER
AND
FINANCIAL RECORD
An Industrial and Financial Weekly
Devoted to
Michigan Industry

1. Industrial papers are read and reread, then filed for reference. Circulars are read once and destroyed. Daily newspapers are limited in their period of usefulness.

2. Industrial papers go to picked lists. No waste, therefore you pay for prospects only. No amount of advertising space can duplicate the close contact offered you with your trade paper.

3. Industrial papers are read by the folks interested in the products applying to their particular line of work—and naturally look to their industrial journal for this information.

The Purchasing Agents Are Fifty Per Cent New Men—The Favorites Must Compete—Kissing No Longer Goes by Favor—It Is the Day of

THE NEW DEAL

For Rates and Other Information
Write
MICHIGAN MANUFACTURER AND FINANCIAL RECORD
914 Transportation Building, Detroit
27th Bank

Of the 13,770 banks licensed, as of June 30, 1933, to operate on an unrestricted basis in the United States of America, 38 have deposits of $100,000,000 or more. Many of these banks have continuous histories extending back for more than 100 years. The National Bank of Detroit, established a little over four months ago, stood 27th in the following roster of the large banks of the nation.

As of June 30, 1933

<table>
<thead>
<tr>
<th>BANK</th>
<th>NAME</th>
<th>DEPOSITS</th>
<th>AGE</th>
<th>BANK</th>
<th>NAME</th>
<th>DEPOSITS</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chase National Bank, New York</td>
<td>$1,408,337,000</td>
<td>56 Years</td>
<td>21.</td>
<td>American Trust Company, San Francisco</td>
<td>$197,204,000</td>
<td>79 Years</td>
</tr>
<tr>
<td>2.</td>
<td>National City Bank, New York</td>
<td>1,134,750,000</td>
<td>121</td>
<td>22.</td>
<td>The Pennsylvania Company for insurance on lives and granting annuities, Philadelphia</td>
<td>184,893,000</td>
<td>121</td>
</tr>
<tr>
<td>4.</td>
<td>Bank of America National Trust and Savings Assoc., San Francisco</td>
<td>715,026,000</td>
<td>66</td>
<td>24.</td>
<td>Northern Trust Co., Chicago</td>
<td>173,843,000</td>
<td>44</td>
</tr>
<tr>
<td>5.</td>
<td>Bankers Trust Co., New York</td>
<td>693,872,000</td>
<td>30</td>
<td>25.</td>
<td>Wells Fargo Union Trust Company, San Francisco</td>
<td>167,206,000</td>
<td>81</td>
</tr>
<tr>
<td>8.</td>
<td>First National Bank, Chicago</td>
<td>563,408,000</td>
<td>70</td>
<td>28.</td>
<td>San Francisco Bank, San Francisco</td>
<td>152,706,000</td>
<td>65 Years</td>
</tr>
<tr>
<td>10.</td>
<td>Security First National Bank, Los Angeles</td>
<td>442,416,000</td>
<td>58</td>
<td>30.</td>
<td>First National Bank, St. Louis</td>
<td>142,237,000</td>
<td>14</td>
</tr>
<tr>
<td>11.</td>
<td>Irving Trust Co., New York</td>
<td>429,438,000</td>
<td>82</td>
<td>31.</td>
<td>Marine Trust Company, Buffalo</td>
<td>140,356,000</td>
<td>83</td>
</tr>
<tr>
<td>12.</td>
<td>First National Bank, New York</td>
<td>395,763,000</td>
<td>70</td>
<td>32.</td>
<td>Anglo-California National Bank, San Francisco</td>
<td>138,014,000</td>
<td>60</td>
</tr>
<tr>
<td>13.</td>
<td>Bank of the Manhattan Company, New York</td>
<td>381,960,000</td>
<td>134</td>
<td>33.</td>
<td>Fidelity Union Trust Company, Newark</td>
<td>136,331,000</td>
<td>46</td>
</tr>
<tr>
<td>14.</td>
<td>Manufacturers Trust Company, New York</td>
<td>368,460,000</td>
<td>28</td>
<td>34.</td>
<td>First Wisconsin National Bank, Milwaukee</td>
<td>123,328,000</td>
<td>80</td>
</tr>
<tr>
<td>15.</td>
<td>Chemical Bank and Trust Company, New York</td>
<td>345,489,000</td>
<td>109</td>
<td>35.</td>
<td>Harris Trust &amp; Savings Bank, Chicago</td>
<td>121,503,000</td>
<td>51</td>
</tr>
<tr>
<td>17.</td>
<td>Philadelphia National Bank, Phila.</td>
<td>266,337,000</td>
<td>130</td>
<td>37.</td>
<td>First National Bank, Baltimore</td>
<td>104,339,000</td>
<td>127</td>
</tr>
<tr>
<td>19.</td>
<td>Cleveland Trust Co., Cleveland</td>
<td>236,332,000</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Mellon National Bank, Pittsburgh</td>
<td>199,466,000</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Our depositors, who have made possible this splendid record, have provided the foundation for the creation of a sound credit structure in this great trade area. In so doing, they have not only served well their own personal interests, but helped the City of Detroit—and the country generally. To them we gladly tender a full measure of our appreciation.

The
NATIONAL BANK
OF DETROIT
Michigan's Return To Work and Wages

As of Wednesday, Aug. 23, A. J. Barnaud, manager of the District Office of the Department of Commerce, at Detroit, to which Michigan employers report their adherence to the National Recovery Program, had received the signatures of 56,316 Michigan employers, with 426,873 employees, to the President's program. Of these, 23,284 employers were in the Detroit district, representing employment of 225,981 workers. Of these, so far, 19,800 have received the Blue Eagle insignia.

The State of employment in Michigan for 1931 and 1932 was very discouraging. The present year was begun with high hopes of increased work for Michigan's workers. The hopes were just beginning to be realized when the bank holiday was announced on February 11. This had a harmful effect upon small industry in that it uniformly tied up its working capital and cut off credit. In large industry, however, conditions were such that they practically saved the situation. The motor car trade was surging into activity in February when the bank holiday was ordered, more on expectations of a million or a million and a quarter car year than upon actual sales contracted. The motor car manufacturers literally had "their tail in the crack" and had to go on. Their product was half fabricated for a season then expected to run into June, the usual end of the buying year, which in the past, has indicated a slowing down of employment in May. Therefore the motor car makers of Michigan were forced to import cash from outside sources to meet their payrolls and set up, during the bank holiday, banking facilities of their own to carry on employment. General Motors, Chrysler and Ford imported millions. The first two-named organizations set up payroll check cashiering facilities in banking offices which had been closed. Ford, who always paid in cash, continued without a skip. The smaller producers did measurably the same thing.

The Recovery Program

Then came something else. That was the release of buying power for motor cars which had neither been expected nor counted upon, with the result that, at the end of August the motor car producers, especially those in the lower-priced lines are running like mad and having trouble keeping up with their orders. It is said that production will run into September before the companies catch their breath for inventories and for the usual retooling for seasonal models. Maybe there won't be any big price drops on new cars and the equipment which has been standardized seems to please the public quite well as they are.

The program of the Roosevelt administration authorized by the Congress during the last of June, and upon which schemes for the recovery of the industrial and agricultural activity of the country were based, has gone far enough to have accomplished much re-employment in Michigan, even before the codes for the various lines of business have been finally determined. These programs involve practically three features. The distribution of employment by the shortening of hours in employment shifts, the increase of hourly wage rates to make the shortened shifts produce the same minimum incomes that the longer hour-power wage combination produced, and the adoption of a minimum hour week, calculated to ensure a living to the workers. These minimum wage scales and hourly limitations per week have been in part voluntarily set up by Michigan employers or are being adjusted by trade conferences. The results are that unemployment in Michigan, which was calculated to have affected from 150,000 to 180,000 persons dependent upon wages for comfortable living and economically useful as the back log of buying power, has been cut down by approximately 60,000, either of persons already on the new basis, or just about to go on it, and that the indications are that by October 1 enough additional employing enterprises will be initiated to take care

Paul Honoré's Mural "Michigan's Natural Resources" at Michigan's Headquarters

Mr. Honoré's mural symbolizes the general survey showing the tilling of the soil, and in the iron and copper mines, fisheries, oil and salt wells, agricultural productivity of Michigan under present-day conditions. At the left is an agricultural distance the market of the farmers. On the right are groups of native factors: the lumber industry,
of the largest percentage of those now unemployed. Whether this will work out completely or not depends upon the success of the Federal program. So far its contributions to employment have been striking.

The Motor Car Industry

The great industry of the state, motor car manufacturing, already influenced, as has been stated, by an unexpected and unseasonal demand for its product, has been a large contributor to re-employment in the state. This will be accelerated by the distribution of work involved in the acceptance of the shorter hour code which is expected on the publication date of this paper, after the hearing by the Recovery Administration on Friday of this week. So far, however, the results are valuable.

General Motors Units

Taking the units of General Motors Corporation, on the authority of President Kendall, of Chevrolet, who also manages the Pontiac factory and includes its figures in his totals, the present employment is 46,000 persons. This number includes 11,000 who have been added since June 10. Much of this preceded the proclamation of the President. As to wages, this group of employees received a 5 per cent advance on previous scales in May, and a further 15 per cent increase on August 1. The amount of these additions to the actual pay-out has not been calculated, for the public, at any rate. In addition to the workers' rates, all salaried employees earning $1,800 per year and less, were advanced, as of August 1, 10 per cent. This addition to the Michigan payrolls of these two companies is estimated to amount to $1,350,000 annually.

Most of these companies' manufacturing plants shortly will be on three shifts of 7½ hours for five days a week with others, such as assembly plants, on two shifts as soon as employment can be stepped up. The eventual wage scale will follow the code which has been in the making for the past two weeks.

Cadillac Raises Pay Rates

The Cadillac Motor Car plant, of this group, has also announced a 20 per cent wage increase above the March, 1933, level. The second rise in two months, it approximates an additional 15 per cent above the 5 per cent rise granted June 1. About 4,500 employees are affected. The increases affect salaried employees whose annual incomes are less than $1,800, Mr. Fisher said.

The Buick operations, also of General Motors group, has extended its production schedule, usually slowed up in June, to September of this year. The total number of workers employed under President Reuter, who also manages Oldsmobile at Lansing and includes its figures with Buick's, was 7,500, of whom 1,000 are new men. These, too, have received a 20 per cent increase over the scale prevailing in March. The 1,000 additional employees are men who have been recalled. The 20 per cent addition to the wage scale represents an additional million a year tacked on to the payrolls.

Fisher Body's Contribution

Fisher Body Corporation, another constituent of General Motors, through its President William A. Fisher, announces that an increase, affecting 20,000 employees in plants scattered through 15 communities, became effective Aug. 1. This represents a 20 per cent increase for factory workers since May 1, and supplements an increase of 5 per cent which became effective June 1. In addition, the Fisher announcement points out a 10 per cent increase also became effective Aug. 1 for all salaried employees receiving less than $1,800 yearly. The Fisher Body Corporation employs about 70 per cent of all its help in Michigan plants, the additions to its employment in June in Michigan represent more than 3,000 persons re-employed. The payroll additions are said to figure approximately 2½ million dollars per year.

Still another General Motors subsidiary, General Motors Truck Corporation, at Pontiac, announced a 15 per cent increase of wages Aug. 1, supplementing an earlier 5 per cent increase. The force to which this applies numbers 2,000, which is practically all re-employment since last May.

A-C Spark Plug's Increases

A substantial increase in employment, unfilled orders, production and sales was reported by AC Spark Plug Company, of Flint, for June. Production of units even exceeded the peak month of June, 1932. June sales in dollars increased 194 per cent over June a year ago and 20 per cent over May this year.

Employees at the end of June numbered 3,124 as compared with 2,586 working part time in June a year ago and against 2,534 in May this year. This represents an increase of employees of 300 in June and more than 1,000 since April 1, 1933. Payrolls for June increased 130 per cent in dollars over June a year ago and 15 per cent over May this year. During July and August considerable additions to employment were made. The 20 per cent increase over March pay rates applied to this plant, also. More than 3,000 workers benefited from this action. It means an advance of 15 per cent for all hourly rate employees, who received a five per cent boost on June 1. Salaried employees also shared in the increases, which added $500,000 to the concern's annual payroll.

Chrysler's Increased Employment

Additions to employment in Michigan at the various units of the Chrysler Corporation are reported to have been 22,585 since March 1. This company had anticipated the Recovery program. As of August 15, and subject to some considerable increase during the remainder of the month, employment in the Chrysler Michigan plants aggregated 47,664. Of these the hourly rate employees were 42,276, while the salaried employees represented the difference. By Sept. 1 the round number of all employees in the four Chrysler units in Detroit, being Dodge, Plymouth, DeSoto and Chrysler factories may be rounded set at 50,000. The step-up has been from March 1, as follows:

On March 1, the Chrysler Corporation had 22,585 workers on its payrolls. On April 1, 25,267; on May 1, 29,535; on June 1, 34,265; on July 1, 40,845; on Aug. 1, 42,376.

Double Former Employment

These figures are the double employment of this institution for 1930, 1931 or 1932. The adjustments to the preliminary ideas of the code of the motor car industry will be completed by Aug. 31. This company will not be
a larger employer after the code is adopted, having made its studies and adjustment while the Recovery program was under legislative consideration. These adjustments have furnished re-employment for 20,000 men. The schedule is five days per week, seven hours per day. A 20 per cent increase effective Aug. 1, which includes a 10 per cent advance granted earlier, is the factor of effect upon the hourly scale.

Of the factory employment, 8,000 men are on the Plymouth division payroll, an increase of 50 per cent over the employment of August 1, 1932.

Ford Motor's Wages Ever High

The Ford Motor Company is in a unique condition with respect to code minimum wages and employment. The current report of its force as of August 20 was that it stood in the neighborhood of 42,000 in the main factory at Dearborn. Henry Ford, in a recent interview, declared that the Recovery Act would have little effect on the Ford Motor Company.

"Our wages now are higher than any code is likely to set them," he said. "As to hours, it would seem that an eight-hour day and five-day week are not excessive for an industry like ours. We pioneered in these two advances long ago, and we find that they work. The Ford Motor Company can get along under any conditions that may be made. We have always been improving conditions in our part of the industry and we are certainly not going to kick on any further improvements."

Hudson's Additions to Work

Hudson Motor Car Company, of Detroit, has recalled 500 former employees recently, making an addition of 2,500 since March. In that month employment was 4,500. At this date it is 7,000. A 5 to 10 per cent increase in hourly wages was made July 17. Another, of an announced increase, was promised for August 1. The weekly average maximum of hours is 35.

Packard Goes on New Plan

Hourly rates higher than average have been paid consistently by the Packard Motor Car Company, Detroit, it is stated by officials of that concern, but workers were to benefit from further increased rates this month, in line with the general wage upturn. The plant will continue to use the staggered employment system. Its plant has gone on a 35-hour week basis and begun hiring additional men. On the 35-hour a week schedule, Packard will operate seven hours a day, five days a week, from 8 a.m. until 3:30 p.m. daily. E. E. Roberts, vice-president in charge of manufacturing, said about 6,000 men were employed before the tentative automobile code was adopted. Packard's peak employment on an eight-hour, six-day basis was 12,000. A return to peak production under the 36-hour week was expected to reach the 12,000 figure being exceeded by several thousand.

Lansing Back to 1929 Levels

Wages of Lansing's two automobile manufacturing plants, Olds Motor Works and the Reo Motor Car Company, effecting about 4,100 persons, have been increased in conformity with the National Recovery Act. R. H. Scott, president of Reo, has announced that all hourly wage rates of Reo employees were restored to their 1929 levels on August 1, so that they will receive the full benefits of the program of shorter hours and increased rates advocated under the National Recovery Act.

Improvement in automobile sales on the part of Ford and Plymouth, the two principal manufacturers to which Briggs Body Corporation supplies bodies and stampings, together with readjustment of hours of work, has resulted in doubling employment since the first of the year. The company had 5,582 employees on January 1 this year; 12,479 on June 30 and 13,900 on Aug. 1.

Part of this increase in employment also is accounted for by the company's new program of diversification of products which include besides automobile bodies and stampings, refrigerator cabinets, tubular furniture and plumbing ware.

Mining Situation Improved

In the upper peninsula two influences have been at work. One affects the mining industry, both iron and copper. The other is the demand for iron ore by the other remaining industries. The advance in the market price of copper has permitted the copper mining companies to resume activities at about an even break with production costs. Copper Range Company, Calumet, increased the wages of its employees on July 17. The increases ranged from 35 to 40 cents daily. The company also discarded the schedule of six days a week, two shifts a day, in favor of a five-day week and three shifts daily. The new plan resulted in the employment of 50 additional men.

Calumet & Hecla Consolidated Copper Company, largest copper producer in Michigan, has announced wage increases. Effective as of July 17, employees drawing $39 a week or less were increased 40 cents a day. Individual adjustments will be made for those receiving more than $30. This order affects several thousand workmen.

The steel companies have ordered the "sending down" of an unexpected quantity of iron ore to the lower lakes. Present appearances are that the shipments will reach 20 million tons. Pittsburgh Steamship Company has added 40 ships to its fleet for the balance of the second quarter. Activity has begun to clear up the stock piles in Michigan. This procedure is leading to plans for the re-energizing of the iron mines. Announcement has been made by the M. A. Hanna Company that two of its mines, Bates and Hiawatha, located in the Iron River district, will be opened within the next 60 days. The mines will be worked on a six-day basis, with each employee getting at least 12 shifts per month. In this manner more than 500 men will be taken care of.

Iron ore shipments from Marquette harbor will be five times as large as the total for last year. More than a million tons of ore will be sent from that port to the lower lakes in 1933.

Employes at the mines of Republic Steel, Ford Motor, Richmond Iron and Cleveland Cliffs Company, as well as the South Shore and L. S. & I. railroads, will be given more work during the remainder of the navigation season to handle the shipments.

It is believed that 1933 will be the biggest ore shipping year since 1930, So far 500,000 tons have been shipped from the L. S. & I. dock at Preque Isle in 68 boats and 77,000 tons have gone out in 10 boats from the South Shore dock, or a total of 78 boats clearing from the Marquette harbor this season with a total tonnage of 270,000.

The forty additional ships to be placed into operation by the Pittsburgh Steamship Company on the upper lakes ore traffic are expected to start moving from lower lake ports this week. The action of the Pittsburgh company followed an order for 5,000,000 additional
tons of ore made by the steel corporation. This is more ore than was removed from Lake Superior mines in 1932.

Total shipments of ore this year from the upper lake ports will be around 20,000,000 tons, compared with 3,567,985 tons a year ago.

The Pickands-Mather interests got into the running with brisk shipments from several of its mines, including the Bengal, Casplan, Buck, James, Warner and Judson. In addition, loading was resumed at the Hanna properties and the Curligan, McKinley ores are being sent out with more speed than formerly.

While the number of employees to be re-hired is not estimated yet, iron mining is expected to take care of several thousand.

Steel Rates Affect Five Thousand

Five thousand workers in the Detroit steel district are benefitted by the wage increases announced by the industry.

Great Lakes Steel Corporation, Ecorse, announced that 3,600 employees will share 15 per cent increase in wages. This will amount to more than $1,909,000 a year. It also applies to other Detroit district plants of National Steel, including Michigan Steel Company and Hanna Furnace Company.

Newton Steel Company, Monroe, has announced its second wage increase since July 1, to bring its scale in conformity with the general 15 per cent increase throughout the steel industry. About 1,300 employees are affected.

Expenditure of $3,000,000 for new equipment which will increase its production capacity by about one-third, will boost its payroll from the present 3,000 to about 4,000 men. It was announced recently by the Great Lakes Steel Corporation, Ecorse. Expansion of the plant equipment and the construction of a slab plant addition is being rushed by several hundred workmen. The present plant, including blooming mills, bar mills, strip mill and two merchant mills, in addition to the open-hearth plant, has an annual capacity of more than 500,000 tons of diversified steel products.

The furnace of the Newberry Lumber & Chemical Company is in blast after a five-month shutdown. With 12 of the 18 retorts already in operation the other six were to be started at the same time, putting the plant on a 100 per cent production basis.

The Paper Industry

The paper industry has raised prices of its products in anticipation of having to pay higher wages. Prices have gone up, in some cases, 100 per cent. With this contribution from the consumers the paper companies are announcing full and increased employment.

French Paper Company, at Niles, has gone to 100 per cent capacity operation and employment since April 1. Consolidated and River Raisin paper companies, of Monroe, corrugated and flat straw board and fiber paper makers, are running full, due, largely, to the demand for beer cartons.

Approximately 35 new men have been added to the payroll of the Manistee Paper Company's mill since Aug. 1. The normal crew at the mill is 250, but it has been increased to 255.

A 15 per cent increase in wages at the mill became effective Aug. 1. The plant is operating six days a week, 24 hours a day. All employees are on a 40-hour basis.

The Jackson and Tindell mill, shut down for several months, has resumed operations. The mill is operating under the NRA code, wages being paid on the 1926 scale. The men work six days per week, six hours a day.

Consolidated Paper Company, Monroe, announces a general wage increase for all employees in keeping with the aims of the Recovery Act. The minimum increase was ten per cent. Working hours were reduced to 35 and 40 hours weekly in all departments. The action involved 1,200 employees and resulted in the employment of 350 additional persons.

Sutherland Paper Company, Kalamazoo, has announced a five per cent wage increase for 850 employed in its plants. The raise is made possible through its increase in orders booked during recent months. The concern at the present time is working night and day.

Central Paper Company, Muskegon, is working on its heaviest production schedule in more than two years.

Michigan Carton Company, Battle Creek, has made a five per cent increase in wages for all employees on an hourly basis, the order affecting 350 persons.

Business of the Simplex Paper Corporation, with plants at Adrian and Palmyra, has im-

PLANT OF MICHIGAN ALKALI COMPANY, WYANDOTTE
Of few products can it be said with truth that they actually set the standard for others of their kind. And among these few, most surely, is a Cadillac automobile.

For almost twenty-five years, Cadillac cars have occupied this unusual position in the automotive industry—in fact, since 1908, when Cadillac was awarded the famous DeWar Trophy for perfect interchangeability of parts.

Year after year, the public has grown more aware of Cadillac's position, until today you hear it affirmed on every hand.

“She’s a little Cadillac, isn’t she?” boasts the owner who had just taken possession of one of the smaller motor cars.

“She has a little of the ‘feel’ of a Cadillac, says the new possessor of a medium-priced car.

“This performs more like a Cadillac than any other car I ever drove,” explains another owner.

And, again, you hear the good-natured apology, “Of course, it’s not a Cadillac!”

A moment’s reflection will serve to recall that you have heard these very remarks, time and time again. Practically never is any other car used as the standard of comparison—almost always a Cadillac.

This, of course, did not “just happen.” Reputations such as this do not “grow up,” like Topsy. They have their basis, always, in an actual superiority of fact. And back of this superiority is usually found an ideal, religiously adhered to, year after year.

In the case of Cadillac, the will to leadership has become a greater spur to achievement than any creed or law could possibly be. It simply never occurs to anyone at Cadillac that Cadillac is privileged to do any other than excel in all things.

It is out of this spirit that has come Cadillac's long list of basic contributions to the motor car industry. The self-starter, precision manufacture, the closed body, the Syncro-Mesh transmission, the 16-cylinder engine, the 90-degree V-type engine—all of them came, and could have come only, from the Cadillac will to achievement.

We feel certain that most buyers in the fine-car field appreciate the position that Cadillac occupies. Cadillac sales, at least, certainly indicate as much. But for those who may not have had occasion to give the matter particular thought, we wish merely to suggest that the “Standard of the World” is always a safe measure to follow in choosing any commodity.

LaSalle prices begin at $2443 f. o. b. Detroit . . . Cadillac at $2695 . . . G. M. A. C. terms available on any model

CADILLAC

STANDARD OF THE WORLD . . . A GENERAL MOTORS VALUE
proved substantially in recent weeks. The Adrian plant now is working a night force and the Palmyra plant is working 24 hours daily. There are 160 persons on the combined payroll.

Three hundred employes of the Detroit Sulphite Pulp & Paper Company have had their wages increased five cents an hour beginning Monday, W. T. Schmitt, chairman of the company’s board of directors, announced.

The Foundry Activities

Foundry activities are included to some extent in the consolidated reports of the motor car manufacturing companies. Such great integrated foundries as Ford’s, Cadillac’s, Buick’s, Chevrolet’s and Dodge’s are so included. Of the greater jobbing foundries the reports indicate betterment in employment.

Payroll of the Campbell, Wyant & Cannon Foundry Company, Muskegon Heights, recently was boosted to about 900 with the recalling of an additional 100 former men employees.

The Cadillac Malleable Iron Company, Cadillac, recently announced a further wage increase of 18 2/3 per cent, in addition to two previous wage increases granted within the last two months.

Wilson Foundry & Machine Company, Pontiac, has received orders which will keep the foundry operating on the present basis through October. The foundry is employing 450 men. The new orders include 2,000 engines for the Willys-Overland Company and 2,500 engine parts from the International Harvester Company.

Albion Malleable Iron has added 100 men to its employment, making the total 350. Gale Manufacturing, in the same city, has added 100. Union Steel Products has added 16. Service Corporation and Truck, 30; and Decker Screw Products Company, 20.

Industrial Brownholst Corporation, Bay City, now is employing 125 men, an increase of 40 per cent since the first of the year. July business was ahead of June by 49 per cent.

Employment by Retail Stores

Perhaps the hardest hit source of employment during the depression was that of the retail store-keepers. They cut wages, cut forces and, finally, had a large portion of their help working on a petty wage and commission basis. Although they are about the greatest pulse-lighters in the world in claiming credit for altruism the retail store group, country wide, has done a deal of squawking against the new code system. Enhanced buying power, the purpose of the new deal, will benefit these traders first, in fact has already advanced retail prices.

The absorptive power of the retail storekeepers in Detroit and Michigan, for added help consequent upon shortened hours of service and a corresponding increase of hourly wages is set at 10,000 persons. The reason for this great possibility is that the retailers have had to skin along on reduced forces for a long time. Already the smaller retailers are adding help, some of it on, some of it not on, the NRA basis.

The code for retail store employees does not set a high minimum wage, but, such as it is, it is considerably more than the average employee has been getting for two years back. These employees, trained to retail selling only, have been, perforce, an important competitive menace to other classes of employment, because of their willingness to take almost any work at almost any rate. A return of their normal opportunities will, in the opinion of employment economists, of itself prove a great relief to other sections of industry. So far no figures of re-employment from this source have been compiled or given out.

An important section of the retailers, the Michigan United Restaurant Association’s members, will add approximately 6,500 employees, principally in Detroit, to their payrolls before August 27, it was indicated recently when the association filed its agreement under the NRA code.

Adoption of the retail code in Detroit will mean the addition of 9,000 employees to the 21,000 retail establishments in Wayne county, according to Charles E. Boyd, secretary of the
HOSPITAL AND MEDICAL DEPARTMENT, MICHIGAN MUTUAL LIABILITY COMPANY, DETROIT

Detroit Retail Merchants Association. These stores now employ between 50,000 and 60,000 persons at an aggregate of $70,000,000 monthly, which figure will be increased by approximately $17,000,000 as a result of the employment of additional workers.

What it all Means

State labor department figures are always a little behind the procession, especially in periods of marked change. By the middle of August the State Department of Labor and Industry was up to July 15 in its figures. These showed the number of men working in the state's various 432 "sample" industries, from which the department compiles its report, mounted 11.2 per cent from June 15 to July 15 compared with the previous 30-day period.

Aggregate payrolls jumped 3.7 per cent over the same period in 1932 and were up 3.2 per cent over May 15 to June 15. Average weekly earnings advanced 3.1 per cent over the corresponding period in 1932.

The report showed that employment in Michigan from June 15 to July 15 was the highest since July, 1931. The index revealed that 68.5 per cent of the normal number of wage earners were working in that period. For the previous 30 days the figure was 61.2 per cent. Purchasing power mounted to 52.7 per cent from the 51.3 per cent figure of the preceding 30 days.

If the same progress continues, officials pointed out, employment will be within 1.7 per cent of the normal figure of 88 per cent by the month of December. The national NRA program is counted on to boost the percentages.

Automotive industries led the increase with a 13.5 per cent employment advance in the June 15-July 15 period over the previous 30 days. Their aggregate payrolls also jumped 1.4 per cent for the same period. Total payrolls amounted to $3,934,273 compared with $3,881,253 with May 16 to June 15. These was also a "spread the employment movement" reported for these industries.

Iron and steel companies increased their employment 23.7 per cent over the same period of a year ago and 8.1 per cent over the preceding 30 days. Aggregate payrolls mounted 46.5 per cent over 1932 and 3.2 per cent over last month. Average weekly earnings were boosted 18.4 per cent over last year.

The lumber industry, including furniture manufacturing, shared in the increase. Employment mounted 24.5 per cent over last year and 5.4 per cent over last month. Aggregate weekly payrolls advanced 14.2 per cent over May 15-June 15 period.

A 5.5 per cent employment increase over the same period a month ago was reported for the textile industry for June 15-July 15. The boost was 7.7 per cent over the previous 30 days and aggregate payrolls mounted 53.6 per cent over 1932 and 15 per cent over May 15 to June 15.

Another note of optimism was reflected with the revelation that the outstate contributed more to the reported increase than did Detroit.

Mr. Culver's Estimate

Chester M. Culver, general manager of the Employers Association in Detroit, representing about half of the employers measured by their hiring capacity, says that by September 1, more persons will be employed in Detroit factories than on the same date in 1932, 1931 and 1930. Mr. Culver points out that the low employment mark was reached in January this year, when the aggregate payroll of Detroit factories was only about 57,000. Since that time employment has been boosted to about 185,000 at the present time, with indications that the 200,000 mark should be reached by the end of August.

Mr. Lovett's Estimate

Sixty thousand more workers will be restored to Michigan payrolls before Winter as a result of the NRA program, according to John L. Lovett, Detroit, general manager of the Michigan Manufacturers' Association, which represents about one-third of the employers. Lovett says that Detroit's Industries have already re-employed from 50,000 to 60,000 men. As nearly as can be estimated, there still are approximately 150,000 left unemployed in the state. Conversations with more than 200
large employers who intend to comply fully with the blanket code or that of their trade association indicate that, with any sort of an upward trend at all, another 60,000 are shortly to be put to work.

Labour declares that business recovery in the state presents a "rosy picture," with factories reopening and expanding production, mines resuming operations, and unemployment and welfare relief on the wane. He cites specific improvement in Ann Arbor, Jackson, Coldwater, Grand Rapids, Colon, Yale, Clinton, Kalamazoo, Muskegon and in the upper peninsula iron mining regions.

MICHIGAN ALKALI "RAISES" THE CODE
Michigan Alkali Company, Wyandotte, announces that its plants will operate on a maximum 42-hour week for shift men, and a 40-hour week for day men. A general increase of 11 per cent in wages will be paid.

The Michigan Alkali Company is Wyandotte's largest industry, and has sought all through the depression to give employment to as many men as possible, by staggering the work. The average for most of the laborers has been five days a week, thereby largely increasing the number of men on the payrolls. Under the new hours and pay, the minimum will be 50 cents per hour, considerably more than is requested by the provisions of the National Industrial Recovery Act.

FOUR HUNDRED JOBS IN DETROIT AREA
Standard Oil Company of Indiana, through its district manager, P. A. Rauph, of Detroit, states that 400 men will be added to the concern's payroll in the Detroit area.

HAVE ADDED 200 EMPLOYEES
White Star Refining Company, Detroit, placing its 1,600 employees under the NRA agreement recently reported the addition of approximately 200 employees, with an accompanying annual payroll increase of nearly $200,000. The increase in employment was more than 17 per cent, representing only a fraction of the total increase to come. The figures given applied only to Detroit and surrounding territory, not taking into account outlying sections of the state where the operations are not private individuals selling the company's products. The company has notified dealers they were expected to conform to the national recovery program. The increase locally applies to stations, office workers, refiners and wagon men, and will be in complete operation throughout the organization by Aug. 26. Many of the men who formerly worked an average of 57 hours a week will now work 30 to 40 hours, at a sharp increase in hourly rates.

PAYROLL INCREASES 35 PER CENT
Since early spring the payroll of the Upton Machine Company's plant, St. Joseph, has been increased by 35 per cent. The plant is turning out electric washing machines at the rate of about one a minute, or about 400 daily.

WORK FOR 300 MORE
Timken Silent Automatic Company, Detroit, oil burners, has placed 1,200 employees under the "Blue Eagle" banner. Eleven hundred of these men are in the installation and service division and will get a 25 per cent increase in wages. Before the concern reaches its peak in mid-September, approximately 25 per cent more men will be added to the payroll.

REHIRE THOUSAND
During the last two months the R. G. Budd Manufacturing Company plants in Philadelphia and Detroit have re-employed 3,000 men, bringing the total to 4,000 on the payroll, or 45 per cent of capacity.

TEN PER CENT INCREASE
A 10 per cent wage and salary increase was announced for employees of the McCord Radiator & Manufacturing Company, Detroit, applying both to factory workers and clerical employees. The increase affects approximately 1,100 employees in two Michigan plants—one in Detroit, another in Wyandotte.

1,800 GET TEN PER CENT UP
Harry F. Harper, president and general manager of the Motor Wheel Corporation, has announced a general 10 per cent wage increase, affecting 1,800 employees.

FORTY-FOUR WEEK—TWOhifts
Reynolds Spring Company, manufacturers of automobile cushion springs, has announced that employees' wages would be immediately raised five per cent. The company is planning to adopt a 40-hour week and establish a two-shifts-a-day schedule.

RAISES 700 EMPLOYEES
Auto Specialties Manufacturing Company, St. Joseph, has announced a wage increase ranging from 10 to 15 per cent. It includes salaried employees as well as those working on an hourly and piece basis. The increase will benefit 700 employees now on the payroll.

