

A vertical spiral binding runs down the center of the page, consisting of a series of dark, rectangular loops.

TRANSPORTATION-MARKINGS

DATABASE:

**RAILWAY SIGNALS, SIGNS,
MARKS, MARKERS**

TRANSPORTATION-MARKINGS:
A STUDY IN COMMUNICATION MONOGRAPH SERIES
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**TRANSPORTATION MARKINGS
DATABASE:**

**RAILWAY SIGNALS, SIGNS,
MARKS, MARKERS**

**Part Iiii Volume III, Additional Studies,
Transportation-Markings**

**A Study in Communication
Monograph Series**

Brian Clearman

Mount Angel Abbey 2000

DEDICATED TO MY GRANDPARENTS:

Catherine Abbey Brady Sauers, 1878-1919

Frederick William Sauers, 1869-1944

Annie Donaldson Clearman, 1879-1966

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PREFACE

The Database (Part I i, ii, iii, iv of Transportation-Markings: A Study in Communication Monograph Series) draws together the several dimensions of T-M. It shares this drawing together function with the General Classification (Part H). But, paradoxically, Part H and Part I draw together by focussing on the individual entity: each T-M phenomenon. The Database demonstrates the unity and commonality of T-M but presents each one in its separate state. Yet in that process the full panoply of T-M is unfolded including their shared and connected state.

There are thousands of Transportation-Markings. In addition, there are many variant forms, alternative names, untold permutations. The sheer number of forms may obscure the common thread of T-M that interweaves the multifoliated multiplicity. Yet ultimately the multiplicity leads to the basic unity of safety of whatever kind. Th variety and diversity point to a restricted system of messages serving one essential purpose: the promotion of safety. The perennial condundrum of the one and the many is found here in T-M. But the one and the many also interact and explain one another.

The Database examines the four modes of rail, road, aero and marine T-M safety aids in separate studies though all remain components of Part I. The amount of labor required to prepare the Database precludes assembling all four modes of T-M in a single study (though a composite edition may yet be assembled). The initial study examined Marine Aids to Navigation while the second focussed on Traffic Control Devices. This segment takes up Railway Signals. This aspect lacks an overarching term though Signals often includes non-signal forms. Signs, Marks, Markers has been added to Signals in the title. The Aero Navigation Aids study remains to be carried out.

There has been some confusion over the meaning of Transportation-Markings. Some users have interpreted the term as constituting a virtual synonym for Pavement Markings. This is **NOT** the case. T-M is a general, overarching term for all types of safety aids. This perspective is reflected by the Library of Congress which employs T-M as a general heading in its Subject Headings (albeit somewhat implied for some forms). The Library of Congress includes various kinds of T-M under that general heading including that of Pavement Markings. In order to reduce confusion a hyphen has been added that conjoins Transportation and Markings: Transportation-Markings instead of Transportation Markings.

The use of the hyphen results in an image of T-M as a single and unified concept thereby reducing misunderstanding over the meaning of the term and especially of mistaking T-M with one of its constituent elements. The end result is an overarching term encompassing all forms of safety aids including those that incorporate Mark, Marker, or Marking in their names. New compound nouns are often hyphenated as Frederick Crewes notes in his *Random House Handbook*. New compound nouns require the hyphen in order to signal to users that the resulting term is a unit not two independent words existing side by side that can be split apart without significant damage. Developed compound nouns may retain the hyphen, or become one word, or drop the hyphen without the term losing its character, but an early form of compound noun, such as that of T-M, require the hyphen. Regretably, only after a dozen years has it become apparent how much confusion was generated by T M without the hyphen. Hopefully a clearer, more emphatic Transportation-Markings can result.

Classification has been a vital part of T-M from the beginning of these studies. In fact, the previous study, Part H, is little more than a collection of classifications. The writer originally intended that the Database would employ the classification system of Part H extensively. This was a reasonable expectation since the classification was heavily influenced by the primary studies. But the use of the classification in the Database has proven to be problematical. Various T-M forms and classification numbers are not always reflected in the Database. And, conversely, terms of significance in the Database are not always reflected in the classification.

A major reason for this situation has been caused by the classification: the classification employed largely official sources though sometimes retaining T-M forms that were passing away. The reverse is also true: the amalgam of sources in the Database may include forms little noticed in the classification and its sources. The problem of sources and classifications was especially pronounced in Part II though less so in Part III. It is quite pronounced with this segment, Part III. Sources are very decentralized and authors have been quite inventive in creating variant forms for many terms.

It is now quite apparent that a reworking of the classification is needed that will reflect both core sources and the many fragmented sources of the Database. This is not possible at this time. Some limited alterations are included in the Database but a more extensive will have to await another time. Taxonomies, of course, are never finished; each variant form requires changes even before the previous form has been implemented. Over the years the classifications of T-M have been "revisited" many times. Now a further Classification Revisited Redux is required.

The Railway portion of the Database has four segments: the second to the fourth take up all-lighted, partially lighted, and unlighted and radio forms. The first segment includes overarching terms, messages (a dimension of morphology), a second morphology segment -- that brings together functions and signal forms, and a systems dimension.

Acknowledgements for Part III include: Association of American Railroads Library (Joyce Koeneman), California State Railroad Museum Library (Ellen Halteman), Library, Barriger National Railway Library (Gregory Ames), International Railway Journal, Donald R. Kanner, Mount Angel Abbey (Barbara Schmidt, Victoria Ertelt, Paula Hamilton), Libraries of Portland State University, Oregon State University, University of Oregon.

ABBREVIATIONS

AAR SC	Association of American Railroads Standard Code
AAR SM '83	Association of American Railroads, Signal Manual
AREA '29, '87-'88	American Railway Engineering Association
ARSPAP- H, -SS, -D, -A & I, -I, -LSS, MEMI:	American Railway Signal Principles & Practices: History; Semaphore Signals; Definitions; Symbols, Aspects & Indications; Interlockings; Light Signals & Lighted Signal Lamps, Mechanical & Electro-Mechanical Interlocking.
ANR	Australian National Railways: See Australia, South Australia
ATT	Atlantic Track and Turnout
AZD	Czechoslovakia, Routing Interlocking
B & O '27	Baltimore and Ohio Catalogue
B & O	United States, Baltimore and Ohio Railway
B & M '81	Brigano & McCullough
Canada	UCOOR, Uniform Code of Operating Rules
CRIP	Chicago, Rhode Island & Pacific Railroad
ERS	- H, -P, -V, -L, -M European Railway Signallings: Hotchkiss, Vilder, Catrain, Vallez, Pore, Middelraud, Lindenberg
FRA-1, -2, -3	Federal Railroad Administration, Evaluation of Signal/Control Systems, Tasks 1, 2, 3
FRA-RAR	Federal Railroad Administration Rules & Regulation
GFR	German Federal Railways
Gt Peninsula	India, Gt Peninsula General Rules
HDS	Starkey

K & T '88 Kuebler and Tarbox
 K & W '63, '78 Kitchenside & Williams
 KNR Korea, Korean National Railways
 M & H McKensie & Holland
 NSW Australia, New South Wales Railways:
 SI, SI-SL, St. I., Signalling
 O-D Oxford-Duden Pictorial Dictionary
 QR Australia, Queens Railways, SS-EL, S & S
 REMC '48 Railway Engineering & Maintenance Cyclopedia
 RGS '81 Portugal
 RENFE '78 Spanish, Signal Codes
 RSD '11 Railway Signal Dictionary
 SA GA South Africa General Appendix
 SA BBB South Africa Railways, Basic Building Blocks of Mechanical
 Signalling
 SA SSS South Africa, Signalling Standards
 SAF-TWR South Africa, Train Working Regulations
 SAR Australia South Australia Railways
 UAR Union of African Railways, Draft International ...
 UIC LGTF Union Internationale des Chemins de fer,
 Lexique General des Terms
 UIC-CST UIC, Collection of Signal Terms
 UK Mil UK Military, Military Engineering
 UN '54 Union Nations Technical Assistance Organization
 URO United Railway Organization
 U S & S Union Switch & Signal
 VR Australia, Victoria Railways
 VGR Australia, Victoria Government Railways
 WA Rlwys Australia, Western Australia Railways

CHAPTER ONE GENERAL RAILWAY SIGNAL TERMS

1A Indexes: Categories & Alphabetical
 1A1 Categories Index
 General Railway Signal Terms (1B)
 Overarching Terms (1B1)
 Signal Terms (1B1 a))
 Signaling/Signalling
 General Notes I, II
 Signal
 Signal Apparatus
 Signal Appliance
 Signal Device/Signalling Device
 Signal System/Signalling System/Signalling System
 Signal System, Device, or Appliance
 Signal Implement
 Fixed/Lineside/Railway-Railroad/Wayside Signal Terms (1B1 b))
 Fixed Signal
 Fixed Railroad Signals
 Fixed Signal System/Fixed-Signal System
 Fixed Wayside Signal/Fixed Wayside Signal
 Line Signalling System
 Lineside Equipment/Lineside Signal/Lineside Signalling/Lineside Visual Signal/
 Lineside Fixed Signals
 Railway Signal/Railroad Signal
 General Note
 Railway Signaling, Railway Signalling/Railroad Signaling
 Railway Signaling & Control Systems/Railway Signaling & Control
 Railway Signaling, Control & Communications Systems
 Railroad Signaling System/Railway Signal System/Railroad Signal System/
 Railway-Signal System/Railway Signalling System
 Wayside Signal/Wayside Signal System/Wayside Signals & Controls
 Other Overarching Terms (1B1 c))

Fixed Trackside Signal/Fixed Trackside Color Light Signal
Immovable Signals
Optical Signals/Optical Signs & Signals
Roadway Signals
Stationary & Fixed Signals
Trackside Signalling/Trackside Signals/Track-Side Signals/Track Side Signals/
Trackside Railroad Signals
Visual Signals/Visual Signalling/Visual Signalling System
Warning System

Possible/Partial Overarching Terms (1B2))

Energy & Technology-related Terms (1B2 a))

General Note
A.C. Signaling System
All-Electric Power Signalling
Electric Signal/Electric Signal System/Electric Signaling/Electric Signalling/
Electrically-Operated Signals
Electro-Gas Signal
Electro-Mechanical System
Electro-Pneumatic Signal/Electro-Pneumatic Signalling
Low-Pressure Electro-Pneumatic Signalling
Manually Operated Fixed Wayside Signals/Manually Operated Signals/
Manual Signals/Manual Signalling
Mechanical Signals/Mechanical Signalling
Motor-Operated Distant Signals
Power Operated Signals/Power-Operated Signals/Power Signalling/
Power-Signalling/Power-Worked Signals

Physical-Morphological Overlapping Terms (1B2 b))

General Note
Main Route Signals
Main Signal/Main Line Signal/Mainline Signal
Primary Signal
"Universal" Signal
Symbol Information Processing

Possible Overarching Terms-Miscellaneous (1B2 c))

Functional Signal System
Safe Working/Safeworking/Safe-Working/Safeworking Appliances
Signal-&-Control Systems/Signal & Control Systems
Signal & Switch Systems

Signalling Devices
Trackside Warning Signals
Train Signals & Controls
Visual & Audible Signals

Primary Overarching Terms in Other Languages (1B3)

[Terms in other languages follow the English-language terms listed below]

General Note
Signal
Signal/Signalling
Fixed Signal
Light Signal
Lineside Signal
Mechanical Signal
Semaphore Signal
Shunting Signal
Signal Board
Switch Signal
Visual (Or Visible) Signal

Signal Components (1B4)

General Note
Bracket Mast
Bracket Post
Bracket Signal
Bracket Structure
Cantilever Branch Post
Cantilever Structure
Doll
Doll Pole
Doll Post
Doll Signal
Finials
Fresnel Marine Type Lens
Gantry
Lamp
Lattice Post Bracket Signal
Lattice Post Signal
Mast
Mechanism Cover
Roundel
Signal Bracket

Signal Bridge
Signal Dolls
Signal Gantry
Signal Glass
Signal Glassware
Signal Head
Signal Lamp
Signal Lenses
Signal Mast
Signal Mechanism
Tubular Steel Brack Signal

Message: Aspects & Indications Terms (1C)
General Notes I, II, III

Basic Terms & Colors (1C1)

Terms (1C1 a))

Aspect I
Aspect II
Aspect, Signal/Signal Aspect
Aspect Sequences
Indication
Signal Indication
Signal Code

Colors (1C1 b))

Basic Colors (1C1 b) 1))

General Note
Red
Green
Yellow
White

Combinations (1C1 b) 2))

Green/Yellow & Yellow/Green
Yellow/Red, Green/Red & Red/Green

Specialized Colors (1C1 b) 3))

General Note
Blue
White

Amber
Yellow-Orange
Orange
Purple & Violet
Lunar White

Spatial Configurations (1C1 b) 4))

Variant Color Combinations & Miscellaneous Color Uses (1C1 b) 5))

Restricted Red
Traffic Red
Intermediate Yellow
Intermediate Green
Signal Blue
Nels Yellow
Kerosene Pink
Double Red
Double Amber
Double Yellow
Double Yellow Signal
Flashing Yellow Aspect, Leach
Flashing Single Yellow Aspect, Vanms
Flashing Double Yellow Aspect, Vanms
Selenium Ruby Glass
Double Yoke (Double Yellow)
Ginger 'Un (Distant Signal with Caution Indication), Jackson
Lunar-White Lamp/Lunar White Marker Lamp, King, REMC
Yellow Eye (Double Yellow), Jackson
Yellow-Tinted Lenses

Aspects (1C2)

General Note

Single-Aspect Terms (1C2 a)) (6 Forms)

Two Aspects Terms (1C2 b)) (34 Forms)

Three Aspect Terms (1C2 c)) (32 Forms)

Four Aspect Terms (1C2 d)) (16 Forms)

Five Aspect Terms (1C2 e)) (4 Forms)

Other Aspect Terms (1C2 f)

- Multi Aspect (10 Forms)
- Cab Signal Aspect
- Flashing Aspect
- Position Light Aspects
- APB Signal with 3 & 4 Indications
- Three/Four Aspect
- Day & Night Aspects
- Luminous Aspect

Indications (1C3)

- General Note

Primary Forms (1C3 a)

- General Note
- Clear Signal
- Line Clear
- Proceed Signal
- Caution Signal
- Approach Signal
- Stop Aspect/Stop Signal
- Danger/Danger Signal
- Preliminary Caution Signal

Specialized Forms (1C3 b)

- Limited Clear Signal/Limited-Clear/Medium Clear/Medium Clear Signal/Slow-Clear/Slow Clear Signal
- Limited Approach Signal/Medium Approach Signal/Medium Clear/Medium Advance Approach [U.S. only]/Medium Approach Slow Signal [U.S. Only]/Slow Approach Signal/Restricting Signal/Restricting Aspect/Restriction Indication
- Approach Limited/Approach Limited Signal/Approach Medium/Approach Medium Signal/Approach Slow Signal/Advance Approach Medium Signal [U.S. Only]/Advance Approach Signal [Also U.S. Only]
- Stop & Proceed Signal/Stop-&-Proceed Grade Signal/Station Protection Signal/Take (Or Leave) Siding Signal Medium Signal
- Medium Signal
- Caution, Low-Speed Signal
- Caution, Medium-Speed Signal
- Clear, Medium-Speed Signal
- Caution Normal Speed Indication
- Normal Speed Signal



Clear, Normal-Speed Signal

CCOOR:

- Stop
- Stop & Proceed
- Permissive Take Siding
- Approach
- Clear
- Approach Diverging
- Approach Medium
- Clear-Diverging
- Restricting
- Spring Switch
- Slow-Clear

UCOR

- Clear
- Advance Approach
- Diverging Clear
- Approach Medium
- Approach Diverging Approach Medium
- Approach Diverging
- Diverging Approach
- Low
- Stop & Proceed
- Stop
- Aspect, False Restrictive/False Restrictive Aspect
- Aspect, Phantom Signal/Phantom Signal
- False Clear/False-Clear Signal/False Proceed
- Potential False Proceed Condition (PFPC)

Morphological Terms (1D)

- General Notes I, II

Running Signal Terms (1D1)

- General Note

Overarching Signal Terms (1D1 a)

- General Notes
- Running Signals
- Primary Signals
- Running Line Signals
- Color Light Running Signals
- Main Signals

Main Line Signals/Main-Line Signals
Mainline Signals
Main Line Running Signals
Main Running Stop Signals

Core Terms: Stop, Distant & Related Signal Terms (1D1 b))

Stop Signal Terms (1D1 b) 1))

Advance Signals
Advanced Signals
Buffer Stop Signal
Dead Signal
Fixed Stop Signal
Home Signal/Home-Signal
Inner Home/Outer Home
Rear Home Signal
Red Board/Red Eye
Signal, Home
Outer Home Signal/Inner Home Signal/Intermediate Home Signal
Second Home Signal/Third Home Signal/Home No. 1/Home No. 2
Splitting Home Signal
Splitting Semaphore
Splitting Signal
Stop Signal
Color Light Stop Signal/Automatic Stop Signal/Semaphore Stop Signal/
A.P. Permissive Stop Signal
Up, Down Distant, Home Starter, Advance Starter

Starting Signal Terms (1D1 b) 2))

Starting Signal
Starter Signal
Advance Starter/Advance Starting Signal Starter Semaphore/Advance Starter
Semaphore

Distant Signal Terms (1D1 b) 3))

Auxiliary Signal
Distant Signal
Distant Semaphore Signal
Distant (Warning) Signal
Fishtail
Fixed Distant/Fixed Distant Signal
Hall Distant
Signal Distant/Distant-Signal
Warner Signal



Warning Signal
Outer Distant Signal/Inner Distant Signal/Intermediate Distant Signal
Power-Operated Distant Signal/Semaphore Distant/Distant Signal Color
Light/Color Light Distant Signal

Advance Signal
Approach Signal
Unworked Distant Signal
Signal, Distant
Splitting Distant Signal/Splitting Distant

System Terms (1D1 c))

Absolute Signal
Advanced Section Signal
Automatic Block Signals
Automatic Signals
Block Signal
Block & Interlocking Signals
Controlled Signals
Holding Signals
Interlocking Dwarf Signal
Intermediate Block Signal
Intermediate Signal
Interlocking Signals/Signals, Interlocking
Permissive Signal
Semi-Automatic Interlocking Signal
Semi-Automatic Signals

Route & Junction Indicators/Signals (1D1 d))

Basic Terms (1D1 d) 1))

Directing Signal
Direction Indicator
Entry (Route) Signal/Entry (Route) Light Signal
Feathers
Junction Indicator/Junction Signal
Route Signal
Route Indicator
Routing Signals
Turnout Signal

Other Route & Junction Terms (1D1 d) 2))

General Note

'Arbour Lights/Harbour Lights
Banjo
Five-light Junction Indicator
Four-Way Shunting Signal
Junction Semaphore
Lunar Lights
Position Light Junction Indicator
Right-Hand Junction Indicator
Stencil Route Indicator/Route Indicator Stencil Light
Directional Route Indicator
Low Speed Route Indicator
Shunt Route Indicator
Theatre-type Route Indicator/Theatre Multilamp Route Indicator
Multi Lamp Route Indicator
Toton Route Indicator
Two-Way Junction Indicator
Two-Way Stencil Indicator

Other Signal Terms Pertaining to Running Operations (1D1 e))

AB Entry Signal
Backing Signal
Non-Stop Permissive Automatic Signal
Wrong Road Signal/Wrong-Road Signal
Station Signals
Station Protection Signals
Platform Signals
Precaution Signals
Protecting Signals
Repeating Signal
Repeater Signal
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Controlled Manual Block/Controlled Manual Block System/Controlled
Manual Block Signal System/System, Controlled Manual Block/
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Sykes Lock & Block/Sykes Lock & Block System/Siemens-&-Halske Lock-
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Automatic Block Terms (1E1 d)

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Automatic Block Signalling
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Overarching Terms (1E3 a)

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Automatic Train Control System/Automatic Train-Control System
Automatic Train Operation/Automatic Train Operation System
Automatic Train Protection
Automatic Train Supervision
Automatic Train Protection & Control
ATP/ATC
BR ATP
Continuous Transmission Systems/Intermittent Systems

Control System

ICTC Systems, Incremental Train Control System
Intermittent Contact System of Train Control System, ATC
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European Train Control System
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Miller Train Control
Intermittent Inductive Train Control
Continuous Automatic Train Control (CATC)
Continuous Train Control
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Train Control Systems, Devices & Appliances
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Train Situation Indication (TSI)
Advanced Train Control System (ATCS)
Automatische Trein Beinvloeding (ATB)
Rail Operation Control System
Transmission Voie Machine, TVM
Linien Zug Beein Flusoung, LZB
Transmission Beacon Locomotive, TBL
Coded Track Circuit Automatic Block, BACC
Ebicab/Control De Viesse A Balise, KVB
INDUSI (Induktive Zugsicheeving)
AATC - Advanced Automatic Train Control
ACFS -Advance Civil Speed Enforcement System
ASFA
ASR, Automatic Route Setting
ATB/PLP
ATIS, Advance Traffic Information System
ATLAS
Comtra/Cosmos/Smis
EPLRS
Flexiblok System
Microblok
Microlok
Ultrablok
PTCS, Positive Train Control System
PTS, Positive Train Separation
RIT, Train Management System
SSI Systems

Safety Control System/Train Operation Safety Control System
SELTRAC
SIGNUM
SNCF Signalling System for VHS/VHS System of Signalling & Signalling
System for High Speed
Crocodile
Automatic Warning System/BRAWS
Combined Train Control
(ARES) Advanced Railroad Electronic System
Identra
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TBS, Transmission-Based Signalling
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All-Electric Interlocking

All-Mechanical Interlocking
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ATIS, Advance Traffic Information System
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 Electric Interlocking
 Electric Points Indicator
 Electric Repeater Signal
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Geographical Circuitry Interlocking
Ginger 'un
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Grade Signal
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Ground Shunt Signal/Shunting Ground Disc

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Hump Signal/Humping Signal
Humping Signal/Hump Shunt Signal

ICTC System, Incremental Train Control System
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Lattice Post Signal

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Mechanical Roadside Trip Type Stop/Trip Arm System



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Proceed Signal
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PTCS, Positive Train Control System
PTS, Positive Train Separation
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Railway Signaling/Railway Signalling/Railroad Signaling
Railway Signaling & Control System/Railway Signaling & Control
Railway Signaling, Control & Communication System
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RIT, Train Management System
Roadway Automatic Block System
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SELTRAC
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Semi-Automatic Interlocking Signal
Semi-Automatic Signal
Sequence-Switch Interlocking
Set-Back Signal
Shot Shunting Signal
Shunt Ahead Signal/Shunt-Ahead Signal
Shunt Indicator
Shunt Route Indicator
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Siding Signal
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System, Absolute Permissive Block/System APB
System, ATC
System, Block System

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Train-Stop/Train Stop System
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Transmission Voie Machine, TVM
Trap Point Indicator
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Warner & Home
Warner Home & Starter
Warner Home Starter & Advance Starter
Warner Signal
Warning Signal (2)
Warning System
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Wayside Signal/Wayside Signal System/Wayside Signals & Controls
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Yellow Ground Disc
Yellow
Yellow Disc
Yellow Eye
Yellow-Orange
Yellow/Red, Green/Red & Red/Green
Yellow-Tinted Lenses

1B General Railway Signal Terms: Entries

1B1 Overarching Terms

1B1 a) Signal Terms

SIGNALING/SIGNALLING. General Note I. Specific Railway/Railroad Signal terms are often defined or in some way described. However, more general terms are rarely defined. Terms are not infrequently interchanged as if they were synonyms when that may be not the case (at least not in standard dictionaries). A significant problem is the term Signaling/Signalling (one "l" American English; two "l"s British English). Dictionaries may allow for the word Signal to have either noun or verb function but adding the -ing or -ling is seemingly exclusively a verb. That does not appear to be the case for rail practitioners. The term, when standing alone, may be a verb though that is open to question. But the term employed in conjunction with railway, railroad, wayside, etc often appears to be a noun. As noted above, definitions are rarely included. The various Signaling/Signalling terms will be listed and described as nouns though exceptions exist. And it is recognized that recourse to various dictionaries may not cohere with the practice here.

General Note II. Signaling/Signalling is often an encompassing term: neither physical apparatus nor the act of conveying information but both and perhaps the totality of signal and control functions represented by signals and their operations. The term Marine Aids to Navigation encompasses that field in physical and communication aspects. More specific terms such as beaconage, buoyage, signage are also encompassing in nature. But in the railway/railroad realm the term signal may or may not cover the spectrum of roles. Signaling/Signalling is seemingly employed for that role even if dictionaries do not recognize that function; though they may accept buoyage and beaconage and, less often, signage.
References: many sources including Allen '62, Harrigan '62, Schwile '73

SIGNAL. The various Signal terms constitute nearly half of all terms in surveyed literature; slightly over 20% of the references are to the single term Signal. Few definitions of this term in a rail context are available, though AAR offers many definitions relating to specific forms of Signals. These definitions frequently include physical apparatus and the message function but the Signal definition seems to be more in a verb form and focusses on the message function: "a means of conveying information". By contrast FRA-1, -2, -3 offers a satisfactory definition: "An appliance which conveys information governing train movements." The word appliance appears in the definition and refers to the physical apparatus. Older dictionary definitions seem to lean toward appliance as

an apparatus, device of some complexity and which is connected to other devices. While more modern definitions often refer to a free-standing object powered by one or other energy sources such as household appliances. FRA seems to hearken back to an older form of appliance.
References: FRA-1, -2, -3

SIGNAL APPARATUS. This term may seem too general a term to be included. It is occasionally used in railroad literature especially in older sources. It may occupy a position between a general usage term and a specific technical term. One source, Fraser 1919 (NSW) employs it as an overarching term that includes systems, cab signalling and staff/ tablet/ticket working and presumably specific signals within systems.
Reference: Fraser 1919

SIGNAL APPLIANCE. A term found most often in the U.S. It is yet another term that is often used without definition. The usage of the term suggests electrical, mechanical, electro-mechanical devices that are closely allied with the operation of Signals. It is possible that a Signals in itself a component of Signal Appliance. Camp 1903 includes a lengthy section on "Switching Apparatus and Appliances" which includes Switch Lamps, Switch Stands, switches of all kinds, frogs, crossings, turnouts and whatever refers to the switching process and allied safety aids. Nock includes the term but makes little effort to define it. Perhaps it is viewed as self-explanatory.
References: Camp '03, Nock '62, also FRA-RAR

SIGNAL DEVICE/SIGNALLING DEVICE. Yet another term that hovers between a general and largely non-technical term, and a term with technical significance. A small number of sources in South Africa, U.K. and U.S. have included the term. U.S. FRA RAR includes phrases (mostly from the U.S. Code) that describe signals and control systems and associated appliances, devices, methods of systems. It is a stock phrase relating to Signals or to instruments associated with Signals.
References: S.A BBB, FRA RAR, Blythe 1951

SIGNAL SYSTEM/SIGNALLING SYSTEM/SIGNALING SYSTEM. These terms are nearly self-explanatory. They refer to integrated signal operations and can refer to signals, messages, block, interlocking and other methods of operations. The terms are used somewhat infrequently.
References: Fraser 1919, Wooley '58, FRA RAR, Greenfield, Harrigan '62, Romania Raises, Zoetardt, Excursion to '65

SIGNAL SYSTEM, DEVICE, OR APPLIANCE. FRA RAR employs this term as

an umbrella term. See also individual terms.

Reference: FRA RAR

SIGNAL IMPLEMENT. A rare term from Swedish practice. It is a component of Signal Appliance which has three elements: Fixed Signals, Signal Implements, Signal Signs. Implement is not further described. It is included here because it is prefaced with the root word of Signal.

Reference: Nock 1962

1B1 b) Fixed/Lineside/Railway-Railroad/Wayside Signal Terms

FIXED SIGNAL. This Signal, as the names indicates, is on a fixed physical site. It does not refer to an unchanging signal aspect and indication. The term is also used without definition. It is often employed to distinguish this form of Signal from non-fixed forms such as human arm signals. Nearly all references are in books with few journal citations; it is common in code materials. In U.S. parlance it includes any fixed safety aid whose message affects train operations including signs; a similar practice holds true in South Africa. Slightly over ten-per cent of surveyed sources include the term which is more than the usage of seemingly more common terms such as Lineside, Railway, and Wayside Signals.

References: numerous sources including Blythe '51, Mashour '74, Ellis '66, Phillips '42

FIXED RAILROAD SIGNALS. Only a single surveyed source includes this term. It adds greater specificity to the term Fixed Signals.

Reference: B & M 1981.

FIXED SIGNAL SYSTEM/FIXED-SIGNAL SYSTEM. FRA employs this term which refers to original Signals of a fixed position in the earlier 19th century.

REMC adds a hyphenated version.

Reference: FRA-3, REMC

FIXED WAYSIDE SIGNALS/FIXED WAYSIDE SYSTEMS. Only FRA includes these terms. They increase specificity in terminology by combining three of the four most used terms.

Reference: FRA-2

LINE SIGNALLING SYSTEM. This is an OA term for Lineside Signals and is not a term for a specific system.

Reference: ERS-H

LINESIDE EQUIPMENT/LINESIDE SIGNALS/LINESIDE SIGNALLING/

LINESIDE VISUAL SIGNAL/LINESIDE FIXED SIGNALS. Lineside Signals, unlike a variety of terms, is formally defined. UIC CST defines it as "signals of fixed or variable aspect permanently fixed along the track or in stations or yards." The various Lineside terms are largely UK in origin, usage. However, less than 5% of surveyed terms are under this heading. The terms may include Signs and Markers. Lavalley adds Fixed to the basic term; K & W adds Visual. GEC speaks of Lineside Equipment which can have two possible meanings: Trackside Signals, or a broader meaning that includes cables, conduits, pathways as well as Signals. References: Lavalley '53, K & W '63, GEC

RAILWAY SIGNALS/RAILROAD SIGNALS.

General Note: The terms Railway and Railroad are background terms which require explanation. AAR employs both terms; railway in reference to Signals and railroad in reference to organizations. This is also true of Phillips 1942. Railway seems to be an older usage in the U.S. that continues into the present. Railway exclusive or nearly so in United Kingdom though seemingly railroad employed at an earlier time. Railway Signals and Railroad Signals appear to be synonyms. Signaling is the preferred U.S. spelling though Signalling is sometimes used (and it appears secondarily in various dictionaries). Signalling is exclusively used where British English is preferred.

Railway and Railroad Signals are not often defined. They represent terms similar to the bare term Signal though with greater specificity and explicitly place Signal within a rail context. Railroad Signal would appear to be a basic term yet few U.S. sources employ it. Signal and Fixed Signals are far more common.

RAILWAY SIGNALING/RAILWAY SIGNALLING/RAILROAD SIGNALING

These terms often lack definitions. They are apparently meant as nouns and they refer to a system of Signals including the physical apparatus and the message dimension. The word System is lacking yet it seems implicit; at least informal systems of integrated signals working together.

References: Blythe '51, Brown '84, Corbin '22, B & M '81 (3rd term), Sterner (2nd term), U S & S and RMS (2nd term)

RAILWAY SIGNALING & CONTROL SYSTEMS/RAILWAY SIGNALING & CONTROL.

A possible OA term encompassing all Signals and related means of controls. U S & S adds system. Cunliffe employs terms without system.

Reference: U S & S '86 RA, Cunliffe '68

RAILWAY SIGNALING, CONTROL & COMMUNICATIONS SYSTEMS.

This term also refers to U S & S.

Reference: GE Cites U S & S ... RA

**RAILROAD SIGNALING SYSTEM/RAILWAY SIGNAL SYSTEM/
RAILROAD SIGNAL SYSTEM/RAILWAY SIGNALING
SYSTEM/RAILWAY-SIGNAL SYSTEM/RAILWAY SIGNALLING SYSTEM.**

These terms make explicit the meaning of Railway and Railroad Signaling/ Signalling as a system of Signals.

References: FRA (1st term), Mashour (2nd), Greenfield (3rd), With Fast ... (4th), REMC (5th), Tansley (6th)

WAYSIDE SIGNALS/WAYSIDE SIGNAL SYSTEMS/WAYSIDE SIGNALS & CONTROLS. A variety of references are made to these terms yet definitions are apparently non-existent. FRA employs the term in its publications though it fails to define it (as other terms are). Wayside Signal System suggests a group of interconnected signals rather than a single unit. The third term, from US & S, is a broader term encompassing Signals and control mechanisms. While this is relatively common term less than a tenth of references of surveyed sources include Wayside forms.

References: FRA-1, -3, U S & S, Gaum, Yamanouchi

1B1 c) Other Overarching Terms

FIXED TRACKSIDE SIGNAL/FIXED TRACKSIDE COLOR LIGHT SIGNALS. Kanner offers a variant of singular variant forms. The second term may be in Chapter 2B but it is retained here because of the prefatory words. Reference: Kanner

IMMOVABLE SIGNALS. This term is found in one source: Daumas. That source has been translated from French to English. It is not known if the translator selected immovable instead of fixed or whether Daumas selected the French form of immovable instead of fixed. Both terms are very similar in meaning. Reference: Daumas

OPTICAL SIGNALS/OPTICAL SIGNS & SIGNALS. A possible OA term but rarely employed. It is an atypical term employed by Mashour in psychological studies of visual messages and human perception of messages. The term may be overly inclusive unless placed within a railroad/railway context. Reference: Mashour

ROADWAY SIGNALS. FRA 1979 and FRA 1984 may be the only rail sources for this term. The term is also found in U.S. law from 1970 that undergird the FRA sources. The original source of Roadway Signal is not known. FRA 1984 uses Railroad Signal in the title and in the text FRA often employs Wayside Signals.

Roadway Signals is therefore a synonym of unknown parentage. It suggests street and road Signals more than railroad counterparts. References: FRA '79, FRA RAR

STATIONARY & FIXED SIGNALS. This is a 19th c. U.S. term. Stationary Signal had the meaning now ascribed to Fixed Signals. Fixed then referred to signals attached or fixed to trains. Reference: New System-RG 1884

TRACKSIDE SIGNALLING/TRACKSIDE SIGNALS/ TRACK-SIDE SIGNALS/ TRACK SIDE SIGNALS/TRACKSIDE RAILROAD SIGNALS. A plausible overarching term yet rarely used. It can be viewed as the equivalent of Wayside Signals. The third and fourth terms are variant forms. Track-side is not the term used by Kanner in his book. Kanner uses Trackside instead. Track-side comes from online bibliographic record; however the term is retained as a plausible if non-existent term. Trackside Railroad Signals is Kanner's term. References: Challenge ... 1983, Encyclopedia of Thailand, Kanner '92.

TRAIN LIGHT SIGNALS. A singular alternative to Railway Signals. Reference: Jia-lin '81

VISUAL SIGNALS/VISUAL SIGNALLING/VISUAL SIGNALLING SYSTEM. A plausible overarching term but possibly overly inclusive (unless placed in the context of Railroad Signals). Most references are UK in origin. It is not employed very often in itself; rather it is used to differentiate between Signals with lights from other forms including AWS, electric telegraphy, hand signals. Tansley adds system to the basic term. References: Ellis 1966, Blythe 1951, Nock '62, GEC, Allen '62.

WARNING SYSTEM. This is a Level/Grade term but it has the appearance of an OA term and is retained as a Cross Reference. Reference: Miller '97 RA

1B2 Possible/ Partial Overarching Terms

1B2 a) Energy & Technology-related Names

General Note. A variety of terms include mention of source of energy that provides power for a Signal or the form of technology employed. Some or many of these terms refer to a restricted range of Signal forms. Yet these terms often project an image of broad usage. And hence are included here.

A.C. SIGNALING SYSTEM. Term refers to power source though tersely.
Reference: REMC

ALL-ELECTRIC POWER SIGNALLING. UK term from late 19th c./early 20th c. Possibly coined to distinguish power source that was entirely electric but forms combining electricity and other forms such as pneumatic action.
Reference: Vanns

ELECTRIC SIGNAL/ELECTRIC SIGNAL SYSTEM/ELECTRIC SIGNALING/ELECTRICAL SIGNALLING/ELECTRICALLY-OPERATED SIGNALS. These terms may suggest all-lighted forms of Signals in contrast to mechanical forms such as Semaphore Signals. Yet they can denote Signals of a wide range powered by electricity. For example, Queensland Railways explicitly refers to both Color-Light and Semaphore Signals under the heading of Electric Signals. All-lighted Signals of course can be the meaning of Electric Signals.
References: Queensland Railways, Turkey, B & M '81, HDS

ELECTRO-GAS SIGNAL. This term in Nock 1962 refers to a Semaphore Signal employing carbonic acid gas activated by an electric valve. Signals employing gas were also used in the U.S. though a specific term does not appear in the surveyed literature. While the term refers to Semaphore Signals it projects a broader image of Signals powered by this form of propulsion. Hence the inclusion of the term in this section.
Reference: Nock '62

ELECTRO-MECHANICAL SYSTEM. Employed by only a few sources. It is a possible OA term that can encompass a variety of signals operating from mechanical systems powered by electricity. AAR uses the term for the obsolete Banner or Clockwise Signal. UN 1954 employs it seemingly in a more general way. Probably all less than fully-lighted Signals could be included. It may be overly inclusive unless placed in a railroad context.
Reference: ARSPAP-H, UN '54

ELECTRO-PNEUMATIC SIGNAL./ELECTRO-PNEUMATIC SIGNALLING. The first term from ARSPAP describes a Semaphore Signal employing an electrically activated pneumatic mechanism. The term, as with the previous term, is restricted in use yet projects a broader image and is included with possible overarching terms. Second term refers more to system of Signals though it is presupposed that a single Signal is integrated with other Signals.
Reference: ARSPAP-H, Vanns

LOW-PRESSURE ELECTRO-PNEUMATIC SIGNALLING. Vanns includes

specifics of process within title or perhaps title is descriptive rather formal.
Reference: Vanns

MANUALLY OPERATED FIXED WAYSIDE SIGNALS/MANUALLY OPERATED SIGNALS/MANUAL SIGNALS/MANUAL SIGNALLING. These terms refer to Signals operated directly by human efforts. They are in contrast to Power-Operated Signals.
References: FRA-3, ARSPAP-H, Phillips '42, Blythe '51

MECHANICAL SIGNALS/MECHANICAL SIGNALLING. These terms are often synonyms for the Semaphore Signal. They also include other less than fully-lighted forms including Disc & Crossbar, and Ball Signals. Mechanical Signals have lighted aspects but mechanical processes are directly involved in the production and emission of messages. In some instances Mechanical Signal appears to refer to older Signal forms that are manually operated as opposed to Electric Signals that provide automatic operations.
Reference: UN '54, UAR, South Korea, Turkey

MOTOR-OPERATED DISTANT SIGNALS. A partially morphological term attached to non-differentiated energy source.
Reference: Vanns

POWER OPERATED SIGNALS/POWER-OPERATED SIGNALS/POWER SIGNALLING/POWER-SIGNALLING/POWER-WORKED SIGNALS. These various terms refer to signals operated by various energy forms: compressed air, hydraulics, electricity.
References: Jackson '91, NSW, VR, ARSPAP-H, -SS, ANR

1B2 b) Physical-Morphological Overlapping Terms

General Note. Some terms seem to belong to both of these categories or are poorly defined or nebulous in character. This segment includes those terms and an attempt at description and definition. Some at least need further consideration in the morphological part of the chapter.

MAIN ROUTE SIGNALS. This term is equivalent to Main or Main Line Signals.
Reference: Vanns

MAIN SIGNALS/ MAIN LINE SIGNALS/MAINLINE SIGNALS. These terms appear to occupy both the physical and morphological dimensions. For US&S the term Mainline Signal largely refers to equipment (though the form of the equipment and location frame message possibilities and is shaped by it). The

other terms are similar though possibly more morphological. ERS sees Main Signal as a synonym for Running Signals and therefore tending toward the morphological. Primary Signals may be similar though tending more toward the morphological.

References: U S & S, ERS

PRIMARY SIGNALS. This term from Mashour is rare and probably employed for his psychologically-orientated studies. He refers to Primary in the context of Wayside Signals. Wayside may tend toward physical Signal apparatus while Primary is more of a morphological term.

Reference: Mashour '74

"UNIVERSAL SIGNAL". An attempt was made in early 20th c. Belgium to create an "Universal Signal" that would encompass all Aspects and Indications. It is more of a morphological term than a physical yet some measure of the physical may be present.

Reference: Nock '62

SYMBOL INFORMATION PROCESSING. This term is more of an abstract notion than an operational term. It comes from Mashour and describes what takes place in a Signal that creates and emits messages rather than the physical dimension though the physical Signal is implied.

Reference: Mashour '74

1B2 c) Possible Overarching Terms--Miscellaneous

FUNCTIONAL SIGNAL SYSTEM. This may not constitute an actual term. FRA employs the designation for charts comparing types of Signal and related Systems for U.S. railroads that run Amtrak trains.

Reference: FRA-2

SAFE WORKING/SAFEWORKING/SAFE-WORKING/SAFEWORKING APPLIANCES. This collection of terms appears to reside in Australia exclusively. Actual definitions are very much in short supply. The core term seems to mean either all means for the safe operation (working) of trains whether full-scale signals, staff and tickets, methods of interlocking, etc. Or it refers to all safely-related devices and methods other than Signals. Victoria Railways refers to their safety operations department under the title of Office of Safeworking Department. Only one reference adds the word appliance to Safeworking. Whatever the meaning of the term the meaning of the function is maintenance of safe train movements.

Reference: VGR, Bird '72

SIGNAL-&-CONTROL SYSTEMS/ SIGNAL & CONTROL SYSTEMS. With an increase of control systems which, in themselves, do not produce and exhibit signal messages there is an increase in dual terms for Signals and Controls. Many of the control terms are integrated with and thereby part of the Signal role. This is a plausible OA term for 1E.

References: Welty '86, Armstrong

SIGNAL & SWITCH SYSTEMS. This term is an early reference to interlocking. It may be a partial OA term since it includes all forms of Signals in an area. The term projects a broader significance even if the actual usage of the term is narrower, more specific.

Reference: ARSPAP-H

SIGNALLING DEVICES. Cunliffe uses this term to encompass a broad range of railroad safety aids: traditional signals and other entities that control train operations and related functions.

Reference: Cunliffe '68

TRACKSIDE WARNING SIGNALS. A term of restricted use though it projects broader meaning. It refers to lighted and audible systems that warn track repair crews of the approach of trains. Older U.S. practices included a variety of similar systems.

References: ERS-H

TRAIN SIGNALS & CONTROLS. This term is offered by U S & S which seemingly refers to Railway/Railroad Signals not train-based communications.

References: U S & S

VISUAL & AUDIBLE SIGNALS. A rarely employed term that encompasses the full range of Signals.

Reference: BM '81

1B3 Primary Overarching Terms in Other Languages

General Note. An attempt has been made to include major terms in languages other than English. Most of these terms are from Indo-European languages though a limited number of terms from two Ural-Altaic languages (Hungarian, Finnish) are included. A variety of terms are not represented in some languages. In some cases very general terms are not employed by a given signal agency. Specific terms are favored by some agencies though this varies greatly. A few terms are included that are morphological in character. They are included since they also

represent a physical apparatus as well.

SIGNAL

Signaux: Algeria, Ivory Coast
Signal, Norway, Denmark, Sweden
Jel, Jeladus, Jelzec, Hungary
Sygnal, Poland

SIGNALLING/SIGNALING

Signalisation Lumineuse: Belgium
Signalisation Lumineuse: France, Ivory Coast/Upper Volta
Signalisation Mecanique: France, Ivory Coast/Upper Volta
Signalering, Norway

FIXED SIGNAL

Signaux Fixes: Belgium
Senal Fija: Spain, Argentina, Uruguay, Colombia, Bolivia, UIC
Sinais Fixos: Portugal
Ortsfestes Signal: Germany (UIC)
Segnale Fisso: Italy (UIC)
'everst, utvrden, stalan, (Serbo-Croatian language)

LIGHT SIGNAL

Senales Luminosa: Spain, Colombia
Segnale Luminosi: Italy
Segnaux Lumineux: Algeria
Semnale Luminoase: Rumania
Sinais Luminosa: Brazil, Portugal
Signaux Fixes-Lumineux: UAR
Lichtsignal: Germany, Austria
Licht Sein: Netherlands
Senales Luminosas Fijas: Chile
Valo-Opastimien, Finland

LINESIDE SIGNAL

Signalisation laterale: France
Segnali di Linea: Italy

MECHANICAL SIGNAL (This term, though broader in meaning than Semaphores, also includes Semaphores)

Signal Mecanique: France, Algeria
Formsignal: Germany, URO
Mechanical Signal: United Kingdom
Segnale Meccanico: Italy
Senal Mecanica: Spain
Mechanisch Sein: Netherlands
Semnale Mecanice: Rumania

SEMAPHORE SIGNAL

Semaphore: Algeria
Semaforo: Mexico, Bolivia
Semaforul: Rumania
Segnali Semaforica: Italy
Semaphora, Spain
Armsein: Netherlands
Seinpaal: Netherlands
Semafor, Norway, Denmark, Sweden
Szemafor, Hungary
Opticki brzajar, (Serbo-Croatian language) [language marks needed]
Siipiopastinten, Finland
Semaforach, Poland

SIGNAL BOARDS

Senales Pantella: Spain
Klapboard: Netherlands

SHUNTING SIGNALS (Physiology and Morphology Terms)

Signal de Manoeuvre: France
Rangiersignal: Germany, URO
Segnale di Manovra: Italy
Senal de Maniobra: Spain, Argentina, Colombia, Chile
Rangeersein: Netherlands
Signal Lumineux de Manoeuvres: France
Sinais de Manobras: Portugal
(Most terms from UIC)

SWITCH SIGNALS

Weichensignale: Austria, Germany, Switzerland
Signaux d'Aiguilles: Switzerland

VISUAL (Or VISIBLE) SIGNAL

Signal Optique: France
Optisches Signal: Germany
Segnale Ottico: Italy
Senal Optica: Spain
Optisch Sein: Netherlands
(All terms from UIC)

1B4 Signal Components

General Note. Many terms refer to parts of Signals and these are included in a brief form. Many of these deal with Semaphore Signals. But unless a specific reference is made to that form of Signal they are included in General Terms

BRACKET POST, King '21
BRACKET MAST, King
BRACKET SIGNAL, King, REMC '48
BRACKET STRUCTURE, Kanner
BRIDGE MAST, King
BRIDGE SIGNAL, REMC
BRIDGE STRUCTURE, Kanner
CANTILEVER BRANCH POST, King
CANTILEVER STRUCTURE, Kanner

DOLL, A & W, Jackson '91
DOLL POLE, King
DOLL POST, King
DOLL SIGNAL, Kanner '92
FINIALS, A & W '91
FLAT CAP
PARACHUTE TYPE
FRESNEL MARINE TYPE LENSES, REMC
GANTRY, A & W, Jackson
LAMP, Vanns '97
LATTICE POST BRACKET SIGNAL, A & W
LATTICE POST SIGNAL, A & W
L-H BRACKET SIGNAL, A & W
MAST, King
MECHANISM COVER, King
ROUNDELS, A & W
SIGNAL BRACKET, King
SIGNAL BRIDGE, King
SIGNAL DOLLS, A & W
SIGNAL GANTRY, King
SIGNAL GLASS, REMC
SIGNAL GLASSWARE, REMC
SIGNAL HEAD, Kanner
SIGNAL LAMP, A & W
SIGNAL LENSES, REMC
SIGNAL MAST, King
SIGNAL MECHANISM, King
TUBULAR STEEL BRACKET SIGNAL, A & W

Chapter 1C Messages: Aspects and Indications

General Note I. Messages are a very complex subject. Terms, colors, arrangement of colors, alternate configurations, the many different railway systems conspire to defeat any brief (or not so brief) coverage of the subject. The Database is not intended to be a compendium of messages. Instead it is a glossary of terms and definitions. Therefore this coverage is restricted. Terms and definitions are the primary concern. An attempt to include the colors (and other message components) employed for the various messages and the range of configurations has been made. The actual railway signal codes will be needed to gain an understanding of all the permutations in any system.

General Note II. There are three segments of this sub-chapter. The first examines basic terms, and colors in use. The second reviews aspects. (Aspects refer to the visual appearance of a signal. Frequently the aspects of a signal apparatus are attached to the term Signal which results in many terms). The third element, indications, refers to the meanings of the aspects (messages).

General Note III. This coverage is of a general nature. It is more appropriate and more pertinent for fully lighted signals especially for running operations.. Partially-lighted and unlighted signals, signs, markers are included only to a limited degree. Entries for those forms will include messages; entries for radio and sound forms also include messages. Special forms of all lighted signals (rows of lights, special arrangement of lenses, etc) will be noted in the entries for the physical forms. Color information is also included.

General Note IV. Morphology has been assigned to terms relating to that part of functions attached to system terms (e.g. Block Signals, Interlocking Signals) as well as to more specialized functions (e.g. Route Indicators). Messages are also part of morphological concerns though considered separately.

1C1 Basic Terms and Colors

a) Terms

ASPECT I. For North America this means the visual appearance of the signal but not the meaning ascribed to the appearance.

ASPECT, SIGNAL/SIGNAL ASPECT. These terms are more explicit versions of basic term. Employed by AAR Standard Code.

Reference: AAR SC, ARSPAP-D, FRA-3

ASPECT II. For ERS this has two meanings: either the visual appearance, or the meaning ascribed to it. ERS merges two separate meanings or it can be seen to bring together two closely interrelated roles.

Reference: ERS-H

ASPECT SEQUENCES, ERS adds this term which describes the forms that Signal aspects can take: fixed or flashing, horizontally or vertically arranged, etc. Various systems may refer to one/two/three, etc aspects but all of them are retained within the term Aspect. In European practice the specific formulation of aspects can be further explicated with Aspect Sequence.

Reference: ERS-H

INDICATION. For North America this refers to the meaning ascribed to the visual appearance or aspect.

Reference: Henry '42

SIGNAL INDICATION. Employed by AAR SC among other sources. It is an explication of the shorter Indication.

Reference: AAR SC

SIGNAL CODE. The book of rules governing the use of signals for a railway system.

Reference: Part F of Monograph Series

b) Colors

(1) Basic Colors

General Note. Basic colors can be termed the Primary Signal Colors (Breckinridge '64, '67). White is somewhat uncertain: seemingly not primary for Breckinridge though beyond a secondary level of usage in railways.

Reference: Breckinridge '64, '67

RED. This is a long-enduring color with a consistent message of danger with the meaning of stop as a necessary corollary.

Reference: Armstrong '57, K & W '78

GREEN. This color has a nearly universal meaning of Go or Proceed. It is only in the early 20th century that gained that meaning though green was sometimes used as a proceed signal before the mid-19th century. Green was long known as a

caution signal.

Reference: Bronson '93, Mashour '74, Nock '78

YELLOW. This color finds considerable usage as a caution signal though not until early 20th century because of inadequacies in color science and manufacturing capabilities.

Reference: Allen '52, Mashour '74

WHITE. This color is considered among the less-used or specialized colors though it has considerable usage and can be regarded as a fourth basic color in some situations.

Reference: RG 1884, Jia-lin

(2) Combinations

GREEN/YELLOW/YELLOW/GREEN is the frequently employed combination. Nearly half of the systems surveyed in Part F included this combination. It is also the most common combination in Europe. ERS notes it is economical if a fourth aspect is desired since both colors are already present. It can be employed for somewhat restrictive indicator though within the proceed mode. Austria, for example, denotes a 40 km/h speed limit with G/Y. URO also signifies 40 km/h in that manner with the use of flashing lights (GFFIY) a change from 40 to 120 km/h can be signified. Green/Yellow is less restrictive in North America than Yellow/Green. This is less the case in Europe.

Reference: ERS-H, AAR SC, ARSPAP A & I, Canada

YELLOW/RED, GREEN/RED/RED/GREEN are other important combinations. Less than a quarter of the systems reviewed in Part F employed these combinations. In North American practice some combinations are less restrictive (or more) according to order of colors.

Some other combinations include basic colors and a less used color. For example, white is more often employed in this manner. This is especially true in The Netherlands where white is employed but not yellow. Another combination is white and red which find joint use for shunting function in a number of railway systems.

Reference: Part F, ERS-H, The Netherlands

(3) Specialized Colors

General Note. Less employed colors include White, Blue, Purple, and Lunar White. Breckinridge '64, '67 refers to these colors as Secondary Signal Colors. It

is unclear what the status of white would be for Breckinridge; white is retained in Basic Colors as well.

BLUE. A color of relatively limited use. Some European systems employ it for permissive stops. For example, Spain uses it for Directional Signals.

References: ETR '52, RENFE '78

WHITE. This is a frequently used color. It is used often in points indicators, and position lights including route and junction indicators on running lines. As noted above it is conjoined with a major color for various uses. See also Basic Colors.

Reference: Part F

AMBER. A term of confusion. Some sources see this as a less saturated yellow employed in railway signals. Some references seem to suggest it is a modified yellow color employed, for example, in U.S. position light signals.

References: Part F, Swiss Railways

YELLOW-ORANGE. This color employed in Vietnam may also be within the yellow spectrum.

References: UN '54 -Viet-nam

ORANGE. Swiss Railways makes use of what they call Orange (they also include yellow). Possibly this is within the yellow spectrum.

Reference: Swiss Railways

PURPLE & VIOLET. Seemingly these are the same colors. Violet is preferred in Europe. This color(s) finds more specialized uses in shunt and switch roles. Such colors may be employed to avoid confusion with signals for running movements.

Spain employs Violet with permissive stops.

References: RENFE '78

LUNAR WHITE. This can also be seen as Blue-White. It is relatively common in UK and UK-influenced systems. It is used with point indicators and route signals. Color-position Signals in the U.S. also employ the color. Portugal uses it along with standard color for some running movement signals. Netherlands includes a color known as "Melkwit" or milk-white which may also be Lunar White.

References: Netherlands, Portugal

(4) Spatial Configurations

ERS takes notes of differences in spatial configurations: signals can be arranged horizontally, vertically or at an incline. Inclines can be from lower-left to upper-

right or lower-right to upper-left. In the case of the double yellow (preliminary caution) all four versions are employed. Part F viewed spatial configurations differently. That study divided configurations into categories of basic, modified-basic and complex; the complex was further sub-divided. The basic version displayed two or more light units in a vertical pattern that was straight-line. The modified version included basic forms in horizontal or triangular shapes.

