Michigan RAIL UPDATE

A publication of the Michigan Railroads Association

FALL 2008

High-Tech Advances Improve Freight Railroad Safety & Efficiency

Freight railroads have dramatically improved safety and efficiency through the use of new technology, much of it developed and/or refined at the Transportation Technology Center, Inc. (TTCI) in Pueblo, Colorado, a wholly-owned subsidiary of the Association of American Railroads (AAR) and the finest rail research facility in the world. Many of these technological advances are designed to help protect freight cars, locomotives, track, and cargo before damage, costly repairs, traffic holdups, and derailments occur. Some of these high-tech advances are described below:

Freight Car Locomotive Wheels

■ **Wayside detectors** identify defects on passing rail cars—including overheated bearings and wheels, dragging hoses, deteriorating bearings, cracked axles and wheels, and excessively-high and wide loads.

■ **Wheel profile monitors** use lasers and optics to capture images of wheels. The images show if wheel tread or flanges are worn and, consequently, when the wheels need to be removed from service before they become a problem.

■ Trackside **acoustic detector systems** use "acoustic signatures" to evaluate the sound of internal bearings to identify those likely to fail in the near term.

■ Wheels constructed with stronger **micro-alloy metals** that resist damage and withstand higher service loads are being developed.

Track and Infrastructure

■ **Improved metallurgy** and premium fastening systems have enhanced track stability, reducing the risk of track failure leading to derailments.

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Help Available For Freight Rail Users

From the president

Robert Chaprnka

With the price of diesel fuel nearing $5 per gallon this past summer, some businesses are looking to the railroads to handle their freight transportation needs. Railroads are fuel efficient, environmentally friendly and are becoming more attractive to many companies.

The State of Michigan has two programs designed to preserve rail infrastructure and offer financial assistance in rail related development expansion projects:

Michigan Rail Loan Assistance Program
The Michigan Rail Loan Assistance Program or MiRLAP is designed to help preserve and improve Michigan's rail freight infrastructure by awarding non-interest bearing loans to railroads, local governments, economic development organizations or businesses that plan to use rail services. No interest loans are for up to ten years and can be for 90 percent of a project's cost. MiRLAP loan applications for 2009 are available on MDOT's Web site. Completed applications must be received no later than February 2, 2009.

Freight Economic Development Program
The Freight Economic Development Program provides low interest loans to businesses locating or expanding in Michigan requiring rail service or to local governmental units interested in assisting those businesses. These low-interest loans may be up to 50 percent of the cost of the rail infrastructure, such as a rail siding. Loans can be forgiven incrementally provided minimum rail car loadings are met during the five-year repayment period.

More information on these two programs can be found at www.michigan.gov/mdotrail-freight.

To speak to the administrators of these programs contact:

■ Kathleen Grover (MiRLAP) – 517 373-1321 or groverk@michigan.gov

■ Rosemary Holland (Freight Economic Development Program) – 517 335-2580 or hollandr@michigan.gov

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■ **Rail defect detector cars** are used to detect internal rail flaws. The AAR and the Federal Railroad Administration have jointly funded a Rail Defect Test Facility at TTCI that railroads and suppliers use to test improved methods for detecting rail flaws

■ Advanced **track geometry cars** use sophisticated electronic and optical instruments to inspect track conditions, including alignment, gauge, and curvature. This information helps railroads determine track maintence needs

■ **Ground-penetrating radar** and **terrain conductivity sensors** are being developed that will help identify problems below the ground that hinder track stability.

■ Improved **track lubrication** techniques, including the use of environmentally-friendly soybean-based lubricants, are being introduced to reduce fuel costs and extend rail life.

■ Much of the research underway regarding track and infrastructure is related to **heavy-axle load** (HAL) service, which entails the use of heavier trains. HAL related work is underway on rail steels, insulated joints, bridges, welding, specialized track components, and more.

■ New systems are being developed and tested to monitor **bridge safety** including remote monitoring of the structural health of bridges.

<u>**Locomotives and Freight Cars**</u>

■ Thousands of new **AC traction locomotives** are now operating on U.S. railroads. When used in certain types of rail operations, this new locomotive technology can provide more efficient and cost-effective motive power.

■ Trains with **electronically-controlled pneumatic (ECP) brakes** are being introduced into revenue service. In an ECP braking system, an electronic signal applies the brakes on each car in a train almost instantaneously, resulting in a much shorter stopping distance, reduced slack, and improved train control.

