

Modeling and Operating with Track Scales

By Jim Ferenc

Weight Definitions: What the Numbers Mean

Gross Weight: Total weight of the load plus the car. This is what the typical track scale will display to the nearest 100 lbs.

Light Weight: Weight of the empty rail car. This is also called "tare" or "tare weight". Light Weight is stenciled on the side of the rail car.

Net Weight: Weight of the load. This is the Gross Weight (displayed by track scale) minus the stenciled Light Weight (empty car weight). Net Weight is calculated by railroad clerks or computers, depending on the era, and is the weight billed to the shipper.

Capacity: Normal maximum Net Weight for a rail car, stenciled on the car side. For example, a 50 ton hopper has a Capacity of 100,000 lbs. Commodity-specific cars, coal hoppers for example, are often loaded at or even above Capacity.

Load Limit: Absolute maximum Net Weight permitted based on axle and journal limits, stenciled on the car side. If Gross Weight minus Light Weight (equals Net Weight) is greater than the Load Limit, the rail car is overloaded and unsafe.

What, When & Where to Weigh

1. Which customers originate loads in your modeled territory?

With the exception of Question #3 below, these are the only loads you need to consider for weighing.

2. Are any shippers large enough to do their own weighing?

These customers (or collection of customers such as one company's coal mines) are candidates for private industry track scales. Trains that service these customers will need ***weighing instructions*** in their work orders.

3. Are there large receiving industries or trans-shipment facilities, such as a port terminal, on your railroad?

Sugar mills, steel mills and other industries that receive large quantities of raw materials are candidates for track scales. Trains or yard crews that service these customers will need ***weighing instructions*** in their work orders.

4. What trains (or yard jobs) collect newly loaded cars, and where do they terminate?

These locations (if modeled) are candidates for track scales to weigh the originating freight. And their yard crews will need work orders with ***weighing instructions***.

5. Which customers are likely to have special shipping contracts?

Eliminate weighing considerations for special shipment customers, such as TOFC service.

6. Do any trains, such as locals, pickup and deliver the same load before returning to a yard?

These loads will need to be diverted to a nearby yard for weighing before delivery.

From your above answers you should now be able to list:

- Shippers that will weigh loads
- Receivers that will weigh loads
- Yards that will weigh loads
- Yard and train crews that will weigh loads

Modeling Products

Blair Line Scale House, Part # 184 (HO) or # 084 (N), Laser cut wood kits in both N and HO Scale based on a C&O prototype.

Builders In Scale Scale House, Part # 610, HO Scale craftsman kit.

Depots by John Scale House, Part # 114, HO Scale.

Scale University Three Track-Side Structures - 1 Each Loading Ramp, Scale House, Coal Shed, Walthers Part # 646-1008K, O Scale kit.

Walthers Cornerstone Series Track Scales, Walthers Part # 933-3199, HO Scale kit with two scale tracks and scale houses.

Woodland Scenics Track Scale, Part # 231, unpainted HO Scale metal kit of open air beam scale.

Micro-Trains Scale Test Car, various road names.

Walthers Scale Test Car Kit, Part # 932-5650 thru 932-5662, various road names in HO Scale. Released 1994 and out of production – check eBay.

Boulder Creek Engineering WeighStation Track Scales, Part # WS-22.

Bibliography

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Jim Ferenc, “Operating with Track Scales: Ideas for Modeling Freight Car Weighing”, Dispatcher's Office, January 2010. How to integrate freight car weighing into model railroad operations, base on 10 years of operating session experience on the author's layout.

David Popp, “Build the Virginian, Part 1”, Model Railroader, January 2012 & “Add a Digital Track Scale”, Model Railroader, July 2012. . How operating crews weigh coal in the marshalling yard on this Appalachian themed project layout.

Andy Sperandio, “The Operators: Weighing Freight Cars”, Model Railroader, May 2009. One-page summary of how operating crews weigh freight cars on the Kalmbach model railroad.

Cody Grivno, “Build the Beer Line, Part 4”, Model Railroader, April 2009. One-page construction article (by Andy Sperandio on Page 41) showing how the Beer Line scale track was built from a Walthers kit and Peco turnouts.

Bill Darnaby, “Build a Track Scale”, Model Railroader, September 2002. Thorough construction article showing how to scratch build a gantlet track scale.

Jim Ferenc, “Build a Working Track Scale”, Model Railroader, August 2000. Detailed construction article, including mechanism and electronics, for a scale that weighs cars.

Please visit www.bouldercreekengineering.com for more information.