Complex forms included standard-shaped head (basic geometric form) but with an irregular lamp arrangement; in some instances the lamps appear to be "scattered" over the surface. A second complex version displayed irregular-shaped signal heads and lamps. A third version included more than one type of symbol.

One other element is the use of flashing lights. Uses and meanings of Flashing Lights are diverse and decentralized in the extreme. URO employed such lights extensively and as an integral element. European systems use flashing lights extensively though meanings are diverse.

Green flashing lights include proceed at reduced speeds. Yellow encompasses cautionary messages while Red messages include stopping on sight. Users outside Europe include Brazil who employs flashing red as a permissive stop. For Canada flashing red is used for Take/Leave Siding Signals.

References: URO, ERS-H, Brazil, Canada; see also Holmes 1971

5) Variant Color Combinations & Miscellaneous Color Uses

General Note. Specific hues and uses of color may result in qualifying names attached to basic colors. Colors may be attached to other factors. Some of these terms also include colloquialisms and alternate configurations.

RESTRICTED RED
TRAFFIC RED
INTERMEDIATE YELLOW
INTERMEDIATE GREEN
SIGNAL BLUE
NELS YELLOW (Historic)
KEROSENE PINK

DOUBLE RED
DOUBLE AMBER
DOUBLE YELLOW
DOUBLE YELLOW SIGNAL
FLASHING YELLOW ASPECT, Leach



FLASHING SINGLE YELLOW ASPECT, Vanns
FLASHING DOUBLE YELLOW ASPECT, Vanns
SELENIUM RUBY GLASS

DOUBLE YOKE (Double Yellow)
GINGER 'UN (Distant Signal with Caution Indication), Jackson
LUNAR-WHITE LAMP/LUNAR WHITE MARKER LAMP, King; REMC
YELLOW EYE (Double Yellow), Jackson
YELLOW-TINTED LENSES

1C2 Aspects

General Note. Frequently the number of aspects (sometimes the term position is employed though that was more common with Semaphore Signals) is attached to the term Signal so that many Signal terms include the number of Aspects (or Positions) as part of the actual title. The Database includes a listing of these terms but with little explanation since they are largely self-explanatory in nature.

a) Single-Aspect Terms (none in notes but there are some)

SINGLE ASPECT COLOURLIGHT
SINGLE-ASPECT SHUNT
SINGLE ASPECT SUBSIDIARY COLOURLIGHT
SINGLE/2/3/4 ASPECT
2-, 3-, 4-ASPECT SIGNALLING
2/3/4-ASPECT SIGNALLING SYSTEM

b) Two Aspect Terms

LOWER QUADRANT TWO ASPECT SEMPHORE TYPE
TWO ASPECT COLOR LIGHT SIGNALS
TWO ASPECT COLOR-LIGHT SIGNALS
TWO-ASPECT COLOR LIGHT REPEAT SIGNAL
TWO-ASPECT FIXED SIGNALS
TWO-ASPECTS IN-CAB WARNING SYSTEM
TWO ASPECT LOWER QUADRANT SIGNALS
TWO ASPECT MULTI-UNIT TYPE OF COLOUR LIGHT SIGNAL
TWO ASPECT MECHANICAL SEMAPHORES
TWO-ASPECT SHORT RANGE SIGNALS
TWP-ASPECT SIGNALS
TWO ASPECT SYSTEM
TWO-INDICATION SIGNAL, King

TWO-LIGHT SIGNAL ASPECT
TWO-POSITION AUTOMATIC SIGNALS, King
TWO-POSITION BRACKET POST SIGNALS
TWO POSITION LQ BRACKET SIGNAL, King
TWO-POSITION SEMAPHORE SIGNALING
TWO-POSITION SIGNAL
TWO-ARM, TWO POSITION, L.Q. SEMAPHORE PIPE CONNECTED
TRAIN ORDER SIGNAL
TWO-POSITION SEMAPHORE SIGNAL
TWO-ARM STARTER SIGNAL
TWO-POSITION INSTRUMENTS
TWO-POSITION LOWER LEFT-HAND QUADRANT SEMAPHORE
TWO-POSITION DISTANT SIGNAL
TWO-POSITION LOWER QUADRANT SIGNALS
TWO-POSITION LQ TWO ARM, THREE-BLOCK SIGNAL
TWO-POSITION HOME SIGNAL
TWO-POSITION UQ SIGNAL
TWO-POSITION DISTANT SIGNAL
TWO-STRIPPED SPEED INDICATOR (2 rows or strips)
TWO-WAY POINTS INDICATOR
TWO-DOLL BRACKET SIGNAL (Doll: short signal post)

c) Three Aspect Terms

THREE ASPECT SYSTEM
AUTOMATIC THREE-ASPECT SIGNAL
THREE-ASPECT COLOURLIGHT CO-ACTING SIGNAL
THREE-ASPECT UQ DOUBLE WIRE SIGNAL
THREE-ASPECT AUTOMATIC BLOCK LIGHT SIGNAL
THREE-ASPECT MUTLPLE-LENS COLOURLIGHT
THREE ASPECT MULTIPLE-UNIT LENS COLOURLIGHT SIGNAL
THREE-ASPECT MULTIPLE UNIT OF COLOUR-LIGHT SIGNAL
THREE-ASPECT SYSTEM OF SIGNALLING
THREE-ASPECT SIGNALS
THREE-ASPECT LONG RANGE COLOR-LIGHT SIGNAL
THREE-ASPECT COLOR LIGHT SIGNAL
THREE-ASPECT JUNCTION SIGNAL
THREE-ASPECT T.S..
THREE-ASPECT, TWO-BLOCK AUTOMATIC SIGNALLING
THREE-ASPECT, TWO-BLOCK SIGNALLING
THREE-ASPECT, TWO-BLOCK SYSTEM
THREE-ASPECT, TWO BLOCK SYSTEM OF SIGNALLING



THREE-BLOCK INDICATION
THREE-COLOR SIGNAL SYSTEM
THREE INDICATION SIGNAL
THREE-POSITION U-Q SEMAPHORE/THREE-POSITION, U-Q SIGNALS/
THREE-POSITION UQ SIGNALS
THREE-POSITION L-Q SEMAPHORE/THREE-POSITION LQ SIGNAL
THREE-POSITION L Q SEMAPHORE
THREE-POSITION SIGNAL/THREE POSITION SIGNAL
THREE-POSITION SEMAPHORE
THREE-POSITION, U-Q SIGNAL
THREEPOSITION UPPER RIGHT HAND QUADRANT SIGNAL

d) Four Aspect Terms

FOUR ASPECT SYSTEM
FOUR-ASPECT SIGNALING
FOUR-ASPECT CODE 100 HZ CAB SIGNAL SYSTEM
FOUR-ASPECT COLOR LIGHT SIGNALING
FOUR-ASPECT COLOUR-LIGHT SIGNAL
FOUR-ASPECT SHUNT TON SIGNALING
FOUR ASPECT SIGNAL/FOUR-ASPECT SIGNALS
FOUR-ASPECT COLOUR SIGNALS
FOUR-ASPECT, FOUR-SPEED CODED CONTINUOUS TCS
FOUR ASPECT COLOR LIGHT SYSTEM
FOUR-ASPECT JUNCTION SIGNAL
FOUR-ASPECT MULTIPLE UNIT SIGNAL
FOUR-ASPECT SEARCHLIGHT SIGNAL
FOUR-ASPECT SEMI-AUTOMATIC SEARCHLIGHT SIGNAL
FOUR-ASPECT, THREE-BLOCK SIGNALING
FOUR-ASPECT, THREE-BLOCK SIGNALING

FOUR-POSITION SIGNAL

FOURTH ASPECT
FOUR-INDICATOR, THREE BLOCK SIGNAL

e) Five Aspect Terms

FIVE ASPECT SIGNAL
FIVE ASPECT SYSTEM
FIVE SIGNAL (SPEED) ASPECTS
FIVE LIGHT JUNCTION INDICATOR

f) Other Aspect Terms

MULTI ASPECT CAB SIGNALING
MULTI ASPECT COLOR LIGHT SIGNALS
MULTIPLE-ASPECT COLOUR-LIGHT SIGNALLING
MULTIPLE-ASPECT COLOUR-LIGHT SYSTEM
MULTI-ASPECT COLOUR SIGNALS
MULTI-ASPECT SIGNAL
MULTI-ASPECT SIGNAL SYSTEM
MULTI ASPECT SIGNALLING
MULTI-ASPECT SIGNALS WITH JUNCTION INDICATOR
MULTI-ASPECT UQ DOUBLE-WIRE SIGNALING

CAB SIGNAL ASPECT
FLASHING ASPECT

POSITION LIGHT ASPECTS

APB SIGNAL WITH 3 & 4 INDICATIONS
THREE/FOUR ASPECT

DAY & NIGHT ASPECTS

LUMINOUS ASPECT

1C3 Indications

General Note. Some sources employ Signal to mean an Indication. Others so use Aspect. Some employ the message without other terminology. The message with or without other words is the core element.

a) Primary Forms

CLEAR SIGNAL. This is the most common name (or title) for the proceed ("Go") indication. In the English language it is employed by systems on every continent. The meaning of the indication is very often "Proceed." For ERS a variety of European systems employ Line Clear instead of Proceed. While there are alternative wordings the meaning remains the same. In some systems the word Proceed is both title and meaning. For some systems a steady, single green light is employed for the Clear Signal. However, multiple greens and combinations of

colors may be employed. When combinations of colors are employed green has the topmost position. Clear Signal can have several meanings: aspect, or indication, or physical apparatus.
References: ERS-H, Blythe '51

LINE CLEAR. This term is employed by some European systems. See also Clear Signal.
Reference: ERS-H, Vanns

PROCEED SIGNAL. This term is an alternate for Clear Signal. For many systems employing Clear Signal the word proceed is included as the meaning. For ERS-H a proceed indication "Is any aspect other than the most restrictive." For other systems, including South Africa and ANR, proceed denotes next signal either at proceed or at caution.
Reference: TWR, ANR, ERS-H, Leach

CAUTION SIGNAL. This term is employed very frequently for a signal denoting the next signal is at stop. The description of the indication is very similar throughout many systems: "Proceed, prepared to stop at next signal." (ANR). The wording may vary to a degree; the word proceed may drop out; the indication may indicate the next signal is actual at stop but the meaning expressed is very similar. A single steady yellow lens may denote the message though multiple lenses and combinations of colors may be employed; if a combination of colors are employed the yellow indication is uppermost.

APPROACH SIGNAL. Caution is a nearly global term though for Canada and the U.S. Approach Signal is employed instead. However, the meaning and expression of meaning is very similar to other nations. Multiple lenses may be present with more than one color but yellow is in the top position.
References: AAR, SAI & SC, Canada UCOOR

STOP ASPECT/STOP SIGNAL. A nearly self-explanatory indication. Red, unlike green and yellow, has had the meaning danger for a very extended period of time. The indication or meaning of this signal is simply stop. Most systems share that meaning. Pakistan has a variant of "Stop and Stay". A few systems may offer explication with phrase such as "Section is occupied" (New Zealand).
References: Pakistan, New Zealand, REMC

DANGER/ DANGER SIGNAL. Some systems substitute Danger Signal for Stop Signal but with the same meaning of stop. U.K. and Pakistan are two such systems. In UK Home Signals are term Stop Signals. Stop Signals have clear indications in contrast to Distant Signals.

References: K & W '63, Pakistan Rlwys, King

PRELIMINARY CAUTION SIGNAL. UK and other systems often include a Preliminary Caution Signal. UK employs a double yellow indication for this purpose; some systems use a flashing yellow.
Reference: K & W '63

b) Specialized Forms

U.S.(AAR, SAI '56) and Canada (UCOR '61, CN RSIA) have three additional forms of the Clear Signal:

LIMITED CLEAR SIGNAL/ LIMITED-CLEAR/MEDIUM CLEAR/MEDIUM CLEAR SIGNAL/SLOW-CLEAR/SLOW CLEAR SIGNAL. Each signal allows a train to proceed through interlocking limits at the designated speed of limited, clear or slow. Signal configurations and sign plates can vary between U.S. and Canada. Most of the signal aspects include both green and red lens units.

U.S. and Canada have additional forms of the Approach Signal. They follow the Approach form in allowing proceeding but train crew is to be prepared to stop at next signal. The qualifying word in the title indicates the speed the train is to follow: Most of these involve combinations of red and yellow. Flashing lights, letter plates may be present:

LIMITED APPROACH SIGNAL/MEDIUM APPROACH SIGNAL/MEDIUM - CLEAR/MEDIUM ADVANCE APPROACH SIGNAL [U.S.only]/MEDIUM APPROACH SLOW SIGNAL [U.S. only]/SLOW APPROACH SIGNAL/ RESTRICTING SIGNAL/RESTRICTING ASPECT/RESTRICTING INDICATION. U.S. and Canada include several indications in which Approach Signals are followed by qualifying speed limit (in contrast to the previous group in which a qualifying limited preceded Approach). These group includes solid yellow, yellow/green and some yellow/green/red indications. There are three forms in Canada and U.S. and two found only in the U.S.:

APPROACH LIMITED/APPROACH LIMITED SIGNAL/APPROACH MEDIUM/APPROACH MEDIUM SIGNAL/APPROACH SLOW SIGNAL/ADVANCE APPROACH MEDIUM SIGNAL [U.S. only]/ADVANCED APPROACH SIGNAL [Also U.S. only].

Finally U.S. and Canada have several additional forms of the Stop Signal:

STOP & PROCEED SIGNAL/STOP-&-PROCEED/GRADE SIGNAL/



STATION PROTECTION SIGNAL/TAKE (OR LEAVE) SIDING SIGNAL. All involve the single color of red; number and letter plates are usually present; the Siding Signal includes a lighted "S".

Other Systems also include specialized forms of Indications. These include:

MEDIUM SIGNAL. New South Wales includes this form. The meaning is "Proceed; next signal at caution, but signal within braking distance at stop." It displays a Green over Yellow indication.

New Zealand (also South Australia/ANR but adjustments in title wording may be needed) has several added indications. These include:

CAUTION, LOW-SPEED SIGNAL. Proceed but at low speed; train to be prepared for track occupied and ready to stop before obstruction, This Signal indication is red accompanied by low-speed lamp.

CAUTION, MEDIUM-SPEED SIGNAL. This calls for proceeding but at medium speed. Signal displays red over yellow.

CLEAR, MEDIUM-SPEED SIGNAL. Proceed but at medium speed.

NZ has three "Normal-Speed Indications. These include:

CAUTION NORMAL SPEED SIGNAL. This allows moving at normal speed but advance signal is either stop or requiring low speed response.

NORMAL SPEED SIGNAL. Normal speed is permitted but train required to be prepared for medium speed at next signal.

CLEAR, NORMAL-SPEED SIGNAL. Train to proceed at normal signal. Next signal either caution or clear at normal speed.

Kanner includes Aspects and Indications from several North American Codes that overlap and diverge from AAR practice. These Codes and A & I include: The Consolidated Code of Operating Rules:

**STOP
STOP & PROCEED
PERMISSIVE TAKE SIDING
APPROACH
CLEAR**

APPROACH DIVERGING ROUTE
APPROACH-MEDIUM
CLEAR-DIVERGING
RESTRICTING
SPRING SWITCH
SLOW-CLEAR

The Uniform Code of Operating Rules includes:

CLEAR
ADVANCE APPROACH
DIVERGING CLEAR
APPROACH MEDIUM
APPROACH DIVERGING APPROACH MEDIUM
APPROACH DIVERGING
DIVERGING APPROACH
LOW
STOP & PROCEED
STOP

Kanner notes that General code of Operating Rules notes A & I show marked diversity from line to line though rules are general. These are not included.

Some miscellaneous terms include:

ASPECT, FALSE RESTRICTIVE/FALSE RESTRICTIVE ASPECT. Signal Aspect that displays an unintended excessively restrictive indication.
Reference: FRA-3, AAR SM '83

ASPECT, PHANTOM SIGNAL/PHANTOM SIGNAL. An unintended indication created by reflection of extraneous light source off signal's optic system.
Reference: FRA-RAR, AAR SM '83

FALSE CLEAR/FALSE-CLEAR SIGNAL./FALSE PROCEED. Signal mechanism (system, device, appliance) displays an inadequately restrictive indication.
Reference, King, K & W ' 63 or K & T '88

POTENTIAL FALSE PROCEED CONDITION (PFPC). Describes a situation in which a false proceed indication would be activated if a train entered that section-but which hasn't done so.
Reference: AAR SM '83

1D Morphological Terms

General Note I. Part F of Volume II focussed on Signals (the physical entity) and their messages. Perhaps the same format should have been followed in the Database but instead the decision was made to include terms relating to systems (or methods of control) and morphological terms. Neither coverage for Iiii can be said to be definitive though, hopefully, they tend toward the comprehensive. Morphological terms refer to functions of Signals. Such terms are included in the Database when the function is attached to the word Signal. For example, a Block Signal, a Siding Signal, a Shunt Signal. The term Signal means the physical dimension and the morphological term tells what purpose the Signal performs. Such terms can relate to systems (Block indicates the purpose but also tells the kind of system; it also refer to messages as well (a Caution Signal indicates the message).

General Note II. There is a great welter of morphological terms. Not a few of which are found only in a few railway systems or even a single system. Some terms are obsolescent while others are fully archaic though appearing in railway tomes still available in libraries and other collections. It proves to be a problem to include the vast scope of such terms and classify and arrange the categories of those terms.

This coverage will offer a four-part classification (greatly aided by Kitchenside and Williams). The coverage divides Signals into Running and Subsidiary forms. Running Signals include those affecting train movements on running or main lines. Subsidiary forms include shunt operations and other movements though not part of running operations. The term Running Signal is sometimes employed in the U.S. though not subsidiary. Nonetheless, it is a workable schema for many forms of Signals. However, other Signals fit less well into running and subsidiary. Two additional categories are required: Yard, Station, and Miscellaneous Signals, and Message-related terms. Yard and Station terms refer to running situations yet are apart form actual mainline operations. Admittedly, this is a point that can be debated. There are also miscellaneous terms that prove difficult to assign to any other category. Finally, there are messages terms applied to Signals which thereby become morphological. The line between messages and message-morphological terms can be narrow and tentative.

1D1 Running Signal Terms

General Note. An abundant and diverse array of terms are employed for Running

Signals. Some are current, some obsolescent/obsolete. Sub-terms and permutations of many forms are employed as well. This coverage includes many terms with an emphasis on core terms. Sub-terms; variant forms will frequently be attached to core terms. Definitions will be based on major practice; References to more peripheral meanings will be included to some degree. The coverage may possibly be comprehensive though it falls short of definitive.

The plethora of core running terms can be assigned to a few categories. These groups are not isolated monads but are often closely interrelated. Hence, the placing of Stop, Starting, Distant, other terms into one segment (1D1 b). Home Signals are included though not in the title.

1D1 a) Overarching Signal Terms

General Note. Some of the following terms are marginal at best. Possibly a subdividing of the terms into Overarching and sub- or near-Overarching groups may be in order though the number of terms and variants is limited and unable to be subdivided extensively.

RUNNING SIGNALS. These are signals for train operations on running (or main) lines. Such signals control, protect train movements of a through nature. K & W '63 views train operations as of two forms: running and siding operations. The term is common in UK and UK-influenced systems; it is also found on the continent of Europe and in some non-European systems though rare in North America

Reference: K & W '63, ERS-H

PRIMARY SIGNALS. This term is a translation into English of a German term by FRA. It is seemingly a synonym for Running or Main Signals. The Signals in question control main operations.

Reference: FRA-3.

RUNNING LINE SIGNALS. This variant form is found in South Africa. It is a more explicit version of the basic by its inclusion of the word Line. The word Line appears in words such as Lineside and is a synonym for Trackside. Line refers to Track.

Reference: South Africa General Appendix 1947.

COLOR LIGHT RUNNING SIGNALS. A term that all but explains itself. The basic term is augmented by the physical type of signals employed.

Reference: K & W '63

MAIN SIGNALS. This seemingly easy to explain term has multiple meanings. For ERS it is simply a synonym for Running Signals. FRA refers to UK signals by this term. According to FRA it means Home or Block Signals; but apparently not distant signals. UIC-CST sees a Main Signal as one with a clear indication that allows a train to continue or recommence its journey. Apparently a Signal with caution or stop indication is not a Main Signal..

References: ERS-H, FRA-3, UIC-CST.

MAIN LINE SIGNALS/MAIN-LINE SIGNAL. For K & W '63 this is apparently a synonym for Running Signals. Taylor hyphenates this term.

Reference: K & W '63

MAINLINE SIGNALS. This is employed by Union Switch & Signal. It is both a physical and a morphological term. It refers to Signals employed on main lines rather than to train yard and more restricted operations.

Reference: U S & S.

MAIN LINE RUNNING SIGNALS. For NSW this seems to mean Running Signals on Main Lines, or Running Signals - a category - on main or primary tracks. (which might imply that Running Signal might conceivably be found on other than main tracks).

Reference: NSW Rlways

MAIN RUNNING STOP SIGNAL. This term has a different meaning for K & W. This term refers to Main as the major or principal signal assemblage on a mast or gantry in which a second and different assemblage is added. The term on its surface seems to strongly suggest Main Line or simply Running Signal but with added emphasis.

Reference: K & W '63

1D1 b) Core Terms: Stop, Distant & Related Signal Terms

1) Stop Signal Terms

ADVANCE SIGNAL. This serves as Home Signal but is in advance. Creates short blocks so presence of train does not obstruct train operations in adjoining sections. Seems to be akin to Advanced Signal.

Reference: King '21

ADVANCED SIGNAL. This term, from a historic source, RSD 1911, appears to refer to an Outer Home Signal or equivalent. It allows a mini-block within the

regular block and thereby allows holding of train in block while main train operations continue in that block.
Reference: RSD '11.

BUFFER STOP SIGNAL. A Stop Signal not preceded by an Advance Signal.
Reference: A & W '91

COLIGNY-WELCH SIGNAL LAMP. Historic term. Lamp displayed arrows which distinguished Distant Signal from other forms.
Reference: Jackson '91

DEAD SIGNAL. Signal always at Stop indication. Signal crew could approve proceeding after stop made.
Reference: Jackson '91

FIXED STOP SIGNAL. Similar to Fixed Distant Signal.

HOME SIGNAL/HOME-SIGNAL. This signal is at the entrance to a block; it governs movements in that block and along that route. Some UK and derivative sources describe the Home Signal as the one attached to the first signal box. The Signal contains a stop message (as opposed to the UK form of Distant Signal which has caution messages only). Home Signal not included in ERS (Home Signal part of Stop Signal, which see; Stop Signal included in ERS. UIC-CST gives the Home Signal a reduced role of control for yard, station entrances but apparently not for block entrances. The hyphenated form is from UN 1954.
References: K & W 1963, ERS-H, UIC-CST, Allen 1952, Armstrong 1957, numerous other sources.

INNER HOME/OUTER HOME. Abbreviated versions of basic terms.
Reference: Taylor

REAR HOME SIGNAL. NY Muncipal Railway employed this signal in lieu of Distant Signal of other railroads.
Reference: King

RED BOARD/RED EYE. Colloquial terms for Stop Signal.
Reference: Jackson '91

SIGNAL, HOME. AAR-SM 1983, ARSPAP-D places the universal before the particular for a variety of terms including this one. The meaning is not thereby altered.
Reference: AAR-SM 1983, ARSPAP-D.

OUTER HOME SIGNAL/INNER HOME SIGNAL/INTERMEDIATE HOME SIGNAL. "Sub-terms" employed where heavy traffic, or long blocks required more nuanced messages; in effect creating sub-blocks.
Reference: SA - S.I.

SECOND HOME SIGNAL/THIRD HOME SIGNAL/ HOME No 1/HOME No 2. Some systems refer to multiple Home Signals by simple numeration instead of word forms such as Outer and Inner.
Reference: K & W, Queensland, Western Australia.

SPLITTING HOME SIGNAL. A Home Signal for denoting diverging routes. This Signal may be more appropriate with Route and Junction Signals.
References: K & W '63

SPLITTING SEMAPHORE. A permutation of the basic term that includes physical apparatus.
Reference: Taylor '49

SPLITTING SIGNAL. Junction of main and branch lines requires two Signals termed Splitting Signals. Such Signals can take form of Splitting Home, etc Signals..
Reference: Taylor '49

STOP SIGNAL. A term of possible confusion. Stop Signal can have the meaning of a stop indication. But in some usages it refers to a Signal whose indications contain a stop message (as well as a clear message). UK and derivative systems, as with some systems on the continent of Europe include this Signal. Seemingly not employed in U.S. K & W lists two forms of the Stop Signal: Home and Starting Signals. UIC-CST gives more prominence to Stop than to Home Signals. The Signal controls entrance to a block.
References: K & W '63, UIC-CST, ERS-H

COLOR LIGHT STOP SIGNAL/AUTOMATIC STOP SIGNAL/SEMAPHORE STOP SIGNAL/A.P. PERMISSIVE STOP SIGNAL. Variant terms for the Stop Signal.
References: India except 3rd term which is K & W '63

UP, DOWN DISTANT, HOME STARTER, ADVANCED STARTER. UK lines were historically often double track and complete Signaling required for both up line and down line.
Reference: Taylor '49

2) Starting Signal Terms

STARTING SIGNAL. Various UK, Empire/Commonwealth, UK-derivative systems have employed a second form of Stop Signal known as a Starting Signal. While the Home Signal is the first stop signal in a block, the Starting Signal is the last Signal under control of a signal box.

References: WA Rlwys

STARTER SIGNAL. This is seemingly a synonym for Starting Signal.

Reference: Allen '52

ADVANCED STARTER/ADVANCED STARTING SIGNAL/ADVANCE STARTING SIGNAL. Sub-terms employed where heavy traffic or long blocks require more nuanced messages; in effect they create sub-blocks allowing additional train(s) to enter a block already occupied.

References: VR, SA-S.I., SA-BBB

SECTION SIGNAL. According to A & W this is an alternate name for Starting Signal.

Reference: A & W '91

STARTER SEMAPHORE/ADVANCED STARTER SEMAPHORE. Variant terms of the same meaning.

Reference: Rushworth.

3) Distant Signal Terms

AUXILIARY SIGNAL. Old name for Distant Signal.

Reference: Jackson '92

DISTANT SIGNAL. This Signal serves as an advance signal to Stop (& Home) Signals. It is at the braking distance from the Stop Signal. UK & derivative versions give a caution message only while UIC-CST states that it has the messages of the Stop Signal. That is seemingly US practice as well.

Reference: UIC-CST, K & W '63, HDS

DISTANT SEMAPHORE SIGNAL. Variant form that incorporates type of Signal into title.

Reference: King '21

DISTANT (WARNING) SIGNAL. For UIC Warning Signal is synonym for Distant and perhaps applicable here.

Reference: Wehner '81

FISHTAIL. Informal term for Distant Signal.

Reference: Jackson '92

FIXED DISTANT/FIXED DISTANT. Refers to Distant Signal in fixed danger position. Denotes speed or other change in train operations (passing loop, passenger platform).

Reference: Jackson '92

HALL DISTANT SIGNAL. Historic term that includes manufacturer's name in title.

Reference: King '21

SIGNAL DISTANT/ DISTANT-SIGNAL. Variant forms of the core term with the same or similar meaning.

References: Alkmaar, AAR-SM '83, K & W '63

WARNER SIGNAL. A synonym for the Distant Signal. It is included in UN 1954, and employed in Pakistan. Origin of the term is unknown.

Reference: UN '54, Pakistan Rlwys

WARNING SIGNAL. Synonym for Distant Signal in UIC-CST (possibly also in ERS). Note: This term describes a form of Subsidiary Signal as well which see.

Reference: UIC-CST

OUTER DISTANT SIGNAL, INNER DISTANT SIGNAL/INTERMEDIATE DISTANT SIGNAL/SECOND DISTANT SIGNAL. Sub-terms employed where heavy traffic, or long blocks require more nuanced messages; in effect creating sub-blocks to increase train movements in a given block.

Reference: NSW Rlwys, Taylor '49 (last term)

POWER-OPERATED DISTANT SIGNAL/SEMAPHORE DISTANT/DISTANT SIGNAL COLOR LIGHT/COLOR LIGHT DISTANT SIGNAL. Distant Signal terms with qualifying words attached to core term.

References: B & M '81, K & W '63

ADVANCE SIGNAL. Synonym for Distant Signal in UIC-CST, ERS.

References: UIC-CST, ERS-H

APPROACH SIGNAL. Synonym for Distant Signal in FRA-3.
Reference: FRA-3.

UNWORKED DISTANT SIGNAL. This term appears in UK Military 1955 and K & W. It refers to Distant Signals not in operation or in operation but according to a fixed, unvarying pattern. UK Military speaks of large Warning Boards at unworked Distant Signals while K & W speak of Distant signal fixed at caution indication.
Reference: K & W 1963, UK Military 1955.

SIGNAL, DISTANT. Application placed under heading of Signal; may not be accurate to speak of Signal in that form though ARSPAP-D often places general before particular.
Reference: AAR-SM '83

SPLITTING DISTANT SIGNAL/SPLITTING DISTANT. A Signal denoting divergent routes; may be more appropriate if assigned to Route and Junction Signals. A & W omits Signal from term.
References: K & W '63, Nock '80, A & W '91

1D1 c) System Terms

ABSOLUTE SIGNAL. Signal within Automatic Block Signaling. One train permitted at a time in block.
Reference: King '21

ADVANCED SECTION SIGNAL. Older name for what became Intermediate Block Signal.
Reference: Vanns '97

AUTOMATIC BLOCK SIGNALS. See Automatic Signals
Reference: King '21

AUTOMATIC SIGNALS. Signals activated by train movements via track circuit.
Reference: REMC '48

BLOCK SIGNAL. Block System indicates a system of interconnected Signals which include physical Signal, messages, control system. The term Block Signal denotes Signal and its specific function though the line between system and morphology is narrow. Signal, Block is supplied by ARSPAP-D. The definition is that of Signal, home (which see) in the same publication except that the reference

to route is deleted.
Reference: ARSPAP-D, Bisset '90, Ellis '66

BLOCK & INTERLOCKING SIGNALS. In Canadian practice this term refers to Aspects & Indications; that is, Signals as conveying units of information. Canadian Signals (in both senses) are organized into block and interlocking patterns.
Reference: Canada UCOOR 1961.

CONTROLLED SIGNAL. A form of Absolute Signal whose operation is operated by a control operator. A term originating with Chicago and North Western Transportation Co.
Reference: Kanner '92

HOLDING SIGNAL. Block entrance signal that governs train movements entering, running in that block, route. The same as a Block Signal except that it can refer to Holding Signal as well.
Reference: AAR-SM '83

INTERLOCKING DWARF SIGNAL. The basic term is augmented by type of function..
Reference: King '21

INTERMEDIATE BLOCK SIGNAL (IBS). Term refers to Signals which create shorter block sections by adding signals on long blocks. In effect, they offer additional Advanced Starting Signals. Such signals were sans signalbox and were functioning as Automatic Signals.
Reference: K & W '63, FRA-3, ERS-P, Vanns '97

INTERMEDIATE SIGNAL. In New Zealand practice these are Signals that divide a block into small segments. The Signals usually display "Stop & Proceed" indications.
Reference: NZ Rlways

INTERLOCKING SIGNALS/SIGNALS, INTERLOCKING. These are Signals governing train movements within the boundaries of an interlocking, or operations into an interlocking.
Reference: FRA-3, King '21

PERMISSIVE SIGNAL. Additional trains permitted in block. Part of Automatic Signaling. However for Jackson this term is an old name for Draw-up Signal which see.

References: King '21, Jackson '91

SEMI-AUTOMATIC INTERLOCKING SIGNAL. Semi-Automatic Signal placed in interlocking configuration.

Reference: King '21

SEMI-AUTOMATIC SIGNALS. Signals activated both by control center and by trains and track circuits.

Reference: REMC '48

1D1 d) Route & Junction Indicators/Signals

1) Basic Terms

DIRECTING SIGNAL. Alternate name for Junction Signal.

Reference: A & W '91

DIRECTION INDICATOR. A synonym for Junction Indicator, Route Indicator.

Reference: Allen '82

ENTRY (ROUTE) SIGNAL/ENTRY (ROUTE) LIGHT SIGNAL. Signals refer to Soviet practice. Both forms are in context of Route Signals.

Reference: Kharlovich

FEATHERS. Colloquialism for Lunar Light (also employed for crossed bars on unused Signal).

Reference: Jackson '91

JUNCTION INDICATOR/JUNCTION SIGNAL. The first is seemingly a synonym for Route Indicator, Direction Indicator which see. The second term is probably similar in meaning. It denotes a divergent route from the mainline; probably a synonym for Junction, Route, Directional Indicators as well.

References: UIC-CST, Hammond '64, K & W '63, Nock '80 (2nd term)

ROUTE SIGNAL. This term refers to South African practice. It is the equivalent of Route or Junction Indicator. Not to be confused with Route Signalling.

Reference: SA-BBB

ROUTE INDICATOR. An indicator at a Junction or Turnout Signal. Route Indicators are attached to a Signal and multi-routes can be so covered by varying the indicator message. Junction indicator is seemingly a synonym. Route/Junction Indicators can be viewed as physical entities/terms as well.

Reference: Allen '52, Blythe '51



ROUTING SIGNALS. Seemingly the equivalent of Route or Junction Indicators. It is employed with Semaphore Signals in Queensland (though not of a Semaphore form).

Reference: Q Rlwys

TURNOUT SIGNAL. Seemingly a variant term for Junction Signal. It denotes divergent routes.

References: Queensland, New South Wales.

2) Other Route & Junction Terms

General Note. There are additional terms referring to these entities. Most are from manufacturing concerns and probably closer to physical Signal configuration than to morphology. Since they manifest some morphological dimensions they are included. Route Indicators constitutes one of those terms with a morphological name that also denotes a physical unit. Notes are selective only.

'ARBOUR LIGHTS/HARBOUR LIGHTS. Colloquial terms for Junction Route Indicators.

Reference: Jackson '91

BANJO. UK Shunt that resembles a banjo.

Reference: Jackson '91

5-LIGHT JUNCTION INDICATOR. Core term is supplemented by technical details of Indicator.

Reference: Nock '80

FOUR-WAY SHUNTING SIGNAL. The specific directions are incorporated into the Signal's name.

Reference: A & W

JUNCTION SEMAPHORE. A historic term tying morphology to physical apparatus.

Reference: REMC

LUNAR LIGHTS. Informal term denoting Route Indicator combined with Color-Light Signals. 'Arbour Lights can also refer to this.

Reference: Jackson '91

POSITION LIGHT JUNCTION INDICATOR

References Include: Western Australia, Westinghouse Brake & Signal, Westinghouse Signals.

RIGHT-HAND JUNCTION INDICATOR. Signal includes specific configuration in title.

Reference: A & W

STENCIL ROUTE INDICATOR/ROUTE INDICATOR STENCIL LIGHT

References: New South Wales, Queensland, Westinghouse Signals, Westinghouse Brake & Signal, GEC

DIRECTIONAL ROUTE INDICATOR

Reference: GEC.

LOW SPEED ROUTE INDICATOR

Reference: GEC

SHUNT ROUTE INDICATOR

Reference: GEC

THEATRE-TYPE ROUTE INDICATOR/THEATRE MULTI LAMP ROUTE INDICATOR

Reference: GEC

MULTI LAMP ROUTE INDICATOR

Reference: Westinghouse Signals

TOTON ROUTE INDICATOR. It is not clear if 'Toton' is a brand name or has reference to some Signaling function. This Indicator is employed for shunting and other low speed situations.

Reference: Tyer & Co.

TWO-WAY JUNCTION INDICATOR.

Reference: A & W

TWO-WAY STENCIL INDICATOR.

Reference: A & W

1D1 e) Other Signal Terms Pertaining to Running Operations

AB ENTRY SIGNAL. A Queensland Railways term. The term is possibly the equivalent of Home Signals in other block systems since it controls train



movements into the block.

Reference: Queensland Rlwys

BACKING SIGNAL. Probably historical. A Signal denoting wrong-direction train movement. It consists of a modified Semaphore.

Reference:

NON-STOP PERMISSIVE AUTOMATIC SIGNAL. A form of Permissive Automatic Signal that is akin to a Grade Signal rather than a Stop-and-Proceed thereby eliminating a stop.

Reference:

WRONG ROAD SIGNAL/WRONG-ROAD SIGNAL. A separate Signal or supplementary indication warning a train crew they are on the wrong road. South Africa TWA offers a hyphenated version.

References: S.A SSS, TWA, UIC-CST

STATION PROTECTION SIGNALS. Signal with Stop & Proceed Indication. Protects trains on main tracks at stations, yards. Marker board (black on yellow) displays letters SPS, attached to signal mast.

Reference: Canada

PLATFORM SIGNALS. Queensland. Signal denotes whether or not a train "is to stop" at the platform. Signal does not afford protection for a stopped train.

Reference: Queensland Rlwys

PRECAUTION SIGNAL. Platform Line Signaling indication platform line partially in use and early stop required (when at danger).

Reference: Jackson '91

PROTECTING SIGNALS. Signals provided at grade/level crossings.

Reference: Leach '91

REPEATING SIGNAL. Seemingly a synonym for Repeater Signal. Two surveyed sources include the term.

References: UK Military 1955, Japan

REPEATER SIGNAL. A Signal that repeats signal message when primary signal is affected by restricted visibility.

Reference: UIC-CST, Schwile

REPEAT SIGNAL. Queensland employs this term for what are otherwise known

as Repeater Signals.
Reference: Queensland Railways.

BANNER REPEATER SIGNAL. This term is of UK provenance. It consists of a short arm in a glass-fronted case. It replicates regular Signal messages further down the track.
Reference: K & W 1963.

ELECTRIC REPEATER SIGNAL. For Queensland this Signal is for signal cabin crews in situations where the primary Signal cannot be seen from the cabin. Repeaters in other situations are for train crews that can only be seen for a short distance thereby requiring a repeater (known as Repeat Signals in Queensland which see). Q. Rlws also has a Signal with Repeat Arm but this is the equivalent of a Co-Acting Signal.
Reference: Queensland Railways

TUNNEL SIGNAL. Quite simply, a Signal designed for tunnel usage. During the era of Semaphore Signals, a variant form with moving spectacles (but w/o blades) was devised for tunnels; darkness allowed colored lights to be seen at all times even if the light source was weak.
Reference Hammond '64

TUNNEL JUNCTION SIGNAL/TUNNEL REPEATER SIGNAL. These terms are from UK--London Transport, which has many tunnels. These Signals are for that specialized environment.
Reference: K & W 1963.

TONNAGE SIGNAL. A Signal that stops a train of great weight except when a "full clear indication" is present. The Signal prevents such a train having to stop on a steep grade.
Reference: NSW Rlws

GRADE SIGNAL. A signal permitting heavily loaded trains to proceed under "Stop and Proceed" indication. Number plate has "G" stamped on it.
Reference: Armstrong 1978

CO-ACTING SIGNAL. A term from UK and allied systems. Hard to see signals may display double signal apparatus on one mast: one unit at low level, one much higher. This practice was employed with Semaphore Signals. It can be regarded as a form of Repeater Signal which see.
Reference: K & W 1963



CO-ACTING ARMS. This term has meaning of Co-Acting Signal which see.
Reference: A & W

PROTECTION SIGNAL. A practice in some European systems in which separate Yard Exit Signals assigned to each track.
Reference: ERS

YELLOW GROUND DISC. Debatable whether the yellow is part of the title; at least a descriptive heading.
Reference: A & W'91

Terms in Combination:

General Note: Some forms of Signals are combined in some systems. The following material is from UN '54.

WARNER & HOME
WARNER HOME & STARTER
WARNER HOME STARTER & ADVANCE STARTER
OUTER HOME AND STARTER
OUTER HOME WARNER STARTER & ADVANCED STARTER

1D2 Subsidiary Signal Terms

1D2 a) Overarching Terms

SUBSIDIARY SIGNAL. K & W '63 divides all Signals into Running and Subsidiary forms. The second form includes all Signals not part of running operations; many of which are shunt/switch types. This may constitute the sole term encompassing non-mainline forms.
Reference: K & W '63

1D2 b) Switch Indicators/Signals & Points Indicators/Signals

CATCHPOINT INDICATORS/RUNAWAY CATCHPOINT INDICATORS/INDICATORS FOR RUNAWAY CATCHPOINTS. For NZ catchpoints are installed to block runaway railway cars. While Queensland apparently sees the CP as denoting siding clearance points.
References: Western Australia, New Zealand, Queensland, W.A, M & H

COLOUR LIGHT POINTS INDICATOR. The specific physical dimension is

included in the name. For W.A. PI without a qualifier in the name refer to Mechanical P.I. forms while the qualifier denotes all-lighted versions. Other systems, including possibly NZ, may employ a similar name without necessarily following that pattern.
Reference: W.A., NZ.

ELECTRIC POINT INDICATOR. This form is fully lighted. This term may distinguish fully-lighted from partly lighted and mechanical versions.
Reference: NSW Rlwys

ELECTRIC CATCHPOINT INDICATOR. This term, from NSW, may possibly distinguish this form from mechanical forms. There is a physical dimension present in the term though it is largely morphological in character. See also Catchpoint Indicators.
Reference: NSW Rlwys

FACING POINTS INDICATORS. Facing Points Indicators obviously denote Facing Points and how they are set: whether principal line or a secondary line.
Reference: Blythe 1951, NZ Rlwys

MECHANICAL POINTS INDICATOR. This term describes Partly-lighted Indicators including lights, lighted arrows, painted targets. Some forms revolve and are employed for several roles including denoting catch-points, points, derails.
Reference: UIC LGTF, NSW.

POINTS & INDICATORS. These indicators (also termed signals) are markings for points and include a diverse group that numbers unlighted, partially- and fully-lighted mechanisms. Most are Two-position Signals and denote whether the main or branch line is open. Points are tapered rails at the beginning of a branch track adjacent to a main track. A switching mechanism can so adjust points that a train can travel either on the main track, siding or other ancillary track.
Reference: Part F, '91.

POINTS INDICATOR. Point Indicators denotes how points are set. The Indicators are connected to the points they serve.
References: WA, Queensland Rlwys

POINTS SIGNAL/SIGNAL POINTS INDICATORS. These terms from UIC-LGTF are not defined (LGTF is more of a word list than dictionary). It is presumably a basic term for signals and indicators attached to points and indicating their state.

Reference: UIC LGTF 1975.

POINTS INDICATOR--CHEVRON TYPE/POINTS INDICATOR--ARROW TYPE. Queensland terms. Both forms include the distinctive character of the message in the name. The chevron form is lighted; the arrow form is unlighted but reflectorized.
Reference: Queensland Rlwys

SWITCH INDICATOR. An equivalent term for Points Indicator. It is employed in the Americas and also South Australia/Australian National Railways. Note: S.A. refers to tall Switch Indicators as Switch Stands.
References: SA

TRAP POINT INDICATOR. This term indicates the location of Trap Points (Derailing Switches) thereby protecting mainline.
Reference: NZ

1D2 c) Shunt Signal/Indicator Terms

General Note. Shunt/Shunting Signals/Indicators constitute a fairly narrow scope of operation. This results in an expansive General Note and individual entries that are brief. These terms are largely found outside the Americas. A standard dictionary speaks of shunt as having the meaning of changing or switching from one track to another. But that could also mean running operations. Shunting refers to low speed operations. These operations may take place in yards, on sidings, between running lines or even on running tracks. ERS notes that running signals keep trains apart while shunting brings train together: adding train cars together, rearranging trains and individual car configurations and related operations.

Speed (low) and bringing of cars together may be more important in explaining shunting than where it takes place. Many forms of Signals may be involved. signal lens on a running signal mast, independent Signals whether dwarf or standard, obsolescent Signals as well new forms can all be involved. North American operations have switching operations at low speeds constitutes shunting type operations even if not by that name. A possible point of confusion is the use of Switch Signals or indicators in place of points indicator in North America. Yet the word switching attached to Signal or Indicator is the North American term for many shunting operations.

Shunting terms are divided into overarching terms, physical terms, and function or sub-function terms.

1) Overarching Shunting Terms

SHUNT INDICATOR. This may constitute a sub-overarching term since most Shunt aids employ the term Signal. There may not be a hard and fast rule between indicator and signal. Signal, even if very small, allow of various messages, while indicators may be restrictive in what message can be conveyed. That is an uncertain distinction since some Points Indicators are modern Color Light Signals. Though in those cases only a restricted range is possible. This term, from Westinghouse Brake and Signal is a rare usage though it seems plausibly an overarching and general term.

Reference: WBS

SHUNT SIGNALS/SHUNTING SIGNALS. These terms are seemingly interchangeable. The terms appear in UK, Australia, and English-language publications including ERS, UAR and UN 1954. The coverage of the General Note applies here.

SIGNALS FOR SHUNTING/SIGNALS FOR SHUNTING MOVEMENTS. These more formal terms are interchangeable with the basic terms. The former is from the Gt Peninsula Railway of India in the 19th century; the later term is from NSW.

Reference: Gt Pen., NSW.

SWITCHING SIGNAL. A translation from the German in FRA-3. This reflects North American practice; Shunting Signal would be more accurate for Germany.

2) Physical Shunting Terms.

General Note. When a physical term (type of light, size of unit, motive power, etc) is attached to Shunt Signal then that Signal is included here. The term remains morphological through the use of the word shunt though the qualifier is a physical signal term.

DISC SHUNT/DISC SHUNTING SIGNAL/SHUNTING DISC SIGNAL. A nearly self-explanatory term. Disc though can have two forms: a disc whose face turns, or a disc that revolves. To some degree revolving signals, displaying discs or other message arrangements can be referred to as mechanical shunting signal. NSW and Pakistan employ the captioned terms.

References: Pakistan Rlwys, NSW Rlwys, K & W '63, A & W '91

GROUND SHUNT SIGNAL/SHUNTING GROUND DISC. A Signal built low to the ground. It could be termed Dwarf as well.



References: ERS, K & W '63

MECHANICAL SHUNTING SIGNAL. A Signal with moving parts in its message displaying dimensions. Very often the entire unit revolves.

Reference: K & W '63

POSITION LIGHT SHUNT/POSITION LIGHT SHUNT SIGNALS/SHUNT POSITION LIGHT/SHUNT SIGNAL (POSITION-LIGHT). All of these terms speak of the physical light apparatus. To be sure it also affects the morphology of the entity though the physical remains prominent.

References: ERS-H, K & W '63, Westinghouse Signal, UAR

POWER-OPERATED SHUNT SIGNAL. An all-lighted Signal displaying messages by fixed lights only.

Reference: K & W '63

DWARF SHUNT/SHUNT DWARF. These are seemingly general terms though few of the surveyed sources employ them. They take the form of a miniature semaphore signal. Pakistan employs the first form; Taylor '49 includes the second.

Reference: Pakistan Rlwys, Taylor '49

SHUNT LIGHT/SHUNTING LIGHT. Variant forms of the basic term of Shunt Signal.

Reference: Queensland Rlwys

3) Function-related Shunting Signal Terms

BACKING SIGNAL. A Shunt Signal allowing shunting in the wrong direction.

Reference: K & W '63

CALLING-ON SIGNAL. A Shunt Signal that permits train to enter occupied platform as far as the track is unoccupied. Signal shares mast with home signal. When caution lit then train can proceed.

Reference: K & W '63, NSW

CLOSE-UP SIGNAL. For NSW this refers to a Subsidiary Signal for shunting. It indicates movement allowed to next stop signal only. (Movement allowed, that is, when signal at clear).

Reference: NSW

DRAW-AHEAD SHUNT/DRAW-AHEAD SIGNAL/DRAW-AHEAD POSITION-LIGHT SUBSIDIARY SIGNAL. Draw-Ahead Signal is a Shunt

Signal that is attached to a Starting Signal. It denotes approval for moving engines, cars from platform to platform or to sidings. A & W regards the Signal as another name for Calling-on Signal. The final form is usually a darkened except when needed for operations. Limit of Shunt Signal indicates boundaries for shunting operations on wrong roads (incoming line when shunting is outward bound). Set-back Signal needed for "setting back into the platform."
Reference: Nock 1980, A & W '91, Taylor '49

ELEVATED SHUNTING SIGNALS. Signal mounted on a mast. Controls shunt operations from running line to siding (and v.v.).
Reference: A & W '91

FACING SHUNT SIGNAL. This term indicates limits of necessary shunting on incoming track.
Reference: Nock '80

HIGH SHUNTING SIGNAL. Italian Shunt Signal on relatively tall mast without Running Signal attached.
Reference: ERS

HUMPING SIGNAL/HUMP SHUNT SIGNAL. Signals that controls train speed for passing over shunt humps in train yards.
Reference: K & W '63

INDEPENDENT SHUNT SIGNAL. A free-standing unit as opposed to a Shunt Signal attached to the mast of a Running Signal.
Reference: ERS-H

LIMITS OF SHUNT SIGNAL. Signal indicates boundaries for shunting operations on wrong roads (incoming line when shunting is outward bound).
References: Nock '80, A & W '91

MAIN/SHUNT SIGNAL. Apparently Main and Shunt Signals combined with in a form of electronic signaling control.
Reference: NS Samples

MINIATURE ARM SHUNTING SIGNAL/MINIATURE ARM SHUNT SIGNAL. Signals employing small Semaphores for shunting operations.
Reference: A & W '91

RUNNING SHUNT SIGNAL. A Spanish Signal listed in ERS but with little explanation. Possibly a Shunt Signal mounted on running lines for shunting

needs.
Reference: ERS-H

RUNNING SUBSIDIARY SHUNT SIGNAL. Signal may be similar to Subsidiary Shunting Signal which see.
Reference: A & W '91

SET-BACK SIGNAL. Term describes Signal needed for "setting back into the platform."
Reference: Nock '80

SHOT SHUNTING SIGNAL. This signal display a Stop or Proceed message for shunt or train movements. Train movements require a departure indication along with proceed message.
Reference: UIC-CST

SHUNT AHEAD SIGNAL/SHUNT-AHEAD SIGNAL. Subsidiary Signal for Shunting. Allows passage of Stop Signal for shunting.
References: NSW Rlwys, Queensland Rlwys

SHUNT ROUTE INDICATOR. A cross-reference with Route/Junction Indicators. It is, obviously, a Route Indicator dedicated to shunting operations.
Reference: GEC.

SUB-SHUNTING SIGNAL. This Signal is attached to a Shunting Signal. It displays a flashing light and indicates that a small engine can move forward just far enough to clear points or to attach itself to another engine.
Reference: NSW Rlwys

SUBSIDIARY SHUNTING SIGNALS. In NSW this refers to a Shunting Signal attached to a signal mast of a Running Signal. The Shunt Signal is subsidiary to that other entity.
References: NSW Rlwys

SIDING SHUNT SIGNAL. A Spanish Signal illustrated in ERS but with little explanation; possibly a Shunt Signal to a siding mounted on a running line.
Ref: ERS-H

WARNING SIGNAL. A form of Shunt Signal at least in UK. Shunting permitted in occupied area upon giving of warning of situation..
Reference: K & W '63.

1D2 d) Siding, Train Yard & Other Signals

GOODS OR SIDING SIGNAL. Term from South Africa practice. It is a Signal denoting freight lines or siding. When in semaphore form the blade is altered in order to be easily distinguished from Running Signals.
Reference: SA- TWA.

HUMP SIGNAL/HUMPING SIGNAL. Signals that control train speed for passing over shunt humps in train yards.
Reference: ARSPAP-D, AAR SM '83, UIC

LEAVE SIDING INDICATOR. This is the counterpart of Take Siding Indicator. The perspective is from the siding and the Indicator indicates clearance onto the main line.
Reference: AAR SM '83.

MARSHALLING YARD SIGNALS. Term from AZD in Czechoslovakia. These are Signals that control, direct train operations in a marshalling (or train) yard.
Ref: AZD.

OUTLET SIGNAL. Signal that controls exit from siding, goods loop.
Reference: A & W '91

SIDING SIGNAL. Signal controlling movements involving sidings: sidings to main tracks, main to siding, in sidings, between running lines. This specific signal form is found in NSW. Queensland has a more restricted version for main to siding only.
References: NSW Rlwys, Queensland Rlwys

TAKE SIDING SIGNAL/TAKE SIDING INDICATOR. AAR SM 1983 describes the first term as an Indicator displaying a message to a train on mainline to move to siding. The second term is seemingly a synonym for the first term. ARSPAP-H refers to the second term without defining it.
References: AAR SM '83, ARSPAP-H

YARD EXIT SIGNALS. Term is of UK provenance. Semaphore Signal denoting this function has special appearance (ring on semaphore blade). Signal employed on some goods lines as well.
Reference: K & W '63.

DEAD-END SIGNAL. This is a form of Shunting Signal. It is affixed to the

Running Signal post. It controls train movements to yard or dead-end siding.
Reference: NSW Rlwys

DIRECTING SIGNAL. A Train Yard Signal which provides direction to points in the yard (platform, sidings, etc). In some instances these Signals are Shunting Signals.
References: WA Rlwys, NZ Rlwys

TERMINAL SIGNAL. Seemingly Train Yard Signals for caution, low speed operations both shunting and other forms.
Reference: Nock '62

✓ *save one* 1D3 Message-Related Signal Terms

General Note. Messages (more correctly, Indications) are occasionally added to the term Signal. Signal may refer to the Physical Signal or to semiotic/communications meanings. This coverage lists Signals with attached messages without adding meaning (since the meaning of messages is taken up in that sub-chapter).

ABSOLUTE SIGNAL

ALL RIGHT SIGNAL

CAUTION SIGNAL

CAUTIONARY SIGNAL

—acceleration signal

PERMISSIVE SIGNAL

PERMISSIVE STOP SIGNAL

PROCEED SIGNAL

1D4 Miscellaneous Signal Terms

ACCEPT SIGNAL/ACCEPTING SIGNAL. NSW term. It is exit end Signal for an automatic signalling block.
Reference: NSW

APPENDANT SIGNAL. A form of Subsidiary Signal in Japan. It includes Route Indicator and Advance Route Indicator. Possibly it belongs to Route/Junction segment save for its designation as Subsidiary. Appendant has meaning of appendage; possibly auxiliary or perhaps subsidiary.
Reference: UN '54, Japan

ARRIVAL SIGNAL. Terms refer to Automatic Signals at entrance to crossing stations. They are found outside crossing loop points.
References: Western Australia, New Zealand.

