

COURSE OUTLINE

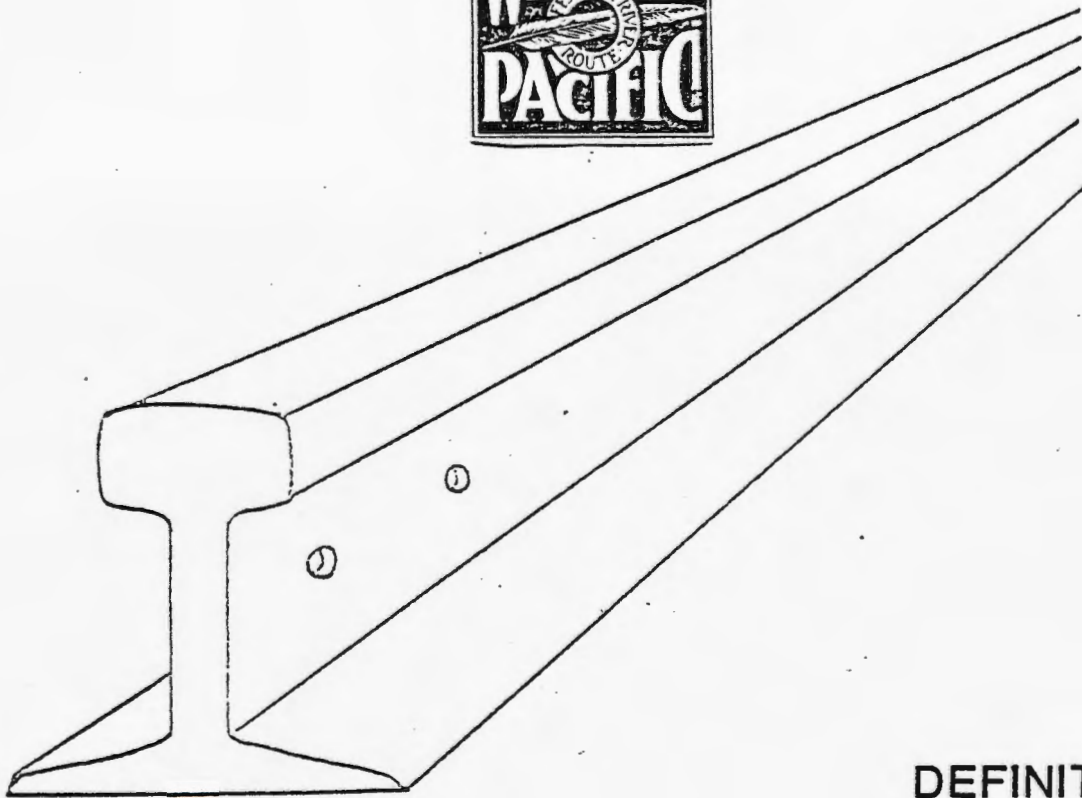
Transportation Officers Class

1. 35-Minute Film - UP Laying CWR Rail
2. WP M/W Rule Book, WP Standards, Condensed Track Chart
3. Track Section of T.T.D. Book
4. F.R.A. Track Requirements
5. Feather River Portec Test Data
6. Review of Engineering Drawings, Plan, Profile, X-Sections
7. M/W Safety Rules, Definitions
8. CPUC General Order 26D and 118, Clearances and Footing
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MAINTENANCE-OF-WAY

TRAINING PROGRAM



DEFINITIONS

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AAR--Association of American Railroads

Abrasion Plate--Used under armored and continuous insulated joints.

Adzing--Cutting or planing a crosstie enough to provide a smooth, satisfactory seat for tie plate.

Adzing Machine--Portable power-operated machine designed to adze the tie plate seat in the tie to provide proper bearing for tie plates.

Alinement--The horizontal location of a railroad as a series of tangents and curves, without respect to gradient or cross level.

