



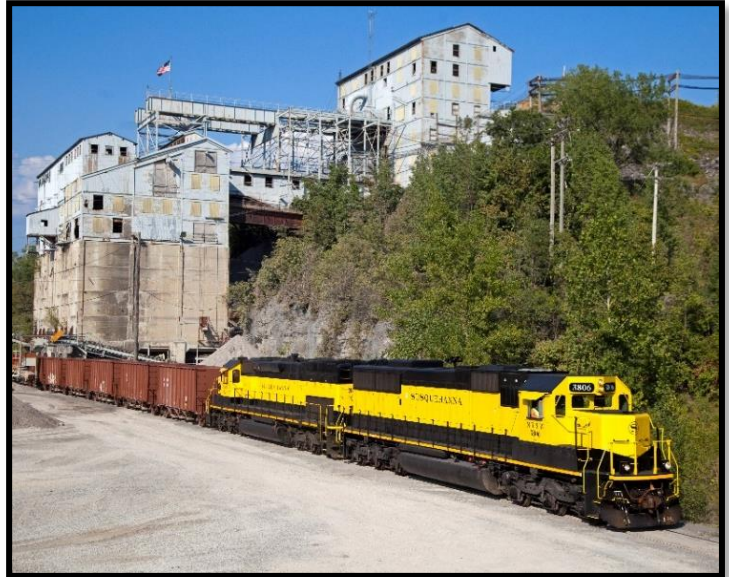
Specializing in Rail Transportation Solutions

We are a railcar operating lessor, broker, rail consultant and transportation manager with a tactical, boutique approach to providing rail transportation solutions.

Tealinc Touchbase Newsletter – January 2020

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The Edge

Darell Luther provides insight



Happy New Year! Here’s to a prosperous, rewarding and enlightening 2020. You’ll notice we’re taking a bit of a different approach on our newsletter this year. We’ll begin with a list of railcars that we’re looking to buy, lease out or sell. Then we’ll host “The Edge” and the “Mechanical Brief” columns in their entirety. The rest of the information will include a short description of and a link to the original article. We hope this shorter format will provide more value for our readers while giving you the option to dig deeper if you so desire.

Railing on.....

When leasing, buying or selling railcars there are a lot of decisions that go into the process. Usually, the first challenge is determining the railcar that works for your product in the most efficient manner. This decision often is tempered by price, size, costs, technology, product handling requirements, rail line capacity, rail rates, and so forth. Financial, market and technological obsolescence are also factors to take into consideration. When leasing railcars it’s important to think as far into the future as you can before

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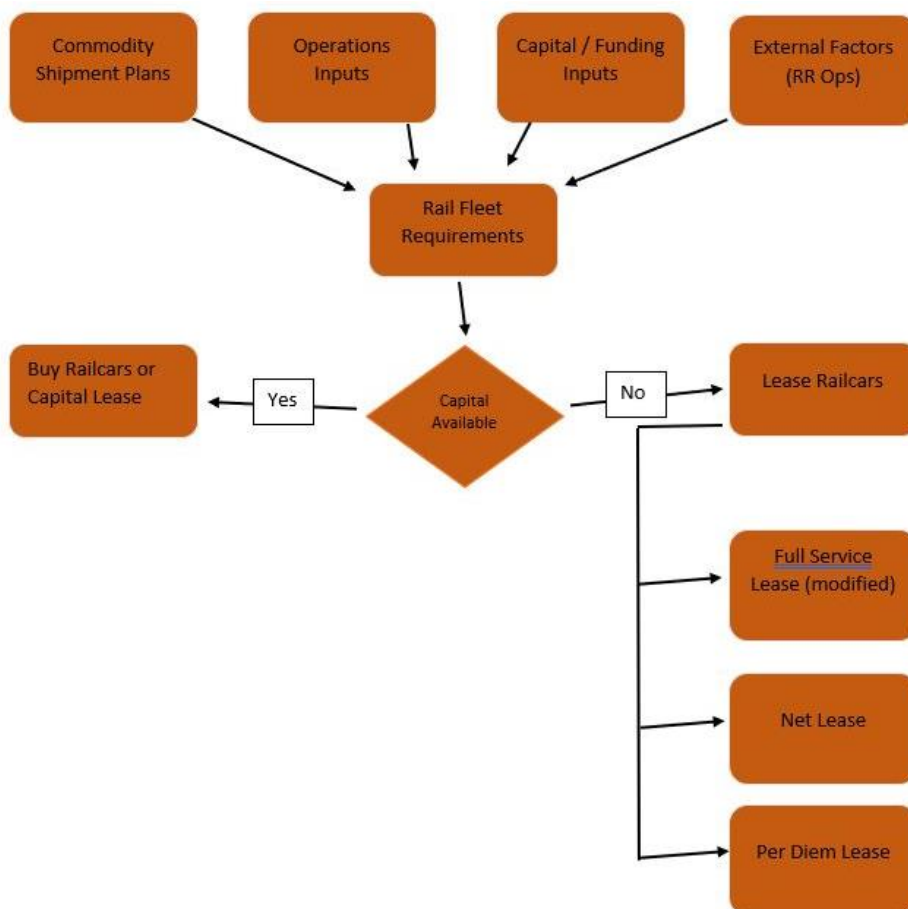
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finalizing a deal. This long-range view will help you position your company's commitment to a railcar fleet that is affordable yet remains flexible to the vagaries of the market.