DECELERATION SIGNALS. Signal within French high speed system. Refers to Signal ordering a lowering of speed.
Reference: Allen '83

DRAGGING EQUIPMENT SIGNAL. This is actually a Sign attached to Signal Mast. It displays the letter "E" and indicates crew to check for dragging equipment.
Reference: B & O '53.

INTERMEDIATE SIGNAL. For B & O this refers to an Automatic Block Signal accompanied by Marker Board. Possibly equivalent of Intermediate Block Signal?
Reference: B & O '53

OUTER SIGNALLING. Refers to Outer Distant and Outer Home Signals in South Africa.
Reference: Starkey '43

PLATFORM LINE SIGNAL. Little information given in A & W.
Reference: A & W '91

REVERSIBLE ROAD WARNING. Older name for Bi-Directional Signalling.
Reference: A & W '91

SNOW SHED TERRITORY WITH C.L. SIGNALS. This is not actual Signal term since mechanism activate Signals though not a Signal in itself.
Reference: ARSPAP-H.

SLIDE DETECTOR FENCE. Activated Signal circuits but not Signal in itself.
Reference: ARSPAP-H.

STATION DEPARTURE COLOR-LIGHT SIGNAL. Presumably denotes safe passage from station to departure to mainline.

Reference: REMC '48

SUBSIDIARY SIGNAL. UK and UK-derivative, influenced systems. It includes Shunting and other movements of a non-running nature (including such functions on running lines). It is a kind of OA term for non-running signal terms.
Reference: K & W '63

TEMPORARY SIGNAL. Signals employed to protect railway line during construction or other temporary situation. Signals may include Semaphores, flags.
Reference: Gt Indian Peninsula Rlwy

TRACK OCCUPANCY OR DEPARTURE SIGNAL. Swiss Railways include a third form of signal aspect indicating that track is occupied; it also includes a calling-on function.
Reference: ERS-H and -B.

TROLLEY LINE SIGNAL. Historic term for signals operated by trolley electric wire contacts. One major brand, Nachod, is known as a Nachod Signal which see.
Reference: B & M 1981.

YARD TRACK SIGNAL. Signal denotes train assignment to track.
Reference: REMC '48

1E Systems (Alternate Title: Methods of Control)

General Note. The Database is about Signals, Signs, Markers. Systems are included since they have direct and immediate connections to Signals. Topics not having that degree of connection are not included. Topics of a more marginal nature may be included but in a more cursory manner. General Notes within the segments of this sub-chapter may explicate this statement more thoroughly.

1E1 Block System Terms

a) Block Overarching Terms

General Note I. The Database is concerned with terms relating directly to the forms of Transportation-Markings. However, there are terms closely associated with T-M forms even if not strictly -- in a sense -- T-Ms. Many such terms are found in Railway Signals. The various systems that arrange and operate groups of Signals are a close component of Signals and therefore terms relating to systems are included.

General Note II. Block Systems have been part of Railway Signals since early in the history of rail transportation and a plethora of terms have grown up that refer to Block systems. Many variant and local terms do not easily fit into the major categories of Block systems. The structured and rational outline of Block terms in this coverage may belie the messy and even uncertain character of many terms. An attempt has been made to respect the uneven and sometimes unclear nature of these terms, though an impression of more system than actual exists may persist.

General Note III. Many system terms are united with Signal terms. That raises a question whether the term is part of a system or is a morphological term. Signal terms united to a simple, unencumbered term (e.g. Block Signal) probably constitute a morphological term. But Signal terms associated with a specific system term in a plural form -- even if lacking a word such as System -- may be a system more than a morphology term; the boundary between them is often uncertain. For example, Manual Block Signaling may be a system term rather than a morphological term. Manual Block Signal, a yet more uncertain case, may tend more toward the morphological.

BLOCK SIGNAL SYSTEM. A means of train operation in or into one or more blocks by use of Signals. The Signals can be Block Signals or Cab Signals or both.

Reference: FRA-1

BLOCK SIGNALING/BLOCK SIGNALLING. These terms seem more akin to Block System or Block Signal system than to the morphological term of Block Signal. Signaling/Signalling suggests groups of integrated Signals. Blythe refers to Block Signal System and Block Signalling and these two usages strongly overlap if they are not actually identical. Armstrong refers to Block Signalling and Signal Systems together and the meanings seem interchangeable. References: Armstrong '78, Blythe '51.

BLOCK SYSTEM OF SIGNALS. Seemingly unique to Allen '52. It is the equivalent of Block Systems and similar terms. Reference: Allen '52.

SYSTEM, BLOCK SIGNAL. Some U.S. sources begin with general terms and then move to the particular. The meaning of this term is that of Block Signal System. Reference: FRA-3

BLOCK SYSTEM. A variant form of Block Signal System and a more abbreviated one. But it does include Signals. References: ERS, UIC-CST.

BLOCK WORKING/BLOCK-WORKING. This term is seemingly confined to U.K. (& derivative systems). It is an OA term that encompasses the working of blocks or train operations by Signals and other means. Instead of Block System or Block Signal System the expression Block Working is employed. Block Working, like Block System, has to do with separating and moving trains through Signals. References: Blythe '51, Nock '62, Corbin '22.

BLOCK. This term can refer to the physical entity of a section of track within prescribed limits and may contain track circuits. But a variety of sources regard train operations on that track controlled by Block Signals (and sometimes Cab Signals) as within the definition of Block. References: Phillips '42, AAR SM '83, AAR Standard Code.

BLOCK OR SPACE INTERVAL SYSTEM/SPACE OR BLOCK SYSTEM. A few sources in referring to Block Systems add the basic form underlying the Block: Space or Space Interval to Block. Space Interval will be considered in OA terms for Railway Signals, and Block Systems will be considered under that title. References: Blyth '51, Phillips '42, B & M '81.

FIXED BLOCK SIGNAL SYSTEM/FIXED BLOCK/FIXED-BLOCK/ FIXED-BLOCK SYSTEM. Fixed Block represents a simple distinguishing of

conventional blocks (fixed) from newer "moving blocks." The second and third terms listed above are variant forms.

References: C.S. '91, Pracht '92, Vantuono '93, Com... Based... '95

ADVANCED FIXED BLOCK/ADVANCED FIXED-BLOCK. A term referring to digital track circuits without Wayside Signals and centering on Traffic Control meanings. This term is distinguished from conventional Fixed-Block.

References: Vantuono '93, Pracht '92

CLOSED BLOCK SYSTEM. Vanns includes this term which refers to Signals kept at danger until train approaches and may refer to manual block rather than Automatic Block Signaling.

Reference: Vanns '97

ELECTRO-PNEUMATIC BLOCK SIGNAL SYSTEM. Occasionally terms include the motive power or principle of operations for Signals. This term from B & M is one such term. Electric motors and generators were not available at an earlier part of the 19th c. resulting in the creation of electromagnetic and compressed air powered Signals.

Reference: B & M '81

BLOCKING SIGNALS. Seemingly a variant form of Block Signals. Therefore a morphological term. But it is included as a cross-reference since it is a term that is based in Block Signal terminology.

Reference: AAR-USSR '60.

b) Manual Block Signal Systems

BLOCK-MANUAL. A term similar to Manual Block System. The term is employed in FRA. The means of communication not specified though communication in some form occurs between dispatchers.

Ref: FRA

COMPUTER-ASSISTED MANUAL BLOCK SYSTEM/COMPUTER-AIDED BLOCK SYSTEM. The first term refers to a component of a modular and micro-processor-based ATCS of RAC/AAR. Computers remove MBS from a traditional description of MBS. The second term refers to a similar -- if not identical -- system. It was begun before ATCS though it conforms to what is known as "ATCL-Level 10." CMBS adds computer checks on "train movement authorities" thereby ending human errors in dispatching.

Ref: Armstrong '86, Geddis '87

MANUAL BLOCK/MANUAL BLOCK SYSTEM. A series of blocks, whose used controlled (governed) by signals under manual operation. Information for signals supplied via telephone, telegraph or other communications means. UIC-CST refers to it as train operation system in which block instruments and Fixed Signals are manually operated ("operated by hand").

Ref: UIC CST, Phillips '42, AAR Standard Code.

MANUAL BLOCK-REMOTE CONTROL. A limited used system for single-track lines with moderate traffic. Relatively short-line system that employs CTC type control mechanism. Employs two-position Signals. How does it differ from CTC?

Reference: REMC '48

MANUAL BLOCK SIGNALING/MANUAL BLOCK SIGNALLING. This term is the equivalent of MBS. Signaling refers to a group of integrated Signals rather MB Signal which has more of a morphological character.

Reference: Armstrong '78, B & M '81 (Double L)

MANUAL BLOCK SIGNAL SYSTEM. MBS is the basic and common term. (MB is also frequently employed). Some sources, including AAR, add the word Signal which adds to the specificity.

Reference: ARSPAP-D

MANUAL BLOCK SIGNAL SYSTEM--SPACE INTERVAL. A few sources in referring to Block Systems add the basic form of Signaling underlying the Block System: Space Interval. One source took that approach with MBS as well. Space Interval is included in OA terms which see.

Reference: FRA-3

MANUAL BLOCKING. A USSR term via AAR 1960. It is seemingly the equivalent of MBS.

Reference: AAR-USSR '60.

MANUAL SIGNALLING. Alternate name for MBS. It is possible that UK sources more likely to omit Block in terms though they include use of Block Systems.

Reference: Vanns '97

c) Controlled Manual Block Systems

CONTROLLED MANUAL BLOCK/CONTROLLED MANUAL BLOCK SYSTEM/CONTROLLED MANUAL BLOCK SIGNAL SYSTEM/SYSTEM,

CONTROLLED MANUAL BLOCK/CONTROLLED-MANUAL BLOCK-SIGNALLING. A group or series of adjoining blocks under control (governed) by Block Signals. They are under the aegis of continuous track circuits. Operations under manual control based on information via telegraph, telephone, etc. System so arranged that it requires agreement of Signal crews at both ends of the block. The term Controlled Manual Block Signal System is sometimes employed by ARSPAP-H though CMBS is more common. ARSPAP-D places system first; hence the form, System, CMB. CMB can differ from MB in several ways. A key difference are the electric locks on the signal controls in CM. This requires release of Signals by the Signal operators at the block station at the opposite end of the block. Continuous track circuits in the block stop passage of trains from opposite directions. CM (and MB) are absolute or absolute-permissive in operation. Intermediate Automatic Signals are also possible. Kings gives hyphen form. References: Phillips '42, RSD '11, AAR SM '83, ARSPAP-D, ARSPAP-H, King '21

LOCK-&-BLOCK SYSTEM/LOCK & BLOCK SYSTEM/LOCK & BLOCK/BLOCK LOCKING. AAR SM 1983 labels the basic term of Lock & Block as a historical term for Controlled Manual Block. It is more of UK provenance than U.S. though employed in U.S. Shackleton notes L & B began before track circuits. They are seemingly automatic since trains activating treadles activated Signal box equipment. Block Locking is term from K & W which is an overarching term for various ways of interlocking of Signals, block instruments, tracks as a unit. A common form was Sykes Lock & Block System which see. References: K & W '63, AAR SM '83, Shackleton '76, Nock '62

SYKES LOCK & BLOCK/SYKES LOCK & BLOCK SYSTEM/SIEMENS & HALSKE LOCK-&-BLOCK SYSTEM. In Sykes L & B a Signal in a block is released electrically at next block; next box cannot release Signal until train has passed Signal. Then train activated treadle indicates it is beyond Signal; track circuit is sometimes substituted for treadle. The second term is a form of Lock-&-Block produced by the German firm of signal makers of Siemens & Halske. A version in the Netherlands adopted clear indications as the basic indication while the German form placed Signals at danger. References: K & W '63, Nock '62, Shackleton '76

c) Automatic Block Terms

ABS SYSTEM/ABSS/ABS. These acronyms have a measure of independent usage. See Automatic Block System, Automatic Block Signal System. Reference: AAR SM '83, ARSPAP-H, FRA-2

AUTOMATIC BLOCK/AUTOMATIC BLOCK SYSTEM/AUTOMATIC BLOCK SIGNAL SYSTEM. Train operation system in which movement of trains triggers signal indications. No manual operator for signals. Phillips 1942 notes that AB encompasses series of adjoining blocks. Some sources employ basic term of AB while others are more explicit and add System of Signal System. Reference: UIC-CST, FRA-3, Phillips '42.

AUTOMATIC BLOCK SIGNALING. FRA and others may omit the word System but the meaning remains the same as that of ABSS. Signaling suggests a integrated series of Signals. The slightly different Automatic Block Signals would appear to have a more morphological meaning (function applied to Signal rather than the suggestion of a system of Signal with accompanying messages). Reference: FRA-1

AUTOMATIC BLOCK SIGNALLING ON DOUBLE TRACK. King further differentiates the basic term by specifying the number of tracks. This is not a minor distinction: Signals are for trains all going in one direction per track. Reference: King '21

AUTOMATIC BLOCK SIGNALING ON SINGLE TRACK. Signals for directions of train operations are on one track. Reference: King '21

AUTOMATIC ELECTRIC BLOCK SYSTEM. In this term the "motive power" is added to basic term. This may have been added since it was the first all electric Signal system of this type. This system dates back to 1866. Reference: ARSPAP-H.

AUTOMATIC SIGNALLING. Alternate name for Automatic Block Signaling tht omits the word Block. Reference: Vanns '97

AUTO-MANUAL BLOCK SYSTEM. Also known as Semi-Automatic System. Signals in this formulation follow the Manual or Lock & Block pattern. However, Signals return to danger by train action which is automatic. Reference: ARSPAP-H.

BLOCK WITH CENTRALIZED EQUIPMENT/ CENTRALIZED AUTOMATIC BLOCK. A form of ABS in which control equipment is kept in an adjoining signal box. ERS-V refers to this as Centralized Automatic Block. The German form of the term is Zentralblock. References: UIC-CST, ERS-V.

CODE TRACK AUTOMATIC BLOCK/CODED CURRENT AUTOMATIC BLOCK. This form of AB uses coded currents for a variety of messages. Messages for Signal indication can be conveyed by using different frequencies or current can be de-energized or de-coded by a "code transmitter." In this case the number of interruptions in the current constitutes the specific code. There are several forms including some older forms as well as more recent variants. References: ERS, Phillips '42, Henry '41.

CONTROL SYSTEM FOR SINGLE-TRACK SIGNALING. For REMC this is a category with Automatic Block Signaling. It describes details of that form of operation. Reference: REMC '48

DOUBLE-TRACK BLOCK SIGNALLING. Signals for one direction on each track. Reference: King '21

MULTIPLE-BLOCK SIGNALING. Automatic block operation in which Signals cover three or more blocks. System combines safety (stopping distance) and short-block flexibility. Reference: REMC '48

NON-CENTRALIZED AUTOMATIC BLOCK. A term supplied by Vilder in ERS. Seemingly this conforms to regular AB (and so known in some systems). Reference: ERS-V.

e) Absolute/ Permissive Terms

ABSOLUTE BLOCK/ABSOLUTE BLOCK SYSTEM. A block system in which one train permitted in block at one time. Signals so arranged that the stop indication blocks the entrance of other trains. Short term has same meaning though less explicit than form with word system attached to it. Reference: Phillips '42, K & W '63, Allen '82.

ABSOLUTE BLOCK WORKING. Variant form of basic term. UK in provenance. Signals set to admit one train into a block at one time. Reference: Allen '52.

ABSOLUTE BLOCKING. Alternate term for Absolute Block System. It appears

in ARSPAP-H but in quote marks. Possibly a historic term and not at all current. Reference: ARSPAP-H

ABSOLUTE PERMISSIVE BLOCK/ABSOLUTE PERMISSIVE BLOCK SIGNALLING/ ABSOLUTE-PERMISSIVE BLOCK/ABSOLUTE PERMISSIVE BLOCK SYSTEM. A system for train operations in opposing directions. Signals when absolute in one direction permit train to follow previous train in the opposite direction according to restrictive signal aspects. Reference: HDS, FRA-3, AAR SM '83, K & T '88. VGR, Nock, '62, Armstrong '82

A.P. BLOCK SYSTEM. A partially abbreviated form of the basic term. Reference: King '21

A.P.B. SCHEME OF SIGNALING/ABSOLUTE-PERMISSIVE-BLOCK SCHEME OF SIGNALING/A.P.B. CONTROL SYSTEMS. Terms from REMC. Possibly informal, descriptive variants of official and formal terminology. Reference: REMC '48

ABSOLUTE & PERMISSIVE SIGNALING ON DOUBLE TRACK. Frequently absolutes denotes stop and stay while permissive indicates stop and proceed. This may be variant for basic Absolute Permissive Block Signal term. Reference: REMC '48

PERMISSIVE BLOCK/PERMISSIVE BLOCK SYSTEM/PERMISSIVE SYSTEM. Trains allowed to follow an earlier train into a block. This excludes passenger trains. According to AAR SM 1983, PB is found in MBS and CMBS forms. Phillips 1942 is slightly different: more than one train permitted in a given block; the meaning is probably the same though the phrasing is different. Permissive System is the equivalent of PBS though more truncated. Reference: AAR SM '83, Phillips '42.

PERMISSIVE BLOCK WORKING. A variant form of Permissive Block Working terminology. This term is primarily of UK provenance. Permissive denotes a system allowing trains to following another train into a block per Signal indication. Working is a common British expression for system. Reference: Blythe '51

PERMISSIVE MANUAL BLOCK. Only REMC among surveyed sources included this variant form which adds explication. Reference: REMC '48

PERMISSIVE WORKING. Jackson includes both Permissive Block, and Permissive Working. Is there a difference? Possibly working requires visual sighting by trains and only low speeds permitted.
Reference: Jackson '91

SUPPLEMENTARY ABSOLUTE BLOCK. Term included by A & W with few details.
Reference: A & W '91

SYSTEM, ABSOLUTE PERMISSIVE BLOCK/SYSTEM, APB. A system for train operations in opposing directions. Signals when absolute in one direction permit trains to follow in the opposite direction according to restrictive Signal aspects. APB, or APB System are (is) the core term and this is an alternate form.
Reference: FRA-3, ARSPAP-D.

ROADWAY AUTOMATIC BLOCK SIGNAL SYSTEM. FRA employs Roadway instead of Wayside (or Trackside or Lineside) in a number of instances. This rather lengthy term seemingly appears only in FRA RAR. It is more explicit in meaning than a simpler ABSS though, admittedly, Roadway can be ambiguous.
Reference: FRA RAR.

ROUTE WITH AUTOMATIC WORKING. This term from UIC-CST presumably refers to European practice. This form of route includes Signals that operate on automatic during the time the route exists. This suggests a non-permanent route. CST describes a route as set up for a given movement and fixed in place for that movement. That too suggests a non-permanent situation.
Reference: UIC-CST

SEMI-AUTOMATIC BLOCK SIGNALING. AAR-USSR describes various forms of Manual Block Signalling. Certain forms involving electric communication and telephone communication are classified as semi-automatic. They are not full manual (or by hand) means but appear to be manual rather than train-activated forms.
Reference: AAR-USSR '60

2/3/4 BLOCK SYSTEM/2-, 3-, 4-BLOCK SIGNALING. Short automatic blocks included Distant Signals which indicated the situation in the following block (Known as 2 Block System). 3 & 4 Block Systems gave indications in yet more blocks.
Reference: FRA 3, REMC '48

3-, 4-, 5-INDICATION SIGNALING. Variant configuration of Multi-Block

Signaling.
Reference: REMC '48

3-BLOCK SIGNALING. Another formulation of Multi-Block Signaling.
Reference: REMC '48

TWO-BLOCK AUTOMATIC SIGNALLING/TWO-BLOCK AUTOMATIC SYSTEM/THREE-BLOCK AUTOMATIC SIGNALLING/THREE BLOCK AUTOMATIC SYSTEM/SINGLE-TRACK AUTOMATIC SYSTEM/SINGLE-TRACK AUTOMATIC SIGNALLING/SINGLE-TRACK AUTOMATIC SIGNAL SYSTEM/APB SINGLE-TRACK SIGNALING. These terms represent permutations of the basic Automatic Signaling patterns which see.
Reference: Phillips '42

e) Other Block Terms

APB, AUTOMATIC PERMISSIVE BLOCK. Has Breen conflated Absolute Permissive System with Permissive within Automatic Block System or is this a separate variant form? (Breen also attaches Wayside to Interlocking System). APB usually refers to Absolute Permissive Block.
Reference: Breen '80

DOUBLE LINE BLOCK/SINGLE LINE BLOCK. These are UIC terms presumably describing European practices. Single Line Block is a system for train operations in which block instruments limit a single section to one train at a time. Double Line Block assigns separate tracks for one direction. This Block System is not concerned with the spacing of trains but to assigning tracks to opposing directions of track.
Reference: UIC-CST.

KINGSMAN BLOCK SYSTEM. A "brand name" system with the same focus as Nachod but instead employs D.C. current and track circuits.
Reference: RSD '11.

MOVING BLOCK SIGNALLING. This term, from Gaum, is the equivalent of Moving-Block or Moving-Block System. Signalling is akin to System in meaning rather than constituting a morphological term.
Reference: Gaum '92.

MOVING BLOCK/MOVING-BLOCK/MOVING BLOCK SIGNAL/MOVING BLOCK SYSTEM. A complex term that presents an obstacle to terse, succinct

description. Moving-Block may be a misnomer to some degree. It refers to Train Control Systems w/o track circuits. M-B Systems employ some form of "vehicle-to-vehicle and/or vehicle-to-wayside or central office communication links to control trains with minimum headway while maintaining positive separation and safe braking distance." It has been described as a "phantom block" between trains. The phantom or shadow grows or shrinks according to requirements.
References: FRA-3, ERS-H, Gaum

NACHOD SIGNAL SYSTEM. A "Brand name" and historic term. It is a system of signals of ABS form designed for electric railways on single track. It employed contact relays rather than track circuits for activation.
Reference: RSD '11.

OVERLAP BLOCK SIGNAL SYSTEM. A situation in which distance of control by one signal enters into a section where another signal has control. This results in opposing Signals displaying stop aspect.
Reference: Phillips '42.

OVERLAP SCHEME OF SIGNALING. Signals arranged so that approaching trains on one track will each encounter a Signal at stop.
Reference: REMC '48

RADIO BLOCK/RADIO BLOCK SYSTEM. A tokenless block system that uses radio between signal stations and thereby eliminates wires. Radio Block in Brown 1984 suggests a communication system which may include Radio Tokenless block but possibly not confined to that function. This entry more appropriate for Chapter 4 but retained because of block character.
Reference: Signal Equipment '81, Brown '84.

TELEGRAPH BLOCK/TELEPHONE BLOCK. A block system in which communications for signal operations are transmitted via telegraph. The second term is a system in which Signals are activated manually after consultation by telephone between Signal crews.
References: Nock '62, ERS-V.

1E2 Interlocking Terms

INTERLOCKINGS. The Standard Code of AAR offers a frequently employed description: "An arrangement of signals and signal appliances so interconnected that their movement must succeed each other in proper sequence and for which interlocking rules in effect." Interlockings may be manual or automatic in

operation. The term encompasses the station, interlocking machine, switches, Signals, connections, other apparatus.
Reference: AAR SC.

INTERLOCKING SIGNALLING. For Phillips 1942, Interlocking Signalling is the overarching term for all forms of Interlocking Systems. This also appears in UN 1954. Interlocking refers to arrangement of switches, locks, points, Signals, control mechanisms. Interlocking Signalling has a possibly slightly altered meaning yet it can serve as an OA term.
Reference: Phillips '42, UN '54.

ALL-ELECTRIC INTERLOCKING. Henry 1942 appears to use this term to distinguish forms fully powered by electricity from partially or fully non-electric. Phillips 1942 includes both All-Electric and All-Relay forms but does not distinguish between them or define All-Electric Interlocking.
Reference: Henry '42, Phillips '42.

ALL-MECHANICAL INTERLOCKING. A term supplied by Lindenberg in ERS. It appears to be the equivalent of Mechanical Interlockings and may be a fuller term for that form. It may also represent a way of differentiation from forms not fully mechanical.
Reference: ERS-L.

APPROACH LOCKING. Possibly a form of Electric Interlocking. System prevents changes to interlocking setup while train movement in progress.
Reference: Jackson '91

AUTOMATIC INTERLOCKINGS. Train-activated interlockings were begun in the early 20th century. Circuits were triggered by trains rather than by manual operations from signal station. Automatic Interlockings requires movement of switches and Signals in correct sequence as is the case with other forms of interlockings.
Reference: ARSPAP-I, -H

CABIN INTERLOCKINGS. Term refers to Indian Railway practice. Interlocking presumably controlled by operators at signal cabin.
Reference: UN '54.

COMPUTER INTERLOCKINGS. A virtually self-explanatory term. Microprocessors serve as control and energizing role that replaces large, complex electric relays and cable arrangements.
Reference: ERS

ELECTRIC INTERLOCKING/ELECTRICAL INTERLOCKING/ELECTRICAL SIGNAL INTERLOCKING. These terms appear to be very general terms for interlockings powered by electricity (often termed Relay Interlockings because of the use of electric relays). However, these terms are in the context of Chinese Railways which to interlockings in railway classification yards especially to a new form that eliminates manually operated points.
Reference: Jia-lin '81.

ELECTRO-MECHANICAL INTERLOCKING. A form of interlocking that relied on mechanical apparatus for operating switches and facing point locks but in which Signals were electrically operated. The entire assemblage was so interconnected so that Signals and switches performed in correct sequence.
References: ARSPAP-I, Armstrong '57.

ELECTRO-PNEUMATIC INTERLOCKING. A system employing use of air for activating switches and signals with electricity as an integral element.
References: ARSPAP-I, Phillips '42, Armstrong '57.

GEOGRAPHICAL CIRCUITRY INTERLOCKING. A form of Relay Interlocking for large scale operations. Term associated with European practice. Geography apparently refers to arrangement of buttons, switches on control panel.
Reference: ERS

INTERLOCKINGS, RELAY TYPE. A variant form of Relay Interlockings. Signals interconnected through electric circuits incorporating relays so arranged that signal processes follow in a desired sequence
Reference: FRA-3

INTERLOCKING TRAFFIC CONTROL SYSTEM. This may not refer to interlocking in a strict sense. Instead it may denote a Traffic Control system of an interlocking character (which a TC system would have over a large area in any case).
Reference: FRA-3.

KEY INTERLOCKING SIGNALLING. A form of Interlocking on Indian Railways. Interlocking of points and signals accomplished through keys.
Reference: UN '54.

MANUAL INTERLOCKINGS. These are interlockings, of whatever operational means, that are operated from an interlocking machine rather than from train-activated means.

Reference: ARSPAP-I

MECHANICALLY-INTERLOCKED POINTS & SIGNALS. A descriptive name rather than a formal name for interlocking encompassing switches and Signals.
Reference: Robbins '67

MECHANICAL INTERLOCKINGS. A term that refers to an older form that was entirely mechanical in nature. A complex system of levers controlled movement of switches and signals through a framework of pipelines connecting the entire system.
References: Armstrong '57, ARSPAP-MEMI

POWER INTERLOCKING. This term refers to systems involving power (electricity) more than direct mechanical action. Electro-pneumatic included in this category. Some versions rely on electrical circuits while others contained a mechanical locking arrangement.
Reference: ARSPAP-I

RELAY INTERLOCKING/RELAY INTERLOCKING SYSTEM/ALL-RELAY INTERLOCKING. An interlocking system that is entirely electric in operation. The system is based on electric relays and allied means of control. FRA-3 adds the word System to the basic term thereby adding precision to the term. All-Relay Interlocking is an alternative name.
References: ARSPAP-H, Armstrong '57, FRA-3.

REMOTE CONTROL INTERLOCKING. A type of Power Interlocking whose controls are some distance from the installation. It is in contrast to manual operation of switches.
Reference: REMC '48

ROUTE CONTROL INTERLOCKING/ROUTE-CONTROL INTERLOCKING. These terms are alternate names for Route Interlocking.
Reference: Henry '42, Phillips '42.

ROUTE INTERLOCKINGS. Term for an all-relay system for complex trackage and signal situations. The system can produce a route for a given train thereby activating stop indications for other routes interwoven with the approved route. Controls for the signal processes are set rather than setting individual levers provided consolidated control requiring less direct human control. Henry '42 explains it as an entrance-exit system: setting of first and last points over a given route fixes entire set of points and other appliances.
References: Armstrong '57, Phillips '42, Henry '42

SATELLITE INTERLOCKING. A form of interlocking in which controls are at a central signal box that is unattended. Actual control is by remote control.
Reference: UIC-CST.

SEQUENCE-SWITCH INTERLOCKING. A UK system of mechanical nature that sets routes over multiple routes.
References: A & W '91

SIGNAL/POINT INTERLOCKINGS. A system for ensuring points are fixed in position upon clearing of corresponding Signal.
Reference: UIC-CST.

SPOORPLAN INTERLOCKING. Short form of GCI (Geographic Circuitry Interlocking Systems). Circuitry has foundation in track and point layout. UIC-CST has alternate spelling, Spurplanschaltung.
Reference: ERS-L.
Reference: Leach '91

1E3 Train Control Terms

a) Overarching Terms

AUTOMATIC TRAIN CONTROL. General Note. This term is seemingly interchangeable with Train Control. Both older and newer sources employ Automatic Train Control (hereafter ATC) and Traffic Control (hereafter TC). TC has found increased usage in recent journal articles (though ATC continues in use). It is possible that it is presupposed that TC means automatic processes and TC is sufficient. In summary, the use of TC has gained ground though the more explicit term of ATC has not faded away.

The meaning of ATC can vary greatly. UIC offers a narrow definition that involves speed regulation and automatic braking. UIC has a second definition that centers on speed monitoring. FRA (which included international studies) sees it as a broader term that controls movements of trains, enforces safety and directs train operations. U.S. sources also perceive ATC as a umbrella term encompassing ATP, ATS, and ATO which are precisely defined subdivisions; those terms can also have a variety of definitions some broader, some more loosely in meaning.
References: FRA-3, ERS, UIC, K & W '63, Blythe '51

AUTOMATIC TRAIN CONTROL SYSTEM/AUTOMATIC TRAIN-CONTROL SYSTEM. The first is a more explicit version of basic term. REMC adds hyphen and control in the second term.
Reference: Sterner '68, REMC '48

AUTOMATIC TRAIN OPERATION/AUTOMATIC TRAIN PROTECTION SYSTEM. A system that oversees on-board operations involving regulation of speed, braking, various adjustments. Chandrika adds system to the basic term though meaning unchanged.
Reference: FRA-3, ERS, Chandrika '98

AUTOMATIC TRAIN PROTECTION. UIC speaks of speed regulation for ATP. While FRA offers a broad range of safety concerns including "train detection, train separation, interlocking."
Reference: ERS, FRA-3.

AUTOMATIC TRAIN SUPERVISION. A component of ATC. ATS monitors and controls train operations in order to maintain effective traffic patterns and reduce train delays.
Reference: FRA-3.

AUTOMATIC TRAIN PROTECTION & CONTROL. A term (s) of confusion. Some sources, including FRA 1979, use ATP as a technical term for one sub-division within ATC. But the tome ERS 1995 coins an overarching term for all forms of processes that include train protection (automatic braking when speeding or ignoring Signal indication) to various means of control. ATPC can be seen as a unitary term in this meaning.
Reference: ERS '95.

ATP/ATC. Chandrika has formed a kind of OA term for Indian Railways of various systems.
Reference: Chandrika '98

BR ATP. ATP system as developed for British Rail. It is an intermittent system.
Reference: Leach '91

CONTINUOUS TRANSMISSION SYSTEMS/INTERMITTENT SYSTEMS. These terms are sub-divisions within ATP according to Leach.
Reference: Leach '91

CONTROL SYSTEM. A very general term that encompasses TC and also other electronic systems applied to railroads (e.g. dispatching). Railroad electronics appears to be moving to a broad, encompassing system that includes direct safety systems (including Signals in some instances). Cross-reference: General OA
Reference: ATCS '89.

ICTC SYSTEMS, INCREMENTAL TRAIN CONTROL SYSTEM. Few details are given by Chandrika. Possibly comparable to ETCS in Europe.
Reference: Chandrika '98

INTERMITTENT CONTACT SYSTEM OF TRAIN CONTROL. One form of intermittent Control System. The specific form is of the ramp type electrically-activated type.
Reference: REMC '48

SYSTEM, ATC. Alternate form of ATC System which places general category before the particular.
Reference: ARSPAP-D

TRAIN CONTROL/TRAIN-CONTROL/TRAIN CONTROL SYSTEM/TRAIN-CONTROL SYSTEM. Train Control is a somewhat ambiguous terms (accompanied by variant forms). It can have a precise technical meaning which includes various subsystems. It can also have a limited meaning consisting of a

single relatively simple device (often a Train Stop and nothing more). There are also divergencies between U.S. practice and European practice.

A core meaning of TC might be object(s) and processes outside of the train that can effect changes in train movements. Control of actions (and not merely hoped-for changes [e.g. obeying signal indications]) can be an encompassing process and practice affecting all phases of train operations (and not confined to Signalling); it can also be very circumscribed in meaning. Terms adding system add explication to the basic term. Hyphens are sometimes add that more clearly conjoin the keywords.
References: Thomas '93, ATCS '89, Nock '62, Phillips '42.

SIGNAL & CONTROL SYSTEMS (Also General OA). With an increase of control systems which, in themselves, do not produce and exhibit Signal messages, there is an increase in dual terms of Signals & Controls. Many of the control terms are integrated with and are thereby part of the Signal role.
Reference: Armstrong '81

TRAFFIC CONTROL SYSTEM. U.S. term for train movement system controlled by signals lacking train orders. A second description describes the system as a Block Signal System in which Block Signal indications take precedence over train superiority for movements on a single track (both directions)
Reference: ARSPAP-H.

TRAIN CONTROL DEVICES/TRAIN-CONTROL DEVICES. A term of uncertain meaning. It is included by only two surveyed sources. Devices was formerly a common designation for various forms of machines, implements, mechanisms, apparatus, appliances. TCD may be a general term for safety aids in railroads or -- more narrowly -- non visual aids such as Train Stops.
References: Henry '42, FRA-RAR.

TRAIN CONTROL EQUIPMENT. Employed by Jane's as a product category title. It is more of an OA term for the range of equipment employed in TC than a specific TC term.
Reference: Jane's, '87-'88

b) Forms of Train Control

CONTINUOUS TRAIN CONTROL SYSTEM. This is a general term in ARSPAP-H encompassing all forms of continuous TC systems in early developments. It is a specific, precisely defined term despite appearance.
Reference: ARSPAP-H

EUROPEAN TRAIN CONTROL SYSTEM. A concept in Europe of creating a common system and also integrating the many existing systems. There are three elements: Euro-Balise, a transponder beacon; Euro-Cab, the on-train equipment which receives data from the beacons (and can transcribe national system data), Euro-radio, transmits ATP and ATC information.
Reference: ERS, ETSC ... 9-93 (IRJ).

INTERMITTENT CONTROL. A system in which control mechanism located only at specific points. Such systems can include Cab Signals, TC.
Reference: AAR SM '83.

CONTINUOUS-INDUCTION SYSTEM. Intermittent systems are only found in certain locations (at Signals) while Continuous systems provides ongoing data and not just at Signals. A break in the track anywhere in block will be indicated.
Reference: Henry '42.

MILLER TRAIN CONTROL. A historic term. It refers to a system involving an inductive electric contact process. The system is a train stop operation which is within the sphere of Train Control.
Reference: ARSPAP-H.

INTERMITTENT INDUCTIVE TRAIN CONTROL. A form of TC in which magnets and track circuits are installed in the tracks. The magnets (linked to track circuits) portray track circuit conditions (as do Signals). If the TC data causes system to manifest stop then the magnet, through induction. The locomotive apparatus receives the track data and brakes applied if crew does not respond to signal
Reference: Henry '42.

CONTINUOUS AUTOMATIC TRAIN CONTROL (CATC). This refers to Cab Signaling. It involves two-way communication (Train-wayside), involves collection of data as well as encoding, decoding functions.
Reference: FRA-1, -2, -3

CONTINUOUS TRAIN CONTROL. A general term for systems providing ongoing information, control as opposed to intermittent forms that provide data only at intervals.
Reference: UIC, B & M '81

INDUCTIVE TRAIN CONTROL. This term - though giving appearance of a general term - refers to Indusi in this instance. However, it can encompass all systems employing magnets and electro-magnets.
Reference: FRA-1

TRAIN CONTROL SYSTEMS, DEVICES & APPLIANCES. A very general term from FRA-RAR encompassing all aspects of TC operations.
Reference: FRA-RAR.

TELEPHONE TRAIN CONTROL. A possibly confusing term. It is part of Telecommunications rather than Signaling in UN 1954. It has more to do with train crew controls than Signaling control (or signal crew communication). There are also Radio Block Systems but they appears apart from the UN system.
Reference: UN '54.

c) Subdivisions of Train Control

1) Train Stop

MECHANICAL ROADSIDE TRIP TYPE STOP/TRIP ARM SYSTEM.
Alternate names for the Automatic Trip Stop, and ultimately, the Automatic Train Stop. The first term is from B & M 1981, and the second from K & W 1963.
References: B & M '81, K & W '63

CODED-CONTINUOUS TRAIN STOP SYSTEM. A brief historical reference in FRA-3 of a change on Penn Railway from CCTS to CC Cab Signals. No details on process followed by CCTS.
Reference: FRA-3.

TRAIN STOP DEVICES. This term is very close to Train Stop in meaning. It may refer to physical apparatus more than total Train Stop System (equipment functioning in TS role).
Reference: FRA-3.

TRIP-STOP DEVICE/AUTOMATIC TRIP STOP DEVICE. Phillips 1942 offers alternate names for the mechanical ATS systems. Trip-Stop is a more explicitly accurate name for the Train Stop process since many forms use a trip arm.
Reference: Phillips '42.

AUTOMATIC STOP/AUTOMATIC STOP SYSTEM. These terms are similar to (and possibly identical to) Automatic Train Stop System. AAR SM 1983 offers a somewhat vague definition that can include ATS but may encompass other safety

aids with similar functions. Shackleton 1976 seemingly separates Automatic Stop from Automatic Train Stop.

References: AAR SM '83, Shackleton '76.

TRAIN STOP/TRAIN STOP SYSTEM. Terms that are shorter forms of Automatic Stop System. The meaning appears to be the same.

References: Blythe '51, Nock '62, AAR SM '83.

AUTOMATIC STOP. King omits train from what is apparently a Train Stop of conventional formulation.

Reference: King '21

AUTOMATIC STOP EQUIPMENT. This term from Jane's refers to a product category title. That is, apparatus employed in Automatic Stop.

Reference: Jane's, '87-'88

ELECTRO-PNEUMATIC TRAIN STOP. This form of Train Stop utilized E-P signals. ARSPAP-H supplied few details but presumably E-P processes and similar in operations to E-P Signals.

Reference: ARSPAP-H.

AUTOMATIC TRAIN STOP/AUTOMATIC TRAIN-STOP/AUTOMATIC TRAIN STOP SYSTEM. A series of devices that made (in most instances) physical contact with a train that passed a danger signal. Contact between a trip arm and receiving apparatus on the locomotive would cause the brakes to activate. There are many terms describing the same or similar process. The word "stop" is central to most of these. The word "train" is often attached to Stop (and trip may also be employed). ATC has meant ATS though ATS is a restricted form of control and perhaps it is not control in a strict sense. Automatic Stop may be a synonym yet AS may be a broader notion. Shackleton, for example, seems to distinguish between ATS and ASD.

References: Allen 1982, ARSAPAP-H, FRA-3.

AUTOMATIC TRAIN-STOP DEVICES. For REMC this refers to individual devices rather than to Train-Stop System.

Reference: REMC '48

INTERMITTENT INDUCTIVE TRAIN STOP. Many forms of ATS employed mechanical means. This form approximates track/road based devices. A magnet mounted on the locomotive achieved close proximity to an inductor on the wayside. The train magnet was activated by the inductor (unless electromagnetic action nullified activation). Only clear Signals brought about energizing of magnet.

Reference: Armstrong '78.

MOTOR-OPERATED AUTOMATIC STOP. A form of Automatic Stop for King. The specific form was employed by NY Municipal Railway.

Reference: King '21

2) Speed Control

GENERAL NOTE: Terms such as Speed Control System, Automatic Speed Control, Automatic Speed Control Systems, Train Speed Control are less independent systems than a dimension or function of other Cab Signalling and/or ATC systems. Speed Supervision is a core (or the core) focus of ATC.

SPEED CONTROL/SPEED CONTROL DEVICES. These terms are seemingly alternates or synonyms for Train Control and Train Control Devices respectively.

Reference: REMC '48

SPEED SUPERVISION SYSTEM - TVM. A category of ERS that includes more encompassing (exercises greater control) than ATC systems.

Reference: ERS-C

AUTOMATIC SPEED REGULATION (ASR). Included by a single surveyed source. It is a dimension or subdivision of ATC. ASR function is to maintain ongoing speed regulation.

Reference: Breen 1980.

3) Traffic Control

CONTROL/TRAIN OR TRAFFIC CONTROL. For Jackson this is separate from ATC. It is a system for organizing train operations in a very broad sense; Signals involved (apparently) but only one element. At least one U.S. description at variance with Jackson which see.

Reference: Jackson '91

4) CTC

ELECTRONIC CTC/CTC & REMOTE CONTROL SYSTEM/BLOCK & ELECTRONIC CTC. These are product category titles from Jane's.

Reference: Jane's '87-'88

CODED CTC. Sophisticated communications require transmission of data over long distances economically. CTC includes (as it developed) one of several code systems:

Time Code- employs short or long impulses, moderate speed, moderate number of stations.

Circuit Code- Three-wire not Two-wire, faster transmissions, more stations.

Polarity Code- Pulses of same length; arranged sequentially.

Reference: ARSPAP-H.

CENTRALIZED TRAFFIC CONTROL (CTC)/CTC SYSTEMS. A system of railroad operations in which train movements are under the sway of Signals controlled at a central location which may be well removed from Signal locations. Signals, switches, other appliances function as a whole. No train orders for trains of superiority were included as operating principle.

Central control requires complete track circuits, clarity regarding special/peculiar aspects of signals. Territory may be small though often very large; and frequently single track. CTC, according to Nock 1962, is a "coded remote control system." Traffic Control System is a synonym for CTC. CTC includes or combines Automatic Signalling and power interlocking.

References are many; they include Phillips '42, Armstrong '57 and '78, Henry '42, K & W '63, Nock '62, ARSPAP-H, AAR SM '83, Thomas '93,

WAY INTERFACE SYSTEM. This ARES can monitor, control all wayside devices. Signals not specifically mentioned in Welty though presumably included. Reference: Welty, 5-88.

CTC RAILWAY SIGNALLING SYSTEM. Presumably a more explicit version of the term CTC: A Signalling system in CTC operation sphere. Reference: Wunderlich-Siemens

d) Specific Named Systems

TRAIN LOCATION SYSTEM. This may seem rather afield for the Database. The system receives location and speed data from GPS or track-based transponders. It is also part of ARES, and therefore, partly, a safety aid. Reference: Welty, 5-88.

TRAIN SITUATION INDICATOR (TSI). This unit is an "On-board Display System" for ARES. It is a "color CRT display" unit. TSI is used for receiving all data need for train operations. Seemingly some portion replaces signal-based messages.

References: Welty, 5-88.

ADVANCED TRAIN CONTROL SYSTEM (ATCS). This is not to be confused

with Automatic Train Control. ATCS is a complete control system for train operations. It is heavily impregnated with computer technology. And it is based on central control of safety and virtually all other elements of train management. Whatever traditional Signaling might remain would be an integral component of ATCS.

Reference: Armstrong '86, Welty, 10-86.

AUTOMATISCHE TREIN BEIINVLOEDING, ATB. A speed protection system. Both Cab and Lineside Signals are included. Audible Signals of several forms are included: gong for changes in speed information, bell for speeding w/o breaking response, buzzer for not braking for 40 km/h speed limit. Reference: ERS-C

RAIL OPERATION CONTROL SYSTEM. A broad-spectrum system that includes speed information. Also part of ARES (Advanced Railroad Electronic System). Reference: Welty, 5-88.

TRANSMISSION VOIE MACHINE, TVM ("Track to train transmission"). A decentralized system which is also continuous. Equipment, nonetheless, attached to central equipment. It is for VHS lines. No Lineside Signals. Reference: ERS-C

LINIEN ZUG BEEIN FLUSOUNG, LZB. This term refers to a continuous system and is centralized. It offers continuous train monitoring. LZB is based on computer technology. Lineside signals are reduced or eliminated. Reference: ERS-C

TRANSMISSION BEACON LOCOMOTIVE, TBL. This is a "speed supervision system" which transmits a broader range of data. One version (TB1) provides automatic braking function if stop signal ignored. It also provides on-board information. A TB2 adds a further range of data. Information emanates from a transponder beacon. TBL is an intermittent form. Reference: ERS

CODED TRACK CIRCUIT AUTOMATIC BLOCK, BACC. A decentralized, continuous system. It is essentially a Cab Signaling system. Speed control aspect added to high speed lines. Reference: ERS

EBICAB/CONTROL DE VITESSE A BALISES, KVB. A transponder beacon based ATC system. It is a sophisticated system that offers many functions including speed supervision, warning of speeding, braking activation. Cab Signals

Netherlands, KVB in France
Reference: ERS

INDUSI (INDUKTIVE ZUGSICHERUNG). This is a contactless system employing transponders. It monitors crew's observance of signals and also includes some speed control. Messages are given for signals and for speed. Brakes activated if crew acts incorrectly unless response made to INDUSI messages. A newer version of INDUSI offers a greater range of messages.
Reference: INDUSI, ERS-C

AATC = ADVANCED AUTOMATIC TRAIN CONTROL. An adaption of EPLRS.
Reference: Comm. Based ... '95

ACFS. Advance Civil Speed Enforcement System. It employs transponders, five mile per hour increments notices for high speed trains and it supplies a variety of data on locations, grades, "distance to a speed restriction."
Reference: Greenfield '98

ASFA. This system is intermittent, contactless, inductive. Its functions are identical to Indusi. Crew can respond to message before brakes activated.
Reference: ERS-C

ASR, AUTOMATIC ROUTE SETTING. Centralized Route Setting adjustments without Signal crews.
Reference: Vanns '97

ATB/PLP. A system of GEC Alstom ACEC. It is also known as SSI-ATC. SSI (Single State Interlocking) provides automatic control for Interlocking and Automatic Block systems that computerized. ATC offers trains supervision.
Reference: Zoetardt '94

ATIS, ADVANCE TRAFFIC INFORMATION SYSTEM. A marginal term at best for Signaling.
Reference: Jackson '91

ATLAS. Acronym has meaning of Advance Train Location & Supervision. A consortium has developed this system. It employs a "speed-spectrum radio signals." It is part of the communication-based technology developments.
Reference: Com ... Based '96

COMTRAC/COSMOS/SMIS. All are part of high speed system for Shinkasen (Japan) railroads. Comtrac is from Computer-aided Traffic Control. SMIS stands

(Japan) railroads. Comtrac is from Computer-aided Traffic Control. SMIS stands for Shinkasen Management Information System. COSMOS = Control Management System. Unclear to what degree signals are involved. Cosmos includes train operation dimension.
Reference: Seko '79, Shouji and Otsuki '97

EPLRS is acronym for Hughes Enhanced Positive Location and Reporting System. It is a form of Communication-Based Train Control.
Reference: C-B '95

FLEXIBLOK SYSTEM. A communication-based spread-spectrum system. Few details available.
Reference: Comm. Based ... '95

MICROBLOK. A form of train control technology.
Reference: U S & S, Comm. Based ... '95

MICROLOCK. Chandrika speaks of a U S & S product under the name of Microlock. Does this refer to Microblock?
Reference: Chandrika '98

ULTRABLOK. A form of ITCS or a variant form.
Reference: Comm. Based ... '95

PTCS = POSITIVE TRAIN CONTROL SYSTEM.
Reference: Greenfield '98

PTS = POSITIVE TRAIN SEPARATION. An "enforcement mechanism overlaid [on] existing signalling
Reference: Comm. Based ... '95

RIT, TRAIN MANAGEMENT SYSTEM. This includes location (GPS), Signals and other matters but purpose is more economical train operation. Signalling is an indirect dimension.
Reference: U S & S & RMS '86

SSI SYSTEMS. Automatic Control system for interlocking and automatic block system. It involves computer technology and is of a centralized nature. See also: ATBL/PLP
Reference: Chandrika '98

SAFETY CONTROL SYSTEM/TRAIN OPERATION SAFETY CONTROL SYSTEM. Both are general, descriptive terms that refer to a variety of control

ideas including ATP, ATO, ATC

Reference: Xishi

SELTRAC. Term for Moving Block developed by Standard Electrick Lorenz AG (SEL).

Reference: Chandrika '98

SIGNUM. This system bears resemblance to Crocodile and AWS. But it lacks a clear signal message. It is intermittent and is of the contactless form.

Reference: ERS-C

SNCF SIGNALLING SYSTEM FOR VHS/VHS SYSTEM OF SIGNALLING & SIGNALLING SYSTEM FOR HIGH SPEEDS. First term is a descriptive rather than a form term. It includes automatic block, track circuits, cab-based equipment and Signals. Second term is an alternate title.

Reference: Weber '80

CROCODILE. A European system for monitoring observance of signals by the train crew. Devices convey sound and visual data indicating whether clear or restrictive. Crew must acknowledge message or brakes applied. The Crocodile is a metal object attached to electric current which interacts with a brush that interacts with the Crocodile. The crocodile is intermittent..

Reference: ERS-C

AUTOMATIC WARNING SYSTEM/BRAWS. A UK system similar to Crocodile. It employs magnets on the track (one activates apparatus, one sends data). Audio and visual messages are received in the locomotive.

References: K & W 1963, ERS-C, Whitehouse '85

COMBINED TRAIN CONTROL. This term refers to Italian State Railways processes which has, in places, provided a TC system that offers intermittent control, conventional continuous control, and a continuous ATP system for high speed use. Trains so equipped can cope with any of the control forms.

Reference: FRA-2

(ARES) ADVANCED RAILROAD ELECTRONIC SYSTEM. This system is from Rockwell International. It encompasses many forms of electronic and control system including safety and sometimes Signals.

Reference: ATCS '91, Welty '88

INDENTRA. System in which inert coils for information passage are on locomotive while track-bed equipment requires a power source. Contrasted with more frequently employed Indusi system with reverse arrangement.

ON-BOARD SPEED CONTROL SYSTEM. Descriptive term rather than formal name. Describes Cab Signal operation with some ATO functions. Cross-reference with Cab Signals.

Reference: Savarzeiz '81

PHAR. Communication system in Sweden employing Doppler radio transmitter and passive beacons. A variety of information given including speed and upcoming data changes.

Reference: Barwell '83

e) Miscellaneous Terms

MICRO PROCESSOR-BASED SIGNALLING SYSTEM. A descriptive term that can describe SSI.

Reference: Vanns '97

NORMAL DANGER SYSTEM. Jackson includes this term which refers to train operations in which Signals at danger until train requires clear indication.

Reference: Jackson '91

TBS, Transmission-Based Signalling. Jackson includes this term which links on-board computer with central computer. Data supplied includes location and speed.

Reference: Jackson '91

TRAIN-OPERATED POINTS SYSTEM. A system whereby points in rural areas are activated by wheel flanges on hydraulic switch mechanisms.

