T-M

TRANSPORTATION-MARKINGS DATABASE: RAILWAY SIGNALS, SIGNS, MARKS & MARKERS

2nd Edition

Brian Clearman

Mount Angel Abbey

2009

TRANSPORTATION-MARKINGS DATABASE:

RAILWAY SIGNALS, SIGNS, MARKS, MARKERS

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RAILWAY SIGNALS, SIGNS, MARKS, MARKERS

Part Iiii, Second Edition

Volume III, Additional Studies

Transportation-Markings: A Study in Communication Monograph Series

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2009

TRANSPORTATION-MARKINGS A STUDY IN COMMUNICATION
MONOGRAPH SERIES

Alternate Series Title: An Inter-modal Study of Safety Aids

Alternate T-M Titles: Transport [ation] Mark [ing]s/Transport Marks/Waymarks

T-M Foundations, 5th edition, 2008 (Part A, Volume I, First Studies in T-M) (2nd ed, 1991; 3rd ed, 1999, 4th ed, 2005)

A First Study in T-M: The US, 2nd ed, 1993 (Part B, Vol I)

International Marine Aids to Navigation, 2nd ed, 1988 (Parts C & D, Vol I)

[Unified lst Edition of Parts A-D, 1981, University Press of America]

International Traffic Control Devices, 2nd ed, 2004 (Part E, Vol II, Further Studies in T-M) (1st ed, 1984)

International Railway Signals, 1991 (Part F, Vol II)

International Aero Navigation, 1994 (Part G, Vol II)

T-M General Classification, 2nd ed, 2003 (Part H, Vol II)
(lst ed, 1995, [3rd ed, Projected])

Transportation-Markings Database:
Marine, 2nd ed, 2007 (Part Ii, Vol III, Additional Studies in T-M)
(1st ed, 1997)
TCD, 2nd ed, 2008 (Part Iii, Vol III) (1st ed, 1998)
Railway, 2nd ed, 2009 (Part Iiii, Vol III) (1st ed, 2000)
Aero, lst ed, 2001 (Part Iiv) (2nd ed, Projected)
Composite Categories Classification & Index, lst ed, 2006 (Part Iv, Vol III)
(2nd ed, Projected)

Transportation-Markings: A Historical Survey, 1750-2000, 2002 (Part J, Vol IV, Final Studies in T-M)

A Truly Integrative Transportation-Markings [Alternate Title: *Transportation Markings as an Information System;* Second Alternate Title: *Transportation Markings as a Communication System* (Part K, Vol IV, Projected)

Transportation-Markings General Table of Contents with Index, 6th ed, 2008 (lst ed, 2002; 2nd edition, 2003; 3rd ed, 2004, 4th ed, 2005, 5th ed, 2006)

Dedicated to my Grandparents:

Catherine Abbie Brady Sauers, 1878-1919
Frederick William Sauers, 1869-1944

Annie Donaldson Clearman, 1879-1966
Frederick William Des Coudres Clearman, 1871-1968

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Library of Congress Cataloguing in Publication Data [lst ed]
Clearman, Brian
Database of transportation-marking phenomena : additional studies
/Brian Clearman.
p. cm. -- (Transportation-markings: v. 3 = pt. 1)
"Monograph series."
Includes indexes.
Contents: i. Marine -- ii. TCD -- iii. Rail -- iv. Aero
1. Transportation-markings--Databases. I. Title. II. Series:
Clearman, Brian.
Transportation-Markings : v. 3.
TA 1245. C56 1984 vol. 3.
629.04'5 a
[629.04'5]--DC21

97-25496
CIP

TRANSPORTATION-MARKINGS DATABASE:
RAILWAY SIGNALS, SIGNS, MARKS, MARKERS

PREFACE

The T-M Database (Parts Ii, Iii, Iiii, Iiv, Iv) draws together the several dimensions of Transportation-Markings. It shares this drawing together function with the General Classification (Part H). Perhaps paradoxically both Parts draw together by focussing on the individual T-M entity. The Database displays the unity and commonality of T-M by presenting each element in its separate state. Yet in that process the full panopoly of T-M is unfolded including that shared and connected state.

There are thousands of Transportation-Markings. In addition there are many variant forms, alternate 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 unit of safety of whatever kind. The variety and diversity points 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 intereact and explain one another.

The Database examines the four modes of rail, road, aero, marine T-M safety aids in separate studies that remain components of the T-M Database. The amount of labor required to prepare the Database precluded assembling all the modes of T-M in a single volume. A hoped-form composite edition may not be feasible since the T-M Database covers well over 1,000 pages. The initial study examined Marine Aids to Navigation while the second focussed on Traffic Control Devices. Both of those studies have now appeared in a second edition. This segment is the second edition of Railway Signals. This aspect lacks an overarching term though Signals often includes other form of railway safety aids. Signs, Marks, Markers have been added to Signal in order to form a more complete title. A second edition for Aero Navigation Aids is projected.

A fifth unit for the T-M Database has been added in the form of a Composite Classification and Index of terms appearing in the four earlier modal studies. That unit will also require a second edition. It is possible that the Composite study will

be part of an informal troika that includes the integrating elements of one additonal edition of the General Classification, and the hoped for final study of T-M as a communication system.

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 inclusion of various kinds of T-M includes 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 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 consititutent elements. The end results is an overarching term that encompasses all forms of safety aids including those that incorporate Mark, Marker, or Marking in their names.

Frederick Crewes notes in his *Random House Handbook* that new compound nouns are often hyphenated. New compound nouns require the hyphen in order to signal to users that the resulting term is aunit not two independent words that exist side by side which can be split apart without significant damage to the meaning.. Developed compound nouns may retain the hyphen, become one word or simply drop the hyphen without losing its character. But a compound noun in its earlier stage requires the hyphen. Regretably, only after a dozen years did it become apparent how much confusion was generated by T M without the hyphen. Hopefully a clearer and more emphatic Transportation-Markings can result.

Classification has been a vital part of T-M from the beginning of these studies. In fact, the *General Classification*, Part H, is little more than a collection of classifications. It was originally intended that the Database would employ the classification system of Part H extensively. This was regarded as a reasonable expectation since the classification was heavily influenced by the primary studies.

But the use of the classification for 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 signficance 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 Iiii. 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 revision 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 yers the classifications of T-M have been "revisted" many times. Now a further Classification Revisited Redux is required.

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

The Acknowledgements for this second edition are those of the first edition.

ABBREVIATIONS

AAR SC 1965	Association of American Railroads Standard Code
AAR SM 1987	Association of American Railraods Signal Manual
AREA 1929, 1987-88	American Railway Engineering Association
ARSPAP-H, -SS, -D	-SAI, -SAI, -LSLSL, -MEMI, -I, -PES American Railway Signal Principles & Practices: History; Semaphore Signals; Definitions; Symbols, Aspects & Indications; Interlockings; Light Signals & Lighted Signal Lamps; Mechanical & Electro-Mechanical Interlocking, Principals & Economics of Signaling
ANR	Australian National Railways: See Australia, South Australia
ATT	Atlantic Track and Turnout
AZD	Czechoslovakia, Routing Interlocking
B & O 1927	Baltimore and Ohio Catalogue
B & O	United States, Baltimore and Ohio Railway
B & M 1981	Brigano & McCullough
Canada	UCOOR, Uniform Code of Operating Rules
CRIP	Chicago, Rhode Island & Pacific Railroad
ERS	-H, -C, -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, Great Peninsular General Rules
K & T 1988	Kuebler and Tarbox
K & W 1963, 1978	Kitchenside & Williams
KNR	Korean, Korean National Railways

M & H	McKensie & Holland
NSW R	Australia, New South Wales Railways: SI, SI-SL, ST. I., Signalling
NTL/TRT	National Transportation Library/Transportation Research Thesaurus
Queensland R	Australia, Queensland Railways, FS, SS-EL, SS
REMC 1948	Railway Engineering & Maintenance Cyclopedia
RGS 1981	Portugal
RENFE 1978	Spanish, Signal Codes
RSD 1911	Railway Signal Dictionary
RONT	Railway Object Name Thesaurus
SA GA	South Africa, General Appendix
SA BBB	South Africa, Basic Building Blocks of Mechanical Signalling
SA SSS	South Africa, Signalling Standards
SA TWR	South Africa, Train Working Regulations
SAR	Australia, South Australian Railways
UAR	Union of African Railways, Draft International ...
UIC LGTF	Union Internationale des Chemins de fer, Lexique General des Terms
UIC-COST	UIC, Collection of Signal Terms
UK Military	UK Military, Military Engineering
UN 1954	United Nations Technical Assistance Organization
URO	United Railway Organization
Victoria R	Australia, Victoria Railways
VGR	Australia, Victoria Government Railways
Western Australia R	Australia, Western Australia Railways

CHAPTER ONE

GENERAL RAILWAY SIGNAL TERMS

1A Indexes: Categories & Alphabetical
  1A1 Categories Index

General Railway Signal Terms (1B)
  Overarching Signal 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 Signals
    Fixed Railroad Signals
    Fixed Signaling
    Fixed Signal System/Fixed-Signal System
    Fixed Trackside Signal
    Fixed Wayside Signal/Fixed Wayside Systems
    Line Signalling System
    Lineside Equipment/Lineside Signal/Line-Side Signal/Lineside Signalling/
      Lineside Visual Signal/Lineside Fixed Signal/Line-Side Signaling
    Line-side Signal/Line-side Signaling
    Rail Signals
    Railroad Visual Signals
    Railway 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
Visual Lineside Signal
Wayside Signal/Wayside Signal System/Wayside Signals & Controls/Way-side Signals
Wayside Signaling
Other Overarching Terms (1B1 c))
Automatic or Remotely Operated Signals
Fixed Trackside Signal/Fixed Trackside Color Light Signal
Immovable Signals
Mechanical Automatic Signals
Mobile Signals
Motion Signals
Night Signal/Night Signaling
Nocturnal Signals
Optical Signals/Optical Signs & Signals
Patent Signals
Rail Signals
Railway Visual Signals
Roadway Signals
Stationary & Fixed Signals
Trackside Signalling/Trackside Signals/Track-Side Signals/Track Side Signals/Trackside Railroad Signals/Trackside Railroad Signaling/Track Side Signalling System
Track Signaling
Trackside Visual Signalling
Train Light Signals
Visual Lineside 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 Light Signal
- Electric Signal/Electric Signal System/Electric Signaling/Electric Signalling/ Electrically-Operated Signals/Electrically Operated Signals
- Electro-Gas Signal
- Electro-Mechanical Ground Signal/Electro-Mechanical 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
- Mechanically Operated Signals
- 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 Signals/Mainline Signal/Mainline Signaling & Control
- Primary Signal
- "Universal" Signal
- Symbol Information Processing

Possible Overarching Terms-Miscellaneous (1B2 c))
- Functional Signal System
- Rail Aids
- Railroad Traffic Control Devices
- Safe Working/Safeworking/Safe-Working/Safeworking Appliances
- Safety Aids
- Safety Signals
- Signal-&-Control Systems/Signal & Control Systems

Signal & Switch Systems
Signalling Devices
Trackside Devices
Trackside Railway Visual Signalling Systems/Trackside Visual Signalling
Trackside Warning Signals
Train Protection Equipment
Train Signals & Controls
Visual & Audible Signals
Wayside Devices

Primary Overarching Terms in Other Languages (1B3)

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

General Note
Signal
Signaling/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
Bridge Mast
Bridge Structure
Cantilever Branch Post
Cantilever Structure
Doll
Doll Pole/Doll Post

Doll Signal
Finials/Signal Finials (Flat Cap/Parachute Type/Pinacles
Fresnel Marine Type Lens
Gantry/Signal Gantry
Ground Signal Lamp
Lamp
Lattice Post Bracket Signal/Lattice Post Signal
Left-Hand Bracket Signal
Lens
Mast
Mechanism Cover
Pivot Light
Roundel
Signal Bracket
Signal Bridge
Signal Dolls
Signal Equipment
Signal Glass
Signal Glassware
Signal Head
Signal Lamp
Signal Lenses
Signal Mast
Signal Mechanism
Signal Post Cap/Signal Post Finial
Tubular Steel Bracket Signal
Visual Display Unit

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Lamp Out Repeator
Light Indicator
On/Off Indicator
Repeator

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-Electric Semaphore Repeator
-Signal Arm Repeator
-Slot Repeator
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Yellow/Red, Green/Red, Red/Green
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White
Amber
Yellow-Orange
Orange
Purple & Violet
Lunar White
Spatial Configurations (1C1 b) 4))

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

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- General Note

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Two Aspects Terms (1C2 b) (35 Forms)
Three Aspect Terms (1C2 c) (46 Forms)
Four Aspect Terms (1C2 d) (22 Forms)
Five Aspect Terms (1C2 e)) (5 Forms)
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- Automatic Colour Light
- Multi Aspect (10 Forms)

Cab Signal Aspect
Day & Night Aspect
Flashing Aspect
Luminous Aspect
Position Light Aspects/Position-Light Signals
Stop-&-Proceed Aspect
APB Signal with 3 & 4 Aspects
Three/Four Aspects
Three/-Four Aspect Signal Systems
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Primary Forms (1C3 a))
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Line Clear
Proceed Signal
Caution Signal
Approach Signal
Stop Aspect/Stop Signal
Danger/Danger Signal
Preliminary Caution Signal
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Limited Approach Signal/Medium Approach Signal/Medium Clear/ Medium Advance Approach Signal [US only]/Medium Approach Slow Signal[US only]/Slow Approach Signal/Restricting Signal/Restricting Aspect/Restricting Indication
Approach Limited/Approach Limited Signal/Approach Medium/Approach Medium Signal/Approach Slow Signal/Advance Approach Medium Signal/ Advanced Approach Signal
Stop & Proceed Signal/Stop-&-Proceed/ Grade Signal/Station Protection Signal/Take (Or Leave) Siding 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 Route
Approach Medium
Clear-Diverging
Restricting
Spring Switch
Slow-Clear
UCOOR:
Clear
Advance Approach
Diverging
Approach Medium
Approach Diverging Approach Medium
Approach Diverging
Diverging Approach
Low
Stop & Proceed
Stop
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- 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 Signals
- Coligny-Welch Signal Lamp
- Dead Signal
- Fixed Stop Signal
- Home Signal/Home-Signal
- Inner Home/Outer Home
- Intermediate Block Home Signal
- 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
Advanced Starter/Advanced Starting Signal/Advanced Starting Signal
Outer Advance Signal
Section Signal
Starter Semaphore/Advanced 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
Signal Distant/Distant-Signal
Warner Signal
Warning Signal
Outer Distant Signal/Inner Distant Signal/Intermediate Distant Signal/Second Distant Signal
Power-Operated Distant Signals/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 Signals
Intermediate Block Signals
Intermediate Signal
Interlocking Signals/Signals, Interlocking
Permissive Signal
Semi-Automatic Interlocking Signals
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/Horns
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 Indicator/Stencil Route Indicator/Route Indicator Stencil Light
Directional Route Indicator
Low Speed Route Indicator
Shunt Route Indicator
Theatre-Type Route Indicator/Theatre-Type Route Indicator/Theatre Multi Lamp/Route Indicator
Multi-Lam 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
Platform Starting Signals
Precaution Signals
Protecting Signals
Repeating Signal
Repeater Signal
Repeat Signal
Semaphore Repeater
Banner Repeater Signal
Banner-Repeating Signal
Electric Repeater Signal
Fog Signal Repeater
Signal Repeater
Tunnel Signal
Tunnel Junction Signal/Tunnel Repeater Signal
Tonnage Signal
Grade Signal
Co-Acting Signal
Co-Acting Arms
Protection Signal
Yellow Ground Disc

Terms in Combination:

General Note
Warner & Home
Warner Home & Starter

Warner Home Starter & Advance Starter
Outer Homer & Starter
Outer Home Warner Starter & Advanced Starter
Subsidiary Signals (1D2)
Overarching Term (1D2 a))
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Colour Light Points Indicator
Electric Catchpoints Indicator
Electric Point Indicator
Facing Points Indicator
Mechanical Points Indicator
Points & Indicators
Points Indicator
Points Signals/Signal Points Indicator
Points Indicator--Chevron Type/Points Indicator--Arrow Type
Switch Indicator
Trap Points Indicator
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Signal for Shunting/Signals for Shunting Movements
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Ground Shunt Signal/Shunting Ground Disc
Mechanical Shunting Signal
Position Light Shunt/Position Light Shunt Signal/Shunt Position Light/ Shunt Signal (Position Light)

Power-Operated Shunt Signal
Dwarf Shunt/Shunt Dwarf
Shunt Light/Shunting Light

Functioning-Related Shunting Signal Terms (1D2 c) 3))

Backing Signal
Calling-On Signal
Close-Up Signal
Draw-Ahead Shunt/Draw-Ahead Signal/Draw-Ahead Position-Light Subsidiary Signal
Elevated Shunting Signals
Facing Shunt Signal
High Shunting Signal
Humping Signal/Hump Shunt Signal
Independent Shunt Signal
Limits of Shunt Signal
Main/Shunt Signal
Miniature Arm Shunting Signal/Miniature Arm Shunt Signal
Route Indicating Signal
Running Shunt Signal
Running Subsidiary Shunt Signal
Set-Back Signal
Shot Shunting Signal
Shunt Ahead Signal/Shunt-Ahead Signal
Shunt Route Indicator
Ground Signal
Sub-Shunting Signal
Subsidiary Shunting Signal
Siding Shunt Signal
Warning Signal
Yellow Shunt Signal

Siding, Train Yard & Other Signals (1D2 d))

Closing-Up Signal
Goods or Siding Signal
Hump Signal/Humping Signal
Leave Siding Indicator

Marshalling Yard Signal
Outlet Signal
Siding Signal
Taking Siding Signal/Take Siding Indicator
Yard Exit Signals
Dead-End Signals
Directing Signals
Terminal Signal

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All Right Signal
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Permissive Signal
Permissive Stop Signal
Proceed Signal

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Arrival Signal
Deceleration Signal
Dragging Equipment Signal
Intermediate Signal
Outer Signalling
Platform Line Signal
Reversible Road Warning
Snow Shed Territory with Color Lights
Slide Detector Fence
Station Departure Color-Light Signal
Subsidiary Signal
Temporary Signal
Track Occupancy or Departure Signal
Trolley Line Signal
Yard Track Signal

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Block System of Signals
Block System Working
System, Block Signal
Block System
Block Working/Block-Working
Block
Block or Space Interval/Space or Block System
Blocking Signal
Fixed Block Signal System/Fixed Block/Fixed-Block/Fixed-Block System
Advanced Fixed Block/Advanced Fixed-Block
Closed Block System
Electro-Pneumatic Block Signal System
Manual Block Signal Systems (1E1 b))
Block-Manual
Computer-Assisted Manual Block System/Computer-Aided Block System
Manual Block/Manual Block System
Manual Block-Remote Control
Manual Block Signaling/Manual Block Signalling
Manual Block Signal System
Manual Block Signal System-Space Interval
Manual Blocking
Manual Signalling
Controlled Manual Block System (1E1 c))
Controlled Manual Block/Controlled Manual Block System/Controlled
Manual Block Signal System/System, Controlled Manual Block/
Controlled-Manual Block-Signalling/CMBS
Lock-&-Block System/Lock & Block System/Lock & Block/Block Locking

Sykes Lock & Block/Sykes Lock & Block System/Siemens-&-Halske Lock-& Block System

Automatic Block Terms (1E1 d))

ABS System/ABSS/ABS
Automatic Block/Automatic Block System/Automatic Block Signal System
Automatic Block Signalling
Automatic Block Signalling on Double Track
Automatic Block Signalling on Single Track
Automatic Electric Block System
Automatic Signalling
Auto-Manual Block System
Block with Centralized Equipment/Centralized Automatic Block
Code Track Automatic Block/Coded Current Automatic Block
Continuous Automatic Block Signaling
Control System for Single-Track Signaling
Double-Track Block Signalling
Multiple-Block Signaling
Non-Centralized Automatic Block
Roadway Automatic Block Signal System
Route with Automatic Working
Semi-Automatic Block Signalling
2/3/4 Block Signaling/2-, 3-, 4-Block Signaling
Three-Block Signaling
3-, 4-, 5-Indication Signaling
3-Block Signaling
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

Absolute/Permissive Terms (1E1 e))

Absolute Block/Absolute Block System
Absolute Block Working
Absolute Blocking
Absolute Permissive Block/Absolute Permissive Block Signalling/Absolute-Permissive Block/Absolute Permissive Block System

A.P. Block System
A.P.B. Scheme of Signaling/Absolute-Permissive-Block Scheme of Signaling/A.P.B. Control Systems
Absolute & Permissive Signaling on Double Track
Permissive Block/Permissive Block System/Permissive System
Permissive Block Working
Permissive Manual Block
Permissive Working
Supplementary Absolute Block
System, Absolute Permissive Block/Systems, APB

Other Block Terms (1E1 f))

APB, Automatic Permissive Block
Block Instrument
Double Line Block/Single Line Block
Kingsman Block System
Moving Block Signalling
Moving Block/Moving-Block/Moving Block Signal/Moving Block System
Nachod Signal System
Overlap Block Signal System
Overlap Scheme of Signaling
Radio Block/Radio Block System
Radio Control Equipment
Single Line Block Instrument
Telegraph Block/Telephone Block

Interlockings (1E2)

Interlockings
Interlocking Signalling
All-Electric Interlocking
All-Mechanical Interlocking
Approach Locking
Automatic Interlocking
Cabin Interlocking
Computer Interlocking
Electric Interlocking/Electrical Interlocking/Electrical Signal Interlocking
Electro-Mechanical Interlocking

Electro-Pneumatic Interlocking
Geographical Circuitry Interlocking
Interlockings, Relay Type
Interlocking Traffic Control System
Key Interlocking Signalling
Manual Interlocking
Mechanically-Interlocked Points & Signals
Mechanical Interlocking
Microlok/Microlok II
Power Interlocking
Relay Interlocking/Relay Interlocking System/All-Relay Interlocking
Remote Control Interlockings
Route Control Interlocking/Route-Control Interlocking
Route Interlocking
Satellite Interlocking
Sequence-Switch Interlocking
Signal/Point Interlocking
SSI Systems
Spoorplan Interlocking
Train Control Terms (1E3)
Overarching Terms (1E3 a))
Automatic Train Control
General Note
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
Communication (s)-Based Train Control/Transmission-Based Signaling (TBS)
Continuous Transmission Systems/Intermittent System
Control System
Intermittent Contact System of Train Control

Safety Control System/Train Operation Safety Control System
System, ATC
Train Control/Train-Control/Train Control System/Train-Control System
Signal & Control System
Telephone Train Control
Train Control System
Train Control Devices/Train-Control Devices
Train Control Equipment

Forms of Train Control (1E3 b))
Continuous Train Control System
European Train Control System
Intermittent Control
Continuous-Induction System
Miller Train Control
Intermittent Inductive Train Control
Continuous Automatic Train Control (CATC)
Continuous Train Control
Inductive Train Control
Train Control Systems, Devices & Appliances

Subdivisions of Train Control (1E3 c))

Train Stop (1E3 c) 1)
Mechanical Roadside Trip Type Stop/Trip Arm System
Coded-Continuous Train Stop System
Train Stop Devices
Trip-Stop Device/Automatic Trip Stop Device
Automatic Stop/Automatic Stop System
Train Stop/Train Stop System
Automatic Stop
Automatic Stop Equipment
Electro-Pneumatic Train Stop
Automatic Train Stop/Automatic Train-Stop/Automatic Train Stop System
Automatic Train-Stop Devices
Intermittent Inductive Train Stop
Motor-Operated Automatic Stop

Speed Control (1E3 c) 2))

General Note
Speed Control/Speed Control Devices
Speed Supervision-TVM
Automatic Speed Supervision (ASR)
Traffic Control (1E3 c) 3))
Control/Train or Traffic Control
CTC (1E3 c) 4))
Electronic CTC/CTC & Remote Control System/Block & Electronic CTC
Coded CTC
Centralized Traffic Control (CTC)/CTC Systems
CTC Railway Signaling System
Way Interface System
Specific Named Systems (1E3 d))
Train Location System
Train Situation Indicator (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
ACSES - Advanced Civil Speed Enforcement System
ASFA
ASR, Automatic Route Setting
ATB/PLP
ATIS, Advance Traffic Information System
ATLAS
COMTRA/COSMOS/SMIS
EPLRS
Flexiblok System
ICTC Systems

Incremental Train Control System
Incremental Train Control System (ITCS)
Microblok
Microlok/Microlok II
Positive Train Control/Positive Train Control System/PTC
PTS= Positive Train Separation
RIT, Train Management 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
On-Board Speed Control System
Phar
Ultrablok

Miscellaneous Terms (1E3 e))
Driver Warning System
Micro Processor-Based Signalling System
Normal Danger System
Occupation Protection Equipment (5)
Electric Occupation Key
Engine Shunting Voucher
Engineering Token
Lockout System Equipment
Patrolman's Lockout Device
Signalling Systems for Other Staff (6)
Signals from Platform Staff To:
Driver/Guard
Passengers
Signalman

Station Staff Warning Systems
Trackside Staff Warning Systems
TBS, Transmission-Based Signalling
TOPS Equipment
Tracker Ball (IECC)
Trackside Staff Warning Systems/Trackside Staff Warning Systems/
Train Operated Warning System
Train-Operated Points System

1A2 Alphabetical Index

1B General Railway Signal Terms

1B1 Overarching Terms

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 not be the case (at least in standard dictionaries). A significant problem is the term Signaling/Signalling (1 "L" in US English; 2 in British). Dictionaries may allow for the word Signal to have either a noun or verb function while adding -ing or -ling is seemingly a verb form only. That does not appear to be the case with rail practioners. 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 as well. 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.

SIGNAL. The various Signal terms constitute nearly half of all terms in surveyed literature in the lst ed. About 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, devices of some complexity and which are 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 1978, -2, and -3, 1979, ARSAP-D 1965

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 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 (NSW)

SIGNAL APPLIANCE. A term found most often in the US. 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 Signal in itself is a component of Signal Appliance. Camp includes a section on "Switching Apparatus and Appliances" that 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 without an definition. Perhaps it is viewed as self-explanatory.
References: Camp 1903, Nock 1962; see 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, UK and US have included the term. US FRA RAR includes the phrases (mostly from US Code) that describes Signals and control systems and associated appliances, devices,

methods of systems. It is a stock phrase relating to Signals and instruments associated with Signals.
References: SA BBB 1974, FRA RAR 1984, 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 (Australia) 1958, FRA RAR 1984, Greenfield 1998, Harrigan 1962, Romania Raises 1980, Zoetardt 1994, Excursion to ... 1965

SIGNAL SYSTEM, DEVICE, OR APPLIANCE. FRA RAR employs this term as an umbrella term. See also individual terms.
Reference: FRA RAR 1984

SIGNAL IMPLEMENT. A rare term found in Swedish practice. It is a component of Signal Appliance which includes Fixed, Signals, Signal Implements and Signal Signs. Implement is not further described. It is included here because it is prefaced with the core term of Signal.
Reference: Nock 1962

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

FIXED SIGNAL. The 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 a common term in codes. In US 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; that is a more frequent usage than seemingly common terms such as Lineside, Railway, and Wayside Signals.
References: Blythe 1951, Mashour 1974, Ellis 1966, Phillips 1942

FIXED RAILROAD SIGNALS. Only a single surveyed sources includes the

term. It offers greater specificity than the term Fixed Signals.
Reference: B & M 1981

FIXED SIGNAL SYSTEM/FIXED-SIGNAL SYSTEM. FRA's use of this term which refers to original Signals of a fixed position (1832). REMC adds a hyphenated version.
Reference: FRA-3 1979, REMC 1948

FIXED SIGNALING. Term refers to a group of signals providing coverage over a specific territory. The previous term seemingly has the same meaning.
Reference: Grafton 1896

FIXED TRACKSIDE SIGNAL. A variant term of marked specificity.
Reference: Kanner 1992

FIXED WAYSIDE SIGNALS/FIXED WAYSIDE SYSTEMS. Only FRA includes these terms. Specificity is increased by combining three of the four most used terms.
Reference: FRA-2 1979

LINE SIGNALLING SYSTEM. This is an overarching term for Lineside Signals; it is not a term for a specific system.
Reference: ERS-H 1995

LINESIDE EQUIPMENT/LINESIDE SIGNALS/LINE-SIDE SIGNAL/ LINESIDE SIGNALLING/ LINE-SIDE SIGNALING/LINESIDE VISUAL SIGNAL/LINESIDE FIXED SIGNALS. Lineside Signals, unlike a variety of terms, is formally defined: "signals of fixed or variable aspect permanently fixed along the track or in stations or yards." (UIC *CST*). The various lineside terms are largely UK in origin and usage. However, less than 5% of surveyed terms are found under this heading for the first edition. The terms can include Signs and Markers. Lavallee adds Fixed to the basic term, and K & W adds Visual. GEC speaks of Lineside Equipment which can have two possible meanings: Trackside Signals, and a broader meaning that includes cables, conduits, pathways in addition to Signals. Signaling can have meaning of verb though very often it is a

noun in railway publictions. Signaling can refer to an integrated system of signals though Signal may have a similar meaning.
References: Lavallee 1953, K & W 1963, GEC 1974, Solomon 2003 (hyphen forms)

LINE-SIDE SIGNAL/LINE-SIDE SIGNALING. Variant terms for Wayside Signal/-Signalling.
Reference: Solomon 2003

RAIL SIGNALS. A more terse version of basic term of Railway Signal.
Reference: Vanns 1997

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/Signaling as a system of Signals.
References: FRA-3 1979 (lst term), Mashour 1974 (2nd), Greenfield 1998 (3rd), With Fast .... 1998 (4th), REMC 1948 (5th), Tansley 1985 (6th).

RAILROAD VISUAL SIGNALS. The contributor has Visual Signals as well. This may be a more explicit version.
Reference: Tansley 1985

RAILWAY FIXED SIGNALS. A possible alternate to Fixed Railroad Signals. It suggests British English though in a US source.
Reference: Calvert 2004

RAILWAY SIGNALS/RAILROAD SIGNALS. General Note: Railway and Railroad are background terms that 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 US which continues into the present. Railway is exclusive, or nearly so, in UK though seemingly railroad was in use at an earlier time. Railway Signals and Railroad Signals appear to be synonyms.

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

Classification: #51
Form of Device: Railway all-lighted Signals
Operation: An all-lighted Device that displays alternating messages according to agreed-upon patterns.
Comments:Railway Signal is employed in T-M monographs titles and employed for two-digit designations in the classification for lighted, partially-lighted, unlighted and sound devices. It can be viewed as an encompassing term for all other terms. Signals can be single or multiple-lens color light, single- color in a semaphore arm, or mult--color semaphore arm mechanisms.
References: ARSPAP-D 1965, Phillips 1942, K & W 1963 among many sources

RAILWAY SIGNALING/RAILWAY SIGNALLING/RAILROAD SIGNALING. These terms are apparently meant as nouns, and refer to a system of Signals that includes the physical apparatus and the message dimension. These terms often lack definitions. The word System is absent though it seems to imply suggest systems of integrated signals working together. Signaling is the preferred US spelling though Signalling is sometimes used (and it appears secondarily in various dictionaries). Signalling is exclusively used where British English is preferred.
References: US&S 1984 (lst term), Sterner 1978 (2nd), B & M 1981 (3rd term)

RAILWAY SIGNALING & CONTROL SYSTEMS/RAILWAY SIGNALING & CONTROL. Possible overarching terms that encompass all Signals and related means of control.
References: US&S 1986 RA (lst term), Cunliffe 1968 (2nd term)

RAILWAY SIGNALING, CONTROL & COMMUNICATION SYSTEMS. A more encompassing term that partially refers to Signals and their use.
Reference: GE Cites US&S ... 10-1991 RA

VISUAL LINESIDE SIGNAL. The term is a more explicit form of the basic term. It may have been coined to distinguish it from other signal forms; possibly it is a fully-lighted Signal in contrast to a semaphore form.
Reference: Vanns 1997

WAYSIDE SIGNALS/WAYSIDE SIGNAL SYSTEMS/WAYSIDE SIGNALS & CONTROLS/WAY-SIDE SIGNALS. A variety of references are made to these terms yet definitions are rare. FRA employs the term in its publications though it does not define it. Wayside Signal System suggests a group of interconnected signals rather than a single unit. The third term is a broader term encompassing Signals and control mechanisms. Wayside forms are relatively common yet less than 10% of surveyed sources for the first edition include these terms. A discussion in one website includes Way-Side Signal. This term seemingly does not appear elsewhere though it remains plausible.
References: FRA-1 1978, -3 1979, US&S 1984, Gaum 1992, Yamanouchi 1992, Trainorders.com.

WAYSIDE SIGNALING. Term appears in an article about electronic systems. It may provide an explicit distinction between electronic and on-site Aids.
Reference: Vantuomo 1993

1B1 c) Other Overarching Terms

AUTOMATIC OR REMOTELY OPERATED SIGNALS. A descriptive phrase rather than a formal name. It refers primarily to electrically powered devices. Term added here because of an overarching appearance.
Reference: Calvert 2004

FIXED TRACKSIDE SIGNAL/FIXED TRACKSIDE COLOR LIGHT SIGNALS. Kanner offers a variant of singular forms. The second term, from Chapter 2B, is included here because of the prefatory term.
Reference: Kanner 1992

IMMOVABLE SIGNALS. This term is a translation from a French source. It is

not known if the translator selected immovable instead of fixed, or whether the writer selected the French form of immovable rather than fixed. Both terms are similar in meaning.
Reference: Daumas 1970

MECHANICAL AUTOMATIC SIGNALS. A term of Calvert referring mostly to treadle-operated Signals from the 19th c. It is included here because of its overarching appearance.
Reference: Calvert 2004

MOBILE SIGNALS. A term from Calvert for non-fixed Signals. Hand-operated acoustical devices (such as flares) and hand signals with flags and lamps are included. It is included here since it has at least a partially overarching character.
Reference: Calvert 2004

MOTION SIGNALS. Term for Signals involving physical movement. Wig-wag Signal is a major example.
Reference: Calvert 2004

NIGHT SIGNALS/NIGHT SIGNALING. Both terms are from the 1890s. They refer to the development of appropriate colors and quality for Semaphore Signals at night.
References: Grafton 1896 (No. 1), Breckenridge 1967 (No. 2)

NOCTURNAL SIGNALS. A early 19th c. term in UK publication. It refers to Night Signals in general.
Reference: Calvert 2004

OPTICAL SIGNALS/OPTICAL SIGNS & SIGNALS. A possible overarching terms though rarely employed. It is an atypical term in a work of psychological study of visual messages and human perception of messages. It may be an overly inclusive term unless placed within a railway context.
Reference: Mashour 1974

PATENT SIGNALS. Calvert's Signal studies relied heavily on patents. These

Signals ranged from mid-19th c. to later times. Apparently none of this category of Signals actually saw regular service and only a few had exposure to rail operations.
Reference: Calvert 2004

ROADWAY SIGNALS. Seemingly only FRA publications include this term among surveyed sources. The term is also found in a federal review of rail Signals rules and practices. Roadway Signals appears to be a synonym of unknown parentage. It suggests street and road Signals more than railroad counterparts.
References: FRA-3 1979, FRA RAR 1984

STATIONARY & FIXED SIGNALS. This is a 19th c. US 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/ TRACKSIDE RAILROAD SIGNALING/TRACK SIDE SIGNALLING SYSTEM. The basic term is a plausible overarching term yet only infrequently used. It can be viewed as the equivalent of Wayside Signals.

