

ECLA**EUROPEAN CLASSIFICATION****B61L****GUIDING RAILWAY TRAFFIC; ENSURING THE SAFETY OF RAILWAY TRAFFIC**

(power supply lines for electrically-propelled vehicles B60M; vehicle signalling in general B60Q; brakes or auxiliary equipment B61H, B61K; point or crossing construction E01B; insulated rail joints [E01B11/54](#); optical devices in general G02; controlling in general G05; electric communication technique H04)

B61L1/00

Devices along the route controlled by interaction with the vehicle or vehicle train,
 [N: e.g. pedals] (detonators [B61L5/20](#); operation of points or signals by passage of the vehicle [B61L11/00](#), [B61L13/00](#); central traffic control systems controlled by train [B61L27/04](#); operation of gates, or gates and signals, by approaching vehicle [B61L29/18](#))

- B61L1/02 . Electric devices associated with track [N: e.g. rail contacts]
- B61L1/02A . . [N: actuated by variation of resistance or by piezo-electricity]
- B61L1/04 . . mechanically actuated by a part of the vehicle
- B61L1/04A . . . [N: actuated by fluid-pressure]
- B61L1/06 . . actuated by deformation of rail; actuated by vibration in rail
- B61L1/08 . . magnetically actuated; electrostatically actuated
- B61L1/10 . . actuated by electromagnetic radiation; actuated by particle radiation
- B61L1/12 . Electric devices associated with overhead trolley wires
- B61L1/14 . Devices for indicating the passing of the end of the vehicle or vehicle train
- B61L1/16 . Devices for counting axles; Devices for counting vehicles (counting moving objects in general [G06M](#))
- B61L1/16A . . [N: characterised by the counting methods] [N0904]
- B61L1/16B . . [N: characterised by the error correction] [N0904]
- B61L1/16C . . [N: Detection devices] [N0904]
- B61L1/16C1 . . . [N: Mechanical] [N0904]
- B61L1/16C2 . . . [N: Electrical] [N0904]
- B61L1/16C3 . . . [N: Optical] [N0904]
- B61L1/16D . . [N: Circuit details] [N0904]
- B61L1/16E . . [N: Specific transmission details] [N0904]
- B61L1/16H . . [N: Diagnosis] [N0904]
- B61L1/18 . Railway track circuits (automatically-operated track circuits specially adapted for section blocking for controlling traffic [B61L23/00](#); rail joints [E01B11/00](#))
- B61L1/18A . . [N: Details]
- B61L1/18A1 . . . [N: Use of current of indifferent sort or a combination of different current types]
- B61L1/18A1A [N: Use of means on the vehicle for improving short circuit e.g. in vehicles with rubber bandages]
- B61L1/18A1B [N: Use of additional conductors for examining leakages between rails]
- B61L1/18A2 . . . [N: Use of direct current]

B61L1/18A3	. . . [N: Use of rectified alternating current]
B61L1/18A4	. . . [N: Use of alternating current]
B61L1/18A5	. . . [N: Use of coded current]
B61L1/20	. Safety arrangements for preventing or indicating malfunction of the device, e.g. by leakage current, by lightning [N: remote indicating means for abnormal operations conditions G08B21/00 , G08B23/00 ; detectors for indicating the overheating of axle bearings B61K9/00]
B61L3/00	Devices along the route for controlling devices on the vehicle or vehicle train, e.g. to release brake, to operate a warning signal
B61L3/00A	. [N: Recorders on the vehicle]
B61L3/00B	. [N: Memory means reproducing during the running of the vehicle or vehicle train, e.g. smart cards] [C0902]
B61L3/00C	. [N: On-board optimisation of vehicle or vehicle train operation (track-side optimisation of operation B61L27/00B3)] [N0902]
B61L3/00D	. [N: On-board target speed calculation or supervision (track-side control of safe travel B61L27/00C ; speed control circuitry B60L3/08 ; speed control of electric drives B60L15/20)] [N0902]
B61L3/02	. at selected places along the route, e.g. intermittent control [N: simultaneous mechanical and electrical control]
B61L3/04	. . controlling mechanically [N: arrangements of making elements acting directly on tread B60T1/04]
B61L3/06	. . controlling by electromagnetic or particle radiation, e.g. by light beam (using radio waves B61L3/12)
B61L3/06A	. . . [N: controlling optically]
B61L3/08	. . controlling electrically
B61L3/10	. . . using current passing between devices along the route and devices on the vehicle train
B61L3/10A	. . . . [N: Details of current transmitting conductors or contact brushes]
B61L3/10B	. . . . [N: with mechanically controlled electrical switch on the vehicle]
B61L3/12	. . . using magnetic or electrostatic induction; using radio waves
B61L3/12A	. . . . [N: using magnetic induction]
B61L3/12B	. . . . [N: using short-range radio transmission (long-range radio transmission B61L15/00B1 , B61L27/00A)] [N0902]
B61L3/12C	. . . . [N: Constructional details] [N0902]
B61L3/12D	. . . . [N: for remote control of locomotives (remote control of locomotives within a train consist B61C17/12)] [N0902]
B61L3/12E	. . . . [N: for control of tilting trains by external control devices, e.g. by Eurobalise (tilting details B61F5/22)] [N0902]
B61L3/14	. . to cut-off the power supply to traction motors of electrically-propelled vehicles
B61L3/16	. Continuous control along the route
B61L3/18	. . using electric current passing between devices along the route and devices on the

