



# RAILBLAZERS

ALLTRANSTEK, LLC

*Commercial Rail Transport Management and Consulting*

June 2015

Volume I Issue II

## In This Issue ...

◆ NEW TANK CAR REGULATIONS

◆ CAR TYPE HIGHLIGHT:

Tank Cars

◆ ALLTRANSTEK SERVICES:

Strategic Services

◆ INTERIOR COATINGS

◆ SUPPLIER MOMENT:

Hempel Highlight

◆ EMPLOYEE SPOTLIGHT

◆ SHOP CAPACITY ISSUES?

◆ FTR CORNER:

Rail Equipment

Outlook Report:

Tank Car Forecast

**NEW!**

**TANK CAR  
CLOSER LOOK NOW  
AVAILABLE!**

**SEE PAGE 4 FOR  
MORE DETAILS...**

## NEW TANK CAR REGULATIONS

After a waiting period that no industry participant would characterize as being “brief” the US DOT and Transport Canada held a joint press conference on May 1st to address HM-251, and the enhanced tank car standards and operational procedures for controlling High-Hazard Flammable Trains.

Amidst a large amount of speculation, the US DOT implemented a final rule that presented a substantial shock factor to a number of industry experts who believed the new requirements would take a more “middle-of-the-road” type of approach. With respect to the new standards for Tank Car bodies, the decisions were of little surprise. The new DOT 117 cars require a thick-



er 9/16” shell thickness, normalized steel, ½ inch full height head shields, upgraded thermal protection, and improved BOV handles and top fittings protection.

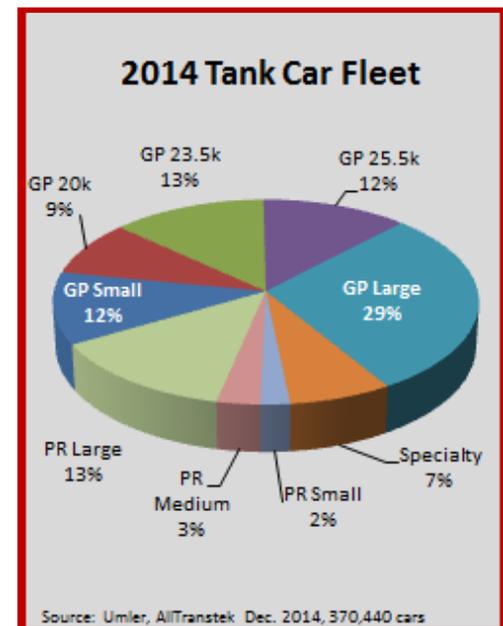
However, the decisions made by the US DOT with respect to retrofit possibilities for the

*(Continued on page 2)*

## CAR TYPE HIGHLIGHT: TANK CARS

The Tank Car fleet is extremely diverse in terms of car characteristics, and is mainly broken up into General Purpose or Pressure cars, while a small number of Specialty cars serve some unique commodities groups. At the end of 2014, the fleet totaled about 370,000 cars, of which General Purpose cars made up 74.6% of the fleet, followed by Pressure cars at 18.3%. Specialty cars accounted for the final 7.1%. The fleet as a whole has grown by 12.7% in the past year, with the Large General Purpose segment growing by about 36% independently.

The traffic base for the Tank Car fleet quickly recovered from the recession of 2008-2009, partially due to the development of crude by rail. Strong shipment volumes in crude oil



and ethanol brought the Tank Car surplus down to just 9,700 cars in 2013, marking the lowest surplus numbers the Tank Car fleet

*(Continued on page 4)*



## Upcoming AllTranstek ShopWatch Schedule

- ◆ UTC, June 30-July 1  
Marion, OH
- ◆ GBW, 2015  
Fitzgerald, GA
- ◆ Contact Mike Dudar  
@ 905-708-7098

### **ENHANCED TANK CAR STANDARDS DEFINITIONS**

HHFT - "High Hazard Flammable Train" is defined as a single train consisting of 20 or more loaded tank cars of Class 3 flammable liquid in a continuous block, or a single train carrying 35 or more loaded tank cars of Class 3 flammable liquid throughout the entire length

HHFUT - "High Hazard Flammable Unit Train" is defined as a single train transporting 70 or more loaded tank cars containing Class 3 flammable liquid

ECP - "Electronically Controlled Pneumatic" braking system, designed to slow trains more quickly than traditional brakes

Normalized Steel - Higher grade steel than used previously on new car builds (TC-128 Grade B)

## **NEW TANK CAR REGULATIONS CONT...**

current Tank Car fleet came as a pleasant surprise to many tank car owners, as the 7/16" shell thickness was deemed acceptable for retrofit to the DOT 117R ("R" standing for retrofit) specification for cars currently in crude oil service. Had the US DOT ruled the 7/16" shell incapable of receiving retrofit status, virtually the entire general purpose fleet would have been rendered useless in flammable services.