SEVERAL HUNDRED UNTIL CHRISTMAS
The Carrom Company, Ludington, has been assured of the autumn and holiday business of R. H. Macy Company, New York, for card tables and bridge sets. This account will mean the employment of several hundred local men at the Carrom factory steadily until Christmas.

EMPLOYMENT INCREASES 37 PER CENT
O. A. Starkie, president of the Star Watch Case Company, Ludington, reports that employment at his plant has increased 37 per cent since February and the payroll by almost 50 per cent since the same time.

TO ADD 1,000 EMPLOYEES
The major baking companies in the Detroit area have signed the Re-employment Agreement with a modification permitting them a minimum work week of 44 hours. The industry previously had been on a 54-hour week. Approximately 1,000 additional employees will be hired by the baking industry in Detroit shortly at hourly rates which will represent an increase of about 18 per cent. It is estimated that 5,000 persons are employed by the bakery industry in Detroit.

A & P UNDER BLANKET
Pending hearings and final action on the chain code the Great Atlantic & Pacific Tea Company, largest food chain in the world (15,700 stores), has subscribed to the President's blanket code, will observe its provisions throughout its organization, and expects that this will mean eventually an increase of 50 per cent over its present force of 90,000 workers.

BELTING IN FOR ACTIVITY
At Belding, Rayon Industries Corporation anticipates that three mills at Belding will be in operation within the next month or two upon completion of the installation of additional machinery, and will add approximately 1,000 persons to the company's rolls. The com-
CHEVROLET
leads the field
by the widest margin
in its history

CHEVROLET, AMERICA'S NUMBER 1 CAR—47.99%* of all low-priced cars sold

NUMBER 2 CAR—26.74%*

NUMBER 3 CAR—19.21%*

ALL OTHERS 6.86%*

*Based on the latest retail registration figures from R. L. Polk & Company (all states for five full months). Since January first Chevrolet has sold in excess of 370,000 passenger cars and trucks.

People have come to expect Chevrolet to lead the world in automobile sales. But this year Chevrolet has done even more than that. According to the latest available figures, Chevrolet alone has sold almost as many cars this year as all the rest of the low-price field combined!

When a car looms above its field like that, there can’t be any argument about it. It must be an all-round better buy. And that’s exactly what Chevrolet offers you. Fisher bodies, with the new ventilation system and the strongest and quietest body construction of the day—solid steel over a sturdy hardwood frame. A valve-in-head six engine, unapproached for economy . . . Cushion-Balanced to blot out vibration . . . full of snap and vigor—all together the most efficient engine in the low-price field.

Then there’s Syncro-Mesh with Silent Second, the Starterator, Simplified Free Wheeling, the Octane Selector, long, parallel-mounted springs—more advancements than we have space to describe. And Chevrolet prices are as low as $445. Don’t guess—buy from the leader. Get a car that has been proved sound and dependable by more owners than any other automobile you can buy.

CHEVROLET MOTOR CO., DETROIT, MICH. All prices f. o. b. Flint, Mich. Special equipment extra. Low delivered prices and easy C. M. A. C. terms.

*Steel alone is not enough.
company is moving machinery as rapidly as possible to the plants of the Beldray Industries Corporation and the Beldray Throwsters, Inc., both at Belding.

THOUSAND GET 10 PER CENT INCREASE
The Alpena Garment Company, Alpena, with branch factories in Onaway, Cheboygan and Rogers City, announces wage increases of 10 and 15 per cent. The company employs 1,000 workers.

GO ON 24-HOUR SHIFT
J. B. Heilbronn Company, of Coldwater, makers of gymnasium supplies, which had been idle months, went on a 24-hour shift in June.

ACTIVITY IN FLOOR COVERINGS
Wages of the 500 employees of Allen Industries, Inc., Detroit, manufacturers of floor coverings, have been increased ten per cent, according to Sidney J. Allen, president. The company's two plants are working to capacity, and they have sufficient unfilled orders on hand to keep up this schedule for the next 30 days.

SIX DAYS—12 HOURS—150 WORKERS
Although the plant of the Owosso Manufacturing Company, Owosso, normally is idle at this season, current operations are on the basis of six days a week, 12 hours a day, with 150 persons on the payroll. The plant makes screens and screen doors.

A NEW INDUSTRY
At Houghton, a new industry gives employment to 300 men on a staggered basis. It is an asphalt mixing plant being operated by the Detroit Asphalt Paving Company to furnish this material for road projects in the Copper Country.

FIVE PER CENT INCREASE
A wage increase ranging from five to ten per cent has been announced by the Ex-Cel-O Aircraft and Tool Corporation, Detroit. It involves 450 employees. All departments of the company are working six days a week, with some working seven days in order to keep up with orders.

START WITH 35 WOMEN
The new branch plant of the Hillsdale Manufacturing Company, at Hudson, Mich., started operations July 17 with 35 women employed in operating machines for the manufacture of men's garments. The Hudson plant, eventually, will be employing 250 women and men.

ADD 150 EMPLOYEES
With the addition of 150 men, an increase of 80 per cent in employees in the last five weeks, the Flint plant of the E. I. duPont de Nemours Company, manufacturers of automobile finish and paints, is working three shifts a day to meet demand. The company now is employing 375 men.

WILL USE 250 MINERS
The Consolidated Coal Company, of Saginaw, one of the largest in the Saginaw Valley, has a shaft for a new mine in Hazleton township, Shiawassee county. The company has 600 acres under lease. Booms show that there are 2,500,000 tons of excellent quality coal available. The company expects to employ 250 to 300 men in the mine when it gets into production. The company now operates mines near Midland and Bay City.

ADD 100 WOMEN WORKERS
The branch shirt factory of Salant & Salant, at Portland, recently added 100 women to its working force, bringing the total payroll to about 400 persons.

FORTY-FOUR WEEK INCREASES WORK
A 44-hour week which resulted in an increase in its working staff was placed in effect recently by the Pest P acking Company at its Bay City and Cheboygan plants.

KNITTING ON 48-HOUR BASIS
Amazon Knitting Company, Muskegon, now is operating on the 48-hour weekly schedule adopted by the national textile industries. Employees now are receiving the same wages they formerly were paid on the 54-hour weekly basis.

BROWN-McLAREN ADDS 70 MEN
C. C. Heath, secretary and sales manager for Brown-McLaren Manufacturing, Detroit, makes 326 employees. All departments of the company are working six days a week, with some working seven days in order to keep up with orders.

TWO THOUSAND ON PAYROLL
Detroit City Gas Company reported a total payroll of 2,000 persons last week as it added itself under the President's agreement. The company planned to add to its force before September 1.

FENCE PLANT GOING
Cyclone Fence Company's plant at Tecumseh, a subsidiary of the United States Steel Corporation, has reopened and will be in full operation shortly. It has been closed since February.

TEXTILES RUNNING 40 HOURS
Lenawee Textiles, Inc., Adrian, is operating its machinery 16 hours a day, the maximum permitted under the textile code. Employees are working 40 hours a week in two shifts. Pay is slightly higher than before the textile industry set up its code, the present minimum being about $15 a week. The plant is working on a day-and-night basis for some time.

FORTY MORE MEN AT CEMENT
Aetna Portland Cement Company, Fenton, will add 40 men to its payroll. Shorter hours will follow, but a plan was presented the present workers willing to accept the plan.

WORK 150 MEN ON STAGGERED TIME
For the first time in more than 25 years the screen plant of the Owosso Manufacturing Company will not be shut down this summer. Instead, the plant will be kept operating, with a force of 150 men, on a basis of four days per week, 10 hours per day, with a divided crew, working alternate weeks.

EMPLOYMENT AND PAY UP, HOURS DOWN
Currier Lumber Company, Detroit, with subsidiaries in Lansing, Flint, Saginaw and Jackson, recently increased its working force from 150 to 200 persons and reduced working hours from 60 to 40 weekly. Minimum wages were boosted from 35 to 40 cents hourly.

FIFTEEN PER CENT UP IN QUARRYING
A general increase in wages of 15 per cent was announced recently by the Inland Lime and Stone Company, Manistique, which employs 153 persons.

WILL EMPLOY 75 WOMEN
Wage increases of 25 per cent for the 250 employees of the A. G. Redmond Company, Flint manufacturers of electric motors and metal stampings, went into effect last week. Announcement was made that 75 more workers will be employed at once, mostly young women. A night shift was started this week.

EIGHT HOUR DAY FOR 150 NEW MEN
Brunswick-Balke Collender Company, Muskegon, has started to put an eight-hour day and five-day week into effect. Present employment of 850 is expected to be increased to about 1,000 as the new schedule of 40 hours is established.

The Brunswick company has been one of the busier industries in Greater Muskegon since the manufacture of service fixtures and equipment for the dispensation of new 3.2 per cent beer was started.

ALL OLD HELP BACK
Four Ann Arbor concerns have added 80 men to their payrolls recently. Hoover Steel Ball Company has put on 21 men, King-Sleey Corporation 18, and Economy Baler Company 14. Machine Specialty Company has put on 19 new men in the last month. Those added to the bolder concerns' payroll are new employees put on since August 1. All old employees having been recalled prior to that date.

INCREASE OF 525 WORKERS
At Mueller Brass Company, Port Huron, eight hundred employees are working, compared with 275 in January and employment is increasing daily. A full 45-hour week is being sustained. Some departments are working 24 hours daily.

INCREASE OF 1,046 EMPLOYES
Notice posted this week in the Leonard Refrigerator plant, Grand Rapids division of Kelvinator Corporation, that effective July 1 a pay increase of 10 per cent is effective. The increase in pay affects 1,046 employees. The plant is employing at least three times as many persons as last winter.
PLANT OF THE BUICK MOTOR CAR COMPANY, FLINT

Michigan's Roll of Honor

While most of Michigan's larger employers are members of industries which come under specific codes and will not be under the emblem of the Blue Eagle until their respective industries have had their codes approved, early signatures to code agreements included some sizeable Michigan plants in all parts of the state. Included among the early signers were the following, with their respective employment totals:

Simplex Paper Company, Adrian, 190.
Lobdell-Wilson Company, Alma, 100.
Chisumy Corporation, Algonac, 150.
Postum Company, Inc., Battle Creek, 1,125.
Battle Creek Gas Company, 164.
Union Steam Pump Company, Battle Creek, 260.
Battle Creek Food Company, 510.
Battle Creek Pump Company, Battle Creek, 262.
Michigan Carton Company, Battle Creek, 350.
Bronson Electric Products Company, Bronson, 247.
Hummer Cigar Company, Bay City, 209.
Superior Steel and Machine Castings Company, Benton Harbor, 128.
Northern Chair Company, Cadillac, 145.
D. Burton Sleeping Garment Company, Centerville, 139.
Detroit: Detroit City Gas Company, 2,000.
United States Rubber Company, 4,557; Gulf Refining Company, 263; Rinsed-Mason Company, 184; Norge Corporation, 1,526; J. Mazer and Sons Cigar Company, 314; Rosebud Creamery, 117; American Electrical Hatter Company, 132; Detroit Gear and Machine Company, 265; Zanol Products Company, 281; Detroit Creamery Company, 871; Arctic Dairy Products Company, 138; Binclair Refining Company, 102; Industrial Motion Picture Company, 162; Elving Creamery, 300; American Brass Company, 1,150;orden Farm Products of Michigan, 1,945; American Beverage Company, 194; Berry Bros. Inc., 690; Mills Baking Company, 360; Continental Baking Company, 260; Timken Silent Automatic Company, 1,100; Peerless Stearns and Company, 511; C. F. Smith and Company, 1,600; Ball Dog Electric Products Company, 115; Sparber Mfg. Company, 111; National Twist Drill and Tool Company, 230; Dittoz Color Company, 164.
Delta Brewing Company, Escanaba, 31; Delta Hardware Company, Escanaba, 53; Dalley Brewing Company, Flint, 74; Sears, Roebuck and Company, Flint, 32; Fremont Canning Company, Fremont, 742; Grand Ledge Chair Company, Grand Ledge, 91; Wolverine Carton Company, Grand Rapids, 377; Heiman Biscuit Company, Grand Rapids, 159; National Candy Company, Grand Rapids, 71; Harold Bertsch Shoe Company, Grand Rapids, 90; Clipper Belt Lacer Company, Grand Rapids, 87; Grand Rapids Plater Company, 88; Masterpiece Cigar Company, Grand Rapids, 110; Colonial Baking Company, Grand Rapids, 133; Standard Oil Company, Grand Rapids, 225; Bissell Carpet Sweeper Company, Grand Rapids, 183; Kendel Furniture Company, Grand Rapids, 165; Mazer Company, Grand Rapids, 211; Baxter Laundry, Inc., Grand Rapids, 122; Widdicomb Furniture Company, Grand Rapids, 225; Kent County Gas Company, Grand Rapids, 282; American Sleeping Company, Grand Rapids, 750; W. R. Roach and Company, Grand Rapids, 1,200; Sears, Roebuck and Company, Grand Rapids, 1,900; Union Tanning Company, Grand Rapids, 300; and Chas. Tranka and Company, Grand Rapids, 155.


C. W. Camp and Company, Jackson, 300; L. M. Dach Company, Jackson, 230; Kellogg Corset Company, Jackson, 86; Macklin Company, Jackson, 60; Therese and Mies Mfg. Company, Jackson, 54; Frost Gear and Forge Company, Jackson, 200; Potter Manufacturing Company, Jackson, 185; Sparks-Withington Company, Jackson, 816; L. H. Field Company, Jackson, 135; Consumers Power Company, Jackson, 4,101, and Trenton Garment Company, Jackson, 449.

Kalamazoo Stove Company, Kalamazoo, 240; Kalamazoo Paper Box Company, 189; Kalamazoo Stationery Company, 435; Riverside Foundry and Galvanizing Company, Kalamazoo, 65; Hammond Machine Builders, Inc., 65; Kalamazoo Creampuf, 61; Sam Rose and Sons, 390, and The Upjohn Company, 766.


Beet Sugar Employment

The beet sugar industry of Michigan, revived last year, was a god-send to the farmers of the best-growing areas. Sugar had been going at sixes and sevens for a few previous years. Last year's satisfactory revival was a prelude to that of this year, which promises to be about a 50 per cent greater business, in acreage, growers, product, money returns, consumption of other raw materials than beets and its other incidents than it was last year. This year there will be fifteen factories operating in Michigan. These include the Caro, Sebewaing, Lansing, Owosso, Bay City, Saginaw and Alma plants, by Michigan Sugar Company; the Blissfield plant of Great Lakes Sugar Company; the St. Louis plant of St. Louis Sugar Company; the Holland plant of Lake Shore Sugar Company; the Mt. Pleasant plant of Isabella Sugar Company; the Bay City plant of Monitor Sugar Company; the Mt. Clemens plant of Northeastern Sugar Company; the Crockwell plant of Crockwell Sugar Company; the West Bay City plant of West Bay City Sugar Company, and the Mecosta plant of Superior Sugar Refining Company.

Farmers, Acreage and Tonnage

Behind these plants, as a source of raw material, there are 22,367 farmers growing sugar beets, on 181,177 acres of land, which are expected to harvest 1,729,658 tons of sugar. Just how big a patch of ground 181,177 acres make, when all taken together, may be gathered from the fact that this number of acres amounts to almost 282 square miles, and that the farmers engaged, at the average of five to a family, indicate that 113,000 farm residents will derive a substantial part of their cash income from this crop, and will put in a part of their time, at least, during the season, in the cultivation. At certain stages of the cultivation hired help has to be employed, and then again at the harvesting of the crop. Simultaneously with the harvest the factories begin to operate and employ help during the three to four months "campaign," as they call it, for bring the beets to factory and operating the factories.

Based on last year's employment and tonnage handled, the sugar industry of Michigan will this year call for the seasonal employment, for these three or four months, of 24,924 people. Last year, when work was very slack, the employment at the sugar factories proved a great boon to the communities in which they are located and then contiguous territory.

The sugar statisticians have already begun to make figures on what the industry will contribute to the general business of the state, the amount which is estimated to be paid to the farmers, if the tonnage estimates hold out, is $16,310,693. This is based upon an initial payment of 10 per cent when it is brought into the factory, and a participation in mill profits, in some cases. The estimated production of refined sugar is estimated at 4,930,690 bags of 100 pounds each. All sugar is not packed in 100-pound bags, so that the miller is allowed 10 per cent and the bags required for the residual sugar pulp, which is distributed for cattle feed, will use 6,723,967 separate bags. That uses up a lot of cotton, in addition to which 125,000 yards of cotton filter cloth will be consumed in the processing of sugar. The transportation of the raw material in and the finished sugar out from the factories is a program divided between motor trucks and railroad freight facilities, and this phase of the handling of the crops is counted upon to call for the earning of $7,379,174 by these agencies.

The Absorption of Labor

One striking calculation which the sugar statisticians have made is an approximate one of the amount of labor which is required to produce 100 pounds of sugar from the preparation of the soil, the sowing, cultivation, harvesting of the crop, transportation and processing of the sugar. They estimate this at eight hours per 100 pounds. On this basis Michigan's sugar crop this year will cost, in labor 39,447,572 man hours of work.

The Michigan sugar producers put on a campaign last year for the domestic consumption of their product by Michigan people. That helped, although not all the Michigan-grown and processed sugar was consumed within the state. Many Michigan retailers joined in the movement for sale to domestic consumers. By far the biggest aggregate of the output was distributed in this state by the chain store groups, which were very loyal buyers of the Michigan product, and distributed a large portion of their purchases outside the state's boundaries.

This year approximately 113,000 farm residents' workers will profit, some more, some less from the beet sugar industry of the state, these figures being largely based on last year's experience applied to this year's plantings.

All these returns have been on the agricultural side of the industry. The mechanical and fabricating side proved to be of equal interest. The manufacturing side presents some other phases of profit to Michigan. In the mills the beets are mechanically washed, sieved, the juice extracted, carbonated, boiled to a syrup, crystallized in rotary machines, dried and packaged for sale. The packaging, so far in the development of the Michigan industry, has been restricted to servicing the consumer in 100-pound bags. More modern packaging into five, ten, and twenty-five pound bags is proposed to be generally introduced this year. Pulverizing into confectioners' and bakers' grades of sugar is done by operators outside the mills. The make-up of sugar into the familiar dominos size and delivery of these to the consumer in pound cartons is also a development of packaging which is promised by some of the mills for the 1933 product.

The factory operations of an average Michigan sugar mill give employment to an average crew per mill of 500 men during the manufacturing season. The operations have to be continuous, as in the heavy chemical, cement and salt making trades. With 11 factories working from November 1, 1932, and closing up shop at February 1, 1933, or shortly thereafter, the industry has furnished a three months' seasonal employment for approximately 3,300 laborer employees, with perhaps 400 other employees of greater skill, this giving a contribution of 3,700 jobs to employment in a season normally slack in most years, and abnormally slack in the fall of 1932.

Secondary Employment

The secondary line of employment to the production and delivery of other supplies and maintenance material than the beets themselves. The role of coal consumption in beet sugar production is that every 7 tons of beets call for the use of one ton of coal in the various stages of their work-up into finished sugar. There is also required a ton of limestone for every 10 tons of beets. This indicates the consumption in Michigan during 1932 of 144,000 tons of coal and 118,000 tons of limestone to take care of the 1,182,375 tons in aggregate of sugar beets delivered at the factories last year.

The average man-days of labor used in the coal mining trade is one per five tons of finished coal, so that the consumption of 118,000 tons of coal has provided 23,600 man days of work, of which about 86 per cent is provided within the state. Therefore the percentage of Michigan mined coal used in fac-
PONTIAC OUTSELLS ALL OTHER CARS IN ITS PRICE RANGE!

If you invest even as much as these low prices, you should certainly demand

A STRAIGHT EIGHT

THE ROADSTER

$ 5 8 5

2-door Sedan, $635
Standard Coupe, $635
Sport Coupe, $670
2-door Touring Sedan, $675
4-door Sedan, $695
Convertible Coupe, $695


... and what is more, DEMAND a Straight Eight with ALL TEN of these advantages:

1. A STRAIGHT EIGHT ENGINE that develops 77 horsepower and 78 actual miles per hour ... smooth miles, effortless miles.

2. THE FISHER VENTILATION SYSTEM that gives occupants of your car fresh air, in the amount each desires ... that lets you laugh at the weather ... that guards the family health.

3. MODERN APPEARANCE, including V-shaped radiator, streamlined bodies, valanced fenders ... fresh as the latest style note, smart as a Paris creation.

4. AMPLE SIZE for roominess and comfort, ample length for smooth performance ... 115-inch wheelbase—remember and compare.

5. AMPLE WEIGHT for safety and roadability ... 4-door Sedan, 3265 pounds at the curb ... it’s good to feel plenty of car under you!

6. DEFINITE PROOF OF FUEL ECONOMY ... more than fifteen miles to the gallon ... just ask any Pontiac owner!

7. FISHER REINFORCED STEEL BODIES ... the kind used on the higher priced cars ... no compromises with quality in order to simplify production.

8. FULL PRESSURE METERED LUBRICATION to every engine bearing ... maybe you don’t understand what that means, but what a difference it makes in carefree performance and long life.

9. CROSS-FLOW RADIATOR, giving positive, efficient uniform cooling ... a great performance and long-life factor, exclusive to Pontiac.

10. A MODERN CAR in every sense, not practically out of date the minute you buy it—but advanced, protecting the future trade-in value.

You will find ALL of these vital features only in the Pontiac Economy Straight Eight.

But you don’t know Pontiac, even from this description. You can’t know Pontiac till you drive it. Do it ... and do it now. Then you’ll know why Pontiac outsells all other cars in its price range!

PONTIAC

WORLD’S LARGEST BUILDER OF STRAIGHT EIGHTS
PLANT OF LINCOLN MOTOR CAR COMPANY, DETROIT

by 10 factories in the state in 1932 indicated
27,000 man days of work. To the extravagantists
and bally-hoo politicians these figures
may seem inconsequential, but to the real in-
dustrialists they have always repre-
ented a substantial contribution to the work
reservoir of the state.

**Explain New Law**

"Michigan’s newly enacted automobile own-
ers' financial responsibility law means busi-
ess, beyond any doubt," says P. W. A. Fitz-
simmons, president and general manager of
the Michigan Mutual Liability Company, of
Detroit. "All uncertainty existing as to the
severity with which the state legislature in-
tended to deal with automobile owners and
drivers, in efforts to reduce traffic fatalities
and provide proper compensation for the in-
jured, has been removed.

"The new law has teeth in it. It means
business. Under it those reckless, irrespon-
sible drivers who cause most of the acciden-
tals and are the chief menace to the careful
driver, will be driven from Michigan’s streets and
highways, and no longer can they hide behind
the challenge ‘You can’t collect from me’. This
new law says they must pay if guilty of viola-
tion of major traffic laws—or injury to some-
one—or the cause of property damage in excess
of $700—or never again can they drive a car
in Michigan. Careful drivers will also qualify
for financial responsibility to protect them-
sewes against the possibility of having their
driving privileges taken away from them.

"Under this new law it is probable that
claims for damages will be made on the slightest pro-
vocation, as has been the case in other states,
and it behoves every motorist to protect him-
self against such claims in the surest, least
expensive, and most convenient way—with ade-
quate automobile insurance.

"You may have an accident in which some-
one is injured and you may honestly believe
you are entirely blameless, yet when the plain-
tiff’s witnesses and lawyers have presented
their case, the jury is apt to bring judgment
against you for several thousand dollars.

"Insurance is not compulsory under this law
until you have had such an accident, or have
been found guilty of certain major law viola-
tions.

"The penalties inflicted by this law apply to
operators and owners of all cars operating in
Michigan who are convicted of any of these
traffic law violations:

1. (a) Manslaughter with a motor vehicle.

(b) Driving under influence of drugs or
liquor.

(c) Perjury or false affidavit on registra-
tion and regulation of motor vehicles.

(d) Felony under the Motor Vehicle Law.

(e) Three charges of reckless driving in
twelve months.

(f) Failure to stop after injury accident.

2. All owners and operators of cars who
are convicted of causing death or per-
sonal injuries with such cars, or caus-
ing property damage in excess of
$300.00.

3. All such owners and operators who
fail to satisfy, within 30 days, final
judgments rendered against them for
such accidents.

"Having been convicted under this law, you
must pay under the final judgment, then prove
your financial responsibility, before you will be
allowed to drive again. If you can’t do these
things, then your license plates, operator’s li-
cense, chauffeur’s license, and all registration
certificates on all cars owned by you will be
taken away from you, and you will not be per-
mitted to drive again in Michigan. Having
paid the final judgment, you must continue to
show proof of financial responsibility for a
period of three years thereafter. This law ap-
plies whether such accident occurs in Michigan
or in another state or province.

"Proof of financial responsibility, or ‘ability
to respond in damages,’ for future accidents
may be evidenced by an automobile insurance
policy, protecting you against claims arising
out of any one accident as follows: Public lia-
bility insurance in the amount of $5,000 for
one person injured or killed, $10,000 for two
or more persons injured or killed in same acci-
dent and property damage insurance for $1,000
or—such proof may be in the form of a surety
bond for $11,000—or it may be cash or securi-
ties deposited with the State Treasury to the
same amount.

"Twenty other states and Canadian provinces
now have this similar law. In effect. In qualifying under the Michigan law, you are
protected in other states having similar non-
resident provisions in their laws. This act ap-
pies to all motor vehicles, including trailers,motorcycles and tractors."

**BETTERMENT AT NILES**

Industrial plants at Niles are operating at
full capacity. Kawneer Company reports pick-
up and is looking forward to fabricating a
large window order soon. National Standard
Company is operating both the Niles and
Akron plants at full capacity, and business
looks good for the near future.

"Dry-Kold" Refrigerator Company, Niles, re-
ports business very good. Much refrigerator
equipment has been sought lately owing to the
advent of 3.2 per cent beer. Simplicity Pat-
ter Company is operating at full capacity,
with about 250 employed. Original Cabinet
Company, which makes post office equipment,
is experiencing the seasonal fall at the end of
the U. S. Postal Department’s fiscal year.

**BOOST FOR 350 MEN**

George N. Harder, general manager of the
I. Stephenson Company, Wells, has announced
an increase in wages to all employees in the
company’s service for six months or longer,
effective as of June 16. The boost affects 350
men.
Leading Industrial Executives
Direct the Affairs of This Company

P. W. A. FITZSIMMONS, President
Detroit
Michigan Mutual Liability Company

A. A. TEMPLETON, Vice Pres.
Detroit
Michigan Mutual Liability Company

FRED BUCK, Vice Pres.
Saginaw
Pres., Lupper Roll Company

CLARANCE HATCH, Vice Pres.
Detroit
Michigan Mutual Liability Company

WALTER E. OTTO, Sec'y Treas.,
Detroit
Michigan Mutual Liability Company

E. R. AILES
Detriot
Sec'y Treas., Int. Steel Products Co.

F. S. BIGLER
Detroit
The S. B. Hill Estate

W. H. BURNIAH
Ashland
Capitalist

J. L. DRYDEN
Detroit
Pres., Long Manufacturing Company

FREDERICK T. DUCHARMIE
Detroit
Capitalist

RUDOLPH FLINTERMAN
Detroit
Pres., Michigan Steel Casting Company

JAMES INGLIS
Detroit
Chairman, American Blower Corp.

A. F. JACKSON
Detroit
V. P., Michigan Malpass & Iron Co.

E. A. MAVIS
Grand Rapids
Treas., American Excelsior Corp.

G. P. Mc CALLUM
Ann Arbor
Director, Michigan Motorbus Association

MICHIGAN MUTUAL LIABILITY COMPANY

1209 Washington Blvd. at State
Detroit, Mich., Cherry 4800

We are the largest carriers of Workmen's Compensation and General Public Liability Insurance in Michigan. We have paid $4,250,000.00 in dividends to our members, and our Treasury still holds $1,710.00 with which to pay every $1,000.00 of liability.

Non-Assessable Workmen's Compensation, Automobile Insurance, and all other Casualty Lines.
Michigan’s Oil Industry

The Production of Petroleum Increases Weekly, With Some Big Wells for 1933

The recovery of petroleum from Michigan underground sources has been going on apace during 1933. Up to this time total recoveries from all sources in this state have aggregated about 25,000,000 barrels, since 1920, most of it in the past four years, since the Mt. Pleasant district has been opened up. The production of Michigan which spiraled up to 22,000 barrels a day, has been this year hovering about 17,000 barrels, representing an aggregate annual recovery of 10 million barrels a year. This production is being added to as the results of continued drilling. An average of a new well a day is being spudded in. The usual proportion of them are dry holes. However, reasonable production from a high average has resulted from drilling, with several spectacular contributions to the supply. First of these in order of time was the Yost well in Porter township, of Isabella county, which came in at 3,500 barrels, big for Michigan.

Following that Walter McClanahan, of Mt. Pleasant, after a series of hard luck experiences, brought in a highly paying well in the same territory, which is reputed to have a 2,500 foot daily value. Later still, and in mid-summer, the interest of the developers was transferred to the Vernon field, north of Mt. Pleasant, where Mammoth Oil Company, headed by Isiah Leeboe, mysterious lawyer, politician and oil explorer from New York. This well was drilled some miles southwest of Clare and on the northly edge of the Vernon field, and was first announced to have had a flow of 6,000 barrels per day, later increased by an announcement of 10,000 barrels capacity, and now reputed to be pinched in, with an output of 2,000 barrels a day representing its free flow.

The Mammoth wells results, whatever they may be accurately, caused a very marked line of enterprise in the Vernon field, 25 wells having been started shortly after the Leeboe announcement. None of these has gone down far enough to have produced results so far. Meanwhile, in the Vernon and Leuntown fields, generally north of Mt. Pleasant, several wells have been brought in, one by the J. B. Wicklund interest, one by the W. J. Wilson interest, others by other enterprisers. These wells are in the 300-barrel class.

Meanwhile systematic drilling is going on by the older organized companies. Pure Oil brought in the first Porter township big well and is carrying on systematic drilling in that field. Sun Oil has begun some drilling, and, lately, Dutch Shell has entered upon drilling, this latter in the neighborhood of Muskegon. Incidentally the Muskegon field has not
PLANT OF PLYMOUTH MOTOR CAR COMPANY, DETROIT

pinched out, by a long shot, and is contributing at least 5,000 barrels a day to the total output of the state. The lesser companies, such as Gordon Oil and Talbot Oil, are pugging along at the rate of only a few barrels a day.

The various promoted interests, whose capital is derived by promoters from the general public, have been equally active in driving wells. As a rule these operations have held up to the average of successes realized by the larger companies.

The activity in Gratiot county which began last year has not realized much oil. One reason was that the drills were short of money. In other districts better results were shown. It is the general impression that Pure Oil, which has an immense leased acreage in Ogemaw county, has pretty well assured itself of the presence of good oil reserves in that country. Recently a well drilled southeast of West Branch, on land in the hands of an independent leaser, is reported to have shown a 300-barrel result. Another well, drilled by Pure Oil, in the same territory, has been capped for over a year. Last week an oil promoter secured a lease on the 1,000-acre poor farm of Ogemaw county, in the West Branch township.

New developments in the processing field of petroleum are noticeable. The Bell Gasoline Company had already been operating a gaso-line from casing-head gas near Mt. Pleasant. This season the Naph-Sol Company at North Muskegon has been using the gas from the Naph-Sol plant at Saginaw, a small one, is operating intermittently and so is Old Dutch refinery at Muskegon.

The gas reserves of the Mt. Pleasant district have begun to be used. Consumers' Power Company has commenced to supply Bay City and the high-lined served municipalities which derive their gas supply therewith from the Central Michigan line. Similar service will shortly be extended to Saginaw. W. J. Sovereign, who has gas wells at Clare, is operating for an independent franchise with a lease in Saginaw with gas at the city entrance at 20 cents per 1,000 feet. This would involve a second distribution system in Saginaw.

Michigan's proved "dry" gas producing areas are a reserve in excess of 21,000,000,000 cubic feet it is indicated by the Geological Survey Division.

This reserve is included in four gas fields that now include 33 wells which have an aggregate estimated original daily open flow of 111,646,600 cubic feet.

The proved acreage has been conservatively placed at 5,800 acres but the Geological Survey Division believes that this estimate is too small.

The largest of the three gas fields in the central Michigan area is in Broomfield township, Isabella county, which has 14 complet-
ed wells with an aggregate initial open flow of 2,100,000 cubic feet. The field now extends over 3,500 acres.

The second large pool, the Vernon Township Pool, discovered August 15, 1925, and has seven wells with an aggregate potential open flow of about 15,000,000 cubic feet.

The Clare pool, the third to be discovered in that section, was brought in February 14, 1924, and comprises about 500 acres of productive area. This to withdraw a total open flow has been gauged at about 29,000,000 feet.

A fourth field, discovered in 1927, is near Ashby, Gratiot county.

The history of natural gas production in Michigan thus far has not reflected the true potentiality of the gas resources of the state, the Geological Survey believes. The Muskegon Field was essentially an oil field, and wasteful operation contributed to a rapid decline and early depletion of its gas reserves, it was said.

The discovery of the "Michigan sand" from which gas productivity is indicated over a rather broad area in the central part of the southern peninsula marks a stride in the development of natural gas development. The future of this district, it is predicted, will be significant producer of natural gas only awaits the proving of larger reserves.

The deepest hole ever drilled beneath Michigan's oil has now reached 6,419 feet, and A. A. Leicht, driller for the Newyago Oil and Gas Company is continuing to push deeper into the gas sands.

The drilling, which is occurring at what is known as the A. J. Bates No. 1 in Sherman township, is being continued intermittently since 1920 and but recently exceeded a previous depth record of 6,510 feet reached in the same pool.