	vehicle or vehicle train
B61L3/18A	. . . [N: using separate conductors]
B61L3/20	. . . employing different frequencies or coded pulse groups [N: e.g. using currents carried by traction current (operating and signalling systems using network power supply H02J13/00)]
B61L3/22	. . . using magnetic or electrostatic induction; using electromagnetic radiation
B61L3/22A	. . . [N: using track circuits]
B61L3/22A1	. . . . [N: Arrangements on the track only] [C9609]
B61L3/22B	. . . [N: using separate conductors along the route]
B61L3/22C	. . . [N: using electromagnetic radiation]
B61L3/24	. . . employing different frequencies or coded pulse groups [N: e.g. in combination with track circuits]
B61L3/24A	. . . . [N: using alternating current]
B61L3/24B	. . . . [N: using coded current]
B61L5/00	Local operating mechanisms for points or track-mounted scotch-blocks (track-mounted scotch-blocks per se B61K); Visible or audible signals; Local operating mechanisms for visible or audible signals (B61L11/00 takes precedence)
B61L5/02	. Mechanical devices for operating points or scotch-blocks [N: e.g. local manual control]
B61L5/02A	. . [N: using funicular driving means]
B61L5/02B	. . [N: fixing switch-rails to the driving means]
B61L5/04	. Fluid-pressure devices for operating points or scotch-blocks
B61L5/04A	. . [N: using electrically controlled fluid-pressure operated driving means]
B61L5/06	. Electric devices for operating points or scotch-blocks [N: e.g. using electromotive driving means]
B61L5/06A	. . [N: Wiring diagrams]
B61L5/06B	. . [N: Construction of driving mechanism]
B61L5/06C	. . [N: using electromagnetic driving means]
B61L5/08	. Underground actuating arrangements, e.g. for tramways
B61L5/10	. Locking mechanisms for points; Means for indicating the setting of points
B61L5/10A	. . [N: Controlling electrically]
B61L5/10B	. . [N: Controlling funicularly]
B61L5/10C	. . [N: electrical control of points position]
B61L5/12	. Visible signals [N: (signalling means on the vehicle B61L15/00 ; signalling means for classification yards, or the like, with multiple indicating means B61L17/02A ; signalling means for road crossings B61L29/24 ; lighting in general F21 ; visible signalling arrangements in general G08B5/00)]
B61L5/12A	. . [N: Fixed signals, beacons, or the like]
B61L5/14	. . Form signals, e.g. semaphore arms [N: (illumination for points, form signals B61L9/00)]
B61L5/16	. . . Local operating mechanisms for form signals