Reference: Leach '91

CHAPTER TWO ALL-LIGHTED SIGNALS

2A Indexes: Categories & Alphabetical

2A1 Categories Index

Summary of Categories Index:

Overarching, Color Light Signal & Other All-Lighted Signal Forms (2B)

Overarching Terms (2B1))

Color Light Signal Terms (2B2)

Principal Forms

Basic Forms

Limited-Variant Forms

Variant Forms

Signalling Forms

Other Color Light Signal Forms

Distance Forms

Lens Arrangement Forms

Morphology & Other Forms

Searchlight Signal Forms (2B3)

Position Light, Color Position Lights & Alphanumeric, Graphic (2C)

Geometric Forms

Position Light Forms (2C1)

Color Position Light Signal Forms (2C2)

Alphanumeric Forms (2C3)

Cab Signals (2D)

Major Cab Signal Forms (2D1)

Forms of (Operational) Cab Signals (2D2)

Partly Morphological Terms (2D3)

Other Cab Signal Forms (2D4)

OA Terms (2B1)

Illuminated Signal

Light Signal

Railway Signal Lights

Signal, Light

Signal Light

Visual Signal Light

Color Light Signal Terms (2B2)

Principal Forms (2B2 a)

Basic Forms (2B2 a 1))

Color Light Signal/Color-Light Signal/Colour Light Signal/Colour-Light Signal/ Colourlight Signal

Color-Light Type/Color Light Type/Color-Light Type Signals/Colour-Light Type of Signal

Color Light Terms: Other Than English

Limited-Variant Forms (2B2 a 2))

Signal, Color Light

Colour Light/Colourlight/Colour-Light

Color Signal/Colour Signal

Coloured Lights

Variant Forms (2B2 a 3))

Automatic Colour-Light Signal

Colour Light Running Signals/Colour-Light Running Signals

Multiple-lens Colour Light Signal/Multiple-Lens Colour-Light Signal/

Multiple-Lens Four-Aspect Colour-Light Signal

Multi-Colored Light Signal

Multi-Unit Colour Light Signal

Spreadlight Colour Light Signals/Long Range Spread Light Colour Light Signal/

Spreadlite Colour Light Signal

Signaling Forms (2B2 a 4))

Automatic Colour-Light Signalling

Color Light Signaling/Colour Light Signalling/Colour-Light Signalling/

Color-Light Signalling (Taiwan)

Colour Signalling

Electric Automatic Colour-Light Signals

Other Color Light Signals Forms (2B2 b)

Distance Terms (2B2 b 1))

Color-Light Type Signal (SR)/Short Range Signals

Medium Range Color Light Signals/Medium Range Color Signals

Long Range Colored Light Signals

Long-Range Color-Light Signal

Long Range Colour Light Signal

Long Range Daylight Signal

Long Range Signal
Long Range Type
Long Range Daylight Type Color Light Signal
Short Range Color Light Signals/Short-Range Color Light/Short Range
Colour Light Signal
Short-Range Color-Light Signals [Vertical Type, Subway Type]

Lens Arrangement Terms (2B2 b) 2)
Long Range Color Light Signals, Vertically Arranged/Type D Long Range Color
Light Signals, Vertically Arranged/Type D (Vertical) Color-Light Signals
Horizontally Arranged Long Range Color Light Signals/Long Range Color
Light Signals, Horizontally Arranged/Type E (Horizontal) Color Light Signals
Triangular Arrangement Color Light Automatic Block Signals/Color Light
Signals Arranged in a Triangle/Type G (Trinangular) Color-Light Signals
Cluster Type Signals/Cluster Type Four-Aspect Signals/Cluster Colour-Light
Signals
Colour-Light Signals Multi-Aspect-Cluster

Morphology & Other Terms (2B2 b) 3)
Approach-Lit Colour-Light System/Approach-Lit Mechanical Colour-Light
Signals
Christmas Tree
Colour-Light Route Indicator
Colourlight Signal-Underground Style
Colour Light Signal (Humping)
Colour Light Shunt Signal
Day Colour-Light Signal
Double Light Signal
Fairyland
Mechanical Color-Light Signals
Miniature Colour-Light Signals/Miniature Colour Light Signals
Three-Aspect Day-Time Colour-Light Signal

Searchlight Signal Forms (2B3)
General Note
Searchlight
Searchlight Signal
Search-Light Signal
Searchlight Type
Searchlight Type Signal
Search Light Type Signal

Search Light Signal
Searchlight Color Light Signal
Searchlight Type of Colorlight Signal/Searchlight Type Colorlight Signal
Searchlight Type Colour-light Signals
Searchlight-Type of Color-Light Signal
Searchlight Type of Single-lens Color-Light
Colour Searchlight Signal
Color-Light Signal, Searchlight Type
Dwarf Searchlight Signal
Colorlight High Signal, Searchlight Type/Color Light Dwarf Signal, Searchlight
Type
Hall-Type Colour-Light Signal
LEDS Searchlight Signal
Single Lens Searchlight Signal
Single Light Signal

Other All-Lighted Terms (2B4)
Single Lens Units [Frequently Morphological Dimension] (2B4 a))
Slightly More Morphological Than Physical (2B4 a) 1))
Marker
Marker Lamp
Marker Light

Terms Somewhat More Morphological Than Physical (2B4 a) 2))
Automatic "A" Signal/"A" Light/Illuminated "A" Light
"L" Light
Multiple-Aspect Light Signal

Dwarf Signals [Frequently Multiple Lens] (2B4 b))
Dwarf Signal
Signal, Dwarf
Colour Light Dwarf Signal/Color Light Dwarf Signal
Dwarf Type Signal
Dwarf Signal-Electrical
Dwarf Searchlight Signal/Dwarf Colourlight Signal
Dwarf Colourlight Shunt Signal

Undifferentiated Physical Forms (2B4 c))

Auxiliary Signals
Back Light I
Back Light II

Back-Light/Backlight
Side Light (Back Light)
Flasher Lights
Flashing Signals(Signal)/Flashing Light Signal/Flashing Lights
Flashing Signal
Signal, Flashing Light
Revolving Light Signa
Fixed-Focus Signal
High Signal
Light Strip
Modular Unit
Multiple Unit Signal
Multiunit
Signal Lamp

Position Light, Color-Position Light, & Alphanumeric, Graphic,
Geometric Signal Forms (2C)

Position Light Signal Terms (2C1)

General Notes I, II, III

Position Light Signal
Position-Light Signal
Position Light/Position-Light
Position-Light Type Wayside Signal
Beam-Light Signal/Beam Light signal
Signal, Position Light
Daylight Position Light Signal
Position Light Signal (LR)
Position Light Dwarf Signal
Position Light Shunt/Position-Light Shunt Signal
Position Light Humping Signal/Position Light Humping Speed Signal
Ground Position Light Shunt Signal
Hump Shunting Signal
Position Light Junction Indicator
Position Light Automatic Type
Position Light Speed Signal/Toton Position Light Speed Signal
Position Light Subsidiary Signal
Pattern Indicator
Pedestal Signal
Subsidiary Signal
Position Light Speed Signal
Wing Lights

Color Position Light Terms (2C2)

General Note

Color Position Light Signal
Color-Position Signal
Color-Position-Light Signal
Signal, Color Position
Colour Position Light Signal
Color-Position-Light High Signal/Color-Position-Light Dwarf Signal
Color Position Light Dwarf Signal
Position-Color Light Signal
Color & Position Signal

Symbolic Signal Forms (2C3)

General Note

Multi-Lamp/Theatre Indicators (2C3 a)

Multilamp Route Indicator/Multi-Lamp Route Indicator/Multi-Lamp
Seven-Way RouteIndicator/Three-Way Theatre Route Indicator
Theatre Multi Lamp Route Indicator
Theatre-Type Route Indicator/Theatre Type Route Indicator
Theatre-Sign Type Indicator

Stencil Indicators (2C3 b) 0

Stencil Indicator/Stencil Type Indicator/Stencil Type-Indicator/Stencil Route
Indicator/Stencil Type Route Indicator/Stencil, Number or Letter Type/Stencil
[Type]

Other Forms (2C3 c)

Arrow Indicator/Single Arrow Indicator/Double Arrow Indicator
Indicator/Indicator (Stencil)
Moving Slide Type Route Indicator
Projector Type Route Indicator/Projector Type

Cab Signals (2D)

Major Cab Signal Forms (2D1)

Cab Signal

General Note I, II, III

Cab-Signal

Automatic Cab Signal/Automatic Cab Signal System/Automatic Cab Signal
System (ACS)/System, Automatic Cab Signal
Automatic Cab-Signal System Continuously Controlled

Signal, Cab
Cab Signal System
Cab Signaling/Cab Signalling/Cab-Signalling/Cab Signalling System
General Note I, II

Forms (Operational) of Cab Signals (2D2)

Cabmatic
A-C./D-C. Cab Signals/A-C./D.C. Coded Cab Signal System
CATC Cab Signals
Coded Continuous Cab Signal System/Coded Continuous Cab Signaling
Continuous Cab Signaling System
Continuous Cab Signaling/Continuous Cab Signalling
Conductive Inductive Cab Signal
Continuous System of Cab Signalling/Continuously Controlled Cab Signal/
Continuously Controlled Cab Signal
Continuous Controlled Cab Signal System
Four -Aspect Coded 100 Hz Cab Signal System/Four-Indication Code Continuous
Inductive Cab Signaling/Four-Indication Code Continuous Cab Signal System
Intermittent Cab Signaling/Intermittent Cab Signal System
Multiple-Indication Coded Cab Signals
Three-Speed Train Control Cab Signals
Two-Indication Non-Code System [Cab Signal]/Three-Indication Non-Code
Track & Loop System [Cab Signal]
TVM 430 Cab Signalling System

Partly Morphological Terms (2D3)

General Note
Four-Aspect Cab Signal System
Four-Indication Cab Signal
Five-Aspect Cab Signal
Five-Aspect Cab Signaling
Multiple Aspect Cab Signal
Three-Indication Cab Signals
Two-Indication Cab Signal

Other Cab Signal Forms (2D4)

Cab Lights
Cab Signal Subsystem
Enforced Cab Signalin
System of Cab Indicators

Visual Cab Signals
Wayside Cab Signal Equipment
On-Board Cab Signal Equipment
Visualizer

Cab Signals with Sound Dimension (2D5)

Indicator, Cab, Audible
Cab Indicators [Audible, Visual]
Cab Signal with Whistle & Acknowledger/Coded Cab Signals with Whistle &
Acknowledger

2A2 Alphabetical Index

A-C./D-C. Cab Signal/A-C./D-C. Coded Cab Signal System
Approach-Lit Color-Light System/Approach-Lit Mechanical Colour-Light
Signals
Arrow Indicator/Single Arrow Indicator/Double Arrow Indicator
Automatic "A" Signal/"A" Light/Illuminated "A" Signal
Automatic Cab Signal/Automatic Cab Signal System/Automatic Cab-Signal
System(ACS)/System, Automatic Cab Signal
Automatic Cab-Signal Systems Continuously Controlled
Automatic Colour-Light Signal
Automatic Colour-Light Signalling (Taiwan)
Auxiliary Signal

Back Light I, II
Back-Light/Backlight
Beam-Light Signal/Beam Light Signal

Cab Indicators [Audible, Visual]
Cab Lights
Cabmatic
Cab Signals
Cab-Signals
Cab Signal Subsystem
Cab Systems
Cab Signals with Sound Dimension
Cab Signals with Whistle & Acknowledger/Coded Continuous Cab Signals with
Whistle & Acknowledger
Cab Signaling/Cab Signalling

Cab-Signalling/ Cab Signalling System
CATC Cab Signals
Christmas Tree
Cluster Type Signal
Coded Continuous Cab Signal System/Coded Continuous Cab Signaling
Color & Position Signal
Color Light Signal Terms
Color Light Terms
Color Light Signal/Color-Light Signal/Colour Light Signal/Colour-Light Signal/
 Colourlight Signal
Color-Light Signal, Searchlight Type
Color-Light Type/Color-Light Type Signal/Color Light Type
Color-Light Type Signal (SR)/Short Range Type
Colorlight High Signal, Searchlight Type/Colorlight Dwarf Signal, Searchlight
 Type
Color Position Light Signal
Color Position Light Dwarf Signal
Color-Position-Light High Signal/Color-Position-Light Dwarf Signal
Color-Position-Light Signal
Color-Position Signal
Colour Light
Colour Light Dwarf Signal/Color Light Dwarf Signal
Colour Light Route Indicator
Colour Light Running Signals/Colour-Light Running Signals
Colour Light Shunt Signal
Colour Light Signal (Humping)
Colour Light Signal-Underground Style
Colour-Light System, Multi-Aspect-Cluster
Coloured Lights
Colour Light/Colourlight/Colour-Light
Colour Searchlight Signal
Colour Signalling
Continuous Cab Signaling/Continuous Cab Signalling
Continuous Cab Signaling System
Continuous Inductive Cab Signal
Continuous System of Cab Signalling/Continuous Controlled Cab Signal/
 Continuously Controlled Cab Signal
Continuous Controlled Cab Signal System

Daylight Position Light Signal
Distance Terms
Domestic Cab Signal Indicators

Double Light Signal
Dwarf Colourlight Signal
Dwarf Colourlight Shunt Signal
Dwarf Searchlight Signal
Dwarf Signal
Dwarf Signal-Flashing
Dwarf Type

Electric Automatic Colour-Light Signal
Enforced Cab Signaling

Fairyland
Fixed-focus Signal
Flasher Lights
Flashing Signals
Flashing Signals (Signals)/Flashing Light Signals
Four-Aspect Cab Signal System
Four-Aspect Coded 100 Hz Cab Signal Sytem/Four-Indication Code Continuous
 Cab Signal System/Four-Indication Coded Continuous Inductive Cab Signaling
Four-Indication Cab Signal

Hall-Type Colour-Light Signal
High Signal
Horizontally Arranged Long Range Color Light Signal Long Range Color Light
 Signals, Horizontally Arranged/Type E (Horizontal) Color Light Signals
Hump Shunting Signal

Illuminated Signal
Indicator, Cab, Audible
Indicator/Indicator (Stencil)
Intermittent Cab Signaling/Intermittent Cab Signal System

"L" Light
LEDS Searchlight Signal
Lens Arrangement Forms
Light Signal
Light Strip
Limited-Variant Forms
Long Range Color Light Signals, Vertically Arranged/Type D Long Range Color
 Light Signals, Vertically Arranged/Type D (Vertical) Color-Light Signals
Long Range Colour Light Signal
Long-Range Color-Light Signal

Long Range Colored Light Signals
Long Range Colour Light Signal
Long Range Daylight Signals
Long Range Daylight Type Color Light Signal
Long Range Signals
Long Range Type

Major Cab Signal Forms
Marker
Marker Lamp
Marker Light
Mechanical Color-Light Signal
Medium Range Color Light Signals/Medium Range Color Signals
Miniature Colour-Light Signal/Miniature Colour Light Signal
Modular Unit
Moving Slide Type Route Indicator
Multi-Colored Light Signal
Multiple Aspect Cab Signals
Multiple-Aspect Light Signals
Multiple-Indication Coded Cab Signals
Multilamp Route Indicator/Multi-lamp Route Indicator/Multi-lamp
Multiple-lens Colour Light Signal/Multiple-Lens Colour Light Signal/Multiple-
Unit Four-Aspect Colour-Light Signal
Multiple Unit Signal
Multi-Unit Colour Light Signal

On-Board Cab Signal Equipment
Other Cab Signal Forms

Partly Morphological Terms
Pedestal Signal
Position Light Automatic Type
Position-Color Light Signals
Position Light/Position-Light
Position Light, Color Position Forms & Alphanumeric, Graphic, Geometric
Signal Forms
Position Light Dwarf Signal
Position Light Humping Signal
Position Light Junction Indicator
Position Light Shunt Signal/Position-Light Shunt Signal
Position Light Signal
Position-Light Signal



Position Light Signal (LR)
Position Light Signal Terms
Position Light Speed Signal/Toton Position Light Speed Signal
Position-Light Type Wayside Signal
Position Shunting Signal
Projector Type Route Indicator/Projector Type

Railway Signal Lights
Revolving Light Signal

Searchlight
Searchlight Color Light Signal
Searchlight Signal Forms
Search Light Signal
Search-light Signal
Searchlight Signal
Searchlight Type Signal
Searchlight Type
Searchlight Type Colourlight Signal
Searchlight Type of Colorlight Signal/Searchlight Type Colorlight Signal
Searchlight Type of Color-Light Signal
Searchlight Type of Single-lens Color-Light
Searchlight Type Signal
Search Light Type Signal
Search-Type of Color-Light Signal
Seven-Way Route Indicator/Three-Way Theatre Route Indicator
Short Range Color Light Signals/Short-Range Color Light/Short Range Colour
Light Signal
Short-Range Color-Light Signals [Vertical type, Subway type]
Sidelight (Back Light)
Signal, Cab
Signal, Color Light
Signal, Dwarf
Signal, Flashing Light
Signal Lamp
Signal, Position Light
Single Lens Searchlight Signal
Single Lens Units
Single Light Signal
Spreadlight Colour Light Signals
Stencil Indicator
Stencil Indicator/Stencil Type Indicator/Stencil Type-Indicator/Stencil Route

Indicator/Stencil Type Route Indicator/Stencil, Number or Letter Type/Stencil
[Type]

Symbolic Form
System of Cab Indicators

Theatre-Type Route Indicator/Theatre Type Route Indicator

Theatre-Sign Type Indicator

Three-Aspect Day-Time Colour-Light Signal

Three-Indication Cab Signals

Three-Speed Train Control Cab Signals

Triangular Arrangement, Color Light Automatic Block Signals/Color Light
Signals Arranged in a Triangle/Type G (Triangular) Color-Light Signals

Two-Indication Cab Signals

Two-Indication Non-code System [Cab Signal]/Three-Indication Non Code Track
& Loop System [Cab Signal]

TVM 430 Cab Signalling System

Undifferentiated Physical Forms

Variant Forms

Visual Cab Signals

Visual Signal Lights

Visualizer

Wayside Cab Signal Equipment

Wing Lights

2B Overarching, Color Light & Other All-Lighted Signal Forms

2B1 Overarching Terms

ILLUMINATED SIGNAL. This term apparently refers to the development in the 19th c. of Signals for night time use. Illuminated Signals originally meant Semaphore Signals. An early form of illumination outlined the blade. This was followed by the creating of a lens unit attached to the blade. This term is more of an OA or sub-OA term than an all-lighted term though it may have some place here.

Reference: FRA-3.

LIGHT SIGNAL. An encompassing term for all forms of fully-lighted railroad Signals. Though it lacks specificity unless placed in a railroad context. Only a limited number of sources include this term.

References: VR, SA-TWR, ARSPAP-LSLSL

RAILWAY SIGNAL LIGHTS. This term suggests a general OA term save for the addition of light. It may be more appropriate here. Compare Visual Signal Lights.

Reference: Tansley '87

SIGNAL, LIGHT. An alternate form -- of the previous term -- in some U.S. sources. Meaning is that of Light Signal. It is a Signal (fixed) whose indications are given by color and/or position lenses.

References: ARSPAP-D, AAR SM '83.

SIGNAL LIGHT. A term found in only a few sources. It appears to be a general term encompassing a broad range of signal forms. It suggests a general term for many types of T-M lighted safety aids and not merely railroad Signals. Light Signal is a more common term with Signal, Light an alternate.

References: Shackleton 1976, US & S.

VISUAL SIGNAL LIGHTS. This term suggests a general OA term save for the addition of light. It may be more appropriate here.

Reference: Tansley '87

2B2 Color Light Signal Terms

a) Principal Forms

1) Basic Forms

COLOUR LIGHT SIGNALS/COLOUR-LIGHT SIGNALS/COLOURLIGHT SIGNALS/ COLOR LIGHT SIGNALS/COLOR-LIGHT SIGNALS.

General Note. This category encompasses a broad range of signal forms. The terms are numerous though diversity within the category is somewhat limited. Actual entries will be limited and related terms will be grouped together. Color Light signal terms can be divided into two basic groups: Primary forms, and Other Forms (and further subdivided into Distance, Lens Arrangement, Morphology, and Other Forms). Position & Color Position, while All-lighted are considered separately. Some source materials include Position and Color Position forms within Colorlight Signals. Most CL terms are two words divided about equally between hyphenated and non-hyphenated forms. English-language terms, outside the Americas, generally follow British spelling (Colour rather than color). Colourlight as one word is relatively rare and found mostly in Australia with a few "sightings" in Asia. These signals emit messages by all-lighted means in color and by multiple lenses. A form of CL, Searchlight, employs one optic unit and changeable discs and is listed separately. REMC refers to Color-Light Signals with light units in a vertical line. That may constitute a description of one form of color-light more than a formal name or a variant signal form. This GN is for all of 2B2.

References: Colour Light Signals: UIC, WBS, Rushworth, Mashour among others.

Colour-light Signals: Ellis, Rolt, Allen '82, Barwell, Shackleton, etc.

Colourlight Signals: WBS, Q-S&S, Grisdale

Color Light Signals: FRA 1, -2, -3,

Color-Light Signals: Phillips '42, Killigrew '49, Kaufmann '66

COLOR LIGHT TYPE/COLOR-LIGHT TYPE/COLOR-LIGHT TYPE SIGNAL/COLOR-LIGHT TYPE OF SIGNAL. FRA-1 employs the first term once; possibly it is an informal term. It is a reference to physical type of signal apparatus employed. The second term is found in ARSPAP though probably only

in conjunction with the additional word of Short Range (SR). The term may not be employed without that reference. See Also C-L Type Signal (SR) for cross-reference. REMC add an "of".

References: FRA-1, ARSPAP-H, REMC '48

COLOR LIGHT TERMS: OTHER THAN ENGLISH. UIC COST 1972 gives Colour Light Signal for the English form of the term. The same publication includes Signal Luminuex in French for Color Light, Lichtsignal in German, and Segnale Luminosa in Italian. However, UIC Gen Dict 1975 has alternate terms: Signal 'a feu de cou luer in French, Farblight Signal in German, Segnal a fuoco di colore in Italian, Senal Luminos de colores in Spanish. Brazil and Portugal railways employ Sinais Luminosos.

2) Limited-Variant Forms

SIGNAL, COLOR LIGHT. Placing the word "Signal: before Colorlight/Color Light is rare except in the U.S. where both AAR SM and ARSPAP-D both employ it. Other Signal terms in those publications also place the general words before the particular in a variety of instances.

References: AAR SM '83, ARSPAP-D '65

COLOUR-LIGHT/COLOURLIGHT/COLOUR LIGHT. Colourlight is possibly either a signal form or a reference to the means of displaying information. The hyphenated form is from Allen '62. The single-word form appears in ERS but with little elucidation. Possibly no extant form of the two-word form.

Reference: ERS-B, Allen '62.

COLOR SIGNAL/COLOUR SIGNAL. The first term is employed by B & O. It possibly includes Signals other than fully lighted forms (such as signals denoting track) and is thereby more inclusive. Colour Signal appears in one Queensland Railway source. That usage omits the commonly included word "light." But the meaning is unchanged.

References: B & O '53, Q Rlwys-S & S

COLOURED LIGHTS. An alternate form of Color Light Signal employed by a historical sketch of South African railway signals. The use of Coloured instead of colour/color is rare. The essay in question is in English and possibly language translations affected choice of terms. Australia also uses the term though the use is rare there as well.

References: Official Inaug., Around Australia, pg 6

3) Variant Forms

AUTOMATIC COLOUR-LIGHT SIGNALS. Companion term to the term Automatic Colour- Light Signalling. Denotes early stage of Color Light Signals when automatic processes were becoming common (but not yet) and method of operation sometimes included in term.
Reference: Shackleton '78, Ellis '66

COLOUR LIGHT RUNNING SIGNALS/COLOUR-LIGHT RUNNING SIGNALS. These are UK terms encompassing all Signals except Subsidiary Signals. They are not far removed from the term Color Light Signal which encompasses all All-lighted Signals. C L Running Signals includes UK Position Light Signals, Theatre & Stencil Indicators. These terms are morphologically-related and perhaps should be cross-references only in this segment.
Reference: K & W '63

COLOUR-LIGHT SIGNALS MULTI-ASPECT-VERTICAL. Vanns arranges signal types under a general heading but the form is a definite and identifiable form.
Reference: Vanns '97

MULTIPLE-LENS COLOUR LIGHT SIGNAL/MULTIPLE-LENS COLOUR-LIGHT SIGNAL./MULTI-LENS FOUR-ASPECT COLOUR-LIGHT SIGNALS. Term supplied by Wooley, VGR. It differentiates CL Signals that display multiple lenses from C L Signals that are searchlight forms with a single visible lens. Vanns offers a double-hyphenated variant that employs multi rather than multiple.
Reference: Wooley, A & W '91, Vanns '97

MULTI-COLORED LIGHT SIGNAL. This is a South Korean term. It distinguishes C L Signals with multiple lenses from searchlight form. It is somewhat similar to previous term though without mention of lens.
Reference: South Korea

MULTI-UNIT COLOUR-LIGHT SIGNAL. An alternate of Multiple-Lens Colour Light Signal.
Reference: A & W '91

SPREADLIGHT COLOUR LIGHT SIGNALS/LONG RANGE SPREADLIGHT COLOUR LIGHT SIGNAL/SPREADLITE COLOUR LIGHT SIGNALS. A single surveyed source included this term though the type of lens appears in other publications. The term "spreadlight" denotes a lens that spreads light over a wider spectrum though the range is less. It is employed, among other places, on sharp curves. Westinghouse B & S uses the term as two words, Spread Light. GRS in

the 1920s coined a trademark of "Spredlite." VGR speaks of "spreadlight-lenses" employed for "subsidiary or shunting signals." Second and third terms are alternatives.

Reference: WBS, GRS, VGR, Sig Eq '81.

4) Signaling Forms

AUTOMATIC COLOUR-LIGHT SIGNALLING. A term that is nearly historic since inclusion of the word "automatic" occurred most likely when mechanical processes dominated signaling and the addition of "automatic" means automatic processes were in an embryonic state. This term refers to a system of signals.
Reference: Shackleton '76

ELECTRIC AUTOMATIC COLOUR-LIGHT SIGNALLING. A general term that encompasses all Color/Colour Light signals but more explicit by including the energy source and character of operations.
Reference: Ellis '58

COLOR LIGHT SIGNALING/COLOR-LIGHT SIGNALLING (TAIWAN)/COLOUR LIGHT SIGNALLING/COLOUR-LIGHT SIGNALLING. These terms are rare in North America. Non-hyphenated forms are more common than hyphenated. Taiwan includes a rare form of American English for Color and British English for Signalling. These terms refer to systems of signals rather than to individual signal units.
Reference: Canada (first term); Taiwan (second term); Bangladesh, Hammond, Zimbabwe, GEC, etc (third term); Alkmaar (fourth term).

COLOUR SIGNALLING. One Queensland source drops "light" from Colour Light Signals, and Colour Light Signalling but the meaning is unchanged.
Reference: Q Rlwys-S & S

b) Other Color Light Signal Forms

1) Distance Terms

General Note. These terms refer to how far a Signal indication can be seen. Only a limited number of terms add a distance factor to the basic term. Most of the sources are from U.S. or ERS.

COLOR-LIGHT TYPE SIGNAL, SR/SHORT RANGE SIGNALS. Originally the first term was designed for 500 feet distance in 1904. The second term is from ERS-B.

Reference: ARSPAP-H, ERS-B.

MEDIUM RANGE COLOR LIGHT SIGNAL/MEDIUM RANGE COLOR SIGNALS. Seemingly only ARSPAP-H and B & M '81 includes this term. Medium Range denotes 1500' viewing distance for ARSPAP-H. Other sources suggest this distance for short range (SR and LR are often the only distance categories). The term dates back to 1912 and may be of a historical nature. Tansley has a similar term though without light.
References: ARSPAP-H, B & M '81

LONG RANGE COLORED LIGHT SIGNAL. It is uncertain whether this is an actual Signal form, or a descriptive reference to a form of signal light apparatus.
Reference: FRA-3

LONG-RANGE COLOR-LIGHT SIGNAL. This version with two hyphenated terms is from GRS '25. Range is determined by wattage, voltage of lamp bulb. Distance, because of those factors, can vary from 2500-3500 feet and often reaches 4000-5000', with a maximum of 5000-6000'.
Reference: GRS '25

LONG RANGE COLOUR LIGHT SIGNAL. This is a variant form of the basic term from GEC.
Reference: GEC

LONG RANGE DAYLIGHT SIGNAL. Another historic term including the word "daylight." The distance for this form was 3,500'.
Reference: B & M '81

LONG RANGE SIGNAL. A more abbreviated term but refers to Color Light. The term from ERS-B (for British Rail) has a distance of 1500m or near 5000'.
Reference: ERS-B

LONG RANGE TYPE. A category within color-light for King.
Reference: King '21

LONG RANGE DAYLIGHT TYPE COLOR LIGHT SIGNAL. A historical term. This can be seen by inclusion of the word "daylight" in the title. Probably only an early signal which could be seen in the daylight would include the word. Transition terms often include words that established words omit.
Reference: ARSPAP-H

SHORT RANGE COLOR LIGHT SIGNAL/SHORT-RANGE COLOR LIGHT SIGNAL/SHORT RANGE COLOUR LIGHT SIGNAL. A more explicit version incorporating both Short Range and Color Light into the title. The second title is from Starkey, South Africa.
References: FRA-3, ARSPAP-H, B & M '81; Starkey '43 ('74)

SHORT RANGE COLOR-LIGHT SIGNALS (VERTICAL TYPE; SUBWAY TYPE). GRS adds further explication by including specific forms: conventional, wayside version, and wayside type.
Reference: GRS '25

2) Lens Arrangement Terms [Some terms are cross referenced with 1) Distance Terms]

LONG RANGE COLOR LIGHT SIGNALS, VERTICALLY ARRANGED/TYPED LONG RANGE COLOR LIGHT SIGNALS, VERTICALLY ARRANGED/TYPED (VERTICAL) COLOR-LIGHT SIGNALS. This compiler has altered terms appearing in ARSPAP-H. The terms in question are tied to a manufacturer (GRS). While it is important to include the correct and precise terminology it may be permissible to present a more general version that is apart from the manufacturer's designation. The vertical version is found in much of the world though not under this heading.
References: ARSPAP-H, also GRS 1925, ARSPAP-LSLSL

HORIZONTALLY ARRANGED LONG RANGE COLOR LIGHT SIGNALS/LONG RANGE COLOR LIGHT SIGNALS, HORIZONTALLY ARRANGED/TYPED (HORIZONTAL) COLOR LIGHT SIGNALS. These are also exclusively U.S. terms (judging from a survey of the literature). ARSPAP-H seemingly is largely dependent on GRS for the data on these Signals. GRS refers to signal types by letters of alphabet. This form is referred to as Type E. See also explanation with Long Range, Color Light Signals, Vertically Arranged.
References: ARSPAP-H, also GRS 1925, ARSPAP-LSLSL

TRIANGULAR ARRANGEMENT COLOR LIGHT AUTOMATIC BLOCK SIGNALS/ COLOR LIGHT SIGNALS ARRANGED IN A TRIANGLE/TYPED (TRIANGULAR) COLOR-LIGHT SIGNALS. These are terms found in a few U.S. publications produced by ARSPAP-H and GRS '25. Most of these (and adjoining terms) are prefaced by GRS type designations. This Database will include that version but also a more generic form. The triangular form has one lens in a lower position and two horizontal upper lenses forming a triangle with one point downward.
References: ARSPAP-H, GRS '25

CLUSTER TYPE SIGNALS/CLUSTER TYPE FOUR-ASPECT SIGNALS/CLUSTER COLOUR-LIGHT SIGNALS. This Signal included in a few UK references is a historical term from the earlier 20th c. The Signal has four lens units arranged in a cross or diamond pattern with two horizontal units in a middle position and two vertical units intersecting the horizontal lenses. The vertical units are yellow; the left horizontal is green and the right horizontal is red. The Signal provided a second yellow for preliminary caution.
References: Nock '62, K & W '63, Vanns '97

COLOUR-LIGHT SIGNALS MULTI-ASPECT-CLUSTER. Vanns arranges signal types under heading of C-L but subdivisions represent a specific form of Signal.
Reference: Vanns '97

3) Morphology & Other Terms

APPROACH-LIT COLOUR-LIGHT SYSTEM/APPROACH-LIT MECHANICAL COLOUR-LIGHT SIGNALS. Signals lighted only at approach of trains. Method of operation that is incorporated into the name of the Signal.
Reference: Vanns '91

CHRISTMAS TREE. Colour lights positioned on a gantry. Colloquial term.
Reference: Jackson '92

COLOUR-LIGHT ROUTE INDICATOR. This Signal is in contrast to many Route Indicators with LW or other uni-color patterns.
Reference: Taylor '49

COLOURLIGHT SIGNAL-UNDERGROUND STYLE. A form of Signal intended for tunnels where space is limited. Housings for lamp apparatus are smaller than standard forms and lenses are simple. Darkness requires less powerful apparatus. A single source has such a signal in which the location (underground) is included in the title.
Reference: WBS

COLOUR LIGHT SIGNAL (HUMPING). This term from UN '54 (for U.S. practice) speaks of Colour Light Signals "for controlling the movement of pusher engines while humping" The term as listed is not fully accurate yet the specific signal has that singular function. This term is also morphological in nature.
Reference: UN '54



COLOUR LIGHT SHUNT SIGNAL. A curious term which may not actually exist. Starkey speaks of Position Light Shunt as a satisfactory Signal but notes that a C L Shunt Signal in lieu of PL Shunt might cause confusion since it would be similar to a C L Running Signal.
Reference: Starkey '43

DAY COLOUR-LIGHT SIGNAL. A term referring to earlier all-lighted Signals which did not require non-lighted dimension during the day hours (in contrast to Semaphore Signals).
Reference: Nock '62

DOUBLE LIGHT SIGNAL. Older term for what is now known as Bi-directional Signaling.
Reference: King '91

FAIRYLAND. Jackson includes colloquial terms in his treatise. Fairyland designates Multi-aspect Colour Light Signals.
Reference: Jackson '91

MECHANICAL COLOR-LIGHT SIGNALS. A curious Signal that employed Semaphore spectacles and lamps but without arms. The Signal was thereby a Colour-Light Signal that found some use in several UK systems.
Reference: Vanns '97

MINIATURE COLOUR-LIGHT SIGNALS/MINIATURE COLOUR LIGHT SIGNALS. Seemingly a synonym for Dwarf Signals. Miniature is found in UK practice; dwarf more common in North America.
Reference: K & W '63

THREE-ASPECT DAY-TIME COLOUR-LIGHT SIGNAL. This term may be more fitting in IC but retained here because of unusual title. It refers to early Signals which could be seen in day as well as at night. See Also Day Colour-Light Signal.
Reference: Vanns '97

2B3 Searchlight Signal Forms

General Note. There is a gradation of terms for Searchlight Signals: Searchlight/Searchlight Color Light/Color Light Searchlight. The various terms fit into one of those categories. Do they represent different conceptions of the Searchlight Signal? Or are they semantic differences which are not of great

significance? Even if the later the categories offer a way to consider the various terms.

SEARCHLIGHT. This term is seemingly a short form for Searchlight Signal. For one system, Zimbabwe, Color Light Signals are divided into Searchlight and Multiunit Forms. Only a few surveyed sources include the term.
References: FRA-3, Zimbabwe Railways

SEARCHLIGHT SIGNAL. The word "searchlight" suggests a powerful light, narrowly focussed and very mobile in direction. The searchlight Signal for railroads was perhaps coined to denote a focussed and powerful and single lamp apparatus; but it does not offer a choice in direction but is fixed. The searchlight Signal is a form of Colorlight Signal but with a single housing for 3-aspects. Movable lenses (or at least movable color panels) provide a choice that is selected by the operating system. This is the only relatively common term for the Searchlight Signal. Queensland Railways speaks of the Searchlight as having one (single) aspect but able to display several indications. It would seem more accurate to speak of three aspects though not at one time.

Safetrans replaces electro-mechanical apparatus of the conventional Search-light with light modules and fiber-optic cables that moves the desired color to the lens. It is termed a "Unilens" and it is not considered to be a Searchlight Signal by Safetrans. Yet it is in essence a Searchlight Signal because one color appears at a time though other colors are capable of display.
References: Queensland Railways, B & M '81, SM '83, South Korea, Canada '62, Safetrans

SEARCH-LIGHT SIGNAL. A slightly variant form of Searchlight Signal. Few surveyed sources include this variation.
Reference: Kaufmann '66, Queensland Railways

SEARCHLIGHT TYPE. A variant and shortened form of Searchlight Type Signal.
References: ARSPAP-LSS, ARSPAP-H

SEARCHLIGHT TYPE SIGNAL. An alternate to Searchlight as an OA term for this form of Signal. The word "Type" is a component of numerous signal terms which also include the word "Searchlight."
Reference: UIC COST

SEARCH LIGHT TYPE SIGNAL. A variant of Searchlight Type Signal. Rare example of Search and Light as two words in a Signal context. See Also: Search

Light Signal.
Reference: UN '54

SEARCH LIGHT SIGNAL. Search and Light as two words is rare in Railroad Signals. This term is from South Korea. One other use is Search Light Type Signal, UN '54. Both uses are Asian and may represent regional uses of English.
Reference: South Korea, UN '54

SEARCHLIGHT COLOR LIGHT SIGNAL. The employment of both SL and CL raises questions that are not easily answered; slight permutations may obscure underlying differences. Is there a difference in meaning between a term begun with Searchlight and followed by Color Light and one begun with Color or Color Light and followed by Searchlight? Is this form a Color Light Signal prefaced by specific form? While the other is a Color Light Signal incorporating a specific variation? Is a Searchlight Signal minus Color Light closer to being an autonomous form?
Reference: Rapid Advance

SEARCHLIGHT TYPE OF COLORLIGHT SIGNAL/SEARCHLIGHT TYPE COLORLIGHT SIGNAL. Both terms are from ARSPAP-H. The first term is from 1920 and may reflect the earliest stage of Searchlight when it was viewed as a variant form of Color Light Signals. The second term, from 1930, omits "of" and may suggest SL is an established variant form.
Reference: ARSPAP-H

SEARCHLIGHT TYPE COLOUR-LIGHT SIGNAL. Variant term. The term is from the UIC "dictionary" which lacks definitions and is more on the order of a word list. A French form in UIC-CST includes "Unite Limineuse A' Oculaire Mobile", suggesting moving lens is included in the title.
Reference: UIC L.Q. (DST), UIC-CST

SEARCHLIGHT-TYPE OF COLOR-LIGHT SIGNAL. Variant form from Kaufmann '66. Only source surveyed with hyphens for Search and Light, and Color and Light.
Reference: Kaufmann (IES) '66

SEARCHLIGHT TYPE OF SINGLE-LENS COLOUR-LIGHT. Term unique to New Zealand. It ties Searchlight directly to Colour-Light and thereby places SL as a component of CL.
Reference: Century ... N Z '64

SEARCHLIGHT TYPE COLOUR LIGHT SIGNALS: Wooley has CL as two

words; this term constitutes a variant form.
Reference: Wooley

COLOUR SEARCHLIGHT SIGNAL. A variant form employed by Wooley (Aus). See comments on Searchlight Colour Light Signal (GEC).
Reference: Wooley.

COLOR-LIGHT SIGNAL, SEARCHLIGHT TYPE. Term reflects view of SL as a clear and explicit type of CL. Terms that omit CL suggest SL as a form in itself or at least not a clear variant of CL
Reference: GRS '61

DWARF SEARCHLIGHT TYPE. Variant form of basic term and description. The word Type is included though not the word Signal. The meaning of the term is the same as terms containing Signal.
Reference: WBS (Aus)

COLOR LIGHT HIGH SIGNAL, SEARCHLIGHT TYPE/COLOR LIGHT DWARF SIGNAL, SEARCHLIGHT TYPE. Terms from ARSPAP-LSLSL. High refers to Signal mounted on mast (and mast of some height) while Dwarf is bolted to a foundation block of concrete or other substance.
Reference: ARSPAP-LSLSL

HALL-TYPE COLOUR-LIGHT SIGNAL. Alternate name for Searchlight Signals. Employed in UK in 1920s; name refers to maker.
Reference: Vanns '97

LEDS SEARCHLIGHT SIGNAL. LED refers to light emitting diodes, a form of solid state technology which produces lower cost light displays.
Reference: Tansley '85

SINGLE LENS SEARCHLIGHT SIGNAL. This term may appear to be redundant since SL is a single, unified apparatus but K & W/UK add "Single Lens" to distinguish a one unit, 3-aspect Signal from a 2 unit apparatus displaying a fourth aspect. "Single lens" does not appear to be fully accurate since SL contains three lens though a single one is positioned at any one time. See Also: SL Type of Single-lens C-L.
Reference: K & W '63

SINGLE LIGHT SIGNAL. This is not a SL term. The term seemingly refers to a Signal displaying one aspect at a time. The term is from NSW and many Signals in NSW have double units and double-aspects. The term in question refers to

single units. This entry is also a cross-reference with morphology, Ch 1D.
Reference: NSW

2B4 Other All-Lighted Terms

a) Single Lens Units (These terms frequently have a morphological dimension)

1) Terms Slightly More Morphological Than Physical

MARKER. This term is from India. It omits the term light and possibly it is not lighted or at least not all forms are lighted. Messages are those of Marker Lights but the energy forms employed are not clear.
Reference: Indian Railways

MARKER LAMP. This term is a possible a synonym for Marker Light though this term may also have a variant meaning. GRS 1925 speaks of both Marker Light and Marker Lamp. Marker Light includes a morphology dimension while Marker Lamp refers to physical apparatus. Western Australia refers to the broader term of Signal Lamp in a manner that suggests Lamp means physical apparatus.
References, GRS '25, Western Australia Railways

MARKER LIGHT. This term is both physiological and morphological. Its core purpose is to qualify main signal aspect and is thereby morphological. But it is also a physical entity consisting of a single lens apparatus mounted on the signal mast. See Also: Marker, Marker Lamp, the several "A" Light forms.
References: UIC-COST, AAR-RAR, K & W '63, Western Australia Railways

2) Terms Somewhat More Morphological Than Physical

ILLUMINATED "A" LIGHT/"A" LIGHT/AUTOMATIC "A" SIGNAL. These terms are single lens units with the letter "A" embossed on the glass cover. They are forms of Marker Lights. These terms along with Marker Lights are cross-referenced with Morphological terms.
References: Queensland Railways (first two terms), NSW (third term)

"L" LIGHT. One unit Signal with letter "L" embossed on the lens cover. L stands for Loop. Cross-referenced with Morphology.
Reference: Western Australia Railways

MULTIPLE-ASPECT LIGHT SIGNALS. This term is a cross-reference with Morphology, Chapter 1D.
Reference: ERS-B

b) Dwarf Signals (Frequently Multiple Lens)

DWARF SIGNAL. This form of Signal is small and may have no mast at all. Often the Signal housing is attached to a foundation on the ground. This Signal type is sometimes employed for mainline/runnig situations though more often it is found in train yards, situations where lines branch off. Not infrequently the term has an undifferentiated title though many forms are in PL form.
References: ERS-B, Nock '62, SM '83, ARSPAP-D and -H

SIGNAL, DWARF. Alternative formulation for Dwarf Signal appearing in some U.S. sources.
References: FRA-3, ARSPAP-D

DWARF TYPE SIGNALS. A slightly altered form of the basic term.
Reference: Nock '62

DWARF SIGNAL-ELECTRICAL. NSW distinguishes between mechanical and electrical (the later with the meaning of all-lighted) by including appropriate term in title.
Reference: NSW

DWARF SEARCHLIGHT SIGNAL/DWARF COLOURLIGHT SIGNAL. Dwarf Signal terms prefaced by the type of Signal (Searchlight, Position-Light, etc) appear in those segments. Terms prefaced by Dwarf are listed here though described in the appropriate place.
References: WBS

COLOUR LIGHT DWARF SIGNAL/COLOR LIGHT DWARF SIGNAL. These are variant forms. Possibly they should be placed in Color Light Signals since that dimension precedes the dwarf dimension.
Reference: WBS

DWARF COLOURLIGHT SHUNTING SIGNAL. This term is primarily a morphological term though it needs a cross-reference here.
Reference: NSW

c) Undifferentiated Physical Signal Forms

AUXILIARY SIGNAL. This is seemingly a very general term that could include Marker Lights and other less than primary forms. Only FRA-3, of surveyed sources includes the term; and the term seemingly refers only to Position Light

Signals. The term is retained here because of its more general character (at least potentially).
Reference: FRA-3

BACK LIGHT I. This term refers to a light created by opening in back side of Signal emitting light from Signal Lamp denoting Signal is in operation. RSD describe a complex form that indicated which message was displayed by main signal at a given time. GRS '25 offered a mirror and lens system that projects light from Signal apparatus to back of Signal. In Pakistan the Back Light indicates signal on, and whether to proceed message displayed. WA form displays one of two messages: proceed or stop; and caution for distant Signal.
References: SM '83, GRS '25, WA, Pakistan

BACK LIGHT II. SM '83 includes a second form of Back Light with a different meaning: This second form projects an auxiliary signal for a Grade Crossing Signal thereby providing a Signal for a different direction (from the main signal).
Reference: SM '83

BACK-LIGHT/BACKLIGHT. WBS (UK) offers two alternative variant forms. They are in use for Position Light Shunt and Subsidiary Signals. [Cross-reference: PL].
Reference: WBS (UK)

SIDE LIGHT. A synonym for Back Light in SM '83. This may refer to second form for grade crossings.
Reference: SM '83

FLASHER LIGHT. Undefined term in UIC. The terms appears in close proximity to fixed lights and therefore probably indicates a signal with flashing aspects(s). Numerous European systems employ such aspects. They are less common elsewhere though not altogether unknown. Messages are found in morphology.
Reference: UIC

FLASHING LIGHT/FLASHING LIGHT (SIGNAL)/FLASHING LIGHT SIGNAL. These terms appearing in SM '83 refer to crossing signals. They are included because of the resemblance to railroad signals.
Reference: AAR SM '83, Kanner '92

FLASHING SIGNALS. Terms appears in a discussion of signals and human factors and may thereby have a theoretical meaning more than an applied one.
Reference: FRA-3

SIGNAL, FLASHING LIGHT. A term in ARSPAP-D That follows their usual reverse order. It refers to a Grade Crossing Signal.
Reference: ARSPAP-D

REVOLVING LIGHT SIGNAL. A historical term in ARSPAP-H from the late 19th c. It is not clear whether or not the term is all-lighted but there is no mention of a daylight dimension.
Reference: ARSPAP-H

FIXED-FOCUS SIGNAL. Term refers to a Signal which can not be adjusted; seemingly, nearly all Railroad Signals are of this form. It can be contrasted with a Safetrans signal with "an adjustable light bracket ..."
Reference: Easy Access Lineside Signal, IRJ 1-96

HIGH SIGNAL. This denotes Signals mounted on a substantial mast and distinguishes them from Dwarf Signals with little or no mast.
Reference: ARSPAP-LSLSL

LIGHT STRIP. A strip or bar of small lights accompanying main lights. It is employed in URO system and provides for further message possibilities. It is not a form of Position Light.
References: URO 1962, Mashour 1974

MODULAR UNIT. This term refers to Signal component in a module form which can be added to other similar units to form a Signal apparatus. The term is from a manufacturing concern.
Reference: WBS

MULTIPLE UNIT SIGNALS. Termed employed by Starkey (SA) in 1943. The meaning is unclear. It may possibly indicate a Signal with multiple lenses or it may refer to Signals with double lenses. Seemingly no other surveyed source includes the term.
Reference: Starkey '43

MULTIUNIT. A one-word term seemingly employed only by Zimbabwe. It refers to Signals with multiple lens units. The other Signal form for Zimbabwe is the Searchlight which see.
Reference: Zimbabwe Railways

SIGNAL LAMP. Western Australia makes a reference to the lighting of Signal Lamps. This may indicate a reference to physical apparatus. Signal Light, on the other hand, speaks more of morphology or the "total package" of apparatus and messages produced and displayed.
Reference: Western Australia Railways



2C Position Light, Color-Position Light, & Alphanumeric, Graphic, Geometric Signal Forms

2C1 Position Light Signals

POSITION LIGHT SIGNAL.

General Note I. Position Light Signals create and display messages by position of lights rather than by multiple colors (Argentina offers an interesting perspective in describing this Signal form as Senales luminosas incoloras; incoloras means colorless). Color is present but only in a single color. Position Light can suggest a full-fledged Signal form since several American systems employ it in a full sense (it dates back to 1915 on the Pennsylvania Railroad). The full form can display as many aspects as mainline Signals such as Color Light Signals. However, many systems outside the Americas employ Position Light in a different form.

The second form comes in two basic versions. One consists of an arm(s) displaying 3-5 lunar white lights, and it denotes a diverging route (which is a morphological function). In some instances five and six arms may be present. It is a true Position Light Signal but with a specialized function, and the light pattern is uni-functional. All lights of a given arm are either on or off. The second version, often a Shunt Signal, has, frequently, a triangular-shaped housing displaying two or three lamps.

In some instances some lamps may be lit at all times but in other cases all lamps may be darkened according to system practice. There are 1-3 possible messages with the second form of the Position Light Signal.

General Note II. Some so-called Position Light Signals include color so they are in reality Color Position Light Signals. For that matter Conrail began adding red lamps to Position Light Signals so even many regular Position Light Signals are no longer true Position Light Signals. A section termed Pseudo Position Light Signals is included in Color Position Light Signals.

General Note III. For the Database Position Light Signals are divided into three categories:

- Position Light I are full signals (circular appearance)
- Position Light II are specialized (usually with arms)
- Position Light III are specialized with one of several forms and are not mainline:

- a) Most common form: triangular-shaped housing, 1-3 lamps
- b) Less common forms include a circular housing with multiple lamps though limited messages (There is also the "Merry go round" with multiple lamps and limited messages).

The regular Position Light Signal displays messages of a semaphoric configuration by one color and through rows of lights. The Position Light has nine signal lamps positioned in a circular pattern with a circular backplate. The lamps are connected to a central hub by pipe conduits. Auxiliary lamps or a marker lamp can accompany the main signal and thereby increase possible indications.
References: Phillips '42, Part F, ARSPAP-LSLSL, FRA-3, ERS-B

POSITION-LIGHT SIGNAL. A variant term that creates a compound noun but without a change in meaning.
Reference: Blythe '51

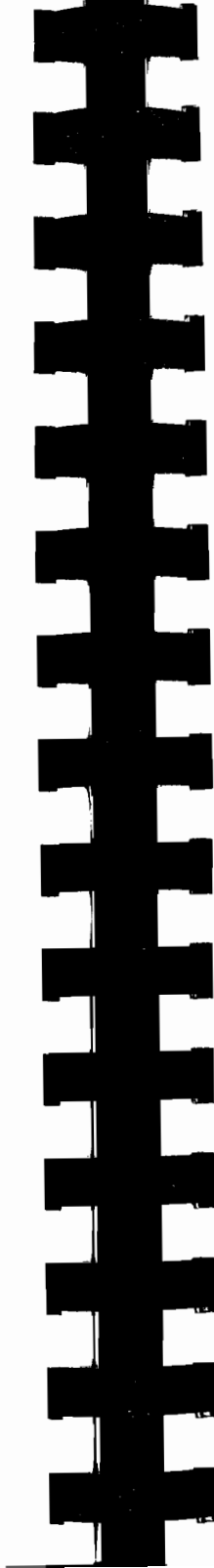
POSITION LIGHT/POSITION-LIGHT. This term is a shorter form that omits the word "Signal". Meaning seemingly unchanged from more explicit form. Term is somewhat vague except when placed in context of Railroad Signals. Blythe '51 includes both Position Light (no hyphen) and Position-Light Signals without a change in meaning. UN '54 lists Position Light under general heading of Light Signals; Signal is thereby implicit in title.
Reference: Blythe '51, Signal Eq '84, FRA-3, UN '54

POSITION-LIGHT TYPE WAYSIDE SIGNALS. FRA-2 places Position Light within category of Fixed Wayside Signal Systems which may explain adding "Wayside Signals" to Position Light.
Reference: FRA-2.

BEAM-LIGHT SIGNAL/BEAM LIGHT SIGNAL. An alternate name for Position Light Signal. A singular term appearing in a few historic sources.
Reference: King '21, Nock '62

SIGNAL, POSITION LIGHT. U.S. sources (of an official nature) tend toward placing the general term first then the particular. Meaning is probably that of the core term, Position Light Signal (Unless the term Signal is the focus and details such as Position Light acting as permutations of the core notion of Signal).
Reference: ARSPAP-D, FRA-3

DAYLIGHT POSITION LIGHT SIGNAL. UK historic term for Penn RR's Position Light Signals. Employment of "Daylight" probably denotes an earlier era which is on the boundary between separate indications for day and night and



single indications with all-lighted aspects.
Reference: Nock '62

POSITION LIGHT SIGNALS (LR). This term is the ARSPAP-H reference for the earliest Position Light form which was long range in nature. Long range added since long distance was not implied for early form.
Reference: ARSPAP-H.

POSITION LIGHT DWARF SIGNAL. This signal from U.S. practice is short range with four lamp units and it is ground-mounted. Ground-mounted is a UK expression.
Reference: ARSPAP-LSLS

POSITION LIGHT SHUNT/POSITION-LIGHT SHUNT SIGNAL. These are "Pseudo Position Light Signals." They have 3 lamps in two colors. The second term is from K & W '63 though identical to shorter form from Westinghouse-UK.
Reference: Westinghouse-UK, K & W '63

POSITION LIGHT HUMPING SIGNALS/POSITION LIGHT HUMPING SPEED SIGNALS. These terms are from UN '54. Little explanation is given of the meaning of the terms. They possibly resemble the Hump Shunting Signal of K & W '63.
Reference: UN '54

GROUND POSITION LIGHT SHUNT SIGNAL. The addition of "ground" denotes the physical size, height of this signal and is included in the title.
Reference: A & W '91

HUMP SHUNTING SIGNAL. This signal is a "true" Position Light even though there is no mention of Position Light in the title. It has multiple lamps in a circular patterns that bear a strong resemblance to U.S. forms though with a specialized function.
Reference: K & W '63.

POSITION LIGHT JUNCTION INDICATOR. This form has arm(s) rather than circular or triangular pattern. All lights are of one color which is lunar white.
Reference: K & W '63

POSITION LIGHT AUTOMATIC TYPE. This term from UN '54 refers to Swiss practice. The term gives the appearance of a general term. However, it is in the context of Signals at stations and is probably restricted in usage.

Reference: UN '54

POSITION LIGHT SPEED SIGNAL/TOTON POSITION LIGHT SPEED SIGNAL. Signals regulate merry-go-round freight loading/unloading operations. Most signal lamps display white lights; two lamps in this Signal display red lamps which falls short of true Position Light Signal.

Reference: Leach '91

POSITION LIGHT SUBSIDIARY SIGNAL. For A & W this denotes a Signal on a mainline that provides indicators for trains to move to one of several types of subsidiary lines.

Reference: A & W '91

PATTERN INDICATOR. Similar to Junction Indicator (Position Light in arm form) but lights mounted on triangular-shaped backdrop. Similar in appearance to those of Queensland Railways Junction Indicator (which is not listed as Position Light).

Reference: K & W '63.

PEDESTAL SIGNAL. These refer to rectangular-shaped (long dimension vertical) Signal intended for restricted locations. Two light units for indication instead of three units as in circular form (though one source speak of two or more). Referred to as high stand (that is, mounted on a short mast or pedestal).

Reference: Conrail

SUBSIDIARY SIGNAL. A term encompassing a variety of functions and Signal forms. Westinghouse-UK presents a Position Light form with two lamp units in one of several colors.

Reference: Westinghouse-UK

POSITION LIGHT SPEED SIGNAL. "True" Position Light Signal on low base. Nine light units in a circular pattern (Center light is white; the other 8 are red or white).

Reference: Westinghouse-UK.

WING LIGHTS. A form of Position Light Humping Signal. See Also: Position Light Humping Signal.

Reference: UN '54 (UK)

2C2 Color Position Light Signal Forms

COLOR POSITION LIGHT SIGNAL.



General Note. Color Position Light Signals are in two forms. One form, under the Color Position title, is found seemingly only in the U.S. The second form, labeled Position Light, frequently displays more than one color and is found outside the U.S. Confusion is increased by adding red to the Position Light Signals maintained by Conrail (purchased and split between two other railroads).

Color Position Light Signal is a fixed, all-lighted Signal whose indications are a combination of position and color. At least two lamps are required per indication. This is the most commonly employed term for this form of Signal. The Signal usually consists of a main signal and marker lights units.

