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Tealinc, Ltd. President Darell Luther Featured In National Publication

Article discusses railcar design and use

Forsyth, MT – Tealinc, Ltd. President Darell Luther was the author and sole contributor to the July 2012 Waste Advantage Magazine feature “Waste-by-Rail” with his educational article titled “Railcar Design and Use”.

Intended to educate shippers of bulk commodities, this article features headlines such as:

- Matching commodity handling requirements and commodity type to a specific railcar is paramount to using the correct railcar for your business
- There are three main railcar classifications and many sub classifications of railcars capable of transporting waste commodities:
 - 1) Gondola railcars
 - 2) Flat deck railcars and
 - 3) Articulated bulk railcars
- Matching commodity handling requirements and commodity type to a specific railcar is paramount to using the correct railcar for your business
- Determining which railcar is right for you

We invite you to [read the entire article online](#) on pages 28-31 of Waste Advantage Magazine. The entire article has been cut and paste below for your reading pleasure.

Darell Luther is president of Forsyth, MT-based Tealinc Ltd., a rail transportation solutions and railcar leasing company. Darell's career includes positions as president of DTE Rail and DTE Transportation Services Inc., Fieldston Transportation Services LLC, managing director of coal and unit trains for Southern Pacific Railroad and directors positions in marketing, fleet management and integrated network management at Burlington Northern Railroad. Darell has more than 24 years of rail, truck, barge and vessel transportation experience concentrated in bulk commodity and containerized shipments. He can be reached at (406) 347-5237, via e-mail at darell@tealinc.com or visit www.tealinc.com.

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Railcar Design and Use

Darell Luther

Matching commodity handling requirements and commodity type to a specific railcar is PARAMOUNT TO USING THE CORRECT RAILCAR FOR YOUR BUSINESS.

RAILCAR DESIGN AND USE IN THE WASTE BUSINESS has evolved as the industry has adapted to movement of waste by direct transfer or intermodal container drayage to a distribution yard. Railcars used in waste transfer are comprised of varying types of gondolas and flat railcars. There are three main railcar classifications and many sub-classifications of railcars capable of transporting waste commodities:

- Gondola railcars
- Flat deck railcars
- Articulated bulk railcars

Gondola Railcars

Gondola railcars are very flexible in hauling bulk commodities. They are generally used for scrap and recyclables, contaminated soil, construction and demolition debris, and municipal solid waste. There are segregations of gondolas and the type of gondola one uses depends on the commodity being transported.

Mill gondolas are generally used for scrap and recyclables. They are smaller cars in cubic capacity designed to transport dense heavy materials. Mill

gondolas can be categorized in two general interior lengths (there are a few outliers), 52' and 65' and several different cubic capacities depending on overall interior side height. Interior side heights vary from 3' 8", 4', 4' 6", 5' to 6', resulting in cubic capacity differences on 52' cars of 1,848 cube to 2,500 cube to 2,743 and 2,800 cubic foot. Although 65' cars are available for use in dense scrap and recyclable products, they are generally used in finished products such as plate steel, bar and similar products. There are two distinct designations in carrying capacity for mill gondolas. Gondolas are classified as 100 ton or 263,000 gross weight on rail and 110 ton or 286,000 gross weight on rail capacity. The designation of gross weight on rail is the maximum capacity the railroads will accept on their rail. This weight is comprised of the lading weight of the commodity and the tare weight of the railcar which cannot exceed the railroads designated gross weight on rail.

Coal gondolas have been adapted over the years to be used in hauling contaminated soils, construction and demolition debris, and municipal solid waste. In the late

Mill Gondolas transporting contaminated soil.
Photos courtesy of Tealinc.





1980s and early 1990s, railroads pushed coal shippers and receivers to switch from steel coal cars to more lading efficient aluminum railcars. This created an opportunity for surplus steel railcars in the waste industry. In my experience as Unit Train Director at Southern Pacific Railroad, we initially started backhauling contaminated soils from the Los Angeles basin to Utah and rotary dumping the railcars at a landfill. When the railcars were empty and the train put back together, cars would be sent off to Utah to haul another load of coal from the coal mines in Utah to the export terminals in Los Angeles and repeat the process. As time progressed more railcars were put into service hauling municipal solid waste from major metropolitan areas to regional landfills.

Modified coal railcars/C&D railcars were the natural progression as more and more companies transported lighter weight material from transfer yards or stations to landfills. Initially, the only modifications complete to coal cars were the removal of interior bracing and strategic reinforcement to maintain the integrity of the railcar. However, customers weren't satisfied since the capacity was still just 4,000 cube and oftentimes meant that small payloads of 40 to 60 tons of "garbage" or "C&D" could be transported. Having the option to transport 100 plus tons pushed railcar development to be more waste transport friendly. The first of these developments was the increase in cubic capacity of railcars. The first increase of capacity was to increase side height. This added the requisite additional cubes to haul additional tonnage. The next increase was to not only increase side height, but also to stretch the railcar to maximum payloads in the 95-ton range. In some cases as much as 11' was added to a railcar that had an overall length of 53' to start. This proved to be a



TOP: 5,700 cubic cube car for C&D transport.
RIGHT: 89' 70 ton flat at transfer station.



very effective capacity solution in some cases retrofitting railcars from 4,000 cubic feet capacity to as much as 5,700 cubic foot capacity. Railcar builders then took note of this phenomenon and built a specific C&D railcar that was capable of 286,000 lbs. gross weight on rail with 6,500 cubic foot capacity to haul a full 110-ton load of lightweight commodity.

Intermodal Flat Railcars

Intermodal flat railcars were introduced into the waste hauling stream much the same as the gondola railcar. The first flat railcars to be used in hauling containerized waste were intermodal castoffs. These first flat railcars were 89' in deck length and could transport 140,000 pounds of product and containers and are rated at 220,000 lbs. gross weight on rail, meaning the railcar, container and product in the container could not exceed 220,000 lbs. They were initially set up to be able to transport four 20' containers or two 40' containers. Most waste intermodal was set up initially using 20' ISO containers that established the footprint for waste container use on flat cars. Over time as the waste-by-rail transport industry grew, the same phenomenon occurred in waste flat cars as occurred in coal gondolas. A group of innovative and creative individuals engineered the 70 ton car so that it could transport 100 tons of containers and commodity. This increased the use and made rail transport of containerized waste commodities even more economical. Soon after, railcar builders constructed a new waste intermodal railcar capable of transporting 110 tons of container and waste. This car is 85' in overall length and has a lightweight spine design made to lower the overall tare weight of the railcar leaving additional capacity for loaded containers. The gross weight on rail of this railcar is 286,000 lbs.

Articulated Bulk Commodity (ABC) Railcars

ABC cars were first introduced in the early 1980s and grew in popularity as the need for moving ever denser products increased. An ABC railcar is two platforms connected by an articulate truck that is capable of



8,100 cube MSW gondola.



Flat bottom coal gondola for C&D and MSW.

carrying four 20' densely loaded containers or two 40' containers. The overall capacity of the cars is 177 tons over a 90' overall length railcar. The railcars are highly efficient for moving large volumes of containerized waste from a fixed transfer yard to a landfill or incinerator.

Determining Which Railcar Is Right For You

Matching commodity handling requirements and commodity type (e.g. bulk, baled or containerized and density) to a specific railcar is paramount to using the correct railcar for your business. Origin, lane and destination capabilities and requirements also play an important role in railcar selection as

the shipper/receiver must keep in mind any online constraints including gross weight on rail, length and height. **WA**

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