

Glossary of Selected Railroad Terms

Angle Bar

Metal bar that is bolted to the ends of two rails to fasten them together.

Ballast

Material (gravel, slag or other heavy material) selected for placement on the roadbed for the purpose of holding the track in line and at surface. Ballast preferably consists of hard particles easily handled in tamping, which distributes the load, drains well and resists plant growth.

Ballast Deck Bridge

A bridge with a solid floor provided with drains supporting a standard track with ballast.

Centralized Traffic Control (CTC)

A computerized system that uses remote controls to change signals and switches along a designated portion of railroad track.

Compression Strength

The maximum compressive stress which a material is capable of sustaining without permanent deformation.

Continuous Welded Rail

Rails welded together in lengths of 400 feet or more.

Controlled Point (CP)

A station designated in the Timetable where signals are remotely controlled from a control station.

Crib

The lateral space between two railroad ties.

Cross Level

The distance one rail is above or below another. This should not be confused with superelevation on curves.

Crossover

A track connection between two adjacent (usually parallel) tracks. When a train moves from one track to the other it "crosses over."

Diamond

A special track work item that allows two railroad tracks to cross each other a grade.

Distributed Power Trains (DPU)

Trains that have a remotely controlled locomotive embedded within the train, or at the end of the train. This allows for higher tonnage trains as the drawbar tensions are lower than an equivalent train with head-end power only.

Dragging Equipment Detector

An electronic trackside detection system that identifies unusual conditions such as a brake rigging down, lading down or dragging alongside car, and chains or straps dragging along the ground.

Grade Crossing

A crossing or intersection of a railroad and a highway at the same level or grade.

Guard Rail

A rail or other structure laid parallel with the running rails of track to prevent wheels from being derailed; or to hold wheels in correct alignment to prevent their flanges from striking the points of turnout or crossing frogs or points of switches.

HAL

Heavy Axle Load.

Insulated Rail Joint

A rail joint which arrests the flow of electric current from rail to rail as at the end of a track circuit by means of nonconductors separating rail ends and other metal parts.

Joint Bar

Short pieces of steel used to join rail ends in railroad track. A Joint Bar is placed on each side of the sections to be joined. Three holes are drilled into each end of the Joint Bar and also through both ends of the track sections. Six bolts with locking washers are fastened through the holes to join the sections. Joint Bars are also used to make temporary repairs to broken sections of rail until it can be replaced.

KIP

A unit of weight or force equal to 1,000 pounds.

Lateral Motion

The motion crosswise of the track, of all car parts except the wheels and axles. This lateral motion, or end play, results from the flexibility which must be provided in the truck structure in order to permit easy and safe negotiation of track curves.

One Spot

A car or locomotive repair shop designated so that the units of rail equipment to be repaired are moved progressively through the shop to various positions where specified work is to be done. Rip tracks designated with a single repair position equipped with modern jacking equipment, air, oxygen, and acetylene lines, lifting devices, and other time-saving equipment are sometimes referred to as "spot shops," or "one spots."

Positive Train Control (PTC)

Technology designed to improve rail safety by automatically keeping trains within track speed limits, helping to identify trains and other obstructions on the track ahead, and bringing a train to a stop if the engineer fails to take corrective action when warned of a safety hazard.

Rail Bond

An electrical conductor for bridging joints between rails for the purpose of carrying electrical current as part of a track circuit.

Rail Joint

A fastening designed to unite abutting ends of contiguous rails.

Ribbon Rail

Continuous welded rail, laid in _ mile lengths then welded end to end to make a continuous length.

Rip Track

A small rail car repair facility, often a single track in a small yard. Name derived from "Repair, Inspect and Paint."

Ruling Grade

The particular point on the run at which the combination of grade and curve resistance makes the train pull hardest and, therefore, "rules" how heavy a load can be given to the locomotive.

Screw Spike (Coach Screw)

A cylindrical threaded spike, designed to be turned with a special wrench into holes bored in ties, to secure rails or act as a tie plate holder in tie plates.

Slide Fence

A wire fence which is placed along trackage to warn of rock slides. If the fence is activated, it changes the aspect of the signals governing the block to Stop.

Stress

A term used in engineering to denote force per unit of area in structural members, expressed commonly in units of lbs. Per sq. inch, and abbreviated psi. Stresses are classified by the type of reaction they produce in the fibers of the material they affect. Tensile stress tends to pull

apart, compressive stress tends to press together, and sheer stress tends to slide paralalled adjacent surfaces against each other in opposite directions.

Stringer

A longitudinal member of a bridge deck usually designed to be a floor support.

Subgrade

The finished surface of the roadbed below the ballast and track.

Superelevation

The vertical distance the outer rail is raised above the inner rail on curves to resist the centrifugal force of moving trains.

Sun Kink

A section of rail that elongates and bends out of alignment due to heat expansion.

Tamper

A power driven machine for compacting ballast under ties.

Tangent Track

Straight track with no curves.

Tie Plate

A metal plate at least 6 inches wide and long enough to provide a safe bearing area on the tie, with a shoulder to restrain outward movement of the rail.

Thermit Weld

A weld made by pouring molten materials into the gap between rail end which fuses to the rail ends, eliminating the need for joint bars.

Track Bolt

A bolt with a button head and oval; or elliptical neck, and a threaded nut designed to fasten together rails and joint bars.

Track Circuit

An electrical circuit of which the rails of the track conduct electricity within a signaling system.

Track-Train Dynamics

The study of the motions and resulting forces that occur during the movement of a train over a track under varying conditions, grades, curves and train handling.

Truck Hunting

A lateral instability of a truck, generally occurring at high speed, and characterized by one or both wheel sets shifting from side to side with the flanges striking the rail. The resulting motion of the car causes excessive wear in car and truck components, and creates potentially unsafe operating conditions.

TTCI

Transportation Technology Center Incorporated.

Turnout

A set of tracks that connect the main track to a siding or rail yard. A turnout allows the train to move on or off the main track.

Turnout Number

The ratio of the length of the tangent track to an equal unit of space between the tangent track and a point on the connected track.

Washout

An erosion of the permanent roadbed by storm or flood to such an extent as would cause delay of trains, or endanger traffic.

Welded Rail

Sections of railroad rail, welded rather than bolted, into lengths normally at least __ mile long.

Wheel Flange

A projecting edge or rim on the circumference of the wheel to keep it on the rail.

Wye

A track shaped like the letter "Y", but with a connector between the two arms of the "Y". A wye is used to reverse the direction of trains or cars. A train pulls completely through one leg of the wye, the switch is thrown and reverses the direction, allowing the movement across the semi-loop track of the wye, and the train is then headed in the opposite direction.