Reference: ARSPAP-D, ARSPAP-LSLSL, ARSPAP-PES, B & O

COLOR-POSITION SIGNAL. Variant form that omits the word "Light" but adds hyphen. Fewer references to this term than to Color Position Light Signal. Though, to be sure, only limited sources employ either term; nearly all or all are U.S. in provenance.

References: Armstrong '57, Phillips '42, Kaufmann '66

COLOR-POSITION-LIGHT SIGNAL. B & M offers a double hyphen variant form. Meaning is unchanged from primary form. GRS '25 also employs double hyphen though that version adds "High" and "Dwarf" to those forms.

References: B & M '81, GRS '25

SIGNAL, COLOR POSITION. This term follows a practice found in some U.S. publications of placing the general before the particular. Meaning unchanged from more conventional word order.

Reference: ARSPAP-D

COLOUR POSITION LIGHT SIGNAL. UN '54 employs British English in referring to U.S. Color Position Light Signal.

Reference: UN '54

COLOR-POSITION-LIGHT HIGH SIGNAL/COLOR-POSITION-LIGHT DWARF SIGNAL. This term is from GRS '25. Double hyphen and Color Position Light Signal divided into High and Dwarf forms.

Reference: GRS '25

COLOR POSITION LIGHT DWARF SIGNAL. This term refers to a small Signal that is ground mounted. Light units and Marker light(s) can produce a full range of aspects. Which is in contrast to PL Dwarf Signal. See also Color-Position-Light Dwarf Signal.

Reference: ARSPAP-LS LSL

POSITION-COLOR LIGHT SIGNAL. Henry '42 alone gives this reversed version of the Color-Position Signal. The Signal is seemingly the regular Color Position Light Signal.
Reference: Henry '42

COLOR & POSITION SIGNAL. [Cross-Reference]. Semaphore Signal of early form that gave night indication both by color and position of lights. Signal is included here as cross-reference because title strongly suggests the all-lighted Color Position Light Signal.
Reference: ARSPAP-H

2C3 Symbolic Signal Forms

General Note. The Railway Signal monograph (Part F) and General Classification (Part H) contain a segment known as Alphanumeric, Graphic and Geometric Signal Forms. Those later terms are largely morphological in character. For this coverage Symbolic Forms will be substituted. The symbolic encompasses the more explicit terms and is a perhaps more adequate term for physical forms which necessarily include the physical aspects of messages. The major components consist of theatre or multi-lamp Signals, stencilled Signals and a miscellaneous category.

a) Multi-lamp/Theatre Indicators

MULTI LAMP ROUTE INDICATOR/MULTI-LAMP ROUTE INDICATOR/MULTI-LAMP.

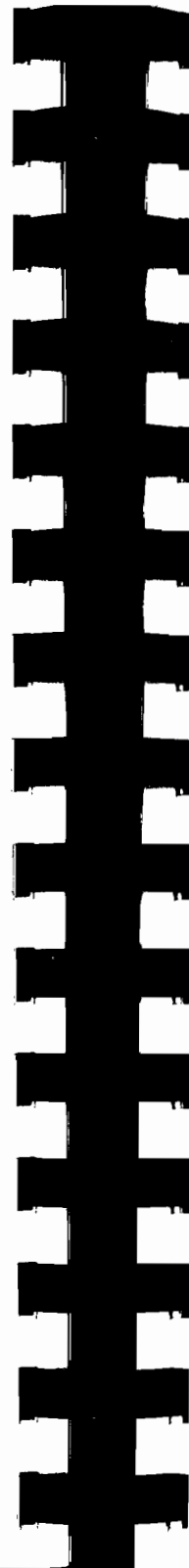
These terms are supplied by Westinghouse Brake & Signal. They consist of numerous lamps arranged to spell out letter(s) and/or number(s). They are seemingly interchangeable with terms that include the word "Theatre". [British English employed here because these aids are in the British English areas of the world].

Reference: WBS

SEVEN-WAY ROUTE INDICATOR/THREE-WAY THEATRE ROUTE INDICATOR. Terms that include the number of divisions in the Indicator as part of the title.

Reference: A & W '91

THEATRE MULTI LAMP ROUTE INDICATOR. A slightly different term that refers to the core Signal form: a Signal displaying numerous small lamps arranged to show letters or numbers. It is partly morphological in character though the



physical dimension remains prominent.
Reference: GEC

THEATRE-TYPE ROUTE INDICATOR/THEATRE TYPE ROUTE INDICATOR. These terms, partly physical, partly morphological, are of the multi-lamp form. K & W includes both hyphenated and non-hyphenated forms.
References: K & W '63, Allen '52.

THEATRE TYPE INDICATOR. A more terse term that omits Route Indicator from the title.
Reference: Vanns '97

THEATRE-SIGN TYPE INDICATOR. A variant name from Allen '52 that is interchangeable with Theatre-type Route Indicator or Theatre Multi Lamp Route Indicator.
Reference: Allen '52

b) Stencil Indicators

STENCIL INDICATOR/STENCIL TYPE INDICATOR/STENCIL-TYPE INDICATOR/STENCIL ROUTE INDICATOR/ STENCIL TYPE ROUTE INDICATOR/STENCIL, NUMBER OR LETTER TYPE/STENCIL [TYPE]. This plethora of names refers to a single form. It displays one or more letter and/or numbers. The characters are embossed on glass with illumination behind the characters. Graphic representations, such as arrows can be present instead of alphanumeric representations. Some of these terms include morphological terminology but they also include the physical dimension which requires their inclusion here. Many or more of the terms are UK, South African or Australian in provenance. Some symbols may be graphic including arrows. Arrow Indicators are included in the miscellaneous segment since because they include both stencil and cut-out forms.
References: WBS, K & W '63, NSW, Leach '91

c) Other Forms

ARROW INDICATOR/SINGLE ARROW INDICATOR/DOUBLE ARROW INDICATOR.

This may be more of a morphological term than physical. Yet it maintains a physical aspect because of the visual appearance. Western Australia includes such a form under the name Arrow Indicator. Other systems may include such forms without the name. Stencil Indicators can include an arrow form. New Zealand splits the term Arrow Indicator into single and double forms. Some Arrow forms

are not embossed on glass but are glass/metal graphic forms shaped in the material itself. Various German Signals/Indicators are of this type.
References: W.A., N.Z., Germany

INDICATOR/INDICATOR (STENCIL). Alternate name from A & W. Indicator can have more general usage but here it refers to Stencil Indicator.
Reference: A & W '91

MOVING SLIDE TYPE ROUTE INDICATOR. Term from NSW. It may not be fully lighted. The symbols are large and may be visible in daylight w/o illumination. A moving slide moves necessary symbols into and out of position.
Reference: NSW

PROJECTOR TYPE ROUTE INDICATOR/PROJECTOR TYPE. Term appearing in two sources. Few details are extant. It is a long range rather than short range aid. (Multi-lamp forms can be view as long range while Stencilled are short range. The Projector form is comparable in function to Multi-lamp).
Reference: Nock '62, Starkey '43

2D Cab Signaling

2D1 Major Cab Signal Forms

CAB SIGNALS.

General Note I. The terms of Cab Signals and Cab Signaling can present a confusing and even contradictory picture. Cab Signals and Cab Signaling (British English: Signalling) can have all but identical meanings and they can have distinctly variant meanings. Cab Signals constitutes a noun while Cab Signaling is seemingly a verb (Signaling is a verb though adding Cab may muddy the matter). Cab Signals is often an individual unit while Cab Signaling can often mean a of conveying messages. But at times Cab Signal suggests an integrated system of signals and messages. But Cab Signaling can also be a system and therefore also a noun. Whatever distinction exists between Cab Signals and Cab Signaling is a less than clear and distinct one.

General Note II. For the Database the term Cab Signal will focus on them as individual units though this does not deny a possibly broader meaning. Cab Signaling will have the primary meaning of a system of integrated signals. Several sources speak of Cab Signal System which may support the contention that Cab Signal can have a broader meanig. However, at least one of those sources indicates that Cab Signal System refers to the components making up a Cab Signal apparatus for a locomotive. The other meaning remains a possibility.

System applying to Cab Signaling is less common. Possibly because any need to make explicit the meaning of Cab Signaling is less necessary.

General Note III. Signals under the heading of Cab Signal are of several forms. There are traditional color light forms in miniature. There are position light and numerical forms as well. Digital forms with numbers and sometimes letter and graphic forms are increasingly commonplace. Such forms focus on speed limit messages. All of these forms are located on-board the train and receive impulses from track circuits and other means including transponders. Frequently various aspects of train control are added to cab signals (or cab signals become part of train control). A sound dimension is also a common feature of Cab Signals. North American forms are often of continuous operation though intermittent forms are commonplace in Europe.
References include: GRS '54, Savarzeix '81, ARSPAP-D

CAB-SIGNALS. A single surveyed source includes this hyphenated variant form. The meaning is unchanged.
Reference: Armstrong '88

AUTOMATIC CAB SIGNAL/AUTOMATIC CAB SIGNAL SYSTEM/AUTOMATIC CAB SIGNAL SYSTEM (ACS)/SYSTEM, AUTOMATIC CAB SIGNAL. These terms are infrequently employed terms found in a few U.S. sources. Is there a difference from Cab Signal System lacking the word automatic? Is it redundant or does it make the basic term more explicit? Is it akin to Automatic Block Signals where trains activate the Signals? Standard Code speaks of Automatic Cab Signals opeating in Automtic Cab Signal territory and not outside of it. SC has no reference to any other form of Automatic Cab Signal. Kanner adds acronym of ACS. Cross Reference: 1E, Systems.
References: AAR SC, ARSPAP-D, FRA-RAR

AUTOMATIC CAB-SIGNAL SYSTEMS CONTINUOUSLY CONTROLLED. This term is similar to other such systems though REMC has added Automtic indicating Cab Signal System is within Automatic Signalling operations.
Reference: REMC '48

SIGNAL, CAB. A recurring U.S. practice in a variety of official documents is to place the general before the particular. Meaning is unchanged from core term of Cab Signal.
References: ARSPAP-D, FRA-RAR, AAR-SC

CAB SIGNAL SYSTEM. Cab Signal may suggest an individual unit but it can have a broader meaning made explicit in this term. All surveyed sources with this

term are U.S. though one refers to USSR (but from the perspective of U.S. ideas), and two contain some international materials.

References: FRA-1, FRA-3, FRA-RAR, AAR-USSR, Armstrong '88, U S & S '86

CAB SIGNALING/CAB SIGNALLING/CAB-SIGNALING/CAB SIGNALLING SYSTEM.

General Note I. These entities can be a conventional signal system though located in the engine cab. They also can be found in tandem with wayside signals. In addition, they can be integrated with some form of train control. However, with newer and more encompassing train control systems they seem to be more often a subsection of train control or a function of train control. The line between Cab Signaling and train control (and the relationship of the same) is not always clear and may be more than a little blurred. Train Control (as messages) is considered in Chapter 1 while the physical aspect is included here.

General Note II. It may be farfetched to suggest that signaling may no longer constitute signaling when a train control function "kicks in." However, when a human operator fails to respond to a signal indication and automatic processes take over then the signal indication and operator and their reaction is eliminated and the signaling processing as such is abrogated. This suggests a semiotic process is at work since a message has to be received and then acted upon. When that process is not occurring the physical operation of signaling falls short of what signaling needs to be.

In contrast to nearly any main signal term -- of whatever mode -- the main term, Cab Signal, is possibly mentioned less often than a term describing a system of such Signals: Cab Signaling (along with Cab Signalling, Cab-Signaling) are mentioned more in the literature than Cab Signals. The British form with double "L" is more common than the relatively infrequent U.S. form. The few references to the hyphenated form are from British English and include two references from Europe and one from the UN.

Cab Signalling strongly suggests a system though rarely is the word system added to the basic term. Three surveyed sources add system and all are European.

Meaning presumably unchanged from basic form.

References: FRA-1, -2, ERS-H, -P, UN '54

2D2 Forms (Operational) of Cab Signals

CABMATIC. GRS brand name for its continuous cab signaling as reported in FRA-1.

Reference: FRA-1, GRS '54

A-C./D-C. CAB SIGNALS/A-C./D-C. CODED CAB SIGNAL SYSTEM.

Inductive coupling is needed for moving energy from track circuit to locomotive. D-C. energy cannot be employed in this situation. A-C. can be used but requires a special cycle. Even A-C. is added (superimposed) to D-C. but the special cycle is not eliminated. GRS has developed a A-C./D-C. system which can use regular 60-cycle A.C.

Reference: GRS '54

CATC CAB SIGNALS. This refers to Cab Signals that are part of Continuous Automatic Train Control (CATC). The signal panel is in a digital format with speed indicators and alphabetical symbols rather than wayside format indicators. References: FRA-3

CODED CONTINUOUS CAB SIGNALING/CODED CONTINUOUS CAB SIGNAL SYSTEM. This term adds operational characteristics to basic term. Coded indicates interruptions in current that conveys messages and continuously denotes on-going flow of current allowing for on-going message indications. REMC offers a variant term that lacks the term System.

References: Middleton '41, REMC '48

CONTINUOUS CAB SIGNAL SYSTEM. REMC adds System to the basic form of the term.

Reference: REMC '48

CONTINUOUS CAB SIGNALING/CONTINUOUS CAB SIGNALLING. Refers to Cab Signaling in which energy is supplied by track circuits whose energy is continuous as contrasted to the intermittent form wherein energy is supplied by transponders at key points only. This is largely a U.S. term.

Reference: ARSPAP-H, B & M '81, Armstrong '57

CONTINUOUS INDUCTIVE CAB SIGNAL. This is a nearly historic term (1913) of Cab Signal term that incorporates means of energy/message transmission in the title.

Reference: ARSPAP-H

CONTINUOUS SYSTEM OF CAB SIGNALLING/CONTINUOUSLY CONTROLLED CAB SIGNAL/CONTINUOUS CONTROLLED CAB SIGNAL. Variant terms for Continuous Cab Signaling.

References: ARSPAP-H, Middleton '41

CONTINUOUSLY CONTROLLED CAB SIGNAL SYSTEM. Term includes

system and thereby adds specificity to it.
Reference: REMC '48

FOUR-ASPECT CODED 100 HZ CAB SIGNAL SYSTEM/FOUR-INDICATION CODED CONTINUOUS INDUCTIVE CAB SIGNALING/FOUR-INDICATION CODE CONTINUOUS CAB SIGNAL SYSTEM. Variant terms adding message and operational informational to basic terms of Cab Signal System, and Cab Signaling.
References: FRA-2, ARSPAP-H

INTERMITTENT CAB SIGNALING/INTERMITTENT CAB SIGNAL SYSTEM. Cab Signals operating periodically on transponder at key points can be referred to as Intermittent in contrast to continuous forms that receive constant energy from track circuits
References: FRA-1, -2

MULTIPLE-INDICATION CODED CAB SIGNALS. A complex term that adds message dimension and operating information to the basic Cab Signal term.
Reference: GRS '54

THREE-SPEED TRAIN CONTROL CAB SIGNALS. The meaning of this term is not altogether clear. It appears to be standard Cab Signals operating in train control territory in which Cab Signal messages required acknowledgement of signals received.
Reference: ARSPAP-H

TWO-INDICATION NON-CODE SYSTEM [CAB SIGNAL]/THREE-INDICATION NON-CODE TRACK & LOOP SYSTEM [CAB SIGNAL]. Coded systems for signal message are much more common than non-code systems. These terms, however, refer to two Cab Signal systems lacking codes. The first term refers to an arrangement wherein A.C. is added to the track circuit for train-based equipment. The second form, for three indications, is more complex. It consists of two circuits with separate train-based receivers one for each circuit.
Reference: ARSPAP-H

TVM 430 CAB SIGNALLING SYSTEM. Cab Signals for very high speed for the Eurotunnel line. Digital display with numbers is employed. Numbers have colored background (this is partly morphological).
Reference: Soph. Cab Sig '94

2D3 Partly Morphological Terms

General Note. The following terms are both Cab Signal terms and message (Morphology terms) This segment takes the form of a word list since both dimensions are considered in the appropriate segments. Additional terms are found in Operational and Other Forms sections

FOUR-ASPECT CAB SIGNAL SYSTEM
FOUR-INDICATION CAB SIGNAL
FOUR-INDICATION CAB SIGNAL SYSTEM
FIVE-ASPECT CAB SIGNAL
FIVE-ASPECT CAB SIGNALING
MULTIPLE ASPECT CAB SIGNALS
THREE-INDICATION CAB SIGNALS
TWO-INDICATION CAB SIGNALS

2D4 Other Cab Signal Forms

CAB LIGHTS. Allen '52 employs a singular term for Cab Signals which is not found in other surveyed sources. The meaning seems to be that of the main term, Cab Signals.
Reference: Allen '52

CAB SIGNAL SUBSYSTEM. With increasingly all-encompassing train control systems, the Cab Signal can become merely one component of train control. That development is exemplified in this term from Xishi and Bin.
Reference: Xishi & Bin

ENFORCED CAB SIGNALING. FRA-1 employs this term to denote Cab Signal with automatic brake control. Instead of Cab Signal plus train control or train control containing Cab Signal, this term offers an additional perspective by focussing on Cab Signaling with a mandatory dimension as part of the Cab Signal entity.
Reference: FRA-1

SYSTEM OF CAB INDICATORS. Term offered by Henry '42. Seemingly an informal synonym for Cab Signals. Refers to early 20th c. practice on one UK railway. It is not clear if it was visual and also audible or perhaps audible only.
Reference: Henry '42

VISUAL CAB SIGNALS. A rarely employed term found in FRA-1. It distinguishes visual component from the "audible alarm" component.
Reference: FRA-1

WAYSIDE CAB SIGNAL EQUIPMENT. A perhaps puzzling term that seemingly merges ways and cab signal equipment. It may refer to electric power system (100 Hz) that supplies power to rails that feed both wayside and cab signal equipment.

Reference: FRA-2

ON-BOARD CAB SIGNAL EQUIPMENT. This term is seemingly only employed by FRA-2. It distinguishes description of Amtrak Cab Signal on-board equipment from materials pertaining to both wayside and Cab Signals.

Reference: FRA-2

VISUALIZER. Weber employs this term in lieu of Cab Signal or Cab Signal Indicator. It has a digital appearance focussing on speed as indicator of safe operation of train; it has numbers rather than multi-colored lights. It is employed for very high speed trains.

Reference: Weber '80

2D5 Cab Signals with Sound Dimension

INDICATOR, CAB, AUDIBLE. Audible Cab Indicator would be a more straight forward arrangement. This audible indicator accompanies visual cab signals and denotes changes in indication (and continues to do so until crew acknowledges changes in indication). Term is from ARSPAP-D which continues its practices of placing general term before the particular.

Reference: ARSPAP-D

CAB INDICATORS [AUDIBLE, VISUAL]. AAR SM offers a term covering both light and sound forms. The visual part is described as a signal while the audible part is described as a "device."

Reference: AAR SM '83

CAB SIGNAL WITH WHISTLE & ACKNOWLEDGER/CODED
CONTINUOUS CAB SIGNALS WITH WHISTLE & ACKNOWLEDGER.
Sound signals can be an integral part of Cab Signals and hence their inclusion. They are cross-referenced with Railroad Sound Signals.

CHAPTER THREE PARTIALLY LIGHTED SIGNALS

3A Indexes: Categories & Alphabetical

3A1 Categories Index

Semaphores (3B)

Overarching Terms (3B1)

Specific Forms (3B2)

Lower Quadrant & Upper Quadrant Signal Forms (3B2 a)

Somersault Forms (2B2 a)

Methods of Operation (3B3)

Morphological-related Terms (3B4)

Other Forms (3B5)

Signal Boards, Disc Signals & Other Forms (3C)

Signal Boards (3C1)

Overarching Terms & Terms in Other Languages (3C1 a)

Specific Board Terms (3C1 b)

Disc Signals (3C2)

Enclosed Forms (Disc or Enclosed Disc) (3C2 a)

Exposed Forms (Banner) (3C2 a)

Morphological-Related Terms (3C3)

Morphological Term Entirely (But encompasses physical form) (3C3 a)

Morphological-Physical Term (3C3 b)

Other Forms (3C4)

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Cross Bars (3C4 b)

Miscellaneous (3C4 c)

Semaphore Signal Overarching Terms (3B1)

Semaphore Signal/Semaphore

General Notes, I, II, III

Ancient Lights

Railway Semaphore Signal/Semaphore Railway Signal

Dwarf Semaphore/Dwarf Signal

Fixed Semaphore Signal

Mechanical Signalling/Semaphore Mechanical Signalling

Mechanical Lower Quadrant

Semaphore Light
Semaphore Type
Signal, Semaphore

Specific Forms (3B2)

Lower Quadrant & Upper Quadrant Forms (3B2 a))

General Note
Lower Quadrant/Upper Quadrant/Lower Quadrant Semaphore/Upper
Quadrant Semaphore/Lower Quadrant Signal/Upper Quadrant Signal/
Lower Quadrant Semaphore Signal/Upper Quadrant Semaphore Signal
Lower-Quadrant Signal/L-Q Semaphore
UQ Type Semaphore/U-Q Semaphore Type Signal
Left-Hand, L-Q Semaphore Signal
Modified LQ Signalling

Somersault Signals (3B2 b))

Balance Arm Signal/Self-Balancing Somersault Signal/Somersault/
Somersault Pattern, Semaphore/Somersault LQ Semaphore/Somersault
Type Signal/Tumbler/Tumble Arm Signal/Semaphore Somersault
Signal/U-Q Somersault
Somersault Home Signal
Centrally Balanced Semaphore/Centre-Balance Signal

Methods of Operation (3A3)

General Note
All-Electric Semaphore Signal
Electric Motor Semaphore Signal/Electric Motor Signal/Electric-Motor-
Driven Semaphore Signal/ Electrically-Operated Semaphore
Motor-Driven Semaphore Signal
Motor-Operated Semaphore
Motor Semaphore Signal
LQ Signal Electric Operated

LQ Electro-Pneumatic Semaphore
LQ Signal Electric Operated
Electro-Gas Semaphore/Electrogas Signal/Electro-Gas Signal
Electro-Pneumatic Semaphore/LQ E-P Semaphore/Electro-Pneumatically-
Semaphore
Oil-Lit Semaphore Signal/Oil-Lit LQ Stop & Distant Signal
Power-Operated Signal
Mechanical Dwarf Signal



Mechanical Ground Signal
Mechanical Operated Semaphore Signal
Mechanical Semaphore
Mechanical Signal
Mechanical UQ Signals
Manually-Operated L-Q Semaphore Stop Signal
Manually-Operated Semaphore
Base-of-Mast Mechanism/Base-of-Mast Semaphore/Top-of-Mast
Semaphore/Top-of-Mast Mechanism
Semaphore Left of Mast/Semaphore Right of Mast

Morphological-Related Terms (3B4)

General Note
Automatic Block Semaphore Signal
Two-Arm, Two Position Mechanism
One-Arm Three Position Mechanism
Three-Position Electro-Pneumatic Semaphore
Home E-P Semaphore Signal
Distant E-P Semaphore Signal
Distant Semaphore
Home Semaphore
Limited Clear U-Q Signal, Vanns
L-Q Distant Signal, Taylor
L-Q Stop Signal, Taylor
One-Arm Two-Position Signal, King
One-Arm, Two-Position-LQ -- Signal, King
One-Arm, Two-Position UQ Dwarf Signal, King
One-Arm Signal
One-Arm Mechanical Ground Signal
Semaphore Distant Signal
Semaphore Manual Block
Semaphore Stop Signal
Semaphore-Type Automatic Block Signal
Stop Semaphore
Two-Arm Mechanical Ground Signal
Three-Position Upper Quadrant
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Oil-Lamp
Oil-Lighted Switch Lamp
Oil Switch Lamp
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Arrow Type
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Disc Shunting
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Home & Distant Banjo Type of Disc Signal

Other Forms (3C4)

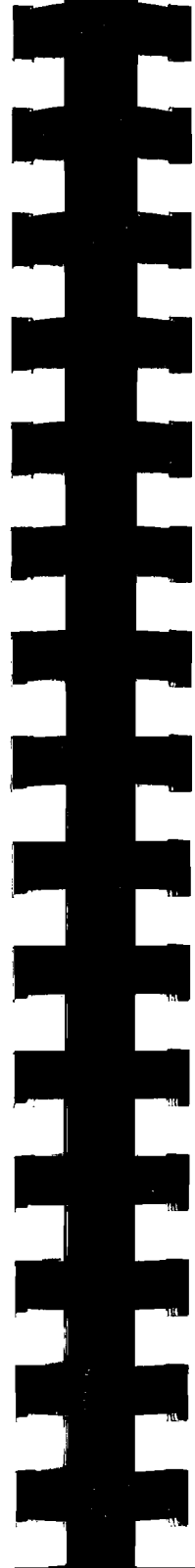
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Points Indicator Arrow Type
Pot Signal
Power-Operated Disc
Power-Operated Signal

Quarter-Rotating Chequer Board

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Revolving Board
Revolving Boards & Lamps
Revolving Disc Signal/Revolving Disc

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Semaphore Distant
Semaphore Distant Signal
Semaphore-Left of Mast/Semaphore-Right of Mast

Semaphore Light
Semaphore Manual Block
Semaphore Mechanical Signal
Semaphore Railway Signal
Semaphore Running Signal
Semaphore Shunt
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Slotted Post
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Wooden Crossbar

3B Semaphores

3B1 Overarching Terms

SEMAPHORE SIGNAL/SEMAPHORE.

General Note I. The word Semaphore is of Greek origins. It has been associated with communications before railway usage. In the 18th century Semaphores were employed in a communication system across France. Railway usage began in mid-19th century England. Semaphores eventually became a dominant railway Signal form in much of the world. The system is now obsolescent if not obsolete. It is marked by movable arms for day use and colored lights at night.

General Note II. The term Semaphore may suggest a clearly defined entity. However, instead it represents a diverse safety aid. Semaphores in Europe and areas influenced by Europe are distinctly at variance with UK-US forms. Europeans generally separate arms from the lens apparatus. Many European forms have blades of an unvarying design both in shape and color. The European forms are not uniform though many follow what may be termed the Germanic model. The word Semaphore appears in many languages (with variant spellings). However, the term Formsignal replaces Semaphore in a variety of systems (especially German language codes). Formsignal often refers to all signals less than fully lighted. It is therefore not altogether a synonym for Semaphore.

General Note III. The Semaphore requires two systems for displaying messages: a blade (arm) for day indications, and lamps at night. The lamp shine through lenses in the blade for UK-US forms though frequently the lamps and lenses are independent of the blades in other forms. The blade moves and can display two or three positions. The lamp shines through a different lens as the blade moves for the UK-US model. Other forms require multiple lamps and lenses since they are independent of the blade/spectacle ensemble. There are two basic forms: the upper quadrant, and the lower quadrant which see.

Semaphore Signal is the most common term for this form of Signal. The abbreviated form, Semaphore, is somewhat commonly used. Semaphore Railway Signal, which see, may appear to be an overarching term but it is only infrequently employed.

ANCIENT LIGHTS. Term refers to Semaphores in an era where Semaphore Signals are nearly unknown and ancient history.
Reference: Jackson '91

RAILWAY SEMAPHORE SIGNAL/SEMAPHORE RAILWAY SIGNAL. The first term is form B & M '81. It is possible that "Railway" was placed before the basic term in order to differentiate it from prior mention of Semaphores not used for railway purposes. The second term is from Shackleton '76 and is from an advertisement from Stevens & Sons for "Iron Semaphore Railway Signals" that is reprinted in Shackleton.

References: B & M '81, Shackleton '76

DWARF SEMAPHORE/DWARF SIGNAL/DWARF TYPE SIGNAL. These terms, obviously, refer to signals that are notably short. They are mounted on abbreviated masts and may have apparatus of reduced size. Dwarf Signal can refer to all forms of railway signals that are small. For some sources it refers specifically to Dwarf Semaphore Signals w/o explicit mention of Semaphore and is therefore included here.

References: K & T '88, Raymond '17, Fisher '76

FIXED SEMAPHORE SIGNAL. This term is apparently exclusive to Starkey '43 (HDL '74). It is a reference to early stationary signals at a time when flags held by train crews constituted most signals. This term encompasses fixed nature of some signals with a major form of fixed signal: the semaphore.

Reference: Starkey '43

MECHANICAL SEMAPHORE SIGNALLING/SEMAPHORE MECHANICAL SIGNALLING. Both terms emanate from new/somewhat new sources. They contrast older signals with newer signals and control through coining terms referring to mechanical signals (of which the primary form was the Semaphore Signal).

References: Intro. of '95, Cardani '79

MECHANICAL LOWER QUADRANT. A terse variant term for one form of Semaphore.

Reference: Vanns '97

SEMAPHORE LIGHT. FRA-3 divides Semaphore Signal into Semaphore and Semaphore Light. The former term focusses on the physical arm; the later is concerned with lighted part and the colors (messages) of semaphore arm.

Reference: FRA-3

SEMAPHORE TYPE. Kanner offers a subdivision of Signals into Color Light and Semaphore Types. Variant form unchanged in meaning from basic term.

Reference: Kanner '92

SIGNAL, SEMAPHORE. This continues a U.S. practice (ARSPAP-Definitions)

of placing the general term before the particular. Meaning is unchanged from that of the core term.

Reference: ARSPAP-D

3B2 Specific Forms

a) Lower Quadrant & Upper Quadrant Signals Forms

General Note. The most basic subdivision within Semaphore Signals is that of Quadrant. A quadrant is one-quarter of a circle (90 degrees). A Semaphore Signal occupying one of the upper quadrants (left or right) is an Upper Quadrant (UQ) Signal; if one of the lower quadrants then a Lower Quadrant Signal.

LOWER QUADRANT/UPPER QUADRANT/LOWER QUADRANT SEMAPHORE/UPPER QUADRANT SEMAPHORE/LOWER QUADRANT SIGNAL/UPPER QUADRANT SIGNAL/LOWER QUADRANT SEMAPHORE SIGNAL/UPPER QUADRANT SEMAPHORE SIGNAL. Both LQ and UQ have a horizontal position (at juncture of upper and lower quadrant). UQ arm moves upward to 45 and 90 degrees for other positions. Most LQ have only one other position (down to 45 degrees); 3-position LQ signals are rare.

Most LQ and UQ terms are in tandem: the words LQ (or UQ) and without semaphore and/or signal. Some sources add Semaphore, others Signals while others add both. Some infrequently used terms are also employed which may not exist in both UQ and LQ forms. In some nations Signals are to right of track while left in others. Left hand or Right Hand may be added to some terms as a result. Terms including position and other information in this Database are cross-reference. UQ and LQ are a basic or the most basic component within the category of Semaphore Signals. They are employed nearly as often as the basic term though that is largely historical now since Semaphores receive less attention now.

References: More than 50 sources include Semaphore Signals. These include Henry '42, Simmons '86, Phillips '42, Lavalley '53, Ellis '66, K & W '63, Nock '78

LOWER-QUADRANT SIGNAL/ L-Q SEMAPHORE. Raymond '17 adds a hyphen to LQ though seemingly not to UQ. Hyphenated terms are a relatively commonplace in Transportation-Markings though rare in LQ and UQ forms. Taylor offers the second form.

Reference: Raymond '17, Taylor '49

UQ TYPE SEMAPHORE/U-Q SEMAPHORE TYPE SIGNAL. These terms add "Type" to the title but without a change in meaning.

References: Stanley, NSW, Harrigan

LEFT-HAND, L-Q SEMAPHORE SIGNAL. The words Left-hand may describe the Signal and is not a part of the Signal title though it is possible that they are part of the title. L-H is a component of the title. L-H Signals are the norm in UK while Right-hand (R-H) dominated in the U.S. This specific term is historic and refers to a railroad operation in the 19th c. (U.S.) employing L-H forms. Reference: ARSPAP-H

MODIFIED LQ SIGNALLING. This term is seemingly exclusive to Indian Railways. It includes more complex indications. Reference: Indian Railways

3B2 b) Somersault Signals

BALANCE ARM SIGNAL/SELF- BALANCING SOMERSAULT SIGNAL SIGNAL/SOMERSAULT/ SOMERSAULT PATTERN, SEMAPHORE/SOMERSAULT LQ SEMAPHORE/ SOMERSAULT SEMAPHORE/SOMERSAULT LQ/ SOMERSAULT SIGNAL/SOMERSAULT TYPE SIGNAL/TUMBLER/ TUMBLE ARM SIGNAL/SEMAPHORE SOMERSAULT SIGNAL/U-Q SOMERSAULT. Early UK Semaphores were of the Slotted-Post form (arm rested inside of post) which see. Ice and snow could block the movement of the arm from leaving the post. This then led to a false proceed signal. To eliminate the problem a new form of Semaphore was developed: the arm was linked to the signal post by a connecting rod and free of direct connection to the post. The signal was balanced and if the rod was damaged the arm reverted (somersaulted) to a stop position. The signal was complex and expensive but became relatively common in UK and even migrated to Australia. Before very long more conventional and simpler Semaphore Signals were designed and installed. But many of the somersault form remained long in service. This one Signal blossomed into many titles. Tumble Arm is an Australian term for the Somersault. Three of the aforementioned titles include the key idea of the signal: Balancing Arm.

References include: K & W '63, Q Rlways, Allen '52, Blythe '51, Philpot '85, Nock '62, Shackleton '76, Taylor, Vanns

SOMERSAULT HOME SIGNAL. Term refers to specific Signal which incorporates physical and morphological dimensions. Reference: Vanns '97

CENTRALLY BALANCED SEMAPHORE/CENTRE-BALANCE SIGNAL. This refers to a Signal that has a center pivot. It is not a Somersault Signal.

Reference: Vanns '97

3B3 Methods of Operation

General Note. Most sources do not include methods of operation (how the signal is activated) in the title. Most sources that do so are of U.S. provenance. Most of the terms refer to a few basic operational means though the terms are diverse.

ALL-ELECTRIC SEMAPHORE SIGNAL. An early term; possibly the earliest form after the Electro-Pneumatic. It may distinguish electric-only form from forms employing compressed air and electricity.

Reference: B & M '81

ELECTRIC MOTOR SEMAPHORE SIGNAL/ELECTRIC MOTOR SIGNAL/ELECTRIC-MOTOR-DRIVEN SEMAPHORE SIGNAL/ELECTRICALLY-OPERATED SEMAPHORE. Additional terms referring to electrical apparatus employed in activating Semaphore Signals. Other terms center on motor though without explicit reference to electricity. The last-named from Vanns displays variant terminology.

Reference: ARSPAP-SS

MOTOR-DRIVEN SEMAPHORE SIGNAL. This form activated arms by electric motor, gears, connecting rod and electromagnet. The early form was known as a Base of Mechanism type which see. More modern forms became Top-of-Mast Mechanism.

Reference: ARSPAP-SS

MOTOR-OPERATED SEMAPHORE. This term is seemingly an alternative for Motor-Driven Semaphore Signal (and related terms) which see.

Reference: ARSPAP-H

MOTOR SEMAPHORE SIGNAL. A historical term and synonym for other forms involving motors and electricity.

Reference: B & M '81

LQ SIGNAL ELECTRIC OPERATED. An additional term that includes the means of operation in the title. This term, from Queensland Rlways, is yet more specific by including the form of Semaphore Signal.

Reference: QR-SS-El

ELECTRO-GAS SEMAPHORE/ELECTROGAS SIGNAL/ELECTRO-GAS SIGNAL. The first term refers to a Signal that is activated by liquid carbonic

control of an electric valve. The second speaks of compressed carbonic acid gas as the energizing force for that Signal. Both signals may be very similar in operation.

References: ARSPAP-H, Nock (2nd term); RSD 1911 (3rd term)

ELECTRO-PNEUMATIC SEMAPHORE/LQ E-P SEMAPHORE/ELECTRO-PNEUMATICALLY-SEMAPHORE. These terms refers to a Signal operating on compressed air regulated by an electric valve. Nock adds the type of Signal (in this case LQ) to the basic term.

References: RSD '11, B & M '81, Nock '62, Vanns '97

OIL-LIT SEMAPHORE SIGNAL/OIL-LIT LQ STOP & DISTANT SIGNAL.

Seemingly only Vanns offers these terms with oil-lit as part of the term.

Reference: Vanns '97

POWER-OPERATED SIGNAL. ARSPAP-SS speaks only of electric motor driven models under this heading but presumably other versions were also power-operated. ARSPAP-H includes electro-pneumatic and electro-gas forms.

References: ARSPAP-H and -SS

MECHANICAL DWARF SIGNAL. This term is also part of the ARSPAP-SS group of mechanical semaphores. This term is distinguished from power-operated forms though all forms are to be mechanical and require propulsion in some manner. The term mechanical seemingly means hand-operated and/or locally operated.

Reference: ARSPAP-SS

MECHANICAL GROUND SIGNAL. A form of mechanically operated Semaphore Signal which see. RSD '11 views Ground Signals as those directly attached to the ground(most attached to ground; presumably foundation slab would qualify) as opposed to gantry, bracket, etc. ARSPAP-SS refers to one and two-arm mechanical ground signals. Those forms are listed in morphological-related terms.

References: ARSPAP-SS

MECHANICAL OPERATED SEMAPHORE SIGNAL. This term refers to Semaphore Signal operated by crank. Even though all Semaphore Signal are mechanical, ARSPAP-SS restricts this term to forms to direct human activation.

Reference: ARSPAP-SS

MECHANICAL SEMAPHORE. A historical term. It seemingly distinguished the term Semaphore (a mechanical entity) from humans displaying signals with lamp.

Reference: Tuma '79

MECHANICAL SIGNAL. This may appear as a near-over arching term. Yet for ARSPAP-SS it refers only to mechanical operated Semaphore Signals which see. Reference: ARSPAP-SS

MECHANICAL UQ SIGNAL. UN '54 distinguishes this term from rotating discs and color light signals. Mechanical nature is the key point rather than means of propulsion (as is the case with ARSPAP-SS). Reference: UN '54

MANUALLY-OPERATED L-Q SEMAPHORE STOP SIGNAL. A complex term presenting both physical and morphological materials in the title. Reference: Taylor '49

MANUALLY-OPERATED SEMAPHORE. References to this term are infrequent; in fact only two surveyed sources included it. They refer to an early form not long after adoption of French communication semaphores and 1880 before means of propulsion had been applied to the Semaphore Signal. References: B & M '81, Middleton '41

BASE-OF-MAST MECHANISM/BASE-OF-MAST SEMAPHORE/TOP-OF-MAST SEMAPHORE/TOP-OF-MAST MECHANISM. Terms referring to placement of operating mechanism in a housing at the base of the signal mast, or is attached to the mast near the top and immediately adjacent to blade and spectacle. Only rarely are these terms labels for signals. Reference: ARSPAP-SS, K & T '81

PNEUMATIC SEMAPHORE. Vanns alone includes a Signal fully pneumatic in operation. Reference: Vanns '97

SEMAPHORE-LEFT OF MAST/SEMAPHORE-RIGHT OF MAST. These "terms" are doubtful. More likely they describe features of Semaphores but are not actual names of signals. Reference: ARSPAP-SS

3B4 Morphology-Related Terms

General Note. This group of terms combines morphological (function) terms with physiological (physical) terms. These terms are not described here since the constituent elements are included in respective morphological and/or physical

segments.

AUTOMATIC BLOCK SEMAPHORE SIGNAL
TWO-ARM, TWO POSITION MECHANISM
ONE-ARM THREE POSITION MECHANISM
THREE-POSITION ELECTRO-PNEUMATIC SEMAPHORE
HOME ELECTRO-PNEUMATIC SEMAPHORE SIGNAL
DISTANT ELECTRO-PNEUMATIC SEMAPHORE SIGNAL
DISTANT SEMAPHORE
HOME SEMAPHORE
LIMITED CLEAR U-Q SIGNAL,
L-Q DISTANT SIGNAL,
L-Q STOP SIGNAL,
ONE-ARM TWO-POSITION SIGNAL,
ONE-ARM, TWO-POSITION-LQ -- SIGNAL,
ONE-ARM, TWO-POSITION UQ DWARF SIGNAL,
ONE-ARM SIGNAL
ONE-ARM MECHANICAL GROUND SIGNAL
SEMAPHORE DISTANT SIGNAL
SEMAPHORE MANUAL BLOCK
SEMAPHORE STOP SIGNAL
SEMAPHORE-TYPE AUTOMATIC BLOCK SIGNAL
STOP SEMAPHORE
TWO-ARM MECHANICAL GROUND SIGNAL
THREE-POSITION UPPER QUADRANT
THREE-POSITION UPPER QUADRANT SIGNAL
THREE-POSITION SEMAPHORE SIGNAL
TWO-POSITION SEMAPHORE
UQ SPLITTING SIGNAL,
UPPER QUADRANT TWO-POSITION
THREE-ARM SIGNAL,
THREE-ASPECT SEMAPHORE
TWO-POSITION SEMAPHORE UPPER QUADRANT
THREE-POSITION SEMAPHORE UPPER QUADRANT
TWO-ARM E-P DWARF SIGNAL
TWO-ARM SIGNAL
TWO-ARM TWO-POSITION SIGNAL
TWO-ARM TWO POSITION LQ SIGNAL
TWO-ASPECT UPPER QUADRANT
MULTI-ASPECT UPPER QUADRANT
SEMAPHORE DISTANT,
SEMAPHORE RUNNING SIGNAL

SEMAPHORE SHUNT SIGNAL
THREE-POSITION SEMAPHORE BLOCK SIGNALS

3B5 System-Related Terms

General Note. These terms refer to Automatic Block and Semi-Automatic Block terms. They are defined in appropriate segments.

AUTOMATIC BLOCK SEMAPHORE SIGNAL
AUTOMATIC MOTOR-OPERATED SEMAPHORE
AUTOMATIC SEMAPHORE, Vanns
AUTOMATIC SEMAPHORE SIGNAL
AUTOMATIC THREE-POSITION UPPER LEFT HAND SEMAPHORE
SIGNALLING
SEMAPHORE AUTOMATIC BLOCK
SEMI-AUTOMATIC ELECTRO-PNEUMATIC DISTANT SEMAPHORE
UPPER QUADRANT AUTOMATIC SIGNAL

3B6 Other Forms

BACK LIGHT. Term in Jackson referring to Semaphore Signal. It allows train crews to see if Signal off or on and lit. See also second form in Ch 2.
Reference: Jackson '91

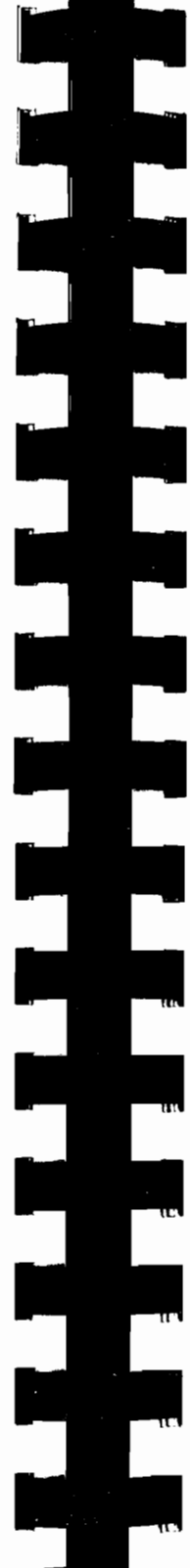
BACKING SIGNAL. Term in Jackson for Semaphore Signal. Controls wrong-direction operations in station areas.
Reference: Jackson '91

BANNER REPEATER. Term in Jackson that is labelled Semaphore though described as a bar that moves within case.
Reference: Jackson '91

DISPLAY BOARD. A Semaphore-enhancing device consisting of board painted white and mounted behind Semaphore Signal.
Reference: Jackson '91

DOUBLE ARM SEMAPHORE/DOUBLE ARM STATION SEMAPHORE. These Signals serve as Station Semaphores which see.
Reference: Vanns '97

ELECTRIC SEMAPHORE. This term distinguished early electric-powered forms from then current electro-pneumatic and manual forms.



Reference: ARSPAP-H

EQUAL BALANCED BRACKET SIGNAL/BALANCED BRACKET SIGNAL/THREE DOLL BALANCED BRACKET SIGNAL/TWO-DOLL BALANCED BRACKET SIGNAL. Equal Balanced does not refer to Somersault Signals. It refers to a single post mounted bracket upon which two or more dolls are evenly spaced. Doll is included in some forms though not in others (despite presence of dolls in all forms).
Reference: A & W '91

CO-ACTORS. Semaphores that server as Repeaters.
Reference: Taylor '49

HUDSON TYPE OF SEMAPHORE. In this form a shield hid the arm and thereby created a clear indication. It is a historic form.
Reference: ARSPAP-H

ILLUMINATED SEMAPHORE. A historic term. This form included arms displaying prism reflectors.
Reference: ARSPAP-H

LARTIGUE SIGNAL. French Semaphore Signal designed by Charles Lartigue.
Reference: Jackson '91

MINIATURE SEMAPHORE SIGNAL. For Taylor these Repeater Signals provided for fog signal crew.
Reference: Taylor '49

MINIATURE REPEATER SEMAPHORE (CO-ACTING). Vanns gives few details on this Signal. It seems to suggest the Miniature Semaphore Signal of Taylor.
Reference: Vanns '97

MINIATURE ARM SIGNAL/MINIATURE SEMAPHORE SIGNAL. These are employed for subsidiary functions including shunt, outlet roles.
Reference: A & W '91

PARABOLIC SEMAPHORE SIGNAL. Historic term. Arm illuminated by light of appropriate color instead of spectacles displaying colors
Reference: ARSPAP-H

UPPER LEFT-HAND QUADRANT SEMAPHORE SIGNAL. Placement of

Signal (LH or RH) incorporated in the title.
Reference: King '21

REPEATER. This is a Co-acting Signal on single mast.
Reference: Jackson '91

SINGLE ARM SEMAPHORE. Term in Vanns that seemingly distinguished Station Semaphore (double arm) from other forms which were single arms.
Reference: Vanns '97

SLOTTED-POST SEMAPHORE. Early/earliest form of the Semaphore. The arm was set within a slotted post and extended outward according to indication. Snow and ice could freeze arm within the post and give false positive indication. Other forms of Semaphores replaced this form.
References: Blythe '51, Hammond '64, K & W '63

SLOTTED POST. Shorter form of term; omits Semaphore
Reference: Jackson '91

SMASH BOARD. For Jackson this is a Semaphore Signal.
Reference: Jackson '91

STATION SEMAPHORE/STATION SEMAPHORE SIGNAL. As is self-evident, these terms refer to Signals positioned at the station. They serve as Home, Stop Signals, Vanns '97

U Q PIPE-OPERATED DWARF SIGNAL. Method of operations included in the title.
Reference: King '21

3C1 Signal Boards, Disc Signals, & Other Forms

3C1 Signal Boards

a) Overarching Terms & Terms in Other Languages

General Note. Railway Signals (full-size, full scale, mainline) may appear to be divided into light (fully), and Semaphore forms and nothing more. However, there is a third component: geometric-shaped Signals on pivots (or spindles) or hinges. These are older signals. They are only infrequently gathered together under an overarching term and hence, a terminology problem exists. Two contenders for that overarching term are Signal Board and Board Signal. They are discussed

below. Board is a third possibility though it is an inclusive form that includes Marker Boards and some Signs, Discs and Banner Signals are considered separately. Many of these do not move (that is, the apparatus) or if there is movement it is often the target aspect since those Signals have a clear identity in themselves and are included together.

SIGNAL BOARD. Some dictionaries include this term though not as a Signal in itself. It refers instead to a list of Signals (such as in an elevator) or of impulses of one form or another. There are also other terms that seem analogous to Signal Board: Signpost (which often includes a Sign and not merely a post to which a sign can be affixed) and Sign Board (which includes messages and not only a board on which messages may be placed). This writer adapted/adopted Signal Board to encompass movable geometric boards that served as Signals for Part G of T-MSIC. Spain employs Pantella for this form of signal which see. The Netherlands uses Klapbord in the same manner. Other terms such as Figura in Portugal and Formsignal in German language codes refer to all less than fully-lighted signals. Other systems may have specific Signal forms without an accompanying general (full or partial) terms. See also: Board Signals.
References: GFR '81, RENFE '78, RCS '81

BOARDS. Blythe and Hammond include this term. Blythe's inclusion may refer to a Pivoted Board. Hammond's form is attached to a spindle which presumably refers to the same action as a pivot. This is a possible overarching term though perhaps overly inclusive.
References: Blythe '51, Hammond '64

BOARD SIGNAL. Seemingly this term appears only in Blythe '51. It can be an overarching term and rivals Signal Board for that role. It places the particular before the general and thereby conforms to such basic terms including Light Signal and Semaphore Signal in that arrangement of words. See Also: Signal Board and Board.
Reference: Blythe '51

FORM SIGNAL. This can be viewed as a partial OA term in the German "school" of Signals. It refers to all less-than-fully-lighted Signals of which Signal Boards are a component.
Reference: GFR '81

KLAPBORD. The Netherlands employs this term for geometric-shaped Signals. klap is variously defined as reversible, spring, flap, leaf. This form is hinged rather than mounted on a spindle.
Reference: Op de Rails

PANTELLA. This is the Spanish railway term for the same form of Signal. It can be defined as a screen.
Reference: RENFE

3C1 b) Specific Board Terms

PERFORATED BOARD/PERFORATED BOARD SIGNAL. Two sources include a Signal by this name. The Blythe version (without the word Signal) is semi-circular. B & M (this version has Signal in title) notes the mode of operation is by manipulation of a handle that pivots the Signal.
References: Blythe '51, B & M '81

PIVOTED BOARD/PIVOTING BOARD SIGNAL. Only Mashour and Blythe include Pivot Boards; these are historic references. Pivoting Board from Blythe may be a variant term or it may be a description of signal action rather than a formal name.
References: Mashour '74, Blythe '51

QUARTER-ROTATING CHEQUER-BOARD/CHESSBOARD. This is a Signal Board form in France (from Ellis '58). Nock in Williams refers to the same signal as a Chessboard.
References: Ellis '58, Nock '78

REVOLVING BOARD. This term is referred to by only a few surveyed sources. Mashour refers to a post-1830 Signal that revolves. Blythe '51 also makes a historical reference which is possibly to Pivot Boards which see.
References: Mashour '74, Blythe '51

REVOLVING BOARDS & LAMPS. Most references to this form of Signal omit mention of a lamp. Blythe makes a single such reference. Many Board Signals/Signal Boards presumably included a night aspect.
Reference: Blythe '51

3C2 Disc Signals

General Note. Signal boards contain sphere-shaped Signals that can be termed Discs. That form of Signal, however, is part of an assemblage of Signals that can be of a variety of shapes. There are many other sphere-shaped Signals who appear only in spherical or disc shaped. A variety of variant systems have grown up and these are often labelled simply Disc Signals. It may create an illusion to speak of schools of types of Disc signals since variations are frequent and many were

created and employed only in restricted areas. Yet in a rough way one can speak of types -- or even of eras -- of Disc Signals:

Disc I can refer to early forms mostly in the United Kingdom. These include exposed forms with double discs and half-open discs.

Disc II include Signals found mostly in the U.S. This form was often of an enclosed nature and was a major Signal form until the Semaphore became dominant.

Disc III are termed Banner Signals and were often a U.S. form co-existing with enclosed Disc Signals. These are somewhat like Switch Targets both by design and because the banner or disc was exposed. These faded out along with the Enclosed Disc Signal. Such Signals are sometimes termed Clockwork Signals.

Disc IV are somewhat current Signals often of a dwarf nature and found in UK and UK-influenced systems especially in Australia. These are often switch/point indicators; some are also in shunt form. In some forms only the target moves while in other forms the entire apparatus revolves.

Disc V is termed a Banner Repeater Signal and is found in UK. It has the shape of a disc with glass front and small arm contained within. The arm has a somewhat semaphore manner of operation.