B61L5/16A	. . . . [N: using electromotive driving means]
B61L5/16A1	. . . . . [N: Wiring diagrams]
B61L5/16A2	. . . . . [N: Driving mechanisms]
B61L5/16B	. . . . [N: using electromagnetic driving means]
B61L5/16C	. . . . [N: using electrically controlled gravity operated driving means]
B61L5/16D	. . . . [N: using electrically controlled fluid-pressure operated driving means]
B61L5/16G	. . . . [N: using funicular driving means]
B61L5/18	. . Light signals; Mechanisms associated therewith, e.g. blinders
B61L5/18A	. . . [N: Daylight signals]
B61L5/18A1	. . . . [N: using mobile coloured screen]
B61L5/18A2	. . . . [N: using light sources of different colours and a common optical system]
B61L5/18A3	. . . . [N: using light sources of different colours and separate optical systems]
B61L5/18A4	. . . . [N: Optical systems, lenses]
B61L5/18A5	. . . . [N: Mounting and focussing of the light source in a lamp, fixing means (focussing of the light source in reflecting mirrors F21M3/02)]
B61L5/18A6	. . . . [N: Lamp mountings on a mast]
B61L5/18A7	. . . . [N: Mobile mounting arrangements on a mast; Arrangements for hoisting of the lamp along the mast]
B61L5/18A8	. . . . [N: Wiring diagrams for power supply, control or testing]
B61L5/18C	. . . [N: using flashing light sources (visible signalling in general using flashing light sources G08B5/38 ; thermal switches operating intermittently H01H61/06 , H01H61/08)]
B61L5/20	. Audible signals, e.g. detonator [N: audible signalling]
B61L5/20A	. . [N: Detonators; Track mounting means; Composition of the detonative product]
B61L5/20B	. . [N: Signalling means for special purposes]
B61L5/22	. . Devices for initiating the release of detonators in a certain position of a signal
B61L5/24	. . Replacement of detonators
B61L7/00	Remote control of local operating means for points, signals, or trackmounted scotch-blocks (B61L11/00 takes precedence; interlocking arrangements B61L19/00; transmission per se, see the relevant classes)
B61L7/02	. using mechanical transmission; e.g. wire, lever
B61L7/02A	. . [N: Driving wheels or supports for traction wires]
B61L7/02B	. . [N: Guiding means or supporting foundations in beton]
B61L7/02C	. . [N: Coupling for wires or traction bars]
B61L7/02D	. . [N: Bracing or compensating arrangements]
B61L7/02E	. . [N: Control levers]
B61L7/02H	. . [N: Indicating or fixing arrangements in the event of breaking or tension difference of transmission wires for points, signals or similar]
B61L7/04	. using fluid-pressure transmitting
B61L7/06	. using electrical transmission

B61L7/06A	. . [N: using electromotive driving means]
B61L7/06A1	. . . [N: Wiring diagrams]
B61L7/06A2	. . . [N: Construction of driving mechanism]
B61L7/06B	. . [N: using electromagnetic driving means]
B61L7/06D	. . [N: using electrically controlled fluid-pressure operated driving means]
B61L7/06P	. . [N: Supply for electric safety arrangements]
B61L7/06Q	. . [N: Protection against eddy-currents, short-circuits, or the like, for electric safety arrangements]
B61L7/08	. . Circuitry
B61L7/08A	. . . [N: Direct line wire control]
B61L7/08B	. . . [N: Common line wire control using currents of different amplitudes, polarities, frequencies, or the like]
B61L7/08C	. . . [N: Common line wire control using synchronous distributors]
B61L7/08D	. . . [N: Common line wire control using relay distributors]
B61L7/08F	. . . [N: Common line wire control using series of coded pulses]
B61L7/10	. . . for light signals, e.g. for supervision, back-signalling
B61L7/10A	. . . . [N: Electric control of the setting of signals]
B61L7/10A1	. . . . . [N: for form signals]

B61L9/00 **Illumination specially adapted for points, form signals, or gates** ([lighting in general F21](#))

B61L9/02	. non-electric
B61L9/04	. electric

B61L11/00 **Operation of points from the vehicle or by the passage of the vehicle**

B61L11/02	. Using mechanical interaction between vehicle and track
B61L11/04	. . Trailable point locks
B61L11/06	. . with fluid-pressure transmission
B61L11/08	. using electrical or magnetic interaction between vehicle and track
B61L11/08A	. . [N: Magnetic control]

B61L13/00 **Operation of signals from the vehicle or by the passage of the vehicle**

