Making tracks for rail efficiency

In North America, automotive manufacturers and logistics service providers are working with railroads to improve supply chain visibility and reduce traffic congestion, writes **Anthony Coia**

The automotive industry in North America faces a number of challenges in using the railway system to move parts and finished vehicles. Equipment shortages and traffic congestion are top among the complaints from automotive shippers. These ongoing problems reduce supply chain efficiency and test the competitiveness of rail.

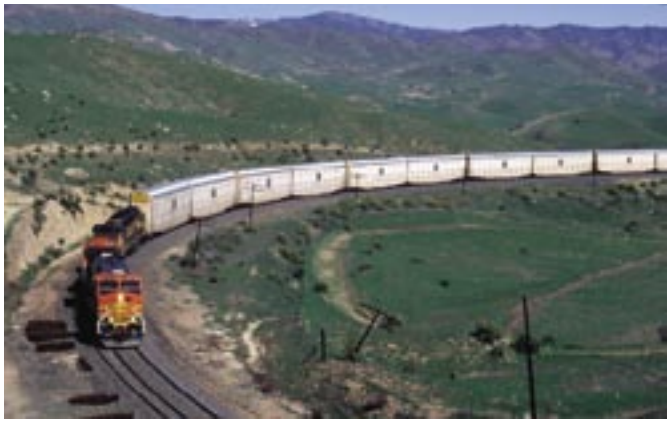
The good news is that solutions are coming from the rail carriers, logistics providers and manufacturers. Solutions for improving logistics efficiency include better visibility throughout the rail network, larger capacity and more flexibility with the equipment. These opportunities for improvement are facilitated by closer cooperation between automotive shippers and rail service providers.

Mexican connections

One man who is instrumental in bringing together automotive shippers and North American railways is Kenneth Fletcher, formerly Executive Director – Logistics, Planning and Operations at Volkswagen of America. He became Executive Director of the Automotive Industry Logistics Steering Committee (AILSC) on 1 June 2005. The committee comprises major vehicle manufacturers in North America as well as rail carriers, and is designed to further cooperation by addressing logistics issues. The group also controls the allotment of 56,000 railcars in North America.

Volkswagen uses Mexican railway TFM to transport finished vehicles from its plant in Puebla, Mexico to Laredo, Texas. There it connects with BNSF and Union Pacific railways to the United States, while some connect with Canadian National and Canadian Pacific railways to Canada. In total, Volkswagen moves from 250,000-300,000 vehicles from Mexico annually. It also imports vehicles from Germany to Halifax, Canada and transports them by rail to the West Coast.

Fletcher says that one of the ongoing problems with using rail is the shortage of bilevel and trilevel railcars. "The automotive economy is down. The trilevel fleet is falling apart. Furthermore, it is difficult to persuade railroads to invest in equipment and upgrades for the rates that vehicle manufacturers pay," he says.



Closer cooperation between automotive shippers and rail service providers (like BNSF, pictured here) is improving supply chain efficiency in North America

Roland Fortner, General Manager, Insight Network Logistics, Auburn Hills, Michigan, a subsidiary of Union Pacific that provides network management and inventory control services, says that demand and supply for finished vehicles fluctuates dramatically: "The relative demand for bilevels compared to trilevels has increased due to the demand for SUVs and for higher profile cars such as the Ford Five Hundred. If the demand stays the same, I do not expect the supply to improve significantly over the next two model years because of the lag-time involved in producing these railcars."

Railcar requirements

At Toyota Logistics Services, Torrance, California, the division of Toyota that handles finished vehicles, Jim Finkel, Corporate Manager Logistics, Administration and Planning, says that there are not enough multilevel railcars in the areas where they need them. "For example, our Fremont, California plant is short of trilevels so we use bilevels just to get by," he says. The network has added about 2,000 bilevels within the past year, bringing the total to 38,000, according to David Julian, President, Automotive And Supply Chain Services at Norfolk Southern Railroad.

"If everyone shipped only SUVs or Corvairs it would be simpler, the current system is designed to handle that mix.

But the present system is not flexible enough to handle all the product variations we see in the marketplace today. The alternative is a universal railcar, which is longer than bilevels or trilevels. We need a design that will have more flexibility and more capacity to handle at least 80 per cent to 85 per cent of the volume with one kind of railcar. Infrastructure restrictions would still exclude certain types of railcars, however. The greater problem is that it is difficult to get people to agree on a design. At this point it is still one and a half years away at best. No one wants to put up such out-of-pocket costs without guaranteeing volume," says Fletcher.