3C2 a) Disc Signals Containing the Word Disc

BANJO. Term applied to Enclosed Disc Signal. Physically it resembled a banjo.
Reference: King '21

BRACKETED DISC. This is a term from M & H. The form of attachment becomes part of the term. Disc on bracket is attached to a post or wall.
Reference: M & H

C.I. PILLAR DISC. This forms displays a "Flap Target." See Also Signal Box
Reference: M & H

COMPOUND GROUND DISC. This term refers to two adjoining discs; one high, one low. Both can be viewed by a train crew simultaneously because of the elevation difference.
Reference: M & H

DISC/DISC SIGNAL. This term is a historic term under two names and has two forms: a brief form without the word Signal and one with it. The B & M form is from the 1840s and had discs 4' in diameter. The three references with these terms all refer to historical forms. The terms can be applied to more modern Signals yet more modern terms nearly always attach other words (other than Signal)
References: B & M '81, Simmons '86, Lavalley '53, Schwile '73

DISC & CROSSBAR/DISC & CROSSBAR SIGNAL/DISC-&-CROSSBAR SIGNAL. This Signal has targets both for danger and clear as well as lamps. Apparatus can be turned 90 degrees. This Signal is a stage beyond the basic, early Disc which displayed a blind-edge for clear indications. Simmons has Disc & Crossbar (with double disc) which survived into the 20th c. Blythe '51 has bar and disc with openings so as to reduce possibility of wind mis-aligning the signals and creating false messages. Allen gives a version (GWR) that could be as high as 60'. Lavallee speaks of a Bar & Disc which may be a description rather than a precise name. The hyphenated version is from Hammond and Mashour. The Simmons version is apparently called a Double Disc though w/o a bar by Blythe. References: Allen '52, Blythe '51, Simmons '86, Lavallee '53, Hammond '64, Mashour '74

DISK SIGNAL. A variant spelling (instead of Disc) which is sometimes employed by U.S. sources. This specific usage refers to 19th c. Signals. References: Raymond '17, RSD '11

DOUBLE DISC/DOUBLE DISC SIGNAL/DOUBLE-DISC SIGNAL. This is a 19th c. Signal employing two discs attached with horizontal bar. The edge-on position denoted clear. At times this form was a Distant Signal while a Semaphore served as Home Signal. Reference: Blythe '51

DOUBLE DISC & CROSSBAR SIGNAL. Dempsey and Simmons includes a Signal with two Discs & Crossbars. Dempsey includes this signal with branch line operations. References: Dempsey 1855, Simmons 1986

DWARF SIGNAL/THREE-POSITION DWARF/TWO-POSITION DWARF SIGNAL. For Victoria Railways and Western Australia Railways these are Disc Signals. The "target revolves vertically" rather than entire mechanism. (though in another place Victoria Railway seems to differentiate between Dwarf and Disc Signals). Reference: Victoria Railways, Western Australian Railways

ENCLOSED DISC/ENCLOSED DISK SIGNAL. RSD '11 notes that Disk Signal are often restricted to Enclosed Disk Signal. This is in reference to Banners and Clockwork Signals which are often considered apart from Disk Signals. Enclosed Disc/Disk is thereby a more explicit term for Disc enclosed within a housing. Reference: RSD '11, B & M '81

EXPOSED DISC CLOCKWORK TYPE SIGNAL. Historic form from 1880s. The Disc is exposed. At least one vane is of obround shape. The frame is topped by lamp. There is some resemblance to current target/lamp though Exposed Disc was a mainline signal. Reference: ARSPAP-H,

FLOODLIT GROUND DISC/FLOOD LIT DISC/FLOOD-LIT DISC. These are ground-based signals that are flood-lighted at night. The lamp is attached to the apparatus. Color lamps are therefore not needed. References: Queens Railway, K & W'63, Vanns '97

GALLOWS TYPE OF SIGNAL (DISC). A historic term in U.S. It consisted of a large sheet iron disc (with red lens built into it) that denoted danger. Clear indication was passive since the disc was "hidden" behind shield. Reference: ARSPAP-H

GROUND DISC/GROUND DISC SIGNAL. These are terms appearing in M & H. The second form seemingly involves movement of entire mechanism while the first form has a revolving target only. Each form has two versions: one that works with points, one that works independently. Reference: M & H

GROUND-LEVEL DWARF SIGNAL. This term from Allen '52 frequently refers to Discs (45 degrees rotation) though some forms are Miniature Semaphore Signals. See Also: Ground Disc Cross-Reference: Semaphore. Reference: Allen '52

HALF-OPEN DISC SIGNAL. This is a more complex form of Disc Signal. It displayed an oval with one-half of the disc open. The signal could create four messages: Clear half-disc on left indicated proceed for left track; if on right then proceed for right-hand track. When the open part of disc was on bottom then both tracks closed. An on-edge position denoted both tracks open. Reference: Blythe '51

INDEPENDENT DISC. This term, from QR, entirely revolves. Disc and signal lever connected by wire. Reference: Q Rlwys

MECHANICAL DISC. This form from K & W '63 has a partial disc. The disc target moves in contrast to mechanical revolving discs. Reference: K & W '63

MECHANICAL REVOLVING DISC SIGNAL. This form suggests that Disc Signal can take on a generic meaning indicating signals of reduced stature carrying out non-running/non-mainline functions. This NSW form does not display disc targets but instead has square target and triangle target.
Reference: NSW Railways

PATTERN GROUND DISC. A & W includes this term but with little elucidation. The Disc is a product of Westinghouse.
Reference: A & W

POWER-OPERATED DISC. Only the Target revolves with this form. Queens Railways offers only limited data on this Disc.
Reference: Queens Railways

REVOLVING DISC SIGNAL/REVOLVING DISC. The term refers to Discs in which entire mechanism revolves. Disc face (target) and lamp stationary in themselves. Some versions may have target on one side only. English and Australian in provenance.
References: K & W '63, Blythe '51, NSW Railways

TOMMY/TOMMY DODD. Colloquial terms for Ground Disc Signal.
Reference: Jackson '91

U.Q. POWER WORKED DWARF SIGNALS. Dwarf Signals can encompass several forms. This specific form consists of Disc Target. The Target revolves but not the entire mechanism.
Reference: NSW Railways

3C2 b) Banner Signals [Exposed Disc Signals Under Banner Signal name]

BANNER SIGNAL. This term covers several forms. It can refer to Banner Repeater Signal which see. It can also refer to earlier 19th c. signal which literally included banners (sometimes termed a Banner Box Type Signal). The term can also refer to a later 19th c Signal. This last named form is also referred to as a Clockwork Signal or an Exposed Disc Signal which also see. This form had targets (akin to current forms) and a lamp. It often displayed Discs but they were exposed discs.
References: ERS-H, ARSPAP-H, AAR-SM

BANNER BOX SIGNAL. B & O '27 refers to this Signal as an Enclosed Disc Signal. It is employed in the Manual Block System.
Reference: B & O 1927



BANNER BOX TYPE (IRELAND SIGNAL). Historic term from ARSPAP-H.
Reference: ARSPAP-H

BANNER BOX TYPE SIGNAL. This term refers to an Enclosed Signal with cloth banners; banners not discs. ARSPAP-H also refers to it simply as a Banner Signal.
Reference: ARSPAP-H

BANNER CLOCKWORK SIGNAL. B & M '81 speaks of Enclosed Disc and Banner Clockwork Signals. This seemingly represent two constitutive elements of Signals for the time (before Semaphore Signals became significant). B & M does not give details. Banner Signal and Clockwork Signal sometimes act as synonyms for each other rather than placed together.
References: B & M '81, ARSPAP-H

BANNER REPEATER SIGNAL. This signal repeats messages of the primary signal. The UK version consists of a glass-fronted housing and bar representing a semaphore arm. ERS-H includes this signal and describes versions on the continent of Europe.
References: K & W '63, ERS-H

BANNER TYPE SIGNAL/BANNER-TYPE SIGNAL. Seemingly similar to, or identical, to Banner Repeater Signal which see. Signal Box offers a hyphenated version.
Reference: UK Military

BANNER TYPE TRAIN ORDER SIGNAL. Historic term (1890s) from ARSPAP-H. Few details on signal are given other than it was operated by hand.
Reference: ARSPAP-H

BOX TYPE TRAIN ORDER SIGNAL. This is a Banner Signal despite omission of that word. It is a historic term consisting of a wood housing and displaying banners of red cloth.
Reference: ARSPAP-H

CLOCKWORK EXPOSED DISC SIGNAL. Historic term from ARSPAP-H. No details save that it was "a modification of the Gasset & Fisher Signal." Presumably a Banner Signal since it displayed an exposed disc.
Reference: ARSPAP-H

CLOCKWORK SIGNAL. This term can encompass a variety of terms that

describes signals under the heading of Banner Signal. ARSPAP-H seemingly uses the term as a synonym. ARSPAP also employs the term for a specific signal, a signal installed in 1879 that displayed an exposed disc with operation by "weight-driven clockwork."

Reference: ARSPAP-H, B & O '27

EXPOSED BANNER CLOCKWORK TYPE SIGNAL. A variant title for Gasset and Fisher Clockwork Exposed Signal.

Reference: ARSPAP-H.

IRELAND BANNER BOX TYPE SIGNAL. Historic term in ARSPAP-H. No details given. Cp Banner Box Signal (Ireland).

Reference: ARSPAP-H

REVOLVING BANNER SIGNAL/ROTATING BANNER SIGNAL. These terms are both historical references. The first term is from 1880; the second from 1862. They are possibly similar signals since revolving and rotating can be very similar in meaning.

References: B & M '81, ARSPAP-H

TOP-OF-MAST EXPOSED BANNER SIGNAL. In this term mechanism is presumably at the top of the mast rather than at the base. Location of mechanism becomes part of the title of the signal. Top of Mast and Bottom of Mast terms are attached to some forms of Semaphore Signals as well.

Reference: ARSPAP-H

3C3 Morphological-Related Terms

General Note. These terms combine physical and morphological terms. Some terms are substantially physical in nature while the morphological is stronger in others. Entries are frequently brief since terms are engaged in more fully under respective morphology and physical segments.

3C3 a) Switch Terms

DODSON SWITCH & SIGNAL LAMP. This type of lamp was a long-burning apparatus. It consisted of a large pot, small flames, and magnified the light produced by reflectors.

Reference: Camp '03

ELECTRIC SWITCH LAMP/ELECTRIC-LIGHT SWITCH LIGHT. Foster adds power source to switch lamp title; electricity for this form; oil for the second

form. See also: Switch Lamp, Switch Light, Electric Switch Lights. The second term from REMC is slightly more explicit.
Reference: Foster '83, REMC '48

ELECTRIC SWITCH LIGHT. According to Camp, Switch Lamps as such burn oil (lard oil or kerosene; Camp's "Supplementary Notes" include mention of Signal Oil). However, those running on electricity include the power source in the title. That may indicate the early state of electrical switch lights since early forms of Signals include means of propulsion in the title while established forms may not.

Reference: Camp '03

KEROSENE SWITCH LAMP. Term that includes exact form of energy in title.
Reference: REMC '48

LAMP, SWITCH; ELECTRIC. The curious practice of ARSPAP-D to begin with general term then moved to the particular is mirrored in this term as well. This Signal is rotated mechanically and is a supplement to target.
Reference: ARSPAP-D

OIL-BURNING SWITCH LAMPS. Variant version of basic form.
Reference: REMC '48

OIL-LAMP. Either shorter form, or a reference to lamps employed for Switch Lamps safety aid.
Reference: REMC '48

OIL-LIGHTED SWITCH LAMP. Slightly more explicit form than following term.
Reference: REMC '48

OIL SWITCH LAMP. Older forms omitted source of energy since most were oil-burning. Foster adds oil to term because they also marketed electric forms.
Reference: FOSTER '83

REFLECTING SWITCH LAMP/REFLEX SWITCH LAMP/REFLEX LENS SWITCH LAMP. Terms refers to reflector used in lieu of lenses and energy sources.
Reference: REMC '48

SWITCH DWARF SIGNAL. This term from UN '54 (Viet-nam Railways) offers few details. Switch signals are often partially-lighted. This Signal may have had

form of Signal Board or Semaphore forms.
Reference: UN '54

SWITCH INDICATOR. For ANR this term refers to a switch with lamps and target. It is a low or dwarf unit. See also Switch Stand.
Reference: ANR '47, King '21

SWITCH LAMP. This term refers to a form of Railway Signal rather than merely a lamp employed in Switch Signals. It denotes the position of a switch and whether a given track is open or closed. Switch Stand Targets are frequently found with Switch Lamps (or vice versa). Camp employs Switch Light which is seemingly a synonym which see. There are both all-lighted and partly-lighted forms.
Reference: Adam and Westlake, Jia-lin, REMC '48

SWITCH LIGHT. Camp employs this term in place of Switch Lamp. Camp also employs the word Lamp but seemingly as physical apparatus rather than as a complete signal. See also Switch Lamp, Electric Switch Lamp.
Reference: Camp '03

SWITCH SIGNAL. This term may suggest a general use appearance but for Camp it specifically refers to a Semaphore Signal employed in a switch situation. It can also refer to all-lighted versions.
Reference: Camp '03

SWITCH STANDS. Core meaning of this term is the stand attached to the switch and which -- in itself -- is not a safety aid. However, at least one railway system, ANR, employs the term with the meaning of targets and lamp and, therefore, as a safety aid. This form can be regarded as a high stand. For ANR the form termed Switch Indicator, which see, is a low or dwarf form.
Reference: ANR '47, Bethlehem

3C3 b) Point Indicators

CATCH POINT INDICATOR. This term, from W.A. Railways, has two forms. One version has square targets; the second version has discs on one side and horizontal bands on a second side.
Reference: W.A. Railways

CATCH POINT DISC/POINTS DISC. These are terms from Queens Railways. Physical appearance is that of Mechanical Point Indicator-Disc Type of NSW.
Reference: Queens Railways



MECHANICAL POINTS INDICATOR: ARROW TYPE; DISC TYPE. For NSW these indicators are revolving and are employed for points, catch-points, siding derails. There are two forms:

ARROW TYPE: Rectangular targets, arrows (left or right).

DISC TYPE: One direction only; no disc target with reversed points. Lighted at night.
Reference: NSW Railways

POINTS INDICATOR. A term that can include a variety of designs. This particular form is partly-lighted and very similar in design to Catch Point Indicator with disc and band targets.
Reference: W.A. Railways

POINTS INDICATOR - ARROW TYPE. A term from Queensland Railways. The Indicator has square targets in white and red with illuminated arrow. Mechanism seemingly revolves.
Reference: Queens Railways

3C3 c) Route Indicators

MECHANICAL ROUTE INDICATOR. This term is possibly this similar to Australian moving slide in which mechanical methods places letters/numbers in glass-fronted case denoting appropriate messages.
Reference: K & W '63, A & W

MORSE & BERRY TYPE ROUTE INDICATOR. Little information available; it is possibly a mechanical form using letters/numbers.
Reference: Nock '62

MOVING SLIDE TYPE -- ROUTE INDICATOR. Term of moving slide describes a mechanical device that positions (or removes) appropriate letters/numbers for a given route.
Reference: NSW Railways

3C3 d) Other Forms

CLOCKWORK AUTOMATIC BLOCK SIGNAL. This term combines physical and morphological functions.
Reference: ARSPAP-H

CLOCKWORK ENCLOSED DISC TYPE ELECTRIC AUTOMATIC SIGNAL.

Though this is a clockwork signal (which are very often Banner Signals) it is apparently an Enclosed Disc Signal rather than an Exposed Banner Signal. The term is morphological in part.
Reference: B & M '81

CLOCKWORK SIGNAL EXPOSED DISC FORM & AUTOMATIC BLOCK SIGNAL. Principle of operation: weight-driven clockwork.
Reference: ARSPAP-H

GASSETT & FISHER CLOCKWORK EXPOSED BANNER TYPE OF AUTOMATIC BLOCK SIGNAL. Is this an actual term or more of a descriptive term?
Reference: ARSPAP-H

DISC SHUNT. This term incorporates the physical with the morphological dimension.
Reference: Pakistan Railways

DISC SHUNTING SIGNAL. The morphological dimension is included in title. There are both ground and bracket forms.
Reference: W.A. Railways

FLOODLIT DISC SHUNTING SIGNAL. This term includes the morphological aspect in the title. Illumination is by small floodlight that illuminates disc face. UK in provenance. This specific form was found on signal bridges. Apparatus differs little from floodlight Ground Disc and Floodlit Disc (which is ground-based with floodlight); colored-lamps not required.
Reference: K & W '63

HOME & DISTANT BANJO TYPE OF DISC SIGNAL. Historic term from ARSPAP-H but little information available. It is morphological-related but includes physical apparatus.
Reference: ARSPAP-H

3C4 Other Forms

a) Crossbar Signals

CROSS BAR & LAMP SIGNAL. Term for an early railway Signal. It consisted of lamp and target with on-edge for clear message.
Reference: ARSPAP-H



CROSSBAR SIGNALS. Signal Box presents the core term. It displayed red and light or green light only. Entire mechanism revolved.
Reference: Signal Box

DOUBLE DISCS & CROSS BAR. This term appears in Dempsey 1855 though not in Blythe '51 (the later source often represents a comprehensive source for older UK terms). Double discs and white light indicates clear and double crossbar (and double red light) equals stop. This was employed for branch line on one railway. Discs for clear and for cross bars for stop indications does not, seemingly, appear elsewhere.
Reference: Dempsey 1855

FLAP SIGNAL. Signal Box describes this as a revolving Disc Signal alternative. Flap (painted red) dropped into position for danger warnings. For clear message a lens in green would position itself across the lamp.
Reference: Signal Box

TILTING CROSSBAR SIGNAL/TILTING (CROSSBAR) SIGNAL. Grade crossing term. It consisted of two balls and two lamps.
Reference: ARSPAP-H

WOODEN CROSSBAR. This term from B & M '81 corresponds to Crossbar and Lamp Signal which see.
Reference: B & M '81

3C4 b) Flag Signals

AUTOMATIC FLAGMAN. This term is another name for the Wig-wag Signal at railway crossings.
Reference: B & M '81

FANTAIL SIGNAL. Alternate title for Brunel's Flag Signal.
Reference: Blythe '51

KITE SIGNAL. Alternate titles for Brunel's Flag Signal.
Reference: Blythe '51

FLAG SIGNAL.
General Note. This term may have several meanings: "human-operated" flags (not a foci of this DB); a simple flag attached to a post (which does constitute a fixed signal). Flag Signal may also be placed in a frame (termed a Pivoted Flag by Mashour '74 which see).

The term also includes a signal by Brunel consisting of cloth shutters, one red, one green. When both shutters are pulled up this denotes clear. Dropping of green shutter indicated caution; dropping red meant danger. This is better described as fantail or kite signal which see.

Reference: Blythe '51

PIVOTED FLAG. This term refers to a flag placed in a frame and capable of being pivoted. "Passive clear" (on-edge) constitutes clear indication, when visible it denotes stop. Mashour '74 refers to it as a Pivoted Flag while Blythe '51 refers to it simply as a Flag Signal which see.

References: Mashour '74, Blythe '51

3C4 c) LIGHTED SIGNS & BOARDS

General Note. A variety of Signs and Boards contain or are augmented by lights. They remain substantially that form of safety aid yet are a partly-lighted aid. An attempt is made here to list such Signs and Boards that have a lighted dimension. Chapter 4 contains the primary entries.

CAUTION BOARD
END OF SHUNT SIGN
INDICATION BOARD
LINESIDE BOARD
MARKS & MARKERS FOR JAPAN [Selected Entries]
SHUNTING LIMITS BOARD
TEMPORARY SPEED-REDUCTION BOARD
TRAIN-ORDER BOARD

3C4 d) Track Indicators

General Note. This Indicator frequently employs miniature semaphore arms or graphic symbols that indicate whether or not a train is approaching the location of the Indicator. They were employed on selected U.S. railroads and other nations including Australia. They were primarily for the benefit of train crews working on the track or maintaining switches for divergent lines. They are possibly more often used in the past than in the present. Part F and underlying sources contains coverage of forms and messages. Kanner '92 augments that coverage. Forms include:

BLOCK INDICATORS
MOTOR CAR INDICATORS

SWITCH INDICATORS
TRACK CAR INDICATORS
TRACK OCCUPANCY INDICATOR
TRACK INDICATORS
TRACK SIDE WARNING INDICATOR
TRAIN APPROACH INDICATORS

3C4 e) Miscellaneous Forms

BALL SIGNAL. This Signal was short-lived in UK though more popular, longer lasting in the U.S. Some Ball Signals were in use in New England into the 1930s. Ball positioned at top indicates clear; at bottom denoted danger. A different version was employed by B & M: white ball at top denoted train on time while black at top indicated train late, disabled. Lamps might be attached to balls with hooks or attached to signal pole. B & M used "bell-shaped peach baskets" that appeared to be balls which eventually that became the name.
References: Blythe '51, Allen '52, B & M '81, "Lav" '53, FRA-3, Fisher '76, Off In (SA)

BASKET SIGNAL. Some early UK railways employed a basket instead of a ball. Hence the variant name.
Reference: Blythe '51

GATE SIGNAL. An early form of Grade Crossing Signal. However, it was placed across the tracks instead of across the roadway.
Reference: ARSPAP-H

GROUND SIGNAL. This could be an OA for Disc Signal but it includes Semaphore as well. Term refers to Subsidiary Signals both Semaphore and Disc forms.
References: K & W '63, ERS-H, Keyboard ... '84, Nock '62. UK Military

HIGHBALL SIGNAL/HIGH-BALL SIGNAL. The name of this Signal comes from one of the Signal's indication rather than Signal in itself. Highball refers to top position indicating clear.
References: Allen '82, Henry '42

INDICATOR LANTERN. German Shunt Signal under English-language term.
Reference: Nock '62

LAMP. This is something of a marginal term. It refers to the lamp apparatus in

itself without interaction with the switch, other railway appurtenances. The lamp is a key element of a railway safety aid but the lamp is not specifically and precisely a safety aid.
Reference: Camp '03

POT SIGNAL. This is a U.S. term. It refers to a Revolving Signal which was originally oil-burning. It consisted of Switch Stand, Lamp Target. RSD'11 speaks of two versions: a Switch Target with four lenses; and a Dwarf with two lamps for "low-speed movements." Switch Target often means Target without lamps. However, RSD employs Switch Target with lighted components; almost as a synonym.
Reference: RSD '11, Fishers '76

SMASH/SMASHBOARD SIGNAL. This refers to a Signal that incorporates an obstacle (long horizontal Semaphore or Disc). If Signal ignored when in danger position then train will strike the object.
Reference: Lavallee '53, RSD '11

TRIP'S IMPROVED RAILWAY SIGNAL. A historic term. It consisted of a Semaphore with clock. Information limited.
Reference: B & M '81

TWO-COLOUR OIL LAMP. Is this term a component of a Signal or a Signal in itself? While it would appear to be the former the matter is not clear.
Reference: UN '54 (Philippines)

CHAPTER FOUR UNLIGHTED, AUDIO & RADIO SIGNS, SIGNALS, MARKERS

4A Indexes: Categories and Alphabetical

4A1 Category Index

Unlighted Fixed Form with Constant Messages (4B) General Note

Location Signs (4B1)

- Location Signs
- Corporate or Other Political Subdivision Sign
- Mile Post Sign
- Standard Right of Way Sign
- Subdivision Sign
- Tresspass Sign
- Tresspass--Right of Way Sign/Tresspass-Bridge Sign/Tresspass-Crossing Sign
- Railroad Property - Trespassing Forbidden Under Penalty
- Danger Do Not Trespass on the Railroad
- Valuation Section Sign

Transportation Signs (4B2)

Speed Control Signs (4B2 a)

- Speed Control & Restriction Signs
- GN I, II,
- Advance-Warning Sign/Advance Warning Sign
- Reduce Speed Sign
- Resume Speed Sign
- Retro-Reflective (Road Traffic Type) PSR Sign
- Speed Control Signs - Temporary & Permanent
- Speed Limit - Permanent Sign/Speed Limit - Temporary Sign
- Speed
- Slow
- Resume Speed
- Temporary Reduce, Slow, Resume Signs
- Reduce Speed Sign
- Slow Sign
- Resume Speed Sign
- UAR Speed Signals (=Signs)

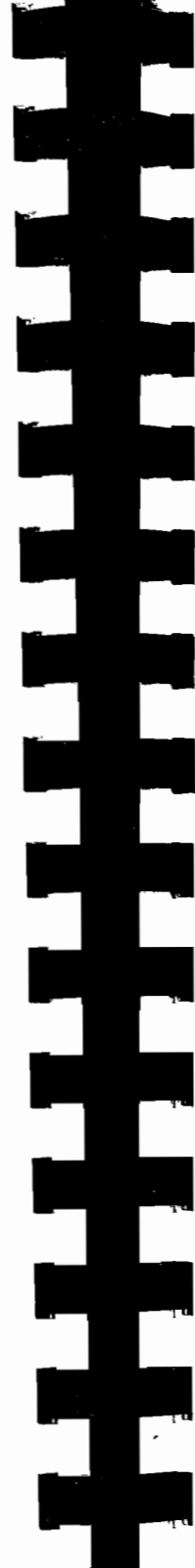
General Note
Speed Zone Sign
Restricting Sign
Resume Speed Sign
Speed Zone Signs
Speed Zone Sign
Restricting Sign
Resume Speed Sign
Indicator
Fixed Indicator
Sign for Day Running
Warning Sign/Commencement Sign/Termination Sign
Arrows
Line Indicator
Line Speed Indicator
Temporary Speed Restriction Indicator
"Z" Board/"R" Board
Speed Restriction Signs - Temporary
Senal Indicadora de Velocidad Limitada/De Fin Senal
Indicadora de Velocidad
Other Speed Signs:
Curve Speed Sign
Permanent Slow Speed Sign
Temporary Slow & Release Sign
Proceed Prepared to Stop Sign
Zone Speed Sign

Location Signs (4B2 (b))

Advance Location Signs (4B2 b 1))

Advance Location Signs
General Note
Railway Grade Crossing Signs
Drawbridge Signs
Tunnel Signs
Junction Signs
Rock Slide Signs
Snow Slide Signs
Station Signs
Station Name Sign (UAR)

Limit & Location Signs (4B2 b 2))



Limit & Location Signs

General Note
Yard Limit Signs
Switching Limit Signs
Signal Territory Limit Signs
Station Location Signs
Derail Locations Signs
Track Capacities Signs
Water Station Limit Signs
Fuel Station Limit Signs
Cinder Station Limit Signs
Blind Siding Signs
Cut Section Sign

Territory Limits Signs (4B2 b 3))

Territory Limit Signs

General Note
Begin CTC Sign/End CTC Sign
CTC
Begin
End
Begin Cab Signal Territory/End Cab Signal Territory
Begin TCS Sign/End TCS Sign
End of Signal Territory
End of Block Sign/Block-limit Sign
Automatic Block Signs
Start Automatic Block
End Automatic Block
Remote Control Signs
Begin Remote Control Signs
End Remote Control Signs
Beginning of Double Track Sign/End of Double Track Sign/Double
Track Begins/Double Track Ends
Begin Rules .../End Rules ...
Approach Block Limit Sign/ABL Sign

Maintenance of Way Signs (4B3)

General Note
Alinement Sign Or Markers
Bridge Sign/Bridge Number Sign
Curve & Elevation sign
Elevation Markers

End of Shunt Sign
Flanger Sign
Maintenance Limits Sign
Roadway Structures Sign
Snowplow Sign
 Raise Snowplow Sign
 Lower Snowplow Sign
Token Block Working
Wing Marker

Safety Signs (4B4)

General Note
Electrical Hazard Sign
Fire Hazard Sign
Highway Grade Crossing Sign
Barricade Sign
Highway & Barricade Sign
Power-Operated Switch Sign
Restricted Clearance Sign
Warning No Clearance for Man on Side or Top Car Sign

Marks & Markers (4B5)

Markers
Marker (Board)
Alinement Marker
Auxiliary Marker
"C" Markers/"S" Markers
 General Note
 "C" Markers
 "S" Markers
Clearance Mark
Diamond Shaped Marker
Distance Markers
Elevation Markers
Fixed Markers
Landmark
Lineside Marker
Marks & Markers for Japan
 General Note
 Repeater Signal
 Train Stop Sign Marker/Car Stop Marker
 Shunting Signal Marker & Shunting Sign Marker



Switch Target
Sudden Release Shunting Sign Mark
Trolley Wire Dead Section Indicator
Trolley Wire Electric Source Sign Marker
Route Electric Source Sign Marker
Once Stop Sign Marker
Clearance Post
Whistle Sign Marker
Buffer Stop Indicator
Marks:
 Route Identification Mark
 Station Approach Mark
 Slow Speed Release Mark
 Tablet Carrying Mark
 Signal Aspect Confirmation Position Mark
 Signal Alarm Mark
 Power Drive Mark
 Coasting Mark -- AC & DC
 Train Stop Position Mark
 Electric Train Section Mark
Mounument Marker
Reflective Marker Board
High Speed Marker Board
Section Entrance Marker
Signal Marker Board
Spring Switch Marker/Spring Switch Sign
Wayside Marker
Wing Markers

Boards & Posts (4B6)

General Note
Baak
Caution Board
Countdown Board
Countdown Marker Board
Flag Board/Metal Flags
Indicating Board
Indication Board
Lineside Board
Marker Board
Mile Board
Nameboard

Notice-Board
Number Board
Order Board
Permanent Speed Restriction Board/Permanent Speed-Restriction Board
Permanent Warning Board
"R" Board/"Z" Board
Radio Channel Change Board/Radio Channel Indicator
Reflectorized Distant Board/Distant Board/Fixed Board
Resume-Speed Board (Temporary)/Resume-Speed Board (Permanent)/
Advance Warning Board
Shunting Limits Board
Signal Board
Slow Board
Speed Board
Start of Section Board/End of Section Board
End of Section Marker Board
Sighting Board
Signal Warning Board
Starting Signal Notice Board
Station Limit Board
Station-Name Board
Train Clear of Passing Loop Indicator/Advanced Starting Loop Clear
Signal
AWS Cancelling Indicator
End of Token Section Proceed if Platform Clear Board
Temporary Warning Board
Temporary Outer Speed Board/Temporary Inner Speed Board/All Trains
Stop Board
Train Order Board
Terminating Board
Stop Board
Temporary Speed-Reduction Board
Warning Board
Watering Board
Whistle Board
Yard Limit Board
"Y" Board
Blockposts
Clearance Post
Curve & Elevation (Post)
Elevation Posts/Full Elevation Posts/Zero Elevation Posts
Gradient Posts



Mile Posts
Permanent Whistle Post/Temporary Whistle Post
Property Line Posts/Property Posts
Section Post/Sub-section Posts
Signposts
Whistle Posts

Plates, Flags & Other Forms (4B7)

"A" Plate
"F" Plate/Nf Plate
Identification Plate
Identifying Plate
Track Circuits
Fireman's Call Plunger Plate
Telephone Plate
Identity Plate
Letter Plate
Marker Plate
Name Plate/Plate, Name
Plate, Number/Number Plate
Signal Background Plate
Signal Identification Plate
Signal Number Plate
Station Nameplate
"T" Plate
Flags
General Note
Flagboards
Metal Flags
Flag Signals
Blue Flag Devices
Power Blue Flag
Blue Flag Detail
Derail Blue Flag
Chock Flag

Other Forms (4B8)

Overarching Terms (4B8 a)
General Note
Trackside Signs
Lineside Signs

Fixed Sign
 Roadway Sign
 Sign
 Signpost

 Blue Flag Forms (4B8 b))
 General Note
 Derail
 Stop
 Stop (Portable)
 Camp Cars
 Alto
 Danger Men Working on this Track
 Danger Tank Car Connected

 Electric Traction Signs (4B8 c))
 General Note

 Miscellaneous signs (4B8 d))
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 Checquered Sign
 Number Plate
 Signal-Not-In-Use Sign

 Unlighted, Acoustical & Radio Signals (4C)

 Targets (4C1)
 General Note I, II, III, IV, V

 Overarching Terms (4C1 a))
 Target
 Switch Stand Target
 Switch Target
 Illuminated Switch Target

 Morphological-related Terms (4C1 b))
 General Note

 Shape (4C1 b) 1))
 General Note
 Arrow-shaped Vanes (9 Forms)
 Obround-shaped Vanes (3 Forms)



Rectangle-shaped Vanes (4 Forms)
 Obround Vanes (4 Forms)
 Other Shapes (6 Forms)

 Color & Position (4C1 b) 2))
 General Note

 Railroad-function Related Terms (4C1 b) 3))
 Blind Target
 Main Track Switch Target
 Siding Yard Switch Target
 Siding Derail Target/Siding Derail Switch Target
 Yard Switch Stand

 Other Forms (4C1 c))
 Day Targets
 Main Line Switch Stands
 Target Stand
 Switch Target Reflector Type/Reflectorized Switch Target/Reflector
 Target
 Targets whose titles refer to Height:
 Low Target
 Low Revolving Target
 Intermediate Target
 High Switch Target
 High Target

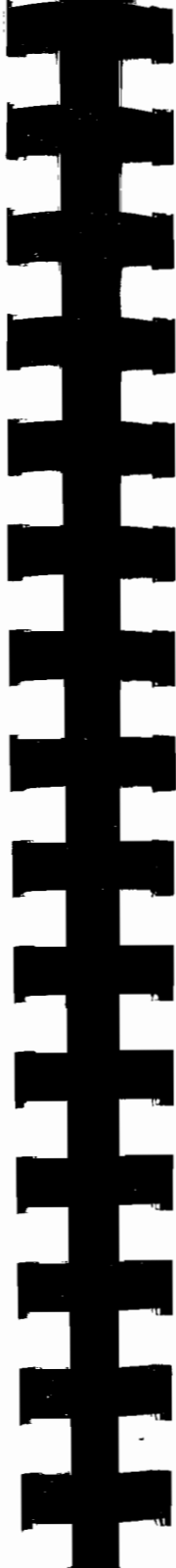
 Switch Stand Forms (4C1 c))
 General Note
 Automatic Safety Lock Switch Stand
 Automatic Safety Switch Stand
 Automatic Stand
 Automatic Switch Stands
 Column-Throw Stand
 Derail Switch Stand/Derail Stand
 Double Stand
 Dwarf Stand
 Enclosed Geared Type Parallel Throw Switch Stand
 Gearless Switch Stand
 Ground Throw Stand
 Ground-Throw Switch Stand/Ground Throw Switch Stand
 Hasty Triple Stand

High Banner Two Tie Switch Stand/Low Banner Two Tie Switch Stand
High Switch Stand
Intermediate Stand
Low Stand
Low Switch Stand
Main Line Safety Switch Stand/Mainline Safety Switch Stand
Main Line Switch Stand
Parallel-Throw Switch Stand
Stone Drum Switch Stand
Pony Stand
Positive-Action Switch Stand
Steelton Switch Stand
Switch Stand, Parallel Throw
Three-In-One Automatic Switch Stand

Acoustical Signal Forms (4C2)
General Note

Overarching Terms (4C2 a)
Acoustic or Audible Signal
Audible Danger Signal
Audible Signalling Devices
Audible Warning Systems

Explosive Signals (4C2 b)
All-Weather Fuzees
Audible Signal
Banger
Clayton's Automatic Detonator Placer
Clayton Fogging Machine
Detonating Fog Signal
Detonating Signal
Detonator
Detonator Machines
Detonator Placer
Detonator Signal
Duplex
Fog
Fog Detonator
Fog Gong
Fog Repeater
Fog Signal



Fogger
Fogging Machines
Fuzees
Non-optical Signals
Torpedo
Torpedo Signal

Level/Grade Crossing Sound Signals (4C2 c)
Audible Automatic Warning Devices
Audible-Pedestrian Crossing
Automatic Bell
Bell
Bell, Gong
Bell, Single Stroke
Bell, Vibrating
Crossing Alarms
Crossing Bells
Double Gong Highway Crossing Bell
Electronic Bell/Electronic Warning Bell
Enclosed Crossing Bells
Iron Case, Enclosed Crossing Bell
Enclosed Water Tight, Low & High Voltage Highway Crossing Bell
Enclosed Type Gong
Grade Crossing Alarm
Highway Crossing Bell/Bell, Highway Crossing
Highway Crossing Bell-Electronic/Highway Crossing Bell-Electro-
Mechanical
Highway Crossing Signal
Locomotive Type Crossing Bell
Skeleton Bell
Sound-Bell/Sound Bell
Special Case: Bell (Switch Indicator)

Cab & Train Control Sound Signals (4C2 d)
General Note
Cab Signal, Audible
Cab Signal-Sound
Audible Cab Signalling/Audible-Cab Signalling
Audible Cab Indicator/Indicator, Cab; Audible
Audible Cab Indicator
Audible Indicator
Audible Signal

Bell & Siren Unit
Cab Alarm
Cab Indicator
Cab Whistle
Code Continuous Cab Signal with Whistle & Acknowledger
Indicator, Cab; Audible
Klaxon
Reliostop
Warning Hooter
Warning Whistle
Whistle
Whistle Signals

Radio Signal Terms (4C3)

Beacon/Euro-balise Beacon
Electronic Signalling
Electronic Token
Electronic Token System
Euro-Radio
GPS/NAVSTAR GPS/GPS Technology
Radio-Based Token System
Radio Block
Radio Block System
Radio Electronic Token Block (RETB)
Radio Signalling
Radio Token Block
Radio Token Equipment
Radio Electronic Token System
Radio-Shunting
Radio Token Block System
Radio Tokenless Block
Raliophone
RETB System
Sat-Guidance System/Sat-Based Guidance System
Token Block
Wireless Signal System

Staff & Ticket, Tablet, Token, Train Order & Time Interval Forms (4D)

Staff Forms (4D1)

Absolute Staff System/Absolute Staff Instrument
Annett's Key



Automatic Electric Staff Instrument
Automatic Staff Exchanging Apparatus/Automatic Exchange Equipment/
Automatic Tablet Exchange
Electric Staff
Electric Train Staff
Electric Staff Instrument
Electric Staff Block System
Electric Staff System
Electric Staff Working
Electric Train Staff & Ticket System
Electric Train Staff System
Intermediate Siding Junction Instrument
Large Electric Staff
O.E.S. Staff
One Train Working
Permissive Staff/Permissive Attachment
Pusher Attachment
Staff
Staff & Ticket Working
Staff Catcher
Staff Crane/Crane, Staff
Staff Manual Block System
Staff Pouches
Staff System
Subsidiary Electric Staff Working
Train Staff/Train-Staff
Train Staff System/Train-Staff System
Webb & Thompson Electric Staff
W & T Electric Staff System
Webb & Thompson Electric Staff Instrument
Wooden Staff/Wooden Train Staff

Staff & Ticket Forms (4D2)

Paper Ticket Method
Staff & Ticket/Staff-&-Ticket
Staff & Ticket System
Ticket System
Train Staff & Ticket System
Train Staff System/Train-Staff System
Wooden Train Staff & Paper Ticket Method

Token Forms (4D3)

Automatic Token Exchange
Ball Token/Ball-Token
Ball Token Type
Electric Token
Electric Token Apparatus
Electric Token Instrument
Electric Token Methods
Electric Token System
Electric Token System/Electric Token Block
Key Token (I), (II)
Key Token Block System
Key Token Transfer System
Key Token Balancer
Key Token Instrument
Key Token System
Neale's Ball Token Instrument
Neale's Single Line Combined Ball Token & Block Instrument
No Signalman Remote Key Token Working/No-Signalman Remote Key
Token Working
No Signalman Token Block
One Train Working
Signalman-to-Signalman Token Working
Signalman to Automatic Operated Token Working
SingleLine Token Instrument
Token
Token Block System
Token Signalling
Electric Single-Line Token System
Token Type Block Instrument
Token-Forms
Token Forms-II
Main Section (Unidirectional) Token
Engineering Token
Test Token
Special Token
Van Schoor Train Token System

Tablet & Tablet & Token Forms (4D4)
Ball & Tablet Token Instrument
Electric Tablet/Electric Train Token
Electric Tablet Instrument
Electric Tablet System



Electric Train Tablet Method
Single Line Tablet
Tablet
Tablet Block Systems
Tablet Block Train Operation
Tablet Instrument
Tablet System
Tablet System of Working
Tyer's Electric Train Tablet System
Tyer #7 Tablet Instrument
#6 Tyer's Tablet Machine
Tyer's Tablet Instrument
Tyer's Electric Tablet System/Tyer's Tablet System

Tokenless Forms (4D5)

General Note
Scottish Region Tokenless Block
Tokenless Block
Tokenless Block Working/Tokenless Block System
Tokenless Block Instrument
Tokenless Block Working (Paper Ticket)

Train Order Forms (4D6)

Balloon Train Order
Banner Type Train Order Signal
Boot-Jack Type Train Order Signal
Box Type Train Order
Center-Pivoted, 2-Position Train Order Signal
Double-Arm UQ Train Order Signal
Electric Enclosed Disc Train Order Signal
Electro-Mechanical Train Order Signal
Nineteen Order
Slow Order
Telegraph Train-Order Signal
Telephone Train Order Sign
Thirty One Order
Timetable & Train Order (T & O)
Train Order Boards
Train Order/Train-Order
Train-Order Lineside Signal
Train Order Signal/Train-Order Signal
Train Order Signals of the Color Light Type

Level-Crossing [REVIEW]

MWL Crossing

Highway Crossing Protection

Automatic Bells

Flashlight

Gates

Wig-wag

Highway Crossing Signa

Crossing Sign

Locomotive Type of Bell

Wigwag Signal

Highway Crossing Warnings & Controls

Cantilevers

Gates

Lamps

Highway Grade Crossing

Signs

Signals

System

Warning Device

Power-Worked MCB

Audible Warning Devices

Traffic Lights

Barriers

Seismic Based Train Actuated Approach Warning at Level Crossing

The Orion - 300 Level Crossing Approach Warning System

Lighted LC/GC Signal Forms (4E2)

Advance Warning Signal (Highway Crossing)

AGA Highway Danger Signal

Barrow Crossing Warning Indicator

Cantilever Signal

Color-Light Highway Signal

Crossing Signal

Flashing Light Signals

Flashing Light Type

Grade Crossing Signal

Highway Approach Signal

Highway Crossing Signal

Hoeschon Crossing Signal

Miniature Warning Lights

Miniature R/G Warning Lights

Train-Order System

Train-Order Working

Written Train Orders

Yarrington Type of Train Order Signal

Time Interval Forms (4D7)

Telegraph Block or Time-Interval System

Time Interval System/Time Interval-System

Time Interval Method

Time Interval/Time-Interval

Time Interval System of Working/Time-Interval System of

Safeworking

Time Systems

Other Forms (4D8)

Space Interval-Method

Telegraph & Ticket Method

Telegraph Message System

Telegraphic Order Method of Train Working

Telegraphic Orders

Ticket & Section Order System

Time-Code System

Timetables/Time-Tables

Time-Table Operation

Train Warrant Control (TWC)

Level/Grade Crossings Signs, Signals, Markers & Other Forms (4E)

General Note

Integrative LC/GC Terms (4E1)

Automatic Safety Installations for Level Crossings

Automatic Controlled Level-Crossing Protection

Bells

Flashing Lights

Automatic Level Crossing Protection

Automatic Warning System

Conventional Track Circuit-Operated Level Crossing Warning System

Crossing Protection

Crossing Warning Device

Grade Crossing Warning Systems

Highway Crossing Protection

Highway-Railroad Crossing Protection

Railroad-Railroad Grade Crossing Signal
Highway Signals
Level Crossing-Flashing Light Signals
Level Crossing Signals
Level Crossing with Flashing Light Signals
Level Crossing with Signal System
Signals for Tramway Level Crossing [REVIEW-M & H]
Pre-Warning Signals
Tram Crossing Signals
Visible Warning Signals
Wig Wag
Wig Wag Crossing Signal
Wig Wag Type

Barriers & Gate Forms (4E3)

Barriers, Full Gates, & Gates (4E3 a))

Automatic Gates
Automatic Lifting Barriers
Barrier
Barrier Type Protection
Boom Gates
CCTV Monitored Remote Barriers Crossing
Crossing Gates
Electric Operated Lifting Barriers
Electro-Hydraulic Pedestrian Barrier
Full Barrier
Level Automatic Barriers
Level Automatic Open Crossing
Level Crossing Barrier
Level Crossing Gates
Level Crossing with Automatic Barrier
Level Crossing with Full Barrier
Lifting Barrier
Manned Gated Crossing
Manned Barriers
Manner Barriers Crossing
 MCB/Local
 MCB/Remote
 MCB/CCTV
 TOB
Manually Controlled Barriers



MCB/CCTV
On Call Barrier Crossing
Short-Arm Gates
TMO (Trainman Operated [Barrier])
Trainman-Operated Barrier (TOB)
Wicket Gate

Half Barriers & Gates (4E3 b))

AHB Crossings
Automatic Half Arm Barrier Installation
Automatic Half Barrier
Automatic Half Barrier Crossing (AHB)
Automatic Half Barrier Locally Monitored (ABCL)
Automatic Level Crossing & Half Gate
Double Half Barrier & Full Barrier Crossing
Half Barrier: Double Half Barriers & Single Half Barrier
Level Automatic Half Barriers
Level Crossing Half Barriers

Sound Signal Forms (4E4)

Audible-Pedestrian Crossings
Bell, Gong, Audible Warning
Crossing Alarms
Double Gong Highway Bell
Electronic Warning Bells
Enclosed Crossing Bells
Enclosed Type Gong
Grade Crossing Alarm
Locomotive Type of Crossing Bell
Highway Crossing Alarm
Highway Crossing Bell
Highway Crossing Bell-Electronic
Highway Grade Crossing Warning Device
Hoeschen Bell System
Skeleton Bell
Vibrating Bell

Signs (4E5)

Auxiliary Sign
Close Up Road Warning Sign [& with Flashinglight]
Crossing Signs
Crossbuck Sign

Distant Road Warning Sign
Gates Not Working Sign
Highway & Barricades Sign
Highway Crossing Sign
Highway Grade Crossing Sign
Illuminated Sign
Level Crossing Halt Board
Level Crossing - Sign Board
Railroad Crossing Sign: Highway, At the Crossing, Advance Warning Sign (& with Flashing Light)
Railroad Grade Crossing Targets
Road Signs at Level Crossing
St Andrew's Cross
St George's Advance Warning Board
Second Train Coming Sign
Signs (Crossing)
Warning Signs for Level Crossing

Open Crossings (4E6)

Accommodation Crossing
Automatic Open Crossing Locally Monitored (AOCL)
Automatic Open Crossing Remotely Monitored (AOCR)
Automatic Open Level Crossings
Open Crossing (OC)
Open Crossing with No Controls

4A2 Index: Alphabetical

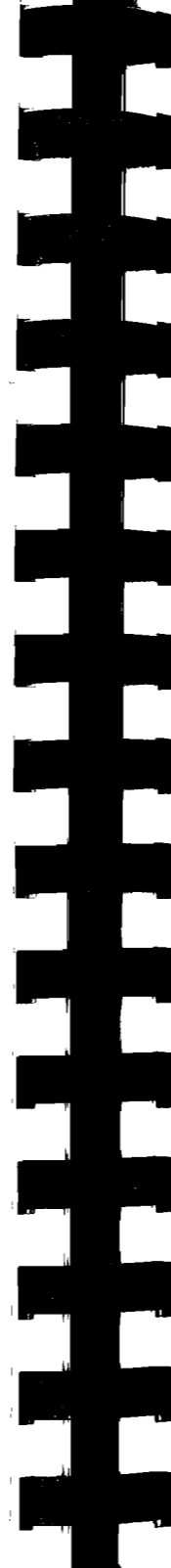
4A2 Alphabetical Index

"A" Plates

Absolute Staff System/Absolute Staff Instrument
Accommodation Crossing
Acoustical or Audible Signal
Acoustical Signal
Advance Warning Board: Resume Speed Board
Advance Location Signs
Advance-Warning Sign/Advance Warning Sign
Advance Warning Signal (Highway Crossing)
AGA Highway Danger Signal
AHB Crossings
Alinement Marker
Alinement Signs or Markers
All Trains Stop Board: Temporary Outer
All-Weather Fuses
Approach Block Limit Sign/ABL Sign
Approach Sign
Arrow
Arrow-Shaped Vanes
Audible Automatic Warn Devices
Audible Cab Indicator/Indicator, Cab, Audible
Audible Cab Signalling/Audible-Cab Signalling
Audible Danger Signal
Audible Frequency Cab Signal
Audible Indicator
Audible-Pedestrian-Crossing
Audible Signal
Audible Signalling Devices
Audible Warning Systems
Automatic Bell
Automatic Block Sign
Start
End
Automatic Controlled Level-Crossing Protection
Bells
Flashing Lights
Automatic Electric Staff Instrument

Automatic Gates
Automatic Half Arm Barrier Installation
Automatic Half Barrier
Automatic Half Barrier Crossing (AHB)
Automatic Half Barrier Locally Monitored (ABCL)
Automatic Level Crossing & Half Gate
Automatic Level Crossing Protection
Automatic Lifting Barriers
Automatic Open Crossing Locally Monitored (AOCL)
Automatic Open Crossing Remotely Monitored (AOCR)
Automatic Open Level Crossing
Automatic Safety Installations for Lighted Crossings
Automatic Safety Lock Switch Stand
Automatic Safety Switch Stand
Automatic Staff Exchanging Apparatus/Automatic Exchange
Equipment/Automatic Tablet
Exchange
Automatic Stand
Automatic Switch Stand
Automatic Token Exchange
Auxiliary Marker
Auxiliary Sign
AWS Cancelling Indicator

Baak
Ball & Tablet Token Instrument
Ball Token/Ball-Token
Ball Token Type
Balloon Train Order
Banger
Banner Type Train Order Signal
Barricade Sign
Barriers
Barriers & Gates Forms
Barriers, Full Barriers, & Gates
Barrier Type Protection
Barrow Crossing Warning Indicator
Beacon/Euro-Balise Token
Begin Rules .../End Rules ...
Begin Cab Signal Territory/End Cab Signal Territory
Begin CTC/End CTC Sign
Begin TCS End/End TCS Sign



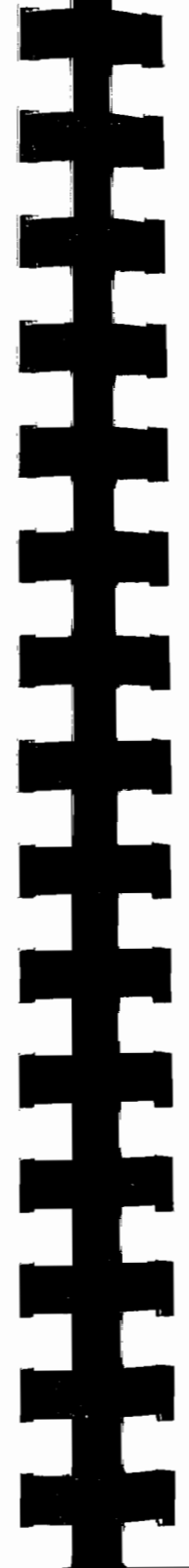
Beginnings of Double Track/End of Double Track/Double Track Begins/Double
Track Ends
Bell
Bell & Siren Unit
Bell, Gong
Bell, Gong, Audible Warning
Bell, Gong/Bell, Gong, Audible Warning
Bell, Single Stroke
Bell, Vibrating
Blind Siding Sign
Blind Target
Block Posts
Blue Flags
Blue Flag Devices
Blue Flag Forms
Derail
Stop
Stop (Portable)
Camp Cars
Alto
Danger Men Working on This Track
Danger Tank Car Connected

Boards
Boards & Posts
Boom Gates
Boot-Jack Type Train Order signal
Box Type Train Order
Bridge Sign/Bridge Number Sign
Buffer Stop Indicators

Cab Alarm
Cab & Train Control Sound Signal
Cab Indicator
Cab Signal, Audible
Cab Signals-Sound
Cab Whistle
Cantilever Signals
"C" Marker/"S" Marker
Camp Cars Flag
CCTV Monitored Remove Barrier Crossing
Caution Board

Center-Pivoted, 2-Position Train Order Signal
Chequered Sign
Clayton's Automatic Detonator Placer
Clayton's Fogging Machine
Clearance Marker
Clearance Post
Code Continuous Cab Signal with Whistle & Acknowledger
Chock Flag
Cinder Station Limits Sign
Close Up Road Warning Sign
Color & Position
Column-Throw Stand
Conventional Track Circuit-Operated Level Crossing Warning System
Corporate or Other Political Subdivision Sign
Countdown Board
Countdown Marker Board
Crossbuck Sign
Crossing Alarm
Crossing Bell
Crossing Gates
Crossing Protection
Crossing Signs
Crossing Signal
Crossing Warning Devices
CTC Sign
 Begin
 End
Curve & Elevation Post
Curve & Elevation Sign
Curve Speed Sign
Cut Systems

Day Target
Derail BlueFlag
Derail Location Signs
Derail Switch Stand/Derail Stand
Detonating Fog Signal
Detonating Signal
Detonator
Detonator Machine
Detonator Placer
Detonator Signal

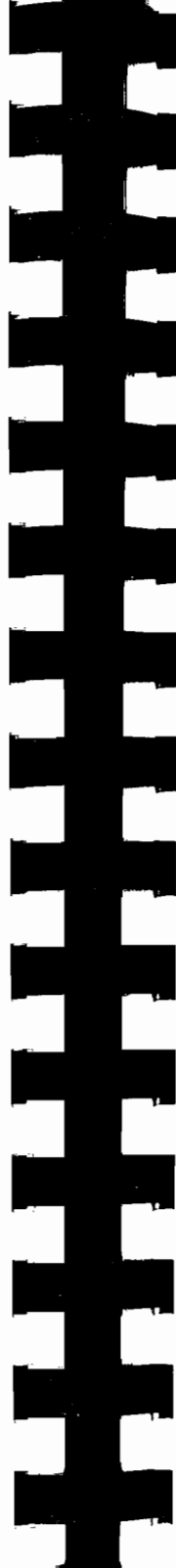


Diagonal Arrow & Mask Vane
Diamond/Single Vane
Diamond Shaped Marker
Distance Marker
Distance Road Warning Signs
Double-Arm UQ Train Order Signal
Double Gong Highway Bell
Double Gong Highway Crossing Bell
Double Half Barrier & Full Barrier Crossing
Double Stand
Drawbridge Signs
Duplex Fog Signal
Dwarf Stand

Electric Enclosed Disc Train Order Signal
Electric Operated Lifting Barriers
Electric Single-Line Token System
Electric Staff
Electric Staff Block System
Electric Staff Instrument
Electric Staff System
Electric Staff Working
Electric Tablet
Electric Tablet/Electric Train Token
Electric Tablet Instrument
Electric Table System
Electric Token Apparatus
Electric Token Instrument
Electric Token Methods
Electric Token System/Electric Token Block
Electric Train Staff & Ticket System
Electric Train Staff System
Electric Train Tablet Method
Electro-Hydraulic Pedestrian Barriers
Electro-Mechanical Train Order Signal
Electronic Signaling
Electronic Token
Electronic Token Instrument
Electronic Token Methods
Electronic Token Systems
Electric Traction Sign
Electric Train Staff

Electric Train Tablet
Electric Train Token
Electrical Hazard Sign
Electronic Bell/Electronic Warning Bell
Electronic Token
Electronic Token System
Electronic Warning Bell
Elevation Markers
Elevation Posts/Full Elevation Posts/Zero Elevation Posts
Enclosed Crossing Bell
Enclosed Type Gong
Enclosed Water Tight, Low & High Voltage Highway Crossing Bell
Enclosed Geared Type Parallel Throw Switch Stand
End of Block Sign/Block-limit Sign
End of Shunt Signal
End of Section Marker Board
End of Signal Territory
End of Token Section Proceed if Platform Clear Board
Euro-Radio
Explosive Signal

"F" Plate/Nf Plate
Fire-Hazard Sign
Fixed Indicator
Fixed Marker
Fixed Sign
Flag
Flag Signal
Flagboard
Flag Board/Metal Flag
Flanger Sign
Flashing Light Signal
Flashing Light Type
Fog
Fog Detonator
Fog Gong
Fog Repeater
Fog Signal
Fogger
Fogging Machine
Fuel Station Limit Signs
Full Barrier



Fusees

Gates Not Working Signal
Gearless Switch Stand
GPS/Navstar GPS/GPS Technology
Grade Crossing Alarm
Grade Crossing Signal
Grade Crossing Warning System
Gradient Posts
Ground Throw Stand
Ground Throw Switch Stand/Ground-Throw Switch Stand