Angle Bar--Rail joint identified by large flange or toe at the bottom which hides the rail base. Used mainly with lighter rail sections.

AREA--American Railway Engineering Association. Determines and recommends plans and practices for railroad track and structures. Has world-wide membership.

Authority for Expenditure-- An authorization on a special form signed by an executive officer of the Railroad authorizing money to build, purchase, change or retire specific physical property is called an "AFE".

Ballast--Selected material placed on the roadbed to hold track in line and surface. Consists of hard particles easily handled in tamping, which distribute the load, drain well, and resist plant growth.

Materials used include broken or crushed stone, gravel, slag, sand.

Ballast Section--Cross section of a track between and above the toes (lowest points) of the ballast slopes, whether or not this section includes subballast.

Ballast shoulder-- that portion of ballast between the end of the tie and the toe (lowest point) of the ballast slope. It distributes the traffic load over a greater width of roadway and helps hold the track in alignment.

Ballast tamper--portable power-operated machine for compacting ballast under crossties.

Ballast tamping--compactng ballast under crossties to maintain or correct the line and surface of track.

Ballast Curb. A longitudinal member placed along the outer edge of the floor of a ballast deck bridge to retain ballast. On timber ballast deck bridge usually made of timber.

Batter-mashing of the surface of the rail's head close to the end of the rail.

Bolt Machine--Power operated wrench used to install or remove nuts and track bolts.

Bridge, ballasted-deck--bridge with a solid floor on which ballast and track structure are placed, to reproduce as nearly as possible an earthen roadbed.

Bridge, open deck--bridge on which bridge ties placed on top of the bridge stringers form the support for the rail. Earthen roadbed structure is not duplicated.

Bridge tie--a special tie of the correct size and length used to support track on an open deck bridge. Usually timber but steel and concrete ties have been been used.

Butterfly. A message written on a sheet from a notebook and rolled. Name derives from the fluttring action of the message when thrown from rear of a fast moving train.

Cant--Slope of rail seat on a tie plate, expressed in rate of inclination, such as one inch drop in 40 inches, written as 1:40.

Car, ballast--specially designed car for hauling and distributing ballast.

Car, motor--motor-driven railroad work or inspection car.

Catenary--curve formed by a cord or cable hanging freely from two fixed points or supports.

Catenary system--method of supporting a trolley wire horizontally by suspending it by messenger wires from a catenary.

Closure Rail--The rails between the parts of any special trackwork layout, as the rails between the switch and the frog in a turnout; also the rails connecting the frogs of a crossing or of adjacent crossing, but not a part of the crossing frog or adjacent crossing.

Compensated grade--a grade on which the percent of grade has been reduced at horizontal curves to compensate for the added train resistance caused by the curve. It is intended a uniform train resistance will result from the grade whether on tangent or intervening curves.

Compromise Joint Bars--Joint bars designed to connect rails of different height or section or both, or rails of the same section but different joint drillings .

Control Cooled--Generally used in describing rail. Control cooled rail will have letters 'CC' as part of the brand on the web. The cooling cycle of the rail is controlled when rolled at the steel mill, so that it is prolonged. Control cooled rail gives longer service life than standard Open Hearth (OH) rail.

Clearance--Horizontal distance measured from ~~to~~ track or vertical distance measured from top of rail perpendicular to plane of rails.

Corrugated Rail--A rough, wavy condition of surface of rail. This develops under traffic. The cause of corrugated rail is uncertain.

Crib--the ballast or open space between two adjacent crossties; also, a criss-cross structure of logs, timber, concrete, or other members used to retain a fill or as a bridge support.

CPUC--California Public Utilities Commission

Regulatory body of State of California concerned with rates and safety of operation of all railroads and other utilities such as airlines, bus lines, electric gas and telephone companies.

Crossing, grade--crossing or intersection of a railroad and a highway at the same level or grade.

Crossing, track--A structure used where one track crosses another at grade, and consists of four connected crossing frogs. Sometimes called "railroad crossing".