Classification: #511
Form of Device: All-lighted mainline Signal
Operation: An all-lighted device that displays alternating messages according to color and position of lenses.
Comments: The basic term has been employed in the classification to designate primary or mainline Signals.
References: Challenge ... 1983 (lst and 2nd terms), Encyclopedia of Thailand (#2), Zoetardt 1994 (#3), Kanner 1992 (#5), Kanner 1992 (#6), Whitehouse (#7),

TRACK SIGNALING. A variant form that is seemingly similar in meaning to the basic term.
Reference: FRA-1 1978

TRACKSIDE VISUAL SIGNALLING. Term can be a more explicit version of the basic term. It may possibly distinguish from Signals that are not of a visual nature.
Reference: Tansley 1985

TRAIN LIGHT SIGNALS. A singular alternative to Railway Signals.
Reference: Jia-lin 1981

VISUAL SIGNALS/VISUAL SIGNALLING/VISUAL SIGNALLING SYSTEM. A plausible overarching terms but possibly overly inclusive (unless placed in the context of Railroad Signals). Most references are UK in origin. It is not employed often by 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 1996, Blythe 1951, Nock 1962, GEC 1974, Allen 1962, Tansley 1985

WARNING SYSTEM. This is a Level/Grade term since it has the appearance of an overarching term; it is retained here as a cross reference.
Reference: Miller 1997 RA

1B2 Possible/Partial Overarching Terms

1B2 a) Energy & Technology-Related Terms

General Note. A variety of terms include mention of the energy source 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 are therefore included here.

A.C. SIGNALING SYSTEM. This term includes the power source though briefly.
Reference: REMC 1948

ALL-ELECTRIC POWER SIGNALLING. A UK term from late 19th c./early 20th c. Possibly coined to distinguish a power source that was entirely electric

from forms combining electricity and other sources such as pneumatic action.
Reference: Vanns 1991

ELECTRIC LIGHT SIGNAL. Term may have been used to distinguish it from older oil lamp powered Signals.
Reference: Solomon 2003

ELECTRIC SIGNAL/ELECTRIC SIGNAL SYSTEM/ELECTRIC SIGNALING/ ELECTRICAL SIGNALLING/ELECTRICALLY-OPERATED SIGNALS/ ELECTRICALLY OPERATED SIGNALS. These terms may suggest all-lighted forms of Signals in contrast to mechanical forms such as Semaphore Signals. Yet they can also denote Signals of a wide range that are powered by electricity. For example, Queensland Railway explicitly refers to both Color-Light and Semaphore Signals under the heading of Electric Signals.
References: Queensland R FS, Turkey, B & M 1981, Starkey 1944, Wikinfo 2005

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

ELECTRO-MECHANICAL GROUND SIGNAL/ELECTRO-MECHANICAL SIGNAL. Both Signals activated by electric motor or solenoid.
Reference: RONT 2001

ELECTRO-MECHANICAL SYSTEM. A term employed by few sources. It is a possible overarching 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 seemingly employs it 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.

References: ARSPAP-H 1953, UN 1954

ELECTRO-PNEUMATIC SIGNAL/ELECTRO-PNEUMATIC SIGNALLING. The first term from ARSPAP describes a Semaphore Signal that employs 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. The second term refers more to systems of Signals though it is likely that a single Signal is also integrated with other Signals.
Reference: ARSPAP-H 1953, Vanns 1997

LOW-PRESSURE ELECTRO-PNEUMATIC SIGNALLING. Vanns includes the specifics of process within the title or perhaps the title is descriptive rather than formal.
Reference: Vanns 1997

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 1979, ARSPAP-H 1953, Phillips 1942, Blythe 1951

MECHANICAL SIGNAL/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.
References: UN 1954, UAR 1983, South Korea (Korea), Turkey

MECHANICALLY OPERATED SIGNALS. This term has specific reference to manually operated Semaphore Signal though it has the appearance of a general term. The source included Electrically Operated Signals as well.
Reference: Wikinfo 2005

MOTOR-OPERATED DISTANT SIGNALS. A partially morphological term attached to a non-differentiated energy source.
Reference: Vanns 1997

POWER OPERATED SIGNALS/POWER-OPERATED SIGNALS/POWER SIGNALLING/POWER-SIGNALLING/POWER-WORKED SIGNALS. These terms refer to Signals operated by various energy forms: compressed air, hydraulics, electricity.
References: Jackson 1991, NSW Signalling, Harrigan 1962 VR, ARSPAP-H 1953, -SS 1948, ANR 1947

1B2 b) Physical-Morphological Overlapping Terms

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

MAIN ROUTE SIGNALS. This term is equivalent to Main or Main Line Signals.
Reference: Vanns 1997

MAIN SIGNALS/MAIN LINE SIGNALS/MAINLINE SIGNALS/MAINLINE SIGNALING & CONTROL. These terms appear to occupy both the physical and morphological dimensions. For US&S the term Mainline Signal largely refers to equipment (though the forms of the equipment and location frame the message possibilities and are 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 physical.
References: US&S 1982, US&S 1984, ERS-B 1995

PRIMARY SIGNALS. This term from Mashour is rarely employed though included for his psychological studies. Primary is placed in a context of Wayside Signals. Wayside may tend toward the physical while Primary is more morphological.

Reference: Mashour 1974

"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 one; yet some measure of the physical may be present.
Reference: Nock 1962

SYMBOL INFORMATION PROCESSING. This term is more of an abstract concept than an operational term. It describes what takes place in a Signal that creates and emits messages. It more morphological than the physical dimension though the physical Signal is implied.
Reference: Mashour 1974

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 US railroads that run Amtrak trains.
Reference: FRA-2 1979

RAIL AIDS. Possibly coined by compiler. It is employed in a reference to the full spectrum of T-M forms.
Reference: Part J

RAILROAD TRAFFIC CONTROL DEVICES. Transportation Research Thesaurus (TRT) employs this as a basic category. However, TCD has represented safety devices for roads over a span of 70 or more years. And that specific meaning has become embedded in the term. Other sources also occasionally use the term in that broader sense. TCD could have achieved general use yet instead the more restricted term has dominated. And it can be questioned whether the meaning can become more encompassing. A brief internet search (June 2008) reveals few specific references of TCD to railroads. There are references to roads and rails which are often limited to road-rail crosssings.
Reference: NTL/TRT 1997

SAFE WORKING/SAFEWORKING/SAFE-WORKING/SAFEWORKING APPLIANCES. This collection of terms is from Australia. Actual definitions ae very much in short supply. The core term seems to mean either all methods for the safe operation (working) of trains whether full-scale signals, staff and tickets, methods of interlocking, etc. Or it refers to all safety-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.
Reference: VGR 1932, Bird 1972

SAFETY AIDS. Specific references are to track circuits and interlocking. Possibly a general term that includes Signals.
Reference: Chandrika 1998

SAFETY SIGNALS. Term distinguishes between Signals for train control and nearby lights that could be confused with railroad Signals.
Reference: Grafton 1896

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 the Signal function and thereby part of that role. This is a plausible overarching term for 1E.
References: Welty 10-1986, Armstrong 1981

SIGNAL & SWITCH SYSTEMS. This term is an early reference for interlocking. It may be a partial overarching 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 more limited, more specific.
Reference: ARSPAP-H 1953

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 1968

General Note. An attempt has been made in this study 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-CST 1972
Sinais Fixos: Portugal
Ortsfestes Signal: Germany, UIC-CST 1972
Segnale Fisso: Italy, UIC-CST 1972
'everst, utvrden, stalan, (Serbo-Croatian language)

TRACKSIDE DEVICES. Term for interlocking equipment as well as Signals. This term and Wayside Devices suggest a broad usage yet specific contents are frequently unclear.
References: Sterner, ud

TRACKSIDE RAILWAY VISUAL SIGNALLING SYSTEMS/TRACKSIDE VISUAL SIGNALLING. Terms may provide a contrast with non-visual forms.
Reference: Tansley 1985

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 US practices included a variety of similar systems.
Reference: ERS-H 1995

TRAIN PROTECTION EQUIPMENT. Systems for preventing two trains in one section at one time. Includes ATP, Block System Working, Emergency Detection Equipment
Reference: RONT 2001

TRAIN SIGNALS & CONTROLS. This term seemingly refers to Railway/ Railroad Signals rather than train-based communications.
Reference: US&S

VISUAL & AUDIBLE SIGNALS. A rarely employed term that encompasses the full range of Signals.
Reference: B & M 1981

WAYSIDE DEVICES. Term for variety of railway equipment including switches, crossing equipment and Signals. Possibly a general-use term that includes trackside Signals.
Reference: Welty 5-88, C & S ... 1996

1B3 Primary Overarching Terms in Other Languages

LIGHT SIGNAL

Senales Luminosa: Spain, Columbia
Segnale Luminosi: Italy
Segnale 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
Segnale Meccanico: Italy
Senal Mecanica: Spain
Mechanisch Sein: The Netherlands
Semnale Mecanice: Rumania

SEMAPHORE SIGNAL

Semaphore: Algeria

Semaforo: Mexico, Bolivia
Semaforul: Rumana
Segnali Semaforica: Italy
Semaphora: Spain
Armsein: The Netherlands
Seinpaal: The Netherlands
Semafor: Norway, Denmark, Sweden
Szemafor: Hungary
Opticki brzajar, (Serbo-Croatian language)
Siipiopastinten: Finland
Semaforach: Poland

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: The Netherlands
Signal Lumineux de Manoeuvres: France
Sinais de Manobras: Portugal
(Most terms are from UIC)

SIGNAL BOARDS

Senales Pantella: Spain
Klapboard: The Netherlands

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: The Netherlands
(All terms from UIC)

1B4 Signal Components

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

BRACKET POST. A structural means of supporting at least two adjoining Signals on one foundation.
Reference: King 1921

BRACKET MAST. A mast affixed to a Bracket Post.
Reference: King 1921

BRACKET SIGNAL. A Signal whose foundation is a Bracket Mast.
Reference: King 1921

BRACKET STRUCTURE. A single mast topped by a two-arm bracket with two Signals.
Reference: Kanner 1992

BRIDGE MAST. An upright mast atop a Signal Bridge.
Reference: King 1921

BRIDGE STRUCTURE. Structure with at least two vertical supports built over multiple tracks. It forms a structure for multiple signals.
Reference: Kanner 1992

CANTILEVER BRANCH POST. A form of Bracket Post so positioned that a Signal mast on post is in alignment with the relevant track.
Reference: King 1921

CANTILEVER STRUCTURE. Mast adjoined by single bracket.
Reference: Kanner 1992

DOLL. A short post for a Signal that serves as a Bracket Mast.Reference:
Reference: King 1921

DOLL POLE/DOLL POST. Both terms refer to a short doll or post atop a Signal Bracket. In this instance they lacked a Semaphore arm but included a lamp.. The unit indicated the presence of track between Signal and the track to which a regular Signal referred.
Reference: King 1921

DOLL SIGNAL. This is a Signal rather than a component though the support unit is part of the term. It is a Marker Light affixed to mast of another Signal. It indicates of a track without Signals positioned between track with Signals.
Reference: Kanner 1992

FINIAL/SIGNAL FINIAL. A cover that affords protection for an otherwise uncovered post top.The second term is more precise. RONT speaks of these caps as an "ornate embellishment" which describes many Victorian era decorative tops. Ront 2001, A & W 1991

A & W offers two variant terms:

FLAT CAP. A accurate description of a plain, flat cover.

PARACHUTE TYPE. That form is contrasted with this version. A &W notes that M & H supplied this ornament. Though a M & H ca. 1900 catalogue speaks of

PINACLES not Parachute forms. Pinaces are very much an ornamental design.

FRESNEL MARINE TYPE LENSES. A cylindrical-shape lens that can provide 360 degree illumination. This contrasts with many railroad lenses and roundels that have narrow coverage for a few degrees.
Reference: REMC 1948

GANTRY/SIGNAL GANTRY. Structure forming a foundation for Fixed Signals,
Reference: RONT 2001, King 1921, Jackson 1991

GROUND SIGNAL LAMP. NT within Signal Lamp. Refers to paraffin lamp employed in Lighted Ground Signals. It was a removable unit.
Reference: RONT 2001

LAMP. Individual light apparatus for one aspect. A Signal may have several such units.
Reference: Vanns 1997

LATTICE POST BRACKET SIGNAL/LATTICE POST SIGNAL. A & W includes a discussion of materials employed for Signals and supports. Lattice work steel structures were a common structural means for UK.
Reference: A & W 1991

LENS. A Lens is a specially designed glasswork that draws together light rays and arranges them in a specific pattern (beam). A reflector may augment the lens.
See Also: Roundel
Reference: REMC 1948

LEFT-HAND BRACKET SIGNAL. A Semaphore Signal that is mounted upon a lattice-work bracket fashioned in turn to a a vertical mast.
Reference: A & W 1991

MAST. Upright to which a Signal apparatus is attached.
Reference: King 1921

MECHANISM COVER. Housing for Signal apparatus.

Reference: King 1921

PIVOT LIGHT. NT [Narrower Term] within Signal Lamp category. Term refers to Light employed used in Position Light Signals for on and off aspects.
Reference: RONT 2001

ROUNDELS. A glass device in lens assembly that spreads light beams into a designed pattern. See Also: Lens
Reference: ARSPAP-D 1965.

SIGNAL BRACKET. A bracket that was offset from a post for supporting Signals.
Reference: King 1921

SIGNAL DOLL. A term that may be a more precise form of the basic term Doll. A & W makes specific reference to a Signal Doll as a mast atop a Signal Bridge.
Reference: A & W 1997

SIGNAL EQUIPMENT. Materials and equipment needed for Railway Signal System.
Reference: RONT 2001

SIGNAL POST CAP/SIGNAL POST FINIAL. Two variant terms for Finials.. RONT describes the former as as a "Protective cap." and the latter as "Decorative protective cap."
Reference: RONT 2001

SIGNAL BRIDGE. A structure built over multiple tracks and which provided a foundation for Signals.
Reference: REMC 1948.

SIGNAL GLASS. Glass designed and manufactured for Signal use.

Reference: REMC 1948

SIGNAL GLASSWARE. Term from Corning ad in REMC. It refers to designed and manufactured glass products from Signal lense to Lantern globes.
Reference: REMC 1948

SIGNAL HEAD A device (mechanical or electrical) with apparatus for producing/deploying Signal aspects.
Reference: Kanner 1992

SIGNAL LAMP. A Lamp that is positioned behind spectacle.
Reference: RONT 2001, A &W, 1991

SIGNAL LENSES. A more specific term than the general term Lenses.
Reference: REMC 1948

SIGNAL MAST. Portion of a Signal that supports the operating apparatus.
Reference: King 1921

SIGNAL MECHANISM. Signal apparatus that regulates changing of aspects in a power Signal.
Reference: King 1921

TUBULAR STEEL BRACKET SIGNAL. Steel mast of a tubular shape. Other elements of the unit were of prefabricated parts.
Reference: A & W 1991

VISUAL DISPLAY UNIT. A Screen for displaying various forms of information.
Reference: RONT 2001

1B5 Signal Confirmation

General Note. RONT includes a segment of Signal Confirmattion devices known either as Indicators or Repeaters. Some are in a Semaphore form and these are cross-references.

SIGNAL CONFIRMATION. These are "remote indicators" confirming Signal aspects or operation of Signal.
Reference: RONT 2001

ARM REPEATER. Displays arm position to Signal staff.
Reference: RONT 2001

LAMP OUT INDICATOR. Electric indicator that notes Signal lamp fault.
Reference: RONT 2001

LIGHT INDICATOR. No information given by RONT.
Reference: RONT 2001

ON/OFF INDICATOR. Signalbox instrument that indicates signal arm position.
Reference: RONT 2001

REPEATER. Signalbox indicator gives position of Semaphore arms when not seen from box.
Reference: RONT 2001

SIGNAL REPEATER.

ELECTRIC SEMAPHORE REPEATER. Electric powered indicator of Signal arms position in signalbox.

SIGNAL ARM REPEATER. Signalbox instrument giving Signal arm position.

SLOT REPEATER. Mechanical or electric indication of position of home and distant Signal slot interlocking.
Reference: RONT 2001

1C Messages: Aspects & Indications

General Note I. Messages are a very complex subject. Terms, colors, arrangement of colors, alternate configurations, the many railway systems conspire to defeat any brief (or not so brief) coverage of the subject. Since the Database is not intended to be a compendium of messages this coverage is restricted. The primary concern of this study are terms and definitions. Nonetheless, an effort has been to include colors and other message components for basic messages and their meanings. The actual railway signal codes would be needed in order to gain a fuller understanding of all of the permutations for any system.

General Note II. There are three segments for this sub-chapter: a) an examination of basic terms and colors in use; b) a review of aspects. Aspects refer to the visual appearance of a signal. Often the aspects of a signal apparatus are attached to the basic term Signal thereby generating many additional terms; c) Finally, indications which refer to the meanings of the aspects (messages) are included.

General Note III. This coverage is of a general nature. It is more focussed on 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. Radio and sound devices also include messages. Special forms of all lighted signals (e.g., rows of lights, special arrangement of lenses, etc.) are noted in entries for physical forms. Color information is also included.

General Note IV. Morphology includes terms that refer to functions of signals in a system (e.g. Block Signals, Interlocking Signals) as well as specialized functions (e.g. Route Indicators). Messages are also part of morphological considerations though reviewed 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.
References: AAR SC 1965, UCOOR (US) 1968

ASPECT II. For ERS this has two meanings: either the visual appearance, or the meaning ascribed to it. ERS merges two separate meanings or perhaps it can be seen as bringing together two closely interrelated roles.
Reference: ERS-H 1995

ASPECT SEQUENCES. This term refers to 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 forms can be retained within the term Aspect.
Reference: ERS-H 1995

ASPECT, SIGNAL/SIGNAL ASPECT. These terms are more explicit versions of the basic term.
References: AAR SC 1965, ARSPAP-D 1965, FRA-3 1979

INDICATIONS. For North America this refers to the meaning ascribed to the visual appearance or aspect.
Reference: Henry 1942

SIGNAL INDICATION. This term is a further explication of the core term Indication.
Reference: AAR SC 1965

SIGNAL CODE. The book of rules governing the use of signals for a railway system.
Reference: See Part F for references to Signal Code.

b) Colors

(1) Basic Colors

General Note. Basic colors can be termed the Primary Signal Colors. White is somewhat uncertain among categories of colors. It is seemingly not a primary color for Breckinridge though it is beyond the a secondary level of usage for railways.
Reference: Breckenridge 1964, 1967

RED. This is a long-enduring color with a consistent message of danger with the meaning of stop as a necessary corollary.
Reference: Armstrong 1957, K & W 1978

GREEN. This color has a nearly universal meaning of Go or Proceed. However, it was only in the early 20th c. that it 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: ARSPAP-H 1953, Bronson (DEP) 1993, Mashour 1974, Nock 1978

YELLOW. This color finds considerable usage as a caution signal though not until the early 20th c. because of inadequacies in color science and manufacturing capabilities.
References: Allen 1952, Mashour 1974

WHITE. This color is considered among the less-used or specialized colors though it finds considerable usage and can be regarded as a fourth basic color in some situations.
References: New System RG 1884, Jia-lin 1981

2) Color Combinations

GREEN/YELLOW//YELLOW GREEN. This is the most common color combination; it is included by nearly half of the systems surveyed in Part F. And it also the most common combination in Europe. It is an economical fourth aspect since both colors are already in used. It can be employed for a somewhat restrictive indicator though within the proceed mode. Examples of that usage include Austria (40 km/h speed limit with G/Y), URO (40 km/h in that manner with flashing lights, GFFY a change from 40 to 120 km/h can be signified). G/Y

is less restrictive in North America than Y/G. This is less the case in Europe.
Reference: ERS-H 1995, AAR SC 1984, ARSPAP A & I 1956, Canada, UCOOR 1961, URO 1962

YELLOW/RED, GREEN/RED, RED/GREEN are other important combinations. though 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.

Other combinations include basic colors with a less used color.White is more often employed than other colors. (e.g., The Netherlands uses white but not yellow). Another combination is white and red which finds use for shunting purposes in a number of railway systems.
References: Part F, ERS-H 1995, NS SR 1975

(3) Specialized Colors

General Note: Less employed colors include White, Blue, Purple, and Lunar White; Breckenridge refers to the last three colors as Secondary Signal Colors. Breckenridge seemingly does not include white in Primary or in Secondary though he does include white in signal colors.

BLUE. A color of relatively limited use. Some European nations have employed it. Portugal has used it for permissive stops and directional indications. Spain uses blue for Directional Signals. Blue flags and lights are used in the US for workers in close proximity to rolling stock. It has also been used for Vane Signals.
Reference: Calvert 2004, CP 1981, McKnight 1990, RENFE 1978

WHITE. This is a frequently used color. It is often used for 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, ARSPAP-H 1953

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 in US position light signals among other uses.

References: Part F with references to other sources, Swiss Railways 1981

YELLOW-ORANGE. This color employed in Vietnam may also be within the yellow spectrum.
Reference: UN 1954 - Viet-nam

ORANGE. Swiss Railways employs what they call Orange; they also include yellow. Possibly the Orange hue is within the yellow spectrum.
Reference: Swiss Railways 1981

PURPLE & VIOLET. Seemingly these are the same colors. Violet is preferred in Europe. This color (s) finds more specialized use in shunt and switch roles. Such colors may be employed to avoid confusion with signals for running movements. Spain employs Violet with permissive stops.
Reference: RENFE 1978

LUNAR WHITE. This can also be seen as Blue-White. It is relatively common in UK and UK-influenced systems. It is used with Points Indicators and Route Signals. Color-position Signals in the US 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.
Reference: Netherlands 1975 SR, RGS 1981

4) Spatial Configurations

ERS takes notes of difference in spatial configurations: signals can be arranged horizontally, vertically or at an incline. Inclines could 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 1962, ERS-H 1995, Brazil 1960, Canada UCOOR 1961; 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, Breckenridge 1964
TRAFFIC RED, Homes 1971
INTERMEDIATE YELLOW, Breckenridge 1964
INTERMEDIATE GREEN, Breckenridge 1964
SIGNAL BLUE, Breckenridge 1964
NELS YELLOW (Historic), AERR
KEROSENE PINK, (DEP) Bronson 1983

DOUBLE RED, Armstrong 1957
DOUBLE AMBER, Allen 1952
DOUBLE YELLOW, Shackleton 1978, Nock 1978
DOUBLE-YELLOW SIGNAL, K & W 1963

FLASHING YELLOW ASPECT, Leach 1991
FLASHING SINGLE YELLOW ASPECT, Vann 1997
FLASHING DOUBLE YELLOW ASPECT, Vann 1997
SELENIUM RUBY GLASS, B & M 1981

DOUBLE YOKE (Double Yellow), Jackson 1992
FROSTED WHITE, (DEP) Bronson 1983
GINGER 'UN (Distant Signal with Caution Indication), Jackson 1992
"LIGHTLY-TINTED ... ", B & M 1981
LUNAR-WHITE LAMP/LUNAR WHITE MARKER LAMP, King 1921,
REMC 1948
RED EYE, Jackson 1992
YELLOW EYE (Double Yellow), Jackson 1992
YELLOW-TINTED LENSES, King 1991

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)

ONE-WAY POINTS INDICATOR, SA-BBB 1974
SINGLE ASPECT COLOURLIGHT, WBS
SINGLE-ASPECT SHUNT, King 1921
SINGLE ASPECT SIGNAL, Queensland SS-E 1977
SINGLE ASPECT SUBSIDIARY COLOURLIGHT, A & W 1991
SINGLE/2/3/4 ASPECT, Signal Eq. 1981,
2-, 3-, 4-ASPECT SIGNALLING, Leach 1991
2/3/4-ASPECT SIGNALLING SYSTEM, Cunliffe 1968

b) Two-Aspect Terms

LOWER QUADRANT TWO ASPECT SEMAPHORE TYPE, UN 1954 (Phil.)
TWO ASPECT COLOR LIGHT SIGNALS, Kenya
TWO-ASPECT COLOR-LIGHT SIGNALS, K & W 1963
TWO-ASPECT COLOR LIGHT REPEAT SIGNAL, Queensland SS-E 1977
TWO-ASPECT FIXED SIGNALS, Pakistan
TWO-ASPECT IN-CAB WARNING SYSTEM, FRA-1 1978
TWO ASPECT LOWER QUADRANT SIGNALS, India
TWO ASPECT MULTI-UNIT TYPE OF COLOUR LIGHT SIGNAL, A & W 1991
TWO ASPECT MECHANICAL SEMAPHORES, Kenya
TWO-ASPECT SHORT RANGE SIGNALS, Starkey 1944
TWO-ASPECT SIGNALS, GEC 1974, Hammond 1964
TWO ASPECT SIGNALS, Queensland SS-E 1977
TWO ASPECT SYSTEM, ERS-H 1995
TWO-INDICATION SIGNAL, King 1921
TWO-LIGHT SIGNAL ASPECT, King 1921
TWO-POSITION AUTOMATIC SIGNALS, King 1921
TWO-POSITION BRACKET POST SIGNALS, King 1921
TWO-POSITION HOME SIGNAL, King 1921
TWO POSITION LQ BRACKET SIGNAL, King
TWO-POSITION SEMAPHORE SIGNALING, King
TWO-POSITION SIGNAL, ARSPAP-D 1965, AAR SM 1983, Victoria R
TWO-ARM, TWO POSITION, L.Q. SEMAPHORE PIPE CONNECTED TRAIN ORDER SIGNAL, ARSPAP-H 1953
TWO-POSITION SEMAPHORE SIGNAL, K & W 1963
TWO-ARM STARTER SIGNAL, Queensland SS 1965
TWO-POSITION INSTRUMENTS, One 100 Years
TWO-POSITION LOWER LEFT-HAND QUADRANT SEMAPHORE, Wooley 1958, VR
TWO-POSITION DISTANT SIGNAL, K & W 1963
TWO-POSITION LOWER QUADRANT SIGNALS, South Australia 1947
TWO-POSITION LQ TWO ARM, THREE-BLOCK SIGNAL, FRA-3 1979
TWO-POSITION HOME SIGNAL, Blythe 1951
TWO-POSITION UQ SIGNAL, Nock 1962

TWO-POSITION DISTANT SIGNAL, K & W 1963
TWO-STRIPPED SPEED INDICATOR (2 rows or strips), AZD
TWO-WAY POINTS INDICATOR, Starkey 1944, SA-BBB 1974
TWO-DOLL BRACKET SIGNAL, Starkey 1944

c) Three-Aspect Terms

AUTOMATIC BLOCK THREE-ASPECT SIGNAL, Calvert 2004
AUTOMATIC THREE-ASPECT SIGNAL, UN 1954
LOWER-QUADRANT THREE-ASPECT SIGNALS, Calvert 2004
THREE-ASPECT AUTOMATIC BLOCK LIGHT SIGNAL, AZD
THREE-ASPECT COLOR-LIGHT SIGNAL, K& W 1963
THREE-ASPECT COLOUR LIGHT SIGNAL, A & W 1991
THREE-ASPECT COLOURLIGHT CO-ACTING SIGNAL, A & W 1991
THREE-ASPECT LONG RANGE COLOUR-LIGHT SIGNAL, Starkey 1944
THREE-ASPECT JUNCTION SIGNAL, Nock 1980, K & W 1963
THREE-ASPECT MULTIPLE-LENS COLOURLIGHT, Vanns 1997
THREE-ASPECT MULTIPLE-UNIT LENS COLOURLIGHT SIGNAL, A & W 1991
THREE-ASPECT MULTIPLE-UNIT OF COLOUR-LIGHT SIGNAL, Taylor 1949
THREE ASPECT SIGNAL, RONT 2001
THREE-ASPECT SYSTEM OF SIGNALLING, Zimbabwe 1987
THREE ASPECT SIGNAL/THREE-ASPECT SIGNAL, Queensland R SA-E 1977, SA G.A.1947
THREE-ASPECT T.S., Nock 1962
THREE-ASPECT, TWO-BLOCK AUTOMATIC SIGNALLING, A & W 1991
THREE-ASPECT, TWO-BLOCK SIGNALLING, REMC 1948
THREE-ASPECT, TWO-BLOCK SYSTEM, REMC 1948
THREE-ASPECT, TWO BLOCK SYSTEM OF SIGNALLING, REMC 1948
THREE-ASPECT UQ DOUBLE WIRE SIGNAL, UN 1954 (India, Burma)
THREE-BLOCK INDICATION, King 1921
THREE-COLOR SIGNAL SYSTEM, Tansley 1985
THREE INDICATION SIGNAL, King 1921
THREE-INDICATION TWO-BLOCK SIGNAL, Henry 1942

THREE-POSITION AUTOMATIC SIGNALLING, 100 Years
THREE-POSITION COLOUR-LIGHT SIGNALS, A Century ... NZ 1964
THREE-POSITION COLOUR SIGNALLING, Queensland SS
THREE-POSITION ELECTRO-PNEUMATIC SEMAPHORE, Nock 1962
THREE-POSITION U Q DISC SIGNAL, Nock 1962
THREE-POSITION U-Q SEMAPHORE/THREE-POSITION, U-Q SIGNALS/ THREE-POSITION UQ SIGNALS, ARSPAP-H 1953 (1), A Century (2), Shackleton 1976 (3) [2 and 3 add semaphore]
THREE-POSITION L-Q SEMAPHORE/THREE-POSITION LQ SIGNAL, ARSPAP-H 1953 (1), King 1921 (2)
THREE-POSITION LQ SEMAPHORE SIGNAL, King 1921
THREE-POSITION SIGNAL, Corbin 1922
THREE POSITION SIGNALLING, Nock 1962
THREE-POSITION SEMAPHORE, Shackleton 1976
THREE-POSITION, UQ SIGNAL/THREE POSITION UQ SIGNAL, Nock 1962, K & W 1963 [No comma], REMC 1948
THREE-POSITION, THREE ASPECT SIGNAL, Blythe 1951
THREE POSITION UPPER RIGHT HAND QUADRANT SIGNAL, ARSPAP-H 1953

d) Four-Aspect Terms

FOUR ASPECT SIGNAL, RONT 2001
FOUR ASPECT SYSTEM, ERS-H 1995
FOUR-ASPECT SIGNALING/FOUR-ASPECT SIGNALLING, India, FRA-1, Nock 1980
FOUR-ASPECT CODED 100 HZ CAB SIGNAL SYSTEM, FRA-2 1979
FOUR-ASPECT COLOR-LIGHT SIGNALING, Vann 1997
FOUR-ASPECT COLOUR LIGHT SIGNAL, GEC
FOUR-ASPECT SHUNT TOTON SIGNALING, Tyer (Field & Grant)
FOUR ASPECT SIGNAL/FOUR-ASPECTS SIGNALS, Queensland R SS-E 1977 (1), SA TWR 1962 (2)
FOUR-ASPECT COLOUR SIGNALS, Queensland R SS
FOUR-ASPECT, FOUR-SPEED CODED CONTINUOUS TCS, FRA-3
FOUR ASPECT COLOR LIGHT SYSTEM, Nock 1962

FOUR-ASPECT JUNCTION SIGNAL, Nock 1980
FOUR-ASPECT MULTIPLE UNIT SIGNAL, Taylor 1949
FOUR-ASPECT SEARCHLIGHT SIGNAL, A & W 1991
FOUR-ASPECT SEMI-AUTONOMOUS SEARCHLIGHT SIGNAL, A & W 1991
FOUR-ASPECT, 3-BLOCK AUTOMATIC WAYSIDE SIGNALING, A &W 1991
FOUR-ASPECT, THREE-BLOCK SIGNALING, REMC 1948
FOUR-INDICATION, THREE BLOCK SIGNAL, Henry 1942
FOUR-POSITION SIGNAL, AAR SM 1983
FOURTH ASPECT, Cardani 1979

e) Five-Aspect Terms

FIVE ASPECT SIGNAL, Nock 1962
FIVE ASPECT SYSTEM, ERS-H 1953
FIVE-INDICATION SIGNAL, Henry 1942
FIVE LIGHT JUNCTION INDICATOR, Queensland R SS-E 1977
FIVE SIGNAL (SPEED) ASPECTS, FRA-1 1978

f) Other Aspect Terms

AUTOMATIC COLOUR LIGHT, Barwell 1983

MULTI ASPECT CAB SIGNALING, FRA-3 1979
MULTI-ASPECT COLOR-LIGHT SIGNALS, V. Brown 1984
MULTIPLE-ASPECT COLOUR-LIGHT SIGNALLING, Allen 1962
MULTIPLE-ASPECT COLOUR-LIGHT SYSTEM, Barwell 1983
MULTIPLE ASPECT SIGNALS/MULTIPLE-ASPECT SIGNAL, Nock 1962 (1), RONT (2)
MULTIPLE-ASPECT SIGNALLING, Barwell 1983
MULTLPLE ASPECT SIGNALLING, A & W 1991
MULTI-ASPECT COLOUR SIGNALS, UN 1954
MULTI-ASPECT SIGNALLING, A & W 1997, UAR 1983
MULTI-ASPECT SIGNAL SYSTEM, FRA-1 1978

MULTI-ASPECT SIGNALING, Armstrong 1978/MULTI ASPECT SIGNALLING, SA Multi-Aspect Signalling
MULTI-ASPECT SIGNALS WITH JUNCTION INDICATOR, ERS-B
MULTI-ASPECT UQ DOUBLE-WIRE SIGNALING, UN 1954

APB SIGNAL WITH 3 & 4 ASPECTS, FRA-3 1979
CAB SIGNAL ASPECT, FRA-1 1978
DAY & NIGHT ASPECTS, Farrington 1946
FLASHING ASPECT, LIRR 1991
LUMINOUS ASPECT, UIC CST 1972
POSITION LIGHT ASPECTS/POSITION-LIGHT SIGNALS, ERS-H, Calvert 2004 (2nd term)
STOP-&-PROCEED ASPECT, Solomon 2003
THREE/FOUR ASPECT, K & W 1963
THREE/-FOUR ASPECT SIGNAL SYSTEM, FRA-1 1978

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 (inhabited). The meaning of the indication is very often "Proceed." For ERS a variety of European systems employ Line Clear instead of Protocol. 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 1995, Blythe 1951

LINE CLEAR. This term is employed by some European systems. See also Clear Signal.
Reference: ERS-H 1995, Vanns 1997

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 "[i]s 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: SA TWR 1964, ANR (SA 1947), ERS-H 1995, Leach 1992

CAUTION SIGNAL. This term is frequently employed 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 (e.g., 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.
References: ARSPAP SAI 1956, K & W 1963, ANR (SA 1947)

APPROACH SIGNAL. Caution is a nearly global term though for Canada and the US 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: ARSPAP SAI 1956 & SC 1965, Canada UCOOR 1961

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 a phrase such as "Section is occupied" (NZ).
References: Pakistan Railways, New Zealand R 1974, REMC 1948

DANGER/DANGER SIGNAL. Some systems substitute Danger Signal for Stop Signal but with the same meaning of stop. UK and Pakistan are two such systems. In UK Home Signals are termed Stop Signals. Stop Signal have clear indications in contrast to Distant Signals.
References: K & W 1963, Pakistan Railways, King 1921

PRELIMINARY CAUTION SIGNAL. UK and other systems often include a Preliminary Caution Signal. UK employs a double yellow indication for this purpose; some systems using a flashing yellow.
Reference: K & W 1963

b) Specialized Forms

US (ARSPAP, SAI 1956) and Canada (UCOOR 1961, 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 US and Canada. Most of the signal aspects include both green and red lens units.

US and Canada have additional forms of the Approach Signal. They follow the Approach form in allowing proceeding but the 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 [US ONLY]/MEDIUM APPROACH SLOW SIGNAL [US only]/SLOW APPROACH SIGNAL/ RESTRICTING SIGNAL/RESTRICTING ASPECT/RESTRICTING

INDICATION.