Oil production in Michigan for June reached 474,000 barrels with a daily average of 16,000. Of this production the Mt. Pleasant field produced 245,214 initial flow on May 21, the Porter field 112,000 barrels. Vernon produced over 31,400 barrels, and the Test field over 23,000 barrels, all better than 26,000 barrels. The remainder came from Muskegon, Saginaw and Oceana counties. On the basis of this production at an average price of 80 cents per barrel Michigan produced in June oil valued at $579,000.

The state has now become second only to Pennsylvania in production east of the Mississippi. The history of the growth of production is striking, particularly in central Michigan. Its first showings of oil go back 10 years or more when rock salt showed in brine wells in the Midland area. The acreage which pany. Famous brine well No. 57 made a promising show of oil in 1924 and February 26, 1928, was opened for the well on the Laura A. Root 1, Greendale township, Section 18. It has an initial production of some 30 barrels.

From that rather unassuming start, the Central Michigan field in five years has moved from the status of a minor oil producing state. More than 425 commercial oil wells have been drilled; production today is above 25,000 barrels daily. More than 75 wells are going down in the field.

Wicklund's Well a Winner

One of the most striking recoveries was that accomplished last week in the Vernon field by J. V. Wicklund. Mr. Wicklund was a security dealer for 18 years, who was formerly in the insurance business, is in the Vernon field. His locations are in the Vernon field, nine and a half miles north of Mt. Pleasant. His drilling operations were conducted by George Talbot, oil field operations company of Sarnia, Ont. Last week's success was on Carmichael Well No. 2, on Section 22, of Vernon township. A well which reached 211 miles of the Leebobe Mammoth Oil Company's well which created such a sensation when it came in. The initial flow of Carmichael No. 2 was 19 barrels in 15 minutes gauging, indicating a 2,000-barrel per day initial flow. This well is holding up well. This week he began drilling Carmichael Wells No. 3 and 4, adjoining Carmichael No. 3.

Mr. Wicklund has this week started another well on Section 23, on Road east of Road No. 27, which runs through the Vernor oil field from Mt. Pleasant to Clare. This well is also being drilled by Talbot. It is 1,400 feet from the Leebobe Mammoth well, and offsets the Marcellies well, which came in with 1,800 barrels initial flow. The Wicklund operations are in good territory and, if this developer's luck holds out, his operations promise to be as successful as those of McClanahan, Leebobe and Pure Oil in this particular field.

A New Oil Organization

W. T. McKenna, of Detroit and Mt. Pleasant, has organized a group which has been working on a large scale on development in the Mt. Pleasant field. Mr. McKenna has had experiences in southern and southwestern oil development since before the World War and ever since has been a producer, landing his first field, an old oil field in Texas, in 1920. The McKenna project will develop amount to about 1,000 acres all in the Isabella county township, part of the Towson-Porter township. It has all been selected or approved by W. T. McClanahan, who will conduct the drilling operations.
A Modern Oil Refinery

White Star Refining Company’s Plant Produces Results from The Crude Upward

The White Star Refining Company, now one of the larger companies which make up the great Socony-Vacuum Corporation, was organized in Michigan in 1919 by Harry Boyd Earhart. At that time the company was housed in a small warehouse in which Mr. Earhart and one helper blendeed cutting compounds and factory lubricants. They did the selling, the blending, the delivering, and the bookkeeping.

From this modest beginning, the company has grown until at the present time it is distributing its products in Michigan, parts of Indiana, Ohio, and Ontario. However, primarily the White Star Refining Company is distinctly a strong local industry, employing local labor, and serving Michigan industrial plants. One of its early outstanding achievements was the introduction of an “easy starting” gasoline in Michigan — the first company to make this forward step.

Quality Motor Oil Paved Boon

A great boon to the company’s early growth was the use of a high quality motor oil by a big automobile manufacturer. White Star made that kind of oil and got the order. However, up until 1916, the company was essentially a refining company and not a distributor. In that year, Mr. Earhart entered the gasoline distributing business. Four filling stations were purchased. And with that as a nucleus, they have grown in number until today more than 1,500 service stations are dispensing White Star products throughout its territory.

In 1920 White Star’s first refinery with a daily crude oil capacity of 5,000 barrels was established at Wood River, Ill., and July, 1929, marked the opening of the company’s second refinery at Trenton, Mich., just twenty miles from the heart of Detroit. Its daily crude oil capacity is in excess of 7,000 barrels and is supplied by pipelines direct from Kansas and Oklahoma. Research laboratories are located at both refineries and at the main storage in Detroit.

Affiliates With Vacuum Oil Company

White Star made a really long step forward when in August, 1929, it became affiliated with the Vacuum Oil Company. This latter company, with a history dating back to 1866, was founded primarily as a manufacturer and distributor of lubricating oils of the finest quality possible to produce. It was this company which developed the first Vacuum stills for the refining of petroleum, and it was from this that the company derived its name. From a humble beginning the Vacuum Oil Company grew to become a worldwide organization established in every country on the face of the globe. Its products became renowned and the standard for comparison. In fact it is difficult to find an industrial man today who has not heard of such famous brands of oil as Vacuum’s Cylinder Oil 600 W developed for steam cylinder lubrication, its DTE Oils and its Mobilollin.

The high quality of these products is attested by the fact that 76 per cent of the original equipment manufacturers of today recommend or approve a Vacuum Oil for use in their finished product. They do this because they have confidence in its uniformity as well as its high quality and because no matter to what section of the world that piece of equipment goes, they will find there the exact oil needed for its lubrication.

Now a Socony-Vacuum Company

Subsequently when the Vacuum Oil Company merged with the Standard Oil Company of New York to form the Socony-Vacuum Corporation, White Star became a member of the new billion dollar corporation. The Socony-Vacuum merger was a perfectly natural one because both companies had world-wide distribution, and their combining gave the consumer the advantage of their combined experience and facilities, and likewise made for more efficient and complete service.

Yet comparatively few people in this country have realized the tremendous scope covered by a world-wide organization such as Socony-Vacuum. Many are prone to look with amazement at this time upon the nation-wide activities of the NRA and wonder how the many production, marketing, and merchandising activities can be coordinated into one great family, all working along definite and standardized lines for the common good.

A similar situation prevails with a large company like Socony-Vacuum where it becomes necessary to coordinate and standardize practices all over the world so that consumers will receive high quality and uniform...
Until we learned better, we used to mix wood and steel in our car bodies and wheels. It was the best way to make bodies—then. But the state of the art has advanced.

Of course, it is more expensive to make an all-steel body than to make a wooden frame and nail steel panels on to it. The better way involves an initial expenditure of several millions of dollars for new dies, which renders a change very costly. Cars, especially large expensive cars which are produced in small volume, cannot afford this, because the dies cost as much for one car as for a million. That alone explains why all-steel bodies are not used in all cars.

But our basic policy from the beginning is to make a good car better, regardless of cost.

For example, when we discarded wood-steel body construction, it was not because we lacked wood. We still have some thousands of acres of the best hard wood in America. Economy would urge us to use up the wood first, and then adopt the better all-steel body. But we decided that quality was more important than expense.

We weighed the reasons, for and against, before we made the change.

We could see only one reason for retaining a mixed wood-and-steel body—nailing the metal on, instead of welding an all-steel body into a strong one-piece whole. That reason was, it would be cheaper—for us.

Our reasons for adopting an all-steel body were these: A wood-steel body is not much stronger structurally than its wooden frame. In all American climates, wood construction weakens with age. Every used car lot gives evidence of this. Rain seeps in between joints and the wood decays. A car may have a metal surface, and yet not be of steel construction. Under extreme shock or stress the steel body remains intact—dented perhaps, but not crushed.

Steel does not need wood for strength or protection. Wood is fine for furniture, but not for the high speed vehicles of 1933.

In the Ford body there are no joints to squeak, no seams to crack or leak.

The all-steel body is more expensive—to us, but not to you. By all odds, then, steel bodies seem preferable. Wheels also have become all-steel. No one argues that an electrically welded one-piece steel wheel, such as the Ford wheel, needs to be "strengthened" by adding wood to it.

The one-piece all-steel body is the strongest, safest, quietest, most durable body made. That is our only reason for making them.

July 31, 1933
It is an interesting fact that all salesmen in this corporation with its many affiliated companies, purchase their gasoline, and use the same sales and engineering material. Likewise, the engineering department with its New York office works along the same line—all with one object in view—to produce savings for the consumer through the reduction of waste traceable to improper or faulty lubrication.

Naturally, the White Star Refining Company, as an integral part of the Socony-Vacuum Corporation follows the same standardized methods followed by all other affiliated companies of the company world wide. "The tools" used are the same, and so are the high-grade lubricants which are uniform in quality, whether they are applied to lubrication problems here or in Japan, China, or South Africa.

White Star, located as it is right in Michigan, besides having access to the knowledge and assets of the great Socony-Vacuum Corporation, is in a position to specialize on the needs and requirements of Michigan industries and particularly those industries in the automotive field and its associated industries. Growing up as it has with the development of the automobile and other Michigan industries, White Star has a back-ground which has enabled it to serve local industry intelligently.

Today, through its own and the facilities of the Socony-Vacuum Corporation, owns its own crude supply and transportation facilities, operates its own refineries and marketing outlets. Its engineering service and advice is impossible of duplication in any other company. Moreover, it operates what have been named as the best equipped oil, chemical, and engineering laboratories in Michigan. These are the disposal of manufacturers and consumers alike.

The research developments which have come out of these laboratories are being enjoyed and proved profitable to most of the Michigan manufacturers today.

Thus the union of the White Star Refining Company with the Socony-Vacuum organization is an advantage in the purchase of high-quality products because of the combining of the assets of all companies, improved distribution, wide range of products, and advantageously located laboratory and refinery facilities.

Despite its world-wide affiliation through the Socony-Vacuum Corporation, White Star is manned by people who have grown up with the company here. The company's officers, headed by Mr. Howard A. Coffin, who became president when Mr. Earhart resigned in 1923, and many of the employees have been with the organization since its early days. The division managers and sales organizations include many men who started with the company as filling station salesmen, and lubricating oil salesmen. Moreover, the company's investments in its territory are very substantial, and by reason of its own organization is able to offer Michigan industry unusual service in supplying petroleum products.

**General Food's Shows at Chicago**

In signing the President's Re-employment Agreement, C. M. Chester, president of General Foods, announced that the agreement is being put into operation in more than 50 of the company's factories and sales offices.

Factory workers employed by General Foods, whose working time has been reduced from 40 hours to 35 hours per week, will continue to receive the same rate of weekly pay they previously received.

Factory employees who have been working longer than 40 hours a week are having an equitable adjustment made in their hourly rate of pay to conform with the spirit of the agreement.

Products, made in the Michigan plants affected by the agreement, include Postum, Grape-Nuts, Post Toasties, Post's 40% Bran Flakes, Post's Whole Bran, and Grape-Nuts.

General Foods is making a great exhibition of its productions at Century of Progress, including the new chocolate factories, by showing what science and industry have done to improve conditions governing food and its handling. The exhibits include quality, cleanliness, variety, palatability, and convenience. Science and industry have made many of these improvements, and one of the recent industrial tendencies has been to gather under one administrative control a group of the best foods with which the public is familiar.

That is what General Foods Corporation has done, and the reason its exhibit in the impressive Agriculture and Foods building is crowded is because this exhibit includes well-known and widely used breakfast foods, gelatins, cake flour, tapiocas, chocolate, cocoa, coconut, decaffeinated coffee, maple flavored syrup, coffee, tea, baking powder, bottled pic- tin for use in making jams and jellies, high grade salt, frosted foods and many more. There are eighteen General Foods products in all, including even aids to washing and ironing.

An unusual method has been adopted to make clear to the masses just how these foods are produced and in what forms they are presented to the public. On one of the largest revolving stages ever built General Foods is presenting sixteen scenic productions featuring each of its nationally advertised products, and selling its dramatic story through a variety of highly interesting and unique mediums.

Eights of the performances are given simultaneously for a period of two minutes. The show is the exact same length of time, following an intermission of ten seconds. So a person standing before one stage can see the entire sixteen shows by merely standing still because of the revolving mechanism.
BUICK GIVES MORE AND BETTER MILES

Wings over the world! And now, sturdy Buick wheels over the roads of America! That is the travel story of

MR. WILEY POST

who purchased a new Buick Eight after completing his record-breaking round-the-world flight in the Winnie Mae. Mr. Post says: "My experience in the air has taught me the vital need of a reliable engine. The Buick people have been building motor cars for thirty years—they know how to build cars that are the last word in reliability. And they’ve always concentrated on building Valve-in-Head Engines, which means a lot to me, because Valve-in-Head Engines are supreme in the air, and I’m also convinced that they’re supreme on the road." Mr. Post stresses Buick reliability. You’ll also find that Buick is beautiful, comfortable, long-lived—that Buick gives more and better miles. Choose it and you’ll be choosing the ideal motor car investment.

WHEN BETTER AUTOMOBILES ARE BUILT . . . BUICK WILL BUILD THEM

A GENERAL MOTORS VALUE
The All-American Channel

The Favorable Results it Will Bring to Monguagon and Brownstown Townships, of Wayne County

By all odds the most striking of the improvements in the line of public works proposed to be done by the Federal Government under the National Recovery Act $3,300,000,000 appropriation is the proposed deep channel of the Detroit River from the head of Grosse Ile to Lake Erie. The effect of this project would be to round out the proposed Great Lakes-Atlantic deep waterway, and make the territory south and southwest of Detroit available for industry as an Industrial District of Detroit, from the mouth of River Rouge to the Port of Monroe. This project is now in process of presentation by Chairman William P. Bradley, of the Port Committee of the Wayne County Board of Supervisors. The proposal has been discussed at length in earlier issues of this paper. The following article is a discussion of its advantages to the townships of Brownstown and Monguagon and the Village of Trenton, which occupy strategic economic positions in the territory to be benefited.

Two townships of Wayne county to which much eventual profit will come from the construction of an All-American Channel of the Detroit River, as proposed by the Port Committee of the Wayne County Board of Supervisors, are Monguagon and Brownstown. These townships have a water frontage on the undeveloped reaches of the American channel of the lower river of more than seven miles. They include in their territory on the shore line the ports of Riverview and Trenton the old time port of Gibraltar, which was once the seat of a ship-building industry producing wooden sailing ships, and the undeveloped harbors of Swan Creek and the Huron River. Together they have about 60 square miles of area.

Gibraltar an Old Settlement

Gibraltar, incidentally, was the seat of a great land boom in the late 30's of the last century, when it and Monroe were competitors for the supremacy as a port to connect lake traffic from Buffalo to possible rail lines across the lower peninsula of Michigan to Lake Michigan. Many eastern people formed the Gibraltar Company, which carried on a land boom and sale which, for its time, would do credit to the boomiest days of the more recent land development in Wayne county. Lots laid out six to the acre sold as high as $800 to $1,000 apiece prior to the panic of 1837, which ended the boom.

The port of Gibraltar is the mouth of Swan Creek, which has port possibilities for a mile back from its mouth at Lake Erie, in the shelter of Celeron Island.

The Huron River forms substantially the

This territory is backed up for its entire length by the rail facilities of the New York Central and Detroit, Monroe & Toledo Short Line, a coal carrying road owned jointly by the Grand Trunk Western and Nickel Plate railroads. In addition, in the back from the shore portion of Brownstown there are approximately 16 miles of the double frontage of the Pennsylvania-Detroit Railroad, and quite as much more mileage of the Detroit, Toledo & Ironton railroads running, including both the old line of the original Detroit Southern constituent of this rail facility and the more recently created cut-off.

Detroit, Toledo & Ironton has access to any possible port improvement that may follow the construction of an All-American Channel of the Detroit River at Trenton, and similar contact with rail and water is possible at several points between the Detroit-Toledo coal road already mentioned and the water front.

Industrial Possibilities

The industrial possibilities of Brownstown and Monguagon have already been pretty well considered. American Rolling Mills Company, of Middletown, Ohio, has for several years held an option on a tract of 200 acres, while an important 800-acre tract, formerly known as the Denby operation, which has fallen back to its original owners, has formed the basis of observations of several prospective steel locations on the Detroit River. Most of these projects have been discouraged by the lack of deep water facilities in the channel upon which they have their marine frontage.

The farthest down-river possibilities of even shallow depth transportation are those enjoyed
What's in a NAME?

Has it ever occurred to you that the only motor car body universally known by name is Fisher Body?

That is something worth remembering and weighing when you buy an automobile.

The fine and time-honored craft of coach building is as natural a part of Fisher as is the name itself.

The Fisher organization was born with it. Grew up with it. And with the oncoming of the automobile swept the practical knowledge of it forward to the eminence which Fisher occupies today.

For more than twenty-five years the growth of the Fisher organization has depended upon its alertness to the public's desire for style and safety and comfort.

And because Fisher has known and studied and anticipated the wants of the public, the public has grown to know the Fisher name.

What, specifically, does the name "Body by Fisher" mean to the buyers of cars today?

It means that the body which bears this name enjoys the benefits of manufacturing and financial resources greater than those of all other bodymakers combined—and therefore receives the advantage of every opportunity which large scale manufacture presents.

Still young among nations, America is yet mature enough to have her household names for excellence in special arts and crafts.

These are the names of families in whose tradition runs lifelong devotion to one field of work, the transmitting of skill and experience from fathers to sons.

So the name of McCormick means reapers and the tools of the field; Harper, Scribner's and Putnam are books; Morgan and Dressel call up visions of the counting house; Hoe, press; Roebling, bridges; and Fisher is.

It means that the organization which bears this name is the world's largest user of steel, of glass, of fine hardwoods, of hardware, of upholstery in body construction—and therefore is best enabled to use them skillfully and wisely for your safety and comfort and pride.

It means that Fisher has the greatest experience—and the finest reputation to maintain.

It is a point of pride with us that Fisher is free to build any type of body that it may choose, from any materials.

It is a matter of common sense that Fisher should and does employ these vast resources to build the very best body for the purpose intended, without and within.

A review of Fisher contributions even to the closed car body alone must include such visible improvements as the easy-rolling regulators for windows, the seats easily adjustable for pitch and depth, the form-fitting seats and backs, the slanting and visored full-vision non-glare windshield.

And now, crowning all these, is the latest and most important contribution to motoring health, comfort, and safety made in the last twenty years: Fisher No Draft Ventilation.

When you consider that the body is the most costly single unit of any automobile, you will see the wisdom of making sure that you get the finest body on the next car you buy.

What's in a name? It all depends on the name. In the name Fisher is assurance of all that a man or woman needs to know to choose the strongest, safest, smartest motor car body in the world today.

Consider all this when you are buying a car, and you will surely look for the name:

Body by Fisher

on GENERAL MOTORS CARS ONLY: CHEVROLET · PONTIAC · OLDSMOBILE · BUICK · L.A. SALLE · CADILLAC
by the port of Trenton, in M ebony town- ship. Trenton's locality is the seat of a most extensive power producing plant of the Detroit Edison Company, which now introduces the enormous quantity of its annual coal consumption for power purposes by steam railroad.

In the hinterland of Brownstown are several substantial industries. At Rockwood there are deposits of glass-making sand of high quality; one of which is being mined for the glass-making market, while others of high value remain undeveloped. Near Trenton is the age-old limestone quarry of the Solvay Process Company, operated for many decades by the Sibley interests. That operation was largely for lime burning and rubble stone for building operations. It is now carried on for chemical lime and blast furnace fluxing purposes, this quarry supplying the limestone raw material for the Solvay Process Company and the Hanna Furnace plants at River Rouge. Most of the operating part of this plant lies in M ebony township, but the reserves run far back into Brownstown.

At the neighborhood of Flat Rock is the petroleum distilling plant of White Star Refining Company which has pipe line facilities from the Ohio oil fields. The whole length of the township is traversed by the gasoline and fuel oil pipe lines of the Pure Oil and Sun Oil Company combination of interests. These lines are available for a drop-off supply at any point in their Brownstown and M ebony area for industrial purposes. There are already a number of other substantial industries in Brownstown which would benefit by a water outlet during the eight-months season of navigation.

The prospective down-river harbor of greatest potential value in the field of the proposed improvement is that of the Huron River. It occupies, in the raw, about the same position that the River Rouge did before its improvement for industrial purposes and that the Raisin did before the present deepening operations of that river were commenced. A possibility of deepening it as far inland as Flat Rock exists in the event of or prior to industrial demand. Preliminary observations indicate the possibility of its deepening to a 16 foot depth, which, incidentally, is what the Saginaw River was maintained at in the halcyon days of the lumber traffic. The Huron is crossed by all the rails of the companies already mentioned except those of the Pennsylvania-Detroit.

The towns of Brownstown and M ebony are on the great two centuries old traffic trail between Detroit and Toledo, toward its river side it is traversed from one end to the other by the River Road, west of which is the Dixie highway, while west of that again is the Telegraph Road, an artery from Toledo and Monroe to the entire southeastern Michigan industrial area.

Indications of Petroleum Measures

There are indications of petroleum measures in the territory, the geological survey of the state having indicated a dog's leg of the so-called Cincinnati arch which has been observed in Monroe country, which probably crosses under the Detroit River in the neighborhood of Trenton to some connection with the Leaming ton and Kingsville gas and oil fields of the Ontario peninsula lying between Detroit River and Lake Erie.

The most thriving town of the area is Trenton, formerly a market town and suburban home area, but now an important railroad town and transit point for the good of industry. A riveting making company from Ohio is seeking settlement there now. Trenton shows availability for such a marine and rail junction operation, once a Detroit River All-American channel is created, as that provided in the Nicholson Dock and Terminal plant. A similar contact is an engineering and economic possibility at the port of Huron River.

The Brownstown and M ebony folks are getting active in the promotion of the proposed All-American channel. Its completion would turn their areas and river shores into a possible Calumet Harbor or Gary district. These shores used to be the origin of a good deal of water-borne commerce. Long ago every morning used to see two schooners laden with lime stone or iron ore going out up the river on the morning breeze with loads of limestone for Sibley's kilns at Detroit. There was an important marine commerce in stones. At Gibralter the wooden ship yards of John Craig turned out a couple of boats a year until steam came in, when the Craig yards were moved to Toledo to build steamboats.

River Rouge Planned for Channel

As bearing upon earlier foresight of an All-American channel, it is worthy of note that, in constructing the county bridge at Trenton to Gross Ile, the Wayne County Road Commission so designed this bridge that an ample opening was left through it to carry the passages of such a channel. With the accomplishment of this plan the toll bridge to Gross Ile would be destroyed.

An interesting phase of the results of the proposed construction of the All-American channel of the Detroit River, as affecting the town of Brownstown is the amount of the addition to the industrially available area. People whose memories run back to the development of the Rouge River district, below Detroit, or the Calumet and Hamilton districts at Chicago, will recall that before improvements, these were marshy areas. The Rouge country was a duck-pond. The same is true of some of the fringes of Brownstown. The deepening of the river will call for a spooling ground for the removed material. In addition to that the engineers must make sure that the section of the river will not be increased, because that would let too much water run out of the upper lakes, a rather touchy proposition since the lowering of the lake levels. The marshes of Brownstown furnish adequate and convenient spoil banks, which, in addition to providing industrial areas will build up the edges of the river section which are now shallow waterways.

Dependent upon this, is the fact that the new channel may be made and how close it will be to the Michigan shore estimates run from 3,000 to 6,000 feet. At least 1,000 feet will be added to the present surveyed area of the township. Such industrial land has an eventual use value for industry of about 40 cents per square foot, or $17,500 per acre. The addition of the minimum estimated addition to the land area at this price runs up to $51,500,000 as the eventual value of the additions to the assessable value of the township, a figure to be realized years ahead, but none the less certainly on that account.

HILLSDALE AHUMMING

Substantial gains have been made in Hillsdale's plants during the last 60 days, according to the heads of the F. W. Stock & Sons milling plant, Hillsdale Manufacturing Company, Harvard Tobacco Company, Hillsdale Screen Company, Machine & Tool Company and the Lewis Oil Company, six of the largest concerns in the district. All are running at peak production, with orders several months ahead.

ADDS 200 IN THREE WEEKS

Northwestern Cooperative & lumber Company, Gladstone, reopened its flooring mill recently, thus placing all units in operation. The cur- rent payroll lists 400 men, 260 of whom were added in the past three weeks.
The Present Shore Line of Mungoagon and Brownstown

Michigan Public Projects Plans
A Group of Constructural Proposities by Michigan Governments Which May Get Federal Appropriations

From all parts of the state applications are pouring into the Detroit office of the Michigan Public Works Advisory Board for federal aid in the financing of public works improvement programs under the National Administration's $3,200,000,000 appropriation. Applications of this kind are requested to aid in the financing of public improvements, and to supplement the National Recovery Act.

The Public Works Administration in Washington has been issuing the public works funds during the past nine weeks at the rate of $132,969,043 weekly, a pace which would dispose of the entire allotment in six months. To date, total allotments amount to $1,195,721,332.

On a population basis, Michigan would be entitled to approximately $200,000,000, and it is estimated that Wayne county and Detroit would be entitled to about $60,000,000 of the state's total. Applications received by the Michigan board from all sectors of the state total almost $200,000,000, and it was pointed out recently by Frank H. Alfred, chairman of the three-man Michigan advisory board, that application for Federal financing of a $55,000,000 program for the city of Detroit was the first approved by the city council and that applications were advanced to place the projects for the Michigan Public Works Advisory Board. The proposal to ask aid for an $85,000,000 subway system in Detroit was rejected by the board, although Mayor Frank Converse advocate the submission of the question to the voters.

The projects which were approved by the Detroit council included a $15,000,000 sewage disposal plant to be constructed by the Federal Government, $3,500,000 for pavement repairs; six swimming pools at the cost of $1,224,000; a slim clearance project involving $50,000,000; $1,500,000 for garbage incineration; $2,000,000 for public lighting improvements; $1,805,000 for water system repairs, and $70,000 for sewer repairs. Board of Education officials sought to have a $10,000,000 item for school maintenance included in the list, but the proposal was turned down.

It is expected that approximately $300,000 for street paving repairs will be the first actual grant to the city, while the remaining projects, with the exception of the sewage disposal plant, will be passed upon by the State Board. The $15,000,000 sewage project will be sent at once to Washington for consideration as a strictly federal development project.

Detroit city officials pointed out that more than 5,000 men can be put to work immediately if approval is forthcoming for only two of its listed projects. The sewage disposal plant, which would be constructed on the Fort Wayne parade grounds at the cost of $15,000,000, would employ 3,000 men for three years. It is estimated; while the paving program, through which the Government would pay 30 per cent of a $5,500,000 outlay to rehabilitate Detroit's $106,000,000 investment in its streets, would give 40 weeks' work to 2,000 and 3,000 men. Construction of the swimming pools would put 1,500 men to work for four months.

The $12,500,000 which the Federal Government will make available for highway improvements in Michigan, under the general public works improvement program, has been allocated by the Federal Highway Commission Murray R. Van Wagoner to the 32 counties of the state. The state department follows the federal policy in allocating the basis of one-third for population, one-third for area and one-third for mileage within the counties.

Van Wagoner stated that his department had received favorable reaction from his public appeal for cooperation in obtaining right-of-way for the first 69 projects authorized under the program. This first group of 69 projects involves an expenditure of $3,215,000, or approximately one-fourth of the state's total allotment.

The $12,500,000 has been allotted to the 32 counties as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcona</td>
<td>$2,702</td>
</tr>
<tr>
<td>Alger</td>
<td>16,516</td>
</tr>
<tr>
<td>Allegan</td>
<td>154,741</td>
</tr>
<tr>
<td>Alpena</td>
<td>3,450</td>
</tr>
<tr>
<td>Antrim</td>
<td>6,314</td>
</tr>
<tr>
<td>Arenac</td>
<td>6,041</td>
</tr>
<tr>
<td>Baraga</td>
<td>134,485</td>
</tr>
<tr>
<td>Barry</td>
<td>144,408</td>
</tr>
<tr>
<td>Bay</td>
<td>5,177</td>
</tr>
<tr>
<td>Berrien</td>
<td>185,615</td>
</tr>
<tr>
<td>Branch</td>
<td>59,911</td>
</tr>
<tr>
<td>Calhoun</td>
<td>20,071</td>
</tr>
<tr>
<td>Cass</td>
<td>1,423</td>
</tr>
<tr>
<td>Cheboygan</td>
<td>96,513</td>
</tr>
<tr>
<td>Chippewa</td>
<td>29,444</td>
</tr>
<tr>
<td>Clare</td>
<td>74,935</td>
</tr>
<tr>
<td>Clinton</td>
<td>98,829</td>
</tr>
<tr>
<td>Cooski</td>
<td>167,212</td>
</tr>
<tr>
<td>Delta</td>
<td>13,577</td>
</tr>
<tr>
<td>Dickinson</td>
<td>125,327</td>
</tr>
<tr>
<td>Eaton</td>
<td>315,728</td>
</tr>
<tr>
<td>Emmet</td>
<td>315,728</td>
</tr>
<tr>
<td>Genesee</td>
<td>315,728</td>
</tr>
<tr>
<td>Gienfeck</td>
<td>315,728</td>
</tr>
<tr>
<td>Gogebic</td>
<td>315,728</td>
</tr>
<tr>
<td>Grant</td>
<td>62,667</td>
</tr>
<tr>
<td>Grandview</td>
<td>62,667</td>
</tr>
<tr>
<td>Hillsdale</td>
<td>62,667</td>
</tr>
<tr>
<td>Houghton</td>
<td>62,667</td>
</tr>
<tr>
<td>Huron</td>
<td>62,667</td>
</tr>
<tr>
<td>Ingham</td>
<td>62,667</td>
</tr>
<tr>
<td>Ionia</td>
<td>62,667</td>
</tr>
<tr>
<td>Iron</td>
<td>62,667</td>
</tr>
<tr>
<td>Isabella</td>
<td>62,667</td>
</tr>
<tr>
<td>Jackson</td>
<td>62,667</td>
</tr>
<tr>
<td>Kalamazoo</td>
<td>62,667</td>
</tr>
<tr>
<td>Kalkaska</td>
<td>62,667</td>
</tr>
<tr>
<td>Kent</td>
<td>62,667</td>
</tr>
<tr>
<td>Kenton</td>
<td>62,667</td>
</tr>
<tr>
<td>Kewenewen</td>
<td>62,667</td>
</tr>
<tr>
<td>Lake</td>
<td>62,667</td>
</tr>
<tr>
<td>Lapier</td>
<td>62,667</td>
</tr>
<tr>
<td>Leeansu</td>
<td>62,667</td>
</tr>
<tr>
<td>Lapeer</td>
<td>62,667</td>
</tr>
<tr>
<td>Leelanau</td>
<td>62,667</td>
</tr>
<tr>
<td>Lapeer</td>
<td>62,667</td>
</tr>
<tr>
<td>Lansing</td>
<td>62,667</td>
</tr>
<tr>
<td>Lelu</td>
<td>62,667</td>
</tr>
<tr>
<td>Macomb</td>
<td>62,667</td>
</tr>
<tr>
<td>Marquette</td>
<td>62,667</td>
</tr>
<tr>
<td>Mason</td>
<td>62,667</td>
</tr>
<tr>
<td>Mecosta</td>
<td>62,667</td>
</tr>
<tr>
<td>Menominee</td>
<td>62,667</td>
</tr>
<tr>
<td>Menominee</td>
<td>62,667</td>
</tr>
<tr>
<td>Monroe</td>
<td>62,667</td>
</tr>
<tr>
<td>Montclair</td>
<td>62,667</td>
</tr>
<tr>
<td>Monroe</td>
<td>62,667</td>
</tr>
<tr>
<td>Montmorency</td>
<td>62,667</td>
</tr>
<tr>
<td>Muskegon</td>
<td>62,667</td>
</tr>
<tr>
<td>Newaygo</td>
<td>62,667</td>
</tr>
<tr>
<td>Oakland</td>
<td>62,667</td>
</tr>
<tr>
<td>Oceana</td>
<td>62,667</td>
</tr>
<tr>
<td>Oceana</td>
<td>62,667</td>
</tr>
<tr>
<td>Oceola</td>
<td>62,667</td>
</tr>
<tr>
<td>Otsego</td>
<td>62,667</td>
</tr>
<tr>
<td>Ottawa</td>
<td>62,667</td>
</tr>
<tr>
<td>Presque Isle</td>
<td>62,667</td>
</tr>
<tr>
<td>Rockau</td>
<td>62,667</td>
</tr>
<tr>
<td>Saginaw</td>
<td>62,667</td>
</tr>
<tr>
<td>Saginaw</td>
<td>62,667</td>
</tr>
<tr>
<td>Schoolcraft</td>
<td>62,667</td>
</tr>
<tr>
<td>Sheboygan</td>
<td>62,667</td>
</tr>
<tr>
<td>St. Clair</td>
<td>62,667</td>
</tr>
<tr>
<td>St. Joseph</td>
<td>62,667</td>
</tr>
<tr>
<td>Tuscola</td>
<td>62,667</td>
</tr>
<tr>
<td>Van Buren</td>
<td>62,667</td>
</tr>
<tr>
<td>Washtenaw</td>
<td>62,667</td>
</tr>
<tr>
<td>Wexford</td>
<td>62,667</td>
</tr>
<tr>
<td>Wexford</td>
<td>62,667</td>
</tr>
</tbody>
</table>

It is estimated that the projects to be energized by the expenditure of almost $13,000,000 in Michigan upon highways by the federal government will give employment to 22,000
The Book of Michigan Industry
August 26, 1933

MODEL MICHIGAN SALT MAKING OPERATION SHOWN AT CENTURY OF PROGRESS

men. The total sum will be allotted on the following types of construction: 10 per cent for federal-aid road systems; 25 per cent for extensions to federal highways into and through municipalities; and 25 per cent for feeder roads.