(1) Bolted rail-type crossing is one in which all running surfaces are of rolled rail, the parts being held together with bolts.

(2) Manganese Steel Insert crossing. A track crossing in which a manganese steel casting is inserted at each of the four intersections, being fitted into rolled rails and forming the points and wings of the crossing frogs. Purpose is for longer service under heavy or high-speed traffic.

(3) Solid manganese steel crossing. A crossing in which the crossing frogs are cast completely from manganese steel. For extremely fast or heavy traffic.

(4) Two rail crossing. A crossing in which the connections between the end frogs and the center frogs consist of running rails and guard rails only. For light traffic lines or in yards where speeds are slow.

(5) Three rail crossing. A crossing in which the connections between the frogs consist of running rails, guard rails and easer rails (see Easer Rails).

Cross-Buck Sign--Standard Railroad Crossing sign used at public road crossings, and always placed on right-hand side of road in advance of the crossing. New installations are always reflectorized. Symbol "X-buck" is sometimes used when referring to cross-buck signs.

Crossing Warning Devices--Devices installed at grade crossings to warn motorists of an approaching train or track vehicle. All except crossbuck sign are automatically train activated to give a visual or auditable warning 25 seconds in advance of train's arrival at grade crossing.

Those in common use are:

Crossbuck CPUC No. 1-A

Wigwag, CPUC No. 3 (obsolete)

Flashing lights, CPUC No. 8

Flashing lights with cantilever CPUC 8-A

Automatic gates, CPUC No. 9

Automatic gates with cantilevered flashing lights, CPUC No. 9-A

Identical installations are in use in Nevada and Utah but of course they do not carry the CPUC designation in those States.

Crossover--Two opposing turnouts on adjacent or parallel tracks with track between the frogs arranged to form a continuous passage between the tracks.

Cross Tie--A track tie.

Curve--Simple curve: A continuous and uniform change in direction. Called a circular curve.

Compound curve: A continuous change in direction by means of two simple curves of different radius connected together at a common point of tangent.

Degree of Curve: The angle at the center of a simple curve, subtended by a 100-foot chord.

Easement Curve: A curve with a constant increase in degree until the degree of curve equals that of the main curve at the point where the two curves meet. Commonly called "spiral".

Reverse Curve: A curve made up of two curves that turn in opposite directions as their point of contact, as in the letter "S". There must be a tangent between the reverse curves.

Vertical Curve: A curve connecting two different grade lines.

Deadman--A heavy object placed to act as an anchor or an object to which a pulley or sheave can be attached. As far as track concerned, refers to broken spike imbedded in ties.

Derail--A device or track structure designed to derail rolling stock in emergency.

DOT--Department of Transportation headed by Secretary of Transportation, a cabinet post under the President of the United States. California and Utah also have a Department of Transportation.

Double Track--Two or more main tracks upon any of which the current of traffic may be in either specified direction.

Dual Gage Track--A track with at least three rails to accommodate vehicles of different gage on the same roadbed at different times.

Dutchman--A piece of rail from a few inches to a few feet long used to fill a gap between ends of rails for emergency track repair. It is intended to be used as a running rail between existing rail.

Dump--Term usually used when referring to the roadbed. Particularly refers to location where track is on a fill above the general level of surrounding ground. Sometimes referred to as "FILL". The two terms mean the same thing.

Dwarf Signal--A low home signal.

Easer Rail ---A rail placed with its head along the outside and close up to the head of the running rail and sloped at the ends to provide a bearing for the overhanging portion of hollowed out treads of worn wheels. Also serves to provide additional strength.

Easement Curve--A curve with a constant increase in degree until the degree of curve equals that of the main curve at the point where the two curves meet. Commonly called "Spiral". See Curve.

Electrified railway--railway on which the locomotives are powered by electricity supplied by a third rail or overhead trolley wire.

Electric Lock Switch--A hand thrown switch or derail with an electrically operated mechanism applied to prevent its operation except under prescribed conditions.

Elevation of Curves ---The vertical distance that the outer rail is above the inner rail on curves. The purpose is to compensate for the side thrust of train moving around curve at speed. More properly called "super-elevation". Do not put super-elevation in slow speed tracks.

Embankment--That part of the roadbed constructed by filling. See Dump and see Fill.

End Overflow--A projection of metal into the joint gap at the top or side of the head of a rail. Will cause chipping.

Expansion shim--spacer inserted between ends of abutting rails while track is being laid, to provide allowance for expansion of steel when temperature changes.

Eye--The crib or the area between adjacent ties . See Crib.

Facing Point Movement--Movement entering switch or frog from in front of the switch or frog point.

False Flange--A wheel worn down in the center of the tread, leaving a flang-like projection around the outside edge of the wheel.

Field Side--That direction of the track structure from the rail to end of ties.

This as opposed to gage side or that area between the rails.

Fill--That part of the roadbed constructed by filling as opposed to a cut. See Dump.

Fishing surface--Bearing surface between joint bar and rail.

Flange--projecting edge, rib, or rim on any object. Examples: on a rail, the base; on a car wheel, the inside rim which projects below the tread.

Flanger--snowplow designed to clear ice and snow from between rails, to provide a clear passage for wheel flanges.

Flangeway--space between running rail and guard rail to provide clearance for passage of wheel flanges.

Flare--A tapered widening of the flangeway, as at the ends of a guard rail or at the end of a frog or crossing wing rail.

Flare Opening--Distance between gage line and guard line at outer end of the flare.

Foot Guard--A filler for the space near where two rails merge, as in a frog, to prevent the feet of persons from becoming wedged between the two rails.

FRA--Federal Railroad Administration. Arm of Federal Government acting under DOT to prescribe initial minimum safety standards for track.

French Drain--A subterranean drain constructed by filling a trench or excavated area with rock or other permeable material.

Fouling Point--The location in the vicinity of a switch marking safe passing clearance with another track. In signaled territory also indicating point where signals on adjacent track are activated by occupation of signal detector circuit.

Frog--A track structure used at the intersection of two running rails to provide support for wheels and passageways for their flanges, thus permitting wheels on either rail to cross the other.

Fusee--A flare designed to burn with a red flame under all weather conditions and for a specified length of time.

Gage - Track --Standard gage is 4 feet 8½ inches, or 56½ inches which equals 143.51 cm or 1.43 meters.

Gage - Tool --A device used to establish or measure gage of track. Sometimes equipped with a spirit level and when so equipped user can check cross-level as well as track gage. When so equipped, usually referred to as "level-gage".

Gage Rod--A device that clamps the base of each rail in track designed to hold the rails to proper gage. Also called "tie rod".

Gage Side--Refers to direction toward center of track from the two gage lines of a track.

Gauntlet Track--A track laid such that it diverges from a given track with switch points but curves parallel with given track before frog is necessary. Thus, one rail of the gauntlet track would be between rails of given track, the other outside. Used mainly as live and dead rails on track scales.

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Grade--The ratio of rise or fall of track for each 100 feet, expressed in a percentage. Example: A 2-foot rise vertically in 100 feet of track measured horizontally, would be a "two percent grade".

Grade Signal--Automatic block signal equipped with yellow marker displaying a black letter "G".

Gradient--Same as Grade

Guard Rail--A rail laid parallel with the running rails of a track to prevent wheels from being derailed as does the guard rail opposite a frog, or to hold wheels in correct alinement in event of a derailment. On bridges "guard rail" refers to a longitudinal timber placed outside the track rail near the end of bridge ties to serve the dual purpose of a guard rail for wheels in event of derailment and to maintain proper spacing of bridge ties.

Guard Rail-Inner--Rails sometimes of smaller section than that in track usually laid through tunnels or on bridges to keep derailed wheels and trucks from skewing. Rails laid immediately inside running rails to form a flangeway in paved areas.