B61L13/00A	. [N: actuated by the passage of the vehicle]
B61L13/00B	. [N: optically actuated]
B61L13/00C	. [N: acoustically actuated]
B61L13/02	. using mechanical interaction between vehicle and track [N: (pedals B61L1/00)]
B61L13/04	. using electrical or magnetic interaction between vehicle and track [N: e.g. by conductor circuits using special means or special conductors]

B61L13/04A	<ul style="list-style-type: none"> • [N: using isolated rail sections]
B61L13/04B	<ul style="list-style-type: none"> • [N: using separated rail contacts, pedals or similar (B61L1/02 takes precedence)] [C9609]
B61L13/04C	<ul style="list-style-type: none"> • [N: controlling inductively or magnetically]
B61L15/00	Indicators provided on the vehicle or vehicle train for signalling purposes; [N: On-board control or communication systems] [C0902]
B61L15/00A	<ul style="list-style-type: none"> • [N: wiring diagrams for start- or stop-signals on vehicles having one or more carriages and having electrical communication lines between the carriages]
B61L15/00B	<ul style="list-style-type: none"> • [N: Communication with or on the vehicle or vehicle train (line transmission systems H04B3/00)] [C0902]
B61L15/00B1	<ul style="list-style-type: none"> • [N: Radio-based, e.g. using GSM-R] [N0902]
B61L15/00B2	<ul style="list-style-type: none"> • [N: Conductor-based, e.g. using CAN-Bus, train-line or optical fibres] [N0902]
B61L15/00C	<ul style="list-style-type: none"> • [N: Destination indicators, identification panels or distinguishing signs on the vehicles (displaying in general G09F)] [C0902]
B61L15/00D	<ul style="list-style-type: none"> • [N: Train integrity supervision, e.g. end-of-train (EOT) devices] [N0902]
B61L15/00E	<ul style="list-style-type: none"> • [N: Multiple on-board control systems, e.g. "2 out of 3"-systems (trackside multiple control systems B61L27/00E)] [N0902]
B61L15/00G	<ul style="list-style-type: none"> • [N: On-board train data handling (trackside train data handling B61L27/00G)] [N0902]
B61L15/00H	<ul style="list-style-type: none"> • [N: On-board diagnosis or maintenance (trackside diagnosis or maintenance B61L27/00H)] [N0902]
B61L15/00K	<ul style="list-style-type: none"> • [N: On-board display devices] [N0902]
B61L15/02	<ul style="list-style-type: none"> • Head or tail indicators, e.g. light
B61L17/00	Switching systems for classification yards (rail brakes B61K)
B61L17/02	<ul style="list-style-type: none"> • Details, e.g. indicating degree of track filling
B61L17/02A	<ul style="list-style-type: none"> • [N: Signalling; Signals with multiple indicating means]
B61L17/02B	<ul style="list-style-type: none"> • [N: Brake devices]
B61L19/00	Arrangements for interlocking between points and signals by means of a single interlocking device, [N: e.g. central control (remote control B61L7/00; station block arrangements B61L21/00)]
B61L19/02	<ul style="list-style-type: none"> • Interlocking devices having mechanical or fluid-pressure operation
B61L19/02A	<ul style="list-style-type: none"> • [N: purely mechanical (control levers B61L7/02E)]
B61L19/02B	<ul style="list-style-type: none"> • [N: using fluid-pressure operated points or signals]
B61L19/04	<ul style="list-style-type: none"> • Detail- e.g. hand lever, back-signalling device
B61L19/06	<ul style="list-style-type: none"> • Interlocking devices having electrical operation