US 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). This group includes solid yellow, yellow/green and some yellow/green/red indications. There are three forms in Canada and US and two found only in the US:

APPROACH LIMITED/APPROACH LIMITED SIGNAL/APPROACH MEDIUM/APPROACH MEDIUM SIGNAL/APPROACH SLOW SIGNAL/ ADVANCE APPROACH MEDIUM SIGNAL [US only]/ADVANCED APPROACH SIGNAL [Also US only].
Finally, US 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 Signals 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 indications.

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 construction. This Signal indication is red accompanied by a 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 Aspect and Indications from several North American Codes that overlap and diverge from AAR practice. These Codes and Aspects & Indications include:

1) The Consolidated Code of Operating Rules:
STOP
STOP & PROCEED
PERMISSIVE TAKING SIDING
APPROACH
CLEAR
APPROACH DIVERGING ROUTE
APPROACH MEDIUM
CLEAR-DIVERGING
RESTRICTING
SPRING SWITCH
SLOW-CLEAR

2) 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 the General Code of Operating Rules have general rules but the A & I display marked diversity from line to line though rules are general. These are not available in Kanner.
Reference: Kanner 1992

Some miscellaneous terms include:

ASPECT, FALSE RESTRICTIVE/FALSE RESTRICTIVE ASPECT. Terms for Signal aspect displaying an unintended excessive restrictive indication.
References: FRA-3, AAR SM 1983

ASPECT, PHANTOM SIGNAL/PHANTOM SIGNAL. An unintended indication created by reflection of extraneous light source off the signal's optic system.
References: FRA-RAR, AAR SM 1983

FALSE CLEAR/FALSE-CLEAR SIGNAL/FALSE PROCEED. Signal mechanism (system, device, appliance) that displays an inadequately restrictive indication.
Reference: King 1921, K & T 1988

POTENTIAL FALSE PROCEED CONDITION (PFPC). Term describes a situation in which a false proceed indication would be activated if a train entered relevant section.
Reference: AAR SM 1983

1D Morphological Terms

General Note I. Part F of Volume II focusses 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. The added coverage for Iiii can not be said to be definitive though it tends 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 indicates what purpose the Signal performs. Such terms can relate to systems (e.g., a block indicates the purpose but also tells the kind of system). It can refer to messages as well (e.g., a Caution Signal indicates the message).

General Note II. There is a great welter of morphological terms. Not a few of which are found in only a few railway systems or even a single system. Some terms are obsolescent while others are fully archaic though they may be found in railway treaties 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 (aided by Kitchenside and Williams). The coverage divides Signals into Running and Subsidiary forms. Running Signals include those affecting train movement 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 US though not Subsidiary Signals. 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 and Station terms refer to running situations yet are apart from 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 message 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 and 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 be reasonably comprehensive though falling short of definitive.

The phethora of core running terms can be assigned to a few categories. These groups are not isolated monads but are instead often closely interrelated. These groups include Stop, Starting, Distant forms (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 extensive subdivisions are not feasible.

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 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 European continent and in some non-European systems though rare in North America.
Reference: K & W 1963, ERS-H 1995

PRIMARY SIGNALS. This term is a translation of a German term into English. It is seemingly a synonym for Running or Main Signals. Such Signals control main operations.
Reference: FRA-3 1979

RUNNING LINE SIGNALS. This variant form is found in South Africa. It is a

more explicit version of the basic form by adding the word Line. That word also appears in Lineside and is a synonym for Trackside. Line refers to Track.
Reference: SA GA 1947

COLOR LIGHT RUNNING SIGNALS. A term that all but explains itself. The basic term is augmented by the physical type of signal that is employed.
Reference: K & W 1963

MAIN SIGNALS. This term has multiple meanings though it may appear to have a simple meaning. For ERS it is simply a synonym for Running Signals. FRA includes references to UK signals. It can mean Home or Block Signals but apparently not Distant Signals. UIC-CST views it as having a clear indication allowing a train to continue or recommence its journey. Apparently a Signal with a caution or stop indication is not a Main Signal.
References: ERS-H 1995, FRA-3 1979, UIC-CST 1972

MAIN LINE SIGNAL/MAIN-LINE SIGNAL. For K & W this is apparently a synonym for Running Signals; a second source hyphenates the term.
Reference: K & W 1963, Taylor 1949

MAINLINE SIGNALS. This is both a physical and a morphological term. It refers to Signals employed on main lines rather than to train yards and more restricted operations.
Reference: US&S 1982

MAIN LINE RUNNING SIGNAL. For NSW this seems to mean Running Signals on Main Lines, or Running Signals - a category - on main or primary tracks. That may imply that Running Signal might conceivably be found on other than main tracks.
Reference: NSW Railways Signalling

MAIN RUNNING STOP SIGNAL. This term refers to Main Signal as the major or principal signal assemblage on a mast or gantry in which a second and different assemblage is added. On the surface the term seems to suggest a Main Line or Running Signal though with added emphasis.

Reference: K & W 1963

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

1) Stop Signal Terms

ADVANCE SIGNAL. This Signal serves as a Home Signal but in advance mode. It creates short blocks so the train does not obstruct operations in adjoining sections. See Also: Advanced Signals.
Reference: King 1921

ADVANCED SIGNAL. This term from a historic source appears to refer to an Outer Home Signal or equivalent. It allows for a mini-block within a regular block thereby permitting the holding of train in block while main train operations continue in that block.
Reference: RSD 1911

BUFFER STOP SIGNAL. Term for a Stop Signal not preceded by an Advance Signal.
Reference: A & W 1991

COLIGNY-WELCH SIGNAL LAMP. A historic term. The lamp displayed arrows that distinguished Distant Signal from other forms.
Reference: Jackson 1992

DEAD SIGNAL. This Signal is always at an Stop indication. The Signal crew could approve proceeding after a stop is made.
Reference: Jackson 1992

FIXED STOP SIGNAL A Signal similar to the Fixed Distant Signal.
Reference:

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 is 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 1972, UIC-CST 1972, UN 1954, Allen 1952, Armstrong 1957

INNER HOME/OUTER HOME. Abbreviated versions of basic terms.
Reference: Taylor 1949

INTERMEDIATE BLOCK HOME SIGNAL. Stop Signal at exit from intermediate block to blocked section beyond intermediate block.
Reference: RONT 2001

REAR HOME SIGNAL. NY Muncipal Railway employed this signal in lieu of Distant Signal of other railroads.
Reference: King 1921

RED BOARD/RED EYE. Colloquial terms for Stop Signal.
Reference: Jackson 1992

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 1965

OUTER HOME SIGNAL/INNER HOME SIGNAL/INTERMEDIATE HOME SIGNAL. "Sub-terms" employed where heavy traffic, or long blocks require require more nuanced messages; in effect this creates sub-blocks.
Reference: SA SS 1936

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.

References: K & W 1963, Queensland R FS, Western Australia R 1974

SPLITTING HOME SIGNAL. A Home Signal for denoting diverging routes. This Signal may be more appropriate with Route and Junction Signals.
References: K & W 1963

SPLITTING SEMAPHORE. A variation of the basic term that includes the physical apparatus.
Reference: Taylor 1949

SPLITTING SIGNAL. A junction of main and branch lines requires two Signals termed Splitting Signals. Splitting Home Signal is one such form.
Reference: Taylor 1949

STOP SIGNAL. A term of possible confusion. Stop Signal can denote a stop indication. But in some usages it refers to a Signal where indications contain a stop message as well as a clear message. UK and derivative systems as well as some continental European systems include this Signal. Seemingly, it is not employed in the US. K & W includes two forms: Home and Starting Signals. UIC-CST gives more importance to Stop than Home Signals. The Signal controls the entrance to a block.
References: K & W 1963, UIC-CST 1972, ERS-H 1995

COLOR LIGHT STOP SIGNAL/AUTOMATIC STOP SIGNAL/SEMAPHORE STOP SIGNAL/A.P. PERMISSIVE STOP SIGNAL. These are variant terms for the Stop Signal.
References: India R, K & W 1963 (3rd term)

UP, DOWN DISTANT, HOME STARTER, ADVANCED STARTER. UK lines historically were often double track and complete Signaling was required for both up line and down line.
Reference: Taylor 1949

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.
Reference: Western Australia R 1974

STARTER SIGNAL. This is seemingly a synonym for Starting Signal.
Reference: Allen 1952

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.
Reference: Victoria R Signals, SA-SS 1936, SA-BBB 1974

OUTER ADVANCED STARTER. A additional Starting Signal. It is "in advance of an advanced starter."
Reference: RONT 2001

SECTION SIGNAL. According to A & W this is an alternate name for Starting Signal.
Reference: A & W 1991

STARTER SEMAPHORE/ADVANCED STARTER SEMAPHORE. Variant terms of the same meaning.
Reference: Isaacs & Whitehead 1917.

3) Distant Signal terms

AUXILIARY SIGNAL. Old name for Distant Signal.
Reference: Jackson 1992

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 1972, K & W 1963, Starkey 1944

DISTANT SEMAPHORE SIGNAL. A variant form that incorporates the type of Signal into the title.
Reference: King 1921

DISTANT (WARNING) SIGNAL. For UIC the Warning Signal is synonym for Distant and perhaps applicable here.
Reference: Wehner 1981

FISHTAIL. An informal term for Distant Signal.
Reference: Jackson 1992

FIXED DISTANT/FIXED DISTANT SIGNAL. Refers to Distant Signal in fixed danger position. Denotes speed or other change in train operations (passing loop, passenger platform).
Reference: Jackson 1992

HALL DISTANT SIGNAL. A historic term that includes the manufacuter's name in the title.
Reference: King 1921

SIGNAL DISTANT/DISTANT-SIGNAL. Variant form of the core term with the same or similar meaning.
References: Alkmaar, AAR-SM 1983, K & W 1963

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

WARNING SIGNAL. Synonym for Distant Signal in UIC-CST (possibly also in ERS). This term describes a form of Subsidiary Signal as well which see.
Reference: UIC-CST 1972

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. The final term is from Taylor.
Reference: NSW R Signalling, Taylor 1949 (final 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 1981, K & W 1963

ADVANCE SIGNAL. A synonym for Distant Signal.
References: UIC-CST 1972, ERS-H 1995

APPROACH SIGNAL. A synonym for Distant Signal.
Reference: FRA-3 1979

UNWORKED DISTANT SIGNAL. This term refers to Distant Signals not in operation or in an operation mode that is in a fixed, unvarying pattern. UK Military speaks of large Warning Boards at unworked Distant Signals while K & W speaks of Distant Signals fixed at a caution indication.
References: K & W 1963, UK Military 1955

SIGNAL, DISTANT. An application placed under heading of Signal. It may not be accurate to speak of the Signal in that form though ARSPAP-D often places the general before the particular.
Reference: AAR-SM 1983

SPLITTING DISTANT SIGNAL/SPLITTING DISTANT. A Signal denoting divergent routes. It may be more appropriate if assigned to Route and Junction Signals. A & W omits Signal from term.
References: K & W 1963, Nock 1980, A & W 1991

1D1 c) System Terms

ABSOLUTE SIGNAL. Signal within Automatic Blocking Signaling. One train permitted at a time in block.
Reference: King 1921

ADVANCED SECTION SIGNAL. An older name for what became Intermediate Block Signal.
Reference: Vanns 1997

AUTOMATIC BLOCK SIGNAL. See Automatic Signals.
Reference: King 1921

AUTOMATIC SIGNALS. These are Signals activated by train movements via track circuit.
Reference: REMC 1948

BLOCK SIGNAL/SIGNAL, BLOCK. A Block System indicates a system of interconnected Signals that include the physical Signal as well as messages and control system. The term Block Signal denotes the Signal and its specific function though the line between system and morphology is narrow. Signal, Block is from ARSPAP-D. The definition is that of Signal, home (which see) in the same publication except that the reference to route is deleted.
References: ARSPAP-D 1965, Bisset 1990, Ellis 1966

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 which is operated by a control operator. A term that originated with Chicago and North Western Transportation Co.
Reference: Kanner 1992

HOLDING SIGNAL. Term for block entrance signal that governs train movements entering, and operating in that block, route. It is the same as a Block Signal except that it can refer to Holding Signals as well.
Reference: AAR-SM 1987

INTERLOCKING DWARF SIGNAL. The basic term is augmented by type of function.
Reference: King 1921

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 lacked signalboxes and functioned as Automatic Signals.
References: K & W 1963, FRA-3 1979, ERS-P 1995, Vanns 1997

INTERMEDIATE SIGNAL. In New Zealand practice these are Signals that divide a block into small segments. The Signals usually display "Stop and Proceed" indications.
Reference: New Zealand R 1989

INTERLOCKING SIGNALS/SIGNALS, INTERLOCKING. These are Signals governing train movements within the boundaries of an interlocking, or operations into an interlocking.
Reference: FRA-3 1979, King 1921

PERMISSIVE SIGNAL. Additional trains permitted in block by this Signal. It is part of Automatic Signaling. However, for Jackson this term is an old name for Draw-up Signal which see.
References: King 1921, Jackson 1992

SEMI-AUTOMATIC INTERLOCKING SIGNAL. A Semi-Automatic Signal placed in interlocking configuration.
Reference: King 1921

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

trains and track circuits.
Reference: REMC 1948

1D1 d) Route & Junction Indicators/Signals

1) Basic Terms

DIRECTING SIGNAL. An alternate name for Junction Signal.
Reference: A & W 1991

DIRECTION INDICATOR. A synonym for Junction Indicator, Route Indicator.
Reference: Allen 1982

ENTRY (ROUTE) SIGNAL/ENTRY (ROUTE) LIGHT SIGNAL. Signals refer to Soviet practice. Both forms are in context of Route Signals.
Reference: Kharlovich 1980

FEATHERS/HORNS. Colloquial term for Lunar Light (also employed for crossed bars on unused Signal). Wikinfo views Feathers as a name for Position Light Junction Indicator. And Horns is the equivalent "North of the border" which may mean Scotland. If Feather employed lunar white lights then the variant explanations may be linked. Jackson is presumably a British author.
Reference: Jackson 1992, Wikinfo 2005

JUNCTION INDICATOR/JUNCTION SIGNAL. The first term 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 1972, Hammond 1964, K & W 1963, Nock 1980 (2nd term)

ROUTE SIGNAL. This term refers to South African practice. It is the equivalent of Route or Junction Indicator. The term is not to be confused with Route Signalling.
Reference: SA-BBB 1974

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.
References: Allen 1952, Blythe 1951

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: Queensland R FS

TURNOUT SIGNAL. Seemingly a variant term for Junction Signal. It denotes divergent routes.
References: Queenslands R SS-E 1977, NSW R SI SL 1969

2) Other Route & Junction Terms

General Note. These are additional terms that refer to these entries. A variety of the terms are from manufacturing concerns and probably closer to physical Signal configurations than to morphology. However, since they manifest some morphological dimensions they are included. Route Indicators is one such Signal with a morphological name that also denotes a physical unit.

'ARBOUR LIGHTS/HARBOUR LIGHTS. Colloquial terms for Junction Route Indicators.
Reference: Jackson 1992

BANJO. UK Shunt Signal that resembles a banjo.
Reference: Jackson 1992

5-LIGHT JUNCTION INDICATOR. Core term is supplemented by technical details of Indicator.
Reference: Nock 1980

FOUR-WAY SHUNTING SIGNAL. This term refers to a multi-route Signal. The number of specific directions is incorporated into the name of the Signal.
Reference: A & W 1991

JUNCTION SEMAPHORE. A historic term tieing morphology to physical apparatus.
Reference: REMC 1948

LUNAR LIGHTS. Informal term denoting Route Indicator combined with Color-Light Signals. 'Arbour Lights can also refer to this.
Reference: Jackson 1992

POSITION LIGHT JUNCTION INDICATOR. This indicator consists of one or more arms. At least some agencies employ lunar white lights for the lamps.
References: Western Australia R 1974, Westinghouse Brake & Signal (Aus), Westinghouse Signal UK

RIGHT-HAND JUNCTION INDICATOR. Signal includes specific configuration in title. It is possible that the specifics are a descriptive addition by the author.
Reference: A & W 1991

STENCIL INDICATOR/STENCIL ROUTE INDICATOR/ROUTE INDICATOR STENCIL LIGHT. Indicators display stencils with appropriate alphanumeric symbols. Often times the stencil is placed between a cover glass plate and illuminating lamps.
References: Queensland R SS-E 1977, Westinghouse Signals UK, Westinghouse Brake and Signal Australia, GEC 1979

DIRECTIONAL ROUTE INDICATOR. Seemingly a more specific term for an Indicator that includes its physical configuration. It may also distinguish this form from a Stencil Indicator.
Reference: GEC 1972

LOW SPEED ROUTE INDICATOR. A term that includes morphological and physical aspects. It is in a Stencil Indicator form.

Reference: GEC 1972

SHUNT ROUTE INDICATOR. A term that includes morphological and physical aspects. This specific brand is in a Stencil Indicator form.
Reference: GEC 1972

THEATRE TYPE ROUTE INDICATOR/THEATRE-TYPE ROUTE INDICATOR/THEATRE MULTI LAMP ROUTE INDICATOR. An indicator with alphanumeric symbols formed by lamps. A plate in lunar white covers the lamp display.
Reference: GEC 1972, A & W 1991

MULTI-LAMP ROUTE INDICATOR/MULTI LAMP ROUTE INDICATOR. This Indicator is similar or identical to a Theatre type unit.
Reference: A & W 1991, Westinghouse Signals UK

TOTON ROUTE INDICATOR. It is not clear if "Toton" is a brand name or has some reference to a Signaling function. This Indicator is employed for shunting and other low speed situations. Lenses usually red or white.
Reference: Tyer & Co.

TWO-WAY JUNCTION INDICATOR. Term refers to separate light units for separate routes. It is probably the equivalent of a Directional Indicator.
Reference: A & W 1991

TWO-WAY STENCIL INDICATOR. Term refers to separate light units for separate routes.
Reference: A & W 1991

1D1 e) Other Signal Terms Pertaining to Running Operations

AB ENTRY SIGNAL. A Queensland Railways term. It is possibly the equivalent of Home Signals in other block systems since it controls train moments into the block.
Reference: Queensland R FS

BACKING SIGNAL. This is probably a historical term. It denotes a wrong-direction train movement. It consists of a modified Semaphore.
Reference: Jackson 1992

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: REMC 1948

WRONG ROAD SIGNAL/WRONG-ROAD SIGNAL. A separate Signal or supplementary indication warning a train crew they are on the wrong road. South TWA offers a hyphenated version.
References: SA SS 1936, SA TWA 1964, UIC-CST 1972

STATION PROTECTION SIGNALS. Signal with Stop & Proceed Indication. Protects train on main track at stations, yards. Marker board (black on yellow) displays letters SPS, attached to signal mast.
Reference: Canada UCOOR 1961

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

PLATFORM STARTING SIGNAL. Stop Signal located in proximity of station platform departure end.
Reference: RONT 2001

PRECAUTION SIGNAL. Platform Line Signaling indication denotes platform line is partially in use and early stop required when at danger.
Reference: Jackson 1992

PROTECTING SIGNALS. Signals provided at grade/level crossings.
Reference: Leach 1991

REPEATING SIGNAL. Seemingly a synonym for Repeater Signal. Two surveyed sources include the term.
Reference: UK Military 1955, JNR

REPEATER SIGNAL. A Signal that repeats signal message when primary signal is affected by restricted visibility.
Reference: UIC-COST 1972, Adam-Smith 1973

REPEAT SIGNAL. Queenslands employs this term for what is otherwise known as Repeater Signals.
Reference: Queensland R FS

SEMAPHORE REPEATER. Instrument in signalbox giving Semaphore positions.
Reference: RONT 2001

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

BANNER REPEATING SIGNAL. Signal repeats message at another Signal when that Signal can't be seen by crew. See Also: Banner Repeater Signal.
Reference: RONT 2001

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). Queensland Railways also has a Signal with Repeat Arm but this is the equivalent of a Co-Acting Signal.
Reference: Queensland Railways FS

FOG SIGNAL REPEATER. It can be a high-powered Signal used in Fog. Or second Signal used by maintenance staff in fog.

Reference: RONT 2001

SIGNAL REPEATER. No definition. It includes Electric Semaphore Repeater, Signal Arm Repeater, Slot Repeater.
Reference: RONT 2001

TUNNEL SIGNAL. Quite simply, a Signal designed for tunnel usage. During the era of Semaphore Signals, a variant form with moving spectacles (but without blades) was devised for tunnels; darkness allowed colored lights to be seen at all times even if the light source was weak.
Reference: Hammond 1964

TUNNEL JUNCTION SIGNAL/TUNNEL REPEATER SIGNAL. These terms are from London Transport UK, a agency with 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 the train having to stop on a steep grade.
Reference: NSW Railways Signalling

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 1991

CO-ACTING ARM SIGNAL. A Signal with second arm linked to main Signal. Employed where sighting problems are present.
Reference: RONT 2001

PROTECTION SIGNAL. Term for a practice in some European systems in which separate Yard Exit Signals are assigned to each track.
Reference: ERS-B 1995

YELLOW DISC SIGNAL/GROUND DISC SIGNAL. Two terms for seemingly the same device. The disc displays a horizontal yellow stripe on black ground. It is a form of Stop Signal marking siding exit at the entrance of the primary track. It displays a light that is yellow or green at night.
Reference: A & W 1991

Terms in Combination:

General Note: Some forms of Signals are combined in some systems. The following material is from UN 1954:

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

1D2 Subsidiary Signal Terms

1D2 a) Overarching Terms

SUBSIDIARY SIGNAL. K & W 1963 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 1963

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

CATCHPOINT INDICATORS/RUNAWAY CATCHPOINT INDICATORS/ INDICATORS FOR RUNAWAY CATCHPOINTS/CATCHPOINT DISCS. For NZ catchpoints are installed to block runaway cars. While Queensland apparently sees the Catchpoint as denoting siding clearance points.
References: Western Australia 1974, New Zealand 1989, Queenslands R FS, M & H

COLOUR LIGHT POINTS INDICATOR. The specific physical dimension is included in the name. For WA a Points Indicator without a qualifier in the name refers to Mechanical Points Indicator forms while the qualifier denotes all-lighted versions. Other systems, including possibly NZ, may employ a similar name without necessarily following that pattern.
References: Western Australia R 1974, NZ 1989

ELECTRIC CATCH POINT INDICATOR. This form is fully lighted. The term may distinguish fully-lighted from partly lighted and mechanical versions.
Reference: NSW Railways SI SL 1989

FACING POINTS INDICATORS. Facing Points Indicator obviously denote Facing Points and whether they are set for the principal line or a secondary one.
References: Blythe 1951, NZ 1989

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 catch-points, points, derails.
Reference: UIC LGTF 1975, NSW Signalling

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 of these devices are Two-position Signals which indicate whether the main or branch track adjacent to a main track is open. A switching mechanism can so adjust points that a train can travel on the main track, a siding, or other ancillary track.

Reference: Part F, 1991

POINTS INDICATOR. Point Indicators indicate how points are set. The Indicators are connected to the points they serve.
References: WA 1974, Queensland Railways FS

POINTS SIGNAL/SIGNAL POINTS INDICATOR. 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 a points and indicating their state.
Reference UIC LGTF 1975

POINTS INDICATOR--CHEVRON TYPE/POINTS INDICATOR--ARROW TYPE. 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 Railways FS

SWITCH INDICATOR. An equivalent term for Points Indicator. It is employed in the Americas and also on South Australia/Australian National Railways. Tall Switch Indicators are known as Switch Stands for South Australia.
References: ANR (SA 1947)

TRAP POINTS INDICATOR. This term indicates the location of Trap Points (Derailing Switches) thereby protecting the mainline.
Reference: NZ 1989

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 trains together: adding train cars together, rearranging trains and individual car configurations and related operations.

The bringing of rail cars together under low speed 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 as new forms. North American 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 and 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. A Signal, even if very small, allows various messages, while indicators may be restrictive in what messages can be conveyed. That is an uncertain distinction since some Points Indicators are modern Color Light Signals. Though in those case only a restricted range is possible. This term is a rare usage though it seems plausible as an overarching and general term.
Reference: Westinghouse Brake and Signal (Aus)

SHUNT SIGNALS/SHUNTING SIGNALS. These terms are seemingly interchangeable. The terms appear in UK, Australia and other English-language publications.
References: ERS-H 1995, UAR 1983, UN 1954.

SIGNALS FOR SHUNTING/SIGNALS FOR SHUNTING MOVEMENTS. These more formal terms are interchangeable with basic shunting terms.
References: Great Peninsula Railway, NSW Signalling

SWITCHING SIGNAL. A translation from the German in FRA-3. This reflects

North American practice; Shunting Signal would be more accurate for Germany.
Reference: FRA-3 1979

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 a mechanical shunting signal.
References: Pakistan Railways Diagrams, NSW Railways Signalling, K & W 1963, A & W 1991

GROUND SHUNT SIGNAL/SHUNTING GROUND DISC. A Signal built low to the ground. It could be termed Dwarf as well.
References: ERS-H 1995, K & W 1963

MECHANICAL SHUNTING SIGNAL. A Signal with moving parts in its message displaying dimensions. Very often the entire unit revolves.
References: K & W 1963

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 1963, Westinghouse Signals UK, UAR 1983

POWER-OPERATED SHUNT SIGNAL. An all-lighted Signal displaying messages by fixed lights only.
Reference: K & W 1963

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.
References: Pakistan Railways Diagrams (lst term), Taylor 1949 (2nd term)

SHUNT LIGHT/SHUNTING LIGHT. These are variant forms of the basic term of Shunt Signal.
Reference: Queensland Railways SS-E 1977

3) Function-related Shunting Signal Terms

BACKING SIGNAL. This is a Shunt Signal allowing shunting in the wrong direction.
Reference: K & W 1963

CALLING-ON SIGNAL. A Shunt Signal that permits a train to enter occupied platform as far as the track is unoccupied. Signal shares mast with home signal. When caution light is lit then train can proceed.
Reference: K & W 1963, NSW Signalling

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

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 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."
References: Nock 1980, A & W 1991, Taylor 1949

ELEVATED SHUNTING SIGNALS. This is a Signal mounted on a mast. It

Controls shunt operations from running line to siding and vice versa.
Reference: A & W 1991

FACING SHUNT SIGNAL. This term indicates limits of necessary shunting on incoming track.
Reference: Nock 1980

HIGH SHUNTING SIGNAL. This refers to an Italian signal on a relatively tall mast without Running Signal attached.
Reference: ERS-H 1995

HUMPING SIGNAL/HUMP SHUNT SIGNAL. Terms for Signals that control train speed for passing over shunt humps in train yards.
Reference: K & W 1963

INDEPENDENT SHUNT SIGNAL. A free-standing unit as opposed to a Shunt Signal attached to the mast of a Running Signal.
Reference: ERS-H 1995

LIMITS OF SHUNT SIGNAL. Signal indicates boundaries for shunting operations on wrong roads (incoming line when shunting is outward bound).
References: Nock 1980, A & W 1991

MAIN/SHUNT SIGNAL. Apparently Main and Shunt Signals are combined within a form of electronic signaling control.
Reference: NS Samples 1983

MINIATURE ARM SHUNTING SIGNAL/MINIATURE ARM SHUNT SIGNAL. Terms refer to Signals employing small Semaphores for shunting operations.
Reference: A & W 1991

ROUTE INDICATING SIGNAL. A Signal with two or more running routes "and is capable of displaying an indication of route."
Reference: RONT 2001

RUNNING SHUNT SIGNAL. A Spanish Signal listed in ERS though with little explanation. It is possibly a Shunt Signal mounted on running lines for shunting needs.
Reference: ERS-H 1995

RUNNING SUBSIDIARY SHUNT SIGNAL. Signal may be similar to Subsidiary Shunting Signal which see.
Reference: A & W 1991

SET-BACK SIGNAL. Term describes Signal needed for "setting back into the platform."
Reference: Nock 1980

SHOT SHUNTING SIGNAL. This signal displays a Stop or Proceed message for shunt or train movements. Train movements require a departure indication along with proceed message.
Reference: UIC-CST 1972

SHUNT AHEAD SIGNAL/SHUNT-AHEAD SIGNAL. Subsidiary Signal for Shunting; it allows passage of Stop Signal for Shunting.
References: NSW R Signalling, Queensland R

SHUNT ROUTE INDICATOR. A cross-reference with Route/Junction Indicators. It is, obviously, a Route Indicator dedicated to shunting operations.
Reference: GEC 1972

GROUND SIGNAL. Any Signal at ground level. Used for sidings and shunting operations.
Reference: RONT 2001

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 R Signalling

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 R SI-SL 1969

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 1995

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 1963

YELLOW SHUNT SIGNAL. Signal that is followed "only to movements in the direction to which the signal can be cleared ... ." Also a Ground Position Light Signal with yellow light.
Reference: RONT 2001

1D2 d) Siding, Train Yard & Other Signals

CLOSING-UP SIGNAL. A Signal near approach to station that optimizes head-ways; it can also give earlier clearance for junctions.
Reference: RONT 2001

GOODS OR SIDING SIGNAL. Term from South Africa practice. It is a Signal denoting freight line or siding. When of semaphore form the blade is altered in order to be easily distinguished from Running Signals.
Reference: SA-TWR 1964

HUMP SIGNAL/HUMPING SIGNAL. Signals that control train speed for passing over shunt humps in train yards.
Reference: ARSPAP-D 1965, AAR SM 1987, UIC-CST 1972

LEAVE SIDING INDICATOR. This is the counterpart of Takes Siding Indicator.

The perspective is from the siding and the Indicator indicates clearance onto the main line.
Reference: AAR SM 1983

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

OUTLET SIGNAL. A Signal that controls exit from siding, goods loop.
Reference: A & W 1991

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 Railways S, Queensland R SS 1965

TAKING 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.
References: AAR SM 1987, ARSPAP-H 1953

YARD EXIT SIGNALS. Terms 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 1963

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 R Signalling

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: Western Australian R 1974, New Zealand R 1989

TERMINAL SIGNAL. Seemingly Train Yard Signals for caution, low speed operations both shunting and other forms.
Reference: Nock 1962

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 (which is reviewed are in Ch 1E).

ABSOLUTE SIGNAL

ALL RIGHT SIGNAL

CAUTION SIGNAL

CAUTIONARY SIGNAL

PERMISSIVE SIGNAL

PERMISSIVE STOP SIGNAL

PROCEED SIGNAL

1D4 Miscellaneous Signal Terms

ACCEPT SIGNAL/ACCEPTING SIGNAL. Term for an exit end Signal in an automatic signalling block.
Reference: NSW R Signal

APPENDANT SIGNAL. A form of Subsidiary Signal in Japan. It includes Route Indicator and Advance Route Indicator. It possibly belongs to Route/Junction segment except for its designation as Subsidiary. Appendant has the meaning of appendage; possibly auxiliary or subsidiary.
References: UN 1952, JNR

ARRIVAL SIGNAL. Terms refer to Automatic signals at entrance to crossing stations. They are found outside crossing loop points.
References: Western Australia R 1989, New Zealand R1989

DECELERATION SIGNAL. A Signal within the French high speed system. It refers to Signal ordering a lowering of speed.
Reference: Allen 1983

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 1953

INTERMEDIATE SIGNAL. For B & O this refers to an Automatic Block Signal accompanied by Marker Board. It is possibly the equivalent of Intermediate Block Signal.
Reference: B & O 1953

OUTER SIGNALLING. Term refers to Outer Distant and Outer Home Signals in South Africa.
Reference: Starkey 1944

PLATFORM LINE SIGNAL. Little information given in A & W for this term.
Reference: A & W 1991.

REVERSIBLE ROAD WARNING. Older name for Bi-Directional Signalling.
Reference: A & W 1991

SNOW SHED TERRITORY WITH C.L. SIGNALS. This is not a Signal term; it

is a mechanism that activates Signals.
Reference: ARSPAP-H 1953

SLIDE DETECTOR FENCE. Term refers to Activated Signal circuits rather than a Signal in itself.
Reference: ARSPAP-H 1953

STATION DEPARTURE COLOR-LIGHT SIGNAL. Presumably it denotes safe passage from station to departure to mainline.
Reference: REMC 1948

SUBSIDIARY SIGNAL. UK and UK-derivative, influence systems include this Signal. It includes Shunting and other movements of a non-running nature (including such functions on running lines). It is a kind of overarching term for non-running signal terms.
References: K & W 1963

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

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.
References: Swiss Railways 1981

TROLLEY LINE SIGNAL. Historic term for signals operated by an electric 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 1948

1E Systems (Alternate Title: Methods of Control)

General Note. The Database is about Signals, Signs, Markers. Systems are included when 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 though in a more cursory manner. General Notes within the segment 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 so. 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 theses terms, though an impression of more system than actual exists may persist.

General Note III. Many systems terms are united with Signal terms. That raises a question whether the term is part of a system or is a morphological terms. Signal terms united to a simple, unemcumbered term (e.g. Block Signal) probably constitutes 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 term for a means of train operation in, or into, one or more blocks by use of Signals. The Signals can be Block Signals, Cab Signals or both.
Reference: FRA-1 1978

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 not identical. Armstrong refers to Block Signalling and Signal Systems together and the meanings seem interchangeable.
Reference: Armstrong 1978, Blythe 1951

BLOCK SYSTEM OF SIGNALS. Seemingly unique to Allen. It is the equivalent of Block Systems and similar terms.
Reference: Allen 1952

BLOCK SYSTEM WORKING. Signal arrangement in which track divided into block sections with one train per section.
Reference: RONT 2001

SYSTEM, BLOCK SIGNAL. Some US 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 1979

BLOCK SYSTEM. A variant form of Block Signal System and a more abbreviated one. But it does include Signals.
References: ERS-V 1995, UIC-CST 1972

BLOCK WORKING/BLOCK-WORKING. This term is seemingly confined to UK and derivative systems. It is an overarching 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 1951, Nock 1962, Corbin 1922

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 1942, AAR SM 1983, AAR Standard Code 1965

BLOCK OR SPACE INTERVAL SYSTEM/SPACE OR BLOCK SYSTEM. A few sources in referring to Block System add the basic form underlying the Block: Space or Space Interval to Block. Space Interval will be considered in overarching terms for Railway Signals, and Block Systems will be considered under that title.
References: Blythe 1951, Phillips 1942, B & M 1981

BLOCKING SIGNALS. Seemingly a variant form of Block Signals. Therefore a morphological term. But it is included as a cross reference since it is based in Block Signal terminology.
Reference: AAR-USSR 1960

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: Cab Signalling 1991, Pracht 1992, Vantuono 1993, Com ... Based ... 1995

ADVANCED FIXED BLOCK/ADVANCED FIXED-BLOCK. A term referring to digital track circuts without Wayside Signals and centering on Traffic Control meanings. This term is distinguished from the conventional Fixed-Block.
References: Vantuono 1993, Pracht 1992

CLOSED BLOCK SYSTEM. This term refers to Signals kept at danger until train

approaches and may refer to manual block rather than Automatic Block Signaling.
Reference: Vanns 1997

ELECTRO-PNEUMATIC BLOCK SIGNAL SYSTEM. Occasionally terms include the motive power or principle of operations for Signals. This is one such term. Electric motors and generators were not available in an earlier part of the 19th c. This resulted in the creation of electromagnetic and compressed air Signals.
Reference: B & M 1981

b) Manual Block Systems

BLOCK-MANUAL. A term similar to Manual Block System. The means of communication occurs in some form between dispatchers though the form is not specified.
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. The use of computers moves MBS away from a traditional form of that system. The second term refers to a similar system; that system began before ATCS. CMBS adds computer checks on train operation movements thereby ending (or reducing) human dispatching errors. It replaces the Train Order System.
Reference: Armstrong 1986, Geddis 1987

MANUAL BLOCK/MANUAL BLOCK SYSTEM. A series of blocks whose use is 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 Signal are manually operated ("operated by hand").
Reference: UIC CST, Phillips 1942, AAR Standard Code 1965

MANUAL BLOCK-REMOTE CONTROL. A limited use system for single- track lines with moderate traffic. A relatively short-line system that employs CTC type

control mechanisms. It employs two-position Signals.
Reference: REMC 1948

MANUAL BLOCK SIGNALING/MANUAL BLOCK SIGNALLING. This term is the equivalent of MBS. Signaling refers to a group of integrated Signals rather than a MB Signal which has more of a morphological character.
References: Armstrong 1978 (lst term), B & M 1981 (2nd term)

MANUAL BLOCK SIGNAL SYSTEM. Manual Block System is the basic term, with Manual Block as a common form. Some sources add Signal which adds to specificity.
Referenc: ARSPAP-D 1953

MANUAL BLOCK SIGNAL SYSTEM-SPACE INTERVAL. A few sources in referring to Block Systems add the basic form of Signaling that underlays the Block System which is a Space Interval form. One source takes that approach with MBS as well. Space Interval is included with overarching terms which see.
Reference: FRA-3 1979

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

MANUAL SIGNALLING. An alternate name for MBS. It is possible that UK sources are more likely to omit Block in terms though they include Block Systems.
Reference: Vanns 1997

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/CMBS. Terms refer to a group or series of adjoining blocks under the aegis of continuous track cricuits. Operations under manual control are based

on information via telegraph, telephone, etc. System is 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. Automatic Signals are also possible.
References: Phillips 1942, RSD 1911, AAR SM 1983, ARSPAP-D 1965, -H 1953, King 1921 (with hyphen).