Alongside the allowance of 7/16" cars to be retrofitted to DOT 117R specifications, the ruling also recognized the steel specifications used in the current fleet did not coincide with the normalized steel tank shell material required in the new car build. The DOT 117R will only require that retrofitted tank cars were built with "steel authorized by regulation at the time of construction." Once again, this opens up a greater possibility for retrofit of the current fleet, as the DOT 111 car would have been rendered incapable of receiving retrofit status had the shell material requirement called for normalized steel which is only present in the newer CPC 1232 cars.

The top fittings protection for the DOT 117R follows suit, as the equipment installed at the time of manufacture is considered sufficient for retrofit.

In light of all these positives that came from the US DOT final rule for the enhanced tank car standards, there still looms one large, ominous regulatory requirement that has been met with significant resistance. ECP (Electronically Controlled Pneumatic) Braking Systems are now a requirement for both new DOT 117 builds and retrofitted DOT 117R cars in the US, while Canada has held off on a decision for now, but looks to the possibility of ECP brakes on all freight cars in the future. This news was met with displeasure by many car owners, as the cost of the upgraded brakes and installation adds to an already lengthy retrofit bill.

The use of ECP brakes will be mandated by January 2, 2021, for HHFUT trains (High Hazard Flammable Unit Trains), while their use

in HHFT (High Hazard Flammable Trains) will follow on May 1, 2023. Tank car owners in the US expressed concern about the additional expenditures that will need to be made to their fleets in the coming years to satisfy these braking requirements, but also worry about the operational implications if their cars do not conform to the new ECP Braking standards. HHFT's will be limited to 30 mph in all areas of transportation if any tank cars carrying Class 3 flammables do not meet this requirement. HHFUT traffic suffers the same fate, as these trains will also be limited to just 30 mph if they are not equipped with ECP brakes while carrying just a single car loaded with Packing Group 1 material.

The requirement to use ECP brakes poses significant problems for train assembly and railroad operations in general. It falls within the responsibility of the railroads to assign cars to HHFT trains, and the effect of these rules on the makeup of trains may leave a variety of shippers with long delays and reduced speeds because of tank cars not meeting the standards of this rule.

All in all, Tank Car owners have a lot to consider economically moving forward with respect to their decisions to retrofit their existing fleets or effectively start from scratch and have new DOT 117 cars built.

It will not only be important to consider the cost of retrofitting an existing DOT 111 car, but to also consider the implications on freight rates that the "R" designation will carry. Already the DOT 117R seems to be considered second class to the DOT 117 new car build by most industry participants. The perspective that the retrofitted cars remain inferior to the new car builds might mean that the DOT 117R will see a significantly higher shipping tariff than new cars.

There is also suspicion among industry participants that the "R" designated 117 cars may be labeled as such because of impending regulations planned for the future. In other words, there is concern that future regulations might cause these cars to be pulled from the tracks before they reach the end of their service limitations.

## INTERIOR COATINGS: CHOOSING A SUPPLIER

Interior coatings have long been considered one part science and one part art form in the rail industry. The science behind the formulation of a coating material is cutting edge, as leaders in the coatings and linings market are required in the United States to have fully equipped testing and development laboratories in house. These coating materials are developed to tolerate contact with a large variety of commodities having various degrees of corrosive properties. Blends of epoxy, epoxy-phenolic, phenolic, vinyl esters, and urethane resins are carefully combined to precisely serve the commodity for which they are developed.

Companies also take into consideration the rail cars' structure when formulating a coating material, as the difficulty of a coating application can vary in complexity due to the design of the car. Proper application of an interior coating is considered to be an art form to participants in the coatings and linings market. The application of a liquid material to a rail car interior is performed by operators in a very confined space, and requires an astonishing level of precision in which the coatings thickness is equivalent to just two sheets of writing paper. A prescribed tolerance of +/- 10% means that even the slightest mistake can render a job ineffective, forcing the application process to be started from scratch, or even causing damage to the car if the mistake goes unnoticed.