B61L19/08	<ul style="list-style-type: none"> <ul style="list-style-type: none"> Special arrangements for power supply for interlocking devices
B61L19/10	<ul style="list-style-type: none"> <ul style="list-style-type: none"> with mechanical locks
B61L19/12	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> Details
B61L19/14	<ul style="list-style-type: none"> <ul style="list-style-type: none"> with electrical locks
B61L19/16	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> Details
B61L21/00	Station blocking between signal boxes in one yard (interlocking between points and signals by means of a single interlocking device B61L19/00)
B61L21/02	<ul style="list-style-type: none"> Mechanical locking and release of the route; Repeat locks; Coupling of semaphores
B61L21/04	<ul style="list-style-type: none"> Electrical locking and release of the route; Electrical repeat locks [N: (central interlocking B61L19/00)]
B61L21/06	<ul style="list-style-type: none"> Vehicle-on-line indication; Monitoring locking and release of the route
B61L21/06A	<ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: for signals, including signals actuated by the vehicle]
B61L21/08	<ul style="list-style-type: none"> Order transmission and reception arrangements for giving or withholding permission
B61L21/10	<ul style="list-style-type: none"> Arrangements for trains which are closely following one another (automatic central traffic control systems B61L27/04)
B61L23/00	Control, warning, or like safety means along the route or between vehicles or vehicle trains
B61L23/00A	<ul style="list-style-type: none"> [N: Control or safety means for heart-points and crossings of aerial railways, funicular rack-railway (points or safety systems for model railways A63H; points, crossings or hearts for aerial railway, funicular rack railway E01B25/12)]
B61L23/00A1	<ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: Automatic control or safety means for points for operator-less railway, e.g. transportation systems]
B61L23/00B	<ul style="list-style-type: none"> [N: Safety arrangements on railway crossings]
B61L23/02	<ul style="list-style-type: none"> for indicating along the route the failure of brakes
B61L23/04	<ul style="list-style-type: none"> for monitoring the mechanical state of the route
B61L23/04A	<ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: Obstacle detection] [N0902]
B61L23/04B	<ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: Track changes detection] [N0902]
B61L23/04B1	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: Broken rails] [N0902]
B61L23/04B2	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: Rail wear] [N0902]
B61L23/04B3	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: Track or rail movements] [N0902]
B61L23/04B4	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> [N: Road bed changes, e.g. road bed erosion] [N0902]
B61L23/06	<ul style="list-style-type: none"> for warning men working on the route
B61L23/08	<ul style="list-style-type: none"> for controlling traffic in one direction only (station blocking between signal boxes in one yard B61L21/00)
B61L23/10	<ul style="list-style-type: none"> <ul style="list-style-type: none"> manually operated [N: e.g. block arrangements]

- B61L23/12 . . partly operated by train
- B61L23/14 . . automatically operated
- B61L23/16 . . . Track circuits specially adapted for section blocking
- B61L23/16A [N: using current of indifferent sorte or a combination of different current types]
- B61L23/16B [N: using direct current]
- B61L23/16C [N: using rectified alternating current]
- B61L23/16D [N: using alternating current]
- B61L23/16F [N: using coded current]
- B61L23/18 . . . specially adapted for changing lengths of track sections in dependence upon speed and traffic density
- B61L23/20 . . . with transmission of instructions to stations along the route
- B61L23/22 . for controlling traffic in two directions over the same pair of rails (station blocking between signal boxes in one yard [B61L21/00](#))
- B61L23/24 . . using token systems, e.g. train staffs, tablets
- B61L23/26 . . with means for actuating signals from the vehicle or by passage of the vehicle
- B61L23/28 . . using non-automatic blocking from a place along the route
- B61L23/30 . . using automatic section blocking
- B61L23/32 . . . with provision for the blocking or passing sidings
- B61L23/34 . Control, warnings or like safety means indicating the distance between vehicles or vehicle trains by the transmission of signals therebetween

B61L25/00 Recording or indicating positions or identities of vehicles or vehicle trains or setting of track apparatus

- B61L25/02 . Indicating or recording positions or identities of vehicles or vehicle trains
- B61L25/02A . . [N: Measuring and recording of train speed]
- B61L25/02B . . [N: Determination of driving direction of vehicle or vehicle train] [N0902]
- B61L25/02C . . [N: Absolute localisation, e.g. providing geodetic coordinates] [N0902]
- B61L25/02D . . [N: Relative localisation, e.g. using odometer] [N0902]
- B61L25/02E . . [N: Determination of vehicle position and orientation within a train consist, e.g. serialisation] [N0902]
- B61L25/04 . . Indicating or recording train identities
- B61L25/04A . . . [N: using reflecting tags]
- B61L25/04B . . . [N: using inductive tags]
- B61L25/04C . . . [N: using reradiating tags]
- B61L25/04D . . . [N: using magnetic tags]
- B61L25/04E . . . [N: using programmable tags]
- B61L25/06 . Indicating or recording the setting of track apparatus, e.g. of points, of signals
- B61L25/06A . . [N: for signalling systems on the vehicle using current conduction]
- B61L25/08 . . Diagrammatic displays