Grand Rapids: Grover C. Dillman, former state highway commissioner and now director of public service in Grand Rapids, is assembling a group of projects to submit to the state board. Among the improvements sought will be: $173,203 for street and sewer maintenance; $55,754 for new sewers; $18,986 for a flood wall; $150,000 for a sports stadium; $50,000 for a city museum; $160,000 for street widenings; and other substantial sums for grade separations and sewage disposal works. The Grand Rapids Board of Education will seek $655,000 for alterations and additions to six school buildings.

Kalamazoo: A $1,029,000 program has been considered, involving a $250,000 sewage treatment plant and grade separations. The Kalamazoo county board of supervisors will seek $720,941 for the construction of a courthouse and jail building in Kalamazoo.

Lansing: Officials have outlined a program calling for an expenditure of $2,150,427 and including $900,000 for construction of a sewage disposal plant, pump station and force main; $700,000 for grade separations; and additional sums for garbage disposal, flood control and street improvements.

Muskegon: Projects involving $1,250,000 are planned, including a $650,000 filtration plant, sewage disposal plant and city hall building.

Dearborn: Engineers have outlined seven projects costing $3,500,000, the largest item of which is $2,398,000 for a water plant. Other projects include storm water sewer outlet, trunk sewers, additions to sewage disposal plant, swimming pools, branch library and fire station.

Highland Park: Will ask for $1,288,550 to expand and improve city water system.

Plinth: Seeks $500,000 for various improvements to streets, sewers, bridges and lighting system.

Jackson: Requests $225,000 for improvements to its water system.

Ann Arbor: Has approval application for a loan of $550,000 for construction of a sewage treatment plant. Considering other improvements to water system.

Saginaw: Is considering plans for the development of ground water supply through federal aid.

Port Huron: Has a $775,000 bridge rebuilding and street repairing program.

Grand Haven: Has matured a $100,000 highway development program.

Albion: Is working on a $75,000 public works program, including $40,000 for street paving.

Royal Oak: Will ask for improvements costing $420,740, including an extension to street car line costing $161,740; construction of sanitary sewers, $176,000; repairs and improvements to sewage disposal plant, $57,600; salt water swimming pools, $46,000.

River Rouge: A $350,000 filtration plant.

Birmingham: A $131,046 loan for water treating plant and water main system.

Dowagiac: $200,000 for municipal lighting plant.

Holland: A $50,000 loan for improvements to the city’s water front.

Lincoln Park: $165,000 for sewage disposal plant.

Plainwell: A $50,000 sewage disposal plant.

Ray: Paw: A $25,000 loan for a sewage disposal plant.

Alma: An $85,000 sewage disposal plant.

Adrian: $75,000 for sewage disposal.

Benton Harbor: A sewage disposal plant costing from $200,000 to $250,000.

Port Hope: Improvements to water works system costing $50,000.

St. Joseph: A $200,000 sewage disposal plant.

Monroe: A $750,000 loan for a sewage disposal plant.

Greenville: A loan of $22,000 for sewers and water mains.

Lowell: $25,000 for sewage disposal.

Ironwood: A sewage disposal plant costing about $150,000.

Hillsdale: An $85,000 sewage disposal plant.

Marcotte: $75,000 for sewage disposal.

Munising: $80,000 for sewage disposal.

Newberry: $70,000 for sewage disposal.

Harrison: A $75,000 power and light plant.

SHOWING OF DETROIT

A display representing Detroit is a part of the Cord Corporation exhibit in the Travel and Transport Building. Perry A. Fellows, manager of the City Airport, prepared the material to be exhibited. His object was to picture the cross-section of Detroit industrialism and commercialis, laying emphasis upon transportation facilities.

The Detroit exhibit is part of the display of the American Airways planes in operation throughout the United States during a period of 24 hours. A gigantic map shows the nation-wide route of the air lines and the day and night operations of planes carrying passengers, air mail and express. A large display case directly in front of this map, furnished by the Cord Corporation, shows industrial and aviation features of Detroit.

HAS 3,500 ON FULL TIME

Detroit tire division of the United States Rubber Company is operating at capacity on the heaviest production schedule since 1931, according to officials. The plant is on a 24-hour a day basis with more than 3,500 persons employed full time.

BURROUGHS EMPLOYS 5,917

In placing the 5,917 employees of the Burroughs Adding Machine Company, Detroit, under the NRA code this week, President Standish Hackens reported that adjustments in various divisions of the concern will be made in the next few weeks to result in additions to the payroll.

FOUR MICHIGAN PLANTS AFFECTED

Factory payrolls of the Eaton Manufacturing Company in June showed an expansion of nearly 200 per cent over March, and of 35 per cent over June, 1932, according to company officials. The company’s payroll index, with the 12-month average for 1932 as 100, stood at 150 in June, against 121 in May, and at the highest point since the spring of 1931. Approximately 3,000 employees are on the payrolls. The company manufactures a large variety of auto parts, and has plants in Detroit, Battle Creek, Marshall, Saginaw and Vassar.

GAINS 25 PER CENT IN WORK

Shipments of the C. M. Hall Lamp Company Department in June are expected to exceed 40,000 units, an increase of approximately 25 per cent over May. The plant has been placed on an operating basis of five days a week against four previously.

FORD WORK AT NORTHVILLE

A total of 170 men are now working at the Northville branch plant of the Ford Motor Company, on a three-shift daily basis,
When Dr. Jean Piccard, who with his twin brother, Dr. Auguste Piccard, determined to make a new effort to investigate the earth's stratosphere he was faced with the problem of making a gondola from which he was to take his observations as light and as strong as possible. Earlier experimentation had made use of aluminum metal for this piece of construction. Further study indicated that Dowmetal, the magnesium product of the Dow Chemical Company, of Midland, in Michigan, was a lighter and even stronger metal. So the "gondola," in this case an orange-shaped sphere, was determined to be made of Dowmetal and was constructed at Midland before it was moved to Akron, O., for connection with the balloon of which it was to be the "basket."

The Dowmetal gondola is seven feet in diameter and weighs 200 pounds. Were it made of aluminum its weight would be 200 pounds. The Midland-made gondola is lighter than that used by Dr. Auguste Piccard last year. The importance of the scientific observations for which it was to be used put the Dow company on its best scientific manners toward making its contribution to the Piccard expedition into the stratosphere as perfect as possible.

The Stratospheric Adventure

The stratospheric adventure is accomplished by the ascent of an ordinary hydrogen-operated balloon, from which depends the Dowmetal gondola for the passengers and observers. In practice the balloon is filled to one-fifth of its capacity with hydrogen, which expands as the balloon rises until when it reaches the stratosphere, about 10 miles above the surface of the earth, it is filled plumply. Thereafter excess gas is released automatically.

From the balloon depends the gondola, which must be light and strong, must carry Prof. Piccard, his instruments and his balloon navigator. The Dowmetal chamber is different from the aluminum gondola used in Europe last summer by Dr. Auguste Piccard. That gondola had one side black, one shiny white, with a turning device to turn the black side to the sun when heat rays were to be attracted, and the white side when the temperature needed lowering. When the turning device failed to work, the black side remained to the sun, lifting the interior temperature as high as 194. This time the gondola is painted a neutral color, and the turning device is not used.

Made Like an Orange Peel

The eight sections of the orange peel constructed gondola are welded together. They had to be capped at top and bottom. Two manholes were located so that if the gondola should fall into a lake, both manholes could not possibly be under water at once. These had to be airtight. Eight portholes had to made, one in each section, fitted with double optical glasses, for observation purposes and photography.

The gondola was a classic piece of welding, demanding precision in the fitting of the pieces, which could not be distorted in the slightest degree. When completed, the sphere was polished down and painted.

The contract for the construction of the gondola was let to the Dow company, due to the fact that they are the manufacturers of Dowmetal, a magnesium alloy which is only two-thirds as heavy as aluminum. The gondola used by Auguste Piccard in his flight into the stratosphere last year at Switzerland, which attracted international attention, was constructed of aluminum. The gondola constructed this year was exactly the same size and construction as the one used by Auguste Piccard in Switzerland, except that the Dowmetal gondola, instead of weighing three hundred pounds, the weight of the aluminum gondola, weighed only two hundred pounds.

The gondola constructed at Midland will be of the same strength as the one used by Auguste Piccard. The thickness of all of these sections is a little bit over one-eighth of an inch. The construction of the gondola was under the supervision of Willard H. Dow, president and general manager of the Dow company.

The Gondola's Suspension

The gondola is suspended from the balloon by means of ropes fastened directly to the fabric of the balloon instead of being attached to a net over the balloon, as is common practice. The ropes from the balloon fabric attached to a collar on the upper part of the gondola, which in turn is attached to another collar on the lower part of the gondola so that the gondola hangs suspended in a sort of mesh bag. The gondola is equipped with a huge parachute folded in the ropes attaching the gondola to the balloon bag, and in the event that any mishap occurs during the flight, it will be possible to cut the gondola loose from the balloon bag and to open the large parachute, which checks the descent of the gondola to such an extent as to give its occupant plenty of time to leap to safety with an individual parachute. There will be eight portholes in the gondola and two manholes.

Dowmetal is made from brine, which is pumped from wells in the vicinity of Midland. The Dow company has over three hundred wells in operation. The brine contains four different components the Dowmetal being made.

PROF. PICCARD INSPECTING HIS GONDOLA
Records in Refrigeration

by HOWARD E. BLOOD
President, Norge Corporation—Detroit.

The ordinarily well-read person who visits The Century of Progress, in a reflective mood, will find countless things of profound interest. Thoughtful comparison of what may be seen at this Exposition with what was seen at similar world’s fairs of a decade or several decades ago, cannot fail to fill one with pride and enthusiasm and wonderment over the progress of a century.

It is also a fact that when viewing the wonders of The Century of Progress, one is apt to go farther back than a century in his comparisons—maybe a thousand or thousands of years. If he does, there is one fact of interest that is outstanding: that the world’s progress in art and invention and engineering has, in many instances, made far greater advance in the past century than it did in countless centuries that have gone before. At today’s Century of Progress we see modern developments of an idea that may have been old—an idea that perhaps the ancients pondered over and got nowhere, but which has been taken in hand by modern artists and turned into a machine or a process of marvelous perfection.

Consider mechanical refrigeration, which is based on the science of making ice chemically or mechanically. This is a relatively new industry with a short history. It had its origin probably in the early days of Egypt and Babylon. The ancients had the idea of refrigeration. They knew that the long journeys made by merchants and soldiers were made easier by having cold meat, and they even turned a machine to a process of marvelous perfection.

Early Essays at Refrigeration

Chemical and mechanical processes of refrigeration and ice making have long been known, but the possibilities of producing refrigeration in this way hindered its progress. In the year 1755 a certain Dr. William Cullen made an ice machine using a vacuum pump. In 1854 John Hurst and Johnson made an ether machine. In 1868 J. Dovy suggested refrigeration for vessels in the transportation of ice. This idea was first utilized in a vessel crossing the ocean in 1879. A Coleman air compressor machine produced the refrigeration. The old ice box, the ice machine of the eighteenth century, was now the modernized refrigerator. The old ice box has been modernized into a thing of beauty and marvelous cleanliness and economy and efficiency. Noteworthy, too, is the response which American people make in their encouragement of such efforts to provide them with the last word in home comfort and convenience. A page or two from the sales records of the Norge refrigerator, that of the famous Rollator feature, will verify what we have just stated regarding the loyalty of the American public toward a worthy invention.

Increasing Refrigerator Sales

Month after month and year after year, Norge refrigerators have been sold in tremendously increasing numbers. For instance, sales records noted in April, 1932, showed an increase of 241 per cent for the first three months of 1932 over the same period of the previous year. Single freight shipment carried $1,500,000 worth of Norge refrigerators to the homes of America. At that time five solid trainloads left the factory.

Time moves on. In June, 1933, seventeen trainloads of Norge refrigerators left the factory, breaking all former Norge buying records. The total sales of Norge refrigerators for July, 1933, were above the entire sales made during the last six months of 1932. Now, in August, 1933, Norge has the greatest amount of unfilled business for this time of year in its history.

It is important to remember that the above increase represents actual consumer buying, and the increasing demand indicates that it is not a passing wave of enthusiasm. In fact, we feel that it is a positive, two things. One is that there is a recovery of confidence and a renewed desire to buy on the part of the American people which has been induced by the workings of the National Recovery Act. The other factor which induces the increasing volume of Norge sales is the public’s desire for, and appreciation of, genuine value in a modern household appliance that was once a luxury beyond the reach of any but wealthy homes, but is now a necessity and a comfort, priced within the reach of any home.

WORK HAS DOUBLED

Operations of Holland Furnace Company. Holland Pump Company have been stepped up to 100 per cent of capacity, with a six-day week basis in effect on an eight-hour shift a day. Recently the company was operating three days a week. Sales have been running slightly below a year ago, but last week was the biggest so far this year. This company has recently been reorganized.

GOING TO USE 150 MORE

A heavy buying trend is picking up orders for Michigan’s furniture industry and promises to keep it running with old-time activity for the remainder of the year. A new, and expected, 700 will be on the Ionia company’s payroll.

WILL BUY ONLY FROM N. R. A.

The Wolverine Shoe Company’s 550 employees at Rockford have declared 100 per cent cooperation with NRA agreeing to patronize no business place which does not display the Blue Eagle.

HOWARD E. BLOOD
Paraphrasing a Famous American . . .

"LET'S TAKE A LOOK AT THE RECORD"

Fifty years ago—back in 1884 when hoop skirts and side saddles were in vogue—there appeared on the business horizon of Detroit a modest shingle bearing this name: "The Acme White Lead & Color Works".

It was a small, one-man, one-building concern. But it had a big idea. That idea was this: some products may be made cheaper than the best and still remain just as good for the user—but paint is NOT one of them! Only upon the best quality can a good and lasting paint business be built.

Since 1884, times have changed. Markets have changed. The entire complexion of American life has changed. But not Acme's attitude about quality paint. And Acme has grown from a small, one-man concern to one of the world's largest manufacturers of paints, varnishes, lacquers and enamels. That's a record which speaks for itself. The basic big idea must have been sound—"it had to be good to get where it got!"

ACME WHITE LEAD & COLOR WORKS
DETOIT, MICHIGAN

ACME QUALITY
PAINTS, VARNISHES, LACQUERS & ENAMELS
MICHIGAN'S BEET SUGAR INDUSTRY

- Gives Employment to 47,561 Michigan Farmers, Field Workers and Factory Employees.

- Will Distribute Over $10,500,000 to Michigan Farmers.

- Will Produce Approximately 500,000,000 Pounds of Sugar.

- Will Consume... 444,688 Tons of Coal, Coke and Limerock
  ... 6,723,967 Sugar and Pulp Bags
  ... 125,514 Yards of Cotton Filter Cloth.

- Will Distribute Over $5,379,174 to Transportation Companies
  and will utilize
  39,447,272 Man Hours of Labor.

MORE THAN 181,000 ACRES OF MICHIGAN LAND ARE BEING DEVOTED TO SUGAR BEET GROWING THIS YEAR

EVERY ACRE OF LAND DEVOTED TO SUGAR BEET GROWING MEANS ONE ACRE LESS TO BE DEVOTED TO THE PRODUCTION OF SURPLUS CROPS

USE BEET SUGAR GROWN AND PROCESSED BY AMERICAN FARMERS AND AMERICAN LABOR IN U. S. A.

The Continuance and Development of Michigan’s Beet Sugar Industry is Vital to the Agricultural and Industrial Prosperity of Michigan.

FARMERS AND MANUFACTURERS BEET SUGAR ASSOCIATION
Davidson Building
BAY CITY, MICHIGAN

The Association will furnish competent educational speakers for meetings of business men, civic organizations, luncheon clubs, and homemakers organizations. This service is free. Bookings are now being made for fall and winter meetings.
Michigan’s Industries
At the Century of Progress

Chicago’s “Century of Progress,” the most modern interpretation of the World’s Fair idea, has been running since June, but it was well toward the first of August before all the features were finally finished and in complete show form. The two remaining months of the exhibition which follow the first of September are expected to be the period in which the thoughtful observers will get the most out of the completed show.

The show and its features, as a whole, have been widely publicised. For the purposes of this publication the representation of Michigan is of the most importance.

Michigan’s representation almost represents dominance, because Michigan’s leading industry, the motor car trade, actually stands out at the show more prominently than any other industrial feature. The state itself has 5,000 feet of floor space devoted to an exhibition of its natural and industrial resources, upon which the legislature authorized the expenditure of $125,000.

Mr. Knudsen the Executive

The official Michigan representation is in charge of a commission of which Gov. Comstock is the honorary chairman, while the actual working chairman is no less an industrialist than William S. Knudsen, vice-president of General Motors Corporation, who directs the operations of the Chevrolet and Pontiac units. In addition to being the working head of the commission, Mr. Knudsen’s interest and connections have had to do with the most dominant industrial feature of the show, the General Motors building and exhibit, in which a working assembly line building Chevrolet motor cars from their parts is one of the most stupendous examples of a factory operation actually carried on in a show room that has ever been made public in the country. Of that more later.

The Michigan State Exhibit

The Michigan State exhibit, which is under Mr. Knudsen’s committee’s direction, and the personal management of George E. Bishop, who got a good training for state showmanship as Director of the Northern Michigan Development Bureau, occupies 5,000 square feet.

Sixteen diorama scenes depict in minute detail the leading industries and recreational facilities of the state. The Exhibit was designed and executed by the commission appointed by the governor.

Scores of artisans constructed the dioramas in Detroit under supervision of Capt. Michael Gera, sculptor-soldier, formerly of the imperial guards to the Royal Family of Russia.

In the dioramas, seven feet long by three feet high and of equal depth, the foregrounds, containing miniature figures, buildings, trees or other objects, merge into painted backgrounds with convincing three-dimension fidelity.

Among the sports and features of the Michigan outdoors included among the dioramas are bird hunting, trout fishing, boat racing on the Detroit River, beautiful Glenn Lake, the locks at Sault Ste. Marie, the Porcupine Mountains, harbor scene at Mackinac Island, winter sports, a typical state park and the bird sanctuary at Battle Creek.

The making of the diorama figures was a work of much ingenuity. In the Detroit stua-
die where they were made, picture a workman at a bench. Beyond him hung a color picture of a reaping machine. With deft figures he built an exact duplicate of the reaper, accurate in every detail and not more than three inches wide. The machine was scheduled to reap the field of thread-and-sawdust wheat in a diorama of Michigan’s health food industry.

Equally inauspicious were the foreground details of the Michigan hunting scenes. In order to provide the furs, typical of Michigan woods, a large quantity of white chicken feathers had to be gotten. These were cut to a point, serrated with sharp scissors and dipped in green lacquer. There were also several thousand tiny oak leaves. It required three and one-half minutes for a workman to make one leaf. So a punch and die machine was invented with which one workman made more than 2,000 leaves per day. It was a confusing tangle of old sewing machine parts, photographic film spools and other odds and ends. But it took a strip of adhesive paper, “licked” the glue, folded the paper so that the sticky surfaces enclosed a fine wire which provided the stem and then punched out the shape of the leaf from the doubled paper.

Merely by changing the die, several other varieties of leaves were produced. Gathered into bunches, they were dipped in lacquer of the proper tint. The leaves were attached to the branches of miniature trees by means of their wire stems.

The Contour Map of Michigan

The same workers made a huge, electrically-illuminated, contour map of Michigan which is shown in the recreational room of the Michigan Exhibit in the Court of States. Thirteen by 18 feet and accurately built to scale from the U. S. Geological Survey Maps, this big topographical-pictorial map presents a most striking bird’s-eye view of the state.

On this contour map all the major inland lakes are shown, as well as Lake Michigan, Lake St. Clair and parts of Lake Superior and Huron, with illuminated lighthouses in proper locations, and such islands as Mackinac, Grand, Beaver, Manitou, Grosse Ile and Les Cheneaux Group. All principal streams, railroads with miniature trains, state and federal highways, and approximately 100 cities are included. The out-door recreational features receive special emphasis, state parks, state and national forests, game refuges and other forested areas being indicated by stands of pigmy trees. Tiny flags dot the map, each representing a golf course.

Agriculture and Air Ports

Agricultural areas devoted to general and fruit farming and dairying are shown in respective regions as are also the various mining regions which produce salt, oil, coal, iron and copper. The last three are marked by actual scale reproductions of shaft houses.

All Michigan airports are shown and sparks sputtering from small towers reveal the locations of broadcasting stations.

The mechanical illumination system built into the map is controlled by an automatic mechanism concealed in a basement compartment. It is similar in operation to those used in flashing electric signs. At one corner of the map are shown automatically in sequence the titles of various groups such as “state parks,” “air-ports,” etc. Each title appears simultaneously on two identical boards set at an angle of 45 degrees and visible from any spot around the map. Immediately after a title is shown, the map blossoms with twinkling lights which mark the indicated group.

A somewhat different method is employed to illuminate the various cities and towns. Their Lilliputian buildings glow brilliantly under the influence of overhead infra-red lights, automatically switched on at the proper moment to react upon a special phosphorescent paint with which they are coated.

Michigan’s Play-Ground Features

Dominating the exhibit and establishing its principal motif, is the scene first viewed from the entrance through the long vista of the three connecting sections which comprise the Display—a murmuring waterfall dropping to a pool fringed with living trees, tangled underbrush and graceful ferns. Above, a message beckons: “Come to Michigan to Play.”

In this scene the real and the unreal have been combined, to achieve an authentic gem of Michigan woodland beauty. Landscape artists provided a natural background for growing pines, transplanted from the north of Michigan. Hidden mechanical means maintain a flow of 500 gallons of water per minute over a 15-foot brink into a foam-foamed pool 10 feet below in which can be seen the flash of speckled trout. The scene is framed, high overhead, in an arch of living branches extending upward from the trunks of big trees which have been moved intact from the hardwood ridges of Michigan.

The walls of the Michigan Exhibit are adorned with historical industrial and agricultural murals from the brushes of such famous Michigan artists as Paul Hovore, Walter Speck, Reginald O. Bennett, Zoltan Siposhy, Hunter Griffith, Leon Makielski, Roy Gamble and Vivian Brown Boren.
CRAINE-SCHRAGE STEEL CO.

OFFICES AND WAREHOUSE
6189 HAMILTON AVENUE
TELEPHONE MADISON 5424

DETROIT, MICHIGAN

Mill and Warehouse Service

Cold Finished Bar Steels
Rounds-Squares-Hexagons-Flats

Cold Rolled Strip Steel
Stamping and Drawing Quality

Wire and Wire Products

Polished Drill Rods

Carbon Tool and Die Steels
Bars and Billets

Rough Turned Bars
6½” to 12” Diameter
The General Motors Exhibit

The Book of Michigan Industry
August 26, 1933

TWO SHIPOAIDS OF CHRYSLER PRODUCTS OFF FROM DETROIT

The two greatest individual exhibition features of the Century of Progress are representative of Michigan Industry. These are the General Motors Building and the Chrysler Building. The former is the more costly, being reported to have had $1,000,000 expended on it.

General Motors Building is the tallest in the Exposition, the 177-foot tower being surpassed only by the piers of one of the amusement devices. The structure also is the largest erected by a private exhibitor. It arouses more interest because of its unusual architecture than because of its size.

Albert Kahn of Detroit, whose golden-towered Fisher Building in his home city and other works have attracted wide attention, was the architect. The structure adapts ultra-modern ideas of form and decoration to industrial construction. It was necessary to provide for the utilitarian housing of complete Chevrolet assembly plant, a little theater, a gallery of industrial art, research laboratory equipment and display space for products ranging from automobiles and Diesel engines to the tiniest of ball bearings, and at the same time present an external appearance in keeping with the striking new type of architecture specified for all buildings by the Exposition management.

General Motors' Great Building

The building is a rectangle with front corners broadly rounded. It is 434 feet long by 388 feet deep. It lies between Lake Michigan and Lef Erikson Drive at the foot of Thirty-first street. One thousand, one hundred piles were driven to provide a foundation for the mass of steel, concrete, glass and machinery. The walls are almost completely glass. The semi-circular front consists of a fantastically pyloned entrance and eight plate glass bays. Each bay is forty-eight feet long.

The interior is divided into seven main rooms upon varying levels, dictated by the terrain which slopes down to the lake. The rooms include the large Entrance Salon, where paintings, sculpture and other works of internationally famous artists are housed, the Chevrolet assembly plant, two enormous automobile show rooms, the accessory display room, the truck display room and a little theatre.

Hundreds of exhibits portray General Motors' twenty-five years of contribution to progress in industry, science and art. Products of the numerous automobile, household appliance, farm and other machinery manufacturing units among the seventy-five companies that make up General Motors are represented.

Color and Sculpture

Daring color is used in the exterior decoration, the scheme being gray, bright orange, red, blue and silver. Colors are in harmony with the general Exposition scheme worked out by Joseph Urban. By night, the startling effect is heightened by lavish use of changing colored flood lights and powerful neon tubes, arranged to give the appearance of iridescent color.

The craftsmen of automobile manufacturing are typified at last in six life-size wood carvings just completed by the Swedish-American sculptor, Carl Hailshammer.

The statues, which are in the unique rough finish characteristic of Hailshammer's work, are in the General Motors Building.

The figures are carved from large blocks of laminated pine with mallet and chisel and painted in life-like colors. The figures are unusually true to life. Hailshammer, a resident of Chicago, has attracted wide attention both in Europe and America during the past few years with his unique type of realistic art.

Behind each of the figures as they are arranged in the Impressive Entrance Salon of the General Motors Building is a background scene, painted on a panel, 12 feet high, showing the tasks which these workers perform and the machinery at which they work. Panels and wooden figures are so arranged that the figure fits naturally into the background. Each of the sets subconsciously conveys to the viewer impressions of the beauty, strength, inborn quality, precision workmanship and enormous production which have given the American automobile its world leadership.

The panels were done by Axel Linus of Chicago, painter of portraits and landscapes. One of the sets shows a muscular foundry worker pouring molten metal for a casting with a background of gigantic foundry equipment. Another depicts a workman removing a red-hot crankshaft from a huge drop-hammer. Others show inspection of cylinder bores to insure uniformity, grinding of cylinder blocks, removing of fenders from a huge fender press and the building of automobile bodies.

Mr. Hailshammer, who came to the United States from Sweden nine years ago, studied under the famous Swedish artist, Anders Zorn. He won national attention in 1907 with a carving entitled "The Junk Man." He also is widely known for his "Church Collection" which depicts three parsonage parishioners endeavoring to ignore the collection basket. His work has been exhibited widely in New York, Chicago and other leading American cities.

Mr. Linus, who painted the panels, studied in Stockholm and Paris and came to the United States from Sweden in 1929. He has painted portraits of many noted Americans and is known for some of his murals in Chicago churches.

Three hundred and fifty flood and projector lamps bathe the orange, yellow, red, silver and blue building. The orange-gold tower is the focal point of attention, rearing its 177-foot height conspicuously into the many-hued heaven created by the genius of Joseph Urban.

Exterior lighting of the General Motors Building alone consumes enough electricity per night to pump water for a city of 25,000 inhabitants, or to provide home and street lighting for a city of 7,500 inhabitants. An average of 2,300,000 watts of electricity a day is used. Monthly consumption mounts to $8,000,000 watts. This is equal to 12,000 horsepower a month.

Cadillac Cars of Ancient Vintage

Approximately three times this amount of current is consumed in the interior of the giant structure for power in the Chevrolet-Fisher body assembly plant and other action exhibits and to light the seven main rooms.

The first closed car built by the Cadillac Motor Car Company—a one-cylinder coupe—is among the interesting exhibits in the Cadillac-LaSalle line in General Motors Building. This special job was manufactured in 1904.
A SHIPLOAD OF PLYMOUTH CARS OFF TO MARKET

by the late Henry M. Leland, then president of Cadillac for his son, Wilfred C. Leeland of Detroit. It was recently found in Kinzville, Ontario, Canada, the property of Miriam L. Woodbridge, and was loaned for this special display.

It is chain-drive, fitted with coal oil lamps, high and rakish in design, the upper part of the body mostly of glass. It was of particular interest to Fred J. Fisher, vice-president of General Motors, because the body was built under Mr. Fisher's supervision in the Wilcox Body Company plant in Detroit, previous to the organization of Fisher Body Corporation. Executives of Fisher Body were interested because the principle of ventilation of the rear windows is similar, in a rough way, to the Fisher Body No-Draft ventilation recently introduced.

This car was driven under its own power to the exhibit, with several other cars of ancient vintage. Another influence in the car—the 1911 model, that introduced the self-starter—was known by the identity of the self-starter, C. F. Kettering, vice-president of General Motors in charge of Research.

Buick Presents an Early Engine

Among the features of the Buick exhibit is the power plant from a 1905 car, mounted on a special display stand. This engine won its place of honor by service covering the bulk of 23 years.

The car in which this power plant was originally installed at the Buick factory was sold in the fall of 1905 to F. A. Aldrich, of Flint, Michigan, who used it for so long that as a matter of sentiment he did not dispose of it but kept it in idleness on his own premises for seven years. Then the Buick factory acquired it and had it put in its original good mechanical shape. For several years before its selection as a part of the Buick exhibit at Chicago, it was frequently seen in Flint in connection with special parades and exhibitions staged by the factory.

Then it was taken out of the car of which it had been a part for so many years, its bright parts were farished and it was given an exhibition coating of Duco elsewhere. The greatest bulk of the engine consisted of original parts that were made at the Buick factory 23 years before the Century of Progress was planned.

Not second in importance of individual buildings at the Century of Progress to General Motors Building is the structure erected by the Chrysler Corporation to make its presentation of an all-Michigan made line of motor cars. The exhibit is in charge of D. A. Samson, as general manager, and H. A. Kaufmann as exhibit manager.

Samson, who has been in charge of construction of the Chrysler exhibit since its inception and continues as general manager, is plant engineer of Dodge Brothers Corporation.

Kaufmann, who is widely known in automobile circles, has been director of service of Chrysler Sales Corporation until his present appointment. Previously, he served as general sales manager of the Fargo truck division of the corporation.

Designed by Holabird & Root, internationally known architects, the exhibit is the center of the Transportation Group, immediately north of the Travel and Transport Building. The Chrysler building itself belongs to the modernistic school of architecture. Constructed on piles—134 in number—sunk more than 40 feet, the motif of the main building is of progress and motion in motive engineering.

Huge 125-foot pylons are crowned with golden yellow gasous signs, the only ones of their kind in use at the fair. "Chrysler Motor..." one word on each of the east and west pylons, in letters eight feet high, may be seen from every point on the exhibition grounds.

The Chrysler exhibit building is considered the most unique ever constructed in that, although the exhibit stands inside are fully housed, the entire building is open to receive breezes from Lake Michigan.

A Greek Cross of Pylons

The four massive pylons form a Greek cross. The east and west pylons have diagonal continuous flutes, the entire width of the pylon. At night they are illuminated by more than 1,000,000 candlepower of high intensity lights. The white circular portion of the pylons have built-up flutes with similar illumination. The flutes add to the impressive height and magnitude of the building.

The complete exhibit, most modern and startling in the field of automotive design, engineering, production and performance, is housed in eight spacious niches through 68,000 square feet of space, four on each floor. The most important phases of automotive progress are shown by these exhibits.

A Quarter Mile Track

Interest centers around a quarter-mile track. This marks the first such track to be constructed for an international exhibit. It provides the medium for seeing and taking part in many of the track tests to which Chrysler products are subjected. It is also the headquarters for world-famous racing drivers who serve as demonstrators to thousands of visitors to the fair. There are from 16 to 20 Plymouth, Dodge, De Soto and Chrysler automobiles on the track and visitors are invited to ride in them. In addition to the famous racers, there is a staff of experimental drivers carefully chosen from the Chrysler Motors engineering staff.

The track is oval, 18 feet wide at its narrowest and 40 feet wide at the turns, banked for high speed driving. On the west straight-away there is a by-pass leading to a 100-foot long, 25-foot high ramp with an average grade of 25 per cent, permitting hill-climbing. The east straight-away has a similar by-pass permitting cars to run across an incline the same length as the ramp, but inclined to an angle of 45 degrees. This construction provides ocular demonstration of the low centers of gravity and positive safety angles of the cars.

A Sunken Garden Feature

The eastern side of the Chrysler Motors' exhibit has been made into a beautiful sunken garden. Benches, rocking chairs and a room in which to rest has been provided in the garden, the centerpiece of which is the Chrysler reflecting pool. Standing in front of the
The Book of Michigan Industry
August 26, 1933

pool, the visitor may see the Chrysler exhibit building reflected in the pool of clear water. Arched lighting effects and modernistic aluminum “trees” are placed at regular intervals throughout this garden.

The Chrysler Cyclorama

An airplane trip across the United States in eight minutes! Chrysler has created a perfect introduction for one portion of its exhibit. At a cost of more than $50,000, Chrysler displays a cyclorama depicting a transcontinental journey taking some of the principal points of interest in the United States.

This cyclorama, one of only three ever made, was designed and executed by the originator of this type—Boucher of New York. It is 165 feet in circumference. It takes eight minutes to complete one revolution. The cyclorama is housed in a separate building inside the 1st Street entrance to the exposition grounds.

While the spectator gazes through one of the 30 windows regularly spaced around the building, the building stands in bold relief against the skyline. The trip continues to Windsor, Ontario, where Chrysler Corporation of Canada’s plants are seen, and to Detroit, where the Plymouth, De Soto, Dodge and Chrysler plants are. Westward to Yellowstone National Park, Salt Lake City, Yosemite National Park, San Francisco, the Golden Gate, Los Angeles, back East through the Catskills, shows the Boulter Dam Project, the Evansville, Indiana, Dodge truck and body plants, the Newark, Indiana, gear and axle plants, the Dayton Chrysler properties and then to the Nation’s Capital, this cycloramic trip proceeds.