Half Barriers: Double Half Barriers & Single Half Barriers
Hasty Triple Stand
High Banner Two Tie Switch Stand/Low Banner Two Tie Switch Stand
High Barriers & Gates
High Speed Marker Board
High Switch Stand
High Target
High Switch Target
Highway Approach Signal
Highway & Barricade Sign
Highway Crossing Bell/Bell, Highway Crossing
Highway Crossing Bell-Electronic/Highway Crossing Bell-Electro-Mechanical
Highway Crossing Protection
Highway Crossing Protection: Automatic Bells, Flashlight, Gates, Wig-wag
Highway Crossing Sign
Highway Crossing Signal
Highway Crossing Signal: Crossing Sign, Locomotive Type of Bell, Wig Wag
Signal
Highway Grade Crossing
 Sign
 Signals
 Systems
 Warning Devices
Highway Grade Crossing Sign
Highway Grade Crossing Warning Device
Highway Crossing Warning & Controls
 Cantilevers
 Gates
 Lamps
Highway-Railroad Protection

Highway Signals
Hoeschen Crossing Signals
Hoeschen Bell System

Indicating Board
Indication Board
Identification Plate
Identifying Plate
Track Circuits
Fireman's Call Plunger Plate
Telephone Plate

Identity Plate
Illuminated Sign
Illumination Switch Target
Indicator
Indicator, Cab; Audible
Indicator of Prescribed Speed Sign
Indicating Board/Indication Board
Integrative LC.GC Terms
Intermediate Siding Junction Indicator
Intermediate Stand
Intermediate Target
Iron Case, Enclosed Crossing Bell: Enclosed

Junction Signs

Key Token (I) (II)
Key Token Balancer
Key Token Block System
Key Token Instrument System
Key Token System
Key Token Transfer System
Klaxon

Landmark
Large Electric Staff
Letter Plate
Level Automatic Barrier
Level Automatic: Half Barrier
Level Automatic Open Crossing
Level Crossing Half Barrier
Level & Grade Crossing Signs, Signals, Gates, Barriers & Related Accoutrements



Level Crossing Barriers
Level Crossing Gates
Level Crossing-Flashing Light Signals
Level Crossing Halt Board
Level Crossing-Sign Board
Level Crossing Signals
Level Crossing Sign Board
Level Crossing with Automatic Barrier
Level Crossing with Full Barrier
Level Crossing with Flashing Light Signals
Level Crossing with Signal Systems
Level/Grade Crossing Sound Signals
Lifting Barriers
Lighted Level & Grade Crossing Signals
Limit & Location Signs
Line Indicator
Line Speed Indicator
Lineside Board
Lineside Marker
Lineside Sign
Location Signs
Locomotive Type Crossing Bell
Low Revolving Target
Low Stand
Low Switch Stand
Low Target

Main Line Safety Switch Stand/Mainline Safety Switch Stand
Main Line Switch Stands
Main Track Switch Target
Maintenance Limit Signs
Maintenance of Way Signs
Manned Barrier Crossing
Manually Controlled Barriers
Manned Gate Crossing
MCB/Local
MCB/Remote
MCB/CCTV
TOB
Marks & Markers
Marks & Markers for Japan
Route Identification Mark

Station Approach Mark
Slow Speed Release Mark
Tablet Carrying Mark
Signal Aspect Confirmation Position Mark
Signal Alarm Mark
Power Drive Mark
Coasting Mark -- AC & DC
Train Stop Position Mark
Electric Train Section Mark
Marker
Marker Board
Marker (Board)
Marker Plate
Metal Flags
Mile Boards
Mile Post
Miniature R/G Warning Lights
Miniature Warning Lights
Monument Marker
Morphological-Related Terms
MWL

Nameboard
Name Plate/Plate, Name
Neale's Ball Token Instrument
Neale's Single Line Combined Bell Token & Block Instrument
Nineteen Order
Non-Optical Signals
No Signalman Remote Key Token Working/No-Signalman Remote Key Token Working
Notice Board
Number Boards
Number Plate

Obround-Shaped Vanes
Obround Vane
Octagonal/Single Vane
O.E.S. Staff
On Call Barrier Crossing
Once Stop Sign Marker
One Train Working
Open Crossing (OC)



Open Crossing with No Controls
Order Board
Other Shapes
Other Speed Signs
Curve Speed Signs
Permanent Slow Speed Signs
Proceed Prepared to Stop Sign
Temporary Slow & Release Sign
Zone Speed Sign

Paper Ticket Method
Parallel-Throw Switch Stand
Permanent Speed Restriction Board/Permanent Speed-Restrictive Board
Permanent Staff/Permanent Attachment
Permanent Warning Board
Permanent Whistle Post/Temporary Whistle Post
Plate
Plate, Number/Number Plate
Plates, Flags & Other Forms
Pony Stand
Positive-Active Switch Stand
Power-Operated Switch Sign
Pre-Warning Signals
Power-Working MCB
Audible Warning Devices
Traffic Lights
Barriers
Property Line Post/Property Post
Pusher Attachment

"R" Board/"Z" Board
Radio-Based Token System
Radio Block
Radio Block System
Radio Channel Change Board/Radio Channel End
Radio Electronic Token Block (RETB)
Radio Electronic Token System
Railroad-Function Related Terms
Radio Shunting
Radio Signal Terms
Radio Signalling
Radio Token Block

Radio Token Block System
Radio Token System
Radio Tokenless Terms
Railophone
Railroad Crossing Signs: Highway, at the Crossing, Advance Warning Sign
(& with Flashing Lights)
Railroad Grade Crossing Signs
Railroad Grade Crossing Targets
Railroad Safety Aids
Railroad-Railroad Grade Crossing Signal
Reduce Speed Sign
Reflective Marker Board
Reflectorized Distant Board/Distant Board/Fixed Board
Reliostop
Remote Control Signs
 Begin Remote Control Signs
 End Remote Control Signs
Repeater Signal
Restricted Clearance Sign
Restricting Sign: Speed Zone Signs
Resume-Speed Board (Permanent)/Resume-Speed Board (Temporary)
Resume Speed Sign
RETB System
Retro-Reflective (Road Traffic Type) PSR Sign
Road Signs at Level Crossing
Roadway Sign
Roadway Structures Sign
Rock Slide Signs
Route Electric Source Sign Marker

Safety Signs
Saint Andrew's Cross
Saint George's Advance Warning Board
Sat-Guidance/Sat-Based Guidance System
Scottish Region Tokenless Block
Second Train Coming Sign
Section Entrance Marker
Section Posts/Sub-section Posts
Seismic Based Train Actuated Approach Warning at Level Crossing
Shape Forms
Short Arm Gate
Shunting Limits Board



Shunting Signal Marker & Shunting Sign Marker
Skeleton Bell
Siding & Yard Switch Target
Siding Derail Target/Siding Derail Switch Target
Siding Yard Switch Target
Sighting Board
Sign
Signal-Not-In-Use Sign
Signs (Crossing)
Signal Board
Sign for Day Running
Sign Marker
Signpost
Signal
Signal Background Plate
Signal Board
Signal Identification Plate
Signalman-to Signalman Token Working
Signalman-to Signalman Automatic Operation Token Working
Signal Marker Board
Signal Number Plate
Signals for Tramway Level Crossing
Signal Territory Limit Signs
Single-Line Block-Token Instrument
Single Line Tablet
Skeleton Bell
Slow Board
Slow Order
Snow Slide Signs
Snowplow Signs
 Raise Snowplow Sign
 Lower Snowplow Sign
Sound-Bell/Sound Bell
Space Interval Method
Special Case: Bell (Switch Indicator)
Speed Board
Speed Control & Restriction Signs
Speed Control & Speed Restriction Sign
Speed Control-Temporary & Permanent
Speed Limit-Permanent Sign/Speed Limit-Temporary Sign
 Speed
 Slow

Resume Speed
 Speed Restriction Signs-Temporary
 Speed Zone Signs
 Restricting Sign
 Resume Speed Sign
 Spring Switch Marker
 Standard Right of Way Sign
 Staff
 Staff & Ticket/Staff-&-Ticket
 Staff & Ticket, Tablet, Train Order & Time Interval Forms
 Staff & Ticket Forms
 Staff & Ticket System
 Staff & Ticket Working
 Staff Catcher
 Staff Crane/Crane Staff
 Staff Manual Block System
 Staff Pouches
 Staff System
 Start of Section Board/End of Section Board
 Station Limit Board
 Station Name Board
 Station Name Plate
 Station Name Sign
 Station Signs
 Steelton Switch Stand
 Stone Drum Switch Stand
 Stop Board
 Subsidiary Electric Staff Working
 Sudden Release Shunting Sign Mark
 Switch Lamp
 Switch Stand, Parallel Throw
 Switch & Target Stands
 Switch Stand, Parallel Throw
 Switch Stand Target
 Switch Target
 Switch Target Reflector Type/Reflectorized Switch Target/Reflector Target
 Switching Limit Signs

 "T" Plate
 Tablet
 Tablet & Tablet & Token Forms
 Tablet Instrument



Tablet Block System
 Tablet Block Train Operations
 Tablet System
 Tablet System of Working
 Targets
 Target Stand
 Telegraph Block or Time-Interval System
 Telegraph Message System
 Telegraph Order Method of Train Working
 Telegraph & Ticket Method
 Telegraph Train-Order Signal
 Telegraphic Orders
 Telephone Train Order Signal
 Temporary Outer Speed Board/Temporary Inner Speed Board/All Trains Stop Board
 Temporary Reduce, Slow, Resume Signs
 Reduce Speed Sign
 Slow Sign
 Resume Speed Sign
 Temporary Speed Restriction Indicator
 Temporary Warning Board
 Terminating Boards
 The Orion - 300 Level Crossing Approach Warning System
 Thirty Order
 Three-In-One Automatic Switch Stand
 Ticket System
 Ticket & Section Order System
 Time-Code System
 Time Interval Forms
 Time Interval/Time-Interval
 Time Interval Method
 Time-Interval System of Working/Time Interval System of Safeworking
 Time Systems
 Timetables/Time-Tables
 Time-table & Train Operations (T & TO)
 Time-table Operation
 TMO (Trainman Operated [Barrier])
 Token
 Token Block
 Token Block System
 Token Block Working
 Token Forms

Token Forms II
 Main Section (Unidirectional) Token
 Engineering Token
 Test Token
 Special Token
 Token-Forms
 Token Type Block Instrument
 Tokenless Block
 Tokenless Block System
 Tokenless Block Working
 Tokenless Block Working (Paper Ticket)
 Tokenless Working Block
 Torpedo
 Torpedo Signal
 Track Capacities Signs
 Trackside Sign
 Train Clear of Passing Loop Indicator/Advanced Starting Loop Clear Signal
 Trainman Operated Barrier (TOB)
 Train Order Forms
 Train Order/Train-Order
 Train Order Board
 Train Order Signal/Train-Order Signal
 Train Order System
 Train Order Signal of the Color Light Type
 Train -Order Working
 Train-Over Lineside Signal
 Train Staff/Train-Staff
 Train Staff & Ticket
 Train Staff & Ticket System
 Train Staff System/Train-Staff System
 Train Stop Sign Marker/Car Stop Marker
 Train Warrant Control (TWC)
 Tram Crossing Signals
 Transportation Sign
 Tresspass-Right-of-Way Sign/Tresspass-Bridge Sign/Tresspass-Crossing Sign
 Tresspass Sign
 Trolley Wire Dead Section Indication
 Trolley Electric Source Sign Marker
 Tunnel Sign
 Tyer's Electric Tablet System/Tyer's Tablet System
 Tyer's Tablet Instrument
 Tyer's #7 Tablet Instrument



#6 Tyer's Tablet Instrument
 UAR Speed Signals (=Signs)
 Speed Zone Sign
 Restricting Sign
 Resume Speed Sign
 Unlighted, Acoustical, & Radio Signals
 Unlighted Fixed Forms with Constant Messages

 Valuation Section Sign
 Van Schoor Train Token System
 Vibrating Bell
 Visible Warning Signals

 Warning Board
 Warning Hooter
 Warning No Clearance for Man on Side or Top Car Sign
 Warning Sign/Commencement Sign/Termination Sign
 Warning Signs for Level Crossings
 Warning Signal
 Warning Whistle
 Water Station Limit Sign
 Watering Board
 Wayside Marker
 Webb & Thomas Electric Staff Instrument
 Whistle
 Whistle Board
 Whistle Post
 Whistle Sign Marker
 Whistle Signals
 Wicket Gate
 Wig Wag
 Wig Wag Crossing Signal
 Wig Wag Type
 Wing Marker
 Wireless Signal System
 Wooden Staff/Wooden Train Staff
 Wooden Train Staff & Paper Ticket Method
 Written Train Order

 "Y" Board
 Yard Limit Board
 Yard Limit Sign

Yard Switch Stand
Yarrington Type of Train Order Signal

"Z" Board/"R" Board
Zone Speed Sign



4B Unlighted Fixed Forms with Constant Messages

General Note. This somewhat amorphous term includes all forms of railroad/ railway safety aids of a visual nature with unvarying messages of a fixed character: Signs, Marks, Markers, Boards, Posts, Plates, Flags. These forms are overshadowed by Signals. Signals seemingly dominates the larger world of Railway Signals (a term whose identifying name often encompasses all forms including non-signal forms). Sign form categories are heavily influenced by U.S. practice since AREA offers a classification of signs not available from other sources.

4B1 Location Signs

LOCATION SIGNS. Older editions of AREA speak of "Signs for the Information of Passengers & Employees Other Than Trainmen, Though Incidentally Used by Them." Newer editions have Location Signs instead though the meaning is similar. This term serves as an OA term for this segment. However, there is an area of confusion present: There is also a segment of signs within Transportation Signs known as Location Signs. Those signs refer to train operations in a direct rather than an indirect or marginal sense. The former Location Signs can be termed Location I and the later, Location II.

Reference: AREA '29, '87-88

CORPORATION OR OTHER POLITICAL SUBDIVISION SIGN. This unwieldy term is from AREA 1929. It obviously includes a wide variety of Signs. These Signs are not directly tied to train operations. The Signs are rectangular in shape (horizontal emphasis) with rounded corners. Presumably these Signs display black letters on white ground.

Reference: AREA '29

MILE POST SIGN. This term belongs more to Posts than Signs. However, it is also classified with, placed under the heading of Signs. It is more of a Cross-Reference entry than a full entry.

Reference: AREA '87-88

STANDARD RIGHT OF WAY SIGN. AREA 1987-88 includes Standard Right of Way Sign and Monument Marker as one unit. It denotes limits for right of way. The role of monument marker is not explained further. Cross Reference: Monument Marker.

Reference: AREA '87-88

SUBDIVISION SIGNS. AREA 1929 has Section Sign by itself as well as Section

with Subdivision Sign but no sub-division (or subdivision) by itself. AREA illustrates the combined Signs and notes where they are positioned but a description of the function is not given. Newer editions of AREA do not include this sign(s).

References: AREA '29, AREA '87-88

TRESSPASS SIGN. AREA newer editions speak of No Trespassing Signs while 1929 has Trespassing Signs. Presumably it means a sign denoting limits of areas where intrusion would constitute trespass.

References: AREA '29, AREA '87-88

TRESSPASS--RIGHT-OF-WAY SIGN/TRESSPASS--BRIDGE SIGN/
TRESSPASS-CROSSING SIGN. AREA 1929 provides details on three forms (or uses) of Tresspass Signs. The Signs are rectangular in shape with horizontal emphasis. The Signs are placed at commencement of what would constitute trespass. Samples of Tresspass Signs include:

RAILROAD PROPERTY - TRESSPASSING FORBIDDEN UNDER
PENALTY

DANGER DO NOT TREPASS ON THE RAILROAD

"Wording ... suggestive only." Signs are rectangular in shape with horizontal emphasis. Probably black on white ground.

VALUATION SECTION SIGN. This term is from AREA 1929. It is a rectangle with horizontal emphasis.

Reference: AREA 1929

4B2 Transportation Signs

a) Speed Control Signs

SPEED CONTROL & SPEED RESTRICTION SIGNS.

General Note I. These are the basic terms for Signs relating to speed regulations. Speed Control is more common in the U.S. while Speed Restriction is preferred in Europe. Many European signs refer to speed. If a signal code has only a few references to Signs they are likely to be related to speed. Speed signs are placed within Transportation Sign category of AREA. Signals can manifest considerable variation and often tend toward the local. This is much more true with Signs: they are markedly decentralized and fragmented. Terms and descriptions are therefore tentative and provisional. Foley (AAR) in 1975 supplied to this compiler excerpts from various unnamed U.S. railroad signal codes. The collection of Sign materials constitutes a major resource for railroad signs. Frequently the Signs are in groups and will be so considered here.

General Note II. ERS views Speed Restriction Signs as qualifiers of signal indications. AREA -- which often speaks of Signs as definers of limits -- defines speed signs as "defin[ing] limits of slow orders and locations to stop trains." General III. Terminology can be a problem: Signs can appear under Indicator (ERS) and even under Signal (UAR-French language terms). Signs listed under Board are even more of a problem: Board can be a non-sign entity but it can also serve as a near-synonym for Sign.

ADVANCE-WARNING SIGN/ADVANCE WARNING SIGN. A Speed Sign; somewhat related to Restricting Sign. This sign indicates upcoming speed change. Sign rectangular but at diagonal slant; one side of Sign is cut off at a slant. Reduced speed limit given. [This sign and next two are a set in Foley collection of Signs; name or railroad not given].

REDUCE SPEED SIGN. This sign is of square shape with cropped corners; numbers are displayed in black numbers on yellow ground.

RESUME SPEED SIGN. This is a rectangular-shaped sign with vertical emphasis. Green in color; almost a marker in form.

RETRO-REFLECTIVE (ROAD TRAFFIC TYPE) PSR SIGN. PSR = Permanent Speed Restriction. A circle, black border and numbers. Ground possibly white. Reference: A & W '91

SPEED CONTROL SIGNS - TEMPORARY & PERMANENT. AREA definitions frequently speak of defining limits; this adds a spatial dimension. In this instance defined limits refers to slow limits and stop locations rather than speed limits as such. Reference: AREA '87-88

SPEED LIMIT-PERMANENT SIGN/SPEED LIMIT-TEMPORARY SIGN. There are three forms of each Sign: Limit, Slow, Resume. [Alternately: each form is a Sign.

SPEED - Rectangle at diagonal; left-end cut off; numbers can include passengers and freight limits.

SLOW - Indicates limit to be followed.

RESUME SPEED - Rectangle (horizontal emphasis) with letters of RS. Reference: AREA -87-'88

TEMPORARY REDUCE/SLOW/ RESUME SIGNS. These Signs are in the Foley collection.

REDUCE SPEED SIGN. This Sign is square with upper corners cropped.

Yellow, no other symbols- on stand and base. Black border.
SLOW SIGN. Square shaped with black border; word in black.
RESUME SPEED SIGN. Green ground, no other symbols.

UAR SPEED SIGNALS (=SIGNS).

General Note. UAR employs Signals for Sign. Is this due to translation from French to English?. Signs generally conform to conventionally-named signs.

SPEED RESTRICTIONS

-START OF SPEED RESTRICTION SIGNAL. Rectangular shaped-sign with horizontal emphasis. Black letters and numbers on yellow ground.

-END OF SPEED RESTRICTION SIGNAL. Rectangular-shaped sign with horizontal emphasis. Blue ground only.

-SPEED RESTRICTION WARNING SIGNAL. The complete Sign consists of a yellow disc.

SPEED ZONE SIGNS. There are three Signs in Speed Zone group: Speed Sign, Restricting Sign, Resume Speed Sign. These are in the Foley collection.

SPEED ZONE SIGN. This Sign presents maximum speed. It is a rectangular-shaped sign with horizontal emphasis and cropped corners.

RESTRICTING SIGN. Denotes beginning of speed restriction (Speed Sign one mile after this sign). Is this "Sign" a Sign? It displays diagonal stripes and no alphanumeric symbols. It may constitute a form of Marker. Rectangular-shaped with vertical emphasis.

RESUME SPEED SIGN. Sign displays letter "R". Rectangular-shaped with vertical emphasis.

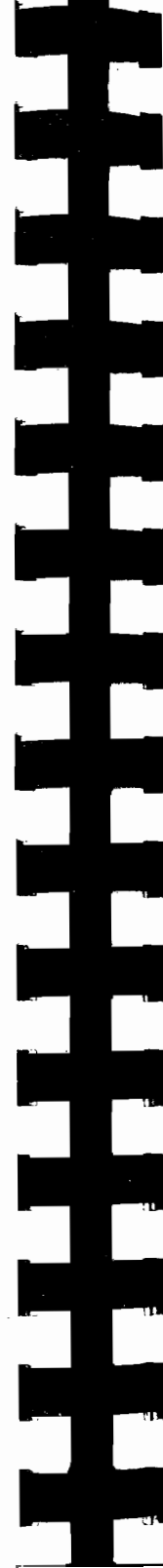
INDICATOR. Common expression by ERS for Speed Restriction Sign.

Seemingly not a formal name. Indicator can apply to a variety of safety aids. It is placed at braking distance to restriction of Speed Sign. This speed is represented by a numeral (For example, 10 x # = speed, or in ERS, speed divided by 10 so that 50 km/h is represented by 5; some systems employ actual speed limit figure. Reference: ERS, Oxford-Duden

FIXED INDICATORS. For Oxford-Duden this is seemingly a description more than a formal name. It refers to permanent speed restrictions. Reference: Oxford-Duden

SIGN FOR DAY RUNNING. From Oxford-Duden. A possible Speed Sign. A triangle with single number in inset. Reference: Oxford-Duden

WARNING SIGN/COMMENCEMENT SIGN/TERMINATION SIGN. For



British Rail this is a common pattern for handling upcoming speed change, the actual change in speed, and ending of that change. Reference: ERS-H

ARROWS. Employed by BR and other systems. It denotes diverging lines that speed restriction pertains to. Reference: ERS-H

LINE SPEED INDICATOR. Displays speeds in 1/10 of speed numerals. A triangular shaped sign in green with point up; numbers in white. Reference: ERS-H

LINE SPEED INDICATOR. Term from Belgium practice as given in ERS. Sign has form of triangle with point up; white on green ground. Speed given as 1/10 of km/h. Reference: ERS

TEMPORARY SPEED RESTRICTION INDICATOR. Spanish Sign as given in ERS. It is square in shape and black on white ground. Actual speed given. Reference: ERS

"Z" BOARD/"R" BOARD. From France via ERS. "Z" designates beginning of speed restriction. It is listed as fixed sign. "R" BOARD has meaning of ending restriction. Reference: ERS-H

SPEED RESTRICTION SIGNS - TEMPORARY. A general heading for ERS. The term Indicator also employed here. Many systems in Europe include lights with these signs. Reference: ERS-H

SPEED RESTRICTION SIGNS. Category for ERS lacks specific names. Speed change marked by a) Sign with similar data or b) "common cipher" such as a "Z" in France or by triangle (small, yellow ground in Norway). End of speed restriction carried out by a) sign with new maximum (with line speed or added restriction) or b) by cipher ("R" in France, Luxembourg). Reference: ERS-H

SENAL INDICADORA DE VELOCIDAD LIMITADA/DE FIN SENAL INDICADORA DE VELOCIDAD. First sign is diamond-shaped and black on white. Speed in Km/h. Second sign is square and without alphanumeric symbols. Black on white.

Reference: Columbia Rlways

Other Speed Signs:

CURVE SPEED SIGN. C.R.I.P.
PERMANENT SLOW SPEED SIGN. C.R.I.P.
TEMPORARY SLOW & RELEASE SIGN. C.R.I.P.
PROCEED PREPARED TO STOP SIGN. C.R.I.P.
ZONE SPEED SIGN. CRIP

b) Location Signs

1) Advance Location Signs

ADVANCE LOCATION SIGNS.

General Note. AREA seemingly has two forms of Location Signs within Transportation Signs: "Advance Locations of" and "Also used to" The later form often defines limits of yards, etc. while the former denotes advance location. Following AREA practice these signs defining locations are referred to as "defining limits."

These Signs include:

RAILWAY GRADE CROSSING SIGNS
DRAWBRIDGE SIGNS
TUNNELS SIGNS
JUNCTION SIGNS
ROCK SLIDE SIGNS
SNOW SLIDE SIGNS
STATION SIGNS
STATION NAME SIGN (UAR)

2) Limit & Location Signs

LIMIT & LOCATION SIGNS

General Note. This is a category of Location Signs for AREA (Signs not involved directly with train operations); there is also an Advance Location Sign segment within Transportation category. Finally, there is a segment adjoining the Advance Location Signs that deals with limits and locations of an immediate nature.

These include:

YARD LIMIT SIGNS
SWITCHING LIMIT SIGNS
SIGNAL TERRITORY LIMIT SIGNS
STATION LOCATION SIGNS
DERAIL LOCATIONS SIGNS
TRACK CAPACITIES SIGNS
WATER STATION LIMIT SIGNS
FUEL STATION LIMIT SIGNS
CINDER STATION LIMIT SIGNS
BLIND SIDING SIGN
CUT SECTION SIGN (B & O)

3) Territory Limits Signs

TERRITORY LIMIT SIGNS

General Note. AREA includes Signal Territory Limits category. This section expands, alters that segment and includes all Signs marking the beginning, end of Signals, systems and other situations affecting train operations since many of these signs are self-explanatory entries are brief except when fuller explication is needed.

BEGIN CTC SIGN/ END CTC SIGN. Rectangular-shaped Sign (but barely: width is 17 inches while height is 18 inches). Black letters on white ground. A second version has cropped corners.
Reference: Foley

CTC SIGN
BEGIN
END

These Signs are black on white with cropped corners.
Reference: Foley

BEGIN CAB SIGNAL TERRITORY/ END CAB SIGNAL TERRITORY.
Reference: CRIP

BEGIN TCS SIGN/END TCS SIGN. This Sign refers to track circuit sections.
Reference: Foley

END OF SIGNAL TERRITORY.

Reference: Fisher '76

END OF BLOCK SIGN/BLOCK-LIMIT SIGN.

Reference: AREA, CRIP, Penn Central

END OF TRACK CIRCUIT SIGN

Reference: B & O

AUTOMATIC BLOCK SIGNS

START AUTOMATIC BLOCK

END AUTOMATIC BLOCK

Start Sign is inverted triangle while End sign is verted. Probably black on white. Denotes beginning and ending of Automatic Block System.

Reference: Foley

REMOTE CONTROL SIGNS

BEGIN REMOTE CONTROL SIGN

END REMOTE CONTROL SIGNS

Rectangular-shaped sign with horizontal emphasis. Black letters on white ground. Denotes begin, end of Remote Control System.

Reference: Foley

**BEGINNING OF DOUBLE TRACK SIGN/END OF DOUBLE TRACK SIGN/
DOUBLE TRACK BEGINS/DOUBLE TRACK ENDS.** First Sign is rectangular-shaped with horizontal emphasis, curved ends, black on white.

Reference: Foley

BEGIN RULES .../ END RULES ...

Reference: CRIP

APPROACH BLOCK LIMIT SIGN/ABL SIGN. ABL Sign from Foley.

Rectangular with vertical emphais; Black letters on yellow ground.

References:Foley

4B3 Maintenance of Way Signs.

General Note. These are Signs dealing with railroad track property and maintaining of same. It is a category for AREA. Many of the component Signs ae probably found only in the U.S.

Reference: AREA

ALINEMENT SIGNS OR MARKERS. These terms refer to "easement spirals and curves" locations and limits.



Reference: AREA '87-'88

BRIDGE SIGN/BRIDGE NUMBER SIGN. Refers to Sign that identifies bridges by providing number designation. The second Sign is octagon-shaped. Black on white.

Reference: AREA '29

CURVE & ELEVATION SIGN. In post form. Only limited information available. See Elevation Marker, Post.

Reference: AREA '29

ELEVATION MARKERS. Terms denotes "top of rail elevations." and "top of rail elevations above which tracks under grade separations cannot be raised."

Reference: AREA '87-'88

END OF SHUNT SIGN. Displays red fixed lights. Details limited.

Reference: Leach '91

FLANGER SIGNS. (Within Snowplow Signs for AREA). Indicates flanges should be lifted.

Reference: AREA '87-88

MAINTENANCE LIMIT SIGNS. These Signs are concerned with defining of limits for ownership of track and maintenance (railroad-industry, railroad-railroad).

Reference: AREA '87-88

ROADWAY STRUCTURES SIGN. These Signs "Define location" or give the location of structures such as bridges, trestles, tunnels, culverts. Distinction between some of these Signs and Transportation Signs is seemingly narrow and even uncertain.

Reference: AREA '87-88

SNOWPLOW SIGNS/ RAISE SNOWPLOW SIGN/LOWER SNOWPLOW SIGN.. AREA defines first as marking placement of snowplow equipment. Next two signs are from Oxford-Duden and refer to German practice.

Reference: AREA '87-88, Oxford-Duden

TOKEN BLOCK WORKING. Employed in Scotland accompanied by arrows. Sign rectangle (vertical emphasis), black on white. A Limit Sign though not by name.

Reference: A & W '91

WING MARKER. Associated with Snow Plow Sign. Marker rather than sign may be due to non-sign character (lack of alphanumeric characters). Indicates snowplow wings should be closed. (Flanger and wing are one sign when necessary).

Reference: AREA '87-88

4B4 Safety Signs

General Note. A category of AREA. Three of these Signs are Cross Reference entries and belong to LC/GC. Two signs of the group are found in some form in other sources: Restricted Clearance, and Power-Operated Switch Signs. A number of the signs include non-train crew users.

ELECTRICAL HAZARD SIGN. Denotes presence of electrical high voltage lines (termed "carriers" in AREA) whether overhead or "subgrades".

Reference: AREA '87-88

FIRE HAZARD SIGN. Provides warnings of storage of flammable materials and what are termed "subgrade carriers."

Reference: AREA '87-88

HIGHWAY GRADE CROSSING SIGN. Term refers to Sign marking crossing; nearly self-explanatory.

BARRICADE SIGN. Denotes construction, repair work at crossing to road users.

Reference: AREA '87-88

HIGHWAY & BARRICADE SIGN. Grade crossing Sign for road users.

Reference: AREA '87-88

POWER-OPERATED SWITCH SIGN. This Sign provides warning to pedestrians especially when pedestrian passageways are near such switches.

Reference: AREA '87-88

RESTRICTED CLEARANCE SIGN. This term identifies restricted clearance whether horizontal and/or vertical: Turnout, buildings, platforms, "other structures."

Reference: AREA '87-88

4B5 Marks and Markers

MARKERS. A general term referring to a variety of safety aids with limited

symbols, often vertical, near ground level. The terms Marker, Board, even Sign are at times used interchangeably. Marker can be applied at times to a specific function. For example, Marker sometimes refers to Reflective Marker Board. It has also been used for Lineside Signal or vice versa. See also terms that include the word Marker

Reference: ERS-P

MARKER (BOARD). Alternate name for Countdown Marker Board. Term listed in both Marker and Board.

Reference: ERS-H

ALINEMENT MARKER. AREA refers to Alinement Signs or Markers. No explanation of the relationship between Sign and Marker is given. Marker can be viewed as smaller, closer to the ground, with fewer symbols, more vertical than sign, however, criteria for AREA unknown.

Reference: AREA

AUXILIARY MARKER. This term refers to Diamond Shaped Markers and Round Speed Limit Markers which see. Auxiliary means auxiliary to lighted Signals to which these markers are affixed.

Reference: FRA-3

"C" MARKERS/"S" MARKERS.

General Note. These Markers mark ends of sections and are lined up with catenary masts. Savarrzeiz speaks of "reflecting line side plaques." [Plaque = Board].

Reference: Savarrzeiz

"S" Markers. These Markers denote points and crossings at stopping locations. They are the equivalent of Semaphore Signals. They give indication of Permissive Stop Signal.

"C" Markers. These Markers denotes points and crossings. The indication is that of an Absolute Stop Signal.

CLEARANCE MARK. This Mark marks the safe edge of points and crossings for trains (beyond the safe edge fouling may occur).

Reference: TWA

DIAMOND SHAPED MARKER. This may be more in the nature of a descriptive name than an official, formal name. Possibly the bare word Marker is the name. It displays letter S or P or G. S= Take Siding. P= Permanent, G =

Grade.
Reference: FRA-3

DISTANCE MARKER. Variant name for Countdown Marker Board.
Reference: UN '54

ELEVATION MARKER. This Marker gives elevation of rails at specified locations. Listed within sign classification.
Reference: AREA '87-88

FIXED MARKER. This term has a specific meaning rather than serving as an OA term. These Markers mark the beginning of "track-circuited block section."
Reference: Allen '83

LANDMARKS. This term substitutes for Distant Signal in situations where caution indication - while approaching a Signal - is always needed. One form has a lighted dimension while other forms have retroreflective material. The Landmark is a black or yellow hollow triangle on post.
Reference: NSW

LINESIDE MARKER. This term refers specifically to the NF plate which see. The term, however, gives appearance of a more general term and can be used as OA for Markers [or Signs with limited messages]. Savarzeix states that Nf denotes "ends of a block section" (SNCF seemingly contradicts that).
Reference: Savarzeix

MARKS AND MARKERS FOR JAPAN.
General Note. For Japan all all-lighted shunting signals are under a heading of Sign (and Block Signal Marker).

Under Sign Marker are found:

REPEATER SIGNAL (All-Lighted)
TRAIN STOP SIGN MARKER/CAR STOP MARKER (Possibly lighted)
SHUNTING SIGNAL MARKER & SHUNTING SIGN MARKER (Both Lighted)
SWITCH TARGET (Vane for daylight use)
SUDDEN RELEASE SHUNTING SIGN MARK (All-lighted)
TROLLEY WIRE DEAD SECTION INDICATOR (Lamp or Reflector)
TROLLEY WIRE ELECTRIC SOURCE SIGN MARKER (Lighted)
ROUTE ELECTRIC SOURCE SIGN MARKER (Lighted)
ONCE STOP SIGN MARKER (Sign form)



CLEARANCE POST
WHISTLE SIGN MARKER
BUFFER STOP INDICATOR (Possibly lighted)

In short, all but main and subsidiary Signals are under the above headings. There are also Marks. But details are limited. Black symbols on yellow ground are common though not universal.

Marks:

ROUTE IDENTIFICATION MARK
STATION APPROACH MARK
SLOW SPEED RELEASE MARK
TABLET CARRYING MARK
SIGNAL ASPECT CONFIRMATION POSITION MARK
SIGNAL ALARM MARK
POWER DRIVE MARK
COASTING MARK -- AC AND DC
TRAIN STOP POSITION MARK
ELECTRIC TRAIN SECTION MARK

MONUMENT MARKERS. This term is combined with Standard Right of Way Sign in AREA. It is unclear how Sign and Marker are combined. However, meaning is clear. Sign defines limits of Right of Way. Markers may reinforce location of limits.
Reference: AREA '87-88

REFLECTIVE MARKER BOARD. Marker Board bears resemblance to markers on TVG lines and indicates boundaries of block section similar to TVG line markers..
Reference: ERS-V, Soph. Cab Sign. '94

HIGH SPEED MARKER BOARDS. These Boards are "fictive block signals". They divide high speed lines into blocks. Scotland employs Marker Boards on RETB sections.
Reference: ERS-V

SECTION ENTRANCE MARKER. This term is a synonym for Fixed Marker. It marks section entrances on high speed lines. Informal descriptive term and not formal name.
Reference: Allen '83

SIGNAL MARKER BOARD. Term has meaning similar to that of Countdown Board.

Reference: UIC-CST

SPRING SWITCH MARKERS/SPRING SWITCH SIGN.. These two terms have the same meaning. They consist of a white disc with black letters. They denote Spring Switch locations which refers to the clearance point near track.

Reference: Foley, REMC '48

WAYSIDE MARKER. This refers to a lighted aid: it is a Cab Signal receiving data from "wayside marker units." But term also has OA implications

Reference: FRA-2

WING MARKERS. This term is associated with Snowplow Signs and Flanger Signs which see. The presence of Wing Markers denotes a need to "close snowplow wings."

Reference: FRA-2

4B6 Boards and Posts

General Notes. Boards and Posts are employed in a variety of systems and regions. Posts are less common and, in fact, most entries are from the U.S. organization AREA. Semantics may be at work since not only boards but marks, markers may be similar to posts.

BOARDS.

General Note. Boards may be literally boards with simple messages (solid colors, stripes, bands). But Boards are sometimes a synonym for Signs (Containing alphanumeric messages, well above ground, etc). Board I =boards with graphic designs and possibly simple alphanumeric messages. Board II= a synonym for signs.

Fisher '76 uses Board as a general purpose term. This is the case not only for Signposts (with the meaning of signs) but even for all kinds of Signal messages and even for the call board (work assignments for train crews). It is also used as a short form for longer, more precise terms. For example, Countdown Marker Boards (from ERS) are termed Boards.

References: Fisher '76, ERS

BAAK. Term refers to Netherland's form of Countdown Marker Board. Beacon in English can at least partly represent the Dutch word Baak.

Reference: Nock '62

CAUTION BOARD. This board in W.A. contains lights. It is retained because of its board character.

Reference: WA, NSW

COUNTDOWN BOARD. Shorter form of Countdown Marker Board. At times, the unadorned terms Board and Marker designates Countdown Marker Board.

Reference: ERS-H

COUNTDOWN MARKER BOARD. This term employed by several European railways. Frequently three boards are lined up in "rear of stop signals" :

250/300m, 175/200m, 100m. Often boards have black diagonal stripes. Italy employs diagonal and horizontal stripes; this is also true of the Netherlands.

Reference: ERS

FLAG BOARDS/METAL FLAGS. Terms refer to a form of Stopboard. A white painted board is designed for displaying metal flags. Metal flags are red on one side and green on reverse side with white disc insert. Marker lamp may be added.

Reference: UK Mil.

INDICATING BOARD. This refers to lighted Signal. Retained because of board character and as cross-reference.

Reference: UN '54

INDICATION BOARD. Term from Bulgaria. Few details. It is one component of Bulgarian Signals. Since Bulgaria influenced by UIC it is presumably akin to Signs and Boards employed by Europe which may mean speed and countdown boards.

Reference: Bulgaria RR

LINESIDE BOARD. Equivalent term for Lineside Signs. Partly-lighted in UK.

Reference: K & W '63

MARKER BOARD. OA term for UK BR. These Boards include Station Limits Board and End of Section Board.

Reference: A & W '91

MILE BOARD. Term from CRIP (Chicago, Rock Island & Pacific Railroad '77) who employs this term instead of Mile Post.. It is rectangular in shape with vertical emphasis. Black on white, and attached to a slender post (rather than mile board listed or post extending to ground).

Reference: CRIP RR

NAME BOARD. Term refers to station name sign which is affixed to station building.

Reference: Simmons '86

NOTICE-BOARD. A general appearing term though confined to a single message for A & W: it requests train crew to telephone for instructions and to proceed cautiously if telephone unanswered.

Reference: A & W

NUMBER BOARD. Term for level/grade crossings. Sign attached to signal mast indicating number of tracks. Possibly white symbols on black ground and word track added. DOT-AAR RR-Highway Cross Inventory System also listed on sign. Alphanumeric symbols (but not words) may have influenced the use of the word board.

Reference: AREA 1978

ORDER BOARD. Historic term. Rectangular in shape--horizontal emphasis with rounded ends. Bracket included for orders for train crews. Unit attached to train station.

Reference: Ball '85

PERMANENT SPEED-RESTRICTION BOARD/PERMANENT SPEED RESTRICTION BOARD. Meaning is clear from title. Hyphenated form is rectangular-shaped with horizontal emphasis, pointed ends. SA-TWA has first form while second form is from UK-Mil. That form is rectangular-shaped, horizontal shaped, black on white ground.

Reference: SA-TWA, UK-Mil

PERMANENT WARNING BOARD. This is one of three forms of Fixed Signals for UAR. It seemingly includes all permanent Signs (Speed, whistle, token, etc) known as Signals. Signals/Signal Boards are reflectorized lighted.

Reference: UAR '83

"R" BOARD/"Z" BOARD. Both terms are of a sign format and are listed there (4B2 a). Speed Control Signals).

Reference: ERS-H

RADIO CHANNEL CHANGE BOARD/ RADIO CHANNEL INDICATOR. Board announces changes in radio channel in RETB territory. Black oval with white diamond on rectangle (vertical emphasis. Second term consists of black

lozenge-shaped board with white diamond and number.

Reference: A & W '91, Leach '91

RESUME-SPEED BOARD (PERMANENT)/SPEED RESTRICTION BOARD (PERMANENT)/ADVANCE WARNING BOARD. This group of safety aids can be regarded as Signs (and Restriction and Resume-Speed are so regarded. But one unnamed railroad in Foley substitutes Board for Sign. Y Board and Slow Board are in this set but listed separately. Limited alphanumeric symbols; limited Sign character.

Reference: Foley, AAR

REFLECTORIZED DISTANT BOARD/DISTANT BOARD/FIXED BOARD. Replacement for Distant Signal. Emblem of Distant Signal is embossed on rectangular-shaped board with white ground. Leach has second term, Vanns the third.

Reference: A & W '91, Leach '91, Vanns '97

SHUNTING LIMITS BOARD. This form is usually lighted at night. A cross-reference entry.

Reference: NSW RR

SIGNAL BOARD. This is a Sign format not a Signal form. It is attached to a signal mast. It has meaning of: Freight trains can pass stop signal. Displays letter "T" [Throughput].

Reference: Kharlanovich

SLOW BOARD. Board Type II has character of Sign. Inverted triangle, black on white. Denotes upcoming speed restriction.

Reference: ANR, King

SPEED BOARD. Board II, Character of Sign. SAF form consists of rectangles, black on white. This is also the case with ANR.

Reference: ANR, S.Af-G.A.

START OF SECTION BOARD/END OF SECTION BOARD. On No Signalman Token Board areas these boards replace Home, Start Signals.

Reference: Vanns '97

END OF SECTION MARKER BOARD. Comparable to Starting Signal (Semaphore) in RETB territory. See also previous entry.

Reference: A & W '91

SIGHTING BOARD. From Indian Railways. Indicates approach of Distant and Home Signals.

Reference: Chandrika '98

SIGNAL WARNING BOARD. Jackson includes term but only as pointer to Warning Board which see.

Reference: Jackson '91

STARTING SIGNAL NOTICE BOARD. This Board consists of a rectangle (vertical emphasis). It displays a red circle and the message, "Stop, obtain token, and permission to proceed."

Reference: Leach '91

STATION LIMIT BOARD. Term from UK Mil. There are two forms: square with white ground, and black diamond. Letters are "SL". A & W offers a third form: rectangle (vertical) with white ground and blue diagonal stripes. Positioned 200-300 yards beyond of End of Section Board.

Reference: UK Mil

STATION-NAME BOARD. Self-explanatory and probably of diverse designs.

Reference: Robbins '67

TRAIN CLEAR OF PASSING LOOP INDICATOR/ADVANCED STARTING LOOP CLEAR SIGNAL. Denotes that train is clear of Passing Loop Indicator and crew to so inform signal box. Rectangular in shape (vertical) with white ground and three diagonal blue stripes. Second term is alternative wording.

Reference: Leach '91

AWS CANCELING INDICATOR. Square board in blue with white St Andrew's Cross. Provides reminder to train crew that passing AWS mechanism for opposite track does not pertain to that train.

Reference: Leach '91

END OF TOKEN SECTION PROCEED IF PLATFORM CLEAR BOARD. A simplified form of older Platform Signal. Square board with black letters on white ground.

Reference: Leach '91

TEMPORARY WARNING BOARDS. This term is from UAR. Reference to such a category but without details.

Reference: UAR

TEMPORARY OUTER SPEED BOARD/TEMPORARY INNER SPEED BOARD/ALL TRAINS STOP BOARD. These "Boards" from NZ are very much in a Sign mode. Outer form: rectangle, lower corners cropped, yellow ground, black alphanumeric. Inner; diamond-shaped, black on white

Reference: NZ Railways

TRAIN ORDER BOARD. Partly-lighted. Cross-reference form. Square in shape. Red = stop for train order; Y= slow.

Reference: B & O

TERMINATING BOARDS. This Board denotes termination of warning and caution boards. Yellow ground and yellow disc.

Reference: W.A.

STOP BOARD. This term has character of a Sign. It can take on diverse appearances for various railways. For ANR it is a Board II type; NSW form lighted. UK Mil form is a square on two posts, white ground, red "stop"; marker lamp may be added. German form is in a Sign form with rectangular-shape, vertical emphasis. Black "H" on white ground or white "H" on black ground.

Reference: ANR, NSW, UK Mil, Germany.

TEMPORARY SPEED-REDUCTION BOARD. As the name indicates the Board denotes temporary speed reduction. Board is rectangular in shape with horizontal emphasis, pointed and fish-tailed. This form is lighted.

Reference: S.AF.-TWA

WARNING BOARD. Term denotes approach (2400') of facing points, halt station or token station. Rectangular-shape with horizontal emphasis with white ground and black border. Some forms are lighted but possibly not all. UK and WA forms display lights. W.A. form is diamond-shaped, yellow ground, black band. For Jackson it denotes approach of Distant Signal. A second board follows: illuminated yellow board for indicating temporary speed restriction.

Reference: SA-TWA; K & W '63, W.A., NSW, UK Mil, Jackson '91

WATERING BOARD. A term for a board indicating nearness of water tank, column. It is of a diamond shape with white ground, black border. It is mounted on a single post and positioned 2400' from tank, column.

Reference: SAF-TWA

WHISTLE BOARD. Alternate or variant name for Whistle Post. In South Africa, it is a black "W" on white "disc." Disc is more of an ellipse shape. Whistle is sounded at Whistle Board (at approaches to level crossing).

YARD LIMIT BOARD. This too has character of Sign, Board Type II. It has two forms: ellipse and rectangle mounted on wood construction. Black on white
Reference: ANR

"Y" BOARD. One Railroad in Foley collection employs Board instead of the more expected usage of Sign.
Reference: Foley, AAR.

BLOCK POSTS. Delineates boundaries of blocks where signals not present.
Reference: 100 Years to Bendigo, A & W

CLEARANCE POSTS. Japan provides visual images but not explanations of various safety aids including this one.
Reference: Japan

CURVE & ELEVATION [POST?]. Information limited. In part it is apparently a variant name for Elevation Post. See Also: Curve and Elevation Sign.
Reference: AREA '29

ELEVATION POSTS/FULL ELEVATION POSTS/ZERO ELEVATION POSTS. These are Posts set upon inside of curve. information is limited on these Posts.
Reference: AREA '29

GRADIENT POSTS. Denotes whether gradient is level, up or down. Also gives "measure/indication" (rise, decline, feet per one foot of rise, decline). However, Jackson speaks of this Post as a Lineside Sign.

MILE POSTS. This can be part of the sign category (in TCD Post are sometimes classified as Signs and sometimes as Markers). It is a vertical and narrow object, painted and displaying numbers.
Reference: AREA '87-'88

PERMANENT WHISTLE POST/TEMPORARY WHISTLE POST. At least one railroad (B & O) distinguishes between long-enduring Posts, and temporary forms for special purposes.
Reference: B & O

PROPERTY LINE POST/PROPERTY POST. Posts set up at corners of property. Tall, narrow post displays words: name of railroad and property line.
Reference:

SECTION POST/SUB-SECTION POST. Both terms have a nearly sign form. First post has obround form. Second has rectangular-shape with horizontal emphasis. Numbers displayed on both. Information limited as to meaning. Designates boundaries of section or block.
Reference: AREA '29

SIGNPOSTS. Signpost is more than a post to which Signs are affixed; they are signs as well (see TCD DB). Fisher is the only surveyed source that employs the term. Fisher employs signpost and board interchangeably.
Reference: Fisher '76

WHISTLE POSTS. This object is often classified as Board or Sign. Whistle Post indicates points where whistle should be sounded: stations, level/grade crossings.
Reference: AREA '29 and '87-'88, Foley, ANR

4B7 Plates, Flags & Other Forms

"A" PLATES. Denotes accompanying Signal is automatic. Plate is circular with black letter on white ground.
Reference: Queensland Railways

"F" PLATE/Nf PLATE. SNCF, in French language, seems to employ Tablet (Tableu = Board) while in ERS uses the word board. However, in translations, SNCF employs Plate. F (when Semaphore) can be when at stop under specific stipulations if F Plate present. Nf: Non-franchissable. Stop Signal not to be passed.
Reference: SNCF

IDENTIFICATION PLATE. From BR. White ground with black horizontal band. L in white on black. It denotes the type of system whether up or down, and distance from given starting point.
Reference: A & W

IDENTIFYING PLATE. Signalbox website includes several forms of Identifying Plates:

TRACK CIRCUITS. This is described as "diamond-shape[ed]" though it appears to be more hexagonal. It is blue in color. It denotes presence of Track Circuits.

FIREMAN'S CALL PLUNGER PLATE. It is a "D"-shaped plate and indicates that a plunger is attached to the Signal.

TELEPHONE PLATE. It is square with diagonal lines.

Reference: Signalbox website

IDENTITY PLATE. This term employed instead of number plate but meaning is seemingly the same.

Reference: ERS-RENFE

LETTER PLATE. Qualifies Signal indications. For Canada, "A" indicates Automatic Signals, "G" for Grade, SPS for Station Protection Signal.

Reference: Canada '62, FRA-RAR

MARKER PLATE. FRA-RAR distinguishes Marker Plate from Name Plate and Letter Plate but without offering explanation of differentiation.

Reference: FRA-RAR

NAME PLATE/PLATE, NAME. ARSPAP-D gives the general before the particular (their usual practice). This is not an Identification Plate. Instead, it gives the name of the manufacturer and other data.

Reference: ARSPAP-D

PLATE, NUMBER/NUMBER PLATE. "Device attached to signal mast for identification purposes." SM has second term while ARSPAP has reversed form. ERS adds small plate for identifying Signal which related to distance or other factors. Queensland Rlwys may include letters, identification for automatic or semi-automatic Signals

Reference: AAr-SM '83, ARSPAP-D, ERS, Q Rlwys

SIGNAL BACKGROUND PLATE. Term does not refer to a direct safety aid but rather a plate (or background or baffle) that helps the lights to be more easily seen.

Reference: UIC

SIGNAL IDENTIFICATION PLATE. Variant term for Number Plate. Meaning: gives "characteristics of signal." as well as location.

Reference: UIC

SIGNAL NUMBER PLATE. Variant name for Number Plate.

Reference: Queens Railways

STATION NAMEPLATE. Term is self-explanatory. Black on white. Horizontal rectangle.

Reference: A & W '91

"T" PLATE. Term refers to Plate signifying Tonnage.

FLAGS.

General Note. Human-held flags are part of railroad operations but not included in this study of Fixed Signals. Flags were part of some early railroad signals. Most flags belong to "Blue Flag Devices" (and may not be of fabric but rather of metal). Nonetheless, this section is included though mostly as a Cross-reference.

Flags include:

FLAGBOARDS, UK Mil	- See Boards
METAL FLAGS, UK Mil	- See Boards
FLAG SIGNALS	- See Flag Signals
BLUE FLAG DEVICES, Hayes	- See Blue Flag
POWER BLUE FLAG, Hayes	- See Blue Flag
BLUE FLAG DERAIL	- See Blue Flag
DERAIL BLUE FLAG, ATT	- See Blue Flag
CHOCK FLAG, ATT	[Yellow Indicator Flag]

[ATT = Atlantic Track and Turnout]

4B8 Other Forms

a) Overarching Signs

General Note. Most railroad Signs are of a specific character. OA terms are employed by only a few sources. And some of these refer to specific Sign forms. Many TCD sources, by contrast, contain both specific terms and OA; but frequently railroad sources have only specific names.

Signs forms that are OA include:

TRACKSIDE SIGN	ERS-H
LINESIDE SIGN	ERS-H, H & P, K & W '63
FIXED SIGN	FRA-3
ROADWAY SIGNAL	FRA-RR
SIGN	Simmons, UIC, FRA-3, TS
SIGNPOST	Fisher '76

b) Blue Flags

General Note. A category of Signs indicating presence of train crews and/or hazardous cars on tracks. If "blue flags" were originally flags they are now generally metal though they remain blue.

Sign forms include:

DERAIL White on Blue Disc attached by blue mast to derail device attached to rail.
STOP Same format as above
STOP (PORTABLE) Presumably synonym for above Sign
CAMP CARS Same format as above
ALTO Spanish language stop sign; same format as above
STOP TANK CAR CONNECTED Rectangular shape with horizontal emphasis
DANGER MEN WORKING ON THIS TRACK Above format
DANGER TANK CAR CONNECTED Previous format
Reference: Hayes Track Appliance Co.

c) Electric Traction Signs

General Note. These Signs, in contrast to many railroad Signs, are a coherent and organized body. The shapes are frequently diamond-shaped. The color patterns are often blue and white which present graphic designs correlating with the sign shape. Alternate color patterns include Yellow and Black, Black and White, Red, Yellow and Blue. Directional arrows are frequently added. Messages denote areas of traction services, permissible and closed areas, specific tracks of usage and related concerns.

Reference: Part F which is based on many European Signal codes.

4B8 d) Miscellaneous Signs

SIGNAL-NOT-IN-USE SIGN, UIC
APPROACH SIGN [Akin to Distant Boards,OD]
CHEQUERED SIGN [Denotes atypical location for Signal, O-D]
NUMBER PLATE, ERS-H



4C Unlighted, Acoustical & Radio Signals

4C1 Targets

General Note I. The Target is an unlighted Signal consisting of distinctly shaped and colored segments of sheet metal attached to the mast (staff, spindle) of a Switch Signal. There is no central authority (or regional) for this form of safety aid. They are a mainstay of U.S. railroads and employed by other systems including Canada, Philippines, Australia (SA-ANR), Japan. Camp 1903 offers an extensive coverage of Targets and since Targets, have changed little over the years that coverage remains valid.

General Note II. Targets are often combined with Switch Lamps and hence can be deemed a partly-lighted Signal. But Targets are often independent units and are a separate unit even when with Switch Lamps. They are therefore both an unlighted and a partially lighted aid. But the coverage will be primarily centered here.