LOCK-&-BLOCK SYSTEM/LOCK & BLOCK SYSTEM/LOCK & BLOCK/ BLOCK LOCKING. AAR SM 1983 labels the basic term as a historic term for Controlled Manual Block. It is more of UK provenance than US though employed in US. This system began before track circuits. It is seemingly automatic since trains that activated treadles in turn activated Signal box equipment. K & W includes Block Locking which is an overarching terms for various ways of interlocking of Signals, block instruments, tracks as a unit. References: K & W 1963, AAR SM 1987, Shackleton 1976, Nock 1962

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 the next block; the next box cannot release Signal until train has passed Signal. A 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 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 1963, Nock 1962, Shackleton 1976

d) Automatic Block Terms

ABS SYSTEM/ABSS/ABS. These acronyms have a measure of independent usage. See Automatic Block System, Automatic Block Signal System.

References: AAR SM 1983, ARSPAP-H 1953 , FRA-2 1979

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 notes that AB encompasses series of adjoining blocks. Sources employ basic term of AB while others are more explicit and add System or Signal System.
Refernces: UIC-CST 1972 , FRA-3 1979, Phillips 1942

AUTOMATIC BLOCK SIGNALING. FRA and other sources omit the word System but the meaning remains that of ABSS. Signaling suggests an integrated series of Signals. The slightly different Automatic Block Signals would appear to have a more morphological meanining (function applied to Signal rather than the suggestion of a system of Signals with accompanying messages).
Reference: FRA-1 1978

AUTOMATIC BLOCK SIGNALLING ON DOUBLE TRACKS. This term differentiates the basic by adding the number of tracks. This is not a minor distinction: Signals are for trains all going in one direction per track.
Reference: King 1921

AUTOMATIC BLOCK ON SIGNALING ON SINGLE TRACK. Term for Signals for direction of train operations are on one track.
Reference: ARSPAP-H 1953

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 1953

AUTOMATIC SIGNALLING. Alternate name for Automatic Block Signaling that omits the word Block.
Reference: Vanns 1997

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 1953

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 1972, ERS-V 1995

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 older forms as well as more recent variants.
References: ERS-V 1995, Phillips 1942, Henry 1941

CONTINUOUS AUTOMATIC BLOCK SYSTEM. A term from Calvert that refers to first full ABS system in 1870s. AAR refers to an earlier system as the first ABS but notes of improvements in 1870s. Possibly this is the original system that is complete.
References: Calvert 2004, ARSPAP-H 1953

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 1948

DOUBLE-TRACK BLOCK SIGNALLING. Terms for Signals for one direction on each track.
Reference: King 1921

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 1948

NON-CENTRALIZED AUTOMATIC 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.
References: Phillips 1942, K & W 1963, Allen 1982

ROADWAY AUTOMATIC BLOCK SIGNAL SYSTEM. FRA employs Roadway instead of Wayside (or Trackside or Lineside) in a number of instances. This rather lengthly 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 1984

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 1972

SEMI-AUTOMATIC BLOCK SIGNALING. AAR-USSR describes various forms of Manual Block Signalling. Certain forms involving electric communication and telephone communications are classified as semi-automatic. They are not fully manual(or by hand) but appear to be closer to manual than train-activated forms.
Reference: AAR-USSR 1960

2/3/4 BLOCK SYSTEM/2-, 3-, 4-BLOCK SIGNALING. Short automatic blocks include Distant Signals that indicated the situation in the following block (Known as 2 Block System). 3 & 4 Block Systems gave indications for additional blocks.
Reference: FRA-3 1979, REMC 1948

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

Signaling.
Reference: REMC 1948

3-BLOCK SIGNALING. Another formulation of Multi-Block Signaling.
Reference: REMC 1948

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 1942

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 the same meaning though less explicit, than a form with the word systems attached to it.
Reference: Phillips 1942, K & W 1963, Allen 1982

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 1952

ABSOLUTE BLOCKING. Alternate term for Absolute Block System. It appears in ARSPAP-H but in quote marks. Possibly a historic term and not current.
Reference: ARSPAP-H 1953

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 trains to follow previous train in the opposite direction according to restrictive signal aspects.

References: Starkey 1944, FRA-3 1979, AAR SM 1983, K & T 1988, VGR 1932, Nock 1962, Armstrong 1982

A.P. BLOCK SYSTEM. A partially abbreviated form of the basic term.
Reference: King 1921

A.P.B. SCHEME OF SIGNALING/ABSOLUTE-PERMISSIVE-BLOCK SCHEME OF SIGNALING/A.P.B. CONTROL SYSTEMS. Possibly informal and descriptive variants of official and formal terminology.
Reference: REMC 1948

ABSOLUTE & PERMISSIVE SIGNALING ON DOUBLE TRACK. Frequently absolute denotes stop and stay while permissive indicates stop and proceed. This may be a variant for basic Absolute Permissive Block Signal term.
Reference: REMC 1948

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

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 1951

PERMISSIVE MANUAL BLOCK. Only REMC among surveyed sources included this variant form which adds explication.
Reference: REMC 1948

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 1992

SUPPLEMENTARY ABSOLUTE BLOCK. Term included by A & W with few details.
Reference: A & W 1991

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 1979, ARSPAP-D 1965

f) 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 1980

BLOCK INSTRUMENT. Instrument indicates occupation of block.
Reference: RONT 2001

DOUBLE LINE BLOCK/SINGLE LINE BLOCK. These are UIC terms presumably describing European practices. Single Line Blocks 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 direction of tracks.
Reference: UIC-CST 1972

KINGSMAN BLOCK SYSTEM. A 'brand name" system with the same focus as

Nachod but instead employs D.C. current and track circuits.
Reference: RSD 1911

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 1992

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 without 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 1979, ERS-H 1995, Gaum 1992

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 1911

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.
Refernce: REMC 1948

OVERLAP SCHEME OF SIGNALING. Signals arranged so that approach trains on track will each encounter a Signal at stop.
Reference: REMC 1948

RADIO BLOCK/RADIO BLOCK SYSTEM. A tokenless block system that uses radio between signal station and thereby eliminates wires. Radio Block can

suggest a communication system which may include Radio Tokenless block but possibly confined to that function. This entry is more appropriate for Ch. 4 but retained because of block character.
References: Signal Equipment 1981, Brown 1984

RADIO CONTROL EQUIPMENT. Radio communication equipment in Block Working System.
References: RONT 2001

SINGLE LINE BLOCK INSTRUMENTS. Telegraphic device controlling train operations on a single line section.
Reference: RONT 2001

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.
Reference: Nock 1962, ERS-V 1995

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 1965

INTERLOCKING SIGNALLING. For Phillips 1942, Interlocking Signalling is the overarching term for all forms of Interlocking Systems. This is 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 overarching term.
Reference: Phillips 1942, UN 1954

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

ALL-MECHANICAL INTERLOCKING. This term 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 1995

APPROACH LOCKING. Possibly a form of Electric Interlocking. System prevents changes to interlocking setup while train movement is in progress.
Reference: Jackson 1991

AUTOMATIC INTERLOCKINGS. Train-activated interlockings were begun in the early 20th c. 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.
References: ARSPAP-I 1952, -H 1953

CABIN INTERLOCKINGS. Term refers to Indian Railway practice. Interlocking presumably controlled by operators at signal cabin.
Reference: UN 1954

COMPUTER INTERLOCKING. A virtually self-explanatory term. Microprocessors serve as control and energizing role that replaces large, complex electric relays and cable arrangements.
Reference: ERS-L 1995

ELECTRIC INTERLOCKING/ELECTRICAL INTERLOCKING/ELECTRICAL SIGNAL INTERLOCKING. These terms appear to be very general terms for interlocking 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 refers to interlockings in railway classifications yards especially to a new form that eliminates manually operated points.
Reference: Jia-lin 1981

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 1952, Armstrong 1957

ELECTRO-PNEUMATIC INTERLOCKING. A system employing use of air for activating switches and signals with electricity as an integral element.
References: ARSPAP-I 1952, Phillips 1942, Armstrong 1957

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-L 1995

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 1979

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 1979

KEY INTERLOCKING SIGNALLING. A form of Interlocking on Indian Railways. Interlocking of points and signals accomplished through keys.
Reference: UN 1954

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 1952

MECHANICALLY-INTERLOCKED POINTS & SIGNALS. A descriptive name rather than a formal name for interlocking encompassing switches and Signals.
Reference: Robbins 1967

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 connected the entire system.
References: Armstrong 1957, ARSPAP-MEMI 1947

MICROLOK/MICROLOK II. The original term is a form of interlocking and should be assigned to this location. However, the second form -- while based on the first form -- has been updated with computer technology and displays a broader range of activities. The full entry is in Train Control terms: Specific Named Systems since they are linked.
References: Chandrika 1998, US&S [www.switch.com]

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 1952

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 1963, Armstrong 1957, FRA-3 1979

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 1948

ROUTE CONTROL INTERLOCKING/ROUTE-CONTROL INTERLOCKING. These terms are alternate names for Route Interlocking.
References: Henry 1942, Phillips 1942

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 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 1957, Phillips 1942, Henry 1942

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 1972

SEQUENCE-SWITCH INTERLOCKING. A UK system of mechanical nature that sets routes over multiple routes.
Reference: A & W 1991

SIGNAL/POINT INTERLOCKINGS. A system for ensuring points are fixed in position upon clearing of corresponding Signal.
Reference: UIC-CST 1972

SSI SYSTEMS. Term refers to Sold State Interlocking. An Automatic Control system for interlocking and automatic block system. It employs computer technology and is of a centralized nature in contrast to relay interlocking. See also: ATBL/PLP
Reference: Chandrika 1998

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 1995, Leach 1991

1E3 Train Control Terms

a) Overarching Terms

AUTOMATIC TRAIN CONTROL. General Note. This term is seemingly interchangeable with Train Control. Both older and new 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. The meaning of ATC can vary greatly. UIC offers a narrow a definition that involves speed regulation and automatic braking. UIC has a second definition that centers on speed monitoring. FRA (which includes international studies) sees it as a broader term that controls movements of trains, enforces safety and direct train operations. US 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 narrow in meaning.
References: FRA-3 1979, ERS-H 1995, UIC-COST 1972, K & W 1963, Blythe 1951

AUTOMATIC TRAIN CONTROL EQUIPMENT. RONT has a focus on Objects and therefore many terms end in equipment. It somewhat alters the meaning since it is centered on the physical dimension and little of the message produced aspect appears.
Reference: RONT 2001

AUTOMATIC TRAIN CONTROL SYSTEM/AUTOMATIC TRAIN-CONTROL SYSTEM. The first is a more explicit version of the basic term. REMC adds hyphen and control in the second term.
Reference: Sterner 1968, REMC 1948

AUTOMATIC TRAIN OPERATION/AUTOMATIC TRAIN OPERATION

SYSTEM.. A system that oversees on-board operations involving regulation of speed, braking, various adjustments. System added to the basic term probably does not alter the meaning.
References: FRA-3 1979, ERS-C 1995, Chandrika 1998 (2nd term)

AUTOMATIC TRAIN PROTECTION. UIC speaks of speed regulation for ATP. While FRA includes a broad range of safety concerns including "train detection, train separation, interlocking."
Reference: ERS-C 1995, FRA-3 1979

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 1979

AUTOMATIC TRAIN PROTECTION & CONTROL. A term(s) of confusion. Some sources, including FRA 1979, use ATP as a technical term for one subdivision within ATC. 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-C 1995

ATP/ATC. This term is a kind of overarching term for Indian Railways for various systems.
Reference: Chandrika 1998

BR ATP. ATP system as developed for British Rail. It is an intermittent system.
Reference: Leach 1992

COMMUNICATION [S]-BASED TRAIN CONTROL/TRANSMISSION-BASED SIGNALING (TBS). Terms for encompassing control system employing computer and radio communications. An early manifestation of CMTC was the lst International Conference on C-B TC in 1995. A variety of systems can be placed under the term with varying components. ATP, ATO, ATS functions are included

in C-B TC. Systems can be based on radio, rail, and loop computer systems.
References: Communication-Based ... . 1995 (lst term), Rumsey 1998 (2nd)

CONTINUOUS TRANSMISSION SYSTEMS/INTERMITTENT SYSTEMS. One source views these terms as sub-divisions within ATP.
Reference: Leach 1991

CONTROL SYSTEM. A very general term that encompasses TC and also other electronic systems applied to railroads (e.g. dispatching). Railroad electronics appear to be moving to a broad, encompassing system that includes direct safety systems (including Signals in some instances).
Refernce: ATCS 1989

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 1948

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 1994

SYSTEM, ATC. Alternate term for of ATC System that places the general term category before the particular.
Reference: ARSPAP-D 1965

TRAIN CONTROL/TRAIN-CONTROL/TRAIN CONTROL SYSTEM/TRAIN-CONTROL SYSTEM. Train Control is a somewhat ambiguous term which is accompanied by variant forms here. It can have a precise technical meaning which includes various subsystems. It can also have a limited meaning consisting of a single somewhat simple device (often a Train stop). There are also divergencies between US and European practice.

A core meaning of TC might be object(s) and processes outside of the train that

can effect changes in train movement. Control of actions (and not merely hoped-for changes [e.g. obeying signal indications]) can be an encompassing process and practice that affects all phases of train operations and is not confined to Signalling. TC can also have a restricted meaning. Terms adding system add explication to the basic term. Hyphens are sometimes added that more clearly conjoin keywords.
References: Thomas 1993, ATCS 1989, Nock 1962, Phillips 1942

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 of Signals and Controls. Many of the control terms are integrated with and are thereby part of the Signal role. See Also General Overarching entry.
Reference: Armstrong 1981

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 communications).
Reference: UN 1954

TRAIN CONTROL SYSTEM. US term for train movements 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 1953

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. Traffic Control Devices may be a general term for safety aids in railroads or, more narrowly, non-visual aids such as Train Stops.
References: Henry 1942, FRA-RAR 1984

TRAIN CONTROL EQUIPMENT. Employed by Jane's as a product category title. It is more of an overarching term for the range of equipment employed in TC

than a specific TC term.
Reference: Jane's 1987-88

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 1953

EUROPEAN TRAIN CONTROL SYSTEM. A concept in Europe of creating a common system and also integrating the many existing systems. It consists of three elements: Euro-Balise, a transponder beacon; Euro-Cab, the on-train equipment which receives data from the beacons (and can transcribe system data), and Euro-Radio, transmiting ATP and ATC information.
Reference: ERS-C 1995, ETSC ... 9-93 (IRJ)

INTEMITTENT CONTROL. A system in which control mechanism is located only at specific points. Such systems can include Cab Signals, TC.
Reference: AAR SM 1983

CONTINUOUS-INDUCATION SYSTEM. Intermittent systems are only found in certain locations (at Signals) while Continuous systems provide ongoing data and not just at Signals. A break in the track anywhere in the block will be indicated.
Reference: Henry 1942

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: ARPSPAP-H 1995

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 will generate electric currents through the induction process. And the locomotive apparatus receives the track data and brakes will be applied if crew does not respond to signal.
Reference: Henry 1942

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 1978, -2 1979, -3 1979

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-COST 1972, B & M 1981

INDUCTIVE TRAIN CONTROL. This term, though giving appearance of a general term, refers to Indusi, in this instance. However, the term can encompass all systems employing magnets and electro-magnets.
Refernce: FRA-1 1978

TRAIN CONTROL SYSTEMS, DEVICES & APPLIANCES. A very general term from FRA-RAR encompassing all aspects of TC operations.
Reference: UN 1954

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.
References: B & M 1981, K & W 1963

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 1979

TRAIN STOP DEVICES. This term is 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 1979

TRIPCOCK ARM/ TRIP ARM LEVER. No definition for either term. Broader term is Mechanical Brake Tripping Device.
Reference: RONT 2001

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

AUTOMATIC STOP/AUTOMATIC STOP SYSTEM. These terms are similar to (and possibly identical to) Automatic Train Stop System. AAR SM 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 1987, Shackleton 1976

TRAIN STOP/TRAIN STOP SYSTEM. Terms that are shorter forms of Automatic Stop System. The meaning appears to be the same.
References: Blythe 1951, Nock 1962, AAR SM 1987

AUTOMATIC STOP. King omits the term train from what is apparently a Train Stop of conventional formulation.
Reference: King 1921

AUTOMATIC STOP EQUIPMENT. This term from Jane's refers to a product category title. It refers to apparatus employed in Automatic Stop.
Reference: Jane's 1987-88

ELECTRO-PNEUMATIC TRAIN STOP. This form of Train Stop utilized E-P processes that also included electro-pneumatic interlockings and automatic signals.
Reference: ARSPAP-H 1953

AUTOMATIC TRAIN STOP/AUTOMATIC TRAIN-STOP/AUTOMATIC TRAIN STOP SYSTEM. Terms for a series of devices which, made in many instances, brings about physical contact with a train passing 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 betwen ATS and ASD.
References: Allen 1982, ARSPAP-H 1953, FRA-3 1979

AUTOMATIC TRAIN-STOP DEVICES. For REMC this refers to individual devices rather than to Train-Stop System.
Reference: REMC 1948

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 1978

MOTOR-OPERATED AUTOMATIC STOP. A form of Automatic Stop for King. The specific form was employed by NY Municipal Railway.
Reference: King 1921

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 1948

SPEED SUPERVISION SYSTEM - TVM. A category of ERS that includes more encompassing (i.e., exercises greater control) than ATC systems.
Reference: ERS-C 1979

AUTOMATIC SPEED REGULATION (AR). 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 are apparently involved though they are only one element. At least one US description at variance with Jackson which see.
Reference: Jackson 1991

4) CTC

ELECTRONIC CTC/CTC & REMOTE CONTROL SYSTEM/BLOCK & ELECTRONIC CTC. These are products category titles from Jane's.
Reference: Jane's 1987-88

CODED CTC. Sophisticated communications require transmission of data over long distance economically. CTC includes (over its development) 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 1953

CENTRALIZED TRAFFIC CONTROL (CTC)/CTC SYSTEMS. A system of railroad operations in which train movements are under the direction 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 It is 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 include: Phillips 1942, Armstrong 1957, 1978, Henry 1942, K & W 1963, Nock 1962, ARSPAP-H 1953, AAR SM 1983, Thomas 1993

CTC RAILWAY SIGNALLING SYSTEM. This term presumably refers to a more explicit version of the term CTC.
Reference: Wunderlich-Siemens

WAY INTERFACE SYSTEM. This Advanced Railroad Electronic System (ARES) can monitor, control all Wayside Devices. Signals not specifically mentioned in Welty though presumably included.
Reference: Welty, 5-88

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 a safety aid at least in part.
Reference: Welty 5-88

TRAIN SITUATION INDICATOR (TSI). This unit is an "On-board Display System" for ARES displaying a "color CRT display" unit. It is used for receiving all data need for train operations. Seemingly some portion of the system 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.
References: Armstrong 1986, 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 without breaking response, buzzer for not braking or 40 km/h speed limit.
Reference: ERS-C 1995

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 of a continuous nature. Equipment is attached to central equipment. It is employed on VHS lines. No Lineside Signals are in use.
Reference: ERS-C 1995

LINIEN ZUG BEEIN FLUSOUNG, LZB. This terms 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 1995

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-C 1995

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-C 1995

EBICAB/CONTROL DE VITESSE A BALISES, KVB. A transponder beacon based ATC system. It is sophisticated system that offers many functions including speed supervision, warning of speeding, braking activation. Cab Signals in the Netherlands, KVB in France.
Reference: ERS-C 1995

INDUSI (INDUKTIVE ZUCSICHEERING). 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 special. Brakes activated if crew acts incorrectly unless response made to INDUSI messages. A newer version of INDUSI offers a greater range of messages.
References: INDUSI, ERS-C 1995

AATC = ADVANCED AUTOMATIC TRAIN CONTROL. An adaption of EPLRS (see entry on next page).
Reference: Communication-Based 1995

ACSES. Advance Civil Speed Enforcement System. It employs transponders that provides five miles per hour increments notices for high speed trains. It also supplies a variety of data on locations, grades, and speed restriction distances.

Reference: Greenfield 1995

ASFA. This Spanish system is intermittent, contactless, inductive. It functions are identical to Indusi. Crew can respond to message before brakes activated.
Reference: ERS-C 1995

ARS, AUTOMATIC ROUTE SETTING. Centralized Route Setting adjustments without Signal crews.
Reference: Vanns 1997

ATB/PLP. A system of GEC Alsthom ACEC. It is also known as SSI-ATC. SSI (Solid State Interlocking) provides automatic control for Interlocking and Automatic Block systems that computerized. ATC offers trains supervision.
Reference: Zoetardt 1994

ATIS, ADVANCE TRAFFIC INFORMATION SYSTEM. The source gives few details on what appears to be at most a marginal Signaling system.
Reference: Jackson 1991

ATLAS. This acronym has the meaning of Advance Train Location & Supervision. A consortium has developed this system. It is part of the communication-based technology developments and employs a "speed-spectrum radio signals."
Reference: Communication-Based 1995

COMTRAC/COSMOS/SMIS. Terms are part of high speed system for Shinkasen (Japan) railroads. Comtrac comes 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 1979, Shouji and Otsuki 1997

EPLRS. This is an acronym for Hughes Enhanced Positive Location and Reporting System. It is a form of Communication-Based Train Control.
Reference: Communication-Based 1995

FLEXIBLOK SYSTEM. Spread-spectrum radio signals have become commonplace for rail usage. That form of signl has a wider bandwith thereby reducing possible interference. This system is one such approach employing that form of radio technology.
Reference: Communication-Based 1995

ICTC SYSTEMS, INCREMENTAL TRAIN CONTROL SYSTEM. Few details are available in one source that gives the term. Possibly comparable to ETCS.
Reference: Chandrika 1998

INCREMENTAL TRAIN CONTROL SYSTEM (ITCS). A communication-based system that employs traditional signals or "virtual signals." It provides a wide-range of information including enforcement practices. The system increases track capacity and safety.
References: Communication-Based 1995, GE Transportation 2008

MICROBLOK. Terms refers to a form of train control technology. The system is older and information is limited.
Reference: US&S in Communication-Based 1995

MICROLOK/MICROLOK II. The first version of this system was an interlocking system and more appropriately placed in interlocking. The second is based on the older system but employs computer technology and has broader usage. It is regarded as a Wayside Control System.
References: Chandrika 1998, US&S [www.switch.com]

POSITIVE TRAIN CONTROL/POSTIVE TRAIN CONTROL SYSTEM/PTC. Terms for a variety of systems that provide control and monitor functions for railways. Radio and GPS systems supply information. Train-based equipment enforces information received. These systems include Incremental Train Control, Electronic Train Movements, Advanced Enforcement Systems.
Reference: Greenfield 1998, Wikipedia 2008

PTS = POSITIVE TRAIN SEPARATION. A mechanism intended to be an overlayment on wayside signaling. This radio-based system includes seveal

features that increase safety, trackage usage and movement efficiency
Reference: Communication-Based 1995

RIT, TRAIN MANAGEMENT SYSTEM. Term for a Dutch system. This system includes location (GPS) capability among several features. The purpose of TIT is primarily for more economical train operation. Signalling is an indirect dimension.
Reference: Train Manager ... IJR 1997

SELTRAC. Term for Moving Block developed by Standard Electrick Lorenz AG (SEL).
Reference: Communication-Based 1995

SIGNUM. This system bears a resemblance to Crocodile and AWS. Though it lacks a clear signal message. It is intermittent in character and of the contactless form.
Reference: ERC-C 1995

SNCF SIGNALLING SYSTEM FOR VHS/VHS SYSTEM OF SIGNALLING & SIGNALLING SYSTEM FOR HIGH SPEEDS. First terms is of descriptive rather than a formal term. It includes automatic block, track circuits, cab-based equipment and Signals. Second term is an alternate title.
Reference: Weber 1980

CROCODILE. A European system for monitoring observance of signals by the train crew. Devices convey sound and visual data indicating whether clear or restrictive conditions. Crew must acknowledge message or brakes applied. The Crocodile is a metal object attached to electric current that interacts with a brush that interacts with the Crocodile. The Crocodile is of intermittent operations.
Reference: ERS-C 1995

AUTOMATIC WARNING SYSTEM/BRAWS. A British Rail system similar to Crocodile. It employs magnets on the track (one activates apparatus, one sends data). Audo and visual messages are received in the locomotive.
References: K & W 1963, ERS-C, Whitehouse 1985

COMBINED TRAIN CONTROL. This term refers to Italian State Railways processes which provides 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 1979

(ARES) ADVANCED RAILROAD ELECTRONIC SYSTEM. This system is from Rockwell International. It encompasses many forms of electronic and control system including safety information and sometimes Signals.
Reference: ATCS 1991, Welty 5-1988

IDENTRA. Systems 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.
Reference: Barwell 1983

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 1981

PHAR. Communication system in Sweden employing Doppler radio transmitter and passive beacons. A variety of information is given to train crews including speed and upcoming data changes.
Reference: Barwell 1983

ULTRABLOK. UltraBlock is a form of ITCS or a variant form for passenger train applications.
Reference: Communication-Based 1995

e) Miscellaneous Terms

DRIVER WARNING SYSTEM. System for engineer that indicates in advance a speed restriction. Brakes applied if indication ignored.

Reference: RONT 2001

MICROPROCESSOR-BASED SIGNALLING SYSTEM. A descriptive term that can describe SSI.
Reference: Vanns 1997

NORMAL DANGER SYSTEM. This refers to train operation in which Signals at danger until train requires clear indication.
Reference: Jackson 1992

OCCUPATION PROTECTION EQUIPMENT. Protecting equipment for engineering and other activities in railway work. It has several components:

ELECTRIC OCCUPATION KEY. Key for gaining access to protection equipment.

ENGINE SHUNTING VOUCHER. RONT does not include definition.

ENGINEERING TOKEN. Electronic Token that allows engineering staff control of section of line.

LOCKOUT SYSTEM EQUIPMENT. A system that restricts, prevents train movements in order to create safety for user of system.

PATROLMAN'S LOCKOUT DEVICE. Device that turns Signs to danger so workcrew is safe when no nearby refuge.
Reference: RONT 2001

SIGNALLING SYSTEMS FOR OTHER STAFF. No definition is given in RONT but this term or component terms. The components include:

SIGNALS FROM PLATFORM STAFF TO:
- DRIVER/GUARD
- PASSENGERS
- SIGNALMAN

STATION STAFF WARNING SYSTEMS

TRACKSIDE STAFF WARNING SYSTEMS

Reference: RONT 2001

TBS, TRANSMISSION-BASED SIGNALLING. Jackson includes this term which links on-board computer with central computer. Data supplied includes

location and speed.
Reference: Jackson 1992

TOPS EQUIPMENT. T.O.P.S.: Total Operations Processing System. A train movement operation employing computers.
Reference: RONT 2001

TRACKER BALL (IECC). IECC: Integrated Electronic Control Centre Component. Device employed for controlling points and Signals.
Reference: RONT 2001

TRACKSIDE STAFF WARNING SYSTEMS/TRACKSIDE STAFF WARNING SYSTEMS/TRAIN OPERATED WARNING SYSTEM. RONT does not give a definition of the first term. The second term is a narrower term under the first. It is an audible warning of approaching train intended for trackside staff. Signal system activates alarm.
Reference: RONT 2001

TRAIN-OPERATED POINTS SYSTEM. A system whereby points in rural areas are activated by wheel flanges on hydraulic switch mechanisms.
Reference: Leach 1991

CHAPTER TWO

ALL-LIGHTED SIGNALS

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2A2 Alphabetical Index

2B Overarching, Color Light & Other All-Lighted Signals

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 overarching (or sub-arching) term than an all-lighted term though it may have a place here.
Reference: FRA-3 1979

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 Signals, SA-TWR 1964, ARSPAP-LSLSL 1949

RAILWAY SIGNAL LIGHTS. This term suggests a general overarching term save for the addition of light. It may be more appropriate here. Compare Visual Signal Lights.
Reference: Tansley 1987

SIGNAL, LIGHT. An alternate form of the Light Siganl for some US sources; it has the same meaning. It is a Signal (fixed) whose indications are given by color and/or position lenses.
References: ARSPAP-D 1965, AAR SM 1987

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 as an alternate.
References: Shackleton 1976, US&S

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

Reference: Tansley 1987

2B2 Color Light Signals

a) Principal Forms

1) Basic Terms

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. Entries are limited since related terms are 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 are considered separately though all-lighted. Some sources include Position and Color Position within Colorlight Signals. Most Color Light terms are two words divided about equally between hyphenated and non-hyphenated forms. English-language terms, outside of 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 Color Light, 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 General Note is for all of Chapter 2B2

Classification: #5110
Form of Device: Lighted Railway Signal
Operation: An all-lighted device that displays alternating messages according to an agreed-upon pattern.
Comments: The classification speaks of Color-Light Multiple-lens which constrasts with Color-Light: Searchlight-lens. Various other Color-Light Signals including Dwarf forms are encompassed within this designation for this study.

References: Colour Light Signals: UIC COST 1972, WBS UK, I & W (Vic), Mashour 1974
Colour-Light Signals: Ellis 1966, Rolt 1982, Allen 1982, Barwell 1983, Shackleton 1976
Colourlight Signals: WBS (Aus), QR-SS, Grisdale 1977
Color Light Signals: FRA-1978, FRA-2 and FRA-3, 1979
Color-Light Signals: Phillips 1942, Killigrew 1949, Kaufmann 1966

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 is possibly employed only with that reference. See Also Color Light Type Signal (SR) for cross-reference. REMC adds "of" to the third term.
References: FRA-1 1978, ARSPAP-H 1953, REMC 1948

COLOR-LIGHT SIGNALING. This term seemingly refers to a system of Color-Light Signals rather than to a single Signal; though such references can refer to groups. See Also: Color Light Signaling group on page 180.
Reference: Solomon 2003

COLOR LIGHT TERMS: OTHER THAN ENGLISH. UIC COST gives Colour Light Signal for the English form of the term. The same publication includes Signal Lumineuex in French for Color Light, Lichtsignal in German, and Segnale Luminosa in Italian. However, UIC GD has alternate terms: Signal 'a feu de cou luer in French, Fablicht Signal in German, Segnal a fuoco di colore in Italian, Senal Luminos de colores in Spanish. Brazil and Portugal railways employ Sinais Luminosos.
References: UIC COST 1952, UIC General Dictionary 1975

2) Limited-Variant Forms

SIGNAL, COLOR LIGHT. Placing the word "Signal" before Colorlight/Color Light is rare except in the US 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 1987, ARSPAP-D 1965

COLOUR-LIGHT/COLOURLIGHT/COLOUR LIGHT/COLORLIGHT/COLOR LIGHT. Colourlight is possibly either a signal form or a reference to the means of displaying information. The hyphenated form is from Allen. The single-word forms appears in ERS but with little elucidation. Possibly there is no extant form of the two-word form. The American English versions are found in one source.
Reference: ERS-B 1995, Allen 1962, Solomon 2003

COLOR SIGNAL/COLOUR SIGNAL. The first term is employed by B & O. It possibly includes Signals other than fully lighted forms (e.g., 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 1953, Queenslands Rlways-SS

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 possible language translations affected choice of terms. Australia also uses the term though the use is rare there as well.
References: Official Inauguration 1975, AR Around Australia

3) Variant Forms

AUTOMATIC COLOUR-LIGHT SIGNALS. Companion term to the term Automatic Colour-Light Signalling. It denotes early stage of Color Light Signals when automatic processes were becoming common (though not yet so) and method of operation sometimes included in the term.
Reference: Shackleton 1978, Ellis 1966

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. Color Light Running Signals include UK Position Light Signals, Theatre & Stencil Indicators. These terms relate to morphology and perhaps should be cross-references only in this segment.
Reference: K & W 1963

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 1997

MULTIPLE-LENS COLOUR LIGHT SIGNAL/MULTIPLE-LENS COLOUR-LIGHT SIGNAL/MULTI-LENS FOUR-ASPECT COLOUR-LIGHT SIGNALS. The basic term is from Wooley, VR. It differentiates Colour Light Signals that display multiple lenses from Colour Light Signals of the searchlight model. Vanns offers a double-hyphenated variant that employs multi rather than multiple.
Reference: Wooley 1958 (Australia), A & W 1997, Vanns 1997, VGR 1932

MULTI-COLORED LIGHT SIGNAL. This distinguishes Color Light Signals with multiple lenses from searchlight forms. It is somewhat similar to previous term though without mention of lens.
Reference: South Korea (Korea)

MULTI-UNIT COLOUR-LIGHT SIGNAL. An alternate of Multiple-Lens Colour Light Signal.
Reference: A & W 1991

MULTIPLE-HEAD COLOR-LIGHT SIGNAL/SINGLE-HEAD COLOR-LIGHT SIGNAL/THREE-HEAD COLOR-LIGHT SIGNAL. Solomon often refers to Signal Head which is seemingly a rare practice. AAR 1949 refers to Signal Units and that may offer a synonym for Solomon's terms. Head refers to the number of Signal assemblages on a given mast.
Reference: Solomon 2003

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 Brake & Signal (UK) uses the term as two words, Spread-Light. GRS in the 1920s coined a trademark of "Spreadlite." Wooley speaks of "spreadlight lenses" employed for "subsidiary or shunting signals." Second and third terms are alternatives.
References: WBS UK, GRS 1925, Wooley 1958 VR, Sig Eq. 1981

(4) Signaling Forms

AUTOMATIC COLOUR-LIGHT SIGNALLING. A term that is nearly historic. The inclusion of the word "automatic" occurred most likely when mechanical processes dominated signaling; the addition of "automatic" indicates that automatic processes were in an early state. The term refers to a system of Signals.
Reference: Shackleton 1976

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.
References: Canada (lst term); Taiwan (2nd term); Bangladesh, Zimbabwe (3rd term); Alkmaar (4th term)

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

ELECTRIC AUTOMATIC COLOUR-LIGHT SIGNALLING. A general term that encompasses all Color/Colour Light signals but made more explicit by including the energy source and character of operations.
Reference: Ellis 1958

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 US or ERS.

