# Railroad Track Scale Terminology

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## General Railroad Terminology often used in connection with track scales:

- **AXLE CENTERS** - Distance between axles on a truck. Most trucks have axle centers that are 5’9" or 5’10".
- **BALLAST** - Material used to construct the track bed. Ballast supports the ties which in turn support the rails via the tie plates.
- **BRANCH** - A track that “branches” off from the main line usually to a specific destination.
- **CAR** - Railroad car. A wide variety of railroad cars are used on the American railroads. The vast majority are 4 axle cars. Cars that carry the same type of product are often all the same size.
- **COMPROMISE BAR -** Compromise bars are used to join different sized rails together. They are specially shaped so that the running surface of the rails are aligned correctly. The maximum weight difference between two rails to be joined is normally 25 lbs/ yard ie; a 90 lb rail can be joined to a 115 lb rail. Larger differences have to be joined in two stages ie; 65 lb to 90 lb, then 90 lb to 115 lb.
- **COUPLERS** - The device that is used to couple one end of a car to the next. All couplers used on American railroads are automatic couplers ie; when one car is pushed into another car they automatically couple together. Several types of couplers are used. TYPE E is the most common type but TYPE F is used extensively on some cars. TYPE F has an interlocking design that is less tolerant to vertical mis-alignment of coupler.
- **FROG** - The center or “V” shaped portion of a switch.
- **JOINT BAR** - Joint bars are specially shaped steel bars that are used to join two pieces of rail together. Joint bars are used in pairs. They are available in both 4 hole and 6 hole versions.
- **RAIL** - Rail is specified by weight in lbs/ yard ie, 115 lb rail. There are many different sizes of rail. Standard rail length is 39'. The HEAD is the top part that the wheels run on; the WEB is the narrow vertical portion; the FOOT or BASE is the wide bottom portion.
- **SIDING** - A track used for temporary storage of cars.
- **SPIKES** - Spikes are driven through the tie plate into the tie. The head of the spike is specially shaped to pull the foot of the rail down against the tie plate.
- **SWITCH** - In railroad parlance, a switch is a special combination of rails that allows for cars to be “switched” from one track to another.
- **TIE** - Sometimes called cross ties, are used to transmit the forces in the rail to the ballast. Rail is normally mounted on wooden ties but concrete and steel are also used. Standard wooden tie size is 7" high x 8" wide by 8' long.
- **TIE PLATE** - Tie plates fit between the bottom of the rail and the tie. They are part of the rail fastening arrangement.
- **TRACK** - The combination of rails and their associated support system.
- **TRUCK** - The assembly at each end of the car that the axles are mounted on. For four axle cars, each truck has two axles and four wheels.
- **TRUCK CENTERS** - Distance between the center lines of the car trucks. This dimension varies considerably but cars that carry a particular product tend to have the same or similar truck centers. For example, most 3 section grain hopper cars have 45’9" truck centers.
- **YARD** - Multiple tracks used for storing and switching of cars to make up trains.

## Track Scale Weighing Terminology:

- **CIM** - Coupled in-motion weighing ie, cars are weighed while coupled together and in-motion.
- **DEAD DECK** - On a dead deck design, only the rails are weight sensing. The deck between the rails and either side of the rails (if applicable) is “dead”.
- **DEAD SECTION** - The section between scales on a multi-platform scale.
- **FULL DRAFT** - Cars are fully supported on scales or multiple scales while weighed ie, every wheel is on a active scale section. This is the preferred method of weighing.
- **MITRE JOINT** - On many track scales the rail joint between the “live” rail on the scale section and the rail on the approach section is cut at an angle of typically 45 degrees to reduce impacts.
- **MULTI-DRAFT** - Car weights are obtained through multiple weighings. For example, each axle is weighed separately and the axle weights added together. Normally only used for special applications such as matching wheel loads of locomotives but may also be used for in-motion weighing.
- **TWO DRAFT** - One end of the car is weighed at a time and the two weights added together. In general two draft weighing is not acceptable for certified weighing except for in-motion systems.
- **UCIM** - Un-coupled in-motion weighing, cars are weighed in-motion but uncoupled.