General Note III. Many references are made simply to the term Targets but that belies the complexity of Targets. Targets come in many diverse shapes and those shapes are part of this coverage.

General Note IV. Targets are of two forms: The larger version can exist separately from Switch Lamps. But Switch Lamps can also display a small target that is integral to the lamp: a small circular disc that fits around the lens of the color of the lens. This form is a partly-lighted entity. Both forms have the same name. (the smaller form is sometimes termed a Day Target).

General Note V. Target types (Camp '03) include: Position, Color, Shape, Shape-Color, Blind forms.

a) Overarching Terms

TARGET. The Target has been extensively covered in General Notes. Target is an OA term with Switch Target as an alternate and Switch Target Stand as a possible alternate. Target can refer to a Signal and also to the metal pieces making up the physical aspect. The pieces are more precisely known as a Vane. The Target is attached to a mast (also known as staff or spindle). This in turn is connected to a Switch Stand (a separate, non T-M mechanism but closely connected to Target).

Reference: Camp, AREA. '87-88

SWITCH STAND TARGET. A more precise term from REMC denoting what Targets are attached to.
Reference: REMC '48

SWITCH TARGET. A more precise, explicit term though Target is more commonly employed. It can be activated either by Switch Stand or switch points. It denotes how switches are set.
Reference: ARSPAP-D, AAR SM, UN-Philippines

ILLUMINATED SWITCH TARGET. This is more a Chapter 3C entry but included here as cross-reference.
Reference: REMC '48

b) Morphological-related Terms

General Note. This coverage includes not only terms whose function is included in the title but also physical aspects directly pertaining to function: shape of Targets, color and position of Targets

1) Shape

General Note. Shapes are somewhat localized but there are some recurring patterns. For example, Prism & Mask (US, ANR): prism suggests proceed, and mask suggests stop (from main line perspective). A Blind Target indicates safety and proceed since the single vane is parallel to the tracks. Arrows - ("fish-tails") - denotes the track that the switch is thrown for.

Major Shapes for Targets include:

- Mask & Obround/Obrotund-shaped Vane
- Mask & Mask-shaped Vane
- Mask & Prism-shaped Vane

Part F in TMSIC has further permutations; Bethlehem (formerly a major producer of Targets) offers many details, forms.

Arrow-Shaped Vanes

- Double Arrow & "H"-shaped Vane
- Double Arrow & Circle Vane
- Single Arrow/Single Vane
- Single Arrow & Circle Vane
- Single Arrow & Obround Vane
- Single Arrow & Diamond Vane



Single Arrow Over Diamond Vane
Diagonal Arrow & Mask Vane
Arrow-shaped Target

Obround-shaped Vanes
Obround & Mask Vane
Obround & Single Arrow
Obround & Square Vane

Note: many forms of targets are not described by shape. Formerly this compiler employed terms such as lozenge (as in cough drops) and oval. However it is far more accurate to speak of Obrounds and Obrotunds. A Obrotund is nearly spherical save for one diameter slightly larger than other diameters in the entity. Obround is a rectangular shaped object with hemispherical ends. A chart beginning with obrounds can evolve into Obrotunds yet they remain separate shapes. Lozenge is a diamond-shaped object (though elongated ovals are also seen as lozenges).

Rectangle-Shaped Vanes
Rectangle/Single Vane
Rectangle & Chevron Vane
Rectangle & Oval Vane
Rectangle with Fish-tail End & Circle Vane

Obround Vane
Obround Vane & Mask
Obround/Single Vane
Obround/Double Vane
Obround (Elongated)

Other Shapes
Circle & Square
Circle & Chevron
Diamond/Single Vane
Triangle (Truncated) & Oval
Octagon/Single Vane
Square & Square

2) Color & Position

General Note. There is some correlation between Target usage and established patterns of color usage. White is sometimes a clear indication (possibly reflecting

old patterns of colors and meanings: white was employed for Lighted Signals as well as Targets). Color meaning is from perspective of main line. Purple is employed at times for derail messages. Frequently a single vane target is employed so that position is the only dominant element. Yet color and shape are also position types though that is not primary. Single vane Target or Blind Target "shows it edge for safety" and Camp sees that as a Position Target.

3) Terms Related to Railroad Functions

BLIND TARGET. This is a single vane Target. It is similar to some older Signals in that the safety indication is "blind." That is, when the Target is parallel to the main track it denotes safety and thereby the train may proceed. Only the thin edge of the Target can possibly be seen from an approaching train.
Reference: Camp '03

MAIN TRACK SWITCH TARGET. Main Track denoted by prism target (diagonal rectangle with pointed ends) in green. When diverging route open then mask-shaped Target is viewed from main track. This is in red. The second form of Target/lamp (day target) may also be employed.
Reference: B & O

SIDING & YARD SWITCH TARGET. This term, from B & O, has only the second form.
Reference: B & O

SIDING DERAIL TARGET/SIDING DERAIL SWITCH TARGET. Term from B & O. Purple represents derail while yellow denotes non-derail position.
Reference: B & O

YARD SWITCH STAND. Partly-lighted. Yellow disc is set for siding "and for straight lead in freight lines." White square is open to freight line from pasenger siding, etc. Partly-lighted. Cross-reference.
Reference: ANR

c) Other Terms

DAY TARGETS. This term seemingly refers to small Targets attached to a Switch Lamp. Color of Target matches lens color.
Reference: Foster, Bethelhem,

MAIN LINE SWITCH STANDS. Despite the name this is a Switch Target/Lamp assemblage. It has a diagonal shaped rectangular vane with notched tail. Green for



main lines; a yellow mask for siding. There is also a third form: a red mask indicating open to "freight line or dead end."
Reference: SAR (ANR) '47

TARGET STAND. This refers to a Target mounted on mast and stand without a Switch Stand. The stand is connected by rod to the Switch Stand. It is employed in situations where a separate assemblage is needed. It is also employed with derails.
Reference: Bethlehem, Hayes

SWITCH TARGET REFLECTOR TYPE/REFLECTORIZED SWITCH TARGET/REFLECTOR TARGET. All three terms include some form of reflectorized material. This may be in the form of circular reflectors of prismatic material or of a second form employing modules that display reflective material.
References includes: Bethlehem, Fosters

There are several other Targets whose titles refer to Height:

LOW TARGET
LOW REVOLVING TARGET
INTERMEDIATE TARGET
HIGH SWITCH TARGET
HIGH TARGET

d) Switch Stand Forms

General Note. Switch Stand is a mechanism through which points can be moved thereby opening or closing a desired section of track. The housing includes base, gear works, throwing level, top cover, mast; also connecting rod to points. While not all Switch Stands have Targets many do. Hence the inclusion of this infrastructure for Targets.

A list of Switch Stands includes:

AUTOMATIC SAFETY LOCK SWITCH STAND
AUTOMATIC SAFETY SWITCH STAND, REMC
AUTOMATIC STAND. Camp
AUTOMATIC SWITCH STANDS
COLUMN-THROW STAND, REMC
DERAIL STAND
DERAIL SWITCH STAND
DOUBLE STAND

DWARF STAND
 GEARLESS SWITCH STAND, REMC
 GROUND THROW STAND
 GROUND THROW SWITCH STAND/GROUND-THROW
 SWITCH STAND
 HASTY TRIPLE STAND
 HIGH BANNER TWO TIE SWITCH STAND/LOW BANNER TWO TIE
 SWITCH STAND
 HIGH SWITCH STAND
 HUB SAFETY AUTOMATIC SWITCH STAND
 INTERMEDIATE STAND
 LOW STAND
 LOW SWITCH STAND
 MAIN LINE SAFETY SWITCH STAND/MAINLINE SAFETY SWITCH
 STAND, REMC
 MAIN LINE SWITCH STAND
 PARALLEL-THROW SWITCH STAND
 STONE DRUM SWITCH STAND
 SWITCH STAND, PARALLEL THROW
 ENCLOSED GEARED TYPE PARALLEL THROW SWITCH STAND
 POSITIVE-ACTION SWITCH STAND
 PONY STAND
 STEELTON SWITCH STAND
 THREE-IN-ONE AUTOMATIC SWITCH STAND, REMC

4C2 Acoustical Signal Forms

General Note. This segment encompasses a broad and disparate range of material: all types of railroad safety aids that emit some form of sound messages. It includes Bells and Gongs at level/grade crossings; explosive devices applied to tracks, and locomotive-based signals for cab and various kinds of train control apparatus. Many of these Signals are also referred to in other segments of the Database since many Sound Signals are attached to other forms of Signals.

a) Overarching Terms

ACOUSTIC OR AUDIBLE SIGNAL. For UAR this is a very broad OA term encompassing all forms of acoustical communication: station master's whistle, locomotive whistles, and Detonators.
 Reference: UAR

AUDIBLE DANGER SIGNAL. Phrase refers to indication: sound and danger;

rather than a type of Signal.
 Reference: Rolt '82

AUDIBLE SIGNALLING DEVICES. A descriptive phrase in Rolt rather than a formal title.
 Reference: Rolt '82

AUDIBLE WARNING SYSTEMS. A blanket and very general term. It seemingly focusses on Sound Signal associated with train stops.
 Reference: Barwell '83

b) Explosive Signals

ALL-WEATHER FUSEES. Is "All-weather" part of the title or simply a description? That is, a Fusee usable in all kinds of weather?
 Reference: Hollingsworth '83

AUDIBLE SIGNAL. For Corbin this refers to a Detonator. Blythe uses it more broadly for a variety of forms. Philipps refers to Cab Signal by this term. Rolt ties term to Automatic Train Control.
 Reference: Corbin '22, Blythe '51, Philipps '42

BANGER. Colloquial term for Detonator.
 Reference: Jackson '91

CLAYTON'S AUTOMATIC DETONATOR PLACER. Vanns provides full title that explains the works of the Placer.
 Reference: Vanns '97

CLAYTON'S FOGGING MACHINE. A "brand name" for one form of Fogging Machine.
 Reference: Corbin '22

DETONATING FOG SIGNAL. Alternate name for Detonator or Torpedo. E.A. Cowper was the inventor. It is made up of a small case with metal "ears" that can be attached to the rail; gunpowder is placed in case.
 Reference: B & M '51

DETONATING SIGNAL. Another variant name for Detonators or Torpedoes. Dempsey notes it has meaning of a danger signal.
 Reference: Dempsey 1855

DETONATOR. According to Hollingsworth this is "English English" for Torpedoes. The term has a variety of meanings: UAR: driver to approach cautiously for a minimum of 1500'. For TWR it has meaning of: one detonator: slow down and be prepared to stop; two detonators: stop; three: stop and do not move until Signal removed and proceed authorization given. Messages for RG New Systems are: one detonator means stop; two mean caution. According to Corbin it consists of percussion cap and gunpowder.
Reference: Hollingsworth '83, UAR, TWR, Corbin '22, RG New Systems

DETONATOR MACHINES. Are these akin to a Fogging Machines (ca 1915)
Reference: Rolt '82

DETONATOR PLACER. Mechanism (apparatus) that places at least one Detonator on rail.
Reference: UIC

DETONATOR SIGNAL. TWA employs this variant of the basic term. It clarifies, makes more explicit the basic term. SA also uses the shorter Detonator form as well.
Reference: SA-TWA

DUPLEX FOG SIGNAL. A Detonator containing two units of explosives according to Jackson. This constitutes two Fog Signals. So that a Fog Signal is not a detonator mechanism but each package of explosives.
Reference: Jackson '91

FOG. Jackson includes this as a term for Detonators albeit a very brief one.
Reference: Jackson '91

FOG DETONATOR. A more explicit form of the basic term of detonator. It is placed on the line at Distant Signals displaying caution.
Reference: Blythe '51

FOG GONG. Electric gong affixed to Visual Signals as a warning in foggy weather especially when in danger position.
Reference: Jackson '91

FOG REPEATER. Visual not audible in nature. It is a Colour-Light Signal exhibited in low visibility and which repeats indication of next regular signal but in advance.
Reference: Jackson '91

FOG SIGNAL. Not an OA term despite its appearance. Corbin employs it as a synonym for Detonator.
Reference: Corbin '22

FOGGER. Jackson gives this term for Fog Repeater.
Reference: Jackson '91

FOGGING MACHINES. A mechanism that automatically places Detonator on track, removes spent detonators and then adds a fresh Detonator.
Reference: Corbin '22

FUSEES. "Chemical fire light, like a Roman candle giving a bright light -- red or green or yellow -- as a stop or slow signal."
Reference: RSD.

NON-OPTICAL SIGNALS. This appears to be a very broad term for any Signals not visual. But Mashour '74 views it as a Sound Signal term meaning Fog Signalling Detonators.
Reference: Mashour '74

TORPEDO. An explosive device affixed to the rail; exploded when train over it.
Reference: ARSPAP-D

TORPEDO SIGNAL. RG 1884 adds the word Signal to core term thereby reducing ambiguity as to meaning.
Reference: RG 1884

c) Level/Grade Crossing Sound Signals

AUDIBLE AUTOMATIC WARNING DEVICES. This term refers to sound signals at grade crossings.
Reference: Philipps '42

AUDIBLE-PEDESTRIAN CROSSING. Refers to German practice. No formal name as such is attached to this device.
Reference: ERS-M

AUTOMATIC BELL. Seemingly the word automatic has been added to indicate bells and other grade crossing safety aids are not controlled and operated manually. Train crews direct traffic if automatic systems activated during frequency movements if train is standing on track circuit.
Reference: B & O

BELL. Acoustical device at grade crossing that emits a warning upon approach of a train.

Reference: AAR SM '83

BELL, GONG. ERS (Luxembourg) distinguished between Bell and Gong forms; RSD frequently views gong as a part of a bell though RSD includes units termed gongs (produced by Faraday).

References: UIC, ERS

BELL, SINGLE STROKE. A signal indication generated by a single stroke.

Reference: ARSPAP-D

BELL, VIBRATING. "An audible signal which, when started, continues automatically until the circuit is opened."

Reference: ARSPAP-D

CROSSING ALARM. Term appears in an advertisement from American Railway Signal Company in RSD. No details.

Reference: RSD '11

CROSSING BELL. Shorter name for Highway Crossing Bell. RSD applies it to one model.

Reference: RSD

DOUBLE GONG HIGHWAY CROSSING BELL. This is a single unit with two gong units [Gong and bell are separate in marine A/Ns but gong seemingly means the hollowed spherical unit struck by a striker buoy gong has a similar shape though larger].

Reference: RSD

ELECTRONIC BELL/ELECTRONIC WARNING BELL. No details on either form; presumably it refers to electronic mechanism work rather than an electro-mechanical mechanism.

Reference: ERS-M

ENCLOSED CROSSING BELL. RSD refers to Bells, whose mechanism (movements) is within a metal housing, and to Bells whose mechanism is uncovered. Some forms are a single unit containing cover, mechanism, striker. Others have the mechanism in a unit separate from Bell and striker.

Variant types and names include:

IRON CASE, ENCLOSED CROSSING BELL

ENCLOSED WATER TIGHT, LOW & HIGH VOLTAGE HIGHWAY CROSSING BELL

Reference: RSD '11

ENCLOSED TYPE GONG. A gong whose mechanism is within a metal housing. See also: Enclosed Bell.

Reference: RSD '11

GRADE CROSSING ALARM. This term is from Japan, few details, presumably in a bell form.

Reference: Japan Assn

HIGHWAY CROSSING BELL/BELL, HIGHWAY CROSSING. This is probably the basic term (U.S.) encompassing various forms at grade crossings. Integrated with Lighted Signals, signs, possibly barriers. Its function is to warn of approaching trains. ARSPAP-D reverses word order.

Reference: RSD '11, ARSPAP-D

HIGHWAY CROSSING BELL-ELECTRONIC/HIGHWAY CROSSING BELL-ELECTRO-MECHANICAL. The first form has an electronic means of operation while the second has traditional mechanism including magnetic coil, armature, traditional gong and a striking arm

Reference: WBS

HIGHWAY CROSSING SIGNAL. RSD includes one Signal, presumably a bell, under the heading of Chicago Highway Crossing (RR Supply Co). In most instances signal in this context means a Lighted Signal rather than a Sound Signal.

Reference: RSD '11

LOCOMOTIVE TYPE CROSSING BELL. A locomotive bell adapted to a grade crossing function.

Reference: RSD '11

SKELETON BELL. According to RSD a Skeleton Bell is one whose mechanism is uncovered.

Reference: RSD '11

SOUND-BELL/SOUND BELL. Netherland's term for level crossing safety aid.

Reference: Alkmaar

Special Case:

BELL. A Switch Indicator Bell that alerted crew when train approaching switch (part of ABS).

Reference: King '21

d) Cab & Train Control Sound Signals

CAB SIGNALS - SOUND.

General Note. Much of Cab Signal coverage is in Ch 2 (and Systems in Ch 1). Some mention of sound is given there. Some Sound Signals are part of other signals without specific mention in the title. This segment therefore provides a specific focus on Sound Signals.

CAB SIGNAL, AUDIBLE. Cab-based device that emits sound under programmed situations. See Also 2D5.

Reference: SM

AUDIBLE CAB SIGNALLING/AUDIBLE-CAB SIGNALLING. This refers to GWR '06 form. It is an informal descriptive term; indicator meant.

Reference: Nock '78. Ellis '66, Barwell '83

AUDIBLE CAB INDICATOR/INDICATOR, CAB, AUDIBLE. This sound device is an air whistle. Whistle sounds when Cab Signal indication. Whistle continues cab signal acknowledged.

Reference: ARSPAP-D

AUDIBLE INDICATOR. Term for sound dimension for Cab Signals.

Reference: FRA-RAR

AUDIBLE SIGNAL. For Breen this is an indication not an indicator. For Skabballonovich it has appearance of OA Signal yet specific use may belie that view. See also Explosive Signals.

Reference: Breen '80, Skabballonovich '84

BELL & SIREN UNIT. Refers to physical apparatus for ATC. Siren denoted presence of Distant Signal. Bell denoted clear indication. No visual signals but Barwell places this discussions under the heading of Automatic Warning Systems-- Cab Signalling.

Reference: Barwell '83

CAB ALARM. A brief entry in source; no details are given as to nature of Alarm.

Reference: Japan Assn.

CAB INDICATOR. According to Philipps, Cab Signal gives visual indications while Cab Indicator gives sound warnigs.

Reference: Philipps '42

CAB WHISTLE. Refers to Whistle which sounds completion to more restrictive indicator. See also next entry.

Reference: GRS '54

CODE CONTINUOUS CAB SIGNAL WITH WHISTLE & ACKNOWLEDGER. A Sound Signal that is integral part of Cab Signal assembly. See also 2D5.

Reference: FRA-3

INDICATOR, CAB; AUDIBLE. Sound Signal that is integral part of Cab Signal assembly. See also 2D5

Reference: FRA-3

KLAXON. Taylor speaks of Klaxon for proceed indication (on) for GWR ATC. Bell sounds for danger (off) indication. Barwell speaks of Siren.

Reference: Taylor '49, Barwell '83

RELIOSTOP. A form of Train Stop. Apparatus is partly on tracks, in locomotive. Apparatus activates siren, whistle in locomotive when signals approached. If action not taken the brakes activated.

Reference: Blythe '51

WARNING HOOTER. This is part of Strowger-Hudd ATC System. Brief blast if Signal clear; on-going blast if at danger until brakes on or mechanism reset.

Reference: Vanns '97, Taylor '49

WHISTLE SIGNAL. This is a Sign for UAR. Appearance belies reality. CR.

Reference: UAR

4C3 Radio Signal Terms

BEACON/EURO-BALISE BEACON. Component of ETCS, creates shared transmission standard. Euro-Balise provides interface with track Signal apparatus and cab-based module.

Reference: ETCS ... IJR 9-93

ELECTRONIC SIGNALLING. An overarching term in this form of Signal.

Reference: NS Samples ... '83

ELECTRONIC TOKEN. This Token is a radio transmission to train from control center. Radio Token constitutes a token since only one train receives data for a section or block. Barwell notes that Electronic Token is a system.
Reference: Barwell '83

ELECTRONIC TOKEN SYSTEM. Alternate name for Radio Electronic Token Block (RETB).
Reference: Challenger '83

EURO-RADIO. This is part of ETCS System. It transmits ATP, ATC data.
Reference: ETCS 9-93

GPS/NAVSTAR GPS/GPS TECHNOLOGY. GPS, originally a marine and aero aid, is increasingly applied to railroad operations. GPS may provide multiple uses for railroads including guidance of trains for purpose of avoiding collisions.
References: Railways Need ... '94, Welty, Carley-WSJ, RN Plan '98

RADIO-BASED TOKEN SYSTEM. This term is seemingly akin to other Electronic Token Arrangements though explanation not fully clear. Refers to Spoornet in S.Af.
Reference: Railways Need ... '94

RADIO BLOCK. A shorter form of basic Radio Block System term.
References: Whitehouse '85, Brown '84

RADIO BLOCK SYSTEM. This term is interchangeable with Radio Token System. It lacks mention of Token but at the same time it is more specific by adding block to term.
Reference: Whitehouse '85

RADIO ELECTRONIC TOKEN BLOCK (RETB). It refers to exchange is of Electronic Tokens rather than physical tokens. Token is a visual message on locomotive screen.
Reference: ERS-V

RADIO SIGNALLING. Seemingly a term covering all aspects of Signalling and controlling in ETCS.
Reference: ETCS '83

RADIO TOKEN BLOCK. A basic term for this form of safety aid. Specific terms

refers to form in Angola that is "knit" together with microwave communication links.

Reference: Railways Need ... '94

RADIO TOKEN EQUIPMENT. This term seemingly refers to the physical appearance of Radio Token System.
Reference: ERS-H

RADIO ELECTRONIC TOKEN SYSTEM. Term is another name for RETB, etc.
Reference: Challenger '83

RADIO-SHUNTING. Seemingly this term refers to radio transmission between control and train. It is probably not a Signal situation since it consists of voice communication only.
Reference: Jia-lin '81

RADIO TOKEN BLOCK SYSTEM. A longer, more explicit version of the basic token.
Reference: Telecomm.

RADIO TOKEN SYSTEM. This system replaces current token system with a electronic token. Involves human speech but also includes "electronic token data" via a display unit in cab.
Reference: Whitehouse '85.

RADIO TOKENLESS BLOCK. This term is interchangeable with the Electronic Token System.
Reference: Challenger '83

RALIOPHONE. This term refers to inductive apparatus based on passage of electrical current. It involves telephone communication and Cab Signal operations. Seemingly, it is not a radio aid though closely related.
Reference: Blythe '51

RETB SYSTEM. Acronym for Radio Electronic Token System.
Reference: A & W '91

SAT-GUIDANCE SYSTEM/SAT-BASED GUIDANCE SYSTEM. Informal, descriptive terms for GPS System.
Reference: Carley, WSJ

TOKEN BLOCK. This refers to a shorter version of Radio Token Block. No

physical tokens.
Reference: Railways Need ...

WIRELESS SIGNAL SYSTEM. This does not refer to radio but instead to Robinson's wire-less track circuit activated Signal system.
Reference: B & M '81



4D Staff, Ticket, Token, Tablet, Train Order & Time Interval

1 Staff Forms

ABSOLUTE STAFF SYSTEM/ABSOLUTE STAFF INSTRUMENT. A form of Train Staff that permits a single train in a section at a time. The Instrument is the physical apparatus dimension.
Reference: King '21

ANNETT'S KEY. Key and lock for seldom used sidings. On single lines it is part of Train Staff operations.
Reference: A & W '91

AUTOMATIC ELECTRIC STAFF INSTRUMENT. An Instrument that allows crews to receive staff while maintaining speed.
Reference: Q S & S.

AUTOMATIC STAFF EXCHANGING APPARATUS/AUTOMATIC EXCHANGE EQUIPMENT/AUTOMATIC TABLET EXCHANGE EQUIPMENT. Terms refer to apparatus for exchanging staff or other form of token; partly located on locomotive, partly next to track at signal box. See Also: Automatic Token Exchange.
Reference: VGR 32, K & W '63, Vanns '97

ELECTRIC STAFF. According to Hammond, this is another name for Tablet; it is also a component for Electric Token Methods.
References: Hammond '64, Corbin '22, Fraser '19

ELECTRIC TRAIN STAFF. No details from VGR but presumably a variant of Electric Staff.
Reference: VGR

ELECTRIC STAFF INSTRUMENT. Mechanism for releasing, retaining staff for a given section or block.
Reference: Shackleton

ELECTRIC STAFF BLOCK SYSTEM. This term is from Canada. In this form train superiority is superseded by possession of staff.
Reference: Canada UCOR '61

ELECTRIC STAFF SYSTEM. Seemingly, it refers to the working of electric staff; both staff, instrument and operation of admitting, blocking of trains in a

section by signal crew.
Reference: Bird

ELECTRIC TRAIN STAFF & TICKET SYTEM. Similar to basic form save for metal rather than paper tickets.
Reference: Taylor '49

ELECTRIC TRAIN STAFF SYSTEM. A means for regulating train movements on single lines.
References: Bird, RSD, HDS

INTERMEDIATE SIDING JUNCTION INSTRUMENT. Special staff machine for allowing access to sidings, junctions.
Reference: King '21

LARGE ELECTRIC STAFF. One form of the Key Token Instrument which see. It is made of steel and designed to be fitted into only the correct machine.
REVIEW.
Reference: K & W '63

O.E.S. STAFF. One Engine in Steam: this refers to the wooden staff system which see. Term means just one engine up and running on line at a time.
Reference: K & W '63

ONE TRAIN WORKING. This employs Staff; no other train in block. Seemingly akin to O.E.S.
Reference: Leach '91, A & W '91

PERMISSIVE STAFF/PERMISSIVE ATTACHMENT. This is an adjunct to Absolute Staff System which see. This allows more than one train in block at a time.
Reference: King '21

PUSHER ATTACHMENT. This Attachment to Train Staff system allows movement of pusher engines.
Reference: King '21

STAFF. Refers to a staff or rod given to train crews for specific section of track. Entrance to the section requires staff. It is surrendered when leaving section. It is employed on single lines. Staff could be in 2 or 3 sections; each piece given to a train crew.
Reference: Corbin '22, Hammond '64

STAFF & TICKET WORKING. Equivalent to Staff and Ticket Systems. Refers to equipment and process of that form of train operations.
Reference: Vanns '97

STAFF CATCHER. Device for delivering, retrieving Staffs.
Reference: King '21

STAFF CRANE/CRANE, STAFF. A post and bars that supports a staff. Placed near the tracks so staff could be reached from moving train.
Reference: RSD

STAFF MANUAL BLOCK SYSTEM. This system is employed where no signals are in service. It follows basic token system format.
Reference: AAR-USSR '60

STAFF POUCHES. Sleeve within which Staff is positioned.
Reference: King '21

STAFF SYSTEM. Term refers to system of controlling traffic on single line by requiring trains entering a section to have a staff (supplied by signal person at beginning of block). Simmons speaks of staff or tablet system; seemingly they are interchangeable terms.
Reference: Blyth '51, Simmons

SUBSIDIARY ELECTRIC STAFF WORKING. No explanation given. It suggests electric staff employed as a secondary or subsidiary system with lighted and other signals primary.
Reference: Bird

TRAIN STAFF/TRAIN-STAFF. Hammond employs this as synonym for staff. It is a more explicit version of the basic term. Hyphenated form is from Barwell.
Reference: Hammond '64, Barwell '83

TRAIN STAFF SYSTEM/TRAIN-STAFF SYSTEM. Staff and Staff Systems are core terms and common terms. "Train" adds a degree of explicitness. Ellis offers a hyphenated form; only surveyed source so doing that. Ellis speaks of staff or

baton.

References: Hammond '64, ARSPAP-D, Ellis '58

WEBB & THOMPSON ELECTRIC STAFF. A "brand name" for electric staff.

See also VR.

Reference: HDS

W & T ELECTRIC STAFF SYSTEM. Commonly employed system until largely superseded by Key Token Working.

Reference:

WEBB & THOMPSON ELECTRIC STAFF INSTRUMENT. A term from VR who notes that it replaced Tyer Tablet Instruments. See above item.

Reference: VR

WOODEN STAFF/WOODEN TRAIN STAFF. K & W '63 is very specific about the nature of this staff. This is the most elementary form of the system and is intended for lightly traveled lines. G.A. adds Train to basic term.

Reference: K & W '63, G.A.

2 Staff & Ticket Forms

PAPER TICKET METHOD. Wooden Train Staff and Paper Ticket work together. Paper Ticket given to each of a group of train crews with only the last one getting the staff.

Reference: G.A.

STAFF & TICKET/STAFF-&-TICKET. Term has same meaning as Staff & Ticket System which see. K & W '63 also employs more explicit version.

Reference: K & W '63

STAFF & TICKET SYSTEM. Term refers to section where multiple trains are present. Staff displayed but not given to succeeding train crews. Instead, a ticket (paper) is given. Last train receives the staff. Ellis '66 adds hyphenated form.

Reference: Corbin '22, Fraser '19, Shackleton '76

TICKET SYSTEM. Blythe employs this term in lieu of more common and complete Staff & Ticket System. A second version contained a staff that could be separated into 2 or 3 pieces.

Reference: Blythe '51

TRAIN STAFF & TICKET. A more explicit form of basic term, Staff & Ticket.

Reference: VGR

TRAIN STAFF & TICKET SYSTEM. A variant form of basic term of Staff & Ticket System.

Reference: HDS

WOODEN TRAIN STAFF & PAPER TICKET METHOD. They form a unit in SA railway operations. Equivalent of Staff & Ticket System.

Reference: S.Af G.A. '47

3 Token Forms

AUTOMATIC TOKEN EXCHANGE. Method for exchanging tokens while train remains at speed.

Reference: K & W '63

BALL TOKEN/BALL-TOKEN. One shape/form of movable objects used in Token System.

Reference: UN, Westinghouse Saxby

ELECTRIC TOKEN. Machines at opposite ends of block are electrically connected; withdrawal of one token blocks withdrawal from other end until token replaced.

Reference: ERS-V.

ELECTRIC TOKEN APPARATUS. Seemingly equivalent to Electric Token Instrument.

Reference: A & W '91

ELECTRIC TOKEN INSTRUMENT. This refers to the apparatus, mechanism including tokens, etc., interlocking mechanism (removal of token from a machine block, removal of token from other machine), magazine and related features.

Three forms of instrument: Large Electric Staff, Key Token, Tablet, which see.

Reference ?

ELECTRIC TOKEN METHODS. OA term for several single-line working methods. Electric staff or tablets employed.

Reference: Hammond '64

ELECTRIC TOKEN SYSTEMS. This term is similar in meaning to Electric Token Methods.

Reference: Hammond '64

Reference: Hammond '64

BALL TOKEN TYPE. This may refer to Neale's Ball Token and Block Instrument which see. Westinghouse Saxby Farmer was once a UK firm but it is now a Calcutta concern.

Reference: UN '54

ELECTRIC TOKEN SYSTEM/ELECTRIC TOKEN BLOCK. Machines for handling tokens are interlocked between opposite ends of section and this is carried out with electricity. Many forms of the system omit reference to electricity.

Reference: ERS-V

KEY TOKEN (I). Metal token with key attached. Key designed to fit specific machine. Key token may take one of several forms including staff and ticket. References: K & W '63, Nock '80, Shackleton, Allen '52

KEY TOKEN (II). For ERS-V this refers to BR block system for single lies. Reference: ERS-V

KEY TOKEN BLOCK SYSTEM. Basic term with addition of Block. Key Token, of course predicated on blocks but often not included in terms. Reference: UAR

KEY TOKEN TRANSFER SYSTEM. An attachment that serves as a Key Token Balancer when train operations become out of balance. Reference: Tyer & Co.

KEY TOKEN BALANCER. See Key Token Transfer System.

KEY TOKEN INSTRUMENT. Mechanism consisting of ball signals, indications, tokens, magazines. Reference: Sig Eq Review, Tyer & Co.

KEY TOKEN SYSTEM. Term refers to Tyer Key Token Instruments controlling and regulating traffic by releasing, "freezing" tokens for a section of track. Reference: Sig. Eq Rev. '81

NEALE'S BALL TOKEN INSTRUMENT. Short form of next term. Reference: Westinghouse Saxby Farmer

NEALE'S SINGLE LINE COMBINED BALL TOKEN & BLOCK

tokens, releasing mechanism, telephone hand sets to coordinate release of token and trains.

Reference: Westinghouse Saxby Farmer

NO SIGNALMAN REMOTE KEY TOKEN WORKING/NO-SIGNALMAN REMOTE KEY TOKEN WORKING. Instruments are handled by train crews with remote supervision.

Reference: ERS-H, Leach '91

NO SIGNALMAN TOKEN BLOCK. Equivalent of No Signalman Token Working.

Reference: Leach '91

ONE TRAIN WORKING. New term for O.E.S.

References: A & W '91, Leach '91

SIGNALMAN-TO SIGNALMAN TOKEN WORKING. This form is employed for single lines.

Reference: Leach '91

SIGNALMAN TO AUTOMATIC OPERATED TOKEN WORKING. This form employed for terminal branch operations and multiple trains.

Reference: Leach '91

SINGLE LINE TOKEN INSTRUMENT. An OA term for apparatus employed in Token systems and maintained at signal boxes.

Reference: Vanns '91

TOKEN. Short form of key token which see. It needs to be noted that Key Token sometimes has meaning of block system for single lines employing tokens. See also Token System

References: Allen '52, Ellis '66

TOKEN BLOCK SYSTEM. Variation of basic term; this version adds block to title.

Reference: UN--Japan

TOKEN SIGNALLING. Hollingsworth, among surveyed sources, is the only source for this tem. It provides a convenient heading for the various components. Hollingsworth speaks of token as having several forms: staff key, tablet, ball. Simple systems contain one token so one train only can pass through.

ELECTRIC SINGLE-LINE TOKEN SYSTEM. This form allowed trains to safely travel either direction since tokens at both ends and tokens and signals interconnected.

Reference: Hollingworth '83

TOKEN TYPE BLOCK INSTRUMENT. Ball Token moved from train to train without a passage through to block instruments.

Reference: UN-Japan

TOKENS-FORMS. Hollingsworth notes they can be one of several forms: Ball, Staff, Tablet, Key. Tyer & Co has several distinct forms and colors: Round key in red, Square key in green, Triangle in yellow, diamond in blue, and rectangle.

References: Hollingsworth, Tyer & Co.

TOKEN FORMS-II. Leach provides a classification by function rather than by physical shape:

MAIN SECTION (UNIDIRECTIONAL) TOKEN
ENGINEERING TOKEN
TEST TOKEN
SPECIAL TOKEN

Reference: Leach '91

VAN SCHOOR TRAIN TOKEN SYSTEM. A system that includes both crossing tablets and absolute tablets.

Reference: TWR

4 Tablet & Tablet & Token Forms

BALL TABLET TOKEN INSTRUMENT. A listing of manufacturer's product in Jane's. Specific source is Westinghouse Saxby. Instrument is a mechanism through which tokens are released, held, and train operations are conducted.

Reference: Jane's '88-'89

ELECTRIC TABLET/ELECTRIC TRAIN TOKEN. Only limited data is available. Presumably the object dispensed to train crew when block. Second term may be a variant form of the basic term.

Reference: Fraser '19

ELECTRIC TABLET INSTRUMENT. Few details available on this term. Presumably an apparatus dispensing metal tablet discs when line clear and which freezes tablets when line occupied.

Reference: VGR '32

ELECTRIC TABLET SYSTEM. An Electric Token method using Tablets (discs about six inches in diameter). The instruments are electrically interlocked.

Reference: Hammond '64

ELECTRIC TRAIN TABLET METHOD. S.A. train operation method employing Tyer's Tablet Method.

Reference: G.A.

SINGLE LINE TABLETS. This term is synonym for Tablets in general.

Reference: Vanns '97

TABLET BLOCK SYSTEM. A block operation based on exchange of tablets.

Reference: UN '54

TABLET BLOCK TRAIN OPERATIONS. Little explanation available but probably self-explanatory.

Reference: UN '54

TABLET INSTRUMENT. This is a reference to traditional form but also a revamped version relating to radio interconnections and long-distance operations.

Reference: Brown '84

TABLET SYSTEM. System based on a machine that dispenses tablets or tokens. Removal of one token locks machine at far end of section thereby blocking entrance of a second train into a section until first train has left section. Variations allowed more than one train in section under prescribed procedures.

Reference: Blythe '51

TABLETS. Small pieces of metal employed in interlocked instruments that control train movements.

References: Allen '52, Corbin '22

TABLET SYSTEM OF WORKING. Train operation system based on tablets and tablet instruments.

Reference: HDS

TYER'S KEY TOKEN INSTRUMENT/TYER'S ELECTRIC TRAIN TABLET. The meaning is that of Key Token Instrument with name of maker added: Tyer who has near monopoly for Key Token systems. This form from A Century ... '84. Reference: Kenya Railways

TYER'S #7 TABLET INSTRUMENT. This device displays 3 indications: "Line Closed," Train Approach (up or down), Train on Line (up or down). Two tablets slides (Top: in, Bottom: out), switch plunger and bell plunger.
Reference: Hammond '64

#6 TYER'S TABLET MACHINE. Machine seemingly synonym for Instrument.
Reference: A & W '91

TYER'S TABLET INSTRUMENT. The mechanism controlling tablet operations. It releases and holds tablet as required thereby maintains safe train operations.
Reference: HDS

TYER'S ELECTRIC TABLET SYSTEMTYER'S TABLET SYSTEM. This model patented in 1878. It replaced older, simpler arrangement and was more fool-proof since electrical connections interlocked respective instruments.
Reference: Ellis '58, Vanns '97

5 Tokenless Forms

General Note. Segment can be viewed as part of 1E though elements closely related to Token Systems and some forms have Tokens in some form.

SCOTTISH REGION TOKENLESS BLOCK. Leach notes this is a "true simulation of Token Working." No physical token though there are radio pulses transmitted (Not referred to as Electronic Tokens by Leach).
Reference: Leach '91

TOKENLESS BLOCK. This refers to Radio Electronic Token System which see.
Reference: Challenger '83

TOKENLESS BLOCK EQUIPMENT. This form refers to Radio Electronic System. Yet Tokenless Block can refer to visual, non-radio forms.
Reference: KNR

TOKENLESS BLOCK WORKING/TOKENLESS BLOCK SYSTEM. This is similar to Token Working but no tangible token given out. Signal crews and machines collaborate closely and only admit trains to clear section. Second term seems to be a close approximation of Working.
References: Hammond '64, UN '54, Japan Assn

TOKENLESS BLOCK INSTRUMENT. Device for interlocking means of and employed for both single and double lines. UN notes that Tokenless Block Instruments are from F.S. (SABIB) Type; Siemens and Halske (Germany), and SNCF Type (France), Sykes (UK).
References: Alkmaar, UN

TOKENLESS BLOCK WORKING (PAPER TICKET). Signal stations cooperate and lock and block operation to process trains but without tokens.
Reference: UN '54

6 Train Order Forms

BALLOON TRAIN ORDER. This is a historical term (1864). It consisted of a "Balloon-shaped container" hung from gallows. The container blocked view of lantern. The lamp could be lowered which denoted train was to stop for orders.
Reference: ARSPAP-H

BANNER TYPE TRAIN ORDER SIGNAL. This T.O. followed the Banner form of signal. It employed a rope for raising, lowering signal indications.
Reference: ARSPAP-H

BOOT-JACK TYPE TRAIN ORDER SIGNAL. This Signal employed a rack and pinion device. An elevator cage moved the red lantern in and out of position. This was activated by controls that could be altered by train crews through a mechanical process.
Reference: ARSPAP-H

BOX TYPE TRAIN ORDER. Modified form of Banner Box Block Signal. Removal of red cloth banner denoted proceed.
Reference: ARSPAP-H

CENTER-PIVOTED, 2-POSITION TRAIN ORDER SIGNAL. This is more of a description of a signal rather than a formal name.
Reference: ASPAP-H

DOUBLE-ARM UQ TRAIN ORDER SIGNAL. Term for Train-order that incorporates physical appearance of the Signal.
Reference: King '21

ELECTRIC ENCLOSED DISC TRAIN ORDER SIGNAL. The name Stewart-Hall can be added to the term. This signal resembled a Banjo Signal which see.

Reference: ARSPAP-H

ELECTRO-MECHANICAL TRAIN ORDER SIGNAL. This form was for a modern version (1906) in contrast to earlier forms which were fully and directly of a mechanical nature.

Reference: ARSPAP-H

NINETEEN ORDER. Train order message: Delivered without train stopping; signature not required.

Reference: A & W '91

SLOW ORDER. Written order for speed reduction at a specific location in Train Order system.

Reference: A & W '91

TELEGRAPH TRAIN-ORDER SYSTEM. Term describing a common means of train operations and regulation in mid-19th century.

Reference: Ellis '58.

TELEPHONE TRAIN ORDER SIGNAL. Signals mounted on regular signal mast -- when red -- indicate if train crew should stop and receive orders or go to siding.

Reference: UN '54

THIRTY ONE ORDER. Term within Train Order system. Signature required on order which means train must stop.

Reference: A & W '91

TIMETABLE & TRAIN ORDER (T & TO). Term refers to a method based on time tables and train orders. UN (for US) indicates TT for scheduled trains while non-scheduled trains require instruction by TO.

Reference: Armstrong '78, UN '54

TRAIN ORDER BOARDS. Term for Boards that give Signals in Train Order system. Found at stations.

Reference: King '21

TRAIN ORDER/TRAIN ORDER. Method of train operation by issuing of orders; may not include fixed signals.

Reference: Hollingsworth, Ellis '58

TRAIN-ORDER LINESIDE SIGNAL. [DID NOT FIND REF]

Reference: Allen '82

TRAIN ORDER SIGNAL/TRAIN-ORDER SIGNAL. SM: A signal indicating whether or not the train has orders to pick up. For RSD: A signal at a station (telephone, telegraph) indicating train to stop for orders (relating to its presence on the track). For ANR/SA: Double arm semaphore: red arm/black arm. Messages for one system (ANR) have this pattern: Both arms horizontal: Stop (red light), Red arm 45 degrees, "slow for orders:, yellow lamp, caution. Red arm vertical, "station open, no orders" green light, clear. Both arms vertical, yellow disc, G and Y light, station closed. For ARSPAP-SS TO Signal is a Two-Way Single Lamp Signal as in ANR.

References: ARSPAP-SS, ANR, RSD, SM

TRAIN ORDER SIGNALS OF THE COLOR LIGHT TYPE. In this form no indication is given except after train activates signals. If red, stop for orders, if green, proceed.

Reference: ARSPAP-H

TRAIN-ORDER SYSTEM. This is little different in meaning from Train Order term. It constitutes a Train Operation method.

Reference: FRA-3

TRAIN-ORDER WORKING. Equivalent to System; British-influenced operations often employ working.

Reference: Cunliffe '68

WRITTEN TRAIN ORDERS. An older form of train operation though FRA-2 notes "it is currently employed signal/control systems."

Reference: FRA-2

YARRINGTON TYPE OF TRAIN ORDER SIGNAL. This signal consisted of four discs (3 red, 1 white) each facing a different direction. Discs attached to horizontal arms which, in turn, are attached to a vertical pipe.

Reference: ARSPAP-H

7 Time Interval Forms

TELEGRAPH BLOCK OR TIME-INTERVAL SYSTEM. Seemingly interchangeable terms for Northern Pacific Railroad.

Reference: K & T '88

TIME INTERVAL SYSTEM/TIME-INTERVAL SYSTEM. RSD, which employs the hyphenated form, notes it is employed where block system is lacking.

Torpedoes and fuses are a part of this method of spacing trains. ARSPAP-H version omits hyphen. See also, Torpedoes, fuses.
References: RSD, K & W '63, ARSPAP-H

TIME INTERVAL METHOD. Meaning probably little different from Time Interval or Time Interval System. It consists of control of train movements by time-tables, train orders, train schedules.
Reference: ARSPAP-H

TIME INTERVAL/TIME-INTERVAL. This is not a signal form in a direct sense; it refers to method of spacing trains by time. First form from ARSPAP-H
Reference: K & W '63, Allen '82. ARSPAP-H

TIME-INTERVAL SYSTEM OF WORKING/TIME INTERVAL SYSTEM OF SAFEWORKING. A method of operation by spacing trains by time differences. Blythe has a slight variant that substitutes safeworking for simple working.
References: K & W '63, Blythe '51

TIME SYSTEMS. Seemingly a variant of Time Interval which see.
Reference: B & M '81

8 Other Forms

DIRECT TRAFFIC CONTROL (DTC). Train movement operations under direction of train dispatcher.

SPACE INTERVAL METHOD. A method based on sections or blocks which are considered in Chapter 1.
Reference: ARSPAP-H

TELEGRAPH & TICKET METHOD. Ticket issued to train after line clear determination through telegraphic communication.
Reference: UN-Thailand

TELEGRAPH MESSAGE SYSTEM. Presumably train control exclusively by telegraph. HDS speaks of "T.O. or Telegraph Message System." In U.S. T.O. is via Telegraph.
Reference: HDS

TELEGRAPHIC ORDER METHOD OF TRAIN WORKING. A train operation system worked through a passage of telegraph messages.
Reference: Instruc-SA '62

Reference: Instruc-SA '62

TELEGRAPHIC ORDERS. These are written orders to train crews via telegraph.
Reference: Nock '78

TICKET & SECTION ORDER SYSTEM. VGR '32 includes this term but seemingly not found in any other source and no details in VGR.
Reference: VGR '32

TIME-CODE SYSTEM. Only limited information available for this unique term.
Reference: B & M '81

TIMETABLES/TIME-TABLES. The term is employed as a means of Train Control. They are possibly employed in conjunction with TO. In some instances TO exists apart from Timetables.
Reference: FRA-2, Hollingsworth

TIME-TABLE OPERATION. This variant form gives a clearer view of the Time Table as an operational method.
Reference: Henry '42

TRAIN WARRANT CONTROL (TWC). This approach to train operations is variously described as employing timetables or verbal directions. Train Orders and Train Warrant are parallel approaches and possibly overlap. A case can be made for placing this in 1E though it also very much part of this segment.
Referenc: Signalbox website, Kanner '92, Railway Needs '94

4E Level and Grade Crossing Signs, Signals, Gates, Barriers and Related Accoutrements

General Note. Level and Grade Crossing entity is unique since it also appears in TCD portion of the Database. Entries in TCD are from the view of road transport. But railway interests also view the area to a significant degree. Coverage may overlap yet remains distinct within the two fields. Some components of L/G Crossings are considered in other segments of the Database. This is especially the case with sound forms. The TCD part of the Database can also be considered for more road-orientated forms. This sub-chapter draws together in a category index/word list format the totality of these safety aids.

1 Integrative Level and Grade Crossing Terms

AUTOMATIC SAFETY INSTALLATIONS FOR LEVEL CROSSINGS
AUTOMATIC CONTROLLED LEVEL-CROSSING PROTECTION
BELLS
FLASHING LIGHTS,
AUTOMATIC LEVEL CROSSING PROTECTION
AUTOMATIC SIGNAL DEVICES
AUTOMATIC WARNING SYSTEM,
CONVENTIONAL TRACK CIRCUIT-OPERATED LEVEL CROSSING
APPROACH WARNING SYSTEM,
CROSSING PROTECTION,
CROSSING WARNING DEVICES
GRADE CROSSING WARNING SYSTEM
HIGHWAY CROSSING PROTECTION
HIGHWAY-RAILROAD CROSSING PROTECTION
LEVEL-CROSSING
MWL CROSSINGS (UK: Miniature Warning Light Crossings: Footpaths,etc)
HIGHWAY CROSSING PROTECTION
AUTOMATIC BELLS
FLASHLIGHT
GATES
WIG-WAG
HIGHWAY CROSSING SIGNAL
CROSSING SIGN
LOCOMOTIVE TYPE OF BELL
WIGWAG SIGNAL
HIGHWAY CROSSING WARNINGS & CONTROLS
CANTILEVERS
GATES

LAMPS
HIGHWAY GRADE CROSSING
SIGNS
SIGNALS
SYSTEM
WARNING DEVICE

POWER-WORKED MCB, A & W
AUDIBLE WARNING DEVICES
TRAFFIC LIGHTS
BARRIERS
SEISMIC BASED TRAIN ACTUATED APPROACH WARNING AT
LEVEL CROSSING, Chandrika
THE ORION - 300 LEVEL CROSSING APPROACH WARNING SYSTEM,
Chandrika

2 Lighted Level & Grade Crossing Signals

ADVANCE WARNING SIGNAL (HIGHWAY CROSSING)
AGA HIGHWAY DANGER SIGNAL, King
AGA TWO-COLOR HIGHWAY DANGER SIGNAL
BARROW CROSSING WARNING INDICATOR, A & W
CANTILEVER SIGNAL
COLOR-LIGHT HIGHWAY SIGNAL
CROSSING SIGNAL
FLASHING LIGHT SIGNAL
FLASHING LIGHT TYPE, REMC
GRADE CROSSING SIGNAL, King
HIGHWAY APPROACH SIGNAL, King
HIGHWAY CROSSING SIGNAL, King
HOESCHON CROSSING SIGNAL, King
MINIATURE WARNING LIGHTS (MWL), Leach
MINIATURE R/G WARNING LIGHTS, A & W
RAILROAD-RAILROAD GRADE CROSSING SIGNAL
PRE-WARNING SIGNALS
HIGHWAY SIGNALS
LEVEL CROSSING-FLASHING LIGHT SIGNALS
LEVEL CROSSING SIGNALS
LEVEL CROSSING WITH FLASHING LIGHT SIGNALS
LEVEL CROSSING WITH SIGNAL SYSTEM
SIGNALS FOR TRAMWAY LEVEL CROSSING
TRAM CROSSING SIGNALS

VISIBLE WARNING SIGNALS
WIG WAG, Jackson
WIG WAG CROSSING SIGNAL
WIG WAG TYPE, REMC

3 Barriers & Gates

a) Barriers, Full Barriers, & Gates

AUTOMATIC GATES, REMC
AUTOMATIC LIFTING BARRIERS, Vanns
BARRIER
BARRIER TYPE PROTECTION, REMC
BOOM GATES, A & W
CCTV MONITORED REMOTE BARRIER CROSSING
CROSSING GATES, A & W
ELECTRIC OPERATED LIFTING BARRIERS
ELECTRO-HYDRAULIC PEDESTRIAN BARRIERS
FULL BARRIER
LEVEL AUTOMATIC BARRIERS
LEVEL AUTOMATIC OPEN CROSSING
LEVEL CROSSING BARRIER, Leach
LEVEL CROSSING GATES, A & W
LEVEL CROSSING WITH AUTOMATIC BARRIER
LEVEL CROSSING WITH FULL BARRIER
LIFTING BARRIERS, A & W, Vanns
MANNED GATED CROSSING, A & W
MANNED BARRIERS, Leach
MANNED BARRIERS CROSSING, Leach
 MCB/LOCAL
 MCB/REMOTE
 MCB/CCTV
 TOB
MANUALLY CONTROLLED BARRIERS (MCB), Leach
MCB/CCTV
ON CALL BARRIER CROSSING (OCB), Leach
SHORT-ARM GATES
TMO (=TRAINMAN OPERATED [BARRIER] , A & W
TRAINMAN-OPERATED BARRIER (TOB) [Type of Manned Barrier], Leach
WICKET GATE, Jackson

b) Half Barriers & Gates

AHB CROSSINGS, A & W
AUTOMATIC HALF ARM BARRIER INSTALLATION
AUTOMATIC HALF BARRIER
AUTOMATIC HALF BARRIER CROSSING (AHB), Leach
AUTOMATIC HALF BARRIER LOCALLY MONITORED (ABCL), Leach
AUTOMATIC LEVEL CROSSING & HALF GATE
DOUBLE HALF BARRIER & FULL BARRIER CROSSING
HALF BARRIER: DOUBLE HALF BARRIER & SINGLE HALF BARRIER
LEVEL AUTOMATIC: HALF BARRIERS
LEVEL CROSSING HALF BARRIER

4) Sound Signals

AUDIBLE-PEDESTRIAN CROSSING
BELL, GONG, AUDIBLE WARNING
CROSSING ALARMS
DOUBLE GONG HIGHWAY BELL
ELECTRONIC WARNING BELL
ENCLOSED CROSSING BELLS
ENCLOSED TYPE GONG
GRADE CROSSING ALARM
LOCOMOTIVE TYPE OF CROSSING BELL
HIGHWAY CROSSING ALARM
HIGHWAY CROSSING BELL
HIGHWAY CROSSING BELL-ELECTRONIC
HIGHWAY GRADE CROSSING WARNING DEVICE
HOESCHEN BELL SYSTEM, King
LOCOMOTIVE TYPE CROSSING BELL
SKELETON BELL
VIBRATING BELL

5) Signs

AUXILIARY SIGN, REMC
CLOSE UP ROAD WARNING SIGN
CROSSING SIGNS
CROSSBUCK SIGN, REMC
DISTANT ROAD WARNING SIGN
GATES NOT WORKING SIGN
HIGHWAY AND BARRICADES SIGN
HIGHWAY CROSSING SIGN

HIGHWAY GRADE CROSSING SIGN
ILLUMINATED SIGN (?), King
LEVEL CROSSING HALT BOARD
LEVEL CROSSING-SIGN BOARD
RAILROAD CROSSING SIGN: HIGHWAY, AT THE CROSSING, ADVANCE
WARNING SIGN (& WITH FLASHING LIGHT)
RAILROAD GRADE CROSSING TARGETS
REFLECTOR BUTTONS (GC?), REMC
ROAD SIGNS AT LEVEL CROSSING
SAINT GEORGE'S ADVANCE WARNING BOARD
SAINT ANDREW'S CROSS
SECOND TRAIN COMING SIGN, Vanns
SIGNS (CROSSING?), REMC
WARNING SIGNS FOR LEVEL CROSSING

6) Open Crossings

ACCOMODATION CROSSING, Jackson
AUTOMATIC OPEN CROSSING LOCALLY MONITORED (AOCL), Leach
AUTOMATIC OPEN CROSSING REMOTELY MONITORED (AOCR), Leach
AUTOMATIC OPEN LEVEL CROSSINGS, A & W
OPEN CROSSING (OC), Leach, A & W
OPEN CROSSING WITH NO CONTROLS, Leach

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