COLOR-LIGHT TYPE SIGNAL, SR/SHORT RANGE SIGNALS. Originally the first term was designed for 500 foot distance in 1904.
Reference: ARSPAP-H 1953, ERS-B 1995

MEDIUM RANGE COLOR LIGHT SIGNAL/MEDIUM RANGE COLOR SIGNALS. 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 historic nature. Tansley includes a similar term though without inclusion of light.
References: ARSPAP-H 1995, B & M 1981

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 1979

LONG-RANGE COLOR-LIGHT SIGNAL. This version with two hyphenated terms is from GRS. Range is determined by wattage and voltage of lamp bulb. Distance, because of those factors, can vary from 2500-3500 feet and often reaches 4000-5000' with a maximum range of 5000-6000'.
Reference: GRS 1925

LONG RANGE COLOUR LIGHT SIGNAL. A variant form of the basic term.
Reference: GEC 1972

LONG RANGE DAYLIGHT SIGNAL. Another historic term that includes the word "daylight." The distance for this form was 3500'.

Reference: B & M 1981

LONG RANGE SIGNAL. A more abbreviated term that refers to Color Light Signals. It refers to Briish Rail and has a distance of 1500m or ca 5000'.
Reference: ERS-B 1995

LONG RANGE TYPE. A category within color-light forms.
Reference: King 1921

LONG RANGE DAYLIGHT TYPE COLOR LIGHT SIGNAL. A historic term. This can be seen by the inclusion of the word "daylight" in the title. Only an early signal which could be seen in the daylight would include the word since Transition terms often included words that established signals would omit.
Reference: ARSPAP-H 1953

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.
References: FRA-3 1979, ARSPAP-H 1953, B & M 1981, Starkey 1944

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 1925

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

LONG RANGE COLOR LIGHT SIGNALS, VERTICALLY ARRANGED/ TYPE D LONG RANGE COLOR LIGHT SIGNALS, VERTICALLY ARRANGED/TYPE D (VERTICAL) COLOR-LIGHT SIGNALS/TYPE-D COLOR LIGHT This compiler has slightly altered terms that appear in ARSPAP-H. The terms in question are tied to a manufacturer (GRS). It is important to include the correct and precise terminology but it may be permissable 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 1953, also GRS 1925, ARSPAP-LSLSL 1949

HORIZONTALLY ARRANGED LONG RANGE COLOR LIGHT SIGNALS/ LONG RANGE COLOR LIGHT SIGNALS, HORIZONTALLY ARRANGED/ TYPE E (HORIZONTAL) COLOR LIGHT SIGNALS/HORIZONTAL COLOR-LIGHT SIGNALS/HORIZONTALLY ORIENTATED COLOR-LIGHT SIGNALS. These are also exclusively US 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. The word "Horizontal" and "Horizontally" may be a descriptive term rather than a part of the formal name. A new source, Solomon, offers the final two terms.
References: ARSPAP-H 1953, GRS 1925, ARSPAP-LSLSL 1949, Solomon 2003

TRIANGULAR ARRANGEMENT COLOR LIGHT AUTOMATIC BLOCK SIGNALS/COLOR LIGHTS SIGNALS ARRANGED IN A TRIANGLE/TYPE G (TRIANGULAR) COLOR-LIGHT SIGNALS. These are terms found in a few US publications produced by ARPSPAP-H and GRS 1925. Most of these (and adjoining terms) are prefaced by GRS type designations. This Database will include that version and also in 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 1953, GRS 1925

TRIANGULAR COLOR-LIGHT/TRIANGULAR-PATTERN COLOR-LIGHT SIGNAL/COLOR-LIGHT WITH TRIANGULAR LIGHT PATTERN. These variant forms may intertwine formal names with descriptive terms.
Reference: Solomon 2003

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 lenses

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 1962, K & W 1963, Vanns 1997

COLOUR-LIGHT SIGNALS MULTI-ASPECT-CLUSTER. Vanns arranges signal types under heading of Color-Light but subdivisions represent a specific form of Signal.
Reference: Vanns 1997

3) Morphology & Other Terms

APPROACH-LIT COLOUR-LIGHT SYSTEM/APPROACH-LIT MECHANICAL COLOUR-LIGHT SIGNALS. Signals lighted only at approach of trains. Methods of operation that is incorporated into the name of the Signal.
Reference: Vanns 1991

CHRISTMAS TREE. Colour lights positioned on a gantry. A colloquial term.
Reference: Jackson 1992

COLOR-LIGHT AUTOMATIC BLOCK SIGNALS/COLOR-LIGHT BLOCK SIGNALS/COLOR LIGHT INTERLOCKING & ABS SIGNALS. One surveyed source combines the light form with a morphological function.
Reference: Solomon 2003

COLOUR-LIGHT ROUTE INDICATOR. The color usage of this Signal contrasts with many Route Indicators that display lunar white or other uni-color patterns.
Reference: Taylor 1949

COLOURLIGHT SIGNAL-UNDERGROUND STYLE. A form of Signal intended for tunnels where space is limited. Housings for lamp apparatus are smaller than standard forms with simple lenses. Darkness requires less powerful apparatus. A single source includes the location (underground) in the title.

Reference: WBS (Australia)

COLOUR LIGHT SIGNAL (HUMPING). Term refers to a Signal engaged in shunting operations at freight yards. British spelling because of the source of the publication. This term is also morphological in nature.
Reference: UN 1954

COLOUR LIGHT SHUNT SIGNAL. A curious term that may not actually exist. Starkey speaks of Position Light Shunt as a satisfactory Signal for shunting but notes that using a Colour Light Shunt Signal in lieu of a Position Light Shunt might cause confusion since it would be similar to a Colour Light Running Signal.
Reference: Starkey 1944

DAY COLOUR-LIGHT SIGNAL. A term referring to earlier all-lighted Signals that did not require non-lighted dimension during the day hours (as was the case with Semaphore Signals).
Reference: Nock 1962

DOUBLE LIGHT SIGNAL. Older term for what is now known as Bi-Directional Signaling.
Reference: King 1921

FAIRYLAND. Jackson includes colloquial terms in his treatise. Fairyland designates Multi-aspect Colour Light Signals.
Reference: Jackson 1992

MECHANICAL COLOR-LIGHT SIGNALS. A curious Signal employing Semaphore spectacles and lamps but without arms. The Signal thereby became a Colour-Light Signal employed in several UK systems.
Reference: Vanns 1997

MINIATURE COLOUR-LIGHT SIGNAL/MINIATURE COLOUR LIGHT SIGNALS. Seemingly a synonym for Dwarf Signals. Miniature is found in UK practice; dwarf more common North America.
Reference: K & W 1963

THREE-ASPECT DAY-TIME COLOUR-LIGHT SIGNAL. This term may better fit in 1C 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 1997

2B3 Searchlight Signal Forms

General Note. There is a gradation of terms from Searchlight Signals to Searchlight to Searchlight Color Lights to Color Light Searchlights. The various terms fit into one of those categories. Do they represent different conception of the Searchlight Signal? Or are they semantic differences which are not of great signficance? Even if the categories are not significant they 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 1979, Zimbabwe Railways

SEARCHLIGHT SIGNAL. The word "searchlight" suggests a powerful light, narrowly focusses and very mobile in direction. The searchlight Signal for railroads was perhaps coined to denote a focussed and powerful and single lamp apparatus; it does not offer a choice in direction since it is fixed. The searchlight Signal is a form of Colorlight Signal though 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 speak 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.

Saftetrans 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.

Classification: #5111
Form of Aid: Lighted Railway Signal
Operation: An all-lighted device that displays alternating messages according to an agreed upon pattern.
Comments: The Signal has a single multifaceted lens apparatus that alternates lens as activated by instructions to the mechanism
Reference: Queenslands Railway, B & M 1981, AAR SM 1983, South Korea, Canada 1962, Safetrans

SEARCH-LIGHT SIGNAL. A slightly variant form of Searchlight Signal. Few surveyed sources include this variation.
Reference: Kaufmann 1966, Queensland Railways FS

SEARCHLIGHT TYPE. A variant and shortened form of Searchlight Type Signal.
References: ARSPAP-LSS 1949, ARSPAP-H 1953

SEARCHLIGHT TYPE SIGNAL. An alternate to Searchlight as an overarching term for this form of Signal. The word "Type" is a component of numerous signal terms which also include the word "Searchlight."
Reference: UIC CST 1972

SEARCH LIGHT TYPE SIGNAL. A variant of Searchlight Type Signal. A rare example of Search and Light as two words in a Signal context. See Also: Search Light Signal.
Reference: UN 1954

SEARCH LIGHT SIGNAL. Search and Light as two words is a rare practice in Railroad Signals. This term is from South Korea. One other use is Search Light Type Signal from UN 1954. Both uses are Asian and may represent regional uses of English.
Reference: South Korea, UN 1954

SEARCHLIGHT COLOR LIGHT SIGNAL. The employment of both Searchlight and Color Light raises questions that are not easily answered. Is there a difference in meaning betwen a term beginning 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 a specific form? While the second term is a Color Light Signal incorporating a specific variation? Is a Searchlight Signal minus Color Light closer to being an autonomous form?
Reference: Rapid Advances ... 1981

SEARCHLIGHT TYPE OF COLORLIGHT SIGNAL/ SEARCHLIGHT TYPE COLORLIGHT SIGNAL ARSPAP is the source for both terms. The first term is from 1920 and may reflect the early stage of Searchlight when it was viewed as a variant form of Color Light Signals. The second term -- from 1930 -- omits "of" and that may suggest Searchlight as an established variant form.
Reference: ARSPAP-H 1953

SEARCHLIGHT TYPE COLOUR-LIGHT SIGNAL. This variant 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, "Unite Limineuse A' Oculaire Mobile", may suggest a moving lens is included in the title.
Reference: UIC LGDTF 1975, UIC-CST 1972

SEARCHLIGHT-TYPE OF COLOR-LIGHT SIGNAL. A variant form from a single source that includes hyphens for Search and Light, and Color and Light.
Refernce: Kaufmann (IES) 1966

SEARCHLIGHT TYPE OF SINGLE-LENS COLOUR-LIGHT. A term unique to New Zealand. It ties Searchlight directly to Color-Light thereby placing Searchlight as a component of Color Light.
Reference: A Century ... NZ 1964

SEARCHLIGHT TYPE COLOUR LIGHT SIGNALS. Wooley has Colorlight as two words; this constitutes a variant form.
Reference: Wooley 1958

COLOUR SEARCHLIGHT SIGNAL. A variant term. See comments on Searchlight Colour Light Signal (GEC).
Reference: Wooley 1958

COLOR-LIGHT SIGNAL, SEARCHLIGHT TYPE. Term reflects a view of Searchlight as a clear and explicit type of Colorlight. Terms that omit Colorlight suggests Searchlight as a form in itself or at least not a clear variant of Colorlight.
Reference: GRS 1961

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 (Australia)

COLOR LIGHT HIGH SIGNAL, SEARCHLIGHT TYPE/COLOR LIGHT DWARF SIGNAL, SEARCHLIGHT TYPE. High refers to Signal mounted on mast while Dwarf is bolted to a foundation of concrete or other substance.
Reference: ARSPAP-LSL SL 1949

HALL-TYPE COLOUR-LIGHT SIGNAL. Alternate name for Searchlight Signals. Employed in UK in 1920s. Name refers to maker.
Reference: Vanns 1997

LED SEARCHLIGHT SIGNAL. LED refers to light emitting diodes, a form of solid state technology which produces lower cost light displays.
Reference: Tansley 1985

LONG-RANGE SEARCHLIGHT/SHORT-RANGE SEARCHLIGHT. The range of Signals is discussed in Color-Light Signals.
Reference: Solomon 2003

RIGHT-HAND SEARCHLIGHT. Right-hand is more of a descriptive term than a formal name. Location of Signal on right or left hand is based on national and/or railway practice. Variation on those practices can occur in a given situation.

Reference: Solomon 2003

SINGLE-HEAD/TWO-HEAD SEARCHLIGHT SIGNAL/TWIN HEAD SEARCHLIGHT SIGNAL/TWIN-HEAD SEARCHLIGHT SIGNAL. Solomon employs "Head" for Signal unit and often employs the term. Twin-Head refers to two Searchlight units on one mast.
Reference: Solomon 2003

SINGLE LENS SEARCHLIGHT SIGNAL. This term may appear to be redundant since Searchlight is a single, unified apparatus but K & W/UK adds "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 Searchlight contains three lens though a single one is positioned at any one time.
See Also: Searchlight Type of Single-lens Colour-Light.
Reference: K & W 1963

SINGLE LIGHT SIGNAL. This is not a Searchlight 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. The entry is also a cross-reference with morphology, Ch 1D.
Reference: NSW SI-SL 1969

TARGET SIGNAL. A variant name for the Searchlight Signal.
Reference: Solomon 2003

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 from India omits the term light; it is possibly not lighted or, at least, not all forms are lighted. Messages are those of Marker Lights.
Reference: Indian Railways

MARKER LAMP. This term is a possible synonym for Marker Lights though it may also have a variant meaning. GRS 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 1925, Western Australia Railways 1974

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 1972, FRA-RAR 1984, K & W 1963, Western Australian Railways 1974

2) Terms Somewhat More Morphological Than Physical

AUTOMATIC "A" LIGHT/"A" LIGHT/ILLUMINATED "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 Railway SS-E 1977 (first two terms), NSW SI-SL 1969 (3rd term)

"L" LIGHT. One unit Signal with letter "L" embossed on the lens cover. L stands for Loop.
Reference: Western Australia Railways 1974

MULTIPLE-ASPECT LIGHT SIGNALS. This term is a cross-reference with the term in Morphology, Chapter 1D
Reference: ERS-B 1995

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/running situations though more often it is found in train yards and other situations where lines branch off. Not infrequently the term has an undifferentiated title though many forms are in PL form.
References: ERS-B 1995, Nock 1962, AAR SM 1987, ARSPAP-D 1965 and -H 1953

SIGNAL, DWARF. Alternate formulation for Dwarf Signal appearing in some US sources.
References: FRA-3 1979, ARSPAP-D 1965

DWARF TYPE SIGNALS. A slightly altered form of the basic term.
Reference: Nock 1962

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 SI

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 (Australia)

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 (Australia), ARSPAP LS-LSS 1949

DWARF COLOURLIGHT SHUNTING SIGNAL. This term is primarily a morphological term though it needs a cross-reference here.
Reference: NSW Signalling

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. 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 1979

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 describes a complex form that indicated which message was displayed by the main signal at a given time. GRS includes a mirror and lens system that projects light from Signal apparatus to back of Signal. In Pakistan the Back Light indicates that the signal is functioning and when in proceed mode ("on"). WA form displays one of two messages: proceed or stop; and caution for distant Signal.
Reference: AAR SM 1987, GRS 1925, WA 1974, Pakistan Railways

BACK LIGHT II. AAR SM 1983 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: AAR SM 1987

BACK-LIGHT/BACKLIGHT. WBS (UK) offers two alternative variant forms. They are in use for Position Light Shunt and Subsidiary Signals. Cross-reference: Position Light Signals.
Reference: WBS (UK)

SIDE LIGHT. A synonym for Back Light. This may refer to second form for grade crossings.
Reference: AAR SM 1987

FLASHER LIGHT. Undefined term in UIC. The term appears in close proximity to fixed lights and therefore probably indicates a signal with flashing aspect(s). Numerous European systems employ such aspects. They are less common

elsewhere though not altogether unknown. Messages are found in morphology.
Reference: UIC Code 1961

FLASHING LIGHT/FLASHING, LIGHT (SIGNAL)/FLASHING LIGHT SIGNAL. These terms refer to crossing signals. They are included because of the resemblance to railroad signals.
Reference: AAR SM 1983, Kanner 1992

FLASHING SIGNALS. Since this term appears in a discussion of signals and human factors it may have more of a theoretical meaning than an applied one. In other references it has a primarily concrete meaning.
Reference: FRA-3 1979

SIGNAL, FLASHING LIGHT. A term from ARSPAP that follows their usual reverse order. It refers to a Grade Crossing Signal.
Reference: ARSPAP-D 1965

REVOLVING LIGHT SIGNAL. A historical term 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 1953

FIXED-FOCUS SIGNAL. Term refers to a Signal which can not be adjusted. This is probaby the case with many Railroad Signals. Adjustable forms are also in use.
Reference: Easy Access Lineside Signal, IRJ 1996

HIGH SIGNAL. This denotes Signals mounted on a substantial mast which distinguishes them from Dwarf Signals with little or no mast.
Reference: ARSPAP-LSLSL 1949

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.
Reference: 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 (Australia)

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 1944

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 1987

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 1974

LED COLOUR LIGHT SIGNAL/LED GROUND POSITION SIGNAL/LED MINIATURE TUNNEL SIGNAL/JUNCTION ROUTE INDICATOR/STENCIL INDICATOR/LED THEATRE SIGNAL/LED LEVEL CROSSING 'WIG-WAG' SIGNAL/LED BANNER REPEATER SIGNAL. Dorman, a UK company, produces standard Signals with LED components which also appear in the title. The last named suggest Signals from the past.
Reference: Dorman

2C1 Position Light Signals

POSITION LIGHT SIGNAL/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 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 with a specialized function; the light pattern is fixed. 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 while 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 thereby increasingly possible indications.

Classification: #5113
Type of Device: Lighted Railway Signal
Operation: Signal displays messages according to an established pattern. A single color of light is employed and follows Semaphore arm configuration.
Comments: The Classification employs a hyphenated form. This entry encompasses other forms and terms of Position Light Signals
References: Phillips 1942, Part F, ARSPAP-LSLSL 1949, FRA-3 1979, ERS-B 1995, Blythe 1951 (2nd term)

POSITION LIGHT/POSITION-LIGHT. This term is a shorter form that omits the word "Signal". Meaning seemingly unchanged from more explicit forms. Term is somewhat vague except when placed in context of Railroad Signals. Blythe 1951 includes both Position Light (no hyphen) and Position-Light Signals without a change in meaning. UN 1954 lists Position Light under general heading of Light Signals; Signal is thereby implicit in the title.
References: Blythe 1951, Signal Equipment 1984, FRA-3 1979, UN 1954

POSITION-LIGHT SYSTEM. "System" infrequently employed for Signals. It may refer to the totality of a Position-Light Signals in a rail system rather than a single Signal or even a group of interconnected Signals.
Reference: Solomon 2003

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 1979

BEAM-LIGHT SIGNAL/BEAM LIGHT SIGNAL. An alternate name for Position Light Signal. A singular term appearing in a few historic sources.
Reference: King 1921, Nock 1962

SIGNAL, POSITION LIGHT. US sources (of an official nature) tend toward placing the general term first then the particular. Meaning is probably that of the core term of Position Light Signal. A variant form may be present if the term Signal is the focus and Position Light acting as a permutation.
Reference: ARSPAP-D 1965, FRA-3 1979

DAYLIGHT POSITION LIGHT SIGNAL. UK historic term for Penn Railroad's Position Light Signals. Employment of "Daylight" probably denotes an earlier era that is on the boundary between separate indications for day and night, and single indications with all-lighted aspects.
Reference: Nock 1962

POSITION LIGHT DWARF SIGNAL/DWARF POSITION LIGHT/DWARF POSITION SIGNAL/DWARF LIGHT. This Signal is a short range Signal with four lamp units and usually mounted on the ground. The remaining terms are variant forms.
Reference: ARSPAP-LSLSL 1949, Solomon 2003

POSITION LIGHT GROUND SIGNAL. RONT refers to term as "slang". Signal is a Position Light Signal installed at a ground level location. UK meaning of slang?
Reference: RONT 2001

GROUND POSITION LIGHT SIGNAL. Term for Position Light Signal installed at ground level. See Also: previous term.
Reference: RONT 2001

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 operation would not be implied for an early form.
Reference: ARSPAP-H 1953

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 though identical to short form from Westinghouse-UK.
References: Westinghouse Brake & Signal-UK, K & W 1963

POSITION LIGHT HUMPING SIGNALS/POSITION LIGHT HUMPING SPEED SIGNALS. Little explanation is given for the meaning of these terms. They possibly resemble the Hump Shunting Signal of K & W 1963.
Reference: UN 1954

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 1991

HUMP SHUNTING SIGNAL. This Sign is a "true" Position Light even though there is no mention of Position Light in the title. It has multiple lamps in a circular pattern that bears a strong resemblance to US forms though with a specialized function.
Reference: K & W 1963

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 1963

POSITION LIGHT AUTOMATIC TYPE. This 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 1954

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 is a variation of the original Position Light Signal. Westinghouse-UK includes nine lights in a circle with the center light white and the remainder red or white.
Reference: Leach 1991, Westinghouse Brake & Signal-UK

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 1991

PATTERN INDICATOR. Similar to Junction Indicator (Position Light in arm form) but lights are mounted on a triangular-shaped backdrop. Similar in appearance to those of Queensland Railways Junction Indicator (which is not listed as Position Light).
Reference: K & W 1963

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 speaks of two or more). It is referred to as high stand (mounted on a short mast or pedestal).
Reference: Conrail

POSITION COLOR-LIGHTS. Term refers to Pennsylvania Railroad Position-Light Signals augmented with color-lights. The Signal is a development by Amtrak on some former Pennsylvania tracks.
Reference: Solomon 2003

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 Brake & Signal-UK

WING LIGHTS. A form of Position Light Humping Signal. See Also: Position Light Humping Signal.
Reference: UN 1954 (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 seemingly found only in the US. The second form, labeled Position Light, frequently displays more than one color and is found outside the US. 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 light units.

Classification: #5114
Type of Device: Lighted Railway Signal
Operation: Signal presents messages according to an established pattern.
Comments: Messages are based on color and position of semaphore arms. Classification employs a variant term, Color-Position Signal. A revision of the Classification needs to include Light. Other forms of these Signals including Dwarf forms are encompassed under the designation number in this study.

References: ARSPAP-D 1965, ARSPAP-LSLSL 1949, ARSPAP-PES 1955, B & O 1953 (US)

COLOR-POSITION SIGNAL. A variant form that omits the word "Light" but adds a hyphen. Fewer references to this term than to Color Position Light Signal. Admittedly, only limited sources employ either term; nearly all, if not all, are of US provenance.
References: B & M 1981, GRS 1925

COLOR-POSITION-LIGHT SIGNAL. B &M offers a double hyphen variant form. Seemingly the meaning is unchanged from the primary term. GRS also employs double hyphen though that version adds "High" and "Dwarf" to the basic term.
References: B & M 1981, GRS 1925

COLOR-POSITION-LIGHT HIGH SIGNAL/COLOR-POSITION-LIGHT DWARF SIGNAL. First term employs double hyphen and the basic term is divided into High and Dwarf forms.
Reference: GRS 1925

COLOR & POSITION SIGNAL. This is a Semaphore Signal of an early form that gave indications both by color and position of lights. The Signal is included here as cross-reference because the title strongly suggests the all-lighted Color Position Light Signal.
Reference: ARSPAP-H 1953

COLOUR POSITION LIGHT SIGNAL. UN employs British English in referring to US Color Position Light Signal.
Reference: UN 1954

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. This is in contrast to Position Light Dwarf Signal. See also: Color-Position-Light Dwarf Signal.
Reference: ARSPAP-LSLSL 1949

POSITION-COLOR LIGHT SIGNAL. Seemingly this Signal is the regular Color Position Light Signal though in a reverse version.
Reference: Henry 1942

SIGNAL, COLOR POSITION. This term follows a practice found in some US publications of placing the general before the particular. Meaning unchanged from more conventional word order.
Reference: ARSPAP-D 1965

2C3 Symbolic Signal Forms

General Note. The Railway Signal monograph (Part F) included Graphic and Alphanumeric forms. The General Classification substituted Symbol Signals which is followed here. A altered term, Symbolic Forms, is employed in this study. The symbolic encompasses the specific terms and perhaps is a more adequate term for physical forms that include the physical aspects of messages. The major components consist of theatre or multi-lamp Signals, stenciled Signals and a miscellaneous category.

SYMBOL SIGNALS.
Classification: #5114
Type of Device: Lighted Railway Signals
Operation: Signals display lighted message arrnaged in alphanumeric and graphic forms according to an agreed upon pattern.
Comments: The term comes from the Classification. Seemingly no actual Signal appears in the literature.
Reference: Part H, General Classification

a) Multi-Lamp/Theatre Indicators

MULTI LAMP ROUTE INDICATOR/MULTI-LAMP ROUTE INDICATOR/ MULTI-LAMP. These terms 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 because these devices are in British English areas).
Reference: Westinghouse Brake & Signal-UK

SEVEN-WAY ROUTE INDICATOR/THREE-WAY THEATRE ROUTE INDICATOR. The terms include the number of divisions in the Indicator as part of the title.
Reference: A & W 1991

THEATRE INDICATOR. Specific term is of an alphanumeric type. It may be

physically part of main Signal since it is "used in conjunction" with that Signal.
Reference: RONT 2001

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 1972

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 1963, Allen 1952

THEATRE TYPE INDICATOR. A more succinct term that omits Route Indicator from the title.
Reference: Vanns 1997

THEATRE-SIGN TYPE INDICATOR. A variant name from Allen 1952 that is interchangeable with Theatre-type Route Indicator or Theatre Multi Lamp Route Indicator.
Reference: Allen 1952

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]. The 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 tems include morphological terminology but they also include the physical dimension which requires their inclusion here. Many more 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 they include both stencil and cut-out forms.
References: WBS (Australia, UK), K & W 1963, NSW SI-SL, Leach 1991

ROUTE STENCIL. This form employs cut-out stencil for forming and displaying messages.
Reference: RONT 2001

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: Western Australia GA 1974, NZ SR 1989, GFR SB 1981

ALPHANUMERIC ROUTE INDICATOR. An Indicator employing alphanumeric characters.
Reference: RONT 2001

FIBRE-OPTIC ROUTE INDICATOR. RONT includes type of cable in name of device. No other details for the the Indicator.
Reference: RONT 2001

INDICATOR/INDICATOR (STENCIL). An alternate name from A & W. Indicator can have a more general usage but here it refers to Stencil Indicator.
Reference: A & W 1991

MOVING SLIDE TYPE ROUTE INDICATOR. This Indicator may not be fully lighted. The symbols are large and may be visible in the daylight without illumination. A moving slide activates symbols in and out of position.

Reference: NSW Signalling

PRELIMINARY ROUTING INDICATOR. This Indicator gives advice about route that is open at junction.
Reference: RONT 2001

PROJECTOR TYPE ROUTE INDICATOR/PROJECT TYPE. Term appearing in two sources. Few details are available. It is a long range rather than a short range aid. Multi-lamp forms can be viewed as long range while Stencilled forms are short range. The Projector form is comparable in function to Multi-lamp.
Reference: Nock 1962, Starkey 1944

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 Signal and Cab Signaling (British English: Signalling) can have all but identical meanings and they can also 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 conveying messages. But at times Cab Signal suggests an integrated system of signals and messages. And 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 meaning. 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 applied to Cab Signaling is less common. Perhaps because there is less need to make explicit the meaning of Cab Signaling.
Reference: UN 1954

General Note III. Signals under the heading of Cab Signal are of several forms. These 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 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.

Classification: #512
Type of Device: Lighted Railway Signal
Operation: Messages of diverse forms are transmitted to locomotive cabs according to an agreement upon pattern.
Comments: The Classification divides Cab Signals into several forms. Cab Signal is a three-digit level with the specific forms under four-digits.
References include: GRS 1954, Savarzeix 1981, ARSPAP-D 1965

CAB-SIGNALS. A single surveyed source includes this hyphenated variant form. The meaning is unchanged from the basic term.
Reference: Armstrong 1988

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 US sources. It seemingly refers to Cab Signals designated as Automatic Cab Signals that are within Automatic Cab Signaling segments. Details on operation and relationship to Cab Signals not so designated are limited.
References: AAR SC 1965, ARSPAP-D 1965, FRA-RAR 1984

AUTOMATIC CAB-SIGNAL SYSTEMS CONTINUOUSLY CONTROLLED. This term is similar to other such systems though REMC has added Automatic indicating Cab Signal System is within Automatic Signalling operations.
Reference: REMC 1948

SIGNAL, CAB. A recurring US practice in a variety of official documents is to place the general before the particular. Meaning is unchanged from core term of Cab Signal.
Reference: ARSPAP-D 1965, FRA-RAR 1984, AAR SC 1965

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 US though one refers to USSR (but from the perspective of US ideas), and two contain some international materials.
References: FRA-1 1978, FRA-3 1978, FRA-RAR 1984, AAR-USSR 1960, Armstrong 1988, US&S RA 10-1986

CAB SIGNALING/CAB-SIGNALING/CAB SIGNALLING/CAB-SIGNALLING/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 a message) is considered in Ch. 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 at work since a message has to be received and then acted upon. When that process is not occuring the physical operation of signaling falls short of what

signaling needs to be.

In contrast to most main signal terms, Cab Signal is seemingly mentioned less often than terms describing a system of such Signals. Cab Signaling (along with Cab Signalling, Cab-Signalling) have more references in the literature than Cab Signals. The British form with double "L" is more common than the relatively infrequent US form. The few references to the hyphenated form are largely from British English.

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 is presumably unchanged from basic form.
References: FRA-1 1978, -2 1979, ERS-P 1995, UN 1954

2D2 Forms (Operational) of Cab Signals

CABMATIC. GRS brand name for its continuous cab signaling as reported in FRA-1.
Reference: FRA-1 1978, GRS 1954

A-C./D-C. CAB SIGNALS/A-C./D-C. CODED CAB SIGNAL SYSTEM. A system developed by GRS that employs AC/DC operating on 60-cycle A.C. This proves to be more workable and effective than A.C. or D.C. systems alone.
Reference: GRS 1954

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 1979

CODED CONTINUOUS CAB SIGNALING/CODED CONTINUOUS CAB SIGNAL SYSTEM. These terms add operational characteristics to basic term. Coded indicates interruptions in current that convey 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 1941, REMC 1948

CONTINUOUS CAB SIGNAL SYSTEM. REMC adds System to the basic form of the term.
Reference: REMC 1948

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 US term.
References: ARSPAP-H 1953, B & M 1981, Armstrong 1957

CONTINUOUS INDUCTIVE CAB SIGNAL. This is a nearly historic term (1913) of the basic Cab Signal term that incorporates means of energy/message transmission in the title.
Reference: ARSPAP-H 1953

CONTINUOUS SYSTEM OF CAB SIGNALLING/CONTINUOUS CONTROLLED CAB SIGNAL/CONTINUOUS CONTROLLED CAB SIGNAL SYSTEM. These are variant terms for Continuous Cab Signaling. System adds specificity to the basic term though all forms would be a system.
References: ARSPAP-H 1953, FRA-2, and -3, 1979, Middleton 1941, REMC 1948

FOUR-ASPECT CODED 100 HZ CAB SIGNAL SYSTEM/FOUR-INDICATION CODED CONTINUOUS INDUCTIVE CAB SIGNALING/ FOUR-INDICTION 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 1979, ARSPAP-H 1953

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 1978, -2 1979

MULTIPLE-INDICATION CODED CAB SIGNALS. A complex term that adds message dimension and operating information to the basic Cab Signal terms.
Reference: GRS 1954

THREE-SPEED TRAIN CONTROL CAB SIGNALS. The meaning of this term is not altogether clear. It appears to refer to standard Cab Signals operating in train control territory in which Cab Signal messages required acknowledgement of signals received.
Reference: ARSPAP-H 1953

TWO-INDICATION NON-CODE SYSTEM [CAB SIGNAL]/THREE-INDICATION NON-CODE TRACK & LOOP SYSTEM [CAB SIGNAL]. Coded systems for signal messages 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 for each circuit.
Reference: ARSPAP-H 1953

TVM 430 CAB SIGNALLING SYSTEM. A term for Cab Signals employed for very high speed service on the Eurotunnel line. Digital display with numbers are employed; numbers have a colored background. This term has a morphological dimension.
Reference: Sophisticated Cab. Sig. 1994

2D3 Partly Morphological Terms
General Note. The following terms are both Cab Signal terms and message (morphology) terms. This segment is primarily a word list since both dimensions are considered in the appropriate segments of the study. Additional terms are found in Operational and Other Forms sections.

