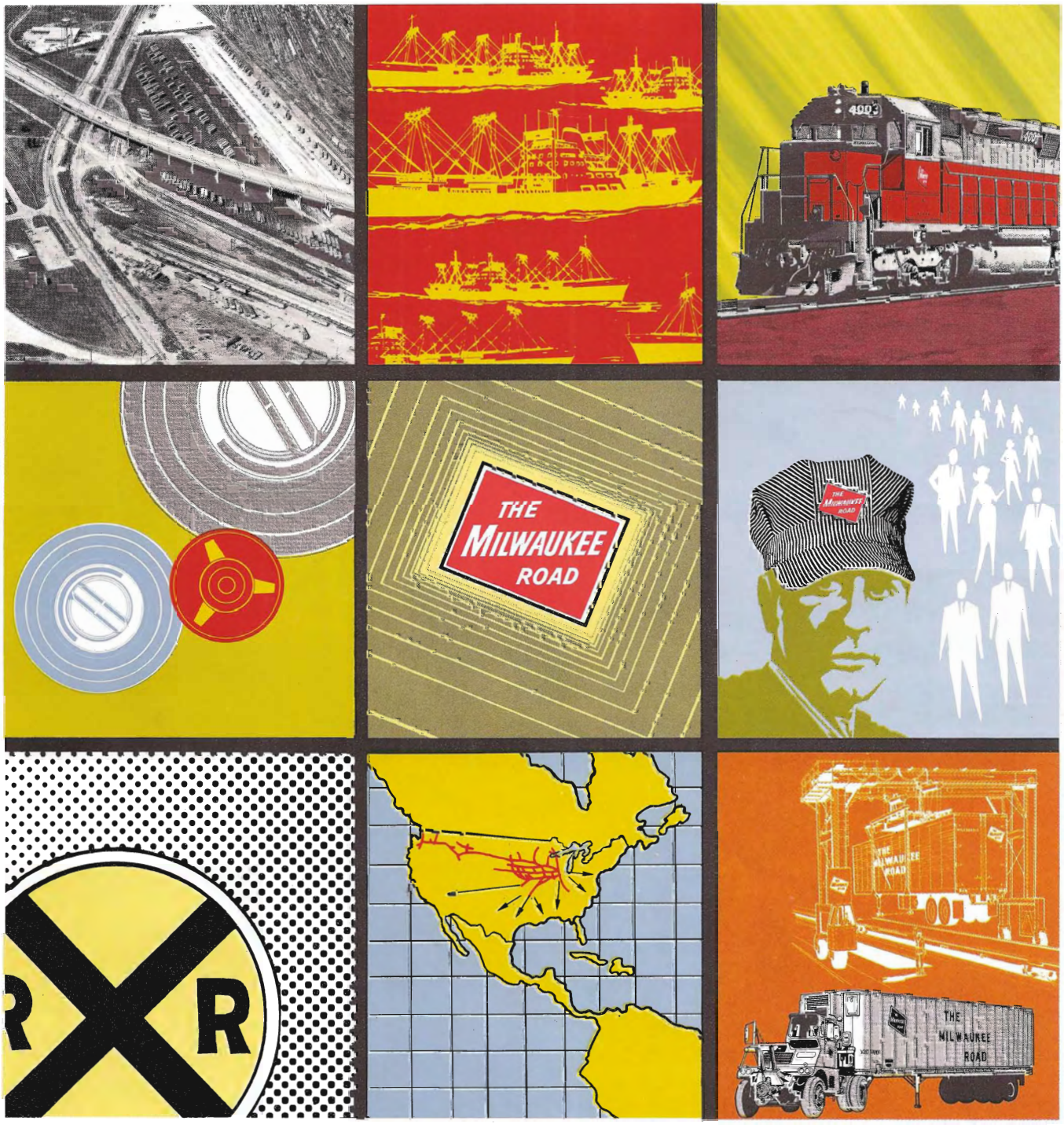
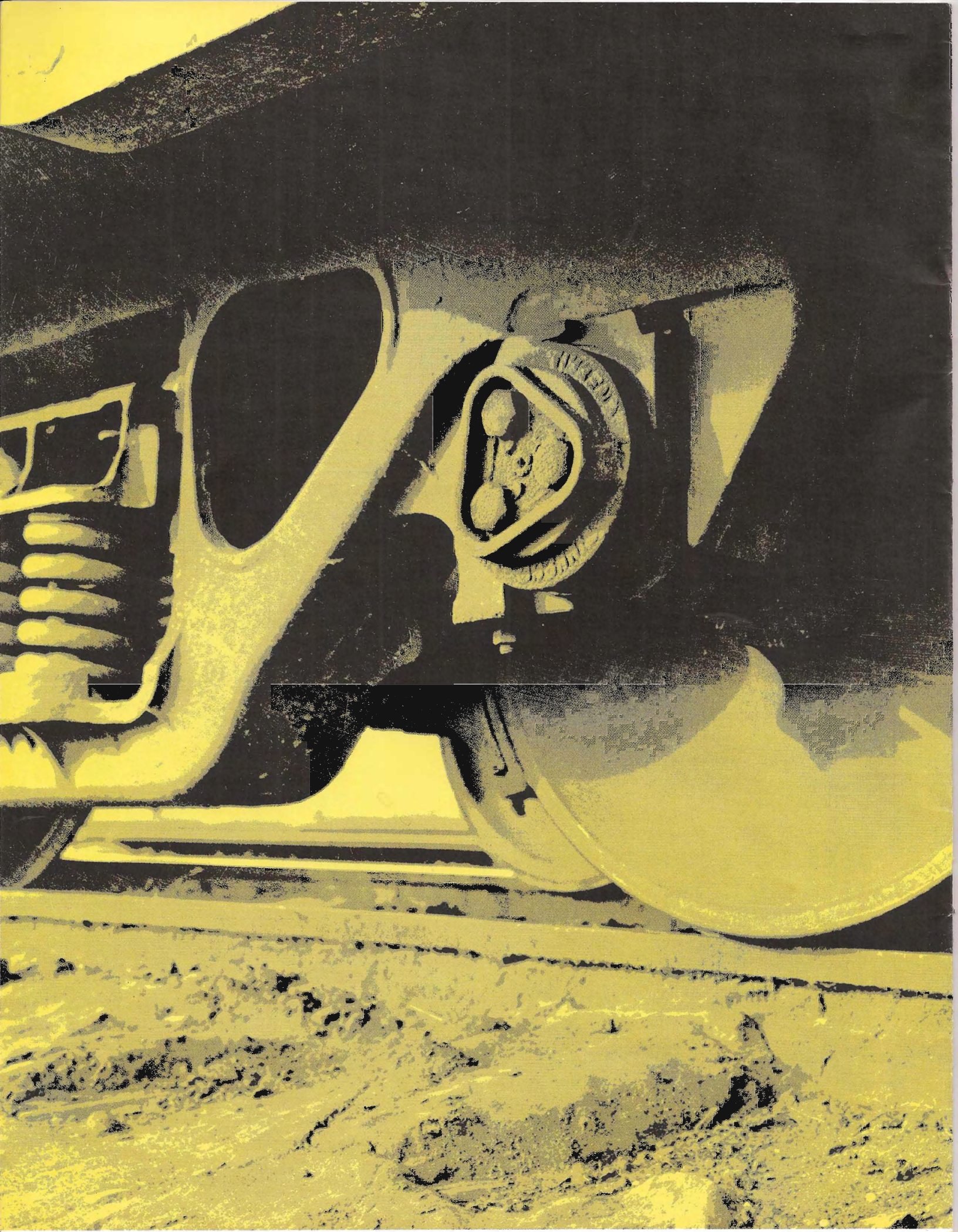
# WELCOME

*a guide book to the many facets of the*

# MILWAUKEE ROAD





# WELCOME

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MILWAUKEE ROAD

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## COVER

**1)** Aerial view of Piggyback Park at Bensenville shows rapid growth of one of the newest and best known developments — piggyback traffic.