Head Block--Ties used to support the switch-point operating mechanism and the switch stand.

Head Rod--Switch rod nearest the point of a switch, usually placed between the two head-block ties.

Heaved Track--Term applied to track when proper surface is disturbed by frost or by expansion of water freezing in the roadbed or by expansion of subgrade generally.

Heel Block _____ --Block which spans joints and fills the space between adjacent rails at the heel of a switch.

Heel Length--Distance between the heel end and half-inch point of a frog, measured along gage lines.

Heel of Frog--End of the frog farthest from the switch.

Heel of Switch--End of the switch rail farthest from the point of switch.

Heel Spread _____ --Distance between gage lines at the heel end of a frog.

Home Signal--A fixed signal at the entrance of a route or block to govern trains or engines entering and using that route or block.

Hi Si Rail--Carbon steel rail with relatively high silicon content intended to prevent shelling.

ICC -- Interstate Commerce Commission. An independent Federal Regulatory agency authorized by the Congress.

Interlocking--Arrangement of signals, switch lock, and signal appliances so interconnected that their movements succeed each other in a predetermined order. It may be operated manually or automatically.

Insulated Joint--A joint in which insulation from flow of electrical current is provided between adjoining rails.

Insulation--Material which prevents flow of electric current in a track circuit from passing from one rail to another or through switches or other track structure.

Joint Facility-- Railway property jointly owned, operated or maintained by two or more railroads.

Joint Gap-- The distance between ends of adjoining rails in track, measured 5/8" below top of rail on the outside of the head.

Joint Ties--The ties which support rail at the rail joint.

Joint Track--Designated trackage upon which more than one carrier may operate.

Ladder Track--Connects parallel yard tracks by a series of turnouts to the yard tracks.

Lead--The distance from the actual point of the switch of a turnout and the half-inch point of the frog measured along the centerline of the main track.

Lead Curve-- The curve in a turnout between the heel of the switch point and the frog.

Level Board--A tool or device, equipped with a spirit level for checking cross level of track.

Line-- The condition of the track in regard to uniformity in direction over short distances on tangents, or uniformity in variation in direction over short distances on curves.

Line Swing--A variation in alinement over a considerable distance on tangent track.

Line Spike--Holds rails in line by bearing against base of rail.

Lining track--Shifting the track laterally to conform to desired alinement.

Locomotive Crane--Self-propelled crane mounted on steel wheels to move over railroad track.

Main Track. A track, other than auxilliary track, extending through yards and between stations upon which trains are operated by timetable or train order or both, or the use of which is governed by block signals.

Mile Board. Numbered mile markers mounted along track to designate mile post location.

Operating Department. Includes all the Operating Sub-Departments:

1. Transportation: train service, engine service, yard service, station, transportation center, and division office employees, dispatchers, marines.
2. Maintenance-of-Way: roadway, bridge and building, signal/communications, maintenance of roadway equipment.
3. Mechanical: car, locomotive, shop, rip tracks.

Outfit Cars. House cars, including TOFC type, used by Maintenance-of-Way personnel for living or eating quarters; not including M/W cars transporting roadway equipment.

Ordinate. The perpendicular distance from the mid point of a chord of a circle to the circumference of a circle. This distance measured from the center of a string drawn tautly and held in contact with gage line of rail.

Paired Track. Western Pacific-Southern Pacific trackage between Weso and Alazon, Nevada.

Passing Track. Properly called siding which is a track auxiliary to the main track for meeting or passing trains.

Point of switch. Point where the spread between the gage lines of the stock rail and the switch rail is sufficient to allow for the standard one-fourth inch width of switch point.

Power Wrench. A portable power-operated machine used to tighten or remove track nuts, sometimes referred to as "bolt machine".

Private Crossing. A private road or drive, covered by a written contract between railroad and owner, which crosses railroad track or tracks, not for public use. Road crossings other than those owned and maintained by City, County or State Highway Departments.

Profile. Logitudinal section in graph or chart form through a track that shows rise and fall of the track. Also, a drawing showing grade line of a railroad, obtained from levels taken on top of the rail.

Public Crossing. A street, road or highway crossing railroad track or tracks owned and maintained by City, County or State Highway Departments for public use.

PUC. Public Utilities Commission. In the three States in which Western Pacific operates the bodies are:

California - California Public Utilities Commission

Nevada - Public Service Commission

Utah - Public Service Commission

Rail Bond. A wire welded to the head of two rails at the joint in track to carry the electrical signal circuits.

Rail Drill. A portable device used for drilling bolt holes in rail usually power-operated.

Rail Saw. A portable power-operated machine with replaceable saw blades used for cutting rail.

Rail Section. The shape and size of a rail cut at right angles to its length. The rolling mill brands the rail section on the web of rail. See section in this manual covering "Rail".

Rail Tongs. A metal device formed so that the head of a rail may be securely held by jaws and lifting force applied to the rail through handles.

Railroad Crossing. The location where two tracks cross. See crossing(track).

Right-of-Way. Railway owned property used or held for railroad operations. Generally used in reference to line-of-road property as distinguished from property held for industrial development.

Roadbed--finished surface of roadway upon which track and ballast rest.

Roadbed Shoulder--portion of subgrade lying between the ballast-covered portion and the ditch in cuts, and the top of slope on embankments. A roadbed shoulder not less than 18 inches wide should be maintained outside the toe, or lowest point, of the ballast slope.

Roadway Sign. Any marker displayed on or near the right-of-way for instruction or information of employees or others.

Rotary snowplow-- car with a bladed wheel on the front end set at right angles to track and driven by an engine on the car. It cuts the snow and discharges it to one side of track.

Running Rail. The rail or surface on which tread of wheel rolls.

Runoff. (1) Amount of water which flows off land upon which it falls in a given length of time. Can be a critical factor to Railroad where water runoff is concentrated.

(2) Rate of change in vertical grade of track at end of surfacing work or other cause or structure which causes change in grade of track.

Sand Fence. A slatted fence built parallel to the track for the purpose of forming artificial eddies on the windward side a sufficient distance from track to cause sand to deposit between the sand fence and the track. Same construction may be used for snow fence.

Safety Rails. A railing applied to structure, machine or vehicle to guard against persons accidently falling.

Self-Guarded Frog. A frog provided with guides or flanges above its running surface, which contact the outside tread rim of wheels to guide flanges past point of frog. Used in yard tracks in special. Locations. Does not require guard rail. For very slow speed. Never used in main track.

Shelled Rail. A localized failure on the rail running surface which is a progressive horizontal separation of the metal on the gauge side.

Shoulder. That portion of the ballast between the end of the tie and the toe of the ballast slope.

Shoofly. Temporary by-pass track.

Shunt. A device to temporarily connect two rails in track to short the signal circuit as a train does.

Siding. A track auxiliary to the main track for meeting or passing trains.

Single Track. A main track upon which trains are operated in both directions.

Slide Fence. A fence constructed along the track at a slide area having wires connected to signal system so that if wires are broken signals will be set to red.

Slope. The inclined face of cut, fill or shoulder; usually expressed as a ratio of horizontal distance to vertical change in that distance. Example: A slope on a fill may drop one foot to every two feet measured horizontally. This slope would be expressed as a 2:1 slope.

Stakes. A length of wood driven into the ground or into the ballast to designate accurate location of survey points either horizontal or vertical. For precise location of horizontal points a tack will be driven in the stake. For precise vertical location such as final top of rail the top of stake will be colored blue.

Line stake designates a survey line such as the center line of track.

Grade stake designates the elevation such as top of rail or top of subgrade.

Offset stake is a line stake set a stated distance offline to facilitate construction.

Slope stake designates the toe of slope or shoulder of cut and will be marked "C" or "F" and designate the amount of cut or fill at center line.

Blue Top--grade stake showing finished grade.

Snow Shed. Roofed structure built over tracks to protect traffic against snow blockades. Restricted to locations where snow encroaches seriously and cannot be handled with plows, usually in side hill cuts on mountain slopes where snowslides amounting to avalanches frequently bury the tracks.

Spike puller. Steel bar about 5 feet long with a claw end shaped for pulling spikes by leverage. Also called claw bar.

Spiral. A curve with a constant increase in degree until the degree of curve equals that of the main curve at the point where the two curves meet. Also called easement curve.

Spot Board. A sighting board placed above and across the track at the proposed height to indicate the new surface and insure its uniformity. See section in this manual covering "Surfacing track by Eye".

Spreader. Spreader ditcher or specially designed equipment, equipped with "wings" and propelled by a locomotive. Used to clean ditches, shoulders or cuts and to plow snow.

Spring Washer. A member designed to be installed on a bolt beneath the nut to prevent backward movement of the nut and looseness in the bolted members. Commonly called "nutlocks" or "lock washers" when used in track at joints on track bolts.

Spur Track. Dead end branch track diverging from a main or other track.

Stringlining. Method for determining corrections to be made in the alinement of a curve, by measuring ordinates to the outer rail and without the use of surveying instruments.

Stock Pass. A culvert or bridge opening under the track used primarily for the passage of livestock.

Stock Rail. A running rail against which the switch point operates. The stock rail in the straight or parent track side of a turnout is called the "straight stock rail" or trunk rail. The stock rail on the turnout side is bent ahead of the switch point to provide protection for the point and is called the "bent stock rail".

Sub-Ballast. Any material of a superior character which is spread on the finished sub-grade of the roadbed and below the top ballast to provide better drainage and bearing characteristics than afforded by sub-grade material.

Sub-Drain. A covered drain below roadbed or ground surface, receiving water along its length through perforations or small holes in the drain pipe. Should be laid with holes or perforations down, on a bed of stone, ballast or other pervious material which will allow passage of water but retard mud or clay from entering pipe or plugging holes. Used extensively under public crossings, railroad crossings and other locations with inherently poor drainage characteristics.

Stringlining Station. Marked point on a stringlined curve.

Subgrade. Finished surface of a roadbed before ballast added.

Superelevation. Height the outer rail is raised above the inner, or grade, rail on curves, to resist the centrifugal force of moving trains.

Surface of track Vertical evenness or smoothness of a track over short distance.

Surface, running Top part of track structures on which treads of wheels bear.

Surfacing, out-of-face Raising the entire track to a new grade.

Surfacing, spot, also designated spot tamping Raising isolated low spots in track to correct grade.

Sweep, Rail. Made of flexible material, attached to front of track mounted equipment, particularly motor cars, in such manner as to brush along top of rail just ahead of lead wheels to remove light obstructions from top of rail. Rail sweeps are usually retractable and should be kept in good condition and in down position when moving.

Swinging Ties. Ties not firmly tamped, showing gap between tie plate and base of rail or bottom of tie and ballast.

Switch. Pair of movable track rails, with their fastenings and operating rods, which as part of a turnout guides the wheels from one track toward another.

Switch, double slip. Movable-point frog crossing with switch rails added. Also called puzzle switch. Replaces double crossover in one unit.

Switch, split. A switch having two tapered movable rails which are placed inside the running rails and designed to contact one or the other as opposed to the stub switch.

Switch, spring. Split switch with a throwing mechanism that enables a train to make a trailing-point movement through a turnout regardless of direction for which switch is lined. Designated by the letter "S" on the switch target.

Switch, stub. Type of switch in which both of the main line rails move for turnout operation and can be moved to align with either the straight movement or turnout movement. Now seldom found in the United States.

Switch lock. Fastener, usually a spring padlock, used to secure the switch or derail stand in place and thus maintain correct position of these members.

Switch plate. Special metal tie plate for use on switch ties, each plate being long enough to extend not only under the stock rail and its supporting braces but also under the switch rail in open position.

Switch plate. Special metal tie plate for use on switch ties, each plate being long enough to extend not only under the stock rail and its supporting braces but also under the switch rail in open position.

Switch points. Tapered ends of the switch rails of a split switch.

Switch rod. Connecting rod that runs from the switch stand to the movable rails of a split-point switch, thereby enabling an operator to move the rails.

Switch stand. Device by which a switch is thrown and locked, and its position indicated. Consists essentially of a base, spindle, lever, and connecting rod, with a target to indicate how the switch is lined.

Switch target. Visual day signal fixed on the spindle of a switch stand, or the circular flaring collar fitted around the switch-lamp lens, and painted a distinctive color to indicate the position of the switch.

Switch, throw of. Distance, measured along the centerline of the rod nearest the point connecting the two switch rails, through which switch points are moved sideways to bring either point against the stock rail; standardized at $4 \frac{3}{4}$ inches.

Tamper--air-, electric-, or power-driven tool used for compacting ballast under ties.

Tangent--straight section of track.

Team track--track on which freight is transferred directly between a rail car and a highway vehicle and which can be used by the public.

Throat of frog--point at which the converging wings of a frog are closest together.

Throw--(noun) distance to move a track laterally with lining bars or track liner;
(verb) to move by shifting laterally.

Throw Rod--Road attached to the head rod of a switch, connecting the switch to a switch stand or other operating device.

Tie Plug--A short wooden plug the approximate size and shape of a track spike. Used to plug old holes in tie to prevent or retard deterioration.

Tie Tongs--Implement designed to engage a tie with a pliers-like action and equipped with handles by which ties can be carried or drawn into or out of the track in renewals.

Timetable--The authority for the movement of regular trains subject to the rules. It contains classified schedules with special instructions relating to the movement of trains and includes supplements issued thereto.

Toe End of Frog--End of a frog nearest the switch.

Toe Spread--Distance between gage lines at the toe end of the frog.

Torpedo--An explosive device strapped to the head of a rail and used to signal train engineers.

Track, ladder--Track connecting successively the body tracks of a yard.

Track, spur--Track connected with the parent track at one end only.

Track Bumper--Device at the end of a spur track to prevent rolling stock from going off the ends of rails. Also called bumping post.

Track Chart--Graphic representation of a segment of a rail line which shows type of rail, ballast, grade, and structure.

Track Level--board containing a spirit level used to check the cross level of rails; usually equipped with a series of notched steps to set superelevation on the outside rail of curves.

Track Liner--Machine designed to line track.

Track Shim--Hardwood or fiber plate, generally as wide as the bearing of a standard tie plate but varying thickness; used to restore the running surface of track heaved by frost or otherwise distorted.

Track Scale:-- A scale specially designed for weighing railway rolling stock.

Track serving a track scale is called a "scale track". Track across scale is sometimes in form of a gauntlet so that one track is the live track on the scale weigh beam and the other is a dead track and is supported so that the weight of an engine or car on the dead track does not apply to the scale.

Trailing Point Movement--Movement from behind point of frog or switch. The opposite of facing point movement.

Train--One or more engines, with or without cars, displaying markers.

Trainmen--Conductors, brakemen, yard conductors, and yard brakemen.

Turnout--Arrangement of a switch and a frog with closure rails, by which rolling stock can be diverted from one track to another.

Water Pocket--Cavity formed in the roadbed because of improper surface drainage in which water collects,

Wye Track--Two connecting tracks, arranged like the letter "Y". Used for turning equipment.

Yard--A system of tracks within defined limits provided for the making up of trains, storing of cars and other purposes, over which movements not authorized by timetable or by train order may be made, subject to prescribed signals and rules or special instructions.