FOUR-ASPECT CAB SIGNALING, Solomon 2003

FOUR-ASPECT CAB SIGNAL SYSTEM, FRA-2
FOUR-INDICATION CAB SIGNAL, Henry 1942
FOUR-INDICATION CAB SIGNAL SYSTEM, GRS 1954
FIVE-ASPECT CAB SIGNAL, FRA-2
FIVE-ASPECT CAB SIGNALING, FRA-2
MULTIPLE ASPECT CAB SIGNALS, FRA-3
THREE-INDICTION CAB SIGNALS, GRS 1954
TWO-ASPECT CAB SIGNALING, Solomon 2003
TWO-ASPECT CONTINUOUS INDUCTIVE CAB SIGNAL, Solomon 2003
TWO-ASPECT, THREE-ASPECT CAB SIGNAL SYSTEM, Solomon 2003
TWO-INDICATION CAB SIGNALS, GRS 1954

2D4 Other Cab Signals

ACSES CAB SIGNAL. Term refers to Cab Signal System employing ACSES employed for high speed trains. ACSES is discussed in 1E.
Reference: Solomon 2003

CAB LIGHTS. Allen employs a singular term for Cab Signals which is not found in other surveyed sources. The meaning seems to be that of the primary term.
Reference: Allen 1952

CAB SIGNAL INDICATOR. Term refers to the unit of cab signal indications in the locomotive cab. Some forms duplicate wayside Signal aspects.
Reference: Solomon 2003, FRA-3 1979

CAB SIGNAL SUBSYSTEM. The Cab Signal can become one component within an all-encompassing train control systems. That trend can be seen in this term.
Reference: Xishi & Bin 1994

DOMESTIC CAB SIGNAL INDICATORS. This may not be an actual Signal term. Instead it distinguishes US from European Cab Signals displays iin locomotives. US form replicates Wayside Signals.
Reference: FRA-3

ENFORCED CAB SIGNALING. This term denotes Cab Signal with automatic brake control.
Reference: FRA-1 1978

ON-BOARD CAB SIGNAL EQUIPMENT. This term is seemingly only employed by FRA-2. It provides greater specificity than other similar terms.
Reference: FRA-2 1979

SYSTEM OF CAB INDICATORS. This term is seemingly an informal synonym for Cab Signals. It refers to an 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 1942

VISUAL CAB SIGNALS. An infrequently employed term. It distinguishes the visual component from the "audible alarm" component.
Reference: FRA-1 1978

VISUALIZER. Source employs this term in lieu of Cab Signal or Cab Signal Indicator. It has a digital appearance that focusses on speed as indicator of safe operation of train. The units displays numbers rather than multi-colored lights. It was employed for very high speed trains.
Reference: Weber 1980

WAYSIDE CAB SIGNAL EQUIPMENT. A perhaps puzzling term that seemingly merges wayside and cab signal equipment. It may refer to electrical power system that supplies power to rails that feed both wayside and cab signal equipment.
Reference: FRA-2 1979

2D5 Cab Signals with Sound Dimension

INDICATOR, CAB, AUDIBLE. Audible Cab Indicator would be a more straight forward arrangement of words. This audible indicator accompanies visual cab signals and denotes changes in indication (and continues to do so until crew

acknowledges changes in indication). This ARSPAP-D term continues a practice of placing a general term before the particular.
Reference: ARSPAP-D 1965

CAB INDICATORS [AUDIBLE, VISUAL]. This term covers 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 1983

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. Cross-referenced with Railroad Sound Signals.
References: ARSPAP-H 1953 (lst term), FRA-3 1979 (2nd term)

CHAPTER THREE

PARTIALLY LIGHTED SIGNALS

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Motor Semaphore Signal
LQ Signal Electric Operated/Lower-Quadrant All-Electric Semaphore
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Limited Clear U-Q Signal
Lower-Quadrant Block Semaphore
L-Q Distant Signal
L-Q Stop Signal
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One-Arm, Two-Position UQ Dwarf Signal
One-Arm Signal
One-Arm Mechanical Ground Signal
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Semaphore Manual Block
Semaphore Stop Signal
Semaphore-Type Automatic Block Signal
Single-Arm Upper-Quadrant Semaphore
Stop Semaphore
Two-Arm Mechanical Ground Signal
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Three-Position Slotted-Mast Semaphore
Three-Position Upper-Quadrant Semaphore/Three-Position Upper Quadrant/
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Automatic Semaphore
Automatic Semaphore Signal
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Co-Actors
GRS Model 2A Semaphore/GRS Model 2A Upper-Quadrant/GRS Model 2A Lower-Quadrant/GRS Model 2A Dwarf Semaphore/Model 2A Upper Quadrant Semaphore
Hall Style-K Upper Quadrant Semaphore/Hall Lower-Quadrant Semaphore
Hudson Type of Semaphore
Illuminated Semaphore
Lartigue Signal
Miniature Semaphore Signal
Miniature Repeater Semaphore (Co-Acting)
Miniature Arm Signal/Miniature Semaphore Signal
Parabolic Semaphore Signal
Upper Left-Hand Quadrant Semaphore Signal
Repeater
Single Arm Semaphore
Slotted-Post Semaphore
Slotted Post
Smash Board
Station Semaphore/Station Semaphore Signal
UQ Pipe-Operated Dwarf Signal
US&S Style-S Semaphore/US&S Style-B Semaphore/US&S Style-B Lower Quadant Semaphore/US&S Style-T Semaphore/US&S Style-S Upper-Quadrant Semaphore/US&S Lower-Quadrant Signal/US&S Style-B Lower Quadrant Semaphore/US&S Lower-Quadrant Semaphore/US&S Style T-2/US&S Style-T Upper Quadrant/US&S Style-T Upper Quadrant Signal/Style-B Signal
Wired-Operated Semaphores

Signal Boards, Disc Signals & Other Forms (3C)

Signal Boards (3C1)

Overarching Terms & Terms in Other Languages (3C1 a))

General Note

Signal Board
Board
Board Signal
Formsignal
Klapbord
Pantella
Rotating Vane
Target Signal
Vane Signal

Specific Board Terms (3C1 b))
Perforated Board Signal/Perforated Board
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Quarter-Rotating Chequer-Board/Chessboard
Revolving Board
Revolving Board & Lamps

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Disc Signals Containing the Word Disc (3C2 a))
Automatic Enclosed Disc Signal/Enclosed Disc Signal
Banjo
Bracketed Disc
C.I. Pillar Disc
Compound Ground Disc
Disc/Disc Signal
Disc & Crossbar/Disc & Crossbar Signal/Disc-&-Crossbar Signal
Disk Signal
Double Disc/Double Disc Signal/Double-Disc Signal
Double Disc & Crossbar Signal
Dwarf Signal/Three-Position Dwarf Signal/Two-Position Dwarf Signal
Enclosed Disc/Enclosed Disc Signal
Exposed Disc Clockwork Type Signal
Floodlit Disc/Floodlit Disc Signal/Floodlit Ground Disc/Flood Lit Disc/
Flood-Lit Disc
Gallows Type of Signal (Disc)
Ground Disc/Ground Disc Signal

Ground-Level Dwarf Signal
Half-Open Disc Signal
Hall Disc Signal/Hall Disc/Hall's Enclosed Disc/Hall Signal
Independent Disc
Martin Disc Signal
Mechanical Disc
Mechanical Revolving Disc Signal
Pattern Ground Disc
Power-Operated Disc
Revolving Disc Signal/Revolving Disc
Tommy/Tommy Dodd
U.Q. Power Worked Dwarf Signal

Banner Signals [Exposed Disc Forms Under the Banner Name] (3C2 b))
Banner
Banner Signal
Banner Box Signal
Banner Box Type (Ireland Signal)
Banner Box Type Signal
Banner Clockwork Signal
Banner Clockwork Type
Banner Repeater Signal
Banner Type Signal/Banner-Type Signal
Banner Type Train Order Signal
Box Type Train Order Signal
Clockwork Exposed Disc Signal
Clockwork Signal
Exposed Banner Clockwork Type Signal
Ireland Banner Box Type Signal
Revolving Banner Signal/Rotating Banner Signal
Top-of-Mast Exposed Banner Signal

Morphological-Related Terms (3C3)
General Note

Switch Terms (3C3 a))
Dodson Switch & Switch
Electric Switch Lamp/Electric-Light Switch Light

Electric Switch
Kerosene Switch Lamp
Lamp, Switch; Electric
Oil-Burning Switch Lamp
Oil-Lamp
Oil-Lighted Switch Lamp
Oil Switch Lamp
Reflecting Switch Lamp/Reflex Switch Lamp/Reflex Switch Lamp
Switch Dwarf Signal
Switch Indicator
Switch Lamp
Switch Light
Switch Signal
Switch Stands
Points Indicator (3C3 b))
Catch Point Disc/Points Disc
Catch Point Indicator
Ground Indicator
Mechanical Points Indicator: Arrow Type; Disc Type
Arrow Type
Disc Type
Points Indicator
Points Indicator - Arrow Type
Route Indicators (3C3 c))
Mechanical Route Indicator
Morse & Berry Type Route Indicator
Moving Slide Type -- Route Indicator
Miscellaneous Forms (3C3 d))
Clockwork Automatic Block Signal
Clockwork Enclosed Disc Type Electric Automatic Signal
Clockwork Signal Exposed Disc Form & Automatic Block Signal
Gasset & Fisher Clockwork Exposed Banner Type of Automatic Block Signal
Disc Shunt
Disc Shunting Signal
Floodlit Disc Shunting Signal

Home & Distant Banjo Type of Disc Signal
Other Forms (3C4)
Crossbar Signals (3C4 a))
Cross Bar & Lamp Signal
Crossbar Signal
Double Disc & Cross Bar
Flap Signal
Tilting Crossbar Signal/Tilting (Crossbar) Signal
Wooden Crossbar
Flag Signals (3C4 b))
Automatic Flagman
Fantail Signal
Kite Signal
Flag Signal
General Note
Pivoted Flag
Lighted Signs & Boards (3C4 c))
General Note
Caution Board
End of Shunt Sign
Indication Board
Lineside Board
Marks & Markers for Japan [Selected Entries]
Shunting Limits Board
Temporary Speed-Reduction
Train-Order Board
Track Indicators (3C4 d))
General Note
Block Indicators
Motor Car Indicators
Switch Indicators
Track Car Indicators
Track Occupancy Indicators
Track Indicators
Track Side Warning Indicators

Train Approach Indicators

Miscellaneous Forms (3C4 e))

Ball Signal

Ball Signal: Station Signal, Junction Signal, Crossing Signal, Drawbridge Signal

Basket Signal

Bezer Rotating Signal

Gate Signal

Ground Signal

Highball Signal/High-Ball Signal

Indicator Lantern

Lamp

Pot Signal

Railroad Grade Crossing Targets

Smash/Smashboard Signal

Trip's Improved Railway Signal

Two-Colour Oil Lamp

3B Semaphores

3B1 Overarching Terms

SEMAPHORE SIGNAL/SEMAPHORE

General Note I. The word Semaphore is of Greek origins. It has been associated with communication before railway usage. Chappe's optical telegraphs are sometimes viewed as the source of railway Semaphore Signals. These devices were developed in 18th century France and were employed as a communication system across that country. However, Calvert notes that Depillon's coastal telegraph (under the name Semaphore [French form of the term] is the source of railway Semaphores. The coastal telegraph followed the coast line of France and Algeria and constituted a communication system with ships at sea. The two systems were linked by messenger and eventually by the modern telegraph. (Calvert 2004). Railway usage began in mid-19th c. England. Semaphores eventually became a dominant railway Signal form in much of the world. It was marked by movable arms for day use and colored lights at night. The system is now obsolete.

General Note II. The term Semaphore may suggest a clearly defined entity. However, it represents instead a diverse safety aid. Semaphores on the European continent -- and areas influenced by Europe -- are distinctly at variance with UK-US forms. For example, Europeans generally separate arms from the lens apparatus and many European forms have blades of an unvarying design both in shape and color. While European forms are not uniform 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. As the blade moves the lamp shines through a

different lens; two or three aspects are thereby created. Other forms require multiple lamps and lenses since they are independent of the blade/spectacle ensemble. Semaphores are of two basic forms: upper quadrant, and lower quadrant.

Semaphore Signal is the most common term for this form of Signal. The abbreviated form, Semaphore, is somewhat commonly used. Semaphore Railway Signal may appear to be an overarching term but it is only infrequently employed.

Classification: #521
Type of Device: Partially-lighted Railway Signal
Operation: A device employing arms for day messages and lights at night. Messages are presented according to previously established pattern.
Comments: An archaic Signal form of diverse forms. The Classification includes a differentiation according to types of blades or arms and variations of same.

References: ARSPAP-H 1953, Calvert 2004, GFR 1981, K & W 1963, Solomon 2003

ANCIENT LIGHTS. This perhaps curious term refers to Semaphore Signals in an era when Semaphores are largely unknown and seemingly of ancient history.
Reference: Jackson 1992

RAILWAY SEMAPHORE/SEMAPHORE RAILWAY SIGNAL. These terms are variant forms of basic terms. Railway may have been placed before the basic term in order to differentiate it from non-railway use of Semaphores. The second term is an advertisement of Stevens & Sons for "Iron Semaphore Railway Signals" reprinted in Shackleton.
References: B & M 1981, Shackleton 1976

DWARF SEMAPHORE/DWARF SIGNAL/DWARF TYPE SIGNAL. These terms, obviously, refer to Signals that are notably short. They were mounted on abbreviated masts and may have displayed apparatus of reduced size. Dwarf Signals can refer to all forms of small railway Signals. For some sources it refers specifically to Dwarf Semaphore Signals though without mention of Semaphore and therefore included here.

References: K & T 1988, Raymond 1917, Fisher 1976

FIXED SEMAPHORE SIGNAL/FIXED SEMAPHORES. An infrequently used term. It refers to early stationary Signals at a time when flags held by train crews were the common form of Signals. Solomon offers a second definition with Fixed Semaphore. That term is contrasted with Ball Signals which are fixed in the ground but whose Signal devices move.
Reference: Starkey 1944, Solomon 2003

MECHANICAL SEMAPHORE SIGNALLING/SEMAPHORE MECHANICAL SIGNALLING. Both terms are from relatively new sources. The terms contrast older signals with newer Signals and train control by coining terms that refer to mechanical Signals (of which the Semaphore Signal was the primary form).
References: Intro. of Electrical ... 1995, Cardani 1979

MECHANICAL LOWER QUADRANT. A variant term for one form of Semaphore.
Reference: Vanns 1997

SEMAPHORE LIGHT. FRA-3 divides Semaphore Signal into Semaphore and Semaphore Light. The former term focusses on the physical while the latter is concerned with the light part and colors (messages) of the semaphore arm.
Reference: FRA-3 1979

SEMAPHORE TYPE. Kanner divides Signals into Color Light and Semaphore Types. Meaning unchanged from basic term.
Reference: Kanner 1992

SIGNAL, SEMAPHORE. This term continues a US practice of placing the general term before the particular. Meaning unchanged from that of the core term.
Reference: ARSPAP-D 1965

3B2 Specific Forms

a) Lower Quadrant & Upper Quadrant Signal 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 quadrant then a Lower Quadrant Signal.

LOWER QUADRANT/UPPER QUADRANT/LOWER QUADRANT SEMAPHORE/UPPER QUADRANT SEMAPHORE/LOWER QUADRANT SIGNAL/UPPER QUADRANT SIGNAL/UPPER-QUADRANT SIGNAL/ LOWER QUADRANT SEMAPHORE SIGNAL/UPPER QUADRANT SEMAPHORE SIGNAL. Both LQ and UQ have a horzontal position (at juncture of upper and 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 while others Signals add both. Some infrequently used terms are also employed that may not exist in both UQ and LQ forms. Signals are to right of track in some nations while to the 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-referenced. UQ and LQ are a basic component within the category of Semaphore Signals. They were employed nearly as often as the basic term.
References: Many sources include Semaphore Signals. A small sampling includes: Henry 1942, Simmons, 1986, Phillips 1942, Lavallee 1953, Ellis 1978, Solomon 2003

LOWER-QUADRANT SIGNAL/L-Q SEMAPHORE. One source adds a hyphen to LQ though seemingly not to UQ. Hyphenated terms are relatively common among T-M forms though relatively rare in LQ and UQ forms.
References: Raymond 1917 (lst), Taylor 1949 (2nd)

UQ TYPE SEMAPHORE/U-Q SEMAPHORE TYPE SIGNAL. These terms add Type to the title though without a change in meaning.
Reference: Starkey 1944, Harrigan VR 1962

LEFT-HAND, L-Q SEMAPHORE SIGNAL/LEFT-HANDED UPPER-QUADRANT SEMAPHORE/LEFT-HANDED SEMAPHORE. Left-hand may describe the Signal and may not be part of the Signal title; though it is possible that it is. Left-hand Signals were the norm in UK while right-hand dominated in the US. The first term is historic and refers to a 19th c. railroad operation in the US that employs left-hand forms. The second and third terms are variants from Solomon.
Reference: ARSPAP-H 1953, Solomon 2003

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/ SOMERSAULT/SOMERSAULT PATTERN, SEMAPHORE/SOMERSAULT LQ SEMAPHORE/SOMERSAULT SEMAPHORE/SOMERSAULT LQ/ SOMERSAULT SIGNAL/SEMAPHORE SOMERSAULT SIGNAL/ SOMERSAULT TYPE SIGNAL/TUMBLER/TUMBLE-ARM SEMAPHORE/ TUMBLE ARM SIGNAL/ SEMAPHORE SOMERSAULT SIGNAL/U-Q SOMERSAULT. Early UK Semaphores were of the Slotted-Post form (arm rested inside of the post). Ice and snow could block the movement of the arm from leaving the post. This then led to a false proceed signal. To eliminate that problem a new form of Semaphore was developed: linking the arm 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. However, many of the somersault forms long remained in service. This Signal blossomed into many titles. Tumble Arm is apparently an Australian term for the Somersault. It also appears in Solomon. Three of the titles include the key notion of the Signal: Balancing Arm.

References: K & W 1963, Allen 1952, Blythe 1951, Philpot 1985, Nock 1962, Shackleton 1976, Taylor 1949, Vanns 1997, Solomon 2003

SOMERSAULT HOME SIGNAL. Term refers to a specific Signal that incorporates physical and morphological dimensions.
Reference: Vanns 1997

CENTRALLY BALANCED SEMAPHORE/CENTRE-BALANCE SIGNAL. This refers to a Signal that has a center pivot. It is not a Somersault Signal.
Reference: Vanns 1997

CENTRE BALANCE STOP SIGNAL. A signal with central pivot point with a more specific function.
Reference: RONT 2001

3B3 Methods of Operation

General Note. Most sources do not include methods of operation (i.e. how the Signal is activated) in the title. Most sources that do so are of US provenance. Though the terms are diverse most of the them refer to a few basic operational means.

ALL-ELECTRIC SEMAPHORE SIGNAL/ALL-ELECTRIC SEMAPHORES. This is an early term. It is possibly the earliest form after the Electro-Pneumatic. It may distinguish electric-only forms from forms employing compressed air and electricity. Solomon offers a slightly shorter version.
Reference: B & M 1981, Solomon 2003

ELECTRIC MOTOR SEMAPHORE SIGNAL/ELECTRIC MOTOR SIGNAL/ ELECTRIC-MOTOR-DRIVEN SEMAPHORE SIGNAL/ELECTRICALLY-OPERATED SEMAPHORE. Additional terms that refer to electrical apparatus employed in activating Semaphore Signals. Other terms center on motors though without explicit reference to electricity. The last-named term from Vanns displays variant terminology.
Reference: ARSPAP-SS 1948, Vanns 1997

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. More modern forms became Top-of-Mast Mechanisms.
Reference: ARSPAP-SS 1948

MOTOR-OPERATED SEMAPHORE. This term is seemingly an alternative for Motor-Driven Semaphore Signals (and related terms).
Reference: ARSPAP-H 1953

MOTOR SEMAPHORE SIGNAL. An historical term and synonym for other forms that involved motors and electricity.
Reference: B & M 1981

LQ SIGNAL ELECTRIC OPERATED/LOWER-QUADRANT ALL-ELECTRIC SEMAPHORE. An additional term that includes the means of operation in the title. This term is made more specific by including the form of Semaphore Signal. This second term is from Solomon and refers to the US.
Reference: QR-SS-El 1974, Solomon 2003

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 type speaks of compressed carbonic acid gas as the energizing force. Both Signals may be similar in operation.
References: ARSPAP-H 1953, Nock (2nd term), RSD 1911 (3rd term).

ELECTRO-PNEUMATIC SEMAPHORE/LQ E-P SEMAPHORE/ELECTRO-PNEUMATICALLY-SEMAPHORE/ELECTRO-PNEUMATIC LOWER-QUADRANT SEMAPHORE. These terms refer 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. The third term is from Solomon.
References: RSD 1911, B & M 1981, Nock 1962, Vanns 1997, Solomon 2003

OIL-LIT SEMAPHORE SIGNAL/OIL-LIT LQ STOP & DISTANT SIGNAL. Seemingly only one source includes Signals with oil-lit as part of the name.

Reference: Vanns 1997

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 1953 and -SS 1948

MECHANICAL DWARF SIGNAL. This term is also part of the ARSPAP-SS group of mechanical semaphores and thereby distinguished from power- operated forms. Though to be sure all forms are mechanical and require propulsion in some manner. The term mechanical seemingly refers to hand- operated and/or locally operated.
Reference: ARSPAP-SS 1948

MECHANICAL GROUND SIGNAL. Term refers to a form of mechanically operated Semaphore Signals. RSD views Ground Signals as those directly attached to the ground. ARSPAP-SS refers to one and two-arm mechanical Ground Signals; those forms are listed in morphological-related terms.
References: ARSPAP-SS 1948, RSD 1911

MECHANICAL OPERATED SEMAPHORE SIGNAL. This term refers directly to a Semaphore Signal operated by crank. ARSPAP-SS restricts this term to forms involving direct human activation.
Reference: ARSPAP-SS 1948

MECHANICAL SEMAPHORE. This term seemingly distinguished the term Semaphore (a mechanical entity) from humans displaying signalas with a lamp.
Reference: Tuma 1979.

MECHANICAL SIGNAL. This may appear to be a near overarching term. Yet for ARSPAP it refers only to mechanical operated Semaphore Signals.
Reference: ARSPAP-SS 1948

MECHANICAL UQ SIGNAL. This term is distinguished from rotating Discs and color light Signals by inclusion of the word mechanical. Its mechanical nature is

the key difference rather than the means of propulsion.
Reference: UN 1954

MANUALLY-OPERATED L-Q SEMAPHORE STOP SIGNAL. A complex term that includes both physical and morphological materials in the title.
Reference: Taylor 1949

MANUALLY-OPERATED SEMAPHORE. References to this term are infrequent; in fact only two surveyed sources included it. They refer to an early form introduced not long after adoption of French communication semaphores, and in 1800 before means of propulsion was applied to the Semaphore Signal.
References: B & M 1981, Middleton 1941

BASE-OF-MAST MECHANISM/BASE-OF-MAST SEMAPHORE/TOP-OF-MAST SEMAPHORE/TOP-OF-MAST MECHANISM/BASE-OF-MECHANISM SEMAPHORE/TOP-OF-MECHANISM SEMAPHORE. Terms refer to placement of operating mechanism in a housing either at the base of the Signal mast, or attached to the mast near the top and adjacent to blade and spectacle. Only rarely do these terms serve as labels for Signals.
Reference: ARSPAP-SS 1948, K & T 1981, Solomon 2003

PNEUMATIC SEMAPHORE. A single surveyed source includes this term for a Signal fully pneumatic in operation.
Reference: Vanns 1997

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 1948

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 SEMAPHORES/AUTOMATIC BLOCK SEMAPHORE SIGNAL, Solomon 2003 (1), E.L. 1936 (2)
TWO-ARM, TWO POSITION MECHANISM, ARSPAP-SS 1948
ONE-ARM THREE POSITION MECHANISM, ARSPAP-SS 1948
THREE-POSITION ELECTRO-PNEUMATIC SEMAPHORE, Nock 1962
HOME ELECTRO-PNEUMATIC SEMAPHORE SIGNAL, ARSPAP-H 1953
DISTANT ELECTRO-PNEUMATIC SEMAPHORE SIGNAL, ARSPAP-H 1953
DISTANT SEMAPHORE, Blythe 1951
FIVE-ARM LOWER-QUADRANT SEMAPHORE, Solomon 2003
HOME SEMAPHORE, Blythe 1951
LIMITED CLEAR U-Q SIGNAL, Vanns 1997
LOWER QUADRANT BLOCK SEMAPHORE, Solomon 2003
LQ DISTANT SIGNAL, Taylor 1949
L-Q STOP SIGNAL, Taylor 1949
ONE-ARM TWO-POSITION SIGNAL, King 1921
ONE-ARM, TWO-POSITION LQ -- SIGNAL, King 1921
ONE-ARM, TWO-POSITION UQ DWARF SIGNAL, King 1921
ONE-ARM SIGNAL, Nock 1962
ONE-ARM MECHANICAL GROUND SIGNAL, ARSPAP-SS 1948
ONE-BLADE LOWER-QUADRANT SIGNALS, Solomon 2003
PNEUMATIC BLOCK SEMAPHORE, Solomon 2003
SEMAPHORE DISTANT SIGNAL, K & W 1963
SEMAPHORE MANUAL BLOCK, AAR-USSR 1960
SEMAPHORE STOP SIGNAL, K & W 1963
SEMAPHORE-TYPE AUTOMATIC BLOCK SIGNAL, K & T 1988
SINGLE-ARM UPPER-QUADRANT SEMAPHORE, Solomon 2003
STOP SEMAPHORE, Blythe 1951
TWO-ARM MECHANICAL GROUND SIGNAL, ARSPAP-SS 1948
THREE-POSITION LOWER-QUADRANT SEMAPHORE, Solomon 2003
THREE-POSITION SLOTTED-MAST SEMAPHORE, Solomon 2003
THREE-POSITION UPPER-QUADRANT SEMAPHORE/THREE-POSITION UPPER QUADRANT/THREE-POSITION UPPER QUADRANT TYPE,

ARSPAP-SS 1948 (1), Corbin 1922 (2), Solomon 2003 (3)
THREE-POSITION U-Q SEMAPHORE SIGNALS, A Century ... 1964
THREE-POSITION UPPER QUADRANT SIGNAL, Corbin 1922
THREE-POSITION SEMAPHORE SIGNAL, Allen 1952
TWO-POSITION LOWER-QUADRANT SEMAPHORE, Solomon 2003
TWO-POSITION SEMAPHORE SIGNAL, K & T 1988, A & W 1963
UQ SPLITTING SIGNAL, Taylor 1949
UPPER QUADRANT TWO-POSTION, K & W 1963
US&S STYLE-B LOWER-QUADRANT BLOCK SIGNAL, Solomon 2003
THREE-ARM SIGNAL, King 1921
THREE-ASPECT SEMAPHORE, Henry 1942
THREE-BLADE SEMAPHORE/THREE-BLADE UPPER-QUADRANT SEMAPHORE, Solomon 2003
TWO-POSITION SEMAPHORE UPPER QUADRANT,
THREE-POSITION SEMAPHORE UPPER QUADRANT
TWIN-ARM LOWER-QUADRANT SEMAPHORE, Solomon 2003
TWO-ARM E-P DWARF SIGNAL, King 1921
TWO-ARM SIGNAL, King 1921
TWO-ARM TWO-POSITION SIGNAL, King 1921
TWO-ARM TWO POSITION LQ SIGNAL, King 1921
TWO-ASPECT UPPER QUADRANT
MULTIPLE-ASPECT UPPER QUADRANT, Bangladesh
SEMAPHORE DISTANT, B & M 1981, K & W 1963
SEMAPHORE RUNNING SIGNAL, K & W 1963
SEMAPHORE SHUNT SIGNAL, SA-BBB 1974
THREE-POSITION SEMAPHORE BLOCK SIGNALS, Train Shed 1972

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, E.L. 1936
AUTOMATIC MOTOR-OPERATED SEMAPHORE, Henry 1942
AUTOMATIC SEMAPHORE, Vanns 1997

AUTOMATIC SEMAPHORE SIGNAL, K & W 1963
AUTOMATIC THREE-POSITION UPPER LEFT HAND SEMAPHORE SIGNALLING, Harrigan VR 1962
SEMAPHORE AUTOMATIC BLOCK, E.L. 1936
SEMI-AUTOMATIC ELECTRO-PNEUMATIC DISTANT SEMAPHORE, ARSPAP-H 1953
UPPER QUADRANT AUTOMATIC SIGNAL, Queensland SS-E 1977

3B6 Other Forms

BACK LIGHT. Term for a feature of Semaphore Signals. The Light allows train crews to determine if Signal is off or on, and lit. See also second form in Ch. 2.
Reference: Jackson 1992

BACKING SIGNAL. Term for Semaphore-related Signal. It controls wrong-direction operations in station areas.
Reference: Jackson 1992

BANNER REPEATER. Term is labelled as Semaphore though described as a bar moving within case.
Reference: Jackson 1992

DAY SIGNAL. Calvert remarks that the semaphore is a "day signal." By that is meant the blade of a Semaphore Signal. But such a Signal is both day and night in operation unless the term is used narrowly.
Reference: Calvert 2004

DISPLAY BOARD. A Semaphore-enhancing device consisting of a board painted white and mounted behind Semaphore Signal.
Reference: Jackson 1992

DOUBLE ARM SEMAPHORE/DOUBLE ARM STATION SEMAPHORE. These Signals serve as a Station Semaphore.
Reference: Vanns 1997

ELECTRIC SEMAPHORE. This term distinguished early electric-powered forms from electro-pneumatic and manual forms.
Reference: ARSPAP-H 1953

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. Instead it refers to a single post mounted bracket upon which two or more dolls are evenly spaced.
Reference: A & W 1991

CO-ACTORS. A Semaphore Signal that serves as a Repeater.
Reference: Taylor 1949

GRS MODEL 2A SEMAPHORE/GRS MODEL 2A UPPER-QUADRANT/ GRS MODEL 2A LOWER-QUADRANT/GRS MODEL 2A DWARF SEMAPHORE/MODEL 2A UPPER QUADRANT SEMAPHORE. General Railway Signal introduced this model in 1908. It was a versatile device that could be employed in mulitple configurations: base or top of mast, LQ and UQ and left or right-hand.
Reference: Solomon 2003, ARSPAP SS-1948, ARSPAP- H 1953

HALL STYLE-K UPPER QUADRANT SEMAPHORE/HALL LOWER-QUADRANT SEMAPHORE. Terms for Semaphore Signals prefaced by the manufacturer's name.
Reference: Solomon 2003

HUDSON TYPE OF SEMAPHORE. In this form of Signal a shield hid the arm thereby creating a clear indication. It is a historic form.
Reference: ARSPAP-H 1953

ILLUMINATED SEMAPHORE. This Signal included arms that displayed prism reflectors.
Reference: ARSPAP-H 1953

LARTIGUE SIGNAL. A French Semaphore Signal designed by Charles Lartigue.
Reference: Jackson 1992

MINIATURE SEMAPHORE SIGNAL. A Repeater Signal provided for fog signal crew.
Reference: Taylor 1949

MINIATURE REPEATER SEMAPHORE (CO-ACTING). Few details are available on this Signal. It may suggest the Miniature Semaphore Signal.
Reference: Vanns 1997

MINIATURE ARM SIGNAL/MINIATURE SEMAPHORE SIGNAL. These are employed for subsidiary functions including shunt, outlet roles.
Reference: A & W 1991

PARABOLIC SEMAPHORE SIGNAL. A Signal displaying arms illuminated by light of an appropriate color instead of spectacles displaying colors.
Reference: ARSPAP-H 1953

UPPER LEFT-HAND QUADRANT SEMAPHORE SIGNAL. Placement of Signal is incorporated in the title.
Reference: King 1921

REPEATER. This is a Co-acting Signal on single mast.
Reference: Jackson 1992

SINGLE ARM SEMAPHORE. A term that seemingly distinguishes Station Semaphore (double arm) from other forms which were single arms.
Reference: Vann 1997

SLOTTED-POST SEMAPHORE. Early if not the 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 1951, Hammond 1964, K & W 1963

SLOTTED POST. A shorter version of basic term of Slotted-Post Semaphore.
Reference: Jackson 1991

SMASH BOARD. A term for the Semaphore Signal.
Reference: Jackson 1991

STATION SEMAPHORE/STATION SEMAPHORE SIGNAL. These Signals, positioned at a station, serve as Home, Stop Signals.
Reference: Vanns 1997

UQ PIPE-OPERATED DWARF SIGNAL. The method of operation is included in the title.
Reference: King 1921

US&S STYLE-S SEMAPHORE/US&S STYLE-B SEMAPHORE/US&S STYLE-B LOWER QUADRANT SEMAPHORE/US&S STYLE-T SEMAPHORE/US&S STYLE-S UPPER-QUADRANT SEMAPHORE/US&S STYLE-B LOWER QUADRANT SEMAPHORE/US&S LOWER-QUADRANT SEMAPHORE/US&S LOWER-QUADRANT SIGNAL/US&S STYLE T-2/ US&S STYLE-T UPPER-QUADRANT/US&S STYLE-T UPPER QUADRANT SIGNAL/STYLE-B SIGNALS. US&S employed designations under Style followed by a letter. Style-B were two-arm and two-position models. Style-S allowed for three-position UQ forms. Style T forms were for top-of-mast Signals. Solomon at times designates Signals by company without further designations.
References: Solomon 2003, ARSPAP SS 1948, ARSPAP-H 1953

WIRED-OPERATED SEMAPHORES. Calvert discusses the operation of the Semaphore Signal under the heading of this term. Various forms of motive power could be coupled with this Semaphore or so it seems.
Reference: Calvert 2004

3C Signals 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 problems. 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 no 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. Calvert suggests Target Signals and Vane Signals for these devices. Seemingly he prefers the Target form for UK and Vane for for US (Calvert 2004).

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 Signal Board to encompass movable geometric boards that served as Signals for Part G (Aero Nav Aids). Spain employs Pantella for this form of Signal. 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.

Classification: #522
Type of Device: Partially-Lighted Railway Signal
Operation: Board in various shapes accompanied by lights display messages according to agreed-upon patterns.
Comments: Board Signals can also be known as Signal Boards and Vane Signals.

This classification and terms represent Dwarf and other Signals in the Classification.
References: GFR 1981, RENFE 1978, RCS 1981

BOARD. This term may refer to a Pivoted Board. One source includes a form that 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 1951, Hammond 1964

BOARD SIGNAL. This term appears in two surveyed source. 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 as Light Signal and Semaphore Signal in that configuration of words. See Also: Signal Board, Board.
Reference: Blythe 1951

FORMSIGNAL. This can be viewed as a partially overarching 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 1981

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: Armseinen 1985

PANTELLA. This is the Spanish railway term for the same form of Signal. It can be defined as a screen.
Reference: RENFE 1978

ROTATING VANE. Calvert apparently uses this variant form to distinguish rotating Vane Signals from non-rotating Semaphore Signals. It refers to French Signals.
Reference: Calvert 2004

TARGET SIGNALS. Calvert employs this an alternative for Vane Signals. It

refers to full-scale Signals rather than smaller devices at switches. See Also: Vane Signals.
Reference: Calvert 2004

VANE SIGNAL. Calvert employs this term as a general term for early Signals that displayed geometric shapes. The term is akin to Board Signals and also to Signal Boards. In fact, B & M and Calvert both use some of the same illustrations. This compiler adapted Board Signal for the same Signals which may have less to recommend it than Signal Boards. Calvert also suggests Target Signals as an alternative to Vane Signals. Target Signals indicate full-use Signals rather than Targets for switches.
Reference: Calvert 2004

3C1 b) Specific Board Terms

PEFORATED BOARD/PERFORATED BOARD SIGNAL. Two sources include a Signal by this name. The first term is semi-circular in shape. The source for the second term notes that it is operated by manipulation of a handle that pivots the Signal.
References: Blythe 1951 (lst term), B & M 1981 (2nd term)

PIVOT BOARD/PIVOTING BOARD SIGNAL. Two sources include these terms. Both are historic references. The second term may be a variant term or it may be a description of signal action rather than a formal name.
References: Mashour 1974 (lst term), Blythe 1951 (both terms)

QUARTER-ROTATING CHEQUER-BOARD/CHESSBOARD. The first term refers to a Signal Board form in France. Nock refers to the same Signal as a Chessboard.
References: Ellis 1958 (lst term), Nock 1978

REVOLVING BOARD. This term is referred to by only a few surveyed sources. Mashour refers to a post-1830 Signal that revolves. Blythe 1951 also makes a historical reference that may possibly refer to Pivot Boards.
References: Mashour 1974, Blythe 1951

REVOLVING BOARDS & LAMPS. Most references to this form of Signal omit mention of a lamp. One surveyed source includes the term. Many Board Signals/Signal Boards presumably included a night aspect.
Reference: Blythe 1951

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 that appear only in spherical or disc-shapes. A variety of systems are often labelled simply Disc Signals. It may create an illusion to speak of schools of Disc Signals types since variations are frequent and many were employed only in restricted areas. Yet in a rough way one can speak of types, or even eras, of Disc Signals.

Disc I can refer to early forms mostly in the UK. These include exposed forms with double discs and half-often discs.

Disc II includes Signals found mostly in the US. This form was often of an enclosed nature and a major Signal form until the Semaphore became dominant.

Disc III are termed Banner Signals and often were a US form co-existing with enclosed Disc Signals. They are somewhat like Switch Targets both by design and because the banner or disc was exposed. Their use faded out along with the Enclosed Disc Signals. These Signals were 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. They are often switchboard/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 found in UK. It has the shape of a disc with glass front and a small arm contained within. The arm has a somewhat semaphore manner of operation.

Classification: #5230s/5240s
Type of Aid: Partially-lighted Railway Signal
Operation: Discs of various forms accompanied by lights present messages

according to agreed-upon pattern
Comments: The Classification includes a complex arrangement of terms and meanings. The precision falls short of the intent. The Database lists basic forms of Discs with less precision but more coherence. The numbers here included are only partial.