Container shortage

In addition to the shortage of multilevel railcars, there are also shortages of intermodal containers. Gregory Shimonek, Senior Director, Business Development, Union Pacific Distribution Services (UPDS), says that within the past 18 months the biggest driver for efficiency improvement has been the shortage of 53ft intermodal containers. "The supply is increasing but the lack of motor carrier equipment is driving demand," he says. "Many more vehicle manufacturers are looking at intermodal service as an alternative to all motor."

Shimonek says that UPDS is able to mitigate equipment

The relative demand for bilevels compared to trilevels has increased due to the demand for higher profile cars, according to Insight Network Logistics

shortages by understanding where the head hauls are destined and the rack return ratios. "We sell in lanes where we know that we are creating capacity. For example, if we ship 10 boxes from the upper Midwest to Mexico and three come back with racks, that means the seven units are still available," he says.

For TLS another challenge is the utilisation of shared assets, according to Finkel. "It is difficult to isolate and schedule them appropriately. We are selling more than what was forecasted but we have good velocity in that we are not storing vehicles on railcars. We cannot obtain enough railcars because the domestic VMs have too many vehicles," he says.

He adds that congestion as a result of ocean containers coming into and out of the port of Los Angeles is also a challenge. The railways admit that an increase in overall volume has slowed the system down.

Within the past 18 months the biggest driver for efficiency improvement has been the shortage of 53ft intermodal containers – Gregory Shimonek, UPDS

David Julian says that the challenge with respect to cycle time is due to the railroads' record volumes last year: "The network did not move as fast last year, so there was degradation in cycle time."

Improvements from within

At Toyota's North American Parts Organization (NAPO), Tony Minyon, National Manager, NAPO Logistics, says that last year's peak season was challenging. NAPO uses rail to ship intermodal containers east of the Rocky Mountains from its Ontario Parts Center and west of the Rockies from its Hebron, Kentucky Parts Center. The destinations are NAPO's parts distribution centres located throughout the country, from which parts are delivered to the dealers.

"Peak season is becoming more challenging. Capacity is fixed and the economy continues to grow. In addition, this past season there were short-term disruptions due to washouts and derailments that lasted between one and seven days. The washouts came just when we were coming out of peak season," says Minyon.

NAPO partners with Intermodal Marketing Companies (IMCs) who in turn partner with the railways. Says Minyon: "Our IMCs guarantee capacity, recommend rates and routes, and provide information on delays. By working with our IMCs – NYK Logistics and the Hub Group – we can load our containers more consistently."

Minyon says that NAPO is also looking more within its own organisation in order to ensure that it does not cause logistics inefficiencies. "For example, we may not give the trucker the intermodal box until 4 or 5pm. With a 6pm cut-off at the Chicago railhead and a three-hour transit time, the box remains at the railhead for an extra day. So, we are looking in the mirror. Now we know that the box must be tendered by 3pm in order to make the ramp by 6pm," he says.

Currently, NAPO is changing its procedures involving cut-off time and expects complete the change by the end of the year, according to Minyon. He says: "After measuring the routes from our Ontario Parts Center to Boston and from Hebron to Portland, Oregon, we found that most delays are our fault. For example, for a 6pm rail cut-off in Chicago,

we are creating variance if we tender a load at 4pm and then at 10am the next day. We need to tender consistently."

Minyon says that NAPO's scheduling change should enable the parts distribution centres (PDCs) to become more efficient. He points out that the railroads would appreciate the change because there would more consistency in NAPO's demand for equipment. This in turn would lead to a reduction in inventory. NAPO's goals are a 15 per cent reduction in lead-time and a 15 per cent reduction in lead-time variability.

Competitiveness of rail

The competition as well as the complementary relationship between rail and road is a consistent part of the transportation market in North America. Fletcher says that about two to three years ago, VMs were taking their freight from railways and putting it on the road. "Now, not as much is being taken off rail in spite of the additional transit time. Manufacturers are willing to tolerate it," he says.

"However, rail is raising its rates. Less railcar capacity means that you need better turnaround. But with the extreme congestion and capacity being so short, VMs are forced to use trucks. Although trucks are faster from plants in Mexico to Chicago for example, they are not more economical. Short-sea shipping is becoming more relevant, but you still must have truck or rail on the other side. This takes a lot of coordination and you also need to find the vessel capacity," he continues.

Fletcher says that Volkswagen is preparing to use rail intra-Mexico by shipping vehicles from its Puebla plant to Guadalajara and Monterrey for redistribution. Currently, Volkswagen trucks all vehicles, although other VMs use rail intra-Mexico.

Rail efficiency improvements

Another programme that Volkswagen plans to implement is called Direct Rail. At present, Volkswagen inspects all vehicles at the Puebla plant and then ships them by rail to sea ports such as San Diego or Houston, where they perform a second quality check. The vehicles then move by rail to destinations such as Chicago, Denver, Tacoma and Minneapolis.

Beginning in the third quarter, finished vehicles will move from the Puebla plant directly to destinations such as Chicago and Denver, bypassing the ports. Volkswagen is also planning to open new railheads in Kansas City and Phoenix. Fletcher says: "This is a new way of distributing finished vehicles. We are trying to reduce transportation costs. Luckily we have a built-in quality system that is already established. In the past, we imported vehicles from Europe by ocean and matched them with rail shipments from Mexico. But now, the quality is such that we can go by rail directly to dealers."

This system will provide transit time savings and cost savings, and will provide a better turn on equipment, according to Fletcher. He says that Volkswagen expects to save 10 days on transport to Chicago from the Puebla plant, which normally takes 20 days.

The railways are also making changes to improve logistics efficiency. Norfolk Southern has made some recent changes to its JIT rail network, which serves GM and Ford. Norfolk Southern's partner, Innovative Logistics Group, provides daily milk runs of components to the JIT rail centres in Detroit, Michigan; Buffalo, New York, and Dayton, Ohio. There, shipments from multiple suppliers are combined into boxcars for common assembly plant destinations.

Julian says that Norfolk Southern is expanding its JIT services this year by adding a new boxcar called Superbox (SBX). The new railcar is higher than normal, which allows Norfolk Southern to triple-stack racks, which it could not do previously. "There is 50 per cent more payload capacity than with a standard 86-foot long double stack, but only 10 per cent more cubic capacity. The SBX can compete with a drop-frame supervan, which is a large cubic capacity trailer," says Julian. Norfolk Southern is working closely with Penske Logistics on finalising a plan to start a network using SBX at two Ford plants, according to Julian. Prototypes are currently being tested by GM and Ford, and construction of the superboxes should begin by early 2006.

Beginning in the third quarter, finished vehicles will move from Volkswagen's Puebla plant directly to dealer destinations as part of the company's Direct Rail initiative, by bypassing the ports

Point-to-point improvements

BNSF is offering another solution to improve network efficiency by running more point-to-point trains. Marc Allen, Assistant Vice President of Consumer Products Marketing, says that the point-to-point reshape initiative began in the latter half of last year and is ongoing. "The goal is to provide a less costly service and more consistency to the customer by reducing work events such as switching," says Allen.

For example, instead of running from Chicago to 25 destinations daily, BNSF would call on some stops on Monday, Wednesday, and Friday, and others on Tuesday, Thursday, and Saturday. Says Allen, "typically we try to hold the railcars at the point of origin. It is a trade-off, but we did not have a choice. We had absorbed substantial volumes that caused us to rethink our strategy."

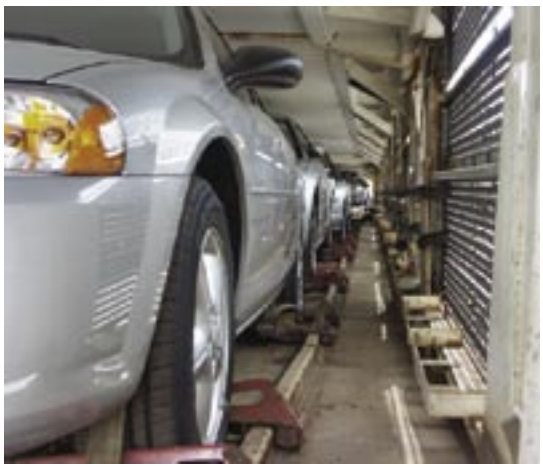
"Although on-time performance was flat, it is starting to move upward, so this change has increased on-time performance slightly. More point-to-point shipments mean greater consistency. Reducing frequency has also helped us to improve density. The increased volume and reduced frequency has enabled us to run pure trains between origin

and destination pairs. For example, we run complete trains from Chicago to Los Angeles," says Allen.

Increasing visibility

Fortner says that one challenge to providing efficient rail services is that the fluctuation in supply and demand forces the VMs to hold inventory. "It is not easy to adjust production rates or it would affect the manufacturers' economies of scale. So we have been seeing more build and hold at origin since mid-2003. The solution to improving logistics efficiency involves getting the most productivity from rail. But, when that is not sufficient, you have to take it off rail and put it on trucks, which we did for 70,000 vehicles last year," he says.

"With rail, the best opportunity to make up time is during weekends and holidays, which is down-time for manufacturers. In the past, we were used to a loading shut down when the plant shut down. Now it must be almost 24/7 and holidays. This is the best opportunity to draw down stored inventory. In addition, we needed a new and improved process for managing stored inventory. If a vehicle is not assigned to a dealer at production, it goes into storage. This move into an offsite process slows down the supply chain. The question is how you take time out of this process," says Fortner.



Insight is providing a new service to DaimlerChrysler Mexico

Insight needed to improve visibility of events at the storage yard level. Fortner says that the objective was to make sure that vehicles were staged and ready to go, and that the carriers knew when the vehicles were ready. "Beginning last year, by increasing visibility, we have saved one day in administration and can save another two days in administration and processing," he says. Earlier this year, Insight also began to provide a new service to DaimlerChrysler Mexico, which provides complete visibility in Mexico for all domestically manufactured vehicles as well as imports sold in Mexico.

BNSF introduced another solution that was designed to improve visibility in late 2004 called the VIN Forecast Tool. Allen says that the system provides a forecast for the next day's available shipments at each rail destination facility. It provides information on specific vehicle availability based on the vehicle identification number (VIN). "We wanted to give haul away carriers more notice – at least 24 hours. Under the previous system, some carriers would obtain data from the Association of American Railroads, but it was cryptic," says Allen.

Allen points out that the goal is to reduce dwell time at destination. In the past, BNSF would provide information after the railcar arrived, and then the trucker would start the dispatch process. The information is available over the Internet and is also transmitted into the dispatch proprietary systems. He admits that adoption of this new system has been slow. "Haul away carriers benefit the most but are also the least likely to embrace new technology. Some have difficulty incorporating it into their proprietary dispatch. It is a learning curve for truckers and it takes a while to adopt new technology. However, manufacturers are putting pressure on the truckers to improve efficiency," he says.

Transparent transportation

Shimonek says that at UPDS, the biggest focus on improvement for the past two years is to make the intermodal and motor portions of the move as transparent as possible. "Our biggest change is the ability to track once the box has left the intermodal terminal by road. Draymen need to report critical events such as pulling out of the terminal, entering and pulling out of the customer's facility. We have rolled out this system over the past year, starting with OEMs initially and moving on to Tier One suppliers," he says.

It is all part of a single IT system. The rail portion is almost live, so the biggest push has been for road tracking. Before that, the truckers would receive only daily updates, or would call us for information. Visibility is crucial in inventory planning. Over the past nine to 12 months we have seen a dramatic improvement in visibility.

Improving quality

In spite of the shortcomings of rail transportation, automotive shippers and rail carriers are working together in order to improve logistics efficiency. TLS has awarded Norfolk Southern Railroad its President's Award for Overall Excellence this year. This measures the main criteria of on-time performance, damage reduction, and customer service. Finkel says: "Customer service includes how the railroad handles requests for information, how it resolves issues, how willing it is to make changes, etc. On-time performance is 86 per cent, which is up a few points from last year. The average for all railroads is 78 per cent. As for damage reduction, Norfolk Southern has good prevention and training programmes as well as good results."

Finkel says that at Toyota's Princeton, Indiana plant, Norfolk Southern coordinates all railcar loading and switching, block loading and other functions. "Since one organisation does it all, Norfolk Southern can load according to its schedule. It keeps the yard clear and has done a great job. We have seen improvement in efficiency within the last year. Norfolk Southern knows when there will be a shortage of access and can minimise the impact," he says.

In North America, rail continues to be a cost-effective mode of transport, albeit one that still needs to address service issues. For automotive shippers, the goal of improved visibility is a way to minimise logistics inefficiencies that are caused by equipment shortages, traffic congestion and the need to reduce inventory.