Many companies only lease railcars to match their foreseeable business needs. That's a good approach if those business needs are well defined and have a definitive timeframe. However, if you've been in business for say 20 to 30 years and you're likely to be in business for another 20 years it may pay to open up your time frame. Combining short and long term leases often yields the best results for cost-benefit tradeoffs. Keep in mind the shorter the term the more engaged you'll need to be in the process as you will consistently be moving railcars into and out of service. The decision making process is as fluid as the market in which you participate. Most markets are not stable so by definition have a ton of variables that can change effecting the outcome at any point in time. To put this into perspective we've added a decision flow chart that illustrates this process at a very high level.

Visually, the process looks something like this:



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This is a simplified approach, but we describe each step below.

- **Commodity Shipment Plans.** These are the plans you put in place to ship your product(s). The top drivers for commodity shipment plans are the sales price of your commodity (scrap, grain, meal, etc.), where it's going, how long it takes to get there, and the mode of transportation you're using.
- **Operations Inputs.** The operations requirements you have to process a product or simply handle and or blend a product are the key variables in the process. If you're projecting a volume of "x" tons and you only have production or a handling capacity of "y" tons you're setting yourself up to fail. Operations inputs have to match up with sales volume projections yet, if possible, remain variable enough to adjust to up or down markets.
- **Capital / Funding Inputs.** How will you pay for the operations and capital costs? Most likely these will be expressed in the form of a budget. Budgets are necessary to keep costs in line but fixed budgets without adjustment for volume or quality changes aren't realistic.
- **External Factors (RR Operations).** At this point, you're depending on others to help you meet your goals. Railroads are in the midst of significantly modifying their operations. A new operating method has taken the railroad industry by storm. This method called Precision Scheduled Railroading changes the way railcars are handled. Be sure to understand the impact this new method will have on your operations. By the way it's always a good idea to have annual visits with your railroad representatives and don't overlook the local trainmasters and trainmen.
- **Rail Fleet Requirements.** At this step you get the first glimpse of a working operations model, from sourcing – production – selling – and finally transporting your product. By taking all the inputs you've gathered thus far and putting them into a spreadsheet model you can tell what you're going to ship, how long it takes to ship, what production volumes need to be to meet your internal goals and how many railcars you'll need to make it all work. This is where you really get into the details and test your assumptions.
- **Capital.** The next step is simple. How are you going to fund the entire rail car and rail operations requirements? In this example we focus on railcar lease versus buying decision processes but it could also apply to track and build outs as well.
- **Railcar Lease Structures.** We give 4 options here. If you have capital available you can buy the railcars or do a capital lease. If you are running on operations income you can decide whether you want to do a modified full-service lease, net lease or per diem lease. Modified full-service leases generally include a maintenance provision where the Lessor pays for Association of American Railroads and Federal Railway Administration required repairs (this number is built into the lease rate) and the Lessee pays for body or corrosion damage or usage damage. In addition, variables such as ad valorem tax responsibilities, shop time, and insurance are generally the responsibility of the Lessor. With a net lease, the Lessor has no

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maintenance responsibility and rates are generally less expensive. Per diem leases are few and far between in today's market but some do exist. This is where a shortline railroad will put their marks on a railcar and thru the carhire settlement process earn a fee from a connecting railroad for providing railcars for an online customer.

Albeit this is a very simplified version of logistics planning, the guidelines are roughly the same. If you don't plan on succeeding you're almost guaranteed to fail. There are too many floating variables in any production and distribution chain to leave it to chance.

Darell Luther is the founder and CEO of Tealinc, Ltd. You may contact Darell directly in his office at (406) 347-5237 or via email at darell@tealinc.com.

Mechanical Brief with Dan Madden

Introduction to Train Wheel Sets



Have you ever watched a train roll by? If so, you might have wondered how the train is able to stay on its tracks. The secret lies in the train's wheels. Although they seem cylindrical at first glance, when looking more closely you will notice that they have a slightly semi-conical shape. (Of course, never get close to a working train!) This special geometry is what keeps trains on the tracks.

The wheels on each side of a train car are connected with a metal rod called an axle. This axle keeps the two train wheels moving together, both turning at the same speed when the train is moving. This construction is great for straight tracks. But when a train needs to go around a bend the fact that both wheels are always rotating at the same rate can become a problem. The outside of a curve is slightly longer than the inside, so the wheel on the outside rail actually needs to cover more distance than the wheel on the inside rail. You can demonstrate this by drawing a train track—consisting of the two rails—with a turn on a piece of paper.