3C2 a) Disc Signals Containing the Word Disc

AUTOMATIC ENCLOSED DISC SIGNAL/ENCLOSED DISC SIGNAL. A Signal invented by T.S. Hall in 1869. A two-aspect device often employed for automatic block service. This usage predates Semaphores. The second term is a shorter form of the basic term.
Reference: Solomon 2003

ENCLOSED DISC/ENCLOSED DISK SIGNAL. RSD notes that the Disk Signal is often restricted to Enclosed Disk Signal. Banners and Clockwork Signals, by contrast, are explosed forms and often considered apart from Disk Signals. Enclosed Disc/Disk is thereby a more explicit term for Disc enclosed within a housing.
Reference: RSD 1911, B & M 1981

BANJO. Term applied to Enclosed Disc Signal. Physically it resembled a banjo.
See also: Enclosed Disc Signal.
Reference: King 1921, Solomon 2003

BRACKETED DISC. The form of attachment becomes part of this term. Disc on bracket is attached to a post or wall.
Reference: M & H

C.I. PILLAR DISC. This form displays a "Flap Target." C.I. = Cast Iron. 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 forms. All the references are to historic forms. One of which is from the 1840s with discs 4' in diameter. The terms can be applied to more modern Signals yet more modern terms nearly always attach other words.
References: B & M 1981, Simmons 1986, Lavallee 1953, Adam-Smith 1973

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 early Disc which displayed a blind-edge for clear indications. Simmons has Disc & Crossbar (with double disc) that survived into the 20th c. Blythe includes bar and disc with openings that reduce any possibility of wind misaligning the Signals and creating false messages. Allen includes a version (GWR) that could be as high as 60'. Lavalle speaks of a Bar & Disc that 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 without a bar.
References: Allen 1952, Blythe 1951, Simmons 1986, Lavallee 1953, Hammond 1964

DISK SIGNAL. A variant spelling that is sometimes employed by US sources. This specific usage refers to 19th c. Signals.
Reference: Raymond 1917, RSD 1911

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 performed as a Distant Signal while a Semaphore served as Home Signal.
Reference: Blythe 1951

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 the entire mechanism. Though in another place Victoria Railways seems to differentiate between Dwarf and Disc Signals.
References: Wooley 1958-2, Western Australia Railways 1974

EXPOSED DISC CLOCKWORK TYPE SIGNAL. A historic form from the 1880s. At least one vane of the Signal is of obround shape and the frame is topped by a lamp. There is some resemblance to a current target/lamp though this Signal was a mainline Signal.
Reference ARSPAP-H 1953

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 not required.
References: Queensland Railway FS 1965, K & W 1963, Vanns 1997

GALLOWS TYPE OF SIGNAL (DISC). A historic term in US. It consisted of a large sheet iron disc (with a red lens built into it) that denoted danger. Clear indication was passive since the disc was "hidden" behind a shield.
Reference: ARSPAP-H 1953

GROUND DISC/GROUND DISC SIGNAL. These specific forms are from M & H, a historic source. The second form seemingly involves movement of entire mechanism while the first form has a revolving target only. Each form has two forms versions: one that works with points, one that works independently.
Reference: M & H

GROUND-LEVEL DWARF SIGNAL. This term frequently refers to Discs (with 45 degrees rotation); some forms are Miniature Semaphore Signals.
Reference: Allen 1952

HALF-OPEN DISC SIGNAL. This term 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 is for right track. Both tracks closed was indicated by positioning the open part of the disc on the bottom. An on-edge position denoted both tracks open.
Reference: Blythe 1951

HALL DISC SIGNAL/HALL DISC/HALL'S ENCLOSED DISC/HALL SIGNAL. A variety of terms employed by Solomon for the essentially same Enclosed Disc Signal.
Reference: Solomon 2003

INDEPENDENT DISC. This Disc entirely revolves. Disc and Signal lever connected by wire.
Reference: Q Rlwys SS 1965

MARTIN DISC SIGNAL. A 19th century Signal for one railway. It consisted of of a board in a circular shape that contained a partially circular opening. The Signal rotated on an axis both vertical and horizontal so that the Signal could provide danger and clear messages for trains in both directions.
Reference: RONT 2001

MECHANICAL DISC. This form has a partial disc. The disc target moves in contrast to mechanical revolving discs.
Reference: K & W 1963

MECHANICAL REVOLVING DISC SIGNAL. This term suggests that Disc Signal can take on a generic meaning that indicates Signals of reduced stature that carry out non-running/non-mainline functions. This NSW form does not display disc targets but instead has a square target and triangle target.
Reference: NSW Railways Signalling

PATTERN GROUND DISC. A & W includes this term but with few details. The

Reference: A & W 1991

POWER-OPERATED DISC. Only the Target revolves with this form. Only limited data on this Disc is available. Power presumably means electric power rather than manual operations.
Reference: Queens Railways FS 1965

REVOLVING DISC SIGNAL/REVOLVING DISC. The term refers to Discs in which entire mechanism revolves. Disc face (target) and lamp unit is stationary. Some versions may have target on one side only. It is English and Australian in provenance.
References: K & W 1963, Blythe 1951, NWS Railways Signalling

TOMMY/TOMMY DODD. Colloquial terms for Ground Disc Signal.
Reference: Jackson 1992

U.Q. POWER WORKED DWARF SIGNALS. Dwarf Signals can encompass several forms. This specific form consists of Disc Target in which the Target revolves but not the entire mechanism.
Reference: NSW Railways Signalling

3C2 b) Banner Signals [Exposed Disc Signals Under Banner Signal name]

BANNER. Short form for Banner Signal. It refers to a later 19th c. form. See Also: Banner Signal.
Reference: Solomon 2003

BANNER SIGNAL. This term covers several forms. It can refer to Banner Repeater Signal. 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. This form had targets (akin to current forms) and a lamp. It often displayed Discs but they were exposed discs.
References: ERS-H 1995, ARSPAP-H 1953, AAR-SM 1987

BANNER BOX SIGNAL. Term for an Enclosed Disc Signal. It is employed in the Manual Block System.
Reference: B & O 1927

BANNER BOX TYPE (IRELAND SIGNAL). A historic term accompanied by few details. There are several other similar terms and perhaps similar Signals.
Reference: ARSPAP-H 1953

BANNER BOX TYPE SIGNAL. This term refers to an Enclosed Signal with cloth banners. ARSPAP-H also refers to it simply as a Banner Signal.
Reference: ARSPAP-H 1953

BANNER CLOCKWORK SIGNAL. B & M speaks of Enclosed Disc and Banner Clockwork Signals. This seemingly represents two constitutive elements of Signals for the time before Semaphore Signals became significant. Details are not given. Banner Signal and Clockwork Signal sometime function as synonyms.
References: B & M 1981, ARSPAP-H 1953

BANNER CLOCKWORK TYPE. Term from Solomon that seemingly refers to the Banner Clockwork Signal.
Reference: Solomon 2003

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 1963, ERS-H 1995

BANNER TYPE SIGNAL/BANNER-TYPE SIGNAL. These terms are seemingly similar to Banner Repeater Signal. Signal Box offers a hyphenated version. Solomon includes second term as a descriptive form of a latter 19th c. Banner Signal.
References: UK Military 1955, Signal Box 1999, Solomon 2003

BANNER TYPE TRAIN ORDER SIGNAL. Historic term from the 1890s. Few details on Signal are given other than it was operated by hand.
Reference: ARSPAP-H 1953

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 1953

CLOCKWORK EXPOSED DISC SIGNAL. A historic term. No details save that it was "a modification of the Gasset & Fisher Signal." It was presumably a Banner Signal since it displayed an exposed disc.
Reference: ARSPAP-H 1953

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. It also employs the term for a specific Signal installed in 1879 that displayed an exposed disc operated by "weight- driven clockwork."
Reference: ARSPAP-H 1953, B & O 1927

EXPOSED BANNER CLOCKWORK TYPE SIGNAL. A variant title for the Gasset and Fisher Clockwork Exposed Signal.
Reference: ARSPAP-H 1953

IRELAND BANNER BOX TYPE SIGNAL. A historic term. No details given.
See Also: Banner Box Signal (Ireland).
Reference: ARSPAP-H 1953

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 1981, ARSPAP-H 1953

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.
References: ARSPAP-H 1953

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 in 3C3 are frequently brief since terms are engaged more fully in 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 reflections magnified the light.
Reference: Camp 1903

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 a slightly more explicit form.
Reference: Foster 1983, REMC 1948

ELECTRIC SWITCH LIGHT. According to Camp, Switch Lamps as such burn oil or kerosene. However, those running on electricity include the power source in the title. That may possibly indicate the early state of electrical switch lights since early Signal forms often include the mean of propulsion in the title while established forms may not do so. Some manufacturers offer alternate energy source and may add energy source to distinguish forms of energy.
Reference: Camp 1903

KEROSENE SWITCH LAMP. Term includes the form of energy in title.

Reference: REMC 1948

LAMP, SWITCH; ELECTRIC. The curious practice of ARSPAP-D to begin with a general term then move to the particular is mirrored in this term as well. This Signal is rotated mechanically and is a supplement to target.
Reference ARSPAP-D 1965

OIL-BURNING SWITCH LAMPS. A variant version of the basic form.
Reference: REMC 1948

OIL-LAMP. Term is either a shorter form, or a reference to lamps employed as Switch Lamps.
Reference: REMC 1948

OIL-LIGHTED SWITCH LAMP. A variant term for the basic term and one that is slightly more precise.
Reference: REMC 1948

OIL SWITCH LAMP. Older forms often omitted source of energy since many were oil-burning. Foster adds the energy source of oil since they also marketed electric forms. This is a more recent Lamp.
Reference: Foster 1983

REFLECTING SWITCH LAMP/REFLEX SWITCH LAMP/REFLEX LENS SWITCH LAMP. Terms refers to reflector used in lieu of lenses and energy sources.
Reference: REMC 1948

SWITCH DWARF SIGNAL. This term from UN 1954 (Viet-nam Railways) offers few details. Switch Signals are often partially-lighted.
Reference: UN 1954

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 1947, King 1921

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. There are both all-lighted and partly-lighted forms.
Reference: Adams and Westlake, Jia-lin 1981, REMC 1948

SWITCH LIGHT. Camp employs this term of place of Switch Lamp. That source also includes the word Lamp. Lamp is apparently included as a physical apparatus rather than as a Signal in itself. See Also: Switch Lamp, Electric Switch Lamp.
Reference: Camp 1903

SWITCH SIGNAL. This term may suggest a general use function. 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 1903

SWITCH STANDS. Core meaning of this term refers to the stand attached to the switch. It is not a safety aid in itself. 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 is a low or dwarf form.
Reference: ANR 1947, Bethlehem 1955, 1981

3C3 b) Point Indicators

CATCH POINT DISC/POINTS DISC. These are terms from Queens Railways. Physical appearance is that of Mechanical Point Indicator-Disc Type of NSW.
Reference: Queensland Railway FS

CATCH POINT INDICATOR. This term has two forms. One version has square targets while the second version has discs on one side and horizontal bands on a second side.
Reference: Western Australia Railways 1974

GROUND INDICATOR. A term seemingly provided by a single source. It resembles a Disc Indicator that partially revolves. Other names for the Indicator includes Shunting Disc, Shunting Signal, Dwarf Signal and Pot Signal which see.
Reference: Calvert 2004

MECHANICAL POINTS INDICATOR: ARROW TYPE; DISC TYPE. These Indicators revolve. They are employed for points, catch-points, siding derails. There are two forms:

ARROW TYPE: Rectangular targets, arrows (left or right).

DISC TYPE: One direction operations only. No form has reversed points. They are lighted at night.
Reference: NWS Railways Signalling

POINTS INDICATOR. A term that can include a variety of designs. This form is partly-lighted and similar in design to Catch Point Indicator with disc and band targets.
Reference: Western Australia Railways 1974

POINTS INDICATOR - ARROW TYPE. This Indicator has square targets in white and red with illuminated arrow. The mechanism seemingly revolves.
Reference: Queensland Railways FS 1965

3C3 c) Route Indicators

MECHANICAL ROUTE INDICATOR. This term is possibly similar to the Australian moving slide in which mechanical methods places letters/number in glass-fronted case denoting appropriate messages.
Reference: K & W 1963, A & W 1991

MORSE & BERRY TYPE ROUTE INDICATOR. Little information is available. It is possibly a mechanical form using letters/numbers.
Reference: Nock 1962

MOVING SLIDE TYPE -- ROUTE INDICATOR. Term describes a mechanical

device that positions (or removes) appropriate letters/numbers for a given route.
Reference: NSW Railways Signalling

3C3 d) Other Forms

CLOCKWORK AUTOMATIC BLOCK SIGNAL. This term combines physical and morphological functions of the Signal in question.
Reference: ARSPAP-H 1953

CLOCKWORK ENCLOSED DISC TYPE ELECTRICAL AUTOMATIC SIGNAL Though this is a clockwork Signal (which very often are Banner Signals) it is apparently an Enclosed Disc Signal rather than an Exposed Banner Signal. The term is partly morphological.
Reference: B & M 1981

CLOCKWORK SIGNAL EXPOSED DISC FORM & AUTOMATIC BLOCK SIGNAL. A weight-driven clockwork is the principle of operations for this Signal.
Reference: ARSPAP-H 1953

GASSETT & FISHER CLOCKWORK EXPOSED BANNER TYPE OF AUTOMATIC BLOCK SIGNAL. Is this an actual term or more of a descriptive term combining manufacturer and Signal name?
Reference: ARSPAP-H 1953

DISC SHUNT. This term incorporates the physical with the morphological dimension.
Reference: Pakistan Railways

DISC SHUNTING SIGNAL. The morphological dimension is included in title. This Signal has both ground and bracket forms.
Reference: Western Australia Railways 1974

FLOODLIT DISC SHUNTING SIGNAL. This term includes the morphological aspect in the title. Lighting is provided by a small floodlight that illuminates the

disc face. This specific form was displayed on Signal bridges. Apparatus differs little from floodlight Ground Discs and Floodlit Disc (which are ground-based with floodlight); colored-lamps not required.
Reference: K & W 1963

HOME & DISTANT BANJO TYPE OF DISC SIGNAL. A historic term but little information is available. It is morphological-related but includes the physical apparatus.
Reference: ARSPAP-H 1953

3C4 Other Forms

Comment: Neither Crossbar Signals of Flag Signals are represented in the Classiification. Any further revision needs to include those forms.

a) Crossbar Signals

CROSS BAR & LAMP SIGNAL. Term for an early railway Signal. It consisted of lamp and target; on-edge position of target indicated clear message.
Reference: ARSPAP-H

CROSSBAR SIGNALS. Basic term for this form of Signal. It displayed red or green lights. The entire mechanism revolved.
Reference: Signalbox 1999

DOUBLE DISCS & CROSS BAR. This term appears in Dempsey though not in Blythe (the later source often represents a comprehensive source for older UK terms). Double discs and white light indicates clear, and double cross-bar (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 seemingly do not appear elsewhere.
Reference: Dempsey 1855

FLAP SIGNAL. Term for revolving Disc Signal alternative Flap (painted red) drops into position for danger warnings. For clear message a green lens positioned

itself across the lamp.
Reference: Signalbox 1999

TILTING CROSSBAR SIGNAL/TILTING (CROSSBAR) SIGNAL. Term for a grade crossing term consisting of two balls and two lamps.
Reference: ARSPAP-H 1953

WOODEN CROSSBAR. This Signal corresponds to the Crossbar and Lamp Signal.
Reference: B & M 1981

b) Flag Signals

AUTOMATIC FLAGMAN. This term is another name for the Wig-Wag Signal at railway crossings.
Reference: B & M 1981

FANTAIL SIGNAL. Alternative title for Brunel's Flag Signal.
Reference: Blythe 1951

KITE SIGNAL. Alternate title for Brunel's Flag Signal.
Reference: Blythe 1951

FLAG SIGNAL.
General Note. This term may have have several meanings. They can include "human-operated" flags, and a simple flag attached to a post. The former is not part of this study while the later is. Flag Signal may also be placed in a frame which Mashour has labelled a Pivoted Flag.

The term also includes a Signal by Brunel consisting of cloth shutters, one red, one green. When both shutters are pulled up the message is clear. Dropping of green shutter indicates caution while dropping of the red shutter denotes danger. This Signal is better described as a Fantail or Kite Signal.
Reference: Blythe 1951

PIVOTED FLAG. This refers to a flag placed in a frame which is capable of being pivoted. "Passive clear" (on-edge) constitutes a clear indication. When it is visible the flag denotes stop. Mashour refers to it as a Pivoted Flag while Blythe names it simply as a Flag Signal which see.
References: Mashour 1974, Blythe 1951

c) Lighted Signs & Boards

General Note. A variety of Signs and Boards contains -- or are augmented -- by lights. To a substantial degree they are part of that category yet they are also a partly-lighted aid. Signs and Boards which have a lighted dimension are included here. Chapter 4 contains the primary entries.
Classification: #5250
Type of Device: Partially-lighted Railway Sign
Operation: Alphanumeric Signs and Boards aided by lights given messages according to a pre-arranged pattern.
Comments: The Classification includes Lighted Signs only. That needs to be augmented by Boards.

CAUTION BOARDS
END OF SHUNT SIGN
INDICATION BOARD
LINESIDE BOARD
MARKS & MARKERS FOR JAPAN [Selected Entries]
SHUNTING LIMITS BOARD
TEMPORARY SPEED-REDUCTION BOARD
TRAIN-ORDER BOARD

d) Track Indicators

General Note. This Indicator frequently employs miniature semaphore arms or graphic symbols which indicate whether or not a train is approaching the location of the Indicator. These devices were employed on selected US 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 found

more use in the past than in the present. Part F and underlying sources include coverage of forms and messages; Kanner 1992 augments that coverage. Forms include:

Classification: #5235
Type of Aid: Partially-Lighted Railway Signal
Operation: Symbols display messages and may include light and sound devices.
Comments: The Classification describes this form as Miniature Graphic Symbol Indicators.

BLOCK INDICATORS
MOTOR CAR INDICATORS
SWITCH INDICATORS
TRACK CAR INDICATORS
TRACK OCCUPANCY INDICATORS
TRACK INDICATORS
TRACK SIDE WARNING INDICATORS
TRAIN APPROACH INDICATORS

References: Part F, Kanner 1992

e) Miscellaneous Forms

BALL SIGNAL. This Signal was short-lived in UK though more popular and longer lasting in the US. Some Ball Signals were in use in New England into the 1930s. A ball positioned at top indicates clear while at bottom it denotes danger. A different version was employed by B & M: white ball at top denoted train on time while black at top indicated train late or disabled. Lamps might be attached to balls with hooks or attached to signal pole. B & M used "bell-shaped peach baskets" giving the appearance of balls; that term was to become the name of the Signal.
References: Blythe 1951, Allen 1952, B & M 1981, Lavallee 1953, FRA-3 1979, Fisher 1976

BALL SIGNAL: STATION SIGNALS, JUNCTION SIGNALS, CROSSING SIGNALS, DRAWBRIDGE SIGNALS. Calvert includes a variety of specialized

Signals under the category of Ball Signals. Few sources include these specific forms.
Reference: Calvert 2004

BASKET SIGNAL. Some early UK railways employed a basket instead of a ball. Hence the variant name.
Reference: Blythe 1951

BEZER ROTATING SIGNALS. Term for a 19th c. patented device consisting of a rotating Semaphore arm and lamp. It was a two-aspect Signal indicating either stop or proceed. It apparently underwent field trials but seemingly never achieved regular service.
Reference: Calvert 2004

GATE SIGNAL. An early form of Grade Crossing Signal. However, it was placed across the tracks instead of across the roadway.
Reference: ARSPAP-H 1953

GROUND SIGNAL. This could be an overarching term for Disc Signal though it includes Semaphore as well. Term refers to Subsidiary Signals including Semaphore and Disc forms.
References: K & W 1963, ERS-H 1995, Keyboard ... 1984, Nock 1962, UK Military 1955

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 the top position which indicates clear.
References: Allen 1982, Henry 1942

INDICATOR LANTERN. Term for German Shunt Signal under an English-language name.
Reference: Nock 1962

LAMP. This is something of a marginal term. It refers to the lamp appearance in itself without interaction with the switch or 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 1903

POT SIGNAL. This is a US term. It refers to a Revolving Signal that was originally oil-burning. It consisted of Switch Stand, Lamp Target. RSD speaks of two versions: a Switch Target with four lenses, and a Dwarf with two lamps for low-speed operations. Switch Target often means Target without lamps. However, RSD employs Switch Target with lighted components as a synonym.
References: RSD 1911, Fishers 1976

RAILROAD GRADE CROSSING TARGETS. A historic device for trains crossing tracks rather than roadways. It consisted of lamps and cross arms whose position indicated when conditions were safe and when dangerous.
Reference: B & O 1953

SMASH/SMASHBOARD SIGNAL. This refers to a Signal that incorporates an obstacle (consisting of a long horizontal Semaphore arm, or Disc). If Signal is ignored when in danger position then the train would strike the object.
References: Lavallee 1953, RSD 1911

TRIP'S IMPROVED RAILWAY SIGNAL. A historic term. It consisted of a Semaphore with clock. Information limited on Signal.
Reference: B & M 1981

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 1954 (Philippines)

CHAPTER FOUR

UNLIGHTED, AUDIO & RADIO SIGNS, SIGNALS, MARKERS, MOVABLE & TIME INTERVAL & TRAIN ORDER FORMS

Speed Contol & Restriction Signs
  General Notes I, II
Advance-Warning Sign/Advance Warning Sign
Reduced Speed Sign
Resume Speed Sign
Retro-Reflective (Road Traffic Type) PSR Sign
Speed Control Signs - Temporary & Permanent
Speed Limit - Permanent Sign/Speed Limit - Temporary Signs
  Speed
  Slow
  Resume Speed
Temporary Reduce Signs/Slow Signs/Resume Signs
  Reduce Speed Sign
  Slow Sign
  Resume Speed Sign
UAR Speed Signals (=Signs)
  General
  Speed Restriction Sign
  Start of Speed Restriction Signal
  End of Speed Restriction Signal
  Speed Restriction Warning Signal
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
Temporary Speed Restrictions
  Commencement Indicator

Special Speed Restriction Board
Spate Indicator
Term Indicator
"Z" Board/"R" Board
Speed Restriction Signs - Temporary
Speed Restriction Signs
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 (4B3 (b) 1))
Advance Location Signs (4B3 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 (4B3 b) 2))
General Note
Yard Limit Signs
Switching Limit Signs
Signal Territory Limit Signs
Station Location Signs
Derail Location Signs
Track Capacities Signs
Water Station Limit Signs

Fuel Station Limit Signs
Cinder Station Limit Signs
Blind Siding Signs
Cut Section Signs
Territory Limits Signs (4B3 b) 3))
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
End of Track Circuit Sign
Automatic Block Signs
Start Automatic Block
End Automatic Block
Remote Control signs
Begin Remote Control Signs
End Remote Control Signs
Double Track Signs
Beginning of Double Track Signs
End of Double Track Sign/Double Track Begins/Double Track Ends
Begin Rules 400-406/End Rules 450-453
Begin Rules 450-453/End Rules 450-453
Approach Block Limit Sign/ABL Sign
Maintenance of Way Signs (4B4)
General Note
Alinement Sign or Markers
Bridge Sign/Bridge Number Sign
Curve & Elevation Sign
Elevation Markers
End of Shunt Sign

- 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
- Monument 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 (4B7)

- General Note
- Board

Baak
Boundary Marker/Boundary Post/Boundary Stone
Caution Board
Countdown Board
Countdown Marker Board
Distant Warning Board
Fixed Signal Board
Flag Board/Metal Flags
Indicating Board
Indication Board
Lineside Board
Marker Board
Mile Board
Name Board
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 (Permanent)/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
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
Train Order Board
Terminating Board
Stop Board
Stop Indicator
Temporary Speed-Reduction Board
Warning Board
Watering Board
Whistle Board
Yard Limit Board
"Y" Board
Block Posts
Clearance Post
Curve & Elevation (Post)
Elevation Posts/Full Elevation Posts/Zero Elevation Posts
Gradient Board
Gradient Posts
Mile Posts
Permanent Whistle Post/Temporary Whistle Post
Property Line Post/Property Posts
Section Post/Sub-section Posts
Signposts
Whistle Posts

Plates & Flags Forms (4B8)
"A" Plate
Alias Plate
Car Stop 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
Rule 55 Exempt Indicator Plate
Signal Background Plate
Signal Identification Plate
Signal Mounted Signs
Signal Number Plate
Station Nameplate
"T" Plate
Flags
General Note
Flagboards
Metal Flags
Flag Signals
Blue Flag Devices
Portable 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
Stop Tank Car Connected
Danger Men Working on this Track
Danger Tank Car Connected
Electric Traction Signs (4D8 c))
General Note
Miscellaneous Signs (4B8 c))
Approach Sign
Checquered Sign
Number Plate
Signal-Not-In-Use Sign
Targets (4B10)
General Notes I, II, III, IV, V
Overarching Terms (4B10 a))
Target
Switch Stand Target
Switch Target
Illuminated Switch Target
Morphological-Related Terms (4B10 b))
General Note
Shape (4B10 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 (4B10 b) 2))
General Note
Terms Related to Railroad Functions (4B10 b) 3))
Blind Target

Main Track Switch Target
Siding Yard Switch Target
Siding Derail Target/Siding Derail Switch Target
Yard Switch Stand

Other Terms (4B10 c))
Day Targets
Main Line Switch Stands
Target Stands
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 Stands Forms (4B10 d))
General Note
Automatic Safety Lock Switch Stand
Automatic Safety Switch Stand
Automatic Stand
Automatic Switch Stands
Column-Throw Stand
Derail Switch 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
Hub 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
Pony Stand
Positive-Action Switch Stand
Steelton Switch Stand
Stone Drum Switch Stand
Switch Stand, Parallel Throw
Three-In-One Automatic Switch Stand
Yard Switch Stand

Acoustical and Radio Forms (4C)
General Note
Overarching Terms (4C1 a))
Acoustic or Audible Signal
Audible Danger Signal
Audible Signalling Devices
Audible Warning Systems
Railway Sound Signals/Rail Sound Signals
Explosive Signals (4C2 b))
All-Weather Fuzees
Audible Signal
Banger/Cracker
Clayton's Automatic Detonator Placer
Clayton Fogging Machine
Detonating Fog Signal
Detonating Signal
Detonator
Detonator Container
Detonator Box/Detonator Case/Detonator Holder/Detonator Tin
Detonator Machines
Detonator Placer
Detonator Signal

Duplex Fog Signal
Flag
Fog
Fog Detonator
Fog Signal
Fogger
Fogging Lever Frames
Fogging Machines
Fusees
Non-optical Signals
Torpedo
Torpedo Signal
Tube Detonator/Open Section Detonator

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
Electric Flagman
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

Hoeschen Crossing Signal/Hoeschen Bell System
Locomotive Type Crossing Bell
Road Crossing Signal
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Vibrating Bell/Bell Vibrating
Cab & Train Control Sound Signals (4C2 d))
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Cab Signal-Sound
Audible Cab Signalling/Audible-Cab Signalling
Audible Cab Indicator/Indicator, Cab; Audible
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
Other Forsm (4C2 e)
Bell
Fog Gong
Fog Repeater
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Movable Automatic Warning Devices
Train Operated Warning System (TOWS)
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Track Crew Warning Signals
Track Indicators
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-Shunting
Radio Token Block System
Radio Token System
Radio Tokenless Block
Raliophone
RETB System
Sat-Guidance System/Sat-Based Guidance System
Token Block
Transponder
Wireless Signal System

Staff & Ticket, Tablet, Token, Train Order & Time Interval Forms (4D)
General Note
Staff Forms (4D1)
Absolute Staff System/Absolute Staff Instrument
Annett's Key
Automatic Electric Staff Instrument
Automatic Staff Exchanging Apparatus/Automatc 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
Single Line Staff
Single Line Staff Box
Single Line Ticket
Single Staff System Equipment
Staff
Staff 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

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
Block Token
Long Section Token
Section Token
Electric Token
Electric Token Apparatus
Electric Token Block Equipment
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 Key Token
No Signalman Token Block
No Signalman Token System Equipment
One Train Working
Signalman-to-Signalman Token Working
Signalman to Automatic Operated Token Working
Single Line Token Instrument
Token
Token Block System

Tokenless Block
Tokenless Block Equipment
Tokenless Block Working/Tokenless Block System
Tokenless Block Instrument
Tokenless Block Working
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)/Time Table & Train Order System
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
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 System
Other Forms
Direct Traffic Control (DTC)
Space Interval Method
Telegraph & Ticket Method
Telegraph Block System
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, Gates, Barriers & Related Devices (4E)
General Note
Integrative LC/GC Terms (4E1)
General Note
Active Warning Devices
Automatic Devices
Automatic Protection
Automatic Safety Installations for Level Crossing
Automatic Warning Devices
Automatically Controlled Level-Crossing (Grade Crossing) Protection
Automatic Level Crossing Protection
Conventional Track Circuit-Operated Level Crossing Warning System
Crossing Device
Crossing Protection
Crossing Warning Device
Crossing Warning System
Electric Flagman
Grade Crossing Warning Device
Grade Crossing Warning Systems
Highway Crossing Alarm
Highway Crossing Protection/Highway Grade Crossing Protection

Highway Crossing Signal
Highway Crossing Warnings & Controls
Highway Grade Crossing Warning Devicess
Highway Grade Crossing Warning System
Level-Crossing Protection
Level Crossing Traffic Warning System
Luminous Signal
Passive Warning Devices
Protective Crossings
Protective Device
Railroad-Highway Grade Crossing Protection
Train-Activated Warning Devices
Warning Devices
Warning Systems

Lighted Level & Grade Crossing Signals (4E2 a))
Advance Warning Signal (Highway Crossing)
AGA Two-Color Highway Danger Signal/AGA Highway Danger Signal
Automatic Signal Devices
Barrow Crossing Warning Indicator
Cantilever Signal
Color-Light Highway Signal
Crossing Signal
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Flashing Light Signals/Flashing-Light Signals
Flashing Light Type
Flashlights/Flashlight Signals
Grade Crossing Signal
Grade Crossing Signaling
Highway Grade-Crossing Protective Signals
Highway Approach Signal
Highway Crossing Signal/Signal, Highway Crossing
Railroad-Railroad Grade Crossing Signal
LED Highway Crossing Lamp
LEX-C Highway Grade Crossing Flashing Light Units

Level Crossing Signals
Level Crossing with Flashing Light Signals
Level Crossing with a Signal System To Give Warning of the Approach of Trains
Miniature Warning Lights MWL)/Miniature R/G Warning Lights
Signal, Flashing Light
Signals for Tramway Level Crossing
Pre-Warning Signals
Tram Crossing Signals
Visible Warning Signals
Wig-Wag Signal
Wig Wag/Wig Wag Type/Wig Wag Crossing Signal
Lighted Crossing Signals Attached to Other Devices (4E2 b))
General Note
Automatic Crossing Gates & Flashing Light-Signals
Flashing Lights & Gates
Level Crossing Gates, Barriers & Warning Signals
Signal Lights & Other Grade Crossing Warning Equipment
Barriers & Gates (4E3)
General Note
Overarching Terms (4E3 a))
Barriers
Level Crossing Barrier
Barriers, Full Barriers, & Gates (4E3 b))
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Full Barrier
Automatic Barriers (4E3 b) 1))
General Note
Automatic Gates
Level Automatic Barriers
Level Crossing with Automatic Barriers
Automatic Barrier Crossing Locally Monitored
Automatic Gates
Automatic Lifting Barriers
Barrier Gates

Crossing Gates
Electrically Operated Lifting Barriers
Gated Level Crossing
Level Crossing Barrier
Level Crossing Gates
Level Crossing with Full Barrier
Lifting Barriers
Lifting Barriers Level Crossing
Boom Gates
Electro-Hydraulic Pedestrian Barriers
On Call Barriere Crossing (OCB)
Lifting Barrier Level Crossing
Robot Barrier Gates
Short-Arm Gates
Wicket Gate

"Manned" and Manually Operated Barriers (4E b) 2)
Manned Gated Crossing
Manner Barriers
Manned Barriers Crossing
MCB/Local//MCB/Remote//MCB/CCTV//TOB
Manned Level Crossing
Locally Controlled Manned Level Crossing
Remotely Controlled Manned Level Crossing
CCTV Monitored Remote Barrier Crossing
Manually Controlled Gate
Manually Controlled
Manually Controlled Barrier Protected by Closed Circuit Television (MCB/CCTV)
Manually Controlled Barriers (MCB)
Power-Worked MCB
Audible Warning Devices
Traffic Lights
Barriers
TMO (Trainman Operated [Barrier])
Trainman-Operated Barrier (TOB)

Half Barriers & Gates (4E3 b))
- Half-Barrier
- Automatic Half Arm Barrier Installation
- Automatic Half Barrier
- Automatic Half Barrier Crossing (AHB)
- Automatic Half-Barrier Crossing
- Automatic Half Barrier Locally Monitored (ABCL)
- Automatic Level Crossing & Half Gate
- Crossings with Automatic Operated Half Barrier
- Double Half Barrier & Full Barrier Crossing
- Level Automatic: Half Barriers
- Level Crossing Half Barriers
- AHB Crossings
- Automatic Barrier Crossing
- Automatic Level Crossing & Half Gate
- Electric Level Crossing with Half Barriers & Signals
- Gates & Automatic Half-Barriers
- Double Half Barrier
- Single Half Barrier

Open Crossings (4E4)
- General Note
- Accomodation Crossing
- Automatic Open Crossing
- Automatic Open Crossing Locally Monitored (AOCL)
- Automatic Open Crossing Remotely Monitored (AOCR)
- Automatic Open Level Crossings
- Level Automatic Open Level
- Ungated Barrier Level Crossing
- Open Crossing (OC)
- Open Level Crossing
- Uncontrolled Open Crossings/Open Crossing with No Controls

Sound Signals (4E5)
- Audible Automatic Warning Devices
- Audible-Pedestrian Crossings
- Automatic Bell

Bell
Bell, Gong, Audible Warnings
Crossing Alarms
Crossing Bell
Double Gong Highway Crossing Bell
Electronic Bell/Electronic Warning Bells
Enclosed Crossing Bells
Enclosed Type Gong
Grade Crossing Alarm
Locomotive Type Crossing Bell
Highway Crossing Alarm
Highway Crossing Bell
Highway Crossing Bell-Electronic/Highway Crossing Bell-Mechanical
Highway Grade Crossing Warning Device
Hoeschen Crossing Signal/Hoeschen Bell System
Road Crossing Signal
Skeleton Bell
Sound-Bell/Sound Bell
Vibrating Bell/Bell, Vibrating

Signs (4E5)
Auxiliary Sign
Barricade Sign
Close Up Road Warning Sign [& with Flashinglight]
Crossing Signs
Crossbuck Sign
Distant Road Warning Sign
Distant Warning Sign
Gates Not Working Sign
Highway & Barricades Sign
Highway Crossing Sign/Highway Grade Crossing Sign
Illuminated Sign
Level Crossing Halt Board
Sign Board
Railroad Crossing Sign
At the Crossing

4A2 Index: Alphabetical

4B Unlighted Fixed Forms

General Note I. Unlighted Fixed Forms are not entirely unlighted. Certain types of Signs can be lighted. This is also true of Targets. Yet the essential form is not lighted nor does it require lighting. Some cross-references are needed for unlighted devices that can include a lighted dimension.

General Note II. The first edition separated Targets from Signs and allied forms. That appeared to be a sound decision since Signs have constant messages while Targets have changeable message; Targets are in some sense Signals. Yet both are often unlighted. In the first edition non-lighted Signal forms were placed together whether visual, acoustical or radio. This placement of diverse Signals together was not entirely satisfactory. Acoustical and radio forms are now together but without the visual . This remains a less than fully adequate solution since some acoustical and visual Signals are unified. Nonetheless, having those forms together illustrates an important non-visual T-M form. Cross-references indicate where Signals forms are been separated.

General Note III. Unlighted Fixed Forms with Constant Messages need to be examined as a group. They include all forms of railroad/railway safety aids: Signs, Marks, Markers, Boards, Posts, Plates, Flags. While these forms are overshadowed by Signals they remain an important element.

General Note IV. The Classification for Unlighted Fixed Forms goes back to 1990 and 1991. That Classification, which appears in *International Railway Signals,* Part F, was transmitted largely intact to the *General Classification (*Part H 1994/ 2003) It is at variance with the schema for Unlighted forms in the Database. Where the Classification has nine segments within two major headings the Database has just four major segments (one of which has further differentiation). The Database has four other segments for other Unlighted Forms which in some cases contain Signs under other names. The Classification has two such groups. The Classification needs to be reformulated along the lines of the Database constructs. Hence, there are no classification entries in this study. The final segment of Unlighted forms, that of Targets, does include classifications.

