As a result of an offer an agreement dated June 3, 1880 was made by the Wisconsin Valley Railroad Company with a line from Tomah to Merrill Property with the Milwaukee whereby the latter was to exchange its bonds at 5%, payable semi-annually, due in forty years from July 1, 1880, and secured by a mortgage on the line to the New England Trust Company for the preferred stock of the Wisconsin Company at 85% and for the common stock at 70% of their face value.[1] The deal went through on October 19, 1880. The mortgage provided for an additional $15,000 per mile for extensions. Later the line was extended to Minocqua, 50 miles.

In June, 1872 the Milwaukee acquired the Necedah & Camp Douglas Railroad Company whose line ran from Lisbon to Necedah, 13 miles.[2] The Milwaukee helped build the line previously.

In 1880 the Lisbon, Necedah & Lake Superior Railroad Company was organized in the interests of the Milwaukee and completed a line from Necedah to Dexterville Junction in 1880 at a cost of $157,000 which was furnished by the Milwaukee. At the latter point this road connected with the Wisconsin, Pittsville & Superior Railroad Company whose line ran from Dexterville Junction to Pittsville with a branch from a point near Pittsville east to Vesper, 21 miles, and with the

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1. Ibid., p. 245.
2. Ibid., p. 245.

Milwaukee, Deterville & Northern Railway Company whose line ran 17 miles northwest from Deterville. In June, 1890 the Milwaukee secured all the stock of these latter two companies at a cost of $547,000 in cash.[1] On June 30, 1891 all three were deeded to the Milwaukee.[2] These lines gave the Milwaukee access to the adjacent hardwood lumber regions.[3]

In 1878 the Milwaukee people came into control of the Viroqua Railway Company with a partially completed road from Sparta to Viroqua. Various terms had pledged financial aid, most of which was paid. The Milwaukee constructed the road from Sparta to Melvina, 12 miles, in 1878 and completed the line from Sparta to Viroqua prior to September 1, 1879 as per agreement. The acceptance by the Milwaukee of an offer as of September 30, 1880 to sell the road in consideration of the debt due the Milwaukee resulted in its transfer.

In 1880 the Milwaukee decided to extend its line from Monroe, via Gratiot, to Shullsburg, and in connection therewith, decided to secure the Mineral Point Railroad Company with its line from Mineral Point, Wisconsin, to Warren, Illinois, and from Calavine on this line to Platteville, 50 miles in length. The road was transferred to the Milwaukee for $1,200,000 bonds secured by a mortgage on the property.[4] This mortgage also covered the Milwaukee lines west of Monroe and provided for

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1. Annual Report of the C.M.& St.P.Ry.Co. to the stockholders, 1891, p. 16. These annual reports will be referred to hereafter simply as annual reports.
2. Cary, p. 247; Annual Report, 1892.
3. Chronicle, vol.53, p. 135.
4. Cary, p. 251.

bonds additional to the $1,200,000. The mortgage was known as the Mineral Point Division Mortgage.

In 1880 the Milwaukee built a line from Janesville to Beloit connecting the Prairie du Chien and the Western Union lines of the company. A line was constructed from Rockton south to Rockford under the name of the Illinois & Wisconsin Railroad Company with the title held by the Milwaukee through a perpetual lease. The Milwaukee and the Chicago,Burlington & Quincy Railroad Company each secured a half ownership in a line from Rockford to Davis Junction. The numerous recent acquisitions above together with lines previously held formed a direct route north and south through central portions of Wisconsin and northern Illinois with good connections with Chicago. This arrangement meant good service to the several interior cities and adjacent territory and profits to the company.

The Pine River Valley & Stevens Point Railway with a narrow gauge line from Lone Rock to Richland Center, 15 miles, was acquired and the gauge widened. Branch lines from Necedah to the Wisconsin River at Prairie du Lac, 10 miles, and from Brandon to Markesan, 12 miles, were constructed. In 1889 a nine mile road was built around Milwaukee, and early in 1897 a new passenger station was opened in the Fourth Ward in Milwaukee. In 1898 a branch was constructed from Bradford to New Glarus, 23 miles.

In 1879 the Milwaukee purchased over 80% of the stock, $320,000 of the bonds, and most of the judgments (numerous)

against the Chicago & Pacific Railroad Company with a line from Chicago, via Elgin, to Byron, 80 miles.[1] In April, 1880 the road was purchased, released by the receiver, and leased in perpetuity to the Milwaukee as with other purchased roads in Illinois, there being no statute in that state authorizing a sale to this company. In 1880 an extension of this line was completed from Byron to an intersection with the Milwaukee line near Lenark. The mortgage on this line was executed by the Milwaukee to the Farmers Loan and Trust Company to secure $3,000,000 of 6% bonds, due in thirty years.

To provide for contemplated extensions west, the Milwaukee executed a mortgage as of January 1, 1881 to secure bonds at 5%, payable semi-annually, due in forty years, and to be issued at $30,000 per mile on the roads to be constructed, also for bridges over the Mississippi and Missouri Rivers, and for the expense of second track and additional equipment. The mortgage covered the railroads formerly known as the Dubuque & Southwestern, the Sioux City & Dakota Railroad, and all lines of said road to be constructed in Iowa, Dakota, and Minnesota. It was known as the Chicago & Pacific Western Division Mortgage.[2]

The road to Council Bluffs was constructed in the name of the Milwaukee, and opened for business in July, 1880, making a continuous line from Chicago, via Savannah, to Council Bluffs.

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1. Ibid., p. 255.
2. Ibid., p. 258.

488 miles, being the shortest distance between these cities. The Milwaukee was the fourth line to reach Council Bluffs.[1] A line from Cedar Rapids to Ottumwa was opened for business in the spring of 1864. This line was constructed by the Milwaukee in its own name.

In connection with the proposed extension from Ottumwa to Kansas City, over 300 miles, in addition to the Chicago & Pacific Western Division bonds at $20,000 per mile which were applicable, the Milwaukee decided to issue $5,000,000 income bonds, $3,000,000 of them for this extension. The right-of-way was secured, and in March, 1887 a contract was let to Herman Clark to construct the line for $3,054,800. The work was completed, and in 1886-1887 the company built a first class bridge over the Missouri River at Randolf Bluffs, a little below Kansas City, with approaches for $584,041.91. Arrangements were made with the Belt Railroad of Kansas City for entrance into the city, and the line was opened for business on December 8, 1887.

In July, 1891 the Milwaukee executed a mortgage known as the Chicago & Lake Superior Division mortgage on its lines from Portage to Madison, Janesville to Beloit, Rockton to Rockford, and other lines.[2] The bonds were issued in connection with lines therein mentioned.

The road to Lee, Amboy & Peoria Railroad Company with

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1. Riegel, p. 105.
2. Cary, p. 257.

a narrow gauge line from Fond du Lac to Iron Ridge was sold in 1883 to the Milwaukee who widened the gauge.[1]

In 1880 a union depot was erected at St. Paul by the Union Depot Company. The Milwaukee was one of the original incorporators.

In 1882 the charter of the Chicago & Evanston Railroad Company was acquired by persons connected with the Milwaukee. Its line was built from Evanston across a newly constructed bridge above Kenzie Street to a connection with the joint tracks running into the Pennsylvania Station in Chicago. Later all the stock and bonds were transferred to the Milwaukee in exchange for its common stock, and a perpetual lease without rent was executed to the Milwaukee.

In 1886-1887 the company constructed a line from Manilla to Sioux City, 90 miles. This line was opened for business in 1887 and in connection with the Council Bluffs line gave a vast territory in Iowa, South Dakota, and North Dakota a shorter and more direct route to Chicago than any other route.

The Milwaukee began to expand in Dakota Territory. In 1873 the road was completed from the Sioux River near Canton west to Marion Junction and northwest to the Missouri River, 97 miles, opposite Niobrara. The line was opened for business to Canton on July 14,1873, to Marion Junction on August 31, and to Running Water on December 31.

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1. Ibid., p. 357.

A mortgage supplemental to the Iowa & Dakota Division Extension Mortgage was executed on July 23, 1879 on the main line to the Missouri River at Running Water.[1]

The road from Marion Junction to Mitchell was completed in 1879-1880.

In 1880 the Milwaukee purchased $178,000 bonds and $178,000 stock in the Sioux City & Dakota Railroad Company from John I. Blair to whom they were issued in return for an advance of $300,000 to the latter company to build a 38-mile extension from Beloit to Sioux Falls. At the same time the stock held by C. C. Wicker in the same company was purchased. Then a lease of the property was made to the Milwaukee now holding a majority of the stock. Later in July, 1880 the rest of Mr. Blair's stock was sold to the Milwaukee. On February 2, 1881 the Milwaukee offered to buy the road whereby it was to assume the $1,034,000 bonds out and pay $25 for each share of stock out.[2] The offer was accepted and the deed delivered on February 22, 1881. These bonds were soon after retired at premiums of 10% and 15%. This line extended from Sioux City, Iowa, to Sioux Falls.

In 1880-1881 the Milwaukee extended its line from Mitchell to Chamberlain (the Chamberlain station being opened on June 21, 1881), from Yankton to Scotland in 1881, and from Scotland to Mitchell in 1880. In 1881 the line was extended from

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1. Ibid., p. 382.
2. Ibid., p. 386.

Plantreau to Howard (the Howard station being opened on January 7, 1888) and from this point west to Woonsocket in 1892. In 1890-1891 the line was extended from Ortonville, Minnesota, to Aberdeen (the latter station being opened on July 14, 1891), and subsequently completed to Bowdle in September, 1886. Lines from Orient to Eureka were built in 1887; from Tripp to Armour, in 1886; and from Aberdeen to Direly, North Dakota, in 1886.

The Chicago & Missouri River Division Mortgage was executed to the Farmers' Loan and Trust Company. It was dated July 1, 1886 to secure bonds due in forty years, at 5%, payable semi-annually, and covered the line from Scotland, via Tripp and Armour, to the Junction with the Hastings & Dakota Division at Roscoe and other lines, all in South Dakota. No specified amount of bonds were authorized in the mortgage.[1]

In November, 1885 the stock in the Dakota & Great Western Railway Company was transferred to people connected with the Milwaukee. By 1887 this company's partially completed line was constructed from Andover to Harlem and from Bristol to Madison, in all 180 miles. In the fall of 1886 the stock was transferred to the Milwaukee, and a deed was delivered on the property with the provision that the Milwaukee pay the interest and principal on $2,856,000 bonds issued previously on the above two stretches.[2]

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1. Ibid., p. 268. Covertale & Colpitts, Appendix, p. 1.
2. Cary, p. 269.

In June, 1885 the Milwaukee acquired all the stock in the Fargo & Southern Railroad Company with a line from Fargo to Ortonville, Minnesota, 120 miles. A deed was delivered whereby the company assumed the $1,450,000 bonds out.[1] Later at the request of the holders of these bonds, the Milwaukee endorsed them. At the same time the bonds of the Dakota & Great Western were similarly endorsed.

The Milwaukee was now the owner of 1,099.93 miles of road in South Dakota and 118.81 miles in North Dakota, which it was operating as part of its system.

On September 1, 1890 an agreement was made between the Milwaukee & Northern Railroad Company and the Milwaukee whereby the Milwaukee purchased the entire capital stock of the former. The $1,589 1/2 shares of the former were exchanged for $1,589 shares of common stock of the latter. On October 1, the transfer was effected. The board of the former was changed and the officers of the Milwaukee were elected to corresponding offices in the Milwaukee & Northern. The additional mileage acquired by this purchase consisted of the following lines of the Milwaukee & Northern and controlled subsidiaries:

Main line, Milwaukee & Northern Railroad from Milwaukee to Champion, Michigan	354.30 miles
Ontonagon & Brule River Railway from Ontonagon to Sidnaw in Michigan	48.00 "
Oconto & Southwestern Railway from Oconto Junction to Oconto, Wisconsin	13.50 "
Branch from Kilbert to Neenah and Appleton in Wisconsin	22.00 "
Branch from Flis Junction, Wisconsin to Marinette, Wis. and Menominee, Michigan	27.55 "
Total	362.35 miles

1. Ibid., p.269.

The new lines were operated in connection with the Milwaukee, but for the time being the revenue and expense accounts were kept separate and distinct. These lines were a valuable acquisition because they gave the Milwaukee access to the iron region of the Peninsula of Michigan.[1]

Since the execution of the consolidated sinking fund mortgage the company had purchased a large amount of real estate in Chicago and Milwaukee, made expenditures on depot buildings, warehouses, elevators, shops, etc., not properly chargeable to operating expense, and in consequence of the increase in business it was necessary to buy more real estate and make more improvements. Therefore the board authorized the president to execute 5,000 negotiable bonds of $1000 each, payable in gold of the standard of 1874 on July 1, 1914, with interest at 5%, payable semi-annually July 1 and January 1 in the same standard. The mortgage was made to cover the terminal property so purchased and made to the Farmers' Loan and Trust Company.[2]

The expansion in Dakota continued. The line was extended from Aberdeen to Ipswich with a branch from Milbank to Sisseton, and a little later from Ipswich to Roscoe and from Aberdeen to Ellendale. Bonds for these lines were issued under the Hastings & Dakota Extension Mortgage of 1890 at 7%. A mortgage supplemental

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1. Ibid.,p.279. Chronicle,vol.55,p.291. Coverdale & Colpitts,p.[illegible].
2. Cary, p. 281.

to this was executed May 1, 1880 providing that in the future the rate should be 5%.[1]

The purchase of the Excelsior Coal Mine in 1878 on the line of the Iowa Central Railroad and its transfer to the Excelsior Coal Company all of whose stock was owned by the Milwaukee and the purchase of 3,500 acres of coal lands at Braceville, Illinois,on the Chicago & Alton Railroad made the Milwaukee to a large extent independent of strikes and combinations among the private coal companies.

The Merrill Boom Company and the Tomahawk Boom Company in which the Milwaukee had a controlling interest were organized to facilitate the lumber business on the Wisconsin River at Merrill and Tomahawk. The Milwaukee Land Company at this time held title to all lands belonging to the company but not used for railroad purposes. The stock was all held by the Milwaukee, and the company was managed by the land commissioner of the road. The sleeping cars of the company were entirely owned by the company until 1892. From 1882 to 1890 a one-fourth interest was held by George M. Pullman. On September 30, 1890 the company resumed full interest, and was at this time operating the cars as a separate department of the company.

In June 1887 action was taken to increase the common stock $10,000,000. Over $3,000,000 of this went to the stock-holders of the Chicago, Evanston & Lake Superior Railroad Company

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1. Ibid., p. 281.

giving the Milwaukee a clear title to that line. $5,075,500 were subscribed and paid for at par by the stockholders of the Milwaukee.[1]

On April 24, 1899 the Board authorized the making of a general mortgage to secure an authorized amount of $150,000,000 bonds. The mortgage was dated May 1, 1899, was executed to the United States Trust Company of New York, and was made due on May 1, 1929. The mortgage provided that the rate on the bonds should be such as the directors should determine from time to time but not to exceed 5% per annum. The mortgage was made to cover all the lines of the company (5,652 miles) as they existed at the time of execution, particularly described in the mortgage and shown on a map which accompanied it, and also to cover certain equipment specified in the mortgage as follows: 786 locomotives, 354 passenger cars, 9 sleeping cars, 10 dining cars, 344 baggage, postal, mail, and express cars, 15,185 box cars, 345 refrigerator cars, 2,540 stock cars, 4,155 flat and coal cars, 531 caboose, wrecking, and tool cars, and a three-fourths interest in 45 sleeping cars. The granting clauses were made to cover appurtenances, franchises, supplies and income. There were also included after-acquired property clauses covering railways, structures, appurtenances, equipment, franchises, and other property, including the income thereof; if owned, used, or acquired as appurtenant to or in connection with the described lines of railway.

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1. Ibid., p. 285.

Article I of the mortgage provided that $6,000,000 in bonds be given to the company, $3,500,000 for the purchase of the Chicago, Evanston & Lake Superior Railway and $2,500,000 for reimbursement for expenditures of the company in constructing 178 miles of road on which no bonds had been issued.

Article II of the mortgage provided that $22,181,000 in bonds be issued for the following purposes:

1. In repayment of expenditures for building or acquiring extensions, additions, and branches at not over $30,000 per mile except in Cook County, Illinois, where the limit was to be $30,000.

2. For premiums paid in retiring or refunding convertible and other prior bonds bearing a higher rate than 4%.

3. For the cost of second additional main track on certain divisions not exceeding $10,000 per mile.

4. For the cost of additional real estate, shops, yards, etc. and for additional bridges across the Mississippi and Missouri Rivers.

5. For the cost of additional side-tracks, depots, station buildings, elevators, warehouses, shops, machinery, etc. as the board shall authorize.