Revolving once every eight minutes, from the opening of A Century of Progress on June 1, to the close, October 31, there will be 13,776 “aerial trips.” A three people watch the illusion from each of the 30 windows every time the cyclorama revolves. In the 12 minutes enjoy this unique thrill at A Century of Progress.

World’s Largest Table

The largest display table in the world of which there are more than 25,000 parts is on one of the features in the Chrysler Motors exhibit.

One hundred and forty-five feet long and seven feet wide, this table is built in a semi-circle and takes up part of the space on the ground floor of the main exhibit. It represents a new Plymouth six-four-door sedan completely disassembled and laid out for parts inspection. This is the first time that every part of an automobile—no matter how infinitesimal—has been placed in one display.

This display, weighing approximately 3,000 pounds, is composed of eight different metals, dozens of alloys, and a wide variety of other materials such as glass, leather, asbestos, cork, cotton, rubber, etc., that go into the make of a modern motor car.

The visitor to this exhibit follows the disassembled car from front to rear by walking the length of the table. Legends are affixed at short intervals throughout the length of the table to tell the story of each important “assembly” on the car.

Visitors to Chrysler’s exhibit see the important events of the exhibition itself and news corporation’s activities right in its own exhibit. A weekly sound and talking newscast is shown in the 250-seat theater which forms a portion of its seven-acre exhibit. The news weekly is two reels in length and includes shots of the most important happenings at the fair. A portion of the newsreel is devoted to activities of the Plymouth, Dodge, De Soto and Chrysler divisions in Detroit and throughout the world.

In addition to the newsreel itself, various sound and talking pictures depicting interesting phases in the engineering, manufacturing and final testing of products are exhibited at Charles Theatre. There will be, of course, no admission charge to this theater. Barney Oldfield, most famous and colorful of all racing drivers, is track manager for the quarter-mile motorodrome forming a portion of Chrysler exhibit.

Hudson Shows Television

Hudson Motor Car attracts attention to its motor exhibit at Chicago by the operation of television outfits. It is in the Electrical Building. A complete transmitting outfit has been installed along with a receiving apparatus and screen permitting a complete demonstration which is open to the public. Shows are given every half hour starting at ten o’clock in the morning.

Billy Bead, known to radio fans, is in personal attendance at the show which opens with a sound picture illustrating the progress in various industries during the past quarter century. There are “flash-backs” in this picture which introduces glimpses of the past. The camera has even caught Mrs. O’Leary’s famous cow in the act of kicking over the lamp which started the great Chicago fire fifty-seven years ago.

The motor-boat of yesteryear is shown in contrast with the hydro-plane of today and continuity is worked about the progress in

TWO CADILLACS OF ANCIENT VINTAGE

Left—The First Cadillac Car Built With a Self-starter. Right—Cadillac’s First Closed Car.

Packard Weighs Signatures

At Packard Motor Show at A Century of Progress the most costly automobile ever built by the Packard Motor Car Company is exhibited alongside the first Packard car. The two cars represent the first and last words in motor cars in the great transportation exhibit of the fair.

In the dome of the Travel and Transport Building are the first Pullman cars, one of the first locomotives and the very latest. One of the first type airplanes and greatest air transports in this country and many other similar transportation exhibits showing progress man has made in transportation are exhibited.

The two Packard cars occupy positions of honor in representing the advances made in the art of building automobiles. The span of years between the two cars represents more than a third of a century, as the first Packard was completed November 6, 1899.

The “last word Packard” somewhat resembles the formal sedan type car. It is actually a new type altogether. It might be called a super deluxe salon or a sport type sedan limousine. The chassis is that of the Packard Twelve.

The first Packard was taken to Chicago from Lehigh University at Bethlehem, Pa. It is a permanent monument at the University to James Ward Packard, its builder, a Lehigh alumnus. The car occupies a sealed glass case in the lobby of the James Ward Packard laboratory of engineering.

At Packard’s exhibit visitors learn the exact weight of their signatures. A delicate balance, identical with several used daily in the laboratories of the Packard factories, is used to determine the weight of the signature of each visitor. A card is first weighed and then, after the signature has been written on it, the card is again weighed. The difference shown on the balance is the actual weight of the ink used in writing the signature.

The scale which, in its exactness, is typical of hundreds of fine precision instruments used in the making of Packard cars, weighs in milligrams. It will weigh the dot of a pencil on a piece of paper.

Hudson Motor Car attracts attention to its motor exhibit at Chicago by the operation of television outfits. It is in the Electrical Building. A complete transmitting outfit has been installed along with a receiving apparatus and screen permitting a complete demonstration which is open to the public. Shows are given every half hour starting at ten o’clock in the morning.

Billy Bead, known to radio fans, is in personal attendance at the show which opens with a sound picture illustrating the progress in various industries during the past quarter century. There are “flash-backs” in this picture which introduce glimpses of the past. The camera has even caught Mrs. O’Leary’s famous cow in the act of kicking over the lamp which started the great Chicago fire fifty-seven years ago.

The motor-boat of yesteryear is shown in contrast with the hydro-plane of today and continuity is worked about the progress in
It takes 90,000 MEN to keep this store going

Back of each little A & P store stands an army of nearly 90,000 men, all trained in the food business and all working together to make the best food more easily available to American housewives.

And back of this skilled army of experts are the large resources of a great company, used in the search for the best food and in the effort to rush it at its best direct to every A & P store.

So when you buy food at any A & P store, you’re getting the best that expert buyers backed by large resources can find anywhere. Your local A & P store is a part of a great system only because in this way it can give you better and more efficient service.

When you buy at A & P, remember that nearly 90,000 men are serving you.

The Great ATLANTIC & PACIFIC Tea Co.
THE GROUP WHO SET CHEVROLET ASSEMBLY IN MOTION

In their order, left to right—D. E. Ralston, H. J. Klingler, W. F. Kudsend, E. L. Wright, L. K. Cooper, W. C. Williams and R. H. Grant, all General Motors Officials.

Members of the audience are then selected and are "telephoned." At the first show a governor of a New England state was one of the first to have his image and voice transmitted. As he is traveling incognito, he requested that his identity be kept a secret.

The Electrical Building lends itself most suitably to the television display. In a specially provided theater the audience may witness the television show and see people and events from their position before the screen. Various subjects are utilized in the demonstration. People are selected from the audience to have their voice and image thrown on the screen.

Kelvinator Exhibits Its Art

In the race for attractiveness of its exhibit at the Century of Progress Kelvinator Corporation, of Detroit, showing in the Electrical Building, has a novelty. The exhibit is opposite the fountain in the garden of this building.

Directly facing the fountain are four "magic window" exhibits which utilize the French glass principle of reflection to produce an unusual display effect. These displays are arranged so that the visitor alternately sees his own reflection and the display of Kelvinator products within the window. As lighting changes the Kelvinator exhibit seems to disappear and the spectator sees nothing but his own image, which in turn vanishes to give way to a glimpse of the Kelvinator again.

These four windows contain household Kelvinators, ice cream cabinets, oil burner equipment, commercial refrigeration coils, beer cooling equipment and water coolers. Their unusual operation serves as an unusually effective method of attracting attention to the main Kelvinator exhibit which is directly behind them on the main floor of the Electrical Building.

This exhibit, extending for 140 feet, contains a complete exhibit of all Kelvinator products. Central prominence in the exhibit is given the 23 cubic-foot deluxe household Kelvinator—the ultimate in domestic refrigeration.

On the walls behind this display are murals by Taylor, depicting important steps in man's advance toward scientific and safe food preservation. On these walls visitors see slaves of Roman emperors bringing huge baskets of snow down from the peaks of the mountain range to cool the royal wine. The old moss-grown well's role in refrigeration is depicted. Lord Bacon, who experimented

by stuffing a foul with snow has this act recorded, along with many other historic periods in the history of food preservation.

The main exhibit shows every model in the Kelvinator household line. Kelvinator condensing units and cooling units are represented. The important place Kelvinator has won in the new American field of beer refrigeration is portrayed by a display unit. Some of the larger units made by the company manufacturers for this particular purpose.

Kelvinator oil burner equipment, which has been showing a steady increase in popularity, is on display.

A supplementary Kelvinator display has an important place in the elaborate exhibit of the electrical central station industry which also is in the Electrical Building. This huge display depicts the history of electricity and its place in modern civilization, offering an unusually appropriate background for a showing of the advancements made in the application of electricity to the problems of food preservation.

Dow Chemical Company Shows Midland Products

Dow Chemical Company, of Midland, in addition to fabricating the material and composition of the Pond of Dr. Jean Piccard, for the exploration of the stratosphere of the earth, has made Midland, its home city, well known at the Century of Progress, through circulation of dowmetal coins. These coins are slightly over an inch in diameter and are stamped, on the face, with the seal of the state of Michigan, and, on the back, with the map of Michigan, the lakes in low relief.

In addition the Dow company is also contributing products to other exhibitors, for which the Midland firm is being given credit.

The bureau of mines in staging an exhibit indicating the research work done in New Brunswick, N. J., on the utilization of polyhalite. In this exhibit, the bureau is demonstrating all possible by-product uses. Among the most important of these by-products are magnesium sulphate, magnesium chloride, metallic magnesium, and the various applications of magnesia including oxchloride products.

As perhaps the most famous producer of these products, the Dow company was invited to take the major part in the display. Samples of the by-products, produced in Midland, have been placed on display.

Downmetal castings for a 12-inch hydraulic coupling, placed on exhibit by the American BLOWER CORPORATION, are also on display.

Typical Michigan Salt Operation Showed In Model

Joy Morton, of Chicago, whose firm, Morton Salt Company, operates salt plants on the eastern and western shores of Michigan, show by means of an especially constructed model and murals how salt is obtained by the solar process, from salt springs, and from mines and the subsequent refining for table and other uses. The elaborate detail model was made by the Chicago Museum of Science and Industry, and is a part of their permanent exhibit.

The model is a gift to the museum from Joy Morton of Chicago and after the Morton Salt Company uses it in its exposition space it will be returned to the museum building in Jackson park.

The model, an illustration of which is carried in this issue, is a typical Michigan salt operation, showing the refinery on the surface and the pipes through which rock salt, several hundred feet underground, is water-mixed by sending water down to the rock salt, to become saturated and be pumped up to have the water boiled off and its salt content crystallized. The plant is typical of that at Marysville, near Port Huron.

Michigan Producers' Showings

Among the operating exhibitors of Michigan products is that of General Foods, Inc., which, among other things gives a demonstration of the quick freezing process. That is the latest development in refrigeration and has already demonstrated possibilities not believed to be possible years ago.

National Biscuit Co. will show the process of making and packing a new type of biscuit and may include other products of its ovens. National Biscuit has factories in Detroit and Grand Rapids.
Part of the contribution to employment in the Great Lakes region adjoining Michigan is composed of seven river and harbor improvement projects within a 60-mile radius of Detroit, which have been placed under contract by the United States Government, representing an expenditure of more than $6,000,000. These contracts call for the dredging of over 13,500,000 cubic yards of rock and other materials, and will afford employment to approximately 1,400 men. Five of the operations are scheduled for completion late this Fall, while the other two projects are expected to be completed by the summer of 1935. All projects are in pursuance of the Government's announced policy of creating a universal 24-foot minimum average depth channel throughout the Great Lakes waterways, a preliminary and necessary step to the establishment of the proposed Great Lakes St. Lawrence Seaway.

**Livingstone Channel Project**

Most extensive of the projects under way is the deepening of the Livingstone Channel, located in the lower Detroit River between Amherstburg and Bob-Lo Island, Ontario, and Grosse Ile on the American side of the river. The channel is being deepened to a minimum depth of 28 feet over a six-mile stretch. The contract calls for the dredging of 2,687,400 cubic yards, most of which is solid rock. The task of removing the rock has been awarded to the Arundel Corporation, of Baltimore, Md., for more than $3,100,000. In turn, this corporation has sublet part of the operation to Dunbar & Sullivan, dredging concern with offices in Detroit, and to the George Mills Company, of Louisville, Kentucky. Out of the removal of sand, clay and other soft materials from Livingstone Channel has been awarded to the Great Lakes Dock and Dredge Company, Chicago. It amounts to about $263,000.

About 25 years ago, Government officials realized the importance of providing a quiet and safe channel through the treacherous rock-bends of the lower Detroit River just before it enters Lake Erie. The artificial Livingstone Channel, cut through solid rock, was eventually created. It gave vessels a straight and alternate channel route through what otherwise heavily burdened traffic lane.

**Had to Open Up Livingstone**

Now the Government officials, witnessing the capacity restrictions of the present channel, and anticipating the day when ocean vessels of larger size will visit Great Lakes ports, are undertaking the deepening of this six-mile stretch to a minimum of 28 feet. It will allow vessels laden with ore from Superior and destined for the lower lake steel maws to increase the capacity size of their loads without fear of trouble in the Detroit River area. The Government's program provides for an average minimum depth throughout the Detroit River of 26 feet, slightly deeper than the average of the lakes as the river has a rock bed and would be far more destructive to vessels than sand or clay, in case of accidental scraping.

Physically, the Livingstone project presents the greatest interest and amount of activity. About it are clustered the dipper dredges, drill boats, rock dredging equipment, drag lines and other apparatus necessary to the two general types of dredging operations.

**Deepening "Dry"**

It is necessary to drill three of the six sections of the channel by the dry method. This calls for the pumping out of all water for certain lengths to allow the rock drills to operate, creating the unusual site of a "dry harbor" in the midst of a great waterway. In order to dry these sections, coffer-dams must be erected, calling for an additional $1,000,000.

It is estimated that approximately 1,000 men will be employed on the Livingstone operations. Contract calls for completion of the work by May 31, 1936, although it is expected to be completed by June, 1935.

Closely allied to the work on the Livingstone Channel is the dredging scheduled for Ballard's Reef Channel. Contract for this work has been awarded to the Construction Materials Corporation, Chicago, for a total of $1,000,000. It calls for the dredging of 375,000 cubic yards, mostly rock, over a distance of about two miles. Ballard's Reef Channel is located just above Livingstone in the lower Detroit River. Work is expected to get under way shortly with employment estimated to total about 65 men. Contract calls for completion of the work by June, 1935. Waste material is to be dumped in a nearby disposal area in deeper water. Like Livingstone, Ballard's Reef Channel will be drilled and deepened to a minimum depth of 28 feet.

**The Job at Monroe Harbor**

The largest port and harbor dredging operation under way at the present time in the southeastern Michigan area is that at Monroe Harbor. It provides for the deepening of Lake Erie at the mouth of the Raisin River, deepening of the river itself and also of a turning basin adjacent to the city's industrial plants. In all, 3,812,000 cubic yards of clay, sand and other soft material must be removed. The general contract has been let in two sections, with the Construction Materials Corporation, Chicago, entrusted with the lake portion and a part of the river, its work to cost $327,500, and the R. C. Hoffman Construction Company, Cleveland, taking care of the remaining river dredging work and the turning basin. The latter's contract will call for about $166,000. It is expected that local contractors will share in the supplementary work.

Completion of the Monroe project will allow the larger lake vessels to dock at Monroe's steel plant and paper companies' wharves. Plans call for dredging from the mouth of the Raisin River in Lake Erie, up the river to the turning basin just above the Newton Steel, Consolidated Paper, River Raisin and other paper plants, a distance of...
PREPARING FRAME FOR INSTALLATION OF VARIOUS RELATED PARTS

about two and one-half miles. The channel will be 200 feet wide, with a minimum depth of 21 feet. The turning basin, 800 feet in diameter, will be dredged to the same depth. All work at Monroe will be of the hydraulic dredging type, with waste material being used to fill in acres of low lands in the adjacent territory. The city, therefore, will not only be provided with direct water transportation to its industries, but acres of inaccessible and unusable land will be enhanced in value. It is expected that about 100 men will be employed by the contracting companies, with completion of the project scheduled for December 1, 1933. The industries benefited by the development are sharing the cost of the improvement with the Government.

Fighting Island Channel

Another lower Detroit river improvement under way at the present time is the deepening of Fighting Island Channel, at the estimated cost of about $70,000. This is a hydraulic dredging job calling for the removal of a total of 505,000 cubic yards of clay and other soft materials. In general, the work undertaken is the clearing of the shoals in the channel over a distance of approximately five miles, the dredging not being a continuous operation but only where shoals make lower depths necessary. Blanck & Gargaro Company, Inc., Detroit, has the contract. The channel will be deepened to minimum of 26 feet, and the work will require one dredge and a force of about 40 men. The Fighting Island Channel lies in the American side of the Detroit River between Wyandotte, Grosse Ile and Fighting Island. Contract calls for

BAKING AND POLISHING THE NEWLY PAINTED PARTS

for Lake St. Clair and work is to be under way shortly. At the upper end of the lake, The Duluth-Superior Dredging Company, Duluth, has a contract for over $290,000 for the removal of 1,717,190 cubic yards. Plans call for the dredging of three miles from the lower end of the St. Clair Flats ship canal into Lake St. Clair to a minimum depth of 25 feet. It will be hydraulic dredging of clay, sand and similar soft materials. Fifty men will be employed on the project, which must be completed by December, 1933.

The other Lake St. Clair operation is at the foot of the lake, starting at a point opposite Grosse Pointe Park and approximately one-quarter mile east of Peche Island. From this point the channel is to be drilled for a distance of about five miles to a minimum depth of 25 feet. About 1,980,000 cubic yards of clay and other soft materials must be removed. The contract has been awarded to the Great Lakes Dock and Dredge Company, Chicago, for $198,400. The work must be finished by December, 1933, and will entail the employment of a force of about 60 men, it is estimated.

The seventh improvement in the Detroit area is that at Port Huron at the junction of Lake Huron and the St. Clair River. Contract for the removal of 1,767,000 cubic yards has been awarded to Wilbanks and Pierce, New Madrid, Mo., for about $344,000. This work is to be started shortly and must be completed by November 15, 1933. It will afford employment to about 50 men and will remove some of the hazards at the narrow entrance to the St. Clair River. Plans call for the dredging of about four miles of the channel to a minimum depth of 26 feet. It will be hydraulic dredging of clay and soft material, necessitating only one dredge.

Thus, by the end of the present navigation season, the federal government will have spent the greater portion of six million dollars, improving waterways in the Detroit district and preparing for the huge St. Lawrence River undertaking which is expected to attract larger foreign and coastal vessels to Detroit terminals.

New Rubber Products

Factory at Plymouth

The Rubber Products Company, newly organized $25,000 corporation, backed by men for years prominent in the rubber products manufacturing business, has begun the operation of a new factory in Plymouth.

C. B. Meyers of Detroit, associated with the rubber industry for thirty years, is president.
He was formerly sales manager of Baldwin Rubber Company of Pontiac.

H. B. Denman, vice-president and general manager, was factory manager of the Baldwin Rubber Company.

E. A. Miles, secretary and treasurer, was factory superintendent of the Detroit Star Grinding Wheel Company.

The company will manufacture molded and extruded rubber parts and rubber cements for automobiles, refrigerators and other machines and equipment where rubber parts are now being used extensively.

**Industry Meets Problems**

How industrial organizations are meeting the problem presented by the declining efficiency of aging employees is told in a report, "The Older Employ in Industry," published by the Metropolitan Life Insurance Company, following an intensive study of the subject by its policyholders service bureau.

The report discusses various methods in use by approximately 500 American corporations to provide for employees, not yet classed as superannuated, but whose years have carried them to the point where their productive power has diminished.

*ASSEMBLING RADIATOR AND HOOD.*
*INSTALLING GLASS AND "DRESSING" ROOF.*

or some other high executive decide whether such employees shall retain their regular jobs, or be transferred, or whether some other disposition of the case shall be made. "The mere continuation of an older worker at his regular job, however," the report says, "in many cases fails to bring complete satisfaction to employer and employee. Often, the company cannot profitably retain such an employee without making some employment adjustment; frequently, the employee is unable to fill the job unless the conditions of work are changed. When such adjustments are made, they usually involve the pay of the older employee, his hours of work, or the activities associated with his job."

**The Story of Calcium Carbide**

Among Michigan’s natural resource industries is the production of calcium carbide, at Sault Ste. Marie, made possible by the early occupation of the water power at that point for conversion of coke and limestone into this chemical substance. The present controller of this enterprise, Union Carbide and Carbon Corporation has a pictograph of its productions, country-wide, at the Century of Progress, which includes the story of calcium carbide, from which acetylene is made; also the many uses of the corporation’s compressed gases for industrial and domestic purposes, such as oxygen and acetylene for welding and cutting of metals, oxygen for human therapy, acetylene in its wide variety of applications for lighting, heating and in the manufacture of chemicals, and pyroxylen, furnished in cylinders for cooking and heating beyond the gas mains, are displayed.

*INSTALLING INTERIOR TRIM, HARDWARE, SEATS.*
*MOUNTING WHEELS, PREPARING FENDERS, ADDING FINISHING TOUCHES TO BODY.*

**PUTTING STEERING MECHANISM TOGETHER, INSTALLING IT ON CHASSIS, AND ADDING MOTOR PANS, BRAKE PEDALS, BATTERY.**

The Illustrations on this Page Show Car Building at the Chicago Show.
Michigan Farm Incomes

The proceeds of farm crops in Michigan for 1933 are beginning to be calculable. The principal field and fruit crops of the state were lesser in volume than in 1932, but the field crops are producing higher prices.

The total of the wheat crop appears to be about 1.500,000 bushels, with an estimated price of from 55 cents up. The crop of corn is 4,526,000 bushels, the highest price for corn for harvest prices this year, in excess of 80 cents per bushel. The wheat and corn are expected to bring a price of 1.500,000 bushels.

The prices of livestock and dairy products have risen sharply, with an increase of 15 cents per barrel. The milk price is up 25 cents per barrel, and eggs are up 10 cents per dozen. The price of hogs is up 20 cents per barrel, and the price of beef cattle has risen 30 cents per head. The price of dairy cows has increased 25 cents per head.

Oats and barley are in better demand this year, with prices up 10 cents per barrel. The outlook for the winter market is favorable, with a forecast of higher prices. The increase in the prices of livestock and dairy products is due to the increased demand for these products.

The increase in the prices of livestock and dairy products is due to the increased demand for these products. The high prices are expected to continue, with a forecast of higher prices for the coming year.

rayon mills for beling

Two corporations, just formed, will take over the vacant silk mills of Belding and engage in the manufacture of rayon. Each corporation is capitalized at $50,000, with 1,000 shares of no par common stock.

The Beldray Industries, Inc., will engage in the manufacture of rayon, while the Seventy Thousand Rays, Inc., will engage in the manufacture of rayon. Both corporations will be capitalized at $50,000, with 1,000 shares of no par common stock.

The seven share holders of the firm are paid $100 per share. The new corporation will be known as the Beldray Industries, Inc., and will have its headquarters in the old Belding Silk Mills, and will be capitalized at $50,000.

The corporation will be capitalized at $50,000, and will have its headquarters in the old Belding Silk Mills. The new corporation will be known as the Beldray Industries, Inc., and will have its headquarters in the old Belding Silk Mills.

To insure paper mill operation

To insure continuous operation during the rest of the year, Munising Paper Company will receive a raft of approximately 10,000 cords of spruce pulpwood from Port Arthur, Canada.

That the business of the company has exceeded expectations and the purchase was necessary to insure 100 per cent operation.

The 10,000 cords of pulpwood, with its convey of three boats, will be one of the most picturesque hails on Lake Superior in 20 years. The 40 acres of wood will be bound with boughs of British Columbia fir, 40 feet long and four feet in diameter. There will be a "double" boom the same size. Logs in the raft will "top" eight feet above the water. It will be the first tow of wood to come across Lake Superior.

Peering into the spray booths

A transparent oil compound which, applied to glass, enables it to be cleaned of paint as easily as a windsheild. A glass cleaner water has been developed by the General Motors research laboratories for specific use in the glass-enclosed spray booths at the new assembly plant in the General Motors exhibit building. Thus positive assurance that world's fair visitors will be able to obtain a downward unimpaired view of the operations that take place within the spray booths is afforded. In the spray booths the oil will be coated or Duco or enamel before being assembled into the car. The spraying process is preliminary to the actual assembling for which the plant will be a complete unit and is done in the interest of beauty and longevity for the complete car. The spraying process is done under the direction of Charles F. Kettering.
The recognized superiority of NORGE Rollator Refrigeration gives it leadership in Industrial Recovery... Every NORGE distributor is an original Business Revivalist... Observe him... He is an inspiration... He is not a follower in the wake of the Revival... He helped to officiate at its birth. • Note this... NORGE July business this year outstripped the NORGE total for the last six months of 1932... Unfilled orders from NORGE distributors are taxing the capacity of our plant to the utmost... NORGE enters August with the greatest amount of unfilled orders in its history... Encouragement of NORGE distributors and dealers of your city in a substantial way is a safe business policy, and an endorsement of the nation's Push for Prosperity.

NORGE CORPORATION
DIVISION OF BORG-WARNER CORPORATION
672 East Woodbridge Street, Detroit, Michigan
Refrigeration’s 1933 Record

Production records for the electrical refrigeration industry, three of the largest units of which are located in Michigan, are taken seriously as statistics show last June to be the peak month in the industry’s history with subsequent months maintaining a constant volume, contrary to the customary trend in refrigeration sales in former years.

While mention in the industry usually is reached in April, and sales after July 1 drop off sharply, the current year has witnessed precedent defiance upon. The peak was reached in June and executives of the industry estimate that the buying season for refrigerators this year has been extended three months beyond the normal period.

Figures compiled by the refrigeration division of the National Electrical Manufacturers Association show an aggregate output of 663,000 units by the industry for the first six months of 1933, an increase of 43,700 over the six months’ total for 1932. The same half-year total compares with 609,000 and 562,000 units, respectively for 1931 and 1930. The N.E.M.A. refrigerator division is composed of what is commonly known as the “Big Twelve of the Industry,” and includes the Kelvinator, Copeland, Universal and Gibson companies in Michigan, Frigidaire, General Electric, Crosley, Frigiby-Grunow, Servel, Trupar and Westinghouse.

The above companies in the first half of 1933 accounted for the production of 554,417 units, or about 80 per cent of the total output. The Kelvinator Corporation, Detroit, with its subsidiary, the Leonard Electric Refrigerator Company, Grand Rapids and Detroit, accounted for 25 per cent of the industry’s total during the spring months this year. The Norge Corporation, with plants at Muskegon and Detroit, also ranks among the industry’s five largest producers. The Copeland Products, Inc., Mt. Clemens, Universal Cooler Corporation, Detroit, Gibson Electric Refrigerator Company, Greenville and Belding, the Spauls-Whitingham Company, Jackson, and smaller concerns in Niles, Detroit and other Michigan cities give the state a substantial contribution to the electrical refrigeration industry as a whole.

Buying Season Lengthens

The extent to which the refrigerator buying season was extended this year is easily discernible in a comparison of production figures for the past three and one-half years. Several factors undoubtedly contributed to the length of the buying season, including the banking holiday in March, followed by a tremendous release of purchasing power in succeeding weeks, the general improved aspect of all business in recent months, and finally the legalization of beer in many states of the nation. The latter action has opened up a new field for the electrical refrigeration manufacturers, and several products such as beer coolers have been added to their former lines. In addition, the sale of beer has stimulated a demand for domestic refrigeration among classes hitherto showing no demand for “iceless refrigeration.”

In 1930, the total output for the industry amounted to 850,000 units. Of this number, 552,000 units were shipped in the first six months, with a peak of 121,000 in April. The following year proved to be the best year to date, with a total for 1931 of 966,000 units. The first half of the year again accounted for 609,000 of the total, with April’s total of 159,300 units again recorded as the peak month. In both these years, the decrease in May and June was not sharp, but beginning with July the reduction in production was very marked. In the first six months of 1933, the total output was 640,000 units, although the total for the first six months was higher than the previous year, amounting to 502,000 units, in the first half of the 1931 peak year. Production in April, 1932, followed the usual trend, rising to 438,200 for the month, then dropping in May to 144,200 and returned in June to 363,300, the highest month in the history of the industry up to that time. The final six months again showed the customary decline, with production aggregating only 191,000 as compared with 469,300 for the first half of the year.

The Up-Turn of 1933

The first half of the current year revealed a distinctly new trend. April output totaled 124,000 units, which was more than twice the output of 62,300 units for March, but instead of falling off in May, the production of the industry surged on to new heights. May this year set a new monthly record with a total of 218,400 units. The customary decline in June was not forthcoming, with the result that another new record of 219,400 units was set for that month, bringing the six months’ total to 696,000. Officials indicated that the volume was well maintained in July and that it will probably be early September before the customary “break” in sales occurs. With a start of 693,000 units up to June 30, and with favorable reports on July and August business, it is highly probable that the 1931 annual figure of 966,000 units will be exceeded before the end of the current year.

Trade Conditions Healthy

Conditions in the electrical refrigeration industry are decidedly healthy. It has been one of the outstanding industries during the depression years, and while lower prices and greater competition has affected profits downwardly, the extension of the demand for its products, the introduction of new lines and a general improvement in prices bid fair to make the current year a prosperous one for the companies engaged in the industry. Employment has been better maintained this summer than in previous years, due to the lateness of the spring season as well as to the suggestion of President Roosevelt, most of the companies in this field have adopted codes aimed to benefit their employees and increase employment generally. Retail prices of refrigerators have either been stepped up recently, or will be by September 1, according to all indications, due to increased prices for raw materials and labor.

Kelvinator’s net profit for the June quarter this year was $1,414,564 as compared with $730,062 for the same quarter in 1932. Up to

Carl Milles Worked This Statue Out at Cranbrook

Carl Milles' Concept of the Factory Worker Shown at Century of Progress.
CAR ASSEMBLY LINE OF CHEVROLET MOTOR COMPANY, AT CHICAGO

July 21, shipments for that month were in excess of those for the entire September quarter in 1932, according to President G. W. Mason. He declared early this month that the Kelvinator company will be able to keep employment above customary summer levels and at higher wages than during the spring months. H. W. Burritt, vice-president in charge of sales for the company, recently pointed out that while Kelvinator’s entire sales volume during the past ten months has shown an increase of 160 per cent over the same period last year, sales of deluxe or higher-priced refrigerators increased 876 per cent during the period. Sales of this type for the months of May, June and July were 19 times as great as for the same three months last year, he said. Kelvinator shipments for the June quarter this year totaled 114,698 units, a gain of 73.2 per cent over the same quarter in 1932. Shipments for the first eight months of the concern’s fiscal year, or up to May 31, 1933, exceeded the total for the full years of 1929 and 1930, and came within 6050 units of equaling the full year total for 1932.

Heavy Shipment of Product

Following shipments of 26,412 and 43,575 units respectively in April and May this year, the Kelvinator Corporation booked 44,525 orders in June, a gain of 129 per cent over the best June in its history. June also was the best month in the history of its Leonard division, with shipments 75 per cent ahead of those for June, 1932, and with unfilled orders on July 1, 1933, approximately 566 per cent ahead of those on the same date last year. The Leonard division has been employing approximately 1,500 persons on three eight-hour shifts. The parent plant in Detroit has been working 24 hours daily, seven days a week, since March 20, last.

Great Progress by Norge

Other Michigan concerns have been similarly active, although actual shipment figures have not been announced. The Norge Corporation is employing about 1,100 persons at its Muskegon plant, in addition to those at the Detroit plant. Both units have been operating at capacity for several months. At the end of April this year, Norge was 5,463 units behind in its production.

In May a new high production record was set, with 3,000 units in the Muskegon plant alone. Output was 22 per cent above that for any previous month in the company’s history. June shipments exceeded those for May and set a new monthly record. The Norge company has a remarkably stable production record during recent depression years. During the 13 months ending June 30, 1932, the year of the depression period, employment was maintained at practically the 1,200 mark.

Since that time the company has adopted a policy of diversifying its products, and early in this year began the manufacture of an electric washing machine. The Norge company is now a unit of the Borg-Warner Corporation, which operates several other concerns in Michigan. The refrigeration division is headed by Major Howard E. Blood, of Detroit.

The Lesser Producers

Universal Cooler Corporation, which confines its output principally to the manufacture of power units for refrigeration machinery, has been very active in recent months, according to G. M. Johnston, president, who also is chairman of the refrigeration division of the N. E. M. A. Early this year, the company added to its line a unit which produces ten tons of refrigeration on an air-conditioning rating. Its employment this spring was reported to be the highest in its history, with a 29 per cent increase over that for the same period in 1932. Recently the company increased wages by ten per cent and reduced working hours of its employees to 36 hours weekly.

Copeland Products, Inc., with plant in Mt. Clemens, encountered some disagreement between several interests in its management and ownership and early this spring was placed in temporary receivership for two days. Since that time, the disagreements have been settled and production and sales have kept pace with other concerns in the industry. At the same time the company was in temporary receivership, its plant was turning out an average of 250 units per day.

The Gibson Electric Refrigerator Company, Greenville, has been uniformly busy since its entrance into the mechanical field. As early as last summer, it reported 4,000 unfilled orders in spite of a 24-hour operating schedule over a period of four months. It also was necessary at that time to open its branch plant in Belding and run it on a 24-hour basis. While production later in the year showed the seasonal decline, operations were again stepped up this spring and the company enjoyed capacity operations in recent months.

The Sparks-Withington Company, long known in the automotive industry through its “Sparton” horns, and later a large producer of radio receivers under the same trade name, last year added the Sparton electrical refrigerator to its line. Although its production to date has been relatively small, it has enjoyed the fruits of an industry which has been operating at capacity since last March. The remaining Michigan electrical refrigerators manufacturers are relatively small producers, with distribution areas limited to the state itself and several others in the Midwest.