**2)** Another new trend is handling of freight in containers, a method of special importance today for import-export shipments.

**3)** New diesel locomotives now in use are more powerful, versatile, yet need less maintenance. Average cost is now about $250,000 each.

**4)** Computers are playing a vital and quickly expanding role in all areas of operation at the Milwaukee.

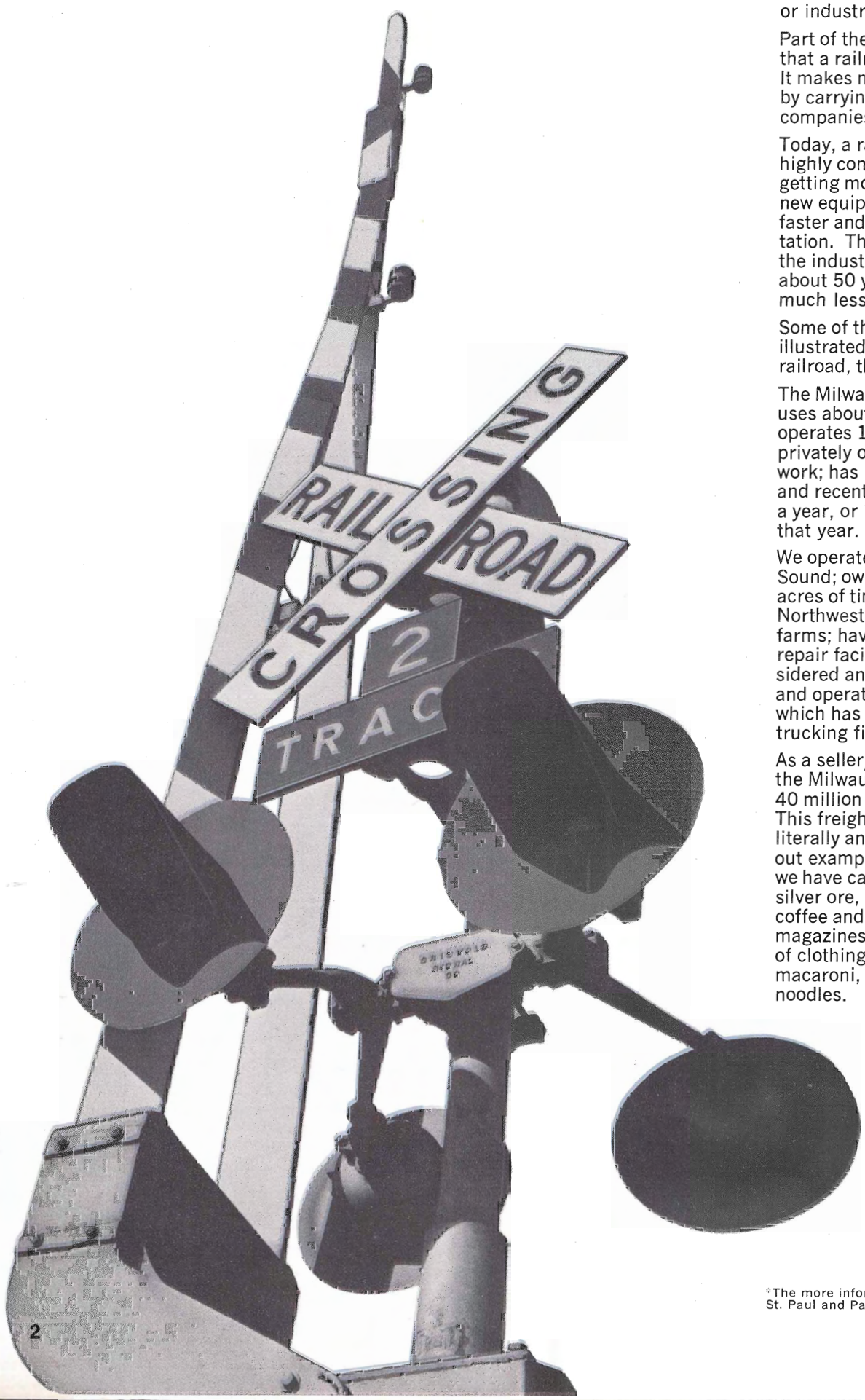
**5)** The Milwaukee's trade mark. The basic design dates as far back as 1880, when tilted rectangle began to be used as company symbol.

**6)** The Milwaukee has more than 15,500 employees, who can be found at work in virtually every state, and Canada.

**7)** An extensive, complex signals and communications system protects the 10,500 miles of road. Protection also is given to more than 10,000 grade crossings in its territory.

**8)** The Milwaukee Road serves a 14-state territory, reaching from the Midwest to Pacific Northwest.

**9)** Modern freight handling methods are typified by gantry cranes that can lift a piggyback trailer from a flatcar in 90 seconds or less.




**A railroad is different.**

This is because it owns things, does things or operates in ways that are different from many other businesses or industries.

Part of the reason for this difference is that a railroad has no product to sell. It makes money by selling a service - by carrying things for people or companies.

Today, a railroad sells its services in a highly competitive market that is getting more competitive each year, as new equipment and new ideas come faster and faster in American transportation. This, by itself, helps to make the industry different today than it was about 50 years ago, when there was much less competition.

Some of the other differences can be illustrated by examples taken from our railroad, the Milwaukee Road.*

The Milwaukee owns 5,975 bridges; uses about 58,000 miles of wire and operates 1,066 radios in its own privately owned communications network; has its own 107-man police force; and recently served 430,117 meals in a year, or 1,178 meals each day of that year.

We operate our own barge line on Puget Sound; own nearly a quarter million acres of timberland in the Pacific Northwest, including two large tree farms; have freight car rebuilding and repair facilities big enough to be considered an industry-within-an-industry; and operate a motor trucking subsidiary which has more trailers than many trucking firms.

As a seller/supplier of transportation, the Milwaukee Road carries more than 40 million tons of freight each year. This freight can consist of almost literally anything. For some fairly far-out examples, consider that in one year we have carried 49 tons of gold and silver ore, more than 22,000 tons of coffee and 20,000 tons of magazines; several hundred carloads of clothing; and 6,400 tons of macaroni, spaghetti, vermicelli and noodles.

*The more informal name for the Chicago, Milwaukee, St. Paul and Pacific Railroad Company.

This list could go on and on, through steel and seal skins, bricks and books, autos and agricultural implements, raw materials or finished products, foods, furniture or hundreds of other individual categories of freight.

We also carry people - more than 7 million riders per year, when commuters are included in the total.

The people who work for us have all kinds of jobs. Some work in metallurgy, chemistry or geology. We have lawyers, bridge and track engineers, agricultural experts, welders, steamfitters, blacksmiths, salesmen, tax men, public relations and advertising people, cooks, safety experts, electricians, architects, real estate experts, carpenters, switchboard operators, secretaries, truck drivers—and, of course, locomotive engineers, firemen, brakemen, switchmen, conductors, porters, waiters, station agents and others.

Our salesmen work out of 54 offices, including offices at such cities within our operating territory as Chicago, Milwaukee, Minneapolis, St. Paul, Omaha, Seattle, Tacoma, Kansas City and Des Moines. Other offices are pretty far from our operating territory: in New York, New Orleans, Atlanta, Dallas, Los Angeles, Toronto, Vancouver and even in Tokyo.

Our "plant" stretches over a good part of the United States, inasmuch as we serve 14 states. The Milwaukee's system has 10,500 miles of road, and reaches from Chicago and Indiana on the eastern end to Omaha and Kansas City on the southwestern end, and to Seattle and Tacoma in the northwest.

Our property is something else that makes us different. As a matter of curiosity, what price would you put on a piece of land that is 100 feet wide and 2,200 miles long? This is a reasonably good description of our main line between Chicago and Seattle.

Our basic working tools include property and equipment valued at a billion dollars. Included in this is approximately $370 million in equipment: freight cars, passenger equipment, locomotives, etc.

Each year the Milwaukee earns about a quarter of a billion dollars ($250 million) for carrying freight or people. The freight side of the business accounts for about $220 million of the revenues, by far the greatest part.

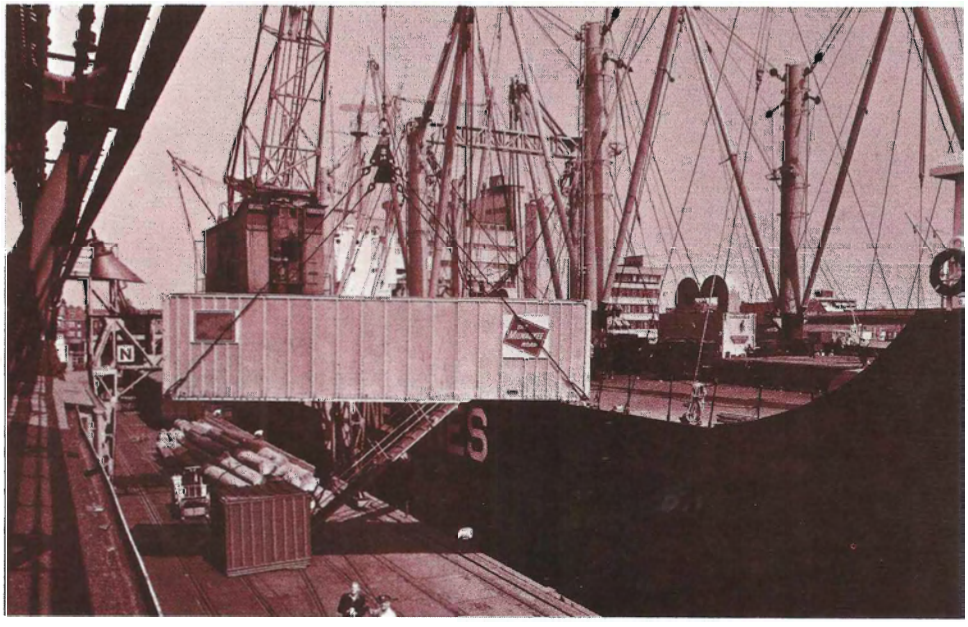
The expenses, or operating costs, can get pretty impressive, too - about $200 million a year. We spend as much as $10 million a year for locomotive fuel.

(All of the above examples are based on figures taken from a typical recent year, as will be others used later.)

These are some of the things that make the Milwaukee Road different - even from some other railroads.

These differences are why this little guide book is meant especially for new employees, but it also is for visitors to our offices, the press, students, libraries, or others who, for one reason or another, want to know something about who we are, and what we do.

Let's go on with this description by telling about one of the most important parts of the Milwaukee Road—

*Two transcontinental freights (eastbound No. 262 at left and westbound No. 263 on the right) meet at Malden, Washington.*

*More and more freight, moving inland or overseas, is being carried in containers which protect against weather, theft and damage while cutting shipping costs.*

## The People

The Milwaukee has approximately 15,500 employees, who can be found at work in virtually every state, as well as in Canada and Japan.

Of course, most of the employees work within our operating area. The largest number of employees, about 4,500, are in Illinois. The next largest number is in Wisconsin, where there are about 4,400. Then come Iowa, Minnesota and Washington, each with well over 1,000 of our employees, followed by Montana with about 800 and South Dakota with nearly 700. Idaho, Indiana, Michigan, Missouri and North Dakota each have between 100 and 300 employees. Slightly more than 100 are in the "all other" category.

Most of our people are directly involved in working with trains, including those employed at yards or stations. About 6,000 employees are in this general category.

Approximately 3,500 people do professional, clerical or general work, and about 3,000 are involved in maintaining equipment and seeing that supplies of stores and materials are kept up. Some 2,000 employees maintain our right-of-way (track and roadbed) and thousands of structures and buildings.

The Milwaukee's payroll is about $120 million a year. To this can be added more than $16 million, with this breaking down into about $4.5 million for health and welfare benefits, and more than $12 million in payroll taxes, which pay for unemployment and sickness benefits. The total annual payroll expense, then, is about $140 million.

The Milwaukee's payrolls in individual states amount to as much as $35 million, Illinois and Wisconsin each being in this category. Payrolls in other states range from half a million a year to $14 million. (The Milwaukee also pays about $10 million a year in property taxes to various states.)

If the payroll is broken down to a "per employee" basis, it averages out to about $8,800 a year per employee, with this figure including about $1,000 of the various benefits. On an hourly basis, it comes to nearly $4.60. Approximately 56 cents of each dollar received in operating revenues is paid out in wages and benefits.

The Milwaukee's employees are of all races, religions, colors and beliefs because the railroad is an equal opportunity employer.

## The Rolling Equipment

The Milwaukee uses more than 800 locomotives. Sixty of these are electric locomotives used only on the 656 miles of electrified operation in Washington, Idaho and Montana.

The others are the more familiar diesel-electric locomotives, of which about 60 are passenger units. The rest are road or switching units; in other words, freight locomotives.

About 38,000 freight cars are in our fleet. Most of these - or 19,000 - are box cars of various types. There are 6,500 gondola cars and 4,500 hopper cars. There also are 3,300 flat cars and 1,100 refrigerator cars, leaving about 5,000 of miscellaneous types, including ballast, ore, stock and tank cars. More than 500 cabooses are used.

The passenger car fleet has about 475 cars, including baggage, express and mail cars, as well as coaches, dining, sleeping and lounge cars.

The company's "work" fleet - equipment used to maintain our own property - has more than 1,600 cars. We use about 900 motor vehicles.

## The Freight

As noted earlier, the Milwaukee carries more than 40 million tons of freight each year, or about a million carloads.

The commodity carried in the largest volume is grain, which averages about 12 per cent of annual tonnage, or about 5 or 6 million tons per year.

Coal is another major item, averaging about 11 per cent of yearly tonnage, or around 5 million tons.

Grain mill products (grain after processing) is another big one, amounting to more than 4 per cent of volume or about 2 million tons per year.

Freight categories that fall into a range of about 1 or 2 million tons a year each include canned or preserved fruits, vegetables and seafoods; primary forest products, which include logs and pulpwood; lumber products; paper and similar products; industrial chemicals; non-industrial chemicals; stone, clay or glass products; and iron and steel products. The non-metallic minerals, a category that does not include such fuels as coal or coke, amount to 3 million tons annually.

Each year the Milwaukee carries more than half a million tons each of meat, soybeans and malt liquors; about a quarter million tons of potatoes, and also of fresh fruits and vegetables; and nearly a million and a half tons of miscellaneous foods.

Through most of its history the Milwaukee has been a major carrier of import-export freight, especially that freight which moves through the Pacific Northwest ports of Seattle, Tacoma and Longview. We also participate in freight shipments moving to Alaska by either sea-going barge or a "trainship."

### The Freight Trains

There really is no such thing as an "average" freight train, since our individual freight trains vary from switching movements with only a few cars to 100- or 120-car transcontinental freights.

However, averaging out our annual statistics would give a typical freight train with 70 cars, of which about 45 would be loaded and 25 empty. An average of nearly 1,600 tons is carried per train.

The total annual mileage rolled up by Milwaukee freight trains is about 10 million miles.

### The Commuter Trains

About 6 million passengers use the Milwaukee's suburban service each year. This operates on a line west from Chicago to Elgin, Ill., and on a north line from Chicago to Fox Lake, Ill., and Walworth, Wis.

There are 66 commuter trains on weekdays, with the west line having 16 in each direction and the north line having 16 northbound and 18 southbound.

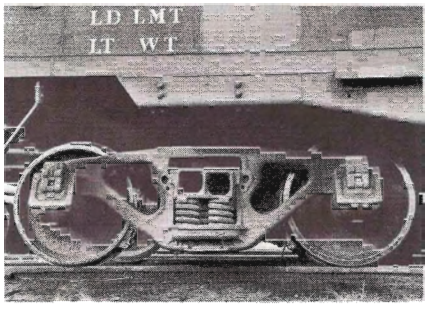
The equipment used consists of 62 double-deck stainless steel coaches which are electrically heated and air-conditioned. Twenty of the coaches have cabs equipped with controls for locomotive engineers, so that the trains can operate in either direction without having to be turned around.

The other 42 coaches are without cabs. These are slightly larger in seating capacity, but each type of coach can carry about 160 passengers.

Seventeen specially equipped locomotives are used in suburban service.

Approximately 21,000 riders use the commuter trains each week day, or about 10,500 individual passengers. Traffic is about evenly divided between the two lines, but the north line gets somewhat heavier traffic.

Modernization of the service began in 1961, when 40 of the new coaches were put in service. The other 22 cars were added in late 1964 and early 1965. The Milwaukee's present investment in land, facilities and equipment related to the suburban operations is more than $17 million.




*Because some commuter coaches are equipped with cabs having operating controls, these suburban trains can operate in either direction without needing to be turned around.*

*Train 263, above center, rounds a curve westbound at Plummer Junction, Wash., as it carries freight from Chicago and the Midwest to the Pacific Northwest.*

### The Passenger Trains

In a typical recent year, the Milwaukee operated 27 daily inter-city passenger trains. Most of these were between Chicago-Milwaukee and St. Paul-Minneapolis, or between Chicago-Omaha and the Pacific Coast.

More than a million passengers are carried annually.

The famous passenger trains operated by the Milwaukee include the Hiawathas and the Pioneer Limited trains between Chicago and the Twin Cities.

Operated jointly with the Union Pacific are the City of Los Angeles, City of San Francisco, City of Denver and the City of Portland.

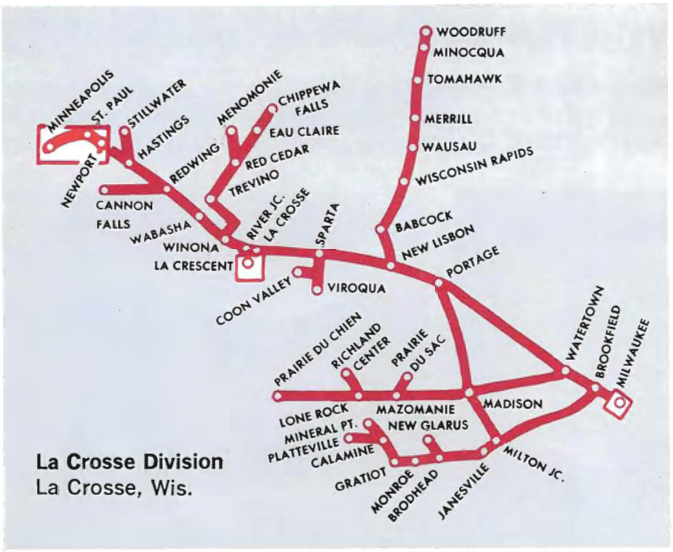
These "Cities" trains have operated over Milwaukee Road tracks between Chicago and Omaha since 1955.

## The Divisions

The Milwaukee's operations are divided geographically into 12 operating divisions, each of which operates in a manner similar to a small, fully-staffed railroad. A division superintendent oversees operations, and a division engineer is in charge of engineering, signals and communications for the division.

**Note:** In the individual divisional maps, lines and towns enclosed in box are not part of the divisions with which they are shown.


Our divisions and headquarter cities are:




**La Crosse Division**
La Crosse, Wis.

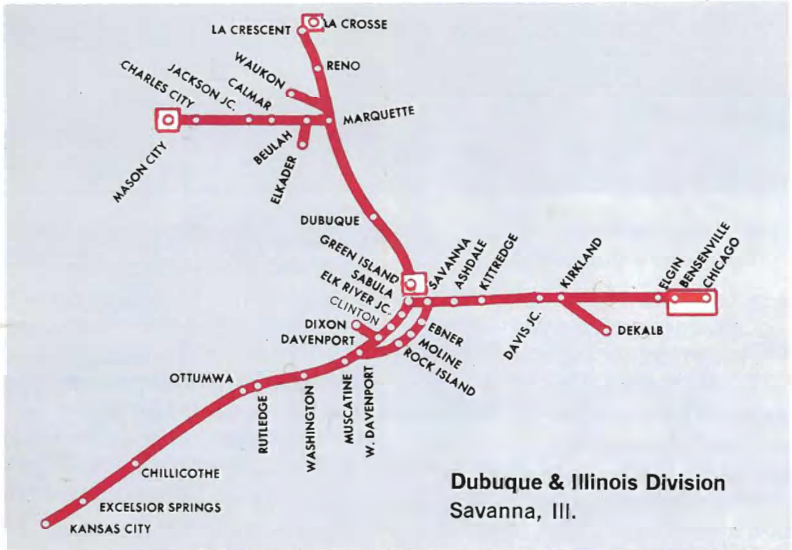

**Chicago Terminal**
Bensenville, Ill.




**Milwaukee Terminal**
Milwaukee, Wis.

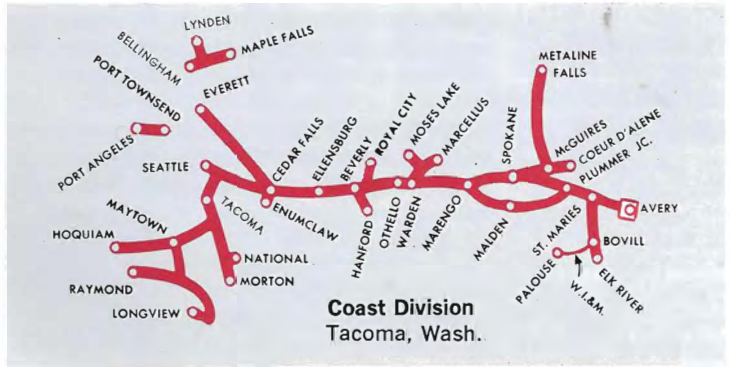

**Twin City Terminal**
St. Paul, Minn.


**Terre Haute Division**
Bensenville, Ill.

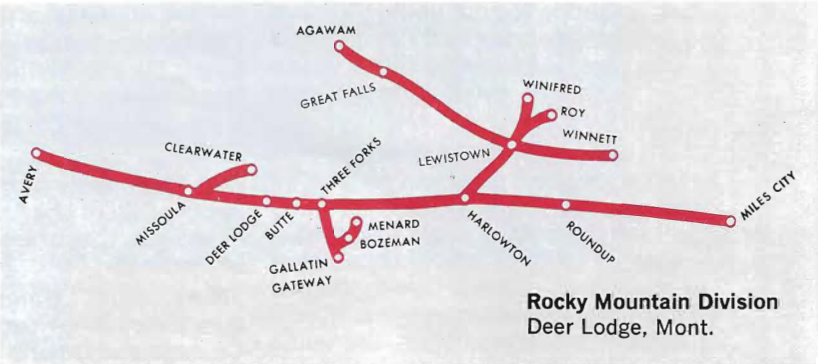



**Dubuque & Illinois Division**
Savanna, Ill.

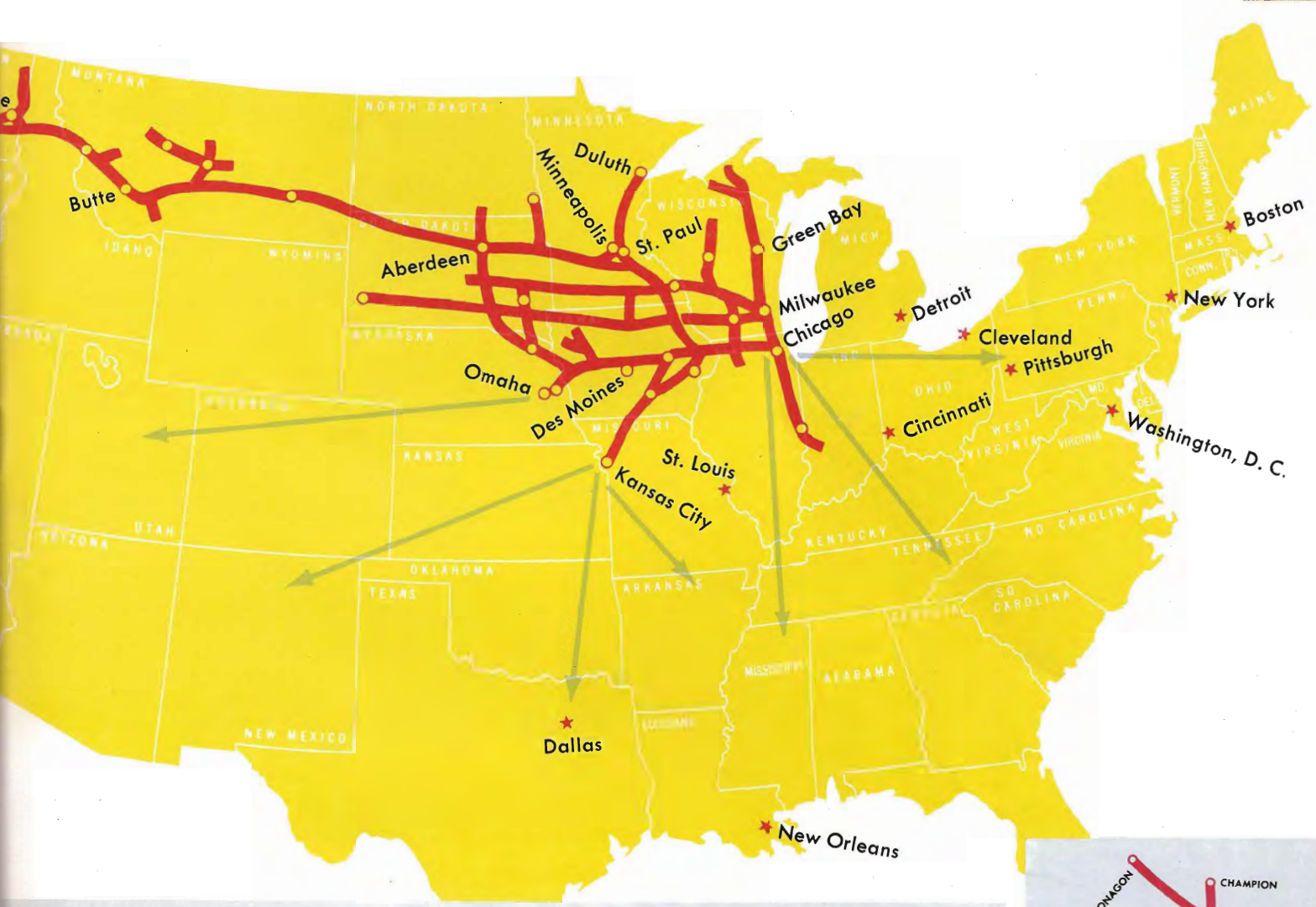

**Iowa Division**
Perry, Ia.




**Coast Division**
Tacoma, Wash.

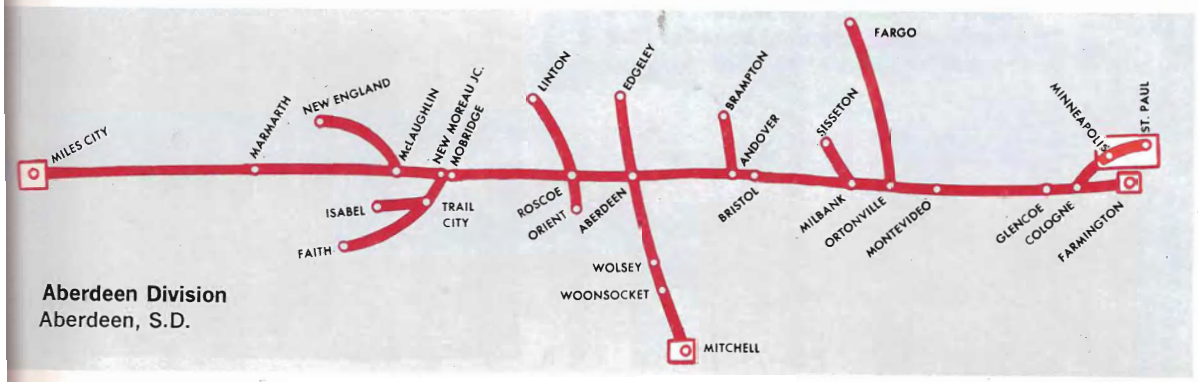



**Rocky Mountain Division**
Deer Lodge, Mont.

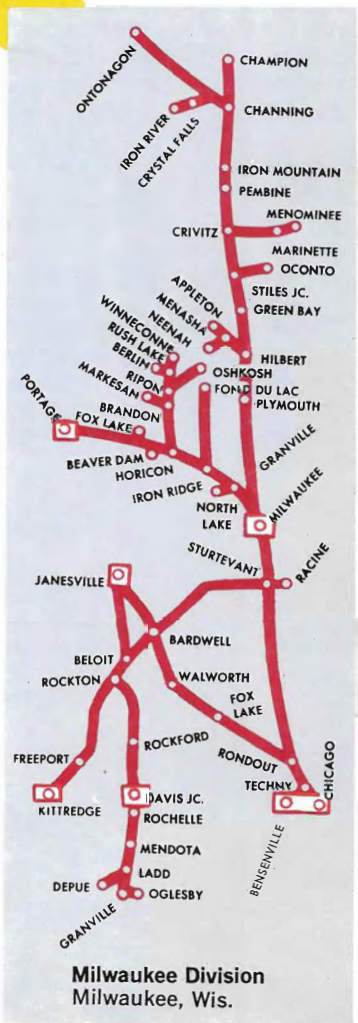




**Iowa, Minnesota & Dakota Division**
Austin, Minn.




**Aberdeen Division**
Aberdeen, S.D.




**Milwaukee Division**
Milwaukee, Wis.

## The Freight Yards

If you define a yard as a place where a number of tracks are set aside for switching freight cars, then the Milwaukee has as many as 300 freight yards.

About 85 of these can be called major yards. The largest yards are concentrated, as you would expect, at the most important points, such as Chicago, Milwaukee, the Twin Cities, Seattle, etc.

The largest freight yard is the one at Bensenville, Ill. It covers 330 acres, has more than 125 miles of track, can hold nearly 8,000 freight cars, and has a switching capacity of about 3,000 cars per day.

The Bensenville yard uses 70 tracks in the "classification" operation, in which cars are sorted by destination and by the trains in which they'll be moved. Of these tracks, 37 are in the eastbound classification yard and 33 in the westbound.

There are 20 tracks on which cars from incoming trains are received, and 5 tracks used to hold cars in outbound trains.

At this yard, at Milwaukee, and at St. Paul, cars to be sorted are pushed by locomotive to the crest of a man-made hill called the "hump." After a car, or group of cars, is uncoupled, they roll down to individual classification tracks, thereby being sorted by train and destination. On the way down, they pass through sets of retarders which squeeze the wheels of the cars to slow them to a proper speed that will prevent damage from coupling at too-high speeds.

The Bensenville yard has a master retarder that is just below the hump crest, plus four intermediate retarders and then 11 final retarders, which are near where the tracks fan out into the car holding areas.

This yard was constructed in 1953 at a cost of more than $5 million.

The next largest yard is the "Pigs Eye" yard at St. Paul, Minn., holding 3,200 cars on 120 acres of land, and with a 2,000 car per day switching capacity. The St. Paul yard has a master retarder, two intermediates and five final retarders. It was built in 1956 at a cost of nearly $5 million.

The third largest yard is the Air Line Yard in Milwaukee, Wis. This has a 1,799 car capacity on 60 acres, using a master and four final retarders, with a hump switching capacity of 1,500 per day. This yard was built in 1952 at a cost of about $3 million.

At all other yards, so-called "flat-switching" is done, in which locomotives are used to move the cars during switching.

The Milwaukee has more than 3,000 miles of track in yard tracks or sidings.

## The Subsidiary Companies

In addition to the Milwaukee Motor Transportation Co. mentioned elsewhere, the Milwaukee Road has several other wholly-owned subsidiaries: The Milwaukee Land Co.; Macy Trucking, Inc.; Bremerton Freight Car Ferry, Inc.; Washington, Idaho & Montana Railway Co.; and M.L.C. Equipment Co.

## The Major Facilities

In addition to those already mentioned, the Milwaukee has these other major facilities:

The **Milwaukee Shops,** located in the city of the same name, are the major point for heavy repairs, for testing, and for servicing and maintenance of freight and passenger cars and locomotives. One important function here has been a freight car rebuilding program begun in 1963. In the years from 1963 through 1968, more than 11,000 freight cars - or nearly a third of the fleet - have been lengthened, converted to new uses, otherwise modified or have had protective and loading equipment installed. The shops also are a central point for stores of supplies and materials.

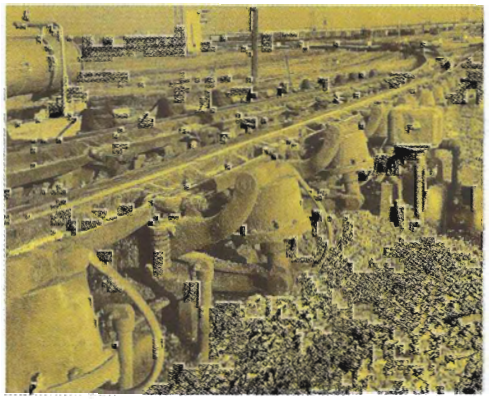
The **Fullerton Avenue Offices** in Chicago house a large part of the finance and accounting department, under the supervision of the assistant comptroller. At this building are the offices of the auditor of expenditure, auditor of capital expenditures, director of revenue accounting, auditor of freight accounts, auditor of freight settlements, auditor of equipment accounts, auditor of passenger accounts, director of internal audit, freight claims, the paymaster, and the systems and procedure and data processing sections of the management services department. A considerable part of the company's computer equipment is housed at the Fullerton building, doing work that especially involves financial and accounting record keeping.

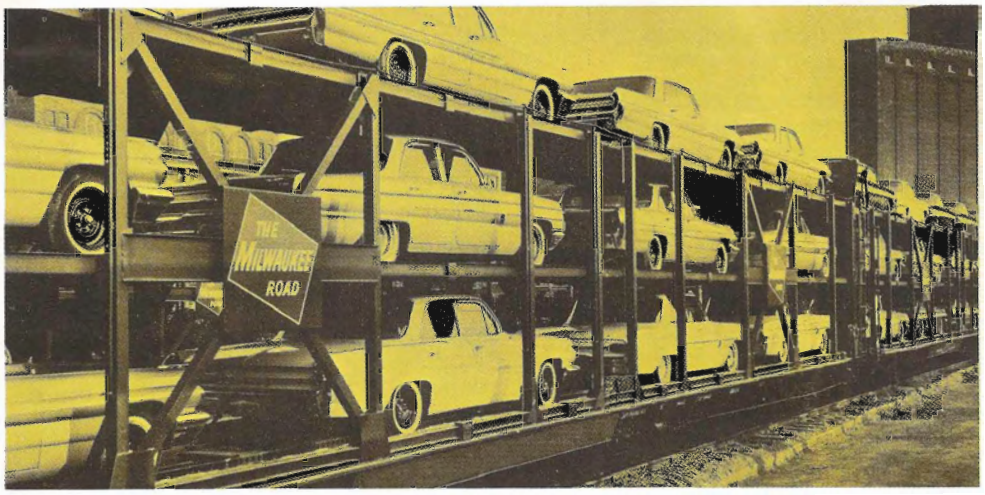
The **Tomah Shops** (at the city of the same name in Wisconsin) reclaims used rail. This is done mostly either through straightening of bent rail or by cutting off worn or broken rail ends; any defective rail is scrapped. Tomah also is a principal storage and distribution point for maintenance-of-way materials, and for the manufacture of track switches and frogs - the latter being those X-shaped permanent devices installed where tracks intersect.

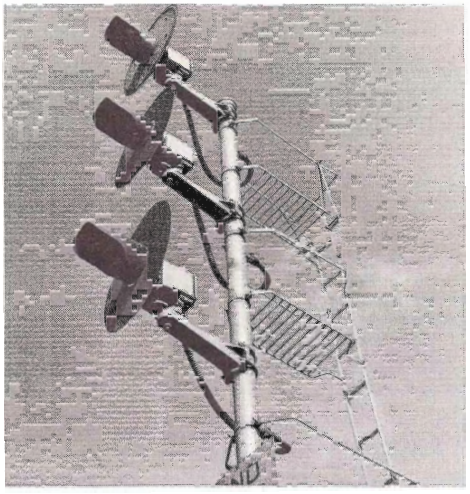
The **Seattle Offices** are the western headquarters for representatives of virtually all railroad departments, as well as for the vice president and western counsel.

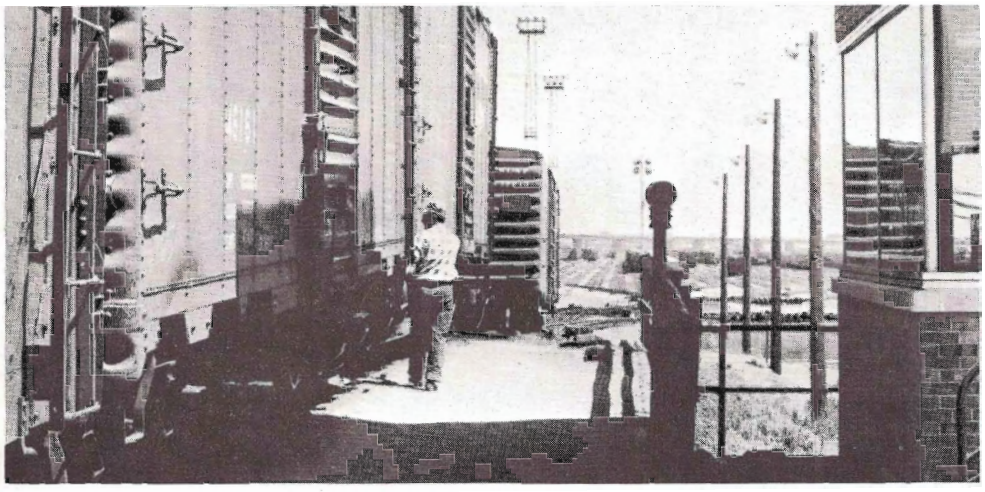
There are **Service Facilities,** of varying sizes, located throughout the system. For example, there are facilities for servicing, maintaining or repairing freight cars at 54 locations, and servicing and maintenance facilities for locomotives at 47 locations.

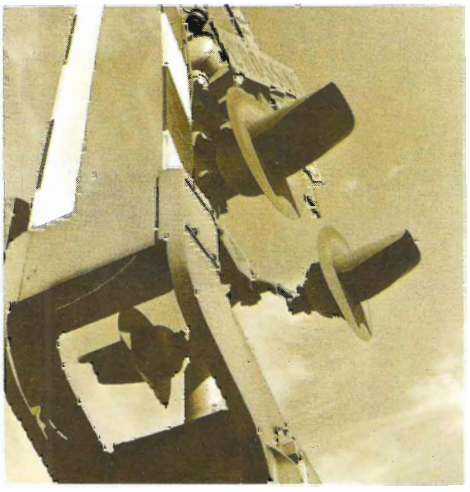
*As freight cars are being humped, retarders squeeze the wheels to slow cars to proper coupling speeds. This is the master retarder at Bensenville.*

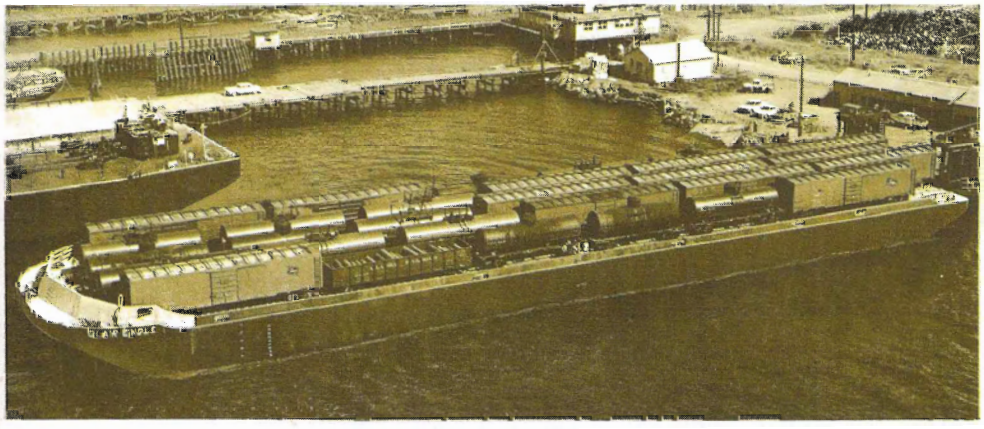


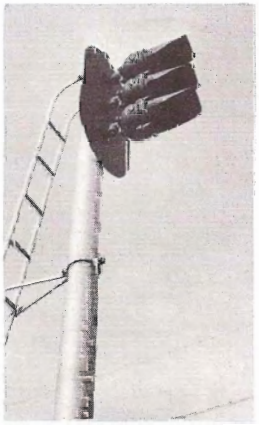










*The efficiency and economy of carrying autos on multi-level rack cars has helped the Milwaukee recapture a market virtually lost to trucking a few years ago.*

*In three retarder yard operations, freight cars pushed to hump crest are uncoupled, then roll to proper place on a classification track.*

*The Milwaukee participates in freight shipments moving to or from Alaska. The railroad cars move over the water journey on sea-going barges or a "trainship."*

## The Piggyback Operations

The Milwaukee Motor Transportation Co., a wholly-owned subsidiary of the railroad, operates terminal or ramp facilities for handling piggyback trailers or containers (trailers without wheels) carried on our trains.

(In piggyback service, as you probably already know, regular highway trailers or containers are carried on railroad flatcars.)

The Milwaukee began piggybacking in 1958. Today, some 10 years later, thousand of trailers are carried each year.

The largest piggyback facility we have is Piggyback Park, located in our freight yards at Bensenville, Ill., just west of Chicago. This park is a fully surfaced specially laid out 46-acre facility that now is exactly 10 times the size it was when we began piggybacking operations there.

The park has two huge gantry cranes, which straddle a railroad track while lifting trailers on or off flatcars. Each crane takes 90 seconds or less to load or unload a trailer.