4B1 Overarching Terms

General Note. Most railroad Signs are of a specific character. Overarching terms are employed by only a few sources. And even some of these refer to specific Sign forms. Overaching terms are often employed without definitions and they may be interchangeable with companion terms.

FIXED INDICATOR. This is employed is seemingly interchangeable with Fixed Signs and similar terms by ERS.
Reference: ERS-H 1995

FIXED SIGN. This and other terms are often employed with little description. ERS-H employs this term for non-Signal devices that are in place near tracks.
Reference: ERS-H 1995

INSTRUCTIONAL SIGN. Term for Sign that gives directions or orders. RONT includes this general term which stems from OED. It has a very inclusive usage.
Reference: RONT 2001

LINESIDE SIGN. A term that is seemingly interchangeable with Fixed and Trackside Signs.
Reference: ERS-H 1995

SIGN. A few surveyed sources employ this term. It extends well beyond railway use but can be applied when linked to rail safety.
References: FRA-3 1979, UIC Code

SIGNPOST. Fisher views this term as a general use term that is nterchangeable at least in some instances with Boards. Signpost means Sign as well as a post for attaching a Sign to it.
Reference: Fisher 1976

SIGNS & MARKERS. For RONT this category includes posts, notices and other unspecified means which convey information. This excludes Signals.
Reference: RONT 2001

TRACKSIDE INDICATORS. The word Indicator is employed for Board, Plate, Sign terms. It seemingly does not constitute a category. This specific term includes mostly speed related Signs; it also includes a shunt-related Sign and Marker Board. It is not a general overarching term.
Reference: RONT 2001

TRACKSIDE SIGNS. A term that refers to Signs near railway operations. It is seemingly interchangeable with a variety of other overarching terms.
Reference: ERS-H 1995

TRACK-SIGNS. Alaska Railroads includes this term in their website for Signs and some non-Sign forms.
Reference: Alaska Railroads

4B3 Location Signs

LOCATION SIGNS. Older editions of AREA spoke of "Signs for the Information of Passengers and Employees Other Than Trainmen, Though Incidentally Used by Them." Newer editions employ the much shorter term of Location Signs. The meaning of these Signs is similar with both titles. This term serves as an overarching term for this segment. There is some possibility of confusion of these signs with a separate group of Location Signs within the Transportation Signs category. Transportation Signs refer to train operation signs in a direct sense rather than an indirect one. The former group can be termed Location I Signs and the latter group as Location II Signs.
Reference: AREA 1929, 1987-1988

CORPORATE OR OTHER POLITICAL SUBDIVISION SIGNS. This term includes a wide variety of Signs. These Signs are not directly tied to train operations. They are rectangular in shape (horizontal emphasis) with rounded corners. The color scheme may be a white ground with black letters.
Reference: AREA 1929

MILE POST SIGN. This term may be more Post than Sign but it is classified under the heading of Signs. It is more of a cross-reference than a full entry.

Reference: AREA 1987-1988

STANDARD RIGHT OF WAY SIGN. AREA includes Standard Right of Way Sign and Monument Marker as one unit. The Sign denotes limits for right of way. The role of Monument Marker is not explained further. Cross Reference: Monument Marker.
Reference: AREA 1987-88

SUBDIVISION SIGNS. AREA 1929 lists the Section Sign by itself as well as in Section with Subdivision Signs. There is no subdivision by itself. AREA illustrates the combined Signs and indicates where they are stationed. But no description of the function is given. Newer editions do not include this Sign(s).
Reference: AREA 1929, AREA 1987-88

TRESPASS SIGN. Newer editions of AREA speak of No Trespassing Signs while the 1929 edition has Trespassing Signs. Presumably it means a Sign denoting limits of areas where intrusion would constitute tresspass.
References: AREA 1929, AREA 1987-88

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 and placed at the commencement of what would consitute tresspass. Samples of these Signs include: RAILROAD PROPERTY - TRESSPASSING FORBIDDEN UNDER PENALTY and DANGER DO NOT TRESPASS ON THE RAILROAD. The specific wording suggest rather than requires compliance.
Reference: AREA 1929

VALUATION SECTION SIGN. This term from AREA 1929 displays a rectangle with horizontal emphasis. Few details are available.
Reference: AREA 1929

4B3 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 US 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 the 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 supplied this compiler excerpts from various unnamed US railroad Signal codes. That collection of Signs is a major resource for railroad Signs. Frequently those Signs are in groups and are so treated.
General Note II. ERS views Speed Restriction Signs as qualifiers of Signal indications. AREA often speaks of Signs as definers of limits including limits for slow orders and train stop locations.
General Note III. Terminology can be confusing: Signs may appear under Indicator (ERS) and even under Signal (UAR, French language terms). Other Signs are listed as Boards. In some cases Boards can be a non-sign entity while it can serve as a near-synonym for Sign in other situations.

ADVANCE-WARNING SIGN/ADVANCE WARNING SIGN. Terms for Speed Signs that are somewhat related to Restricting Signs. This Sign indicates upcoming speed change. The Sign is rectangular but at a diagonal slant with one side cut off at a slant. Reduced speed limit information is given. [Note: This sign and the next two are a set in the Foley collection of Signs; name of railroad is not given].

REDUCED SPEED SIGN. This Sign is of square shape with cropped corners; numbers are displayed in black numbers on yellow ground.

RESUME SPEED SIGN. This Sign is rectangular-shaped with vertical emphasis. Green in color; almost a Marker in form.

RETRO-REFLECTIVE (ROAD TRAFFIC TYPE) PSR SIGN [PSR= Permanent Speed Restriction]. Sign displays a circle with black border and numbers; ground

Reference: ERS-H 1995

LINE INDICATOR. This Indicator displays speeds in 1/10 of speed numerals. A triangular shaped Sign in green with point up; numbers are in white.
Reference: ERS-H 1995

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-H 1995

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-H 1995

TEMPORARY SPEED RESTRICTIONS. Messages give warning indicating temporary regulations for advance, commencement, termination indications.

COMMENCEMENT INDICATOR. This is a speed indicator.

SPECIAL SPEED RESTRICTION BORD. Board gives message with flashing chevron. The temporary speed restriction message occurs after the issuing of weekly notices.

SPATE INDICATOR. Indicator added to temporary Warning Board which indicates rule not in use.

TERMINATION INDICATOR. Sign at end of restriction.
Reference: RONT 2001

"Z" BOARD/"R" BOARD. Terms 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 1995

SPEED RESTRICTION SIGNS - TEMPORARY. A general heading for ERS. The term Indicator is also employed here. Many systems in Europe include lights with these Signs.
Reference: ERS-H 1995

Sign consists of a yellow disc.
Reference: UAR 1983

SPEED ZONE SIGNS. There are three Signs in this group.

SPEED ZONE SIGN. This Sign presents maximum speed allowed. It is a rectangular-shaped Sign with horizontal emphasis and cropped corners.

RESTRICTING SIGN. Signs denotes beginning of speed restriction (e.g. 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. This Sign displays letter "R". It is rectangular-shaped with vertical emphasis.
Reference: Foley 1975

INDICATOR. Common expression by ERS for Speed Restriction Sign. This may not be a formal name. Indicator can apply to a variety of safety aids. It is situated at braking distance to Speed Sign restriction. This speed is represented by a numeral (e.g., 10 x # = speed, or in ERS, speed divided by 10 so that 50 km/h is represented by 5; some systems employ speed limit figure).
Reference: ERS-P 1995, Oxford-Duden 1980

FIXED INDICATORS. For Oxford-Duden this is seemingly a description more than a formal name. It refers to permanent speed restrictions.
Reference: Oxford-Duden 1980

SIGN FOR DAY RUNNING. This is more a descriptive name than a formal name. It refers to permanent speed restrictions.
Reference: Oxford-Duden 1980

WARNING SIGN/COMMENCEMENT SIGN/TERMINATION SIGN. For British Rail this is a common pattern for noting upcoming speed changes (which includes changing the speed, and then ending that change).
Reference: ERS-H 1995

ARROWS. Device that denotes diverging lines which speed restrictions refer to.

Reference: ERS-H 1995

LINE INDICATOR. This Indicator displays speeds in 1/10 of speed numerals. A triangular shaped Sign in green with point up; numbers are in white.
Reference: ERS-H 1995

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-H 1995

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-H 1995

TEMPORARY SPEED RESTRICTIONS. Messages give warning indicating temporary regulations for advance, commencement, termination indications.

COMMENCEMENT INDICATOR. This is a speed indicator.

SPECIAL SPEED RESTRICTION BORD. Board gives message with flashing chevron. The temporary speed restriction message occurs after the issuing of weekly notices.

SPATE INDICATOR. Indicator added to temporary Warning Board which indicates rule not in use.

TERMINATION INDICATOR. Sign at end of restriction.
Reference: RONT 2001

"Z" BOARD/"R" BOARD. Terms 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 1995

SPEED RESTRICTION SIGNS - TEMPORARY. A general heading for ERS. The term Indicator is also employed here. Many systems in Europe include lights with these Signs.
Reference: ERS-H 1995

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 1995

SENAL INDICADORA DE VELOCIDAD LIMITADA/DE FIN SENAL INDICADORA DE VELOCIDAD. The first Sign is diamond-shaped and black on white with speed in km/h. The second Sign is square and w/o alphanumeric symbols. Black symbols on white ground.
Reference: Colombia

Other Speed Signs:

Chicago, Rock Island and Pacific Railroad (CRIP) offers several Signs:
CURVE SPEED SIGN.
PERMANENT SLOW SPEED SIGN.
TEMPORARY SLOW & RELEASE SIGN.
PROCEED PREPARED TO STOP SIGN.
ZONE SPEED SIGN.
Reference: CRIP 1977

b) Location Signs

1) Advance Location Signs

ADVANCE LOCATION SIGNS.
General Note. AREA 1987-88 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
TUNNEL 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. This is in addition to the Advance Location Sign segment within the Transportation category. There is also a segment adjoining the Advance Location Signs that deal 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 SIGNS
CUT SECTION SIGN (B & O)

3) Territory Limits Signs

TERRITORY LIMIT SIGNS.
General Note. AREA includes a Signal Territory Limits category. This section of the study both alters and expands that segment. It includes all Signs marking the beginning and ending of Signals, systems and other situations affecting train operations. Many of these Signs are self-explanatory requiring brief entries are brief except where more lengthly explanations are needed.

BEGIN CTC SIGN/END CTC SIGN. Signs are rectangular-shaped though barely (the Sign is 17 by 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 1977

BEGIN TCS SIGN/END TCS SIGN. This Sign refers to track circuit sections.
Reference: Foley

END OF SIGNAL TERRITORY.
Reference: Fisher 1976

END OF BLOCK SIGN/BLOCK-LIMIT SIGN.
Reference: AREA 1929, and CRIP 1977 (1), Penn Central 1973 (2)

END OF TRACK CIRCUIT SIGN.
Reference: B & O 1953

AUTOMATIC BLOCK SIGNS.

START AUTOMATIC BLOCK
END AUTOMATIC BLOCK

Start Sign is an inverted triangle while the End sign is verted. Ground is probably black on white. It denotes the beginning and ending of Automatic Block System.
Reference: Foley

REMOTE CONTROL SIGNS

BEGIN REMOTE CONTROL SIGN
END REMOTE CONTROL SIGN

Sign displays rectangular-shaped Sign with horizontal emphasis with black letters on white ground. It denotes beginning and ending of Remote Control System.
Reference: Foley

DOUBLE TRACK SIGN. Signs are rectangular-shaped with horizontal emphasis, curved ends, black on white. There are two forms:

BEGINNING OF DOUBLE TRACK SIGN
END OF DOUBLE TRACK SIGN

The names of the two forms indicate the messages.
Reference: Foley

BEGIN RULES 400-406/END RULES 400-406. CRIP Sign indicating jurisdiction of these rules for CTC Rules.
Reference: CRIP 1977

BEGIN RULES 450-453/END RULES 450-453. CRIP Sign has special messages for CTC Rules for train movement in the same direction under Block Signals.
Reference: CRIP 1977

APPROACH BLOCK LIMIT SIGN/ABL SIGN. ABL Sign from Foley. Signs are rectangular with vertical emphasis; black letters on yellow ground.
Reference: Foley

4B4 Maintenance of Way Signs.
General Note. These Signs deal with railroad track property and the maintaining of same. They are a category for AREA. Many of the component Signs may be

found only in the US.

ALINEMENT SIGNS OR MARKERS. These terms refer to "easement spirals and curves" locations and limits
Reference: AREA 1987-88

BRIDGE SIGN/BRIDGE NUMBER SIGN. These Signs identify bridges by providing number designations. The Sign is octagon-shaped and black on white. One Sign but two slightly different names.
Reference: AREA 1929

CURVE & ELEVATION SIGN. This Sign is in post form. Only limited information is available. See Also: Elevation Marker, Post.
Reference: AREA 1929

ELEVATION MARKERS. Terms indicate elevation of rail top and maxium elevation of tracks under which grade separations can be raised.
Reference: AREA 1987-88

END OF SHUNT SIGN. Sign displays red fixed lights. Details are limited.
Reference: Leach 1991

FLANGER SIGNS. Sign appears within Snowplow Signs for AREA. It indicates that flanges should be lifted.
Reference: AREA 1987-88

MAINTENANCE LIMIT SIGNS. These Signs are concerned with the defining the limits for ownership of track and maintenance (railroad-industry, railroad-railroad).
Reference: AREA 1987-88

ROADWAY STRUCTURES SIGN. These Signs define location or give the location of structures such as bridges, trestles, tunnels, culverts. The distinctions between some of these Signs and Transportation Signs are seemingly narrow and uncertain.

Reference: AREA 1987-88

SNOWPLOW SIGNS
RAISE SNOWPLOW SIGN
LOWER SNOWPLOW SIGN
AREA defines the first Sign as marking placement of snowplow equipment. The next Signs are from Oxford-Duden and refer to German practice.
Reference: AREA 1987-88, Oxford-Duden 1980

TOKEN BLOCK WORKING. Sign employed in Scotland and is accompanied by arrows. The Sign is a rectangle (vertical emphasis) and black on white. It is a Limit Sign though not by name.
Reference: A & W 1991

WING MARKER. This Marker is associated with the Snow Plow Sign. The name Marker may be employed because of the non-sign character (e.g. lack of alphanumeric characters). It indicates snowplow wings should be closed. Flanger and wing are one Sign when necessary.
Reference: AREA 1987-88

4B5 Safety Signs
General Note. A category of AREA. Three of these Signs are Cross Reference entries and belong to Level Crossing/Grade Crossing. 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. Sign denotes presence of electrical high voltage lines (termed "carriers" in AREA) whether overhead or "subgrades."
Reference: AREA 1987-88

FIRE HAZARD SIGN. Sign provides warning of storage of flammable materials and what are termed "subgrade carriers."
Reference: AREA 1987-88

HIGHWAY GRADE CROSSING SIGN. Term refers to Sign marking crossing.

Reference: AREA 1987-88

BARRICADE SIGN. Sign denotes construction, repair work at crossing for road users.
Reference: AREA 1987-88

HIGHWAY & BARRICADE SIGN. A grade crossing Sign for road users.
Reference: AREA 1987-88

POWER-OPERATED SWITCH SIGN. This Sign provides warning to pedestrians especially for pedestrian passageway are near such switches.
Reference: AREA 1987-88

RESTRICTED CLEARANCE SIGN. This term identifies restricted clearance whether horizontal and/or vertical: Situations includes turnout, buildings, platforms, "other structures."
Reference: AREA 1987-88

WARNING NO CLEARANCE FOR MAN ON SIDE OR TOP OF CAR SIGN. Term from one railroad. Few details but meaning is self-explanatory.
Reference: CRIP 1977

4B6 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 and even Sign are used interchangeably at times. Marker can sometimes be applied to a specific function. (e.g. Marker sometimes refers to Reflective Marker Board). It has also been used for Lineside Signal or vice versa. See Also terms including the word Marker.
Reference: ERS-P 1995

MARKER (BOARD). Alternate name for Countdown Marker Board. Term is listed in both Marker and Board.
Reference: ERS-H 1995

ALINEMENT MARKER. AREA refers to Alinement Signs or Markers. However, no explanation of the relationship between Sign and Marker is given. Marker can be viewed as smaller, closer to the ground, with fewer symbols, and more vertical than for Signs. However, the criteria for AREA is unknown.
Reference: AREA 1987

AUXILIARY MARKER. This term refers to Diamond Shaped Markers and Round Speed Limit Markers which see. Auxiliary Marker means it is auxiliary to lighted Signals to which these Markers are affixed.
Reference: FRA-3 1979

"C" MARKERS/"S" MARKERS.
General Note. These Markers indicate of sections and are lined up with catenary masts. Savarrzeix speaks of "reflecting line side plaques." [Plaque=Board].
Reference: Savarrzeiz 1981

"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 Signal.

CLEARANCE MARK. This Mark marks the safe edge of points and crossings for trains (beyond the safe edge fouling may occur).
Reference: SA TWA 1964

DIAMOND SHAPED MARKER. This may be more in the nature of a descriptive name than a formal name. Possibly the single word Marker is the name. It displays the letter S (S=Siding), P (P=Permanent), G (G=Grade).
Reference: FRA-3 1979

DISTANCE MARKER. Variant name for Countdown Marker Board.
Reference: UN 1954

ELEVATION MARKER. This Marker gives elevation of rails at specified

locations. It is listed within Sign Classification.
Reference: AREA 1987-88

FIXED MARKER. This term has a specific meaning though it can appear as an overarching term. This Marker marks the beginning of "track-circuited block section."
Reference: Allen 1983

LANDMARKS. This term substitutes for Distant Signal in situations where a caution indication (when approaching a Signal) is always needed. One form has a lighted dimension while other forms have retroreflective material. The Landmark displays a black or yellow hollow triangle on post.
Reference: NSW Signalling

LINESIDE MARKER. This term refers specifically to the NF plate which see. However, the term gives the appearance of a more general term. It can be used as an overarching term for Markers (or Signs with limited messages). Savarzeix states that Nf denotes "ends of a block section" (SNCF seemingly contradicts that).
Reference: Savarzeix 1981

MARKS AND MARKERS FOR JAPAN.
General Note. For Japan all-lighted Shunting Signals are under a heading of Sign (and Block Signal Marker).
Under Sign Markers are found:

REPEATER SIGNAL (All-lighted)
TRAIN STOP SIGNAL 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)

All but main and subsidiary Signals are under the above headings. In addition there is a section of Marks. 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

Reference: Japan Railways RS

MONUMENT MARKERS. This term is combined with a Standard Right of Way Sign in AREA. It is unclear how Sign and Marker are combined. The Sign defines limits of Right of Way. Markers may reinforce location of limits.
Reference: AREA 1987-88

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 1995, Soph. Cab Sign. 1994

HIGH SPEED MARKER BOARDS. These Boards are "fictive block signals" which divide high speed lines into blocks. Scotland employs Marker Boards on RETB sections.
Reference: ERS-V 1995

SECTION ENTRANCE MARKER. This term is a synonym for Fixed Marker. It marks section entrances on high speed lines. It is an informal descriptive term rather than a formal name.
Reference: Allen 1983

SIGN MARKER. Overarching Term in Japan for Shunting Signals as well as Lighted Devices and Unlighted Devices. Marks & Markers are under that title.
Reference: Japan Railways NS

SIGNAL MARKER BOARD. Term has meaning similar to that of Countdown Board.
Reference: UIC-CST 1972

SPRING SWITCH MARKER/SPRING SWITCH SIGN. These two terms have the same meaning. They consist of a white disc with black letters. They denote Spring Switch locations that refer to the clearance point near track.
Reference: Foley, REMC 1948

WAYSIDE MARKER. This refers to a Lighted Aid. It is a Cab Signal receiving data from "wayside marker units." But term also has overarching implications.
Reference: FRA-2 1979

4B7 Boards and Posts

General Notes. Boards and Posts are employed in a variety of systems and regions. Posts are less common than Boards. Most entries are from the US organization AREA. Semantics may be at work since not only Boards, but Marks, and 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, positioned well above ground, etc.). Board I=boards with graphic designs and possibly simple alphanumeric messages. Board II=a synonym

for Signs.

Fischer uses Board as a general purpose term. This is the case not only for Signposts (with the meaning of Signs) but also for all kinds of Signals messages and even for the call board (work assignments for train crews). It is also used as a short form for longer and more precise terms (e.g. Countdown Marker Boards (ERS) are termed Boards.
References: Fisher 1976, ERS-H 1995

BAAK. Term refers for Countdown Marker Board (The Netherlands). Beacon in English at least partially represents Baak.
Reference: Nock 1962

BOUNDARY MARKER/BOUNDARY POST/BOUNDARY STONE. The basic term refers to post/notices denoting property limits. Post is of metal or concrete. Stone is self-explanatory.
Reference: RONT 2001

CAUTION BOARD. This specific term includes lights. It is retained because of its board character.
References: Western Australia 1974,

COUNTDOWN BOARD. Short form for Countdown Marker Board. The unadorned terms Board and Marker sometimes designates Countdown Marker Board.
Reference: ERS-H 1995

COUNTDOWN MARKER BOARD. This term is employed by several European railways. Frequently three boards are lined up in "rear of stop signals" (250/300m, 175/200m, 100m). Boards often have black diagonal stripes. Italy employs diagonal and horizontal stripes; this is also true of The Netherlands.
Reference: ERS-H 1995

DISTANT WARNING BOARD. It displays Markings of stripes or bars that warn of approach of Distant Signals.

Reference: RONT 2001

FIXED SIGNAL BOARDS. This term is not a Signal as the presence of "Fixed" indicates. It includes Distant Warning Board, Stop Board, Stop Indicator. See Also: Signal Board.
Reference: RONT 2001

FLAG BOARDS/METAL FLAGS. Terms refer to a form of Stopboard. A white painted board is designed for displaying metal flags. Metal flags display red one one side and green on the other side with white disc insert. Marker lamp may be added.
Reference: UK Military 1955

INDICATING BOARD. This term refers to a lighted Signal. Retained because of board character and as cross-reference.
Reference: UN 1954

INDICATION BOARD. Term from Bulgaria. Few details are available. Since Bulgaria is influenced by UIC it may be akin to Signs and Boards employed which suggests speed and countdown boards.
Reference: Bulgaria 1986

LINESIDE BOARD. An equivalent term for Lineside Signs. A partly-lighted device in UK.
Reference: K & W 1963

MARKER BOARD. Overarching term for UK BR. These Boards include Station Limits Board and End of Section Board.
Reference: A & W 1991

MILE BOARD. CRIP employed this term rather than Mile Posts. It is rectangular in shape with vertical emphasis. Black on white, and attached to a slender post.
Reference: CRIP 1977

NAME BOARD. Term refers to Station Name Sign that is affixed to the station

building.
Reference: Simmons 1986

NOTICE-BOARD. A general appearing term though confined to a single message for A & W: it requests train crew to telephone for instructions and -- if telephone unaswered -- to proceed cautiously.
Reference: A & W 1991

NUMBER BOARD. Term for level/grade crossings. Signs attached to signal mast indicate the number of tracks. White symbols on black ground and word track may be 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.
References: AREA 1978

ORDER BOARD. A historic term. Rectangular in shape with horizontal emphasis and rounded ends. Bracket included for orders for train crews. Unit attached to train station.
Reference: Ball 1985

PERMANENT SPEED-RESTRICTION BOARD/PERMANENT SPEED RESTRICION BOARD. The meaning is clear from title. Hyphenated form is rectangular-shaped with horizontal emphasis and pointed ends. SA-TWA has first form while second form is from UK-Mil. That form is rectangular-shaped with horizontal emphasis and black on white ground.
Reference: SA TWR 1962 , UK Military 1955

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/Signals Boards are reflectorized or lighted.
Reference: UAR 1983

"R" BOARD/"Z" BOARD. Both terms are of a Sign format and described in Ch. 4B2, Speed Control Signals .
Reference: ERS-H 1995

RADIO CHANNEL CHANGE BOARD/RADIO CHANNEL INDICATOR. Board announces changes in radio channel in RETB territory. It displays a black oval with white diamond on rectangle (vertical emphasis). Second term consists of black lozenge-shaped boad with white diamond and number
Reference: A & W 1991, Leach 1991

REFLECTORIZED DISTANT BOARD/DISTANT BOARD/FIXED BOARD. These are 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 1991, Leach 1991, Vanns 1997

RESUME-SPEED BOARD (PERMANENT)/RESUME-SPEED BOARD (TEMPORARY)/SPEED RESTRICTION BOARD (PERMANENT)/ADVANCE WARNING BOARD. These safety aids can be regarded as Signs (and Restriction and Resume-Speed are so regarded). One unnamed railroad in Foley substitutes Board for Sign. Y Board and Slow Board are in this set but listed separately. They display limited alphanumeric symbols and hae a limited Sign character.
Reference: Foley

SHUNTING LIMITS BOARD. This form of Board is usually lighted at night. A cross-reference entry.
Reference: NSW Signalling

SIGNAL BOARD. This is in a Sign format rather than a Signal form. It is attached to a Signal mast. It indicates that freight trains can pass stop signal by displaying letter ""T" (=Throughput).
Reference: Kharlanovich 1980

SLOW BOARD. This is a Board Type II. It has character of Sign. The device displays an inverted triangle, black on white; denotes upcoming speed restriction.
Reference: ANR, King 1921

SPEED BOARD. Board II form with character of Sign. SAF form consists of

rectangles, black on white. This is also the case with ANR.
References: ANR, SAF GA

START OF SECTION BOARD/END OF SECTION BOARD. These Boards replace Home and Start Signals on No Signalman Token Boards.
Reference: Vanns 1997

END OF SECTION MARKER BOARD. Board is comparable to Starting Signal (Semaphore) in RETB territory. See also previous entry.
Reference: A & W 1991

SIGHTING BOARD. A term from Indian Railways. It indicates approach of Distant and Home Signals.
Reference: Chandriki 1998

SIGNAL WARNING BOARD. Jackson includes term as a pointer to Warning Board which see.
Reference: Jackson 1991

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 1991

STATION LIMIT BOARD. This term has several forms: square with white ground, and black diamond with letters SL (UK Mil). A second form from A & W consists of a rectangle (vertical) with white ground and blue diagonal stripes. It is positioned 200-300 yards beyond End of Section Board.
Reference: UK Military 1955, A & W 1991

STATION-NAME BOARD. A nearly self-explanatory term of diverse designs.
Reference: Robbins 1967

TRAIN CLEAR OF PASSING LOOP INDICATOR/ADVANCED STARTING LOOP CLEAR SIGNAL. A board term that denotes train is clear of Passing Loop

Indicator; crew is to so inform signal box. Rectangular in shape (vertical) with white ground and three diagonal blue stripes. Second term has alternative wording.
Reference: Leach 1991

AWS CANCELLING INDICATOR. This Indicator displays a square board in blue with a white St. Andrew's Cross. It provides a reminder to train crew that passing AWS mechanism for the opposite track does not pertain to that train.
Reference: Leach 1991

END OF TOKEN SECTION PROCEED IF PLATFORM CLEAR BOARD. A simplified form of older Platform Signal. It consists of a square board with black letter on white ground.
Reference: Leach 1991

TEMPORARY WARNING BOARDS. There are few details available for this term. Though there is a reference to this category of Board.
Reference: UAR 1983

TEMPORARY OUTER SPEED BOARD/TEMPORARY INNER SPEED BOARD/ALL TRAINS STOP BOARD. These "Boards" from NZ are in a Sign-mode. The outer form is a rectangle with lower corners cropped, yellow ground, and black alphanumeric symbols. The Inner Board is diamond-shaped, black on white.
Reference: NZ Railways

TRAIN ORDER BOARD. Board is square in shape. Messages include red (=stop for train order) and yellow (=slow). It is partly-lighted. Cross-reference.
Reference: B & O 1953

TERMINATING BOARDS. This Board denotes termination of warning and caution boards. It has a yellow ground with yellow disc.
Reference: Western Australia Railways

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. The NSW form is lighted. UK Mil form is a square on two posts, white ground, red "stop"; marker lamp may be added. The German form is a Sign by form with rectangular-shape and vertical emphasis. It includes a black "H" on white ground or white "H" on black ground. It indicates a place where a train is to stop for RONT.
Reference: ANR, NSW Signalling, UK Military 1955, GFR 1981, RONT 2001

STOP INDICATOR. This is included with Fixed Signal Boards. The Indicator displays the word Stop.
Reference: RONT 2001

TEMPORARY SPEED-REDUCTION BOARD. This Board denotes temporary speed reduction. It is rectangular in shape (with horizontal emphasis), pointed and fish-tailed. This specific form is lighted.
Reference: SA TWR 1962

WARNING BOARD. Term denotes approach (2400' distance from specific point) of facing points, halt station or token station. It is rectangular in shape with horizontal emphasis and displays white ground and black border. Some forms are lighted. The WA form is diamond-shaped with yellow ground and black band. For Jackson it denotes approach of Distant Signal. A second board follows that is an illuminated yellow board for indicating temporary speed restriction.
References: SA TWR 1962, K & W 1963, Western Australia 1974, UK Military 1955, Jackson 1992

WATERING BOARD. A term for a board indicating nearness of water tank, column. It is of a diamon shape with white ground, black border. It is mounted on a single post and located 2400' from tank, column.
Reference: SA TWR 1962

WHISTLE BOARD. An alternate or variant name for Whistle Post. In South Africa it is a black "W" on white "disc." Disc is more in the shape of an elipse. Whistle is sounded at Whistle Board at approaches to level crossing.
Reference: SA TWR 1962

YARD LIMIT BOARD. This too has character of Sign, Board II. It has two forms: elipse and rectangle mounted on wood construction. Black on white.
Reference: ANR 1947

"Y" BOARD. One Railroad in the Foley collection employs Board instead of the more expected usage of Sign.
Reference: Foley

BLOCK POSTS. Delineates boundaries of blocks where Signals are not present.
Reference: 100 Years to Bendigo 1964, A & W 1991

CLEARANCE POSTS. Japan provides visual images but not explanations of various for a variety of safety aids including this form.
Reference: JNR

CURVE & ELEVATION SIGN. AREA 1929 speaks of Elevation Posts and also of Curve and Elevation Signs. Both appear to be Elevation Posts. See also next entry.
Reference: AREA 1929

ELEVATION POSTS/FULL ELEVATION POSTS/ZERO ELEVATION POSTS. Elevation Posts are placed on inside of curves. Posts are white for the upper portion and black for the lower. Alphanumeric symbols are black. The second and third terms are versions of the basic device.
Reference: AREA 1929

GRADIENT BOARD. It has form of Lineside Board. Gradient placed on board.
Reference: RONT 2001

GRADIENT POSTS. Posts denote whether gradient is level, up or down. It also gives "measure/indication" (rise, decline, feet per one foot of rise, decline). However, Jackson speaks of this Post as a Lineside Sign.
Reference: Jackson 1992

MILE POSTS. This Post is a vertical and narrow object, painted, and displaying

numbers. This can be part of the Sign category. In TCD terms Posts are sometimes classified as Signs and sometimes as Markers.
Reference: AREA 1987-88

PERMANENT WHISTLE POST/TEMPORARY WHISTLE POST. At least one railroad (B & O) distinguishes between long-term posts and temporary forms for special purposes.
Reference: B & O 1953

PROPERTY LINE POST/PROPERTY POST. Posts are set up at corners of property. Tall, narrow posts display words: name of railroad and property line.
Reference: AREA 1987-88

SECTION POST/SUB-SECTION POST. Both terms have a nearly Sign form. The first has an obround form while the second has a rectangular-shape with horizontal emphasis. Post designates boundaries of section or block. Numbers are displayed on both. Information limited as to meaning.
Reference: AREA 1929

SIGNPOSTS. A 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 1976

WHISTLE POSTS. This object is often classified as a Board or Sign. Whistle Posts indicate points where whistle should be sounded: stations, level/grade crossings.
Reference: AREA 1929 and 1987-88, Foley, ANR

4B8 Plate & Flag Forms

"A" PLATES. Plate indicates that the accompanying Signal is automatic. The Plate is circular with black letter on white ground.
Reference: Queensland Railway SS-E 1977

ALIAS PLATE. Plate indicating radio identification number for Signal when Signal number is different.
Reference: RONT 2001

CAR STOP PLATE. A platform Sign indicating position of train stop.
Reference: RONT 2001

"F" PLATE/Nf PLATE.. Plates differentiate between Semaphore Signals (which can be an all lighted Signal) and Stop Signals. Nf designate a Stop Signal which has two red lights. Semaphore Signals have one red light and are marked by "F". Nf means stop while F means there are situations when the Signal can be passed. SNCF appears to employs Tablet (Tableu=Board) while ERS uses Board. But in translations SNCF employs Plate.
Reference: SNCF 1985

IDENTIFICATION PLATE. This Plate has a white ground with black horizontal band. L in white in black. It denotes the type of system whether up or down, and distance from a given starting point.
Reference: A & W 1991

IDENTIFYING PLATE. The Signalbox website includes several forms of Plates:

TRACK CIRCUITS PLATE. A "diamond-shape" [ed] plate (though it appears to be more of a hexagonal). It is blue in color and denotes presence of Track Circuits.

FIREMAN'S CALL PLUNGER PLATE. This plate displays a "D"-shaped plate indicating that a plunger is attached to the Signal.

TELEPHONE PLATE. This plate is a square with diagonal lines. It indicates that a phone is available.
Reference: Signalbox website

IDENTITY PLATE. This plate is the equivalent of number plate. The meaning is seemingly the same.
Reference: ERS-A 1995 (RENFE)

LETTER PLATE. This plate qualifies Signal indications. For Canada, "A"

indicates Automatic Signals. "G" for Grade, and SPS for Station Protection Signal.
Reference: Canada 1962, FRA-RAR 1984

MARKER PLATE. FRA-RAR distinguishes Marker Plate from Name Plate and Letter Plate but without offering explanation of differentiation.
Reference: FRA-RAR 1984

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 1965

PLATE, NUMBER/NUMBER PLATE. Plate employed as identification and affixed to Signal mast. ARSPAP-D reverses order of words while -SM has a more straightforward approach. ERS adds a small plate for identifying Signal which is related to distance or other factors. Queensland may include letters, identification for automatic or semi-automatic Signals.
References: AAR-SM 1987, ARSPAP-D 1965; ERS-A 1995, Queenslands Railways FS

RULE 55 EXEMPT INDICATOR PLATE. Plate displays white, diamond-shape. The Plate indicates that Rule 55 can be ignored.
Reference: RONT 2001

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 COST 1972

SIGNAL IDENTIFICATION PLATE. Variant term for Number Plate. Plate gives location and signal identification. RONT includes Number Plate within term.
Reference: UIC COST 1972, RONT 2001

SIGNAL MOUNTED SIGNS. RONT includes several forms of Plates within this

term. No definition is given. The term does suggest Plate because of location. It includes Rule 55 Exempt Indicator Plate, Signal Identification Plate, Alias Plate, Signal Number.
Reference: RONT 2001

SIGNAL NUMBER PLATE. A variant name for Number Plate. It is within Signal Identification Plate for RONT.
Reference: Queensland Railways FS, RONT 2001

STATION NAME PLATE. A self-explanatory term. It is a horizontal rectangle with black letters on white ground.
Reference: A & W 1991

"T" PLATE. Term refers to Plate for Tonnage.
Reference: QR FS

FLAGS.
General Note. Human-held flags are part of railroad operations but not included in this study of Fixed Signals. Flags were also part of some early railroad Signals. Many flags belong to Blