

ACTUAL SPAN: Span length as measured along the ground and not determined from the arithmetic difference of the two I-beam locations.

ALONG-TRACK-MOVEMENT: The motion of Auto Tension catenary induced by counterweights or tensions due to thermal expansion or contraction of the conductors.

ANCHOR:

Anchor Bolt: A large bolt inserted into a concrete foundation to form an attachment for a pole or support bracket.

Anchor Plate: A plate used to terminate the guy wire to a steel bridge.

Foundation: A drilled pier foundation buried in the ground with an embedded galvanized iron rod to which a down guy (or guys) is attached.

ARRANGEMENT: A group of Overhead Contact System structures in a specific configuration providing the wiring of a typical track section.

ASSEMBLY: A group of Overhead Contact System structures in a specific configuration providing the wiring of a typical track section.

AUTO-TENSION (AT): Conductors provided with counterweights, pneumatic or hydraulic tensioning devices to maintain constant tension at specified conductor temperatures by compensating for conductor thermal length changes.

BACKBONE: A span guy or wire between structural supports used primarily to register contact wires around a curve by means of a set of registrations attached along the backbone.

BLOW-OFF: Lateral displacement of the contact wire due to wind.

BODY SPAN WIRE: The center wire of a three-wire headspan.

BOND: An electrical connection between metal hardware to eliminate voltage difference.

BRACKET ARM: The support frame assembly supporting the direct suspension single contact wire from a pole.

BRIDLE: A span guy or wire between structural supports used primarily to provide vertical support to a cross-span wire attached approximately midway along the bridle.

BULL RING: A steel ring usually 2" to 4" in diameter into which guys are dead-ended.

CABLE: A length of single insulated conductor (solid or stranded), or two or more such conductors, each provided with its own insulation. which are laid up together. The insulated conductor or conductors may or may not be provided with an overall mechanical and or insulating protective covering.

CABLE OUTLET: A short pipe installed through the wall of a pole. Through which a feeder cable exits the pole same as “feeder spout”.

CARBON COLLECTOR: See “Rubbing Strip”.

CANTILEVER: The support frame and registration assembly supporting the catenary from a pole, and attached to the pole via a hinge fitting.

CATENARY: The combination of conductors, hangers, and in-span hardware of the Overhead Contact System, not including supports and cross-arms.

Dictionary Meaning: The curve assumed by a perfectly flexible cord of uniform density and cross-section hanging freely from two fixed points: also something in the form of a catenary.

CLEARANCE ENVELOPE: The space around trains into which no part of the Overhead Contact System except the contact wire and its direct support may intrude.

COMPONENT: An item of hardware as commonly supplied as a complete assembly.

COMPOUND CATENARY: Comprising a contact wire, an auxiliary wire and a messenger wire.

CONTACT BRIDGE: A rigid bar, about feet long, fixed closely above and to the in-running contact wire forming a slot for a second contact wire to pass through, thereby preventing differential uplift of crossing contact wires.

CONTACT WIRE OR TROLLEY WIRE: The wire with which the pantograph or current collector is designed to make contact. Normally made of copper or bronze, the wire is a single conductor with a groove by which hangers and clamps may be fitted.

CONTACT WIRE HEIGHTS: The height of the underside of the contact wire above rail level when not uplifted by the pantograph.

Minimum Contact Wire Height: The minimum allowable contact wire height, usually at mid-span or under bridges, which takes due account of train clearance envelope, train bounce, and track tolerances, catenary temperature effects and electrical clearances. May also take future track raising into account if so required.

Maximum Contact Wire Height: The maximum allowable contact wire height.

CONTINUITY or FULL CURRENT: A jumper capable of carrying full line current from one catenary to another longitudinally at tensioning overlaps and track turnouts.

COUNTERWEIGHT: The weighted tensioning device at each end of a tension section of and auto-tensioned Overhead Contact System.

CREEP: The increase in length (stretch) of wires under prolonged tensile loads.

CROSS LEVEL: The plane through the tops of the rails of a track in the transverse direction.

DEADEND or FIXED END: A conductor under tension which is terminated to a pole within a counterweight.

DIRECT SUSPENSION: Direct support of a single contact wire with fixed termination.

DOUBLE INSULATION: Insulation provided by two physically separated insulators.

DOWN or BACK GUY: A wire attached high on a pole and coming down at an angle to an anchor in the ground.

DROP BRACKET: An assembly fixed to the underside of a registration pipe that carries the steady arm.

ELECTRICAL CLEARANCE:

Passing: The dimensional mechanical clearance between live parts of either the vehicle or catenary and grounded parts of the fixed structures. It exists during the passing of a locomotive or car.

Static: The dimensional mechanical clearance between live parts of the Overhead Contact System and grounded parts of fixed structures. under non-passing conditions.

EQUALIZING: A light internal jumper in the Overhead Contact System, connecting the messenger to a contact wire, generally once in each span.

FACE of POLE: The absolute nearest part of a pole from the track or roadway, but excluding the base plate unless this is located significantly above the level of the rails or road surface and intrudes into the clearance envelope.

FEEDERS: Conductors which supply power to or augment the power carrying capacity of the conductors in an overhead contact system.

FEEDER SPOUT: See "Cable Outlet".

FITTINGS: Small components used in the assembly of cross-arm pipes and catenaries.

FIXED-TERMINATED (FT.) EQUIPMENT: Overhead Contact System with dead-ended conductors.

GAUGE:

Load Gauge: The envelope around the track within which all loaded track vehicles must remain while static or in motion.

Track Gauge: The distance between the inside running edges of the track.

GRADIENT (CONTACT WIRE): The average slope of the contact wire between two adjacent catenary supports relative to the track or roadway.

GUY: A steadying or positioning wire.

HANGER: A vertical fitting by means of which the contact wire is suspended from the messenger wire at regular intervals (typically every 15-30 feet).

HEAD or SPAN: A wire between two points but not anchored to ground.

HEADSPAN: An installation of two or more wires that crosses the track and supports a simple catenary(ies), or several single contact wires in multi-track area.

HEADSPAN WIRE: The upper of two cross-span wires or the uppermost of three cross-span wires at Overhead Contact System support structures.

HEEL of STEADY ARM: The pivoted end of steady arm opposite the contact wire clamp.

HORNS: The bent or angled downward portion of the pantograph at either end of the carbon collector.

IMPEDANCE BOND: An inductive device bridging an insulated rail joint used for allowing passage of the DC traction return current while preventing passage of high-frequency AC current used for signaling.

IN-RUNNING CATENARY (AT OVERLAPS, ETC.): The catenary in multiple catenary sections (such as overlaps providing the passage or contact for the pantograph).

IN-RUNNING CATENARY (NORMAL): The catenary providing the passage for the pantograph.

INSULATOR: Any body or substance provided and designed for the purpose of surrounding or supporting a conductor so as to restrict the flow of electricity to a desired path.

Disc: A bell-shaped insulator of glass or porcelain used singly or in string.

No-Bo: A section insulator with a replaceable under run. This insulator is designed with a lower tension beam and an upper compression beam that prevents warpage under the tensile load of a contact wire.

Suspension: An insulator or string of discs, which are suspended in a vertical position.

Standoff: A solid core insulator with bending strength.

Strain: An insulator or a string of disc insulators used in line with a tensioned conductor.

Strut: A standoff insulator used in compression members of cross-arms.

JOHNNY BALL or PORCELAIN STRAIN INSULATOR: A type of strain insulator used primarily for guy or span wire insulation.

JUMPER: Generally an internal electrical connection in the Overhead Contact System; a short conductor installed to provide electrical continuity.

LIVE LOAD (STRUCTURAL): A load or force that is temporary in nature such as wind, ice, the dynamic uplift force of a passing pantograph.

LIVE WIRE (ELECTRICAL): A conductor carrying a voltage for power supply.

LUG - CRIMPED: An attachment to the end of a wire for an electrical connection made using a gripping or crimping tool.

LUG - TERMINAL: A crimped or a soldered piece to terminate a wire for electric connection.

MESSENGER: The uppermost conductor of an Overhead Contact System. The conductor which hangs in the shape of a catenary from which, by means of hangers, the contact wire is suspended.

MIDDLE ORDINATE: The distance between the track arc and its chord between catenary support structures, measured at midspan.

MIDPOINT STRUCTURE: The structure approximately midway between two counterweights of a tension section of AT equipment where the messenger is fixed to stabilize the system.

MID-SPAN OFFSET: The deviation of the static contact wire from the super-elevated center-line of track at mid-span.

MIRROR GAGE: A device that mounts on the track that is used for taking dimensions from the center-line on the track.

NON-RIDING: See “out-of running.”

OUT-OF-RUNNING (OOR) CATENARY: The catenary in multiple catenary sections that does not provide passage for the pantograph because it is higher than, or offset from, the in-running catenary.

OFF-SET: Deviation of the static contact wire from the super-elevated center-line of the track, also the dimension of the center-line of the pole from the center-line of the track.

OVERHEAD CONTACT SYSTEM (OCS): That part of the overhead line equipment comprising the catenary, catenary supports, foundations, counterweights and other equipment and assemblies, that delivers electric power from the traction substations to the LRV's.

OVERLAP: That portion of the overhead contact system where the contact and messenger wires of two adjoining tension sections overlap and terminate.

OVERLAP SPAN: That portion of the overhead contact system between two structures, where the contact and messenger wires of two adjoining sections overlap, and where an electrical break between those sections can be effected.

PANTOGRAPH: A current collection device fitted on top of a locomotive, LRV or multiple unit vehicle, hinged to vary in height as it rubs along the contact wire.

PANTOGRAPH SECURITY: The analysis of the lateral relationship between pantograph and contact wire that makes due allowance for vehicle and pantograph sway, track tolerances, super elevation, erection tolerances, windage on wires and poles. Also includes temperature effects on AT equipment.

PARALLEL GROOVE CLAMP: A piece of hardware used to clamp two parallel wires together.

PANTOGRAPH UP-THRUST: The nominal upward force exerted by the pantograph on the contact wire.

POLE CAP: The attachment over the top of a pole to prevent intrusion of rain water.

PORTAL OR BENT: A frame support structure consisting of vertical columns supporting each end of a horizontal beam.

PIPE CLAMP: A piece of hardware used to attach various types of components to a pipe.

PRE-EMPTION DEVICE: A switch operated automatically by LRV's in city streets, which controls traffic signals to their favor.

PRE-STRESS: Applied to a conductor at a higher tension than for normal operation to reduce creep. The period may vary from 15 minutes to 2 hours or longer, according to circumstances.

PULL-OFF/PUSH-OFF: The registration towards or away from center-line of track in relation to the pole.

RADIAL LOAD: Across-track horizontal loads applied by conductors due to deviation by registration.

RAIL BOND: Electrical connection between adjacent lengths of rail.

RAKE: Lean of the pole from vertical.

REGISTRATION: Lateral support of conductors.

REGISTRATION ARM: See "Steady Arm".

SAG: The difference between the average heights of the conductor at adjacent supports and its height at the lowest point in the span.

SECTIONING or SECTIONALIZING: The division of an electrical distribution system or network into electrical sections.

SECTION BREAK: An electrical break in the overhead contact system permitting isolation of a section of catenary.

SIDEWALK DOWN GUY: A down guy which is diverted to a vertical position for anchorage to the ground, by use of a horizontal strut braced against the pole at a high level. Used where the normal down guy anchorage would occur on a sidewalk or other pathway.

SIMPLE CATENARY: Comprising a contact wire supported from a messenger wire by hangers.

SINGLE WIRE: Comprising a contact wire only.

SECTION INSULATOR: A device (such as a No-Bo insulator) for dividing a contact wire (and messenger wire) into electrical sections while maintaining mechanical continuity and a continuous path for the current collectors.

SPAN: The horizontal length of trolley or contact wire between two adjacent support points (not necessarily the distance or difference in stationing between the support structures).

SPAN GUY: An overhead guy spanning between two support points (pole, bullring, etc.). generally suspending some Overhead Contact System equipment.

SPAN LENGTH: Distance along track between structures.

SPAN WIDTH: Distance across track between the columns of a portal or head-span.

SPECIAL WORK: Jargon for the frogs, switches, crossovers, and curve segments used in street car and trolley bus overhead systems .

SPRING TENSIONING DEVICE: Tensioning device at each end of a tension section used to maintain constant tension at specified conductor temperatures by compensating for conductor thermal length changes.

SPOUT: See "Cable Outlet.

STAGGER: The offset of the contact wire at a support due to registration.

STEADY ARM OR REGISTRATION ARM: The lateral restrainer on the contact wire at a structure.

STITCHED CATENARY: A catenary system to which a stitch wire has been added at the supports to improve catenary dynamics.

STRAIN CLAMP: A piece of hardware used for deadending a wire or conductor under high tension.

STRINGING: Installation of overhead wires under tension.

STRINGLINE: See "middle ordinate."

STRUCTURE: A principal support for the Overhead Contact System conductors. Normally including foundation, poles and cantilever(s)/bracket arm(s), or head-span/cross-span.

SUSPENSION CLAMP: A piece of hardware used to support a tensioned conductor or cable in a hanging arrangement, the greater part of the applied load being due to gravity.

STRUCTURE BOND: An electrical connection between structure and rail.

SYSTEM DEPTH OR HEIGHT: The vertical distance between messenger and contact, normally at the support structure, also known as encumbrance.

TAIL WIRE OR TAIL GUY: The wire that with an insulator joins the yoke plate to the counterweight assembly or dead end.

TENSION SECTION: Length of Overhead Contact System between two corresponding terminations with automatic tensioning or fixed terminations.

TIE WIRE ANCHOR: The span guy that provides the midpoint restraint at AT equipment.

TIE WIRE ANCHOR POLE: The pole, normally with a down guy, that takes the strain from the mid-span guy.

TRAVELLERS: Sheaves used in pulling wires during stringing preferably with one “cheek” that can be opened for inserting wires and pull lines.

TROLLEY BRIDGE: A device in doorways of maintenance shops that bridges the gap in the trolley wire created by the opening and closing of overhead doors.

TROLLEY WIRE: A solid wire usually grooved carrying power from which trolley poles of buses pick up electrical power (see also “contact wire” for LRVs).

TROLLEY SHOE: A device used for current collection attached to a spring loaded pole on roof of car.

UNDER-RUN: The lower running surface of a section insulator or other catenary hardware.

UPLIFT: The difference in height of contact wire when at rest and when subjected to an upward force under one of the following conditions:

Dynamic: Due to the pantographs or trolley poles passing.

Static: Due to stationary pantographs or trolley poles.

YOKE: A steel plate or casting on which two or more wires terminate on one side and continue as one wire on the opposite side (usually yoke-shaped and with lever action to distribute loads from a counterweight to the messenger and contact wire).