Article III of the mortgage provided that the remaining $181,819,000 in bonds be reserved by the company for the retiring, refunding, and paying dollar for dollar the 35 different issues

of underlying bonds described herein. It was also provided that no further bonds be issued under these prior mortgages and that no series be renewed or extended but be paid at maturity. This article provided also that after the $22,181,000 bonds provided for in Article II should be exhausted more bonds could be issued from time to time but only in repayment of the actual expenditures for extensions, additions, branches, additional second main track, real estate, side-tracks, etc. as set forth in Article II up to the par value of convertible underlying bonds exchanges for stock. There were some $30,000,000 of such bonds outstanding.

The objects of the General Mortgage in short were:

1. To reimburse the company for certain expenditures and improvements not previously capitalized.

2. To provide a fund of over $32,000,000 for future improvements and extensions.

3. To provide a fund for taking up and retiring the funded debt of the company as it became due and payable.[1]

As pointed out previously, by the terms of the income bonds dated January 27, 1886, if the holders requested, a mortgage was to be executed on the road from Chicago, via Ottumwa, to Kansas City on or before September 1, 1888. Such a request was made and a mortgage executed on September 5, 1889 to the United States Trust Company of New York on this line subject to prior liens but not to the General Mortgage.[2]

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1. Ibid.,p.285. Chronicle,vol.48,p.830 and vol.50,p.724. Coverdale & Colpitts, Appendix, p. 1.
2. Cary, p. 287.

Funds for the purchase of the Wisconsin, Pittsville & Superior Railroad, Milwaukee, Porterville & Northern Railway, and Lisbon, Neosdah & Lake Superior Railroad were received from bonds issued on the General Mortgage. A supplemental mortgage was executed transferring these lines to the trustee of this mortgage.

In 1889 the fiscal year of the company was changed from the calendar year to the year beginning July 1 and ending June 30. In August, 1890, the company's principal offices except that of the secretary's were moved from Milwaukee to Chicago.

At this time the line of the company extended from Chicago west to Council Bluffs. A connection with Omaha was desirable and in 1890 the Milwaukee and the Chicago, Rock Island & Pacific Railroad Company decided to build a bridge and extend a line across the Missouri River into Omaha. The Union Pacific Railroad Company, not desiring the new bridge, made a perpetual contract with the two newcomers for the use of its bridge. In the fall of 1890 the new board of the Union Pacific decided to repudiate the contract. The affair was carried into the courts. At this time the matter was pending in the United States Supreme Court. Meanwhile the Milwaukee was running its trains across the bridge.

The nucleus of the Chicago, Milwaukee & St. Paul Railway was the old LaCrosse & Milwaukee Railroad chartered on April 3, 1852.[1] The line was completed from Milwaukee to LaCrosse in 1858. In June, 1860 the company was placed in the hands of a receiver.[2] On May 5, 1863 the Milwaukee & St. Paul Railway Company was organized and took over the part of the property of the old company extending from Portage to LaCrosse and assumed the operations of the Eastern Division from Portage to Milwaukee.[3] In 1866 this company acquired the latter division.[4] The important acquisitions prior to 1870 were the Milwaukee & Prairie du Chien by control in 1866 and merger in 1868 and McGregor Western in 1868.[5] In 1870, a southwestern outlet was secured through the acquisition of the Western Union.[6] On January 3, 1872 a more direct route to the Twin Cities was obtained by the purchase of the Minnesota & Pacific.[7] In 1873 a line to Chicago was constructed.[8] On February 7, 1874 the company owned 1,309 miles of line.[9] In 1878 the mileage was increased to 1,539 miles. In 1879 a policy of expansion was inaugurated especially in the West and very soon the mileage was increased to 8,038 miles.

During the period from 1874 to 1879 the preferred and common stocks remained substantially the same. The additional mileage was largely acquired through the issue of bonds, the

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1. See p.4
2. See p.11
3. See p.14
4. See p.18
5. See p.19
6. See p.26
7. See p.34
8. See p.28
9. See p.30

outstanding amount of which increased from $27,119,000 in 1874 to $41,349,500 on December 31, 1879. The condensed balance sheet as of December 31, 1879 appeared as follows:[1]

(Figures in thousands)

Assets		Liabilities	
Properties	$70,388.	Common Stock	$15,404.
Railroad Stocks and Bonds	1,828.	Preferred Stock	12,270.
Materials and Supplies	388.	Funded Debt	41,350.
Receivables	685.	Payables and Accrued	1,495.
Cash	802.	Income Account	3,558.
	$74,086.		$74,086.

From 1874 to 1879 the salient features of operations were:[2]

	1874	1875	1876	1877	1878	1879
Gross Earnings(thous.)	$8,953	$8,255	$8,054	$8,115	$8,452	$10,013
Per mile	5,389	5,807	6,753	5,784	5,493	6,015
Net Earnings (thousands)	3,081	3,085	3,100	3,574	3,690	4,539
Interest Paid (thous.)	1,951	1,980	2,033	2,182	2,135	2,284
Dividends Paid "	880	880	880	880	859	1,345
Dividend Rate:						
Preferred	* 7%	* 7%	7%	7%	7%	7%
Common	-	-	-	-	-	2 1/2%

*Paid in bonds

From the organization of the Milwaukee & St. Paul in 1863 throughout this period the preferred stock received its dividend of 7% every year. During the first few years the earnings were put into improvements and dividends were paid in stock. Afterwards cash was paid except for the years 1874 and 1875 when,

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1. Overdale & Colpitts, p. 3.
2. Ibid., p. 3.

because of improvements, the dividend was paid in consolidated bonds. Small amounts were paid in dividends on the common stock at different times but not regularly prior to 1872.[1]

Rapid expansion took place from 1880 to 1891.[2] During the year 1880 the company acquired 1,125 miles of road by purchase and 349 miles by construction. During the remaining years of this period 2,504 miles were added to the system. Several main lines were extended to their present termini.

On June 30, 1891 the Milwaukee lines, including the 382.35 miles of Milwaukee & Northern line, which was controlled by the Milwaukee, were 6,083.65 miles in extent (main track owned solely and owned jointly with other companies). They were located in the following states: Illinois, 318.09 miles;, Wisconsin and Michigan, 1,736.81 miles; Iowa, 1,553.27 miles; Minnesota, 1,120.09 miles; North Dakota, 118.31 miles; South Dakota, 1,094.82 miles; and Missouri, 140.27 miles. The total mileage in tracks operated, exclusive of the Milwaukee & Northern tracks, was 7,468.97 miles of which 4,994.47 were steel and the rest iron. The rolling stock consisted of 801 locomotives and 25,995 cars of which 25,317 were freight and miscellaneous cars of various kinds.[3]

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1. Poor's Manual, Railroads, 1888, p. 399, hereafter referred to as Poor's. Cary, p. 264.
2. See Pp.35-54.
3. Poor's, 1892, p. 146.

The condensed balance sheet as of June 30, 1891 appeared as follows:[1]

(Figures in thousands)

Assets		Liabilities	
Road and Equipment	$189,825	Common Stock	$ 48,022
Stocks and Bonds	7,337	Preferred Stock	22,199
Materials and Supplies	2,313	Funded Debt	124,105
Receivables	2,555	Payables and Accrued	8,903
Cash	3,494	Income Account	1,095
Total Assets	$205,324	Total Liabilities	$205,324

From the above statement, in part, it will be seen that the mileage and capital structure over the period from 1880 to 1891 were as follows:

Items	January 1, 1880[2]	June 30, 1891
	2038	6083
Miles of Railroad	$41,350,000	$124,105,000
Funded Debt	$12,720,000	$ 22,198,900
Preferred Stock	$15,404,000	$ 48,022,440
Common Stock		

It may be advisable at this point to summarize the methods followed in financing these early companys and their acquisition by the Milwaukee and also the latter's financing.

Government aid of some kind was quite prominent. Congress on desiring the construction of a railroad by private enterprise over a certain route would grant to the state in which this route was located certain sections of land. On completion of the road

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1. Poor's, 1892, p. 146.
2. Overdale & Colpitts, p. 4.

its chief engineer would then apply to the Department of the Interior for the sections designated in the grant. Sometimes the railroad company secured the grant and many times through complications of one kind or another did not receive the grant.[1] Municipal aid was common. The city would loan its credit so to speak. Sometimes it was loaned to the railroad company to assure its including the city on its line. City bonds would be given to the railroad and the city would take a mortgage, probably second to another securing railroad bonds floated to the public.[2] Sometimes a bonus and other incentives like the securing of the right-of-way would be given to encourage the road to enter the city.

Then there was the method of securing funds by selling bonds secured by a note and a mortgage on the farmers land along the right-of-way. The note was given by the farmer for his subscription to the company's stock.[3]

Then of course there was the ordinary methods of financing through mortgage bonds on the road itself and through stock at times. Very often on these small lines was there a second mortgage. In a great many cases the stock was worth little or nothing.

A cross section of the Milwaukee financing is shown in the detailed statement of the funded debt on June 30, 1891 in

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1. See pp. 6,23,31,and 34.
2. See p. 4.
3. See p. 5.

Table I in the Appendix. On acquiring another company usually an agreement was made with the sellers calling for the buyer to execute a mortgage on the premises being acquired. These bonds would be issued for the securities of the selling company on some agreed basis. The Southern Minnesota Division 6's,[1] the St. Paul (or River) Division 7's[2] and the Wisconsin & Minnesota Division 5's[3] were issued under such circumstances. Sometimes the bonds of the selling company were assumed. Sometimes these assumed bonds were retired soon after like the bonds of the old Sioux City & Dakota,[4] and sometimes they were allowed to remain outstanding and become part of the Milwaukee's funded debt as the Fargo & Southern 6's.[5] Sometimes the Milwaukee's capital stock was involved in the purchase of other lines like the purchase of the MacGregor & Western in 1886[6] and the purchase of the stock of the Milwaukee & Northern in 1890.[7] Sometimes cash was involved as with the Dubuque Southeastern.[8] The Milwaukee during these years up to 1891 merged all its acquisitions. In 1891 it was controlling the Milwaukee & Northern but a few years later this road was merged into the system also. Sometimes the purchased road was controlled for a few years like the Milwaukee & Prairie du Chien from 1885 to 1888[9] but finally it was absorbed.

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1. See p. 31.
2. See p. 34.
3. See p. 42.
4. See p. 49.
5. See p. 51.
6. See p. 21.
7. See p. 51.
8. See p. 39.
9. See p. 19.

Although most of the lines of the Milwaukee during these years of mushroom growth to 1891 were built by other companies and purchased by the Milwaukee, this latter road did considerable financing of its own not connected directly at least with the purchase of the lines of other companies. The Milwaukee built many lines under its own name especially in the Dakotas. In this connection such bonds as the Chicago & Pacific Western Division 5's,[1] the Income Sinking Fund Convertible 5's,[2] and the Chicago & Missouri River Division 5's[3] were issued. During this period up to 1891 there were three blanket refunding mortgages executed. The first was the Consolidated Mortgage of 1874 securing 7% bonds.[4] Up to June 30, 1891, $1,038,000 of these bonds were issued. $860,000 of this amount were issued for dividends and the rest were issued in exchange for underlying bonds. Up to this date $850,000 of the amount issued were received in exchange for Consolidated 7's of 1875 and $2000 for preferred stock (for they were convertible) leaving $187,000 outstanding on June 30, 1891. The second was the Consolidated Mortgage of 1875 also securing 7% bonds.[5] A total of $13,082,000 of these were issued up to June 30, 1891. $1,717,000 of this amount were issued for dividends, $7,236,000 were sold to the public, and the rest were issued in exchange for various underlying bonds. Of this amount issued $259,000 were retired by a

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1. See p. 46.
2. See p. 47.
3. See P. 50.
4. See p. 36.
5. Ibid.

sinking fund which was eliminated soon after 1875 and $1,534,000 were received in exchange for preferred stock (for they were convertible) leaving $11,898,000 outstanding on June 30, 1891. The third was the General Mortgage of 1880 with only 4% bonds issued thereon prior to June 30, 1891.[1] On June 30, 1891 there were issued $8,103,000 of these bonds. $3,500,000 were issued on the 178 miles of road upon which in 1879 there was no funded indebtedness; $2,500,000 were issued for the retiring of $2,500,000 Chicago, Evanston & Lake Superior bonds; 1,135,000 were issued for a like amount of underlying bonds redeemed and cancelled and the rest were issued for additions and improvements to the property. The above issuances were sold in blocks to the public in 1880 and 1890 and the rest were unsold in the company's treasury.

The bonded debt on June 30, 1891 given in Table I in the Appendix shows the total amount issued originally and the amount issued on June 30, 1891. With the convertible issues of course the difference in the two figures represents to a large extent the amounts of these bonds turned in from time to time for preferred stock. In some cases portions of the issue were turned in for consolidated bonds, as pointed out above. The Income Sinking Fund convertible 6's, the Wisconsin Valley Division 6's and the Dubuque Division 6's had on June 30, 1891 and the Consolidated 7's of 1875 for a time did have sinking funds through which portions of these issues had by June 30, 1891 been retired.

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1. See p.54.

On June 30, 1891 there were $139,787,000 in bonds issued of which $134,105,000 were in the hands of the public and $5,682,000 were unsold in the company's treasury or due from the trustees.

Of the $68,226,121 stock issued to June 30, 1891 $4,221 was held in the company's treasury and the rest, $68,221,340, was in the hands of the public. This preferred stock was entitled to 7% in dividends which were non-cumulative. The company had the privilege of reserving prior to dividends as working capital a sum not exceeding $250,000 over the floating debt and accrued interest on the mortgage bonds. After the payment of 7% on the common stock, both classes were to share in any further profits pro rata. Thus the preferred was participating as had been customary with seven leading American railway systems.[1] It is interesting to note that up to this time that all but about $9,000,000 of this preferred stock had been issued for convertible underlying bonds received in exchange for preferred stock. The $9,000,000 were issued at various times in connection with such things as the MacGregor & Western in 1868[2] and the line being constructed by the MacGregor & Sioux City in 1888.[3] The common was issued in connection with these transactions and others also like the construction of the Chicago extension and the acquisition of this extension from the subsidiary construction companies,[4] the acquisition of the Chicago & Evanston & Lake

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1. Poors, 1892, p. 148.
2. See p.21.
3. See p.23.
4. See p.28.

Superior[1] and the acquisition of the Milwaukee & Northern[2] Blocks were sold to the stockholders at par to pay for various additions made to the property from time to time.[3]

A condensed income statement covering the period from 1880 to 1891 follows:[4]

(Figures in Thousands)
Year ended December 31

Item	1880	1881	1882	1883	1884	1
Average Miles Operated	3,775	3,850	4,284	4,548	4,780	4,
Operating Revenues	$15,086	$17,025	$20,357	$21,640	$23,471	$24,
Operating Expenses	7,367	9,845	11,596	13,163	13,157	13,
Net Revenue from Ry.Operations	5,715	7,180	8,761	10,497	10,314	10,
Taxes	375	473	560	702	734	
Railway Operating Income	5,344	6,707	8,201	9,582	9,612	9,
Non-operating Income	334	635	624	185	83	
Gross Income	5,648	7,348	8,825	10,048	9,694	10,
Deductions from Gross Income	91					
Net Income available for Int.	5,587	7,348	8,825	10,048	9,694	10,
Int. on Funded Debt	2,837	4,137	4,786	5,374	5,819	6,
Net Income	2,750	3,215	4,038	4,672	3,775	3,
Dividend on Preferred-Amount	280	687	1,033	1,155	1,158	1,
Dividend on Preferred-Percent	7	7	7	7	7	
Dividend on Common-Amount	1,078	1,078	1,435	2,058	2,163	1,
Dividend on Common-Percent	7	7	7	7	7	
Total Dividends	1,938	1,965	2,461	3,212	3,321	2,
Balance	812	1,250	1,578	1,459	454	1,

FULL TABLE ON NEXT PAGE

1. See p. 53.
2. See p. 51.
3. See p. 53.
4. Overmale & Colpitts, p. 5.

A [illegible]

1880 to 1891 follows:[4]

(Figures in Thousands)

Item	Year ended December 31 1880	1881	1882	1883	1884	1885	1886	1887	Year ended June 30 1888	1889	1890	1891
Average Miles Operated	3,775	3,830	4,296	4,549	4,780	4,862	4,977	5,355	5,672	5,678	5,686	5,750
Operating Revenues	$13,086	$17,025	$20,387	$23,660	$23,471	$24,413	$24,718	$25,366	$24,727	$25,741	$26,473	$27,630
Operating Expenses	7,367	9,845	11,596	13,163	13,157	13,779	13,800	14,559	15,666	15,778	16,411	17,634
Net Revenue from Ry. Operations	5,719	7,180	8,791	10,497	10,314	10,634	10,918	10,807	9,061	9,793	10,062	9,996
Taxes	375	473	590	702	734	734	759	767	808	804	830	858
Railway Operating Income	5,344	6,707	8,201	9,882	9,613	9,900	10,158	10,040	8,253	8,989	9,232	9,138
Non-operating Income	324	635	624	165	82	106	145	273	273	372	207	416
Gross Income	5,668	7,342	8,825	10,046	9,694	10,006	10,303	10,313	8,526	9,361	9,439	9,554
Deductions from Gross Income	81									435		84
Net Income available for Int.	5,587	7,342	8,825	10,046	9,694	10,006	10,303	10,313	8,526	8,926	9,439	9,470
Int. on Funded Debt	2,837	4,127	4,786	5,374	5,919	6,097	6,241	6,457	6,448	7,054	7,214	7,237
Net Income	2,750	3,215	4,039	4,672	3,775	3,909	4,062	3,856	2,078	1,872	2,225	2,233
Dividend on Preferred-Amount	860	887	1,033	1,155	1,158	1,158	1,508	1,512	756	972	1,297	1,532
Dividend on Preferred-Percent	7	7	7	7	7	7	7	7	3.5	4.5	6	7
Dividend on Common-Amount	1,078	1,078	1,428	2,058	2,163	1,236	1,545	1,748	975	-	-	-
Dividend on Common-Percent	7	7	7	7	7	4	5	5	2.5	-	-	-
Total Dividends	1,938	1,965	2,461	3,212	3,321	2,394	3,035	3,260	1,731	972	1,297	1,532
Balance	812	1,250	1,578	1,459	454	1,515	1,009	596	347	900	928	701

It can be easily seen that the first three years brought a very large increase in revenues and that from December 31, 1883 to December 31, 1887 the operating results were quite stable. During the last years of this period there was a decline in earnings which continued into the next period. There was at all times an ample margin over interest requirements. Dividends bore a conservative relation to earnings leaving a balance for application to property. Toward the end of the period the company's position was strong enough to meet the trials of the succeeding period of years. With the exception of several years toward the end of the period 7% was paid annually on the preferred. In October, 1879 a dividend of 1 1/2% was paid on the common and from then until April, 1882 a 1/2% semi-annually was paid. From then to the end of this period no dividends were paid thereon.[1]

Some comparative capitalization and operating figures may be of interest at this time.[2]

	Milwaukee	Northern Pacific	Great Northern
Stock per mile	$11,214	$20,286	$ 7,016
Bonds per mile	23,688	33,197	18,837
Interest per mile	1,252	1,719	1,437
Gross earnings per mile	4,817	5,857	3,679
Expenses per mile(including taxes)	3,217	3,648	2,115
Ratio of expenses to earnings	66.74%	61.23%	57.53%
Ratio of operating expenses to earnings	63.83%	59.40%	50.28%
Net earnings per mile	1,600	2,209	1,567
Average rate per ton per mile	1.00¢	1.35¢	1.24¢
Average rate per pass.per mile	2.39¢	2.83¢	2.80¢
Revenue from freight per train mile	$1.5334	$2.034	$2.43
Ratio of freight earnings to total earnings	69.13%	69.70%	74.19%
Ratio of pass.earnings to total earnings	23.82%	25.56%	18.36%

1. Poor's, 1888, p. 390. Cary, p. 384.
2. These figures were obtained from the annual reports of the three roads all as of June 30, 1891 or calculated from other figures given therein.

The figures for the Great Northern are really those of the St. Paul, Minneapolis & Manitoba Railway which at this time was leased to the Great Northern Railway and is the nucleusfor the present Great Northern System. The $1,427 includes $421 dividends of 6% guaranteed on the Manitoba stock by the Great Northern. The light capitalisation of the Milwaukee as compared with the Northern Pacific and its heavy capitalization as compared with the Great Northern are noticeable. The larger earnings per mile of the Northern Pacific over the Milwaukee and the smaller earnings per mile of the Great Northern in spite of the higher rates received per ton mile and per passenger mile stands out prominently. Evidently the traffic density on the Great Northern was much lighter than on the other two roads at this time. The ability of the Northern Pacific and Great Northern to maintain lower operating ratios undoubtedly explains in part the larger net earnings per mile of the former and nearly equal net earnings per mile of the latter in spite of the latter's apparent lower comparative density as compared with that of the Milwaukee. The last two sets of figures in the table indicate that the passenger traffic of the Great Northern was relatively less important than the passenger traffic on the other two roads.

CHAPTER II.

THE DEVELOPMENT OF THE SYSTEM - 1891 TO 1899.

This period is well marked. By 1891 the Milwaukee seemed to have eliminated Wall Street influences, and, with speculative control shaken off, became during this period a railroad in the true sense. The policy of the road from the beginning of this period (some people put the date back to 1887) was no more speculative rigging but straightaway railroading.[1] Furthermore this period was marked by a severe business depression, nation wide in its effects. These business conditions, beginning during the closing years of the previous period in the territory occupied by the lines of the Milwaukee, as then constituted in the early 90's, brought lower prices for agricultural products and cessation of the previous speculative interest in land. The middle years of the period covered a time of readjustment and recuperation, followed by a revival of prosperity in the last two years.[2] As a result of these conditions, at least in part, railroad development was checked and the mileage including the lines of the Milwaukee & Northern operated by the Milwaukee showed a relatively small increase, from 6086 miles in 1891 to 6154 miles in 1899 or an increase of 70 miles.[3]

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1. Spearman, p. 177.
2. Coverdale & Colpitts, p. 6.
3. Chronicle, vol. 53, p. 281 and vol. 87, p. 531.

On July 27, 1891, the famous controversy over the Union Pacific bridge at Omaha was ended by the decision handed down by Justice Brewer.[1] The contract made by the Adam's administration of the Union Pacific for the lease of the bridge to the Milwaukee and Union Pacific was held to be legal in every respect. The court reviewed the whole matter from the beginning. In the first place, the court ruled that the contract was legal as the contract was handled by the proper officials and approved by two thirds of the stockholders present at the stockholders' meeting. In the second place, the owner's use of the bridge was not impaired by the contract. As to future unpredictable needs, any future increase in traffic would be provided for by increased facilities. In the third place, the Union Pacific had as much right to lease the bridge as it had to operate hotels, etc. The $45,000 per year rental was a fair price. Besides the Milwaukee and Rock Island roads had abandoned the construction of an independent bridge and spent millions of dollars on their lines depending on the operation of the contract. If the contract were now held invalid, these two roads would have grounds for enormous damages which the Union Pacific probably could not pay. Therefore the contract was declared valid.[2] The Milwaukee had been running its trains over the bridge since January; the Rock Island ran its first train over on July 30, 1891.

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1. See p. 57.
2. Chronicle, vol. 53, p. 147.

A deed dated October 31, 1881 conveyed the Sherry-Cameron Company with a line from Vesper to Arpin in Wisconsin to the Milwaukee for $25,000.[1]

Early in 1882 the Milwaukee purchased the Oshkosh & Mississippi Railroad Company. The latter company's line was leased to the Milwaukee on August 29, 1871.[2] The Oshkosh Company had outstanding 1,500-1/2 shares of capital stock with a par value of $150,050. The holders of 1,477 of these shares had paid $100 each for them and were holding the shares. Sundry other persons had paid $2,350 on the rest and were holding certificates for the payments. The company was indebted to the Milwaukee for $543,519.04 in bonds secured by a mortgage on its lines, for interest and also for other advances made by the Milwaukee. The Milwaukee agreed to pay $18,758.35 or $12.50 for each share, to be paid the stockholders, and cancel the debt. The delivery of a deed dated February 17, 1883 conveyed the property to the Milwaukee.[3] The Oshkosh Company's line extended from Oshkosh to Fond du Lac in Wisconsin.

In 1882 the Milwaukee & Northern constructed a line about 45 miles long from Channing on its main line to Sidnaw, the terminus of the Ontonagon line. This project closed the gap heretofore existing between these points.

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1. P. M. Myers, "General Deeds and Certain Documents, C.M.& St.P. Ry.Co."(Compiled by P. M. Myers, Sec., Jan.1,1903), p.367, hereafter referred to as Deeds.
2. See p. 35. For the history of this line prior to 1871 see Cary, p. 208.
3. Deeds, p. 370.

In 1883 the Milwaukee directors decided that for the greater convenience and economy of operation, the Milwaukee & Northern should be merged with the property of the Milwaukee which owned all the capital stock of the Northern Company.[1] The delivery of the deed dated June 26, 1883 conveyed the property to the Milwaukee, subject to two mortgages. One of these mortgages was a first lien on the so-called first division of the line from Schwartzburg Station to Green Bay, from Hilbert Station to Neenah and Menasha, and from Menasha to Appleton, etc. It was dated June 10, 1880 and secured an issue of $2,155,000 bonds, due in 30 years, with interest from June 1, 1880, at 6% for the first year, 5% for the second year, and 6% after that, payable semi-annually on June 1 and December 1. The mortgage was executed to Jesse Hoyt and Allen S. Apgar as trustees. The other mortgage was a consolidated mortgage covering the entire line of the company from Milwaukee to Ontonagon and all branches as described and as shall hereafter be constructed, extended, or by any manner be acquired, a real after-acquired property clause. It also covered the rolling stock. It was executed to Samuel M. Hoyt and Allen S. Apgar as trustees and secured an authorized issue of $8,000,000 bonds at 6% per annum, payable semi-annually on June 1 and December 1, due on June 1, 1913, and issuable at $17,000 per mile. $2,155,000 of the authorized issue was reserved to retire the first mortgage bonds which were a prior

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1. See p.51. For the previous history of this line see Cary, p. 270.

lien to these consolidated bonds on part of the Northern company's lines. At the time of the merging $2,155,000 of the first mortgage bonds were issued, and in the hands of the public and $5,082,000 of the consolidated mortgage bonds were issued of which $4,003,000 were in the hands of the public and $1,089,000 were in the treasury of the Milwaukee for the extension, mentioned above which the latter company had financed. At the time of the merger the company's line extended from Milwaukee northerly to the Michigan-Wisconsin state line with several branches in Wisconsin, from said state line northerly to Champion in Michigan, and from Channing northwest, via Gladstone to Ontonagon, with branches in Michigan. At this time the company owned 34 locomotives and 1029 cars of various kinds. The property and accounts were merged July 1, 1893, and the property account of the Milwaukee was debited $13,284,710.75 for the purchase, the stock was removed from the investment account and the bonds were included in the funded debt.[1] The net earnings of the Northern Company for the year ending June 30, 1891, the first year after the purchase of its stock at par by the Milwaukee, was $619,802.52 and a 4% dividend was paid on the stock. For the year ending June 30, 1892, the net earnings were $642,904.13 and no dividend was paid pending a decision on the question of merging the property with the Milwaukee. For the year ending June 30, 1893, the net earnings were $543,538.65 or a decrease of $98,365.48 from the previous year due to the depressed condition

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1. Cary, p. 272 and 275; Annual Reports, 1893 and 1894; Poor's, 1895, p. 1307. Coverdale & Colpitts, Appendix, p. 1.