The Oil Burner Industry

A Michigan industry of the past decade’s growth is that which makes the oil burner for household and industrial heating. Several Michigan industries took the making of these over for the leveling of their labor demands in what were originally seasonal industries, involving labor lay-offs which disrupted organizations. Among these are Motor Wheel, at Lansing; Timken Axle, of Detroit, which absorbed an earlier manufactur-
The Field of "Dry Ice"

"Dry ice," or solid CO₂, has become one of the new and unusual products of the Michigan heavy chemical industry.

Although "dry ice," or solid carbon dioxide, was unknown as a commercial product ten years ago, it is now being put to many uses and its field of utility is rapidly expanding. Large quantities of dry ice are used in the refrigeration of ice cream, meats, beer and soft drinks, and in the last few years it has gained considerable popularity in the railroad shipment of fish, fruit and other perishable foodstuffs, as well as many industrial uses. Its particular advantages are that it does not become wet and that a very high refrigerating value can be compressed into a very small quantity of dry ice. The solid carbon dioxide division of the Michigan Alkali Company, of Wyandotte, is the largest maker of dry ice in this country.

Dry ice has many unusual uses. If in excavating for a building, bridge or other structure, quick-sand is encountered, it can be frozen easily with dry ice and the work continued. Very frequently old wells are rejuvenated by placing acid in the water and then throwing down dry ice and capping the well. The dry ice liberates the carbon dioxide, one pound giving up eight cubic feet of the gas. This drives the acid into the pores of the rock and cleans them from debris, thus opening up the supply of water to the well.

Dry ice very frequently is used in fighting fires, especially underground electrical conduit fires. Such fires are "mean" and difficult to fight and water can not be used on them. Dry ice extinguishes them very easily and is now used extensively in the larger cities for this purpose.

In the fitting together of machine parts, cores are very often cooled with dry ice and inserted in their housing. When they reach normal temperatures they expand and fit very tightly into their housings. Cores of golf balls are frozen with dry ice, before wrapping. Special steels are cold treated with dry ice. With dry ice biological medicines are dried at low temperature; vacuum traps in manufacturing Neon lights and radio tubes are cooled; trees are frozen for transplanting; ether and other solvents are dried by freezing out the water; oils are de-waxed for special use.

It is also finding wide use in the fumigation field, particularly in large grain elevators.

Show Five Michigan Plants

One of the most interesting exhibits of the automotive industry at the Century of Progress Exposition is the display in the Travel and Transport building by the Borg-Warner Corporation, builders of equipment for every American-made car.

The exhibit, covering 2,000 square feet of space, contains graphic displays of automotive, household, agricultural, marine and industrial products manufactured by Borg-Warner, among them the products of several Michigan factories of the organization.

A huge illuminated fountain of light and motion is located in the entrance foyer to the exhibit. This fountain offers a fantastic representation of mechanical movements in operation.

The automotive section occupies the center of the exhibit. An outstanding feature of this section is the illuminated glass-panel automobile, the only solid parts of this auto being Borg-Warner made products.

The outline of a modern automobile is etched on a series of glass panels, giving the appearance of a real motor car made of glass. Within the auto are shown the actual radiators, timing chain, carburetor, clutch, flywheel starter, free-wheeling unit, and universal joint.

The **SMARTEST** car in America

and the **FINEST** car to drive!

---

ONE glance—and you **know** that Oldsmobile "belongs" in the smartest company. Take one short drive, and you'll also know that it ranks with America's finest in the quality of its performance! At the moderate price of the Six and Straight Eight, such performance is literally amazing. For, until now, such power ... acceleration ... speed ... and smoothness were expected only in cars of far higher cost. But Oldsmobile has set new standards—in *both* style and performance—for cars of medium price. Enjoy, *just once*, its performance—and you'll want an Oldsmobile.

*All closed models have the Fisher Ventilating System for year 'round comfort*

---

**OLDSMOBILE**

THE SIX $745 and up, THE EIGHT $845 and up . . . f. o. b.
Lansing . . . spare tire and bumpers extra . . . G. M. A. C. terms.

VISIT THE GENERAL MOTORS BUILDING AT THE CENTURY OF PROGRESS EXPOSITION, CHICAGO
The New Brewing Industry
A 1933 Return to Operation Bringing Much
Public Revenue and Personal Employment

Of which $1,021,330 is in the form of annual license money, 95 per cent of which goes back into the localities in which beer is made and consumed and 5 per cent lies with the state to pay collection and distribution expenses. The remainder, $587,395, goes to the state. This for a light three months production, with very few breweries in operation, indicates an annual revenue from manufacture, of more than $2,249,000, which it is at this time enjoying. With a return to the old time production of 2,200,000 barrels, the state's revenue from its stamp tax on the manufacture of beer in Michigan ought to go up to 2,500,000 barrels, which would indicate a state revenue from its stamp tax on manufacturing the beer, of $3,125,000.

So far for the revenue figures.

As to direct employment, the best figures that this paper can get is that, so far, approximately 2,000 people have gotten new jobs from the breweries so far operating. With a proportionate employment in those being made ready this figure will be increased to approximately 3,500. As the average wage of these employees is rather more than less than $1,000 per year, the $1,000 figure may be taken as conservative average, indicating an extension of the wage fund in this state, from this source from May 11, 1933, up to the time of full employment, amounting to $3,500,000 per year.

As to rebuilding, let's take a look at that.

So far as we can get the best estimates from machinery supply folks, tank and boiler makers, builders and erectors, the total of contracts already completed, being completed and undertaken already aggregates $3,100,000. Much of this was for product originating outside the state, but it is not a bad guess that, taking one thing with another, 40 per cent of this sum was spent upon Michigan direct labor, and indirect labor employed on supplies and materials of Michigan origin. This means that reconstruction has brought approximately a million and a quarter dollars to Michigan workers and material providers.

The distribution employment furnished must be taken from the retailers' angle. Permanent licenses have been issued to 301 hotels, 300 so-called "gardens," 272 clubs, 5,046 specially designated shops, and 3,546 restaurants, 8,465 in all. The best observation that can be made of employment in these is that one person per license has been employed, and would not have otherwise have been at work. Into this low average runs employment upon two shifts, of more than two men, of porters and helpers, in some places, and conditions where no new employee has been taken on to handle beer distribution. This low average adds employment for 5,465 people, who, added to 2,600 direct employees of the reestablished breweries, constitute a working force of 11,165 persons who have found employment since the legalization of the making and distribution of beer. Of the latter class, the distributors, the wage return will run slightly lower than that of the direct labor employed by the breweries, probably about $500 per year. Their employment indicates an addition to the Michigan wage roll which may safely be estimated, as a minimum, of more than $7,000,000 per year.

The total brewing capacity of all the licensed breweries in Michigan, operating and non-operating, is 2,200,000 barrels per year. This capacity is somewhat misleadingly figured, in some cases for the sake of giving "body" to claims of promoters selling their stock. The process of brewing requires eight hours; wherefore, the promoters and optimists assume that three brews a day will be taken off. As a matter of fact two brews a day will be nearer the accomplished fact, indicating present capacity of licensed and operating and non-operating breweries to be about one-third less than the figure named, or approximately 2,000,000 barrels a year. The market for this product will be found...
GAS...

THE MODERN INDUSTRIAL FUEL

In every manufacturing process, where controlled heat is required, Gas does the work economically and satisfactorily.

Your Gas Company maintains a competent staff of industrial engineers who are at your service in the planning of gas fired industrial installations.

If it's done with heat you can do it better with gas

DETROIT CITY GAS COMPANY
Clifford at Bagley
Hale A. Clark, Industrial Fuel Engineer
DODGE OFFERS PROOF THAT IT PAYS TO FORGET CLAIMS AND LOOK AT FACTS WHEN YOU BUY A LOW-PRICED TRUCK

IT'S the easiest thing in the world to make claims about a low-priced truck. 
Now Dodge—one of America's pioneer manufacturers of fine trucks—invises you to forget claims and "sales talk" and to judge truck values for yourself on a basis of cold hard facts. No matter how much or how little you may know about trucks—Dodge is confident, that the new, low-priced, 6-cylinder models will prove their advantages to you...will sell themselves to you, strictly on their own merits. Then, when you know the facts, Dodge gladly leaves the decision up to your own intelligence.

ALL DODGE COMMERCIAL CARS AND TRUCKS HAVE 4 MAIN BEARINGS AND 4 PISTON RINGS

ALL DODGE COMMERCIAL CARS AND TRUCKS HAVE OIL FILTER AND FULL PRESSURE LUBRICATION

NO VALVE GRINDING FOR 30,000 MILES AND MORE...Think of the time and money saved! Valve Seat Inserts also save gas and improve performance because they make valves seat better. A simple invention, yet it gives a tremendous advantage.

ALL DODGE COMMERCIAL CARS AND TRUCKS HAVE HYDRAULIC BRAKES

STOP QUICK, SAFE, SURE—Hydraulic Brakes are always equalized, work smoother. That's why you can stop a Dodge Truck with so little effort. No ordinary pressed steel brake drums here—Dodge uses genuine Cast Iron brake drums on Trucks and centrifugal brake drums on Commercial Cars for long, even wear.

LOWER UPKEEP COSTS and better performance are always guaranteed by better construction! Dodge Commercial Cars and Trucks have four main crankshaft bearings instead of the 3 bearings usually found in low-priced models...have 4 rings on each piston, instead of the usual 3, and the result is better engine performance.

ALL DODGE TRUCKS HAVE FULL FLOATING REAR AXLE

DEPENDABILITY AND long engine life are what you want, and this Dodge Engine Block of special, expensive alloy, is amazingly durable.

ALL DODGE TRUCKS HAVE ENGINE BLOCK OF CHROME-NICKEL MOLYBDENUM IRON

6-CYLINDER—1¾-TON CHASSIS—131" wheelbase extra deep channel frame, has all the mechanical advantages pictured above plus many more. Astounding low price...only $490, F. O. B. Factory, Detroit (Dual Wheels and bumpers extra.)

EVERY Dodge Truck has all of the high-quality features shown here—features you might expect to find in trucks costing two and three times as much. New Dodge models actually have over two dozen advantages that mean positive savings to you every mile you operate your truck. Only when you know the facts about today's truck values can you make every truck dollar do its full duty—make it buy the maximum value. Whatever kind of truck you intend to buy...at whatever price, even the lowest—spend ten minutes with your Dodge dealer and learn what amazing advancements Dodge now offers you.

DODGE BROTHERS CORPORATION
DETROIT, MICHIGAN
TODAY'S LEADING TRUCK VALUES

DODGE COMMERCIAL EXPRESS. Floating Power Engine Mountings, 111 1/4" wheelbase. $450

DODGE 1 1/2-TON STAKE. 6-cylinder, 131" wheelbase (Dual wheel extra). $670

DODGE 2-TON CHASSIS AND CAB. 136" wheelbase (Trailer and its equipment, extra). $905

CHECK THESE LOW PRICES

1 1/2-Ton Chassis, 131" W. B. — 6-cylinder .................. $490
1 1/2-Ton Chassis, 157" W. B. — 6-cylinder .................. $520
2-Ton Chassis, 130" W. D. — 6-cylinder ..................... $795
2-Ton Chassis, 157" W. D. — 6-cylinder ..................... $825
¾ to 1-Ton Panel, 131" W. L. — 6-cylinder .................. $765
1 1/2-Ton Stake, 131" W. B. — 6-cylinder .................. $670
2-Ton Stake, 136" W. B. — 6-cylinder ....................... $995
Commercial Chassis, 111 1/4" W. B. — 6-cylinder .......... $340

Many different body types offered on above chassis all priced proportionately low. Also a Complete Line of Heavy Duty Models up to 9 tons payload. (All prices F. O. B. Factory, Detroit, Special Equipment Extra)

DODGE BROTHERS CORPORATION, DETROIT, MICH.
(Division of Chrysler Corporation)
largely in Michigan, although some of it will be shipped beer, offset in amount by the imports into Michigan of the product of out-of-state breweries. In the olden days the imports of beer into Michigan exceeded the shipments therefrom.

Up to the middle of August, 38 breweries had been granted either permanent or temporary licenses in Michigan to manufacture the new 3.2 per cent beer. Their estimated annual capacity would be approximately 3,000,000 barrels. In addition the State Liquor Control Commission has tentatively reserved an additional three licenses for three of the 20 more breweries whose applications are under consideration.

The new beer law states that the number of breweries shall not exceed the result obtained by dividing the population of Michigan by 75,000. This makes a maximum of 84 plants in the state. The law further provides that not more than one-third of the total shall be in any one county, indicating a quota limit of 21 breweries for Wayne county. As there are 42 licenses to be granted outside of Wayne county, it is expected that several of the more populous counties will have several breweries while certain sparsely settled districts will have none.

The attractiveness of locating a brewery in Wayne county is based on the fact that 39 per cent of the state's population lives therein. To date, 15 licenses have been granted in Wayne county and three more have been reserved for future plants, leaving only three more licenses to be issued to reach the quota of 21. As there are approximately 13 applicants for the three permits, it is entirely possible that several of the organizations will combine to apply for one license, or seek a location in another county adjacent to Detroit.

Permanent or temporary licenses have been issued to the following 38 concerns with their estimated annual capacity: American Beerage Company, Detroit, 100,000 barrels; Auto City Brewing Company, Hamtramck, 75,000 barrels; Bay City Brewing Company, Bay City, 40,000 barrels; Boch Brewing Company, Lake Linden, 25,000; C. and K. Brewing Company, Detroit, 75,000; C. Kersey Brewing Company, Port Huron, 75,000; Dalby Brewing Company, Flint, 45,000; Detroit Brewing Company, Detroit, 15,000; Eberle Brewing Company, Jackson, 25,000; Food City Brewing Company, Battle Creek, 60,000; Frankenthal Brewing Company, Frankenthal, 25,000; A. Haas Brewing Company, Houghton, 50,000; Imperial Brewing Company, Gary Rapids, 15,000; Kolb Brewing Company, Bay City, 25,000; Manistee Brewing Company, Manistee, 40,000; Mars Brewing Company, Wyandotte, 100,000; Manoomine-Marinette Brewing Company, Marinomine, 45,000; Mt. Clemens Brewing Company, Mt. Clemens, 20,000; Mundus Brewing Company, Detroit, 150,000; Muskegon Brewing Company, Muskegon, 50,000; New Englander, Detroit, 25,000; Phoenix Brewing Company, Detroit, 25,000; Prost Brewing Company, Detroit, 35,000; Schmidt Brewing Company, Detroit, 200,000; Silver Foam Brewing Company, Battle Creek, 20,000; Stroh Products Company, Detroit, 200,000; Tivoli Brewing Company, Detroit, 100,000; Waynes Products Company, Hamtramck, 25,000; Zynna Brewing Company, Detroit, 50,000; A. and A. Brewing Company, Detroit, 40,000; Delphi Brewing Company, Escanaba, 25,000; Goebel Brewing Company, Detroit, 125,000; Geyer Bros., Frankenthal, 40,000; Pfeiffer Brewing Company, Detroit, 200,000; Sebewaing Brewing Company, Sebewaing, 25,000; Von Breuning Company, Detroit, 50,000; Wayne Brewing Company, Center Line, 25,000, and the Wolverine Brewing Company, Pontiac, 100,000.

The concern whose applications are under consideration include Eckhardt and Becker Brewing Company, Detroit, Jefferson Brewing Company, Detroit, and the Cadillac Brewing Company, Detroit, all three of which have had their licenses reserved for them, pending completion of certain requirements; and the remaining 17 companies, including Grand Valley Brewing Company, Ionia; Koppitsch-Melcher Co., Detroit; Liberty Brewing Company, Ypsilanti; Oakman Brewing Company, Pleasanton; Olde Union Brewing Company, Detroit; Upper Michigan Brewing Company, Iron Mountain; Columbia Brewing Company, Detroit; Epple Brewing Company, Detroit; Ford Dearborn Brewing Company, Dearborn; Frontenac Brewing Company, Detroit; J. J. Harrington Brewing Company, Port Huron; Pontiac Breweries, Inc., Pontiac; Strals Brewing Company, Detroit; Voigt Brewing Company, Detroit; Wayne Brewing and Distilling Company, Northville, and Midland Brewing Company.

When the manufacture of beer in Michigan became illegal on May 1, 1918, there were 58 plants in operation in the state. Their annual output was slightly in excess of 2,000,000 barrels. Twenty of these breweries were in Wayne county, and plans have either been completed or are being made for the revival of most of them. Twelve of the 68 were in the upper peninsula, while under present conditions there are only three in the upper peninsula and a fourth being considered.

In 1917 there were approximately 64 breweries in the state, and in 1916 a total of 87 brewers paid taxes to the federal government in Michigan. The decline was accentuated by the rapidly approaching dawn of the Prohibition Amendment and some of the institutions suspended operations before the actual death knell was sounded. While the state will not have as many plants as back in 1913, the aggregate annual capacity of the 64 breweries to be licensed under the new law undoubtedly will exceed that of 15 years ago.

A Michigan Brewer of Yore

In the United States, prior to the prohibition era, a brewery might have been either of two things. It might have been a prosaic, matter-of-fact, commercial beer factory—a picture without a frame, as it were. Or, again, it might have been an institution of its community and its trade, with a wealth of personality, some idealism, reflections of its industrial and civic aspirations of its owners, a bit of family pride—a perfect industrial picture in a human context.

Such institutions existed in various parts of the United States in the brewing trade and made both the owners and the products famous. From them the country came to know the names of Bornhelm, of Cincinnati; of Busch, of St. Louis; of Pabst, Schlitz and Blatz, in Milwaukee; of Schenborn and Selz, in Chicago, and of some others.

One of these names was that of Conrad Pfeiffer, of Detroit. He was German born, from near Kurfesschen, in Hesse-Cassel. He came to America at 18. He was trained to be a mechanic in Detroit. At the time of the great British consolidations of American breweries in the 1890's he was the engineer of the Detroit Brewing Company. The consolidation left him without a job. He had some money, and he proceeded to start a small brewery on what was then the outskirts of Detroit. It was a little brewery, with a 35 barrel brewing kettle. He had presence from the start. A new belt railroad line was then encircling the city. He believed a railroad contract would some day be a transportation asset for the larger brewery which he even then visualized as his own. So he located on the railroad. As the result of that vision, the Pfeiffer brewing plant, since grown to great size, is the only Detroit brewery which has its plant on a railroad and can ship beer from its loading dock directly into the refrigerator car.

Conrad Pfeiffer was a monster of a man—the smallest inches in height. He was broad of shoulders. He was broad of mind, too. He had learned the rudiments of brewing, enough to come and go upon, while he was a brewing engineer. That was not enough for him. He began the systematic study of the chemistry of fermentation. He became its master. He had to depend on no one to be his own master-brewer. Where other great brewers had to place such dependence in others, Conrad Pfeiffer knew for himself the principles of fermentation, both by air ex-
PLANT OF CRAINE SCHRAGE STEEL COMPANY, DETROIT

Posure and in sealed packages, knew his yeast-germs, knew the starch and sugar contents of his materials. So he built a brewery and prospered, even with his small brewery.

He began in 1888. By 1907 he was a prosperous man. He then proceeded to carry out his dream of a greater brewery, one whose trade should have a human touch and human accessories. So he built a brewery of 150,000 barrels of annual capacity on his original site, chosen from the first to be the location of a great brewing establishment.

Putting Ideas into Effect

Into that brewery he wove his own engineering and brewing experience. To his good friend, Architect Gustav Mueller, he entrusted the framing of his establishment. A lover of nature, he insisted on incorporating the use of field stone into its design. He was to have a Bier-Garten, an old German beer-garden, attuned to it. Of that and his ambitions and realizations more far on.

Conrad Pfeiffer was a big man mentally. The study of the chemistry of fermentation did not fill his mind. He attached literature, both German and English. He was a devotee of the best of the English masters, knew their literature critically. He became among the foremost Shakespearean scholars of Michigan. A fine speaker, he liked to give lectures on such subjects. He assembled about him men of much breadth and scholarship. Among them were future governors of the state, like Chase Osborne; judges like Alfred Murphy and James Phelan, important personages in his home city; not forgetting Robert Reitzel, a charming writer of radicalism, who ran paper for and called by the name of "The Poor Devil." Reitzel was about the first apostle of "The Forgotten Ten," Conrad Pfeiffer was his patron.

His Ideas of Business

But Mr. Pfeiffer was not all for culture. He was a business man of his own type. He revered his own product. He didn't care to have Tom, Dick and Harry dispense it. Not everybody might like it. He picked his own distributors. Where necessary he "grub-staked" them. He had a theory that like the famous beer brothers, of Brooklyn, it was a badge of honor to distribute his product. In his selection he looked for bonfires who knew things, who could be instructive to their patrons and neighbors. Next they must know how to keep and dispense beer. Again, they must be decent and keep decent places of business. If they didn't the Pfeiffer product might not be sold by them. His distributors were a sort of family. One of them, Delph, had no confidence in banks, and wouldn't deposit his money with them. This worthy kept his balance with Mr. Pfeiffer, and drew upon it as added to it as the spirit moved him. Others had equally peculiar relationship. He loved to drive into the country. In favorite places he picked his type of distributors. He was about the first Detroit brewer to distribute his product beyond the city's borders.

A Variety of Interests

His distributors were not his only family. A pronounced non-believer, he knew no religious prejudices. He handed out money like water to favorite charities. Their religious affiliations made no difference. A giant of a man himself he believed in systematic physical training. So he promoted the German turnvereins, sustained an expert in such instruction, Dr. Sigel, and was for years the financial and moral backer of such recreative efforts. One would think such effort would fill his life. Such people didn't know Conrad Pfeiffer. He had to have other activities. People fell with each other over business or domestic differences. They might, if let alone, go to court or break up their families. Conrad Pfeiffer made it his business to intervene when it was discreet. He invariably patched up their difficulties with the skill of a pasteur.

And music—he loved music although not skilled in it. So he had to promote that art, too. He financed German singing societies, and was really the founder of the first symphony orchestra in Detroit, a modest aggregation of artists, where training was accomplished by a competent artist, Fritz Kaisen. A philharmonic society of local growth, directed by a famous Austrian court player, Wilhelm Yunkel, could get its hand into his pocket when it needed help.

His beer garden was a hobby. It was half-open air for the summer season, glass-inclined for a winter garden. Its settings were his own. The stage was backed by a rockery of a kind of tufa, which he discovered among the islands of Lake Erie. And the palms—yes, a winter garden should be a palm-garden, but who knew palms, and who should lovingly care for them? So he sought out and found one William Dilger, who knew palms, loved palms, petted and pampered Pfeiffer's palms until they were bigger and healthier than the palms in Schlitz's garden at Milwaukee. And Dilger was so good that the City of Detroit took him away from Pfeiffer and put him in charge of its parks. And the garden itself—an electric fountain and rustic houses for the children to play in, and the Dann family and other nationally known entertainers, and, mark this, if you please, the first public showing of moving pictures in Detroit.

Around all this humanity, interest in his fellows, charity, Shakespeare, gymnastics, palm-growing, music promotion and what not, grew Conrad Pfeiffer's brewing business. They were all of a piece. His name was received even where brewing was opposed. When prohibition was first advocated he was sensitive that it might come about. He began propaganda against it among the church people themselves, in good-natured, kindly lectures. He died before it eventuated.

Satisfactory Condition of Detroit Steel

The Detroit Steel Corporation's plant in Melvindale, a suburb of Detroit, has been running at comfortably full production since the first of July. This plant is devoted to the re-rolling of heavy gauge steel strip into finished products, such as fender blanks, its annealing and finished surfacing and servicing to the trade. The activity in motor car production which has marked the summer months has kept this class of producers busy, reflecting favorably upon the demands upon Detroit Steel's plant, because its operations are conducted at the source of final demand. The company's operations are under the direction and control of Arthur Schrage, its secretary and manager. Detroit Steel Corporation has $500,000 capital, its stock is held by a small and homogeneous group and it has paid very satisfactory dividends in the past, a condition to which it seems to be rapidly returning.

"HONOR ROLL" GROWS

Further signed agreements were received by the Detroit district office of the N. R. A. from the following Michigan concerns: American Lady Corset Company, Detroit; 214 Michigan Valve and Foundry Company, Detroit; 130; Detroit Steel Corporation, Detroit; 158; Federated Metals Corporation, Detroit; 107; Old Kent Bank, Grand Rapids; 164; Hawthorne Paper Company, Kalamazoo, 140; Shakespeare Company, Kalamazoo, 163; Scientific Apparatus Industries, Muskegon, 257; Anaconda Wire and Cable Company, Muskegon, 450, and American Brass Novelty Company, Grand Haven, 143.

OPEN BRANCH OFFICE

Establishment of a branch office at 3087 West Grand boulevard has been announced by S. J. Peters, head of the Peters Blue Print Company, with main offices at 243 West Congress street, Detroit. The branch will handle all reproduction work, such as blue printing and photostating, as well as a full line of engineering supplies. The concern maintains its own pick-up and delivery system to insure prompt service.
American Beverage Company
1000 Cary Avenue
DETROIT

Brewers of Beers of Quality

In Continuous Succession
from
Exposition Brewing Company - - 1890
American Brewing Company - - 1900

Capacity Per Year - - 100,000 Barrels

LEO A. TAUBE, President
FRED MAJOR, Vice President
FREDERICK C. STANGE, Secretary
HUGO A. STANGE, Treasurer

Drink Old-Style "Cream-Top"
A Brewery That Kept at Work
One Establishment That Found Profitable and Lawful Work to Do During the Prohibition Era and was Ready to Resume Brewing

In the reorganization of the brewery industry which resulted from the Volstead act, three classes of establishments have appeared. These, and their various states of preparedness for resumption, characterize the gradual renewal of supply to meet the public demand. It must be remembered that when brewing was deprived of its legal character the production in Michigan had been in excess of 2,100,000 barrels a year. The factories in which this quantity of product was made were either maintained—very few of these—or were allowed to fall into disrepair. The latter were the majority. When brewing was suddenly and unexpectedly legalized by Congress, the breweries which had been maintained for other legal uses, were suddenly found to have a trade advantage over those which had become obsolete. Of course even the best-conditioned ones had to renew part of their equipment and enlarge more. A third class had to rebuild entirely.

There were just three breweries in Detroit which were in condition to promptly resume the brewing of beer when the state law regulating it was passed as a consequence of the amendment to the Volstead act. One of these was the American, of Detroit, a plant of 100,000 annual capacity, which had been started in the southwesterly part of Detroit when it was a separate municipality, then known as Delray. Its predecessor had been established 48 years before, and it had been modernized and rebuilt just before prohibition superseded. One of its early investors was an old-time wholesale grocer named Edward Stange. His associates were people of the old-time German American business aristocracy of the period. Among theirs were such names as the Clipperts, great brick-makers and solid citizens of the period. Edward Stange had been a vinegar maker, learning the lore of fermentation in that business. Originally he had been interested, from 1890 to 1892, in a predecessor company, which was comparatively small, but which made a start prosperous enough to attract added capital. Mr. Stange bought into the reorganized company again in 1900, as a director, became its president in 1902, and lived his active business life out with it. His two sons, Frederick C. Stange and Hugo A. Stange, in active management. Leo Taube joined them at about this time, and a substantial business which they built up was put under legal ban in 1918.

They didn’t quit business. They had a prime manufacturing plant. It was adapted to other uses than brewing beer. For instance, the refrigerating equipment could make and supply ice in a commercial way. They made and supplied ice, as much as 150 tons a day. The great boiler facilities could be adapted to distilling water. They made distilled water and furnished enough of it to supply half the motor car storage batteries of the city, as well as for the other technical uses in commerce. The “soft-drinks’” trade, carbonated beverages, sprung up. The brewery carbonators could still work. The bottling plant was available and used. Some average flavors under “boughten” flavors. Hugo Stange fitted himself for and became an expert at the extraction of flavors from their sources. Thus an abated demand for the whole industrial type was replaced with a new one.

During the entire period of prohibition this plant was run to make a satisfactory profit. What was more to the point, this use kept it in operating condition. Busy plants can be kept that way. Idle ones rust out.

So came that when beer-making was relegalized the Stanges and Mr. Taube and their stockholders had an operating plant which required little extension and modernization to go to work again at the duty for which it was originally designed. The owners did not have to go to the public market for new capital. They had no extensive reconstruction campaign to carry on. They didn’t even have to clean up shop. It had been kept cleaned up all the time. All they had to do was to provide raw materials and go to work again.

This they did leisurely and without hurry. The bane of illegal beer was that it had to be thrown on the market “green,” meaning not sufficiently aged. The American brewery’s new product was withheld from sale until it could be aged. Indeed, the makers notified their public that their brewery would not offer product until good product, properly aged, was ready. When it was, their establishment went into distribution at capacity.

That capacity is 100,000 barrels a year. This means that, at full capacity, the property contributes $500,000 annually to the federal revenue, and $125,000 annually to the state’s share of the federal excise taxes. Besides this it must also buy and use 100,000 bushels of malt a year, which is, in turn 100,000 bushels of Michigan barley.

The employment value of the plant is restored. Some money had necessarily to be spent on enlargements. More of these will probably come later as the demand for beer in Michigan and the supply thereof adjust themselves to the increase in population over that upon which the old figures of production in the state were realized.

The record of this brewery for maintenance of plant in condition to resume brewing when it became legalized is actually matched by but one other plant in the state. It was approached by another. Outside these two it wasn’t matched at all. It just naturally eased from one business to another after 1918, and 15 years thereafter eased back to what it had been built for.

SHOW AIR PROGRESS
Two airplanes in the Travel and Transport Building at A Century of Progress are a striking tribute to the progress of airplane design and construction. One is a “stick-and-wire” pusher airplane which was the forerunner of United Air Lines three-mile minute Boeings. Instead of being of stick-and-wire construction it is all-metal and weighs approximately one ton. It carries ten passengers, two pilots, stewardess, baggage and express from Coast-to-Coast in twenty hours and from Chicago to New York in four and three-quarter hours. One of the two 550 horsepower Wasp engines weighs nearly as much as the entire 1910 plane, which was devoid of any instruments.

CLOTHING PRICES MOUNT
Present indications are that prices to clothing dealers for spring merchandise will advance some 15 per cent over the levels prevailing for fall goods, according to leaders in the industry. This will bring the level of prices back to those prevailing in the spring of 1931.
Ford Links Farms, Factories To Combat Unemployment

By GLENN F. JENKINS.

Ford's venture in decentralization of mass production is not all a matter of punching time clocks and tilling the soil. It embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.

The Washenaw Project

These advantages are said to be strikingly exemplified in one of the first of the Ford commune units, the Washenaw Cooperative Industries around Ypsilanti. This one has been developed to the extent that it embraces most of the integral parts necessary to the functioning of the whole. The socio-economic organization seems to be a part of the Ford empire, he explains, for breeders to work out their own ideals of home and environment, to educate their children and to give their families recreational and social advantages of their own selection. There is no paternalism, he added.
PFEIFFER BREWING COMPANY
DETROIT, MICHIGAN

ORGANIZED 1889
REORGANIZED 1933

This Historic Brewing Organization and Facility Remained Quiescent During the Prohibition Period.

With the Return of Legalized Brewing in the United States, its Corporate Structure has been Enlarged and its Old Management Returned to Authority.

Pfeiffer Brewing Company is now Being Reconstructed, Enlarged and Equipped with the Most Modern Brewing and Beer-Handling Apparatus.

Its Potential Capacity will be 300,000 Barrels Per Year.

Its Product will be of the Same High Standard and Quality Developed By Its Founder, the Late Conrad Pfeiffer.

Mr. Pfeiffer's Methods and Brewing Discipline will be Continued by his Former Associate and General Manager, William G. Breitmeyer, who is General Manager of the Reorganized Corporation.

The Production of this Great Brewing Property and Organization will be Available for the Public Within Four Months.

Meantime, this is Notice to Old Friends and New Customers of the Return to Activity and Production of this Institution of More than Forty Years of Industrial History.

PFEIFFER BREWING COMPANY
DETROIT, MICHIGAN
Gold mining is being revived in Michigan. Michigan Gold Mines, Inc., incorporated July 24, has taken a lease on the old Michigan gold mine property, northwest of Ishpeming, which was operated some 40 years ago, while the Ishpeming Gold Mining Company has been organized to reopen the old Ropes Gold Mine, four miles northwest of Ishpeming. J. H. Trebilcock, mining engineer In charge, believes additional ore will be found on the property.

The Ropes mine was discovered by Julius Ropes in 1880 and operated for several years, yielding $99,005,950 gold and silver, besides ore claimed to have been high-grained by miners.

Douglas Houghton, first state geologist, believes from the three per cent gold tellurium discovered of this mine. He returned to his camp near Ishpeming a few days before his death, with a quantity of gold bearing ore, but was too ill to tell where he found it.

In the early history of the Michigan gold mines, the highest specimen of gold were found. Present investigations are establishing the fact that the miner of forty years ago was throwing away ore that runs sufficiently rich in gold to be a credit to the best gold mines in the United States or Canada.

The erection of a mill is now under way, shaft house nearly completed, foundations being built for machinery, bins being built for storage and an electric line being put in by the Cleveland-Cliffs Iron Company. It is expected that the mill will be complete for operation by October 1. The management feels confident that with present-day methods of extracting the gold that the enterprise will be a successful one.

Officers of Michigan Gold Mines are as follows: Henry H. Oviatt, president; Walter H. Orr, vice-president; Frank Trombley, treasurer, and C. A. Secker, secretary. Paul Maler, graduate from the Michigan College of Mining and Technology, Houghton, is mining engineer and geologist. Charles Secker is superintendent of the mill.

The stock issue of the corporation is $50,000, $10,000 of which is preferred stock, and only sufficient preferred stock is being sold to complete the field. As investigations warrant the statement that the mine will be a paying one from the beginning.

From the fact that the property is located so close to Houghton, the officials of the Michigan College of Mining and Technology have promised assistance in making investigations both as to the geology of the deposit and the values to be expected when the mill is in operation.