B61L27/00 Central traffic control systems; [N: Track-side control or specific communication

systems] [C0904]

- B61L27/00A . [N: Details of track-side communication] [N0904]
- B61L27/00B . [N: Regulation, e.g. scheduling, time tables] [N0904]
- B61L27/00B1 . . [N: Preparing schedules] [N0904]
- B61L27/00B2 . . [N: Following schedules] [N0904]
- B61L27/00B3 . . [N: Track-side optimisation of vehicle or vehicle train operation (on-board optimisation [B61L3/00C](#))] [N0904]
- B61L27/00B4 . . [N: Crew rosters and itineraries] [N0904]
- B61L27/00C . [N: Track-side control of safe travel of vehicle or vehicle train, e.g. braking curve calculation (on-board target speed calculation and supervision [B61L3/00D](#))] [N0904]
- B61L27/00D . [N: Testing or simulation] [N0904]
- B61L27/00E . [N: Track-side multiple control systems, e.g. switch-over between different systems, "2 out of 3"-systems (on-board multiple control systems [B61L15/00E](#))] [N0902]
- B61L27/00E1 . . [N: Backup systems, e.g. switching when failures occur] [N0902]
- B61L27/00E2 . . [N: Migration, e.g. parallel installations running simultaneously] [N0902]
- B61L27/00G . [N: Track-side train data handling, e.g. vehicle or vehicle train data, position reports (on-board train data handling [B61L15/00G](#))] [N0902]
- B61L27/00H . [N: Track-side diagnosis or maintenance, e.g. software upgrades (on-board diagnosis or maintenance [B61L15/00H](#))] [N0902]
- B61L27/00H1 . . [N: for track-side elements or systems, e.g. trackside supervision of trackside control system conditions] [N0902]
- B61L27/00H2 . . [N: for vehicles or vehicle trains, e.g. trackside supervision of train conditions] [N0902]
- B61L27/02 . Manual systems
- B61L27/04 . Automatic systems, e.g. controlled by train; Change-over to manual control
- B61L29/00 Safety means for rail/road crossing traffic**
- B61L29/02 . Guards or obstacles for preventing access to the route ([cattle guards connected to the permanent way E01B17/00](#))
- B61L29/02A . . [N: Special gates]
- B61L29/02A1 . . . [N: Preventing access by means of obstacles raising across the route]
- B61L29/04 . Gates for level crossings
- B61L29/06 . . yielding to vehicles in one direction but operated in a different direction
- B61L29/08 . Operation of gates; Combined operation of gates and signals
- B61L29/10 . . Means for securing gates in their desired position
- B61L29/12 . . Manual operation

B61L29/14	. . . mechanically
B61L29/16	. . . electrically
B61L29/18	. . Operation by approaching rail vehicle or rail vehicle train
B61L29/20	. . . mechanically
B61L29/22	. . . electrically
B61L29/22B	. . . . [N: using conductor circuits with separate contacts or conductors]
B61L29/22B2	. . . . . [N: using rail contacts] [C9609]
B61L29/22C	. . . . [N: using track-circuits, closed or short-circuited by train or using isolated rail-sections] [C9609]
B61L29/22F	. . . . [N: using optical means]
B61L29/24	. Means for warning road traffic that a gate is closed or closing, or that rail traffic is approaching, e.g. for visible or audible warning
B61L29/24A	. . [N: Transmission mechanism or acoustical signals for gates]
B61L29/24B	. . [N: Signals or brake- or lighting devices mounted on the road vehicle and controlled from the vehicle train]
B61L29/26	. . mechanically operated
B61L29/28	. . electrically operated
B61L29/28A	. . . [N: magnetic or inductive control by the vehicle]
B61L29/28B	. . . [N: using rail-contacts, rail microphones, or the like, controlled by the vehicle]
B61L29/28C	. . . [N: using conductor circuits controlled by the vehicle]
B61L29/28D	. . . [N: Wiring diagram of the signal control circuits]
B61L29/30	. . . Supervision, e.g. monitoring arrangements
B61L29/32	. . . Timing, e.g. advance warning of approaching train
B61L99/00	Subject matter not provided for in other groups of this subclass [N0704]