For these reasons, the selection of a suitable material supplier and applicator is of the utmost importance for a railcar owner. Making these decisions in the current market is becoming more difficult for car owners due to a number of

new entrants into the market, especially with pressure from foreign materials suppliers. It is a vital stage in the supplier and applicator selection process to properly conduct interviews, research, and facility audits. A good benchmark to use in the selection process is the amount of time these companies have spent in the coating and linings market. Companies with forty to fifty years of service, who have stood the test of time in the industry, are considered to be especially qualified. When choosing a supplier, it is important for a purchaser to obtain qualification information by asking the right questions. Some of these questions are:

- How long has this company been supplying the full range of coating materials in the US Rail Industry?

- Is this company headquartered in North America, or is it a subsidiary of a larger global group? North American railcars may not be a main business interest, and their product research and development may not focus on North American issues.

- How many products does this company provide for the rail industry? How long have they had these systems in place? A complete range of products demonstrates a supply commitment to rail.

- Does the company have in-house, fully equipped laboratories stationed in North America that perform product development and failure analysis?

- Are all coating ingredients approved by Federal and State laws for use and application on rail equipment?

*By Luke Gorinsky: Coating/Lining Specialist, NACE LEVEL 3*



## 2015 Schedule of Upcoming Events

### MARS

Lake Geneva, WI, Jul. 13-14

### PNWARS

Seattle, WA, Sept. 15-16

### FTR Transportation Conference

Indianapolis, IN, Sept. 15-17

### Chlorine Institute

Atlanta, GA, Sept. 21-24

### SEARS

Orlando, FL, Sept. 22-24

### Railway Interchange

Minneapolis, MN, Oct. 4-7

### NEARS

Philadelphia, PA, Oct. 14-16

### Tank Car Committee Meeting

Colorado Springs, CO, Oct. 21-22

### National Industrial Transportation League (NITL)

New Orleans, LA, Nov. 15-17

### RailTrends

New York, NY, Nov. 19-20



## HEMPEL HIGHLIGHTS: FREIGHT CAR LININGS

***Has there been a development in lining materials specifically for treating cars in corrosive crude by rail operations?***

Yes, customers have been requesting coatings with properties such as ultra-fast dry, no-bake required, VOC and HAP free, thermal shock resistance, high temperature resistance, and ability to handle other cargos in the event the shipper or car owner switches the commodity service from crude oil.

***What kind of performance should I expect from an interior coating to last in crude oil service?***

A minimum of 10 years. This is based on a normal crude oil service environment with an appropriate, "holiday" free coating application (i.e. no pin holes).

***Is a coating in crude oil service used for product purity or tank shell protection or both?***

Primarily, linings for crude oil are selected for tank shell protection. Recently the rail industry has started to select linings for both tank shell protection and product purity due to the fact that railcar owners would like to use the same car to move multiple commodities.

***What are the cost differences in the various types of application: Plural Component vs Low Bake?***

The largest single factor to affect cost is if a coating system is a single-coat or two-coat system. Two-coat systems perform very well and most likely will have the widest resistance list to different commodities, but will definitely cost more to install.



## FTR CONFERENCE UPCOMING!

With over 40 sessions and 50 leading industry speakers and panelists, the FTR Conference provides valuable insight on the economy and all modes of freight transportation. Sessions are split into four content channels, and all attendees are invited to choose the channels and sessions that best apply to them. The four content channels are...

- ⇒ [State of Freight](#)
- ⇒ [Shippers, Brokers, & Carriers](#)
- ⇒ [Truck & Trailer Equipment](#)
- ⇒ [Rail Equipment](#)

The FTR Conference will take place in Indianapolis, IN on the dates of September 15-17. The event will be held at the Crown Plaza Hotel at historic Union Station.

### TANK CAR FINAL RULE APPEALS

Various industry groups have been sending their appeals to PHMSA on the Final Rule. These groups range from the railroads to car owners to shipper associations. These appeals can be read on the US government regulations website. The link and search terms below will direct a

<http://www.regulations.gov>

Search: PHMSA-2012-0082

The AAR is requesting three items in their appeal:

- 1) Require the use of thermal blankets
- 2) DOT 117's should be required for all flammable liquids in all service categories
- 3) ECP brakes should be removed from the final rule.

(Continued from  
page 1)

has seen since  
1997.