■ Advanced **fault detection systems** monitor critical functions on locomotives. State-of-the-art locomotives today can have 20 or more sophisticated microprocessors that measure and check several thousand characteristics of locomotives and their operation.

Trackside acoustic detection system, developed at the Transportation Technology Center. This detection system acoustically detects bearing defects in moving rail cars, and electronically reports to a central database where rail car owners receive notification. This technology, which is deployed in North America and China, allows rail car owners to take preventative action to optimize operation and enhance safety.

■ Major U.S. railroads are deploying **remote control locomotive (RCL)** technology to improve rail safety. RCL allows rail personnel on the ground to operate and control locomotives in rail yards through the use of a hand-held transmitter that sends signals to a microprocessor on board a locomotive. In a March 2006 report, the FRA found that "employee injury rates were approximately 20 percent lower for RCL operations than for conventional switching operations"

> *Railroads nationally spend more than $20 billion each year maintaining, renewing and expanding their tracks and equipment.*

■ **Tank car enhancements** have helped railroads reduce the overall rail hazardous materials accident rate by more than 80 percent since 1980, and railroads are constantly investigating ways to further enhance tank car safety. For example, the industry committee responsible for establishing tank car design standards recently adopted a proposal that will enhance the robustness of tank cars that carry toxic inhalation hazards including chlorine and anhydrous ammonia.

■ New technologies designed to enhance fuel efficiency are being developed and deployed. Advanced **engine shutdown and startup systems** help keep engine fluids warm and reduce idling.

<u>**Computer and Communication Systems**</u>

■ Major freight railroads are developing **train control systems** that use advanced technology to prevent accidents by automatically stopping or slowing trains before they encounter a dangerous situation. Through predictive enforcement, train control technologies, in certain circumstances, could significantly reduce the incidence of train accidents caused by human error, especially train collisions and derailments due to excessive speed.

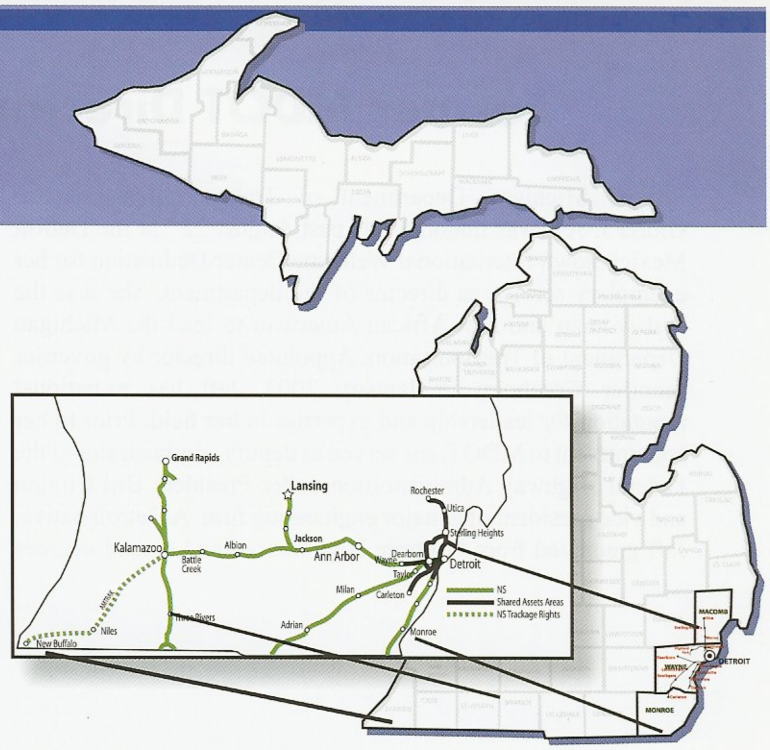
■ Railroads are constantly expanding their use of state-of-the-art wireless technologies and other advanced **communications systems**. For example, the **Integrated Railway Remote Information Service (InteRRIS)**, an advanced Internet-based data collection system with wide potential applicability, is under development at TTCI. An early project using InteRRIS collects data from wheel impact load detector systems (which identify wheel defects by measuring the force generated by wheels on tracks) and detectors that monitor the undercarriage of rail cars (which identify suspension systems that are not performing properly on curves) along railroad rights-of-way. InteRRIS processes the information to produce vehicle condition reports that allow equipment approaching an unsafe condition to be removed from service and repaired before an accident occurs.

■ Advanced **computer modeling software** is being used in a huge variety of rail applications from automating rail grinding schedules and demand forecasting to construction sequencing and operation simulation.