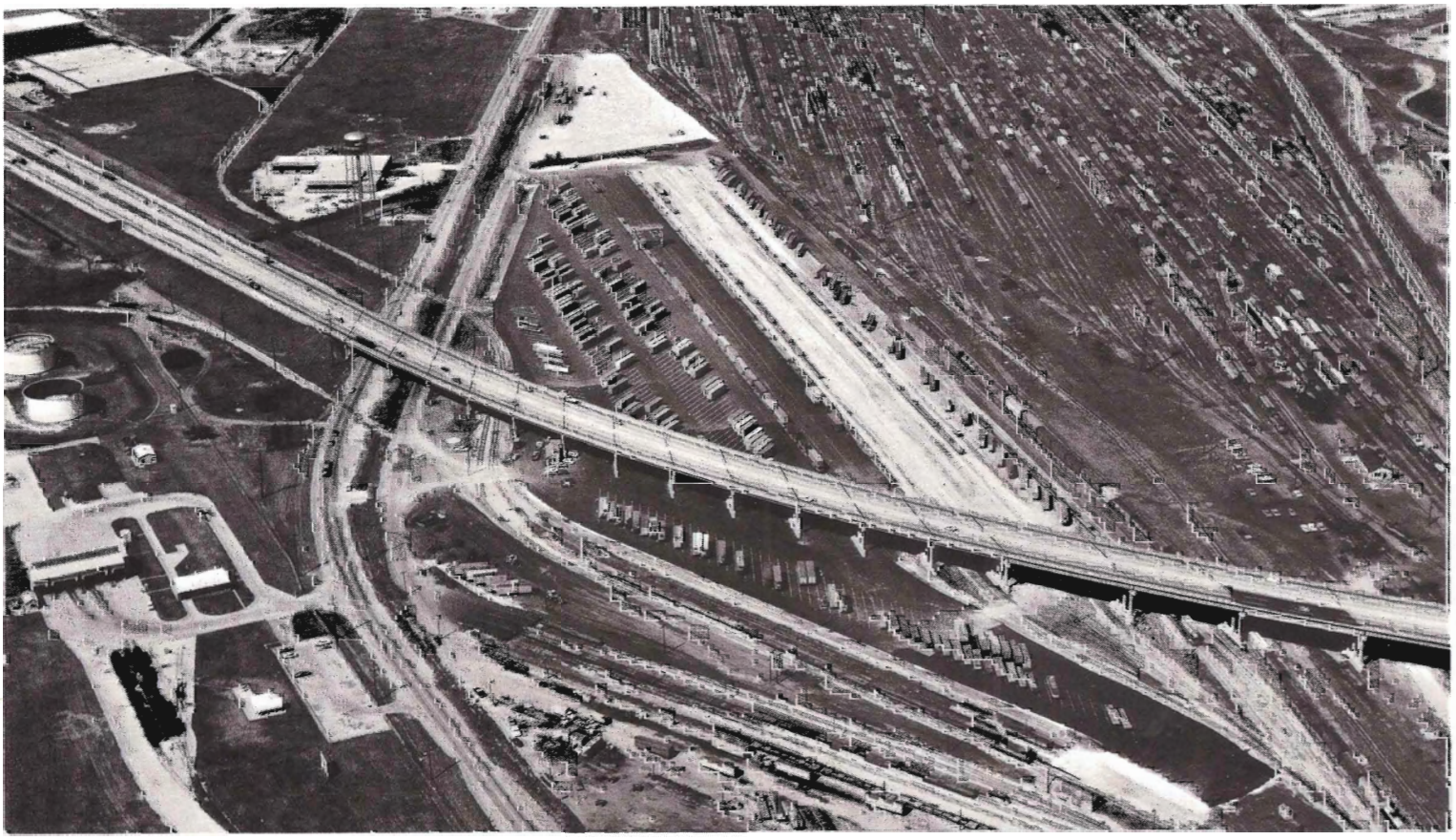
Also in use there is a Piggy Packer, a four-wheel drive vehicle that uses two huge, jointed arms to lift trailers on or off cars, taking about the same time to do this as one of the cranes. The Piggy Packer, used primarily to supplement crane operations, adds flexibility since it can move easily anywhere in the park.

Other Piggy Packers are in use at the St. Paul, Minn., and Seattle, Wash., piggyback facilities.

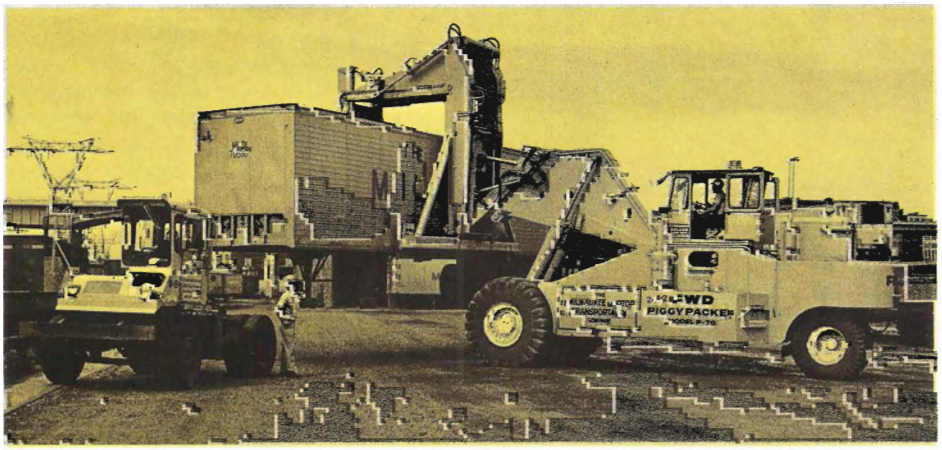
At all of the other 47 MMTC locations, where piggyback is handled, a ramp loading system is used. In this, trailers are backed up a ramp and over the flatcars in loading.

The MMTC subsidiary uses more than 200 truck tractors in terminal operations or to pull trailers over the highway. About 2,100 piggyback trailers are in the MMTC fleet, including approximately 750 refrigerated trailers. The balance are "dry van" non-refrigerated units, and others of various types, including flat bed trailers.

The volume of trailers carried by our trains has been growing very rapidly in recent years. This growth has included increases of more than 17 per cent in 1967, nearly 50 per cent in 1966, about 26 per cent in 1965 and more than 20 percent in 1964.



*Mechanical handling of trailers is key to fast, high capacity operation of Piggyback Park, where two gantry cranes and a Piggy Packer are used to lift trailers on or off railroad flatcars.*




*The use of a Piggy Packer at the St. Paul piggyback facility increased capacity there by 30 percent.*

The Milwaukee Road is organized into these departments:

**Operating**
which also includes within it transportation (responsible for allocating equipment, car tracing, equipment utilization, etc.); safety; police; fire prevention; mechanical (car and locomotive repair, testing, service and maintenance); freight claim prevention; mail, baggage and express; and the sleeping and dining car operation.

**Rates and Divisions**
which sets prices for our services, and does pricing research.

**Real Estate and Industrial Development**
which oversees property owned, sold or leased by the railroad, and which works to locate new industries on sites served by our lines.

**Finance and Accounting**

**Treasurer**

**Purchases and Material**

**Employment Training and Development**

**Corporate Secretary**


**Sales and Service**
which also includes the passenger department, marketing and research, and agriculture and mineral development.

**Law**
which also includes the tax department, and the claim departments.

**Labor Relations**
which negotiates labor agreements with the approximately 20 brotherhoods (unions) having Milwaukee Road membership.

**Engineering**
which basically has three sub-sections: structures, relating to design, construction or maintenance of bridges and buildings we own; maintenance of way, relating to maintaining the track and right-of-way; and signals and communications.

**Public Relations and Advertising**

**Milwaukee Motor Transportation Co.**

**Management Services**
which includes cost research, systems and procedures, and electronic data processing.

## The History

The Milwaukee's history dates to a predecessor railroad which in 1850 operated the first train in Wisconsin. In the 1860's and 1870's many smaller railroads were merged into a system called the Milwaukee & St. Paul Railway until 1874, when the name became the Chicago, Milwaukee & St. Paul.

The system continued to grow in the midwest, either through construction or by acquisition, during the remaining part of the 1800's. In 1900 the system had virtually all of its present midwestern mileage.

In 1906, an extension to the Pacific Northwest was begun, being completed in 1909. In the early 1920's, the present Terre Haute division was acquired, with its trackage in northeastern Illinois and western Indiana.

The company's present name, the Chicago, Milwaukee, St. Paul and Pacific Railroad Company, dates from 1928.


*Computers are used for many important jobs in today's railroad. At the Chicago headquarters, this IBM 360 system is used especially for car tracing and improved equipment utilization. In a virtually instantaneous operation, answers are flashed on a video screen in response to inquiries about car location.*

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CHICAGO, MILWAUKEE, ST. PAUL and PACIFIC RAILROAD COMPANY
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