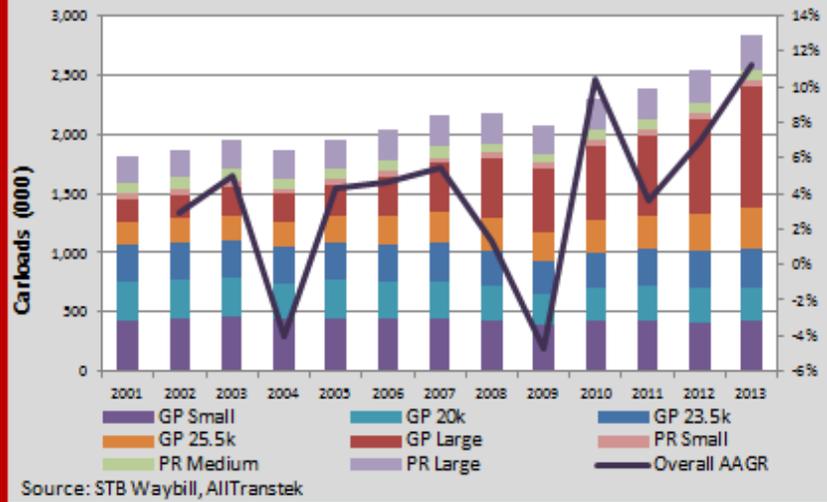
The General Purpose fleet carried almost 2.4 million car loads in 2013, consisting mostly of petro-chemical products, of which the main

commodities are ethanol and crude oil.

Pressure cars carried 433,000 car loads, almost 50% of which was LPG (Liquefied Petroleum Gas).

The Specialty Tank Car fleet, a subset of

## Tank Car Traffic by Equipment Type



General Purpose Tank Cars, have unique features and attributes required for certain commodity specific traffic. These cars are frequently used to traffic highly corrosive products, such as sulfuric acid, and a variety of other acidic commodities.

## STRATEGIC SERVICES GROUP

AllTranstek's Strategic Service practice began in October 2012 with the acquisition of Advanced Rail Equipment Services, a private consulting firm that was engaged in providing Strategic Marketing and Commercial support to a variety of companies in the rail equipment supply chain. This acquisition allowed AllTranstek to create a new competency and was borne out of the desire "Help make our clients smarter", something the AllTranstek client base had been repeatedly asking for.

Specifically, our customers' wanted a better understanding of the trends and direction of the North American railcar fleet. Our new Strategic Services practice is positioned to provide this intelligence through the use of advanced analytics and is a natural fit with our Fleet Management and Technical Services clients.

The goal of the Strategic Services group is to help clients grow their business within the rail industry. This group boasts the expertise and capabilities required to broaden the customer's view of the com-

petitive marketplace by providing industry leading Market Research, Analytics, Forecasting, and Strategic Consulting services.

The Strategic Services group prides itself on the ability to be flexible to its clients needs. Support has been provided by this group to a wide variety of clients, including Car Owners, Shippers, Leasing Companies, Components Manufacturers, Builders, Service Providers, Railroads, Investors, Finance Providers, and other Consulting Firms.

Some of the support capabilities that the Strategic Services group has been engaged in include Strategic Planning, Growth Strategy Development, Commercial Strategy Execution, Acquisitions, New Product Development, New Market Entry, Due Diligence, Risk Management, Fleet Management, and Asset/Portfolio Management.

The Strategic Services group also helps clients realize positive impacts in their revenue streams by supporting Sales Generation, Investment Decisions, Pricing Strategies, Equipment Acquisitions, Supplier Negotiations, and Lease Structuring.

### Director Engineering

Larry Loman has been an AllTranstek employee since 2005, but his experience gives him roots in the rail industry stemming back to 1998, and the valve industry since 1988. Before joining AllTranstek, Larry was employed as a Project Engineer by Union Tank Car, where he became an industry leader in valve expertise. He now uses this knowledge to assist AllTranstek's Technical Support division with regulatory issues, qualification procedures, engineering projects, valves and fittings, and data analysis management.



Larry also serves and chairs a number of AAR task forces and Chlorine Institute task groups, is a voting member on the CI Transportation Issue Team, and is an active member in the American Society for Mechanical Engineers and the National Association of Corrosion Engineers. Larry studied at the University of Illinois, where he received a Bachelor of Science degree in Mechanical Engineering.