The officials of the corporation have some excellent samples of gold found in the discarded rock-piles of forty years ago. R. A. Smith, state geologist, has just returned from a inspection tour of gold mining districts.

The land is all privately owned, however. So there is no field for prospectors. Although the ore is rich, it appears in small quantities and may not be of the utmost, if any, to be handled to obtain the gold.

The timbers in the old mines have stood up while the mining has been with dirt water. They are likely to deteriorate very rapidly after the air gets to them. There also is danger of slides in such old workings.
With a view to obtaining a $2,800,000 loan from the R. F. C. to be used in reopening 53 state banks of Michigan, R. F. C. Reichtert, state banking commissioner, was in Washington this week. The R. F. C. approved the loan Thursday. He also will plan at the federal authorities an additional proposal for the opening of another group of five banks in larger cities of the state. The plan for 53 banks is confined to banks in cities of less than 10,000 population.

The plan contemplated by Reichtert calls for the establishment of incorporated trusts for each institution. The trust will borrow from R. F. C. and with the money thus secured will take over the bills payable of the bank. The various banks have had a total of more than $4,000,000 from the R. F. C. and Reichtert said $2,800,000 to put into trusts will suffice. Mr. Reichtert stated Tuesday that he views optimistically the possibility of the additional loan. From assets of $243,000,000 as at the time of the bank holiday, will be reduced to $210,000,000.

Plans for reorganization of the Equitable Trust Company of Detroit, the Adriatic State Savings Bank, and the State Bank of Hesperia were approved Tuesday by the governor’s advisory banking committee.

Opening Is Celebrated

Equitable Trust is to reopen on a plan similar to that adopted by The Detroit Trust Company, except that depositors will not receive stock. The assets are to be placed in a trust fund for the benefit of depositors when liquidation is possible. Deposits total $4,700,000.

R. F. C. directors have authorized the purchase of $250,000 of preferred stock in the National Bank of Grand Rapids. The new bank succeeds the Grand Rapids National Bank. The bank opened on Wednesday of this week, following the signing of the charter by President Roosevelt. A pay-off of 50 per cent to the 27,000 depositors of the old bank will be made at the new bank.

Opening of the bank released some $5,000,000 to residents of Grand Rapids, all depositors of the old bank being paid 50 per cent as a stimulus to business, thus afforded, released an impromptu celebration in the downtown streets.

The new bank is open with deposits totaling $6,368,503. These are backed by the assets of $5,498,744 in cash and $1,812,659 in bonds, stock and loans approved by the government. There are no liabilities except those to depositors.

Assets Include the $5,498,744 in cash, $564,214.89 in bonds at their present market value, $1,217,144.48 in loans approved by the controller of the currency, and $8,000 in stock in the federal reserve bank. Capital and surplus amounts to $1,000,000, including $750,000 in common stock owned by depositors and residents or firms doing business in Grand Rapids, and $250,000 in preferred stock owned by the R. F. C.


Depositors of the Grand Rapids Savings Bank oversubscribed their $500,000 share in the new People's National Bank, which is being organized to take over the assets of the old institution and carry on its business. The R. F. C. is to provide the other $500,000 of the new million dollar bank.

Through the new bank 50 per cent of the deposits now impounded in the Grand Rapids Savings will be released. The rest will be freed as fast as liquidated. The old bank has been operating on a limited basis since the banking holiday. Assisting in the efforts to bring about the organization of the new bank were William R. McCaslin, conservator; Senator Vandenberg, President Gilbert L. Dane and other officials of the bank.

Niles, without a bank since last March, has a newly organized bank with the opening on Aug. 21 of the First National Bank of Niles. The bank succeeds the City National, a unit of the Guardian group of Detroit.

The First National opens with a capital of $100,000 and a reserve of $10,000. Of the capital stock $75,000 is common, largely subscribed by depositors in the bank and $22,000 is preferred stock subscribed by the R. F. C. The first statement issued by the new bank shows totals of $780,014.68.

New Bank Assured

Circuit Judge White, who was a director of the old bank, is also a director of the new bank. Other directors are E. E. Barber, N. P. Behebe, A. S. Bonner, Charles Goldsman, E. C. Mogford, H. O. Parker, William Saathoff. E. E. Barber is president.

Organization of a new bank in Benton Harbor was assured this week with receipt of signatures of 75 per cent of the depositors of the Farmers & Merchants National Bank & Trust Company consenting to the plan. The new bank will be known as the Farmers & Merchants National Bank & Trust Company in Benton Harbor.

Under the plan half of the deposits will be made available when the new bank opens and half retained under a moratorium agreement for liquidation of the former bank's slow assets.

A campaign to sell $75,000 common stock of the new bank began Monday, and the committee believes the issue will be quickly disposed of. The government will be partner in the enterprise by subscribing for $75,000 preferred stock through the R. F. C.

The Treasury Department and the R. F. C. have approved the qualifications of the First National Bank & Trust Company, Flint, and have instructed Conservator Carl F. Spach to proceed with arrangements for reopening. The R. F. C. has subscribed to $300,000 of preferred stock.

Announcement that a plan for reorganization of the Union Industrial Trust & Savings Bank, of Flint, involving a substantial pay-off, has been completed, is made by Dr. David L. Treanor, chairman of a depositors' committee. He says the plan, details of which were withheld, has been presented to the comptroller of the currency, the R. F. C. and the State Banking Department.

Battle Creek Bank Assured

Purchase by the Kellor interests of $250,000 worth of stock in the new National Bank of Battle Creek has been announced. The subscription represents one-third of the total amount of local capital required for organization of the new bank and brings the total amount already subscribed to something over $500,000 of the required $750,000. The total to be subscribed locally is $600,000 for capital stock and $150,000 surplus, or a total of 6,000 shares.

The R. F. C. is subscribing to $750,000 worth of preferred stock in the new bank.

Opening of the bank will immediately release 100 per cent of the deposits in the City National Bank and Trust Company and 50 per cent in the deposits of the Farmers & Merchants National Bank and Trust Company.

A 35 per cent pay-off to the 22,000 depositors of the closed Union & Peoples' National Bank, Jackson, through the new National Bank of Jackson, which succeeds the closed bank, has been under way since last week. The distribution amounts to about $2,000,000 and three-fourths of it is being redeposited in the new bank. L. F. Bomhoff, conservator of the Union-Peoples Bank, is directing the pay-off. The bank had, previously, paid out five per cent. The new bank has been in full operation since Aug. 1.

Announcement is made of the election of officers for the new Hillsdale State Savings Bank, which will open for business Sept. 5, operating as a federal reserve bank, a merger of the First State and the Hillsdale Savings banks. O. J. Cornell, for 13 years president of the Hilledale Savings, will head the new institution and F. A. Rothlhuber, Sr., who has been president of the First State since 1911, will be chairman of the board.

The reorganization plan, approved some time ago by the state advisory board, will release 65 per cent of deposits at the time of the reopening and the 35 per cent remaining, eventually.

Purposes of the new National Bank of Wyandotte have been elected as officers C. L. Edwards, board chairman; C. A. Brethen, president, and Dr. C. W. McCull, vice-president. The plan for the new bank is being presented.

(Continued on page 68)
The Book of Michigan Industry

The Return to Work and Wages

The ANNUAL Book of Michigan Industry for 1933, of this publication, is presented with this issue. Normally this publication comes out in May, but in May of this year the record of Michigan industry was a very bleak one. Rather happily the experiment in economics and distribution of work which is being carried on by the present Federal Administration started up industry in this state as early as the first of July. This start was not a general one, but as the code system of regulating hours of employment and minimum wages has developed under the direction of Gen. Johnson, a great many employers of labor and producers of merchandise have discounted its effects, and have distributed the work they have to offer over a larger area of the personnel of employment.

Advances in hourly rates of wages have become effective already in Michigan, or are about to become effective, those being passed into force dating from August 1 with a very considerable addition thereto promised for September 1.

The reduction to a lower hour plan is now in process. Some of it has been accomplished and presumably a great deal will be accomplished after the first of the coming month. Those who read the details of re-employment and the increased hourly wages with which this issue of this paper is filled, will be amazed at the number of additional persons who have found employment. Our own estimate, making allowance for all duplications and some extravagance is that during the month of August better than 65,000 people, who are out of work, have found reemployment in this state, and that the further distribution of labor which will occur under the acceptance codes not yet completed or to go into effect on the first of the month, will provide places for at least as many more.

The absorption of 130,000 people in industry in this state really amounts to salvation, because while more residents of the state than that number were out of employment, there was always a fringe of people who would not seek employment until they were driven to it; and there has been another fringe of idle people who were drawn to Michigan in good times, and who have been gradually drifting out of the state to their former residences in other states, or have drifted back to the intra-state cities from which they moved up to Detroit during the high demand for workers.

Back of this reemployment of 130,000 people is the planning of a good deal more which will take effect of common labor. To begin with, an important contribution to highway construction is being made by the Federal Government. This has already been assigned and the needed workers in this employment will find places on these jobs between this time and the freezing up of the ground through which roads are constructed. Then there are a number of public projects, which we enumerate in this issue, for which aid is being requested from the Federal Government.

Not all of these will be approved because some of them are fantastic and are outside the limits of self-liquidation or necessary public value. It is likely that enough of them will be given both state and Federal approval to provide for the absorption of a good deal of shop and actual project labor, beginning perhaps as early as November. Even when these projects are approved it takes a good deal of time to prepare their detailed plans and to get bids thereupon, so that after their approval before they are entered upon and furnish employment.

As our readers will notice two important industries will furnish a great deal of employment. One of these is the beer industry which has become legal and which, in one way or another, either through direct manufacture or through those who furnish a furnished occupation for about 10,000 people. The other is the sugar beet farming industry and the processing of this raw material into the finished product. The sugar beet acreage of the state has been increased practically one-half for 1933 over the acreage of the previous year, and it finances seasonal employment, say from November to February, for practically 25 thousand people. There has been some question about the control of beet sugar acreage by the federal government, based upon fears that the tonnage allotted to domestic production might not be great enough to absorb the product of the acres devoted to sugar beet raising in this country. This week, however, that question seems to be resolving itself by the allotment of 1,750,000 tons of domestic supply to American producers; while the acreage situation gives Michigan a continuation of this sugar beet acreage, with a probable production of 25,000 acres of the Saginaw and Toledo factory, areas to which our Michigan farmers contribute.

Thus the parts of the Michigan industrial jig-saw puzzle are gradually being recovered and put into their places. They furnish the hope that the federal process of reconstruction will be a success. While even the President has not hesitated to describe this as an experiment, the indications are that the experiment will work out successfully, and for long enough to bring the buying power based upon normal, rather than artificial economic conditions.

The Michigan Sales Tax

It is always fair to give the devil his due. While we do not agree with some features of the new Michigan sales tax, it has, in its first installment, proven that it can get the money. This is the purpose of all taxes and the source of the principal objection to most of them. The indications are that the new sales tax will produce about $3,000,000 per month, replacing a $25,000,000 levy on lands, of last year, a portion of which remains. A sales tax return of $36 million a year is more than the state should normally receive from this source; but if the surplus is applied to wiping out the state's deficit, there need not be too much urging of this defect for the present.

The fact remains, however, that for steady taxation of a 3 per cent levy on sales is too high. It should not be more than 2 per cent, if it exists at all; and it should be an honest replacement of other taxes and not an addition to their burden. Meanwhile the Governor promises a special legislative session in January, which can, if it will, patch up the law to make it equally effective and less burdensome.

The Process of Unionization

T HE EMPLOYERS who are protesting against the dangers of unionization of industry in the new industrial codes seem to have lost track of the fact that the codes are unionizing employment, quite as much as giving an opportunity for employees to unionize themselves. If codes of uniform practice, provisions for limited hours, others against unprofitable practices, minimum work hours and the like are not industrial unionization we miss our guess.

At the same time these changes give the unions themselves less to strive for. Most of their plausible demands have been realized.

Pennsy Seeks Gateway

The Pennsylvania and Grand Trunk Western Railroads have applied to the Interstate Commerce Commission for authority to acquire control of the Grand Trunk-Pennsylvania Transportation Company with the intention of buying four car ferries owned on Lake Michigan by the Grand Trunk-Milwaukee Car Ferry Company.

The application proposed also that the Pennsylvania extend its line by car ferry from Muskegon to Milwaukee and extend its line by trackage rights over certain tracks of the Grand Trunk Western and the Muskegon Navigation Company on tracks of the Grand Trunk Western in Milwaukee. The Grand Trunk Western would extend its line by trackage rights over certain tracks of the Pennsylvania and the M. R. & N. in Muskegon.
With its aim the reemployment of two-thirds of the nation's 12,000,000 unemployed by the first of next year, the federal government entered the final phase of its recovery program. Under the plan, which was publicly announced on Wednesday of this week, is to have the sign of the Blue Eagle displayed and subscribed to by every producer, miller and consumer in the country.

Fourteen industries are now operating under permanent codes, inclusive of four of the six major industries. The automotive industry code, a major measure, is believed near adoption with agreement reached on the collective bargaining feature of the labor clause, the main bone of contention. Hundreds of other industrial groups are operating under temporary codes, this portion of the recovery program being sufficiently well advanced to permit the government to undertake its drive, now in progress, to bring every individual in the country into the spirit and performance of the recovery program.

Detroit Starts Drive

While the official date for the starting of the house-to-house and store-to-store canvass is Aug. 29, the Detroit organization, under the leadership of Alderman E. L. Larwood, started its canvass on Wednesday of this week. Fifteen hundred workers have been enrolled in the Mayor's Office, and the organization is working along the lines of the Liberty Loan campaigns.

Of the 2,500 employers in the Detroit area, all but 4,000 have signed the N. R. A. agreement. The campaign in Detroit will end Sept. 1, it is expected.

President Roosevelt has expressed the conviction that the coordinated triple attack of the National Recovery Administration, the Agricultural Adjustment Administration and the Public Works Administration already has started the upwinding of purchasing power and commodity production, and the ultimate goal of prosperity will be reached.

Gen. Hugh S. Johnson, National Recovery Administration, has assured the President his organization would achieve its objective of creating 6,000,000 jobs before snow flies. At the same time, the immediately elected administrator of public works, reported his program to put at least 1,000,000 men to work before Winter will go over the top. It is estimated for every man given a job directly under the public works program at least two would benefit indirectly.

Purchasing Power Increasing

The public works administration estimates its funds will give $250 per man per month on a 30-hour work week, and that 85 per cent of all the money spent on public works goes into wages. That is why they call it the "primer of the pump"—to give quick impetus to buying power.

Secretary of Labor Perkins in an analysis of employment and payroll statistics for July stated that purchasing power on the increase and manufacturing plants increased approximately $29,000,000 in weekly wages paid in July over the average weekly earnings paid in March.

The increased employment for July over June was estimated to be 400,000 factory workers. Since March, employment in manufacturing establishments has increased 22.1 per cent or 453,000 workers, while in non-manufacturing establishments the figure was placed at 300,000.

If the present rate of employment and payrolls increase is maintained, it will mean an increase in purchasing power by the end of 1933 of $390,000,000 for manufacturing industry alone. The President has approved the steel code, according to N. R. A. announcement.

The agreement provides for a 40-hour week averaged over a period of three months. Three N. R. A. officials are to work with the board of the Iron and Steel Institute to see that the code is properly administered.

Automotive In Dispute

The battle is being fought between automobile manufacturers and Gen. Hugh Johnson over the open shop provision of the proposed automotive industry code, to take effect this week as representatives of the industry and the Government conferred in Washington to understand the implications of the disputed Section 7. Headed by Donaldson Brown, General Motors executive, the automotive delegation sought to have Gen. Johnson re-interpret his recent ruling in which he forbade the use of the terms "open and closed shop" in N. R. A. codes. General Johnson was understood to oppose any innovation in the language of the new code, and it was hinted that some modification of the proviso would be attached to another section of the automotive code.

In his recent interpretation of the automotive code, Gen. Johnson at least inferred that he would reject the open shop as proposed by the industry. The automotive leaders were urged to take action and charged that he had "broken his promises" on the open shop features of the code, which he had made in a visit to Detroit some weeks ago. Failure of the industry to accept a code would result in the imposition of a code upon which Johnson himself.

The disputed section refers to collective bargaining on the parts of employers. Under the guarantees provided in it, many manufacturers agree to an all-night unionization of their plants. The auto manufacturers seek the right to hire and fire employees without regard to union membership. They are not adverse to the application of "collective bargaining" principles, but balk at the companies making unionized plants in the new code.

The text of section seven of the Act reads as follows: "Every code of fair competition, agreement and license approved, prescribed, or issued under this title shall contain the following conditions: (1) That employers shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, conspiracy, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization, or affiliation thereof, or in any other purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no employer shall be required as a condition of employment to join any company or union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum rates of wages and hours for each occupation, and for each of the conditions of employment, approved or prescribed by the President."

The National Emergency Committee of the National Automobile Dealers' Association has completed a code of fair competition and self-regulation, of which President of the executive committee may decide to increase the production quotas.

In addition to wage and hour provisions, the code seeks to eliminate competitive practices which have caused heavy losses. The code provides for a statistical commission to determine the current value of used cars. Dealers in accepting cars for trade-ins would not be permitted to allow a price more than three times the going price of the committee, less his charges for selling, handling and reconditioning, which would be held to a minimum of 20 per cent of the valuation.

The code provides a 48-hour week, the maximum hours not to apply to managers and executives making $25 or more a week, or to outside salesmen, emergency work and other special cases. A general minimum wage of $15 a week is provided for cities of 500,000 population or more, and lower rates in smaller towns.

Furniture Code Temporary

A code for the furniture industry has been approved temporarily by the national recovery administration and will be adhered to by the furniture industry in Michigan, it is announced by F. Stuart Foote, Grand Rapids, Michigan, chairman of the executive committee for the National Furniture Manufacturers Association.

The code approved includes substitutions to the blanketed code revised and approved recently by the committee representing the furniture industry in Washington. The permanent code will be announced after it has received the President's approval.

Furniture workers in the north will receive a minimum of 34 cents an hour. A public hearing on a code for the 1,500,000 retail stores of the country was held in Washington this week. More than 5,000,000 wage earners will be directly or indirectly affected. The hearing involved all retail stores except food and grocery and drug stores.

Provisions for wages and hours already are in effect under the presidential reemployment agreements. The present hearings will reopen old issues, and include also the broader range of retail problems such as unfair trade practices, general statutory provisions and collective bargaining proposals.

The code was submitted by the National Furniture Dealers Association, Furniture Association, National Retail Hardware Association, Mail Order Association of America, National Association of Retail Furniture Dealers and Furnishers and National Retailers Association.

Copper Code Filed

The Copper producing industry has filed a code providing for control and allocation of production. It classifies companies into three divisions and sets forth their annual capacity as follows: Class A: Kennecott group, 354,500 tons; Anaconda group, 226,000 tons; Phelps Dodge, 168,000 tons; United Verde, 88,000 tons. Class B producers are Calumet & Hecla, 45,000 tons, and Miami Copper, 35,000 tons. In Class C are Magma Copper, 25,000 tons; United Verde, 24,000 tons; Consolidated Copper, 21,000 tons, and Copper Range, 15,000 tons.

The code states that the production quotas for each company shall be 28 per cent of their individual capacity. Those in Class B may operate on a 25 per cent basis and those in Class C not to exceed 20 per cent of their capacity. The three-member National Emergency Committee of the National Automobile Dealers' Association has completed a code of fair competition and self-regulation, of which President of the executive committee may decide to increase the production quotas.
Auto Plants Going Top Speed

Definite reports from the field and actual orders for new cars and truck deliveries have convinced Michigan motor car manufacturing executives that the remarkable upturn in automotive business which has been in progress throughout the summer will show no let-down for the month and that September sales will be more favorably attended with those of the same month last year and will uphold the gains registered in June and July of this year. Virtually all companies are exceeding their August, 1932, figures by a good margin. Total production for the current month is estimated at around 290,000 units.

A four-million automobile year is not far distant, in the opinion of John W. Scoville, chief statistician of the Chrysler Corporation, who has just completed an analysis of retail sales of new motor cars for the first six months of 1933.

The return of prosperity will see the automobile industry coming back much faster and further than most other lines, he believes. Mr. Scoville estimated new car sales for the entire year at approximately 1,500,000 units.

Basing its computations on registration reports from 31 states, R. L. Polk & Company estimated motor car sales for the first seven months of 1933 with sales of 741,900 in June this year and 104,188 in July, last year. This estimate is 18,600 units higher than the July sales figure of a year earlier. It now appears certain that July sales materially exceeded sales both in June and in July, 1932.

Canadian automobile production in July topped 5,450 units against 7,323 in June and 7,472 in July, 1932. Cars made for sale in Canada declined to 4,562 in July from 5,523 in June, while cars for export increased to 1,988 from 1,861. Cars imported in July numbered 60,1. During the seven months ended July 31, 44,502 cars were produced in Canada, 1,110 imported and 10,564 exported.

Ford sales are understood to have been of satisfactory volume in the last month. This has meant that production at the Rouge plant has been sustained at a level around 55,000 units a month and that plans for an August shutdown at Dearborn have been abandoned.

Preceds Market's Strength

Retail demand, continuing strongly into August, has raised Pontiac straight eight sales during the first 16 days of this month to the highest point for any corresponding period since 1929, according to Sales Manager R. K. White.

"Pontiac's 1933 sales through August 10 exceeded the same period of 1932 by 25,018 units," said Mr. White. "The remarkable manner in which the company is building up the list of back orders and the fact that the company is completely sold out for at least a month or two further accentuates the optimistic trend in the market. The sales are coming in daily and it is expected that the sales figures will show further gains in the near future."

Packard Dealers Purchase
$2,000,000 Worth Of Cars

More than $2,000,000 worth of new Packard motor cars rolled out of Detroit this week on the way to dealers throughout the country. The Packard Motor Car Company, all of the cars, new models which are to be announced shortly, were shipped by the car maker from its home by Packard distributors and dealers from a convention which was held by the company in Detroit Monday and Tuesday.

Every distributing point for Packards in the entire country was represented in the convention, the largest in the history of the company. Selling plans for the Fall and Winter were discussed by officers of the company and the visitors were given an opportunity to inspect the new Packards.

The convention was addressed by Alvan Macaulay, Packard president; M. M. Gilman, vice-president of general sales and advertising; and advertising manager; J. A. Gilray, sales promotion manager; R. M. Williams, service engineer; C. M. Fiske, Cleveland distributor, and R. B. Parker, Philadelphia distributor. and a director of the Packard company.

Visiters of the sales organization showed optimism over the business outlook in practically every part of the country. Not only are sales increasing, they said, but prospects generally are feeling better over the business future.

REINS REOPENING PENDS

Word has been received by Joseph McKnight, manager of the Hastings, Mich., plant of the Packard Motor Car Company, that the firm, which has been in receivership since the announcement of the failure of the bank which opened the plant, has been sold by the receiver and will be reopened.

Mr. McKnight said that the plant will be reopened on a part-time and intermittent basis.

VOIDS FUEL PUMP SUIT

Holding the patent void and no infringement, Federal Judge Arthur J. Tuttle has dismissed the suit brought by the Stewart, Warren, Magney Co. against the A. C. Snark Pong Company, General Motors subsidiary, for an alleged infringement of patent rights to an automobile fuel pump.

BANK OFFICERS NAMED

Fred W. Moore, president of the Commercial & Savings Bank, S. C., announces the election of Charles I. Norman as cashier and director of the bank. Arthur S. Maw, who has been associated with the bank for thirty-four years and cashier since 1922, was elected vice-president.

INSURANCE RECEIVER NAMED

Representative William M. Donnelly, of Detroit, administrative floor leader in the House of Representatives, has been named insurance commissioner by Charles E. Gauss, active under-commissioner for the Michigan property of Lloyds Automobile Company, a subsidiary of the General Indemnity Insurance Company.

SELL AIRCRAFT ASSETS

The date for the sale of the assets of the defunct Detroit Aircraft Corporation has been set for Sept. 15 by William S. Sayres, United States master in chancery.
Priest-Senator Place Bank Blame

New versions of the causes of the collapse of the national banks and trust companies in Detroit were given in dramatic setting before the Wayne County grand jury this week by Senator James Couzens and Rev. Fr. Charles E. Coughlin, the latter being called as a witness because of inferred "inside information" given to him for radio talk at the time the First National and Guardian National banks closed.

Earlier Coughlin, on the stand Wednesday and Thursday, was to be followed by Senator Arthur Vandenberg, it was announced.

Rev. Coughlin, with more or less photographic copies of figures relating to the condition of the Detroit banks, placed the blame for their failure on the management of the boards of directors of the two banks. He admitted, however, that the depositors of the banks may recover as much as 80 per cent of their claims, eventually, through the workings of the government's revaluation of gold, which regulation time is not to testify in the hearing.

Declaring that "God Almighty could not raise the First National," Father Coughlin declared he had known the board of directors for two weeks before the banks closed, to call a banking holiday for the state. "I had information from a source who was looking for the bank to go off," he said. He stated that the Governor professed ignorance of the fact that "Sheep-House" banks in the Thumb district had closed the day he called, Coughlin being in New York at the time.

Calls Mills Testimony False

"For months these,Honors," the witness declared, "tried to cure this damnable depression by pouring in gold at the top while the people starved at the bottom. I'm not criticising." Said Couzens, "but I condemn his philosophy. I'll prove that this was a man-made depression, that in the midst of plenty we are nothing like monkeys on an island full of coconuts without knowing how to gather and eat them."

Fr. Coughlin said that both the last public statements of the First National Bank-Detroit were false in that the "cash on hand item was never mentioned" and that "the true story was that Wilson W. Mills, former chairman of the bank's board, was false. "When Mills testified that 'we had $6,000,000 on hand and government securities' item was $108,855,075 that and the bank was 25 per cent liquid," the real story was in the truth, declared Fr. Coughlin. "When Mills testified that the bank had $60,000,000 with which to meet general deposit withdrawals, again he did not tell the truth," Coughlin continued. "Actually the bank had but $9,302,690 in cash and government bonds, was but 14 per cent liquid and its fund to meet general deposit withdrawals was not more than $49,000,000."

Mr. Hoover, in retirement at his home in Palo Alto, Cal., has refused Prosecutor Toy's request to come to Detroit to testify. An effort will be made to get his deposition. Hoover suggested that all the fact in the Detroit bank situation could be obtained by the federal authorities closely to the key figures.

Couzens Challenges Receivers

Senator James Couzens completed four days on the witness stand Tuesday, in the course of which he challenged the need for the First National and Guardian National banks to substantiate their testimony before the grand jury. Had these two Detroit banks been closed, it could be reopened and pay off depositors 100 per cent.

"I challenge them to produce a statement," he said. "I challenge them to produce the evidence, which made them say under oath that these banks could be opened up and pay depositors 100 per cent. I challenge the banks to produce those records, which made them say under oath that these banks could be opened up and pay depositors 100 per cent. I challenge the banks to demand those records."

"If the Comptroller had enforced the laws as early as 1930," Couzens said, "I would have avoided all this trouble now. There would have been a gradual liquidation of these banks directly."

Senator Couzens charged that in the years just prior to the market crash Detroit had indulged in wilder flights of high finance than any other city.

"No city in the world went through such an orgy of high finance as Detroit," he said. "No place saw such insane pyramiding of holdings, such piling up of paper profits, such reckless mergers and more, men all creating fictitious values and too often destroying the value of sound units in the mergers. The trouble was that everybody was waiting for the prosperity that was just around the corner. Public officials from the President down had been assuring the people of the 'Golden Age' and the 'Golden Opportunity.' I presume federal bank examiners felt it would be a shame to liquidate securities just before the banks had been accredited by the Federal Reserve System. Some of the bankers who have testified have not told the truth.

Neglects to File Claim

Directors of the First National Bank were to be called directly or indirectly. A $5,000,000 when the banks were closed, Couzens testified. He did not state what collateral was being used for the loans.

Failure of the closed First National Bank, Detroit, to file claim against the Detroit Bankers Company, the Trust Company which controlled its stock, for $5,000,000 when the banks were closed, was testified. He did not state what collateral was being used for the loans.

"Because of the failure of the receiver for the First National to file claims officially, the Trust Company may perhaps at some future time be able to get $5,000,000," Judge Richter said. "Again because of this failure, the Trust Company may be able to get $5,000,000, if it files claims. This amount is the largest claim filed that of the Detroit Trust Company for $818,000. Assets filed by the receiver included cash of $52,754, investments of $83,000, and accounts receivable of $4,577,575. The investments included $248,887 shares of stock in the closed First National Bank, on which a value of $5,066,782 was placed, which is the value of the bank was closed and the stockholders are at least presumably liable for double assessment.

Rudy Lowers Prices

Rudy Furnace Company, Dowagiac, has announced price reductions on its standard residential furnaces ranging from 20 to 25 per cent, to take a cut in general trend of the labor and material prices.

Company's unit furnace shipments for the four months through July were 29 per cent higher than for corresponding 1932 period, while unit air conditioner shipments were 71 per cent better.

P. M. Loadings....

Loadings of Pere Marquette in the week ended August 19, totaled 4,377 cars compared with the week last year, which registered an increase of 23.4 per cent over the 3,545 cars in the corresponding week 1932. In the general increase, which was over a year ago, was 29.2 per cent.

Petitions Go to Washington

Carrying petitions signed by 265,757 Detroit citizens, James K. Smith, the company's Detroit Depositors' Committee, left for Washington this week to ask federal aid in the reopening of the two closed national banks in Detroit. The petitions will be presented to the Comptroller of Currency. The petitions ask the Government, on its own initiative, to sponsor a sound plan to reorganize the two banks and the assets of the banks to work for the $80,000 Depositors' Committee Finance Corporation is ready to loan to the receivers of the two banks the maximum amount allowed on the assets of the banks held in trust. If the assets will warrant a larger division at the time the loan is requested by the receivers in cooperation with the depositor an extra dividend, it was said.
INVESTMENTS

Thompson Products, Inc., with a branch plant in Detroit, in July had a net profit of $65,715 as compared with net loss of $18,959 in June. For the six months ended June 30, 1932, the company and its subsidiaries reported net profit of $14,019, equal to preferred dividends to 50 cents a share on 263,160 common shares, against net loss of $13,551 in the first six months of 1932.

C. M. Chester, president of General Foods Corporation, reports a 48 per cent increase in the company's unit sales in July as compared with the same month last year. Reports for the first half of August show a continuation of the favorable trend, he stated. The first seven months of 1933 made a gain of 15 per cent over the same period in 1932.

Sparks-Withington Company, Jackson, reports for the six months ended June 30, 1933, a net loss of $84,141 after charges and depreciation, as compared with net loss of $1,437,857 in the corresponding period of 1932. Net loss for the fiscal year ended June 30, 1933, was $285,137 against loss of $1,159,514 in the preceding fiscal year.

E. I. du Pont de Nemours Company has declared the regular quarterly dividend of 50 cents a share on the common stock to be payable September 15 to stock of record on August 30.

Ann Arbor Railroad reports for June a net loss of $9,935 after taxes and charges, against net loss of $69,452 in June, 1932. Six months' net loss this year was $221,823 as compared with $221,623 for the same period in 1932.

Report of Commonwealth and Southern Corporation and its subsidiaries for the 12 months ended July 31, 1932, shows consolidated net income of $9,283,388 after taxes, interest, amortization, depreciation, minority interest and charges, equivalent after preferred dividends to 50 cents a share on 33,675,328 no-par shares of common stock. This compares with net income of $17,945,337 or 26 cents a share for the 12 months ended July 31, 1931. Directors of the corporation have declared the regular quarterly dividend of $1.50 a share on the $4 preferred stock, payable October 2 to stock of record on September 8.

Briggs Manufacturing Company, Detroit, reports for the June quarter a net profit of $797,158 after depreciation, taxes and charges, equivalent to 40 cents a share on 1,029,000 no-par shares of stock. This compares with net profit of $1,055,967 in the preceding quarter, and with net profit of $347,960 or 18 cents a share in the June quarter of 1932. For the six months ended June 30, 1933, net loss was $98,806 after charges and taxes, as compared with net loss of $606,033 in the first six months of 1932.

Sales of Kroger Grocery and Baking Company for the four weeks ended August 12 totaled $16,751,152, an increase of six per cent over the same period a year ago.

CHAS. A. PARCELLS & CO.
539 Penobscot Building
Randolph 3770
Listed and Unlisted Issues

A plan for the recapitalization of the Pierce-Arrow Motor Car Company, Buffalo, N.Y., and its incorporation from the Studebaker Corporation, has been prepared and the approval of a majority of the stockholders has been sought, according to reports in New York financial circles. Under the plan there will be an exchange of outstanding stock and notes on this basis.

Asbestos Manufacturing Company, Huntington, Ind., in which Detroit capital is invested, reports net profit of $93,850 for the first six months of 1933 after charges and federal taxes, equal to 26 cents a share on the 329,000 common shares. July earnings after charges but before federal taxes and capital stock taxes were $85,826.

Wabash Railway had a net loss of $3,444,631 in the first six months of 1933, as compared with net loss of $4,020,362 for the same period in 1932.

Holland Furnace Company, Holland, reports net loss of $65,851 for the quarter ended June 30, 1933, the first in its fiscal year, as compared with net loss of $755,841 in the June quarter of 1932.

Sears, Roebuck and Company reports sales for the period from July 17 to August 13 of $1,921,070, or 11.1 per cent greater than for the same period a year ago.

Pere Marquette Railway had July net operating income of $327,797 as contrasted with a deficit of $177,122 in the same month in 1932.

