

Terminal Anywhere™ : Innovating Intermodal

RailRunner's patented **Terminal Anywhere** system makes intermodal transportation cost-effective for shorter distances and for smaller markets by allowing a shipper to shift from road to rail and back without the need for transloading any freight or the need for terminals and expensive cranes to lift the container from one mode to another. This enables container-based intermodal transportation services to a huge market of manufacturers, farmers, shippers, wholesalers and retailers who are not located near traditional intermodal hubs.

As a consequence of the increasing pace of trade and the global demand for more specialized products, container intermodal traffic, combining the advantages of water to rail and highway transport, has been growing rapidly. The benefits of this combination of containerized goods and intermodal traffic has not yet reached deep into the infrastructure of the North American, European and Asian economies, where much of the world's manufacturing and agricultural bases are located.

Without the consistently high volume of shipments necessary to justify a traditional and expensive intermodal terminal, shippers are forced to either use more costly road transport or to forego market opportunities altogether. RailRunner provides an accessible, economically efficient rail alternative.

RailRunner's pioneering railcar, trailer and container chassis system provides access to container-based rail transport to a much wider market of manufacturers, farmers, shippers, wholesalers and retailers, thus dramatically extending the reach of current intermodal rail transportation. After many years of development, testing, and initial commercial operation, RailRunner is now poised to bring its innovative **Terminal Anywhere** technology to a wide array of markets throughout the U.S. and abroad.

Economic Benefits

RailRunner has positioned itself in the market place as a technology which may be utilized to enhance or feed the existing double stack networks as well as to provide or allow for an intermodal option in markets that have been traditionally truck served. These are enormous markets which present significant opportunities. In the US short haul sector alone, which we define as trips in the 300 to 800 mile range, over 200 million trips are made annually, worth an estimated USD 300 billion. On a revenue basis, trucks currently handle

in excess of 90% of this business. RailRunner provides an economically viable and environmentally sound opportunity to convert this current truck traffic to rail.

Trucking companies compete with other industries for cyclical labor. As the economy recovers, driver capacity will tighten. The result will be higher truck prices and more difficulty finding a truck to service the customer. Improved consistency in rail service provides an opportunity to convert this traditional truck traffic to rail, providing the same consistent service but at a lower price. Improved service performance by the rail also eliminates the need for safety stock or increased inventory float to insure product is available. RailRunner technology provides the opportunity to benefit from the economics normally associated with rail in markets not currently serviced by rail or in markets that are currently underserved. A RailRunner train can transport 150 truckloads with a single locomotive and a two man crew. The benefits of reducing this congestion from our highway systems are numerous and significant.

Capital costs associated with RailRunner terminals are significantly less than a traditional intermodal facility. No specialized container lift equipment or costly surface preparation is required. Terminals may be scaled to accommodate high or low volume operations. In the event of a rail disruption, the RailRunner technology provides the flexibility to move the container over the road to protect service commitments. In addition, RailRunner is more energy efficient due to the light weight rail characteristics, radial steering and aerodynamics.

In certain situations, RailRunner offers the ability to load containers at heavier weights than normally allowed on roadways. When the RailRunner chassis are loaded and moved to rail without accessing highways and transported directly to railroads for unloading or movement via stack train service, containers may be loaded heavy. Loading products such as grain or other agricultural products in this manner allows the shipper to enjoy a significant reduction in transportation costs when expressed in a per ton price. The flexibility provided by a RailRunner terminal makes this economic savings a reality for a wide range of products and markets.

Whether you need to move manufactured goods, raw materials, MSW, agricultural products or other products, RailRunner has an application for you.

Environmental Benefits

In addition to the RailRunner **Terminal Anywhere** system providing a low cost container transportation solution and a gateway to the international container shipping network, it also encompasses significant and unparalleled environmental attributes complementary to the industry's developing environmental standards. The RailRunner system collectively provides a range of major environmental advantages which are increasingly becoming more and more important as concern about climate change grows:

- **Fuel Savings.** The most important environmental benefit comes from the fuel savings in shifting freight traffic from the less efficient highway system to the more efficient rail system. This reduces the carbon emissions produced, as well as the shipping cost.
- **Energy Efficiency.** Rail transportation is significantly more energy-efficient than shipping by truck. On the rail, a gallon of diesel fuel can transport a ton of freight approximately 400 miles; on the highway, a gallon of diesel transports a ton of freight a far shorter distance (estimates vary from 80 to 120 miles). Thus, every ton-mile of freight that moves on rail, rather than road reduces the fuel use by approximately 70 to 80 percent (Energy Information Administration, U.S. Department of Energy).

This reduces not only the cost, but also the carbon footprint. For every 100 tons of cargo that moves by rail instead of road for 1,000 miles (100,000 ton-miles), CO₂ emissions are reduced by 13,105 pounds.

The long-term implications of this are enormous. RailRunner research shows that moving just one percent of the current truck freight in the 300 to 1,200 mile segment from road to rail could reduce annual fuel consumption by approximately 100 million gallons. This would translate into a reduction of approximately 2.2 billion pounds of CO₂ emissions per year.

Yet, the RailRunner system saves even more fuel because it is much more efficient than standard intermodal rail. The RailRunner chassis is specifically designed to carry a standard shipping container, unlike a flat-car, which is designed to carry a variety of cargoes and packaging. The RailRunner chassis is essentially a light-rail freight vehicle. The total tare weight of the RailRunner rail car, beyond the container and cargo, is only 46,800 pounds. This includes the chassis and the bogie that transforms the chassis from a highway carrier to a rail vehicle. The typical flat-car used to carry containers today weighs about 60,000 pounds, so the RailRunner system results in a savings of 13,200 pounds or approximately 6.5 tons. For a 1,000-mile shipment, that means a reduction of 6,500 ton-miles and another 362 pounds of carbon emissions, compared with shipping containers on flat-cars.

RailRunner complements the existing double-stack network by providing additional rail access for getting more trucks off the highway and onto rail, even in traffic lanes where double-stack is not available.

Beyond Efficiencies

The RailRunner system provides additional environmental benefits beyond just fuel and energy efficiencies:

Traffic Congestion. By moving traffic from road to rail in metropolitan areas in particular, RailRunner can help ease the problems associated with overtaxed roadway systems that create localized environmental problems. Specifically, the overall carbon footprint of idle vehicle exhaust and the potential number of truck related accidents can be reduced. Additionally, timely freight delivery is more likely due to the avoidance of the congested highway system.

Noise Pollution. The RailRunner system incorporates two features that substantially reduce the transit noise produced when compared to conventional rail cars: Each bogie includes radial steering of the rail wheels, thus reducing the noise associated with steel-on-steel through curves, as well as a unique airbag suspension system, which further dampens rail transit noise by transmitting less frequency through the steel structure to the body.

Cargo Protection. Containerized cargo is both secure and protected when coupled to the bogies since the container doors cannot be opened due to the limited spacing between the container systems. Additionally, air-cushioned suspension provides better ride quality and generally reduces potential in-transit damage caused by track vibrations. With this enhanced air-ride suspension it is likely less packaging material would be required, depending upon the cargo specification.

Identity Preservation. As a result of cargo being loaded into containers close to the production source, RailRunner systems provide shippers the ability to preserve the increased value of identity-preserved goods, such as specialized agri-products.