### Mechanical Engineer

Angela Nuxoll is a new AllTranstek employee as of May, 2015. She has had a diverse career working at First Union Rail as a project engineer managing maintenance projects on a variety of railcars from 2000-2008, and at Sargent and Lundy performing nuclear power plant analysis from 2008-2011. She recently returned to Chicago after living in Quito, Ecuador with her family where she learned Spanish, worked with her husband on a variety of engineering and construction projects, and taught physics classes to high school students. Angela has joined the Technical Support Division of AllTranstek where she now works with Larry Loman on regulatory issues, qualification procedures, engineering projects, and data analysis management.



Angela received a Master's of Science degree in Mechanical Engineering from the University of Illinois in Chicago in 2008. She is a member of Society of Women Engineers and a member of the American Society of Mechanical Engineers.



## AllTranstek's Recent Events

- ◆ [NITL Webinar - Tank Car Regulations: What you need to know](#)  
April 9, 2015
- ◆ [NITL Webinar - Tank Car Regulations: What Do I Do Now?](#)  
May 21, 2015

## SHOP CAPACITY ISSUES FOR TANK CAR MAINTENANCE

Growth in the Tank Car fleet began in earnest in 2004 with the build up of the ethanol fleet and has continued to date with the crude fleet build. Added to this an ever increasing regulatory environment. As a result, the demand for tank car maintenance and repair has grown along with the fleet.

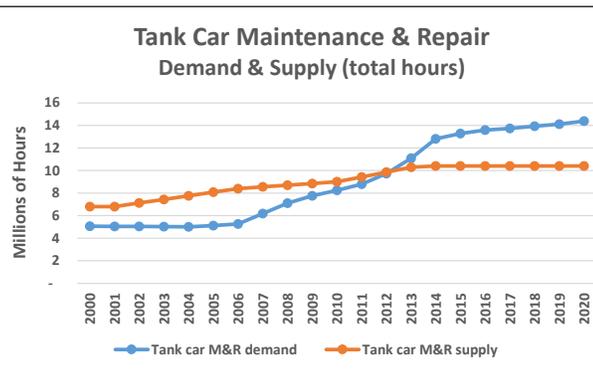
Since 2000, the tank Car fleet has grown 39%, and the number of "C" certified tank car shops grew as well, from 68 to 104 over the 2000-2014 period. However, average shop hours per car also grew, jumping from 76 hours to 138 hours, an increase of 82%, limiting the increase in maintenance and repair supply that would be typical for the increased number of "C" shops. This increase in average shop hours per car can be attributed to increased regulatory maintenance requirements, such as HM-216B, and higher overall fleet mileages.

According to Larry Loman, Director of Engineering at AllTranstek, "Tank Cars are now seeing mileage that would normally be associated with a 30-40 year life cycle in as little as eight years. More parts of the car are showing wear than would be typical for a tank car due

to heavier mileages, and the near future will continue to bring about unknowns for various car parts in the Tank Car fleet."

Due to the cumulative affect of the larger fleet size and increased shop hours per event, the total maintenance and repair demand for the Tank Car fleet has more than doubled, going from about 5 million hours in 2000 to over 12 million hours in 2014. Prior to 2012, the supply of maintenance had exceeded demand and the shop pricing environment was stable. But since 2012, the imbalance between supply and demand has resulted in an escalation in shop pricing.

Going forward, additional tank car shop capacity will be needed. By 2020 a capacity shortage at the current 104 "C" shops is projected to be 4 million hours.



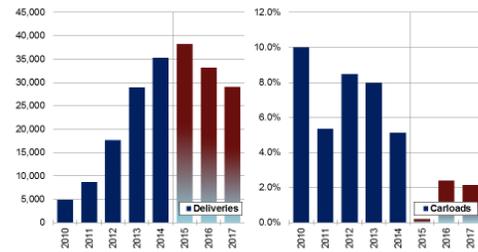
## **WALL STREET JOURNAL**

AllTranstek's Senior VP of Business Strategy and Technical Services, Richard Kloster, recently took part in an interview with the Wall Street Journal regarding the concerns surrounding the Box Car fleet. With the backlog of Tank Car orders taking up the focus of North American railcar builders, growing concern rises from shippers utilizing a shrinking Box Car fleet. The article discusses the capacity issues surrounding commodities shipped in Box Cars, as well as limiting factors in the production of new Box Cars for the future. The article can be found in the Business & Tech section of The Wall Street Journal for the date of Monday, June 22, 2015.