Chrysler Employment at Peak

So far as the Chrysler-Plymouth dealer organization is concerned, the N. R. A. is no longer the theoretical stage but is an established success, according to J. W. Frazer, sales manager of Chrysler Sales Corporation. "We are long past the stage of discussing whether the administration's plans for business recovery are going to work," said Mr. Frazer. "They are working. And we have every reason to believe that they will continue to work better and better. Overcoming inertia in business is the hardest part of the job of bringing about a return to normal conditions. Once momentum has been acquired, it is easier to sustain and increase it than to create it in the first place.

"The surest proof of the success of any business plan is whether it is making money. In our picture it most emphatically is doing so. Our distributors and dealers all over the country are making money. In general their reports for the second quarter of this year were phenomenal. The Chrysler Corporation as a whole showed a net profit of $7,255,616 in this quarter alone, against a loss of $3,938,082 in the first quarter. The Chrysler dealer body also enjoyed a very handsome profit as its share of this remarkable national recovery.

"There are now more men on the Chrysler Corporation's payroll than ever before in its history. It has recently been necessary for the Chrysler division to double its field organization.

"Increased employment, of course, extends all through the organization, from the factory right down to the small subdealer. This means that it is promoting a healthy condition throughout the country, instead of merely a local one in Detroit.

"We have been operating on Chrysler cars ever since June and our Plymouth business is growing by leaps and bounds. There is no indication of any slackening up. The first week in August, for example, was one of the best of the year and one of the best we ever had in the month of August. This condition is remarkable in that generally there is a distinct drop in the sales curve at this time of year. In fact, August for the industry in general used to be considered one of the slow months, but it is going to compare favorably with any of them where Chrysler-Plymouth dealers are concerned.

"Since the first of the year, we have added 1,962 new dealers to the Chrysler Sales Corporation roster, all these being men who are in our family for the first time—not those that merely have signed new agreements. The most remarkable feature of this great growth of our dealer body is that over 450 of these new outlets have been secured since the end of June, or at a time when in former years sales would have shown decreases over the spring and early summer peaks. In adding these new dealers, we have been extremely "choosy" too. We have been able to pick good men in good territory. It is gratifying to know, also, that many of those that have joined forces with us have dropped other lines and have been franchise men in the past. Naturally the dealers are best qualified to judge values and when they select Chrysler-Plymouth to back to prosperity, there is no doubt that we are turning out the kind of merchandise that the public wants at the prices it can afford to pay.

BOOSTS HOLLAND PAYROLL

The H. J. Heinz Company, food processors and manufacturers, has substantially increased employment at its various plants throughout the country since May 1, including the payroll of the plant at Holland, Mich.

AGREE ON TRUCK LAWS

Michigan, Ohio, Illinois and Indiana have agreed that trucks, properly equipped in their home states, will not be molested in the other states. At the present time, the laws of the three states vary greatly in the type of lights required on the rear of trucks. This regulation is being put into effect in Indianapolis. At the same time the three states agreed to make residence of the owner and not his place of employment the determining factor in the purchase of license plates. Thus a man living in Michigan and working in Ohio or Indiana, or Illinois, will purchase Michigan license plates.
Oil production and drilling activity in Central Michigan has reached a new high mark, according to current figures released by the State Department of Conservation. The Department lists 350 commercial oil producers, 31 gas producers and 37 wells in the process of drilling. This total of 528 locations excludes dry holes and former producers which have been muddied in. There are six fields in the central part of the state, the largest of which is the so-called east field in Midland and Isabella counties, where the most active field in that in Porter township, Midland county. New permits are being taken out at the rate of about 25 weekly.

Raymond, president of the Mammoth Petroleum Company, whose Verreto No. 1 well in the Vernon township, Isabella county field recently came in as the state's largest oil producer, set a new record when he took out ten permits to drill at one time.

Hearing on the Three districts petition has been set by the Commission for August 31. An ordinance providing for the sale of natural gas in the city of Lansing was introduced in the Lansing City Council this week. It was explained that the newly organized Central Michigan Natural Gas Company intends to bring natural gas to Lansing from a field west of Mt. Pleasant. If given the right to sell gas in the city, the company will lay its own lines.

Rivalry as to which is the state's largest oil producer was intensified recently when the McClanahan Oil Company's Hathaway 1, Section 17, Porter township, boosted its output to about 5,000 barrels daily. This well was completed on July 18 for an initial of 1,710 barrels daily. Later it was deepened and showed a daily production of 3,600 barrels, and further drilling boosted its output to 3,800 barrels against heavy back pressure. Only recently the well was opened up and it flowed 5,000 barrels into the line in less than 24 hours.

Five completions were recorded recently in the Porter field. The Carter 1 well of the Carter Oil Company, in Section 21, showed an initial production of 1,150 barrels daily. The same interests are spudding the Carter 12 and here is expected to exceed their Carter 3. The Carter 1 well of the Wilson Trustee's in Section 18 flowed 61 barrels of oil in 35 minutes after being drilled to 3,423 feet but failed to sustain production. It was expected to be treated with acid. Fred W. Brown's new well in Section 26, for 306 barrels initial daily output; Pure Oil Company's second Section 25, made only about 30 barrels initial and will be treated with acid. While the same company's State-Porter 2, Section 15, also made a slight showing and will be treated.

The Rock Oil Company in Section 26, is to be abandoned as a dry hole.

In the Vernon field in Isabella county J. V. Wickland's Carter, in Section 22, Vernon township, was brought in with an initial production estimated at more than 1,900 barrels daily. The "Kingskin" of the Vernon field, the Verreto, 1, Section 23, which originally was rated as Michigan's largest producer with an estimated range of between 2,000 and 10,000 barrels daily, now is flowing about 1,000 barrels daily against back pressure. It has stimulated production on the immediate area with more than a score of tests underway and many more under consideration.

The Cottee wells are being held over for the drill in Porter township last week, making it the most active field in Michigan.

So far, the Michigan's largest producer with an estimated range of between 2,000 and 10,000 barrels daily, now is flowing about 1,000 barrels daily against back pressure. It has stimulated production on the immediate area with more than a score of tests underway and many more under consideration.

Rivalry as to which is the state's largest oil producer was intensified recently when the McClanahan Oil Company's Hathaway 1, Section 17, Porter township, boosted its output to about 5,000 barrels daily. This well was completed on July 18 for an initial of 1,710 barrels daily. Later it was deepened and showed a daily production of 3,600 barrels, and further drilling boosted its output to 3,800 barrels against heavy back pressure. Only recently the well was opened up and it flowed 5,000 barrels into the line in less than 24 hours.

The application of the Wayne Dining and Distilling Company, Northville, which proposes to manufacture bourbon and rye whiskey, has been actioned to 1,500,000 barrels of whisky daily.

When the next meeting of the executive committee of the Detroit Liquor Control Commission is held on September 1, the city council of Dearborn will make for a formal request for the approval of a license for the Ford Dearborn Brewing Company, of which Edwin R. Stroh is president. This concern proposes to construct a modern brewery plant on Schaefer road near the Ford Motor Company's administration building.

Tivoli Brewing Company, Detroit, early in September will complete the installation of a 365,000 bottling unit, which with the company's oil company and Fred Stewien will give Tivoli a capacity of more than 182,000 bottles every 15 hours. The present bottling capacity of the company had been fully used since the legalization of beer, it was announced.

Contracts for brew house equipment for the Fosheil Brewing Company, Detroit, have been let to Stokl, Gusmer and Company, Inc., Ho-

Among the new corporations filing at Lansing recently was the Continental Malt Company, with capital of $1,000,000, to manufacture and sell malt and malt products.

August malt shipments of H. W. Richel and Company, Detroit, will reach 85,000 bushels, the highest record since the company was organized 57 years ago, it was announced recently. Malt shipments of the company doubled immediately after the legalization of beer, President Armin Richel pointed out.

To become legal in Michigan, the number of licensed manufacturers of liq id malt in the state has dropped from 38 in 1931 to 19 in 1932.

Seek Capital For Wine-Whiskey Plants

So certain are members of the State Securities Commission that repeal of the national prohibition law is forthcoming shortly that they decided this week to grant the Puritan Winery, of Paw Paw, permission to sell securities in the company which will manufacture wine of an alcoholic content of 16 to 18 per cent. The company was authorized to issue 100,000 shares of stock, 10,000 of which will be placed in escrow until the sale of the rest have been completed within two weeks, despite the fact that the law prohibits the manufacture of intoxicating liquors.

The application of the Wayne Dining and Distilling Company, Northville, which proposes to manufacture bourbon and rye whiskey, has been actioned to 1,500,000 barrels of whisky daily.

When the next meeting of the executive committee of the Detroit Liquor Control Commission is held on September 1, the city council of Dearborn will make for a formal request for the approval of a license for the Ford Dearborn Brewing Company, of which Edwin R. Stroh is president. This concern proposes to construct a modern brewery plant on Schaefer road near the Ford Motor Company's administration building.

Tivoli Brewing Company, Detroit, early in September will complete the installation of a 365,000 bottling unit, which with the company's oil company and Fred Stewien will give Tivoli a capacity of more than 182,000 bottles every 15 hours. The present bottling capacity of the company had been fully used since the legalization of beer, it was announced.

Contracts for brew house equipment for the Fosheil Brewing Company, Detroit, have been let to Stokl, Gusmer and Company, Inc., Ho-

Among the new corporations filing at Lansing recently was the Continental Malt Company, with capital of $1,000,000, to manufacture and sell malt and malt products.

August malt shipments of H. W. Richel and Company, Detroit, will reach 85,000 bushels, the highest record since the company was organized 57 years ago, it was announced recently. Malt shipments of the company doubled immediately after the legalization of beer, President Armin Richel pointed out.

To become legal in Michigan, the number of licensed manufacturers of liquid malt in the state has dropped from 38 in 1931 to 19 in 1932.
ed to depositors of the Peoples Wayne County Bank and the First National Bank. The capital stock plan as approved by the treaty is $50,000, subscribed for by the R. P. C. and $115,000 of common stock and surplus to be subscribed for by the depositors of the banks. The suggested stock purchase is 16 per cent of the deposits which may be paid for by May 15.

The Farmers and Merchants Bank of Wheeler, reopened August 21 and will remain open for the first four weeks for the release of 50 per cent of the deposits. Early in September the bank will be reorganized and will locate at Merrill and be known as the Farmers and Merchants Bank of Merrill. H. C. Mead will be the cashier.

Government examiners have completed a reappraisal of assets of the Capital National Bank, Lansing, with a view to reorganization of the bank. Their report has been placed in the hands of the subcommittee of the depositors’ group, headed by Richard H. Scott. The committee will study the report, with the expectation that it will indicate the definite plan of action for presentation to depositors. The bank has been closed since February. Since March it has operated under N. P. Hull as conservator.

State Property Valuation Placed At $5,829,284,000

Michigan’s final property valuation for the coming year will be $5,829,284,000, it was indicated by a follow-up hearing before the board of examiners of the tentative figures submitted by the State Tax Commission. The final figure is a reduction of approximately $5,536,784,000 recommended by the commission but $755,024,000 under the 1932 valuation. Oakland, reduced $1,000,000; Monroe, which was accorded a cut of $500,000, were the only two counties to be given smaller valuations than those recommended by the commission. The other 81 counties of the state will stand the increase required by the revaluation action in the district. The area includes Wayne, paying almost half of the state tax, will have its levy raised about $500.

The present trend is for the property board to fix the property levy next month but it is not expected to go beyond $3,500,000 compared with a property tax of $2,745,000 for 1932. The legislature eliminated all of the real estate levy with the sales tax with the exception of Universal, Michigan and Michigan State college requirements.

Only four counties protested their valuations and percentages before the equalization board. In addition to Oakland and Monroe, representatives from Wayne and Ottawa argued for reductions. Calhoun, Genesee, Gladwin, and Hillsdale counties were represented at the hearing but they offered no complaints.

RULES MILK INDUSTRY

A federal “milk administrator” will take over complete control of the milk production and distribution industry of the Detroit metropolitan area following the signing last Monday day of a U. S. Agriculture Department agreement by practically every dealer and producer in the district. The area includes Wayne, Farmington Hills and Cumberland counties.

The administrator will have power to enforce regulations governing prices charged to consumers, prices paid to dealers by the farmers and the various practices in the distribution of milk. Heavy penalties are provided for the infractions of rules regulating trade practices.

In a message to the milk dealers, the Department states: “The new program is designed primarily to give the farmers and consumer under the Adjustment Act.”

COLLECTS PROCESSING TAX

William A. Stancil, assistant collector of internal revenue at Detroit for 12 years, has been reassigned to the Revenue Division by Horatio J. Abbott, recently sworn in as Collector of Revenue succeeding Fred L. Woodworth.

A plan has been proposed to the comptroller for the current fiscal year appointing a committee of trustees to act for the depositors of the closed First National Bank to have the remaining assets of the bank. If approved and carried out, it is said the plan will eliminate need for reorganization. The plan must be approved at Washington and by 75 per cent of the depositors. It provides that five trustees be named to make the assets payable to assets and attempt to liquidate them in a beneficial manner.

The official statement of Pontiac’s new Community National Bank since its opening, lists the capital stock, $200,000 of common and $220,000 of preferred, $50,000 surplus, undivided profits of $25,749; demand deposits of $1,947,532 and time deposits of $142,834.

First State Bank of Holland, closed since Feb. 14, reopened Aug. 18 under a new organization plan and 59 per cent of the deposits were made immediately available to depositors.

Hopes for the early reorganization of the State Savings Bank were dashed when H. L. Schutz announced that about two-thirds of the depositors have now signed the reopening agreement. They will donate $150,000 in capital stock has been subscribed.

Plans for the reopening of the Clinton Savings Bank have been approved by the state banking department. It is expected that the bank will be in business September 15 or shortly thereafter.

Bank Ads Officers

Election of two new officers in the Detroit Savings Bank is announced by Walter L. Dunleavy. H. Rupp was appointed as assistant cashier, and Gustave A. Wellensick was made comptroller. In addition to the appointment of new officers, the general appointment of the board of directors in the newly organized bank has been completed.

Following a new bank to take over the liquid assets of the closed First National Bank of Ypsilanti, the payment of a portion of the amounts due the depositors in the old bank has been increased. The notification of the committee that the plans had been formally approved by federal officials and that the bank will be open for the opening of the new bank about Sept. 15, with the first pay-off of 30 per cent to be made to old depositors 10 days later.

At a recent meeting of the stockholders of the St. Louis Commercial Savings Bank, St. Louis, Mo., it was voted to reorganize the bank under the plan of the state banking department. This provides for the payment of fifty per cent of the deposits over a period of five years. All stockholders will be assessed 100 per cent, as provided by the state law.

Deposits in the reorganized Shingwauke County Bank, which was reopened at Durand, Aug. 14, are currently being made, exceeded the withdrawals during the first day.

Plans have been announced for the reorganization and reopening of the Calhoun County Bank of Homer, which has been operated under a conservator. Leo Warner, of the bank, has been appointed as conservator. The time for reopening has been set for September 25.

A. E. Shimek was appointed receiver of the bank by Circuit Judge Jesse H. Root, succeeding V. B. Sidle designated. Mr. Morton has accepted a position with the Peoples State Bank of Monroe.

The St. Charles State Bank, operating under the Federal Reserve System, reopened Aug. 14 under federal license.
A GOOD RULE FOR 1933 CONDITIONS:

If you are a factory owner or plant manager, it will pay you to consider this rule:

NEVER PUT IN A HEATING JOB OF ANY KIND BEFORE FINDING OUT WHAT ELECTRIC HEAT WILL COST AND WHAT IT WILL DO IN COMPARISON WITH FUEL.

There have been mistaken impressions in the past about the cost of electric heat for industrial uses. But no manufacturer can afford to continue this policy of vague misconception. Here are the facts of the matter: Electric heat costs less because it can be confined 100 per cent to its job, rather than heating the surrounding space or "going up the flue." It can be made very largely to fit between the power peaks at a fractional cost—and further, it is figured at the low end of a sliding scale of rates. It produces a superior product with much less spoilage in almost every case, and often at a higher rate of speed.

Small electric heating units—SPOT, STRIP, and DIP—cost $1.50 and up. By spending a small amount of money, you can often effect a large saving. Our engineers will gladly discuss with you any heating problem you may have, no matter how small, and submit recommendations. Call Randolph 2100 and ask for the Power Sales Division. There is no obligation—we do not sell this equipment.

The

Detroit Edison Company
The Book of Michigan Industry

CONSTRUCTION

- Items selected from reports issued by the Builders and Traders Exchange of Detroit.

- Bay City contemplates major improvements to the waterway shipping docks at the cost of $20,000. E. E. leaf, city engineer. Also airport improvements costing $20,000.

- Michigan State Conservation Department is completing plans for many improvements to state parks throughout Michigan. P. F. Hoffmaster, superintendent of parks.

- Freshauch Trailer Company will erect an addition to its plant on Harper avenue, Detroit, Albert Kahn, Inc., architects.

- Henry M. Martens, Detroit, has been awarded the contract for the erection of a church building in Dearborn for the Evangelical Lutheran Church of Atonement, Merritt and Coyle, Detroit, architects.

- The City of Bay City is taking preliminary steps for the construction of a municipal hospital.

- Francis Engineering Company, Saginaw, is preparing plans for a $40,000 sewage disposal plant and sanitary sewer system for the city of Durand.

- Estimates on the cost of the construction of a municipal electric plant.

- Consumers Power Company in the last 12 months ended July 31, 1933, had net income of $7,205,424 against net income of $16,452,345 in the preceding 12 months.

- T. C. Hughes, Detroit architect, is taking bids for the construction of an apartment building on Collingwood avenue, Detroit, for Robert Powell Bldg. Co. Sept. 1.

- Kent County Board of Supervisors contemplates the erection of a community building at Grand Rapids.

- The City of Holland contemplates the construction of a "miniature Netherlands" on the Black River flats, Holland, at the estimated cost of $450,000. It will involve buildings, bridges, canals, paving, sewers, etc.

- The village of White Cloud contemplates the expenditure of $12,900 for alterations and improvements to its water supply system.

- Tawas City expects to spend $20,000 this fall on improvements to its water supply system.

- Maurice Clausen Company, Detroit, has been awarded the contract for the construction of a storage plant at Hillsdale for the Hickok Oil Corporation, Toledo.

- Ayres and Norris, Lewis and May, Ann Arbor engineers, are preparing preliminary plans and surveys for an electric light and power plant for the City of Adrian.

- U. S. Engineers, Milwaukee, Wis., contemplated harbor improvements at South Haven costing $60,000.

- Koerss Paint and Glass Company, Flint, will spend $12,500 for rebuilding its store and warehouse building.

- Francis Engineering Company, Saginaw, is making surveys and preliminary plans for a $26,000 sewage disposal plant for the village of Linden, and a $40,000 sewage disposal plant for Durand.

- Grand Trunk Railway, Detroit, contemplates the construction of a warehouse, dock and terminal at Muskegon, costing about $100,000.

- Peter Ebels, Grand Rapids, has been awarded the general contract for the $45,000 dormitory building to be erected in Grand Rapids for the Little Sisters of the Poor. Harry Colton, Grand Rapids, architect.

- The City of Detroit has already been converted into the Ford factory. Professor Landshut, the Ford factories. Professor Landshut, the Michigan State College declare that Mr. Ford in his extensive growing of the soy bean, from which comes many ingredients that are now passing through the experimental stages at the Ford laboratories, has stabilized the soy bean market in the United States.

- All farm equipment, underwritten by Mr. Ford, is charged against the cooperative unit of other farm equipment, and the majority of the soil is up to the value of $52 a month. Since many new and many new and many new and many new soybean fields have been started, this will carry through the full season and in that event they receive the unsecured balance in cash. The community is a medium through which a farmer, temporarily detached from a pay-roll, may obtain subsistence in exchange for his labor on the farm. Also he shares in the profits on what he produces.

Seeds Grains As Fuel

Identical in pattern, but larger in acreage, is the Lenawee Cooperative Industries, centering in the town of Tecumseh, in Southwestern Michigan, fifty miles from Dearborn. Here more than 10,000 acres have been acquired, including the early Michigan village of Macon, which Mr. Ford has had restored. One of the most beautiful of the "little industries" is now being built on the Clinton River at Tecumseh, on the site of an old mill. As of old, water will furnish the needed power, but by the modern method of turbine and generator.

In Lenawee county the soy bean is the principal crop, the total acreage being 1,300. In addition to many root crops there was a liberal seeding of wheat and planting of corn in the spring. These crops, however, are not thrown into competition with the commercial farmer, but will go through Ford laboratories. Mr. Ford believes the time near when grains will furnish the fuel for little industries when it is not possible to locate them on water power sites. In fact power is already being obtained in this manner by Ford at Greenfield Village, but only in a limited and experimental way.

Thus, with the actual start made in converting farm products into materials and articles other than food, by uniting the farm with the factory, it is now easier to comprehend what Mr. Ford meant when he recently announced his intention of establishing "little industries" at many points in the United States. He is at work on a plan to build and operate plants for the making of automobile parts at Ford Motor Company sales or distribution points. Since there are about 6,000 of these, a large choice of suitable sites to select from. The network of Ford distribution and assembly points is, already in operation, a part of the most important phase of decentralized manufacture—transportation—he declared. Whether in this step by step in the program of decentralization, Mr. Ford will carry out the cooperative industries idea, he refrained from making any statement until plans take more definite form.

Ford Links Farms-Factories To Combat Unemployment

(Continued from page 58)
**HANNA COAL COMPANY**

Offers for every fuel problem a marked saving with Hanna No. 9 Mine Mechanically Washed and Cleaned Coal, whether your boilers are hand fired, stoker fired, or equipped with a powered fuel installation.

Hanna No. 9 Egg Coal and Especially Prepared Stoker Coal are really manufactured products. The removal of all foreign elements, the washing, cleaning, and drying, all contribute to an achievement of standardized production on a large scale.

The definite savings in energy cost and the increased steam production efficiency of Hanna No. 9 Coal are factors that can be definitely relied upon without exception. Standardize on Hanna No. 9 Coal. It pays you.

**General Offices:**
1300 LEADER BUILDING, CLEVELAND, OHIO.

**Detroit Office:**
2939 BOOK BUILDING, DETROIT, MICH.

---

**BUYERS DIRECTORY**

<table>
<thead>
<tr>
<th>ACCOUNTANTS—(Certified Public)</th>
<th>PARKER, DAVIDSON &amp; ELISHOFS, DETROIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR COMPRESSORS</td>
<td>GLOBE MFG. CO., BATTLE CREEK</td>
</tr>
<tr>
<td>AUTO CLUTCHES</td>
<td>LONG MANUFACTURING CO., DETROIT</td>
</tr>
<tr>
<td>AUTOMOTIVE PARTS</td>
<td>LONG MANUFACTURING CO., DETROIT</td>
</tr>
<tr>
<td>AUTO RADITATORS (Mfrs.)</td>
<td>LONG MANUFACTURING CO., DETROIT</td>
</tr>
<tr>
<td>BEARINGS, BALL, ROLLER and THRUST</td>
<td>DETROIT BALL BEARING CO., DETROIT</td>
</tr>
<tr>
<td>BLOW PIPE and EXHAUST SYSTEMS</td>
<td>THE KIRK &amp; BLUM MFG. CO., CINCINNATI and DETROIT</td>
</tr>
<tr>
<td>CAR WASHERS</td>
<td>GLOBE MFG. CO., BATTLE CREEK</td>
</tr>
<tr>
<td>CASTINGS (Die)</td>
<td>BENTON HARBOR MALEABLE IND., BENTON HARBOR</td>
</tr>
<tr>
<td>CASTINGS—Grey Iron</td>
<td>CAPITOL CASTINGS CO., LANSING, GENERAL FOUNDRY &amp; MACHINE CO. FLINT—MARSHALL</td>
</tr>
<tr>
<td>CASTINGS (Malleable)</td>
<td>CADILLAC MALEABLE IRON CO., CADILLAC</td>
</tr>
<tr>
<td>CLEANERS—CHEMICAL</td>
<td>REX PRODUCTS &amp; MFG. CO., DETROIT</td>
</tr>
<tr>
<td>DIES AND TOOLS</td>
<td>THE CLEVELAND PUNCH &amp; SHEAR WORKS CO., CLEVELAND</td>
</tr>
<tr>
<td>DRILLS</td>
<td>THE CLEVELAND PUNCH &amp; SHEAR WORKS CO., CLEVELAND</td>
</tr>
<tr>
<td>ELECTRICAL EQUIPMENT</td>
<td>GENERAL ELECTRIC SUPPLY CORP., DETROIT</td>
</tr>
<tr>
<td>FORGINGS</td>
<td>HURON FORGE &amp; MACHINE CO., DETROIT</td>
</tr>
<tr>
<td>GASKETS</td>
<td>BENTON HARBOR MALEABLE IND., BENTON HARBOR</td>
</tr>
<tr>
<td>GASOLINE</td>
<td>DETROIT GASKET &amp; MFG. CO., DETROIT</td>
</tr>
<tr>
<td>GENERAL OIL CO., DETROIT</td>
<td></td>
</tr>
<tr>
<td>INSURANCE (Automobile)</td>
<td>MICH. MUTUAL LIABILITY CO., DETROIT</td>
</tr>
<tr>
<td>INSURANCE (Casualty)</td>
<td>MICH. MUTUAL LIABILITY CO., DETROIT</td>
</tr>
<tr>
<td>INSURANCE (Automobile Liability)</td>
<td>MICH. MUTUAL LIABILITY CO., DETROIT</td>
</tr>
<tr>
<td>INSURANCE (Property Damage, Collision)</td>
<td>MICH. MUTUAL LIABILITY CO., DETROIT</td>
</tr>
<tr>
<td>INSURANCE (Plate Glass)</td>
<td>MICH. MUTUAL LIABILITY CO., DETROIT</td>
</tr>
<tr>
<td>INSURANCE (Public Liability, all Risks)</td>
<td>MICH. MUTUAL LIABILITY CO., DETROIT</td>
</tr>
<tr>
<td>LEAD PIPE &amp; SHEET LEAD</td>
<td>DETROIT LEAD PIPE WORKS, DETROIT</td>
</tr>
<tr>
<td>LUBRICANTS</td>
<td>STANDARD OIL CO., DETROIT</td>
</tr>
<tr>
<td>MACHINERY</td>
<td>THE CLEVELAND PUNCH &amp; SHEAR WORKS CO., CLEVELAND</td>
</tr>
<tr>
<td>METAL FINISHING</td>
<td>PARKER HUNT PROOF CO., DETROIT</td>
</tr>
<tr>
<td>MULTITRANSFER</td>
<td>ACE LETTER SHOP, 600 CAPITAL PARK BLDG., DETROIT</td>
</tr>
<tr>
<td>TINS, INDUSTRIAL</td>
<td>THE KIRK &amp; BLUM MFG. CO., CINCINNATI and DETROIT</td>
</tr>
<tr>
<td>PAPERS</td>
<td>KALAMAZOO VEGETABLE PARCHMENT CO., KALAMAZOO</td>
</tr>
<tr>
<td>PAPER BOXES</td>
<td>GRAND RAPIDS PAPER BOX CO., GRAND RAPIDS</td>
</tr>
<tr>
<td>PATTERN MAKERS</td>
<td>AJAX PATTERN WORKS, DETROIT</td>
</tr>
<tr>
<td>PUNCHES AND SHEARS</td>
<td>THE CLEVELAND PUNCH &amp; SHEAR WORKS CO., CLEVELAND</td>
</tr>
<tr>
<td>PRINTERS</td>
<td>BLAND PRINTING CO., DETROIT</td>
</tr>
<tr>
<td>PRINTING</td>
<td>MICH. HALL TELEPHONE CO., DETROIT</td>
</tr>
<tr>
<td>RADIATORS</td>
<td>AMERICAN RADIATOR CO. OF MICH., DET.</td>
</tr>
<tr>
<td>REAL ESTATE</td>
<td>FISHER &amp; CO., DETROIT</td>
</tr>
<tr>
<td>SAW AND KNIFE (Regulating)</td>
<td>SAW &amp; SPECIALTY CORP., DETROIT</td>
</tr>
<tr>
<td>SCALES (Industrial)</td>
<td>STANDARD COMPUTING SCALE CO., DET.</td>
</tr>
<tr>
<td>SHEET METAL WORK</td>
<td>THE KIRK &amp; BLUM MFG. CO., CINCINNATI and DETROIT</td>
</tr>
<tr>
<td>SPRAY BOOTHS and EXHAUST SYSTEMS</td>
<td>KIRK &amp; BLUM MFG. CO., CIN. &amp; DET.</td>
</tr>
<tr>
<td>SPRINGS (Auto Cushions)</td>
<td>L. A. YOUNG SPRING &amp; WIRE CORP., DETROIT</td>
</tr>
<tr>
<td>SPRINGS (Mechanical)</td>
<td>L. A. YOUNG SPRING &amp; WIRE CORP., DETROIT</td>
</tr>
<tr>
<td>STAMPINGS</td>
<td>KIRK &amp; BLUM MFG. CO., CIN. &amp; DET.</td>
</tr>
<tr>
<td>STAPLING MACHINES</td>
<td>STAR PAPER FASTENER CO. OF MICH., TRANSPORTATION BLDG., DETROIT</td>
</tr>
<tr>
<td>STEEL</td>
<td>CRANE-SCHRAEGE, DETROIT</td>
</tr>
<tr>
<td>STEEL CASTINGS</td>
<td>MONROE STEEL CASTINGS CO., DETROIT</td>
</tr>
<tr>
<td>STEEL CASTINGS</td>
<td>CRANE-SCHRAEGE STEEL CO., DETROIT</td>
</tr>
<tr>
<td>STEEL CASTINGS</td>
<td>TAMBERG (Shipping Room, etc.)</td>
</tr>
<tr>
<td>TOOLS</td>
<td>Star Paper Fastener Co. of Mich., Transportation Bldg., Detroit</td>
</tr>
<tr>
<td>TOOLS</td>
<td>THE CLEVELAND PUNCH &amp; SHEAR WORKS CO., CLEVELAND</td>
</tr>
<tr>
<td>TOOLS AND DIES</td>
<td>GARMENT TOOL &amp; DIE CO., DET.</td>
</tr>
<tr>
<td>TOOLING</td>
<td>CRANE-SCHRAEGE STEEL CO., DETROIT</td>
</tr>
<tr>
<td>TOOLING</td>
<td>TRANSMISSION APPLIANCES</td>
</tr>
<tr>
<td>TUBING</td>
<td>C. A. ROBERTS CO., DETROIT</td>
</tr>
<tr>
<td>WINDOW CLEANING</td>
<td>PRUDENTIAL WINDOW CLEANING CO., DETROIT</td>
</tr>
<tr>
<td>WIPING CLOTHS</td>
<td>DETROIT WASTE WORKS, DETROIT</td>
</tr>
<tr>
<td>WIRE CLOTH</td>
<td>MICHIGAN WIRE CLOTH CO., DETROIT</td>
</tr>
<tr>
<td>WIRE AND WIRE PRODUCTS</td>
<td>CRANE-SCHRAEGE STEEL CO., DETROIT</td>
</tr>
<tr>
<td>WIRE PRODUCTS (Diversified)</td>
<td>L. A. YOUNG INDUSTRIES, INC., DET.</td>
</tr>
</tbody>
</table>
Sign the NRA pledge

MAKE YOUR OWN MARKET!

MARKETS— that's what we've been needing to bring back prosperity.
The farmer needs a market for his crops, the manufacturer needs a market for the things he makes, the retailer needs a market for the things he sells.

But what's a market, after all? People with money to spend.

And the only way to create that market is to give people work so they can earn that money.

YOU can help to make your own market if you will sign the President's Reemployment Agreement—agree to a shorter work hour, a higher minimum hourly or weekly wage, in your business.

And fast! For if every employer cooperates with this National Recovery campaign right away, then we'll have new markets—people with money to spend—for the things we grow and the things we make RIGHT NOW!

And that spells GOOD TIMES AHEAD for us all!
USE WATER TO REDUCE YOUR FREIGHT COSTS

For nearly eight months of every year water transport is available on the Great Lakes.

Water transport is not limited to waterside manufacturers and producers alone. Its usefulness, in connection with rail hauls or switches, extends far back into the land. The Nicholson Terminal can serve a shipper located at any point in Wayne County, or outside it.

Right here within Detroit's switching limits, but clear of the traffic congestion in the downtown area, is an extensive modern terminal that supplies the necessary speed in the transfer of bulk freight from ships to cars and from cars to ships—a terminal that keeps freight constantly in motion.

Freight leaving your plant in the morning goes aboard a vessel the next morning. Incoming water freight pours into waiting cars 10 minutes after the ship's hawsers are made fast to the dock.

If you are not saving freight costs on Steel, Sugar, Sulphur, Coal, Sand or other bulk shipments by using these modern facilities, call the Nicholson Terminal & Dock Company for particulars.

NICHOLSON TERMINAL & DOCK CO.
P. O. BOX 302, RIVER ROUGE, MICH. - PHONE Vineyard 2-4500 - Foot of Great Lakes Ave.
NEVER before has American industry been so strikingly, so graphically "high-lighted" to the vast consuming public, as at the Century of Progress, Chicago.

And of all the imposing commercial exhibits shown at this great fair, none has caused more widespread comment and interest than the exhibit sponsored by General Foods Corporation.

General Foods is a Michigan-born industry...successor to the original Postum Company founded years ago in "a little white barn in Michigan." General Foods maintains the huge Postum plant at Battle Creek—and another plant at St. Clair for the production of Diamond Crystal Shaker Salt.

And these famous General Foods products...products enjoyed by people in every quarter of the globe...are strictly Michigan-made—in Michigan, by Michigan people: Post Toasties, Post's 40% Bran Flakes, Post's Whole Bran, Instant Postum, Postum Cereal, Grape-Nuts, Grape-Nuts Flakes, Diamond Crystal Salt.

GENERAL FOODS CORPORATION