Railroads nationally spend more than $20 billion each year maintaining, renewing and expanding their tracks and equipment including the many high-tech advances outlined here that improve railroad safety and efficiency. Since passage of the Staggers Act in 1980, which deregulated the railroads, the railroads have been able to do much by massive investment to become the world's most efficient and low-cost rail freight network.

But some in the U.S. Congress want to once again give government regulators ultimate authority over crucial areas of rail operation including forcing railroads to reduce their rates to below-market levels. This would hurt the railroads by cutting off access to needed capital to make the huge ongoing investments needed to keep their networks in top condition. Railroad reregulation is bad public policy and should be rejected.

MOVING MICHIGAN



NORFOLK SOUTHERN CORP.

Headquarters: Norfolk, Virginia
Chief Executive Officer: Wick Moorman
Michigan Payroll: $47.9 million
Employees in Michigan: 900
Route Miles in Michigan: 644
Major Commodities: Auto parts and finished vehicles, coal, intermodal trailers and containers

Wick Moorman
Chief Executive Officer

Through its predecessor companies, Norfolk Southern has been operating in Michigan for more than 160 years, tracing its history in Michigan primarily to three companies that were created during the early stages of railroading in the U.S. The Michigan Central constructed its main line between Detroit and Kalamazoo in the 1840s. The New York Central built its main line between Detroit and Toledo in the 1850s. The Wabash Railroad laid its main line track between Detroit and Ft. Wayne in the 1880s. While some of NS lines in Michigan have seen light traffic volumes in the past few years, there is no doubt that NS continues to play a vital role in Michigan's economy.

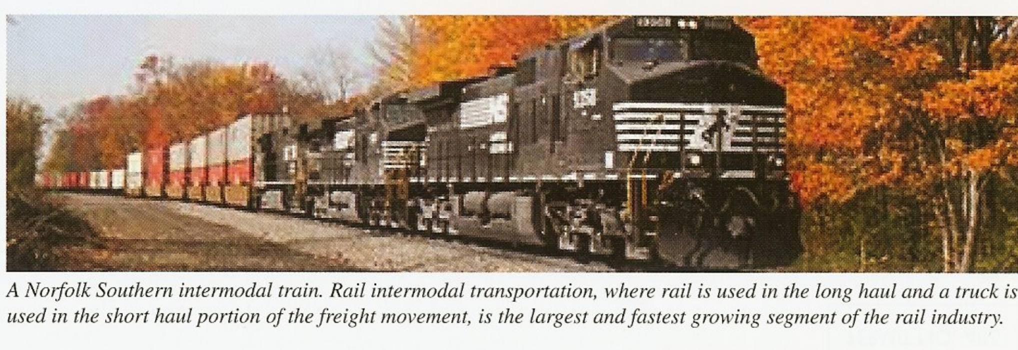
Dearborn is the focal point for Norfolk Southern in Michigan, as it is the headquarters of the Dearborn Division, one of 11 operating divisions on the company's 22-state network. The Dearborn Division includes one of the most active lines on the NS system connecting Cleveland, Toledo and Chicago with more than 100 freight trains daily. The division also controls railroad operations between Dearborn and Kalamazoo, and between Detroit and Toledo. NS' Lake Division, headquartered in Ft. Wayne, Ind., controls trains operating between Detroit and Butler, Ind. NS provides local service in Michigan between Jackson and Lansing, and between Kalamazoo and Grand Rapids. NS uses Amtrak's line to serve freight customers between Kalamazoo and New Buffalo.

Local switching service in the Detroit area is provided by Conrail, which is a jointly owned subsidiary of NS and CSXT.

Norfolk Southern is the largest rail carrier of auto parts and finished vehicles in the U.S. In Michigan alone, NS operates five automotive distribution centers and one Just-In-Time rail facility. It also has access to seven automotive assembly plants and serves ten automotive supplier plants.

Since 1998, Norfolk Southern has managed an innovative vehicle distribution system sourcing from Ford's 15 North American assembly plants through a mixing center network to Ford's retail national dealer network. This network is a hub and spoke distribution system where vehicles are shipped to one of four strategically located mixing centers. Included in the network are four Michigan-based Ford assembly plants: Wayne Passenger, Michigan Truck, Dearborn Truck, and Flat Rock Assembly. This system has resulted in a 40 percent improvement in plant-release to dealer-delivery time. NS is Ford's largest transportation provider.

Norfolk Southern provides vehicle loading services for Chrysler LLC at its auto distribution facility in Melvindale and at Chrysler assembly plants in Warren, Sterling Heights and Detroit (Jefferson North). These facilities load vehicles produced at the Detroit area plants and at Chrysler plants in Windsor



A Norfolk Southern intermodal train. Rail intermodal transportation, where rail is used in the long haul and a truck is used in the short haul portion of the freight movement, is the largest and fastest growing segment of the rail industry.

and Brampton, Ontario. Additionally, Chrysler vehicles from Mexico and Newark, Delaware destined to dealers in Michigan are railed to these facilities by NS.

Norfolk Southern's bimodal affiliate, Triple Crown Services Company, operates two terminals in the Detroit area. Facilities in Melvindale and Ypsilanti provide RoadRailer® service to southeastern Michigan, northwestern Ohio, and western Ontario. RoadRailer® trailers utilize hybrid technology and function as both a road trailer and a rail car. The unique combination provides substantial environmental advantages and exceptional value to shippers throughout the eastern two-thirds of the U.S. and in Toronto and Montreal. Triple Crown was recently named the number one Intermodal Service Provider by *Logistics Management* magazine in its 2008 "Quest for Quality" reader survey. This marked the seventh time in the past eight years that Triple Crown received the top rating.

While Michigan's economy has been soft, NS' Industrial Development department, with an office in Dearborn, aggressively pursues any opportunities to bring more business to the rails – and remove long-haul trucks from the highways. Last year, NS worked with state and local economic development agencies across its 22-state network to locate 63 new facilities on NS trackage, expand 35 others, which resulted in 3,500 new jobs and represents an investment of more than $2 billion.

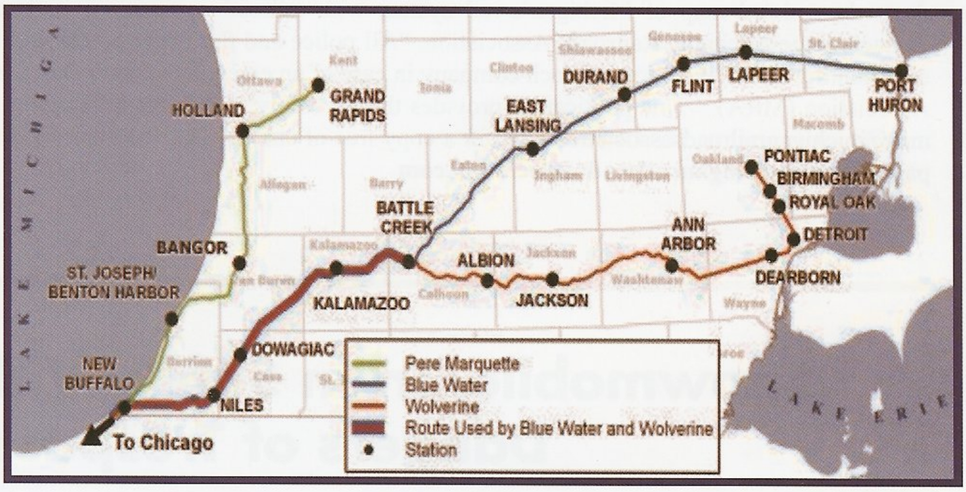
In 2008, Norfolk Southern continued to be the industry leader for employee safety, earning its 19th consecutive E.H. Harriman gold medal. The Harriman award recognizes NS as the railroad with the lowest personal injury ratio in 2007 among the nation's major freight railroads.

Amtrak Ridership Up In Michigan

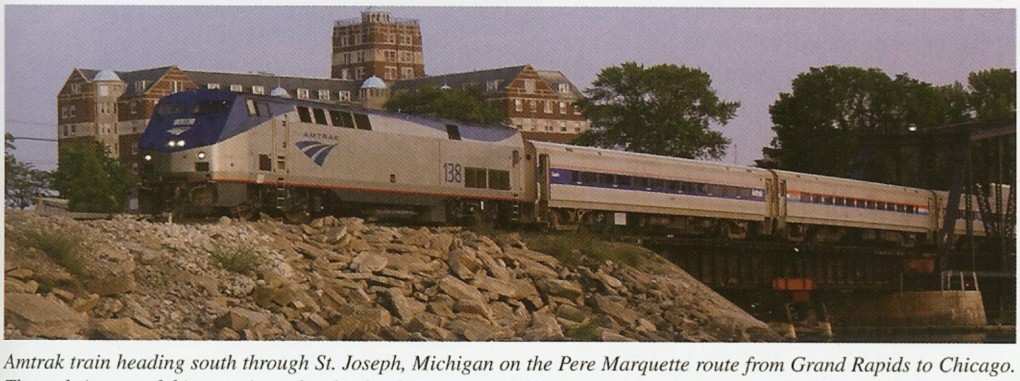
Michigan residents, like their counterparts nationally, continue to flock to the local Amtrak station, driving rail ridership to levels not seen in a generation. The rising costs of gasoline and air travel, airline retrenchment and improved Amtrak service are contributing to increased ridership. Rising patronage and the fuel economy of passenger trains is driving renewed interest among policy-makers in the potential of rail.

Amtrak provides service over three routes in Michigan; the Pontiac-Detroit-Chicago *Wolverine Service,* Port Huron-Lansing-Chicago *Blue Water* and Grand Rapids-Chicago *Pere Marquette.* Through August of this year, ridership is up 6.1% over last year. In 2007, 681,000 rode Amtrak trains to and from Michigan, and expect to top 700,000 Michigan passengers this year.

Ridership growth in Michigan is mirrored nationally. Amtrak carried almost 29 million people in the just completed fiscal year, the most since its 1971 formation. Ridership growth nationally has been driven by service expansion in places like California, Maine, Massachusetts and Illinois, and the attractiveness of high speed *Acela* trains operating between Boston, New York and Washington.



Michigan's three intercity passenger rail routes operated by Amtrak



Amtrak train heading south through St. Joseph, Michigan on the Pere Marquette route from Grand Rapids to Chicago. Through August of this year Amtrak ridership has increased 6.1 % in Michigan mirroring similar growth nationally.

Ridership would have grown even more sharply but for a shortage of coaches to carry all who want to ride. Amtrak is struggling to accommodate burgeoning ridership all over the system, with customer counts setting records every month. Like public transit, the capital needed to fund new equipment acquisitions must be appropriated by federal or state legislatures. Appropriations have not kept pace with needs requiring Amtrak forces to resort to rebuilding its dwindling fleet of coaches, sleepers and food service cars, some initially built in the 1950s.

Recognition of the role that passenger trains can play in improved mobility and economic development has lead to increased interest from other states. Amtrak has completed route and service expansion studies for Iowa

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Illinois and Missouri, and is in progress on similar studies for routes in Texas and Kansas.

In other developments in Michigan this year, work continued on advancing the positive train control "ITCS" system between Niles and Kalamazoo. When this segment is completed in 2009, the improved capabilities of the system are expected to provide enhanced operational safety and allow for a planned increase in speeds from today's 95 mph to 110 mph along approximately 45 miles of the Chicago-Detroit-Pontiac route. Incremental improvements to speed and reliability and more service frequency are hallmarks of Amtrak's conservative growth strategy.

Continued investment in the nation's passenger train network will depend on a shared commitment between state and federal governments, Amtrak, and Amtrak's freight railroad partners. As more demands are placed on the railroad network, it is important that the costs to increase the capability to handle the needs of a growing nation are shared by those who benefit. Amtrak will continue to advocate on behalf of rail, and acknowledge the shared benefits and shared sacrifice needed to move the industry and its customers forward.

Rail Map And Emergency Phone Numbers Available

A newly updated map of Michigan's rail system with railroad company emergency telephone numbers is now available by contacting the Michigan Railroads Association. "All police and fire departments should know which railroads are traversing their communities and how to contact each company in case of an emergency," said Bob Chaprnka, president of the Michigan Railroads Association (MRA). "This publication provides the necessary information." Contact the MRA at (517) 482-9413 or by email at mra@michiganrailroadsassociation.com for a copy free of charge. This information can also be obtained by accessing MRA's web page at **www.michiganrailroadsassociation.com**

Snowmobile/Train Safety Video Illustrates Dangers of Trespassing

Before you know it, the snow will be falling and Michigan will be in the midst of another beautiful winter. Michigan winters offer many recreational opportunities such as snowmobiling. Snowmobiling on or next to railroad tracks sometimes becomes irresistible. Unfortunately, this activity is dangerous and can cause serious injury or death. It is also trespassing and against the law.

The Michigan Railroads Association and Michigan Operation Lifesaver, a non-profit organization dedicated to train safety, are offering a free safety DVD or video showing the dangers of snowmobiling on or next to the railroad tracks. This 12 minute safety presentation entitled "*Sleddin' The Right Track*" is available free of charge by contacting the Michigan Railroads Association at (517) 482-9413 or mra@michiganrailroadsassociation.com

For a Free Copy of
"Sleddin' the Right Track"
Snowmobile/Train DVD or video
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