# FTR OUTLOOK

- ◆ **Freight:** Tank car traffic is forecast to be flat in 2015, up only 0.2% y/y to 3,392,000 carloads, but is expected to grow 2.1% AAGR over 2016-2019, to 3,673,000 by 2019.
- ◆ **New Cars:** Deliveries are forecast to increase 8.3% y/y to 38,214 cars in 2015, and remain high at 33,000 in 2016 and 29,000 in 2017, with crude cars dominating, before falling to about 18,000 per year in 2018-2019.
- ◆ **Inventory:** Retirements are projected to increase sharply over 2015-2017, averaging 24,600 cars per year, driven by cars forced out by the new tank car regulations. Over 2018-2019 retirements will average 17,750 cars per year.
- ◆ The fleet is projected to total 385,200 cars in 2015, up 3.8% y/y, and grow to 409,400 by 2019, a 1.6% AAGR
- ◆ The surplus is projected to jump to 35,700 cars in 2015, but decline at a 12.7% AAGR over the 2016-2019 period as the obsolete cars are retired, to 17,500 cars in 2019.

## N.A. Tank Car Outlook



Source: FTR, Copyright 2015

### Tank Car Market Indicators: 2015Q1

Actual, Not Seasonally Adjusted	2014	2014	2014	2015
	Q2	Q3	Q4	Q1
Orders	10,718	8,047	14,964	4,470
% Change, Y/Y	54.3	56.3	204.4	-7.8
Backlogs	52,589	51,582	57,625	52,381
% Change, Y/Y	-14.3	-12.4	4.0	3.7
Deliveries	8,776	9,235	8,831	9,714
% Change, Y/Y	27.4	21.7	4.6	14.9
Backlogs/Deliveries Ratio	6.0	5.6	6.5	5.4
Net Orders/Deliveries Ratio	1.2	0.9	1.7	0.5

- ◆ Fleet utilization is forecast to be 90.2% in 2015, down 8.0 points y/y, and then improve to 95.6% in 2019.
- ◆ **Changes from last Forecast:** Lower freight and utilization, higher deliveries.
- ◆ **Downside Risks:** Persistent low oil prices, soft economic conditions, lower drilling activity and investment.
- ◆ **Upside Risks:** CBR growth, non-crude tank car replacement demand, forced regulatory requirements.

All charts, graphs, and data are derived from the FTR Rail Equipment Outlook Report  
For more information on this report, please visit [www.ftrintel.com/REO](http://www.ftrintel.com/REO)

[www.alltranstek.com](http://www.alltranstek.com)

## A CLOSER LOOK SERIES

*The Covered Hopper and Tank Car Closer Looks are now available! Be among the first to receive these reports and gain a competitive advantage by increasing your knowledge of the respective marketplaces.*

The Closer Look Series is comprised of six individual reports, each of which exclusively covers one of the major car types: Covered Hoppers, Tank Cars, Gondolas, Open Top Hoppers, Box Cars, or Flat Cars. These reports provide invaluable information and insight for longstanding rail equipment industry participants, as well as new entrants to the industry. Among the companies who will benefit the most are fleet owners, leasing companies, new car builders, component suppliers, service providers, financial institutions, investors, rail carriers and shippers.

True to its name, the Closer Look Series scrutinizes the current railcar market from a variety of angles, specifically by analyzing trends in fleet size, fleet age, ownership, segmentation, commodity traffic bases, new car deliveries, retirements, fleet utilization, attrition, car surpluses, and much more.

*The rest of the reports will become available in the upcoming weeks. Each issue is available for purchase individually, or as a complete series of all six reports.*

For more information on The Closer Look Series, please contact Chad Perrewé at AllTranstek.

Phone: 270-217-4681 E-mail: [perrewe@alltranstek.com](mailto:perrewe@alltranstek.com)



Phone: (630) 325-9977

Fax: (630) 325-9978

E-mail: [info@alltranstek.com](mailto:info@alltranstek.com)

1101 W. 31st Street, Suite 200

Downers Grove, IL 60515

Founded in 1994, AllTranstek has grown into one of North America's largest railcar management and consulting companies, currently managing over 210,000 railcars for some of the country's largest fleets. AllTranstek also provides technical, operational, and strategic consulting services to a broad range of companies active in the rail and rail equipment supply chains. No other company has the combination of institutional knowledge, innovation, and independence that characterizes AllTranstek. As an independent company, with no ties to outside funding from industry, or government, our clients can be confident that we always have their best interests in mind. AllTranstek continues to cultivate strong relationships with clients both large and small because of our ability to creatively and flexibly tailor services of various sizes and scopes to each customer's individualized needs.