Take a measuring tape (or string and ruler) and measure the length of each line. The outside line of the track should be longer than the inside line. But how can one wheel cover more distance than the other one if they both are rotating at the same rate?

This is where the wheels' geometry comes in. To help the wheels stay on the track their shape is usually slightly conical. This means that the inside of the wheel has a larger circumference than the outside of the wheel. (They also have a flange, or raised edge, on the inner side to prevent the train from falling off the tracks.) When a train with slanted wheels turns, centrifugal force pushes the outside wheel to the larger part of the cone and pushes the inside wheel to the smaller part of the cone. As a result when a train is turning it

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is momentarily running on wheels that are effectively two different sizes. As the outside wheel's circumference becomes larger it is able to travel a greater distance even though it rotates at the same rate as the smaller inside wheel. The train successfully stays on the tracks! In this activity you will test for yourself how train wheel shapes impact their ability to stay on track.

With all these forces at work, over time wheel sets will show conditions of failure and wear. The type of defects associated with wheels are listed below:

- Thin Rim
- Slid Flat
- Built Up Tread
- Shelling
- Thermal Cracks
- High Flange
- Thin Flange
- Grooved Tread
- High Impact

Any one defect will make the wheel set condemnable if it meets the criteria listed in the AAR Field Manual. You should always reference the Field Manual, Rule 41, and its most current updates to know what the condemning criteria is for each quarter.

In Tealinc's inspection process we have a very defined procedure to ensure wheels are inspected per the AAR's criteria.

*Dan Madden is the Assistant Customer Support & Development Specialist for Tealinc, Ltd.
You may contact Dan directly at dan@tealinc.com*

Tealinc Equipment

[Explore our railcar inventory](#)

- Flat cars available – various sizes and dimensions
- Gondolas available - 4000 cubic foot steel gondolas available for scrap, lightweight material and mill gondolas for scrap and aggregates
- Covered hoppers available – small, medium and large for cement to grain, round and trough hatch, gravity, gravity – pneumatic and pressure differential cars.



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Industry-specific News

2020 Projections and Issues

There are myriad projections and issues outstanding that we expect to see continue throughout 2020. Here are a few we've selected that have relevance to the rail industry:

- [Energy](#): The Top 10 RBN Energy Prognostications for 2020 - Year of the Rat: Abandoning the Sinking Ship?
- [Aggregates, Rock, Sand and Gravel](#): The five-year aggregate industry outlook
- [Construction and Demolition Recycling](#): AGC releases survey results on state of construction industry
- [Coal](#): American Coal – Sustaining, Adapting and Innovating
- [Grain & Feed](#): NGFA testifies at STB hearing on rail revenue adequacy
- [Surface Transportation Board](#): Fuel surcharge
- [Scrap Metal](#): 2020 PREVIEW: Traders' top tips to beat the ferrous markets

Railroad Traffic

Downward Trends Continue

According to Rail Time Indicators ("RTI") a monthly publication originated by the Association of American Railroads ("AAR") rail carload originations continue to decline and made a poor showing in 2019 being 668,075 carload originations behind 2018 despite an upturn of 71,900 railcar loads of petroleum products led by crude oil shipments. Coal continued to lead the way down followed by grain and grain products with blame being placed on low prices of natural gas and world-wide trade policy negotiations. For the full RTI report subscribe here at [RTI](#). Scroll down until you see the RTI subscription page.

Industrial Inside

Rail Freight - the current situation and the focus on the future

Kicking off 2020 we continue our look at the rail industry industrial footprint now and for the future. Rail freight and how its generated, accounted for, targeted by rail and truck and slewed into an operating environment is briefed in this [article](#).

Financial Focus

Federal Reserve – US Economy started 2020 in a good place

Vice Chair Richard Clarida, January 9, 2020, New York states; the unemployment rate is at a 50 year low, inflation is close to the Fed's 2% objective, gross domestic product is solid, and the FOMC looks for continuation of these trends throughout 2020.

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Railroad & Policy Updates

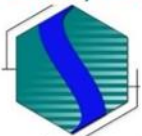
Demurrage - the saga continues

In case you missed it demurrage is back in the limelight with Surface Transportation Board (STB) involvement. On December 7, 2019 with the STB issuing a decision related to demurrage rules and charges. Policy statements, rules, billing requirements and exclusions are discussed in detail. We encourage you to fully understand demurrage rules and regulations for those carriers you use to ship with and if you've got the time and interest take a look at the dockets on the [STB site](#).

Tealinc, Ltd. is dedicated to creating value for our customers. We specialize in Rail Transportation Solutions by buying, selling, leasing, consulting and managing rolling stock fleets with our customers' long term and short-term requirements in mind.

We look forward to earning your business!

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Railcar Leasing & Sales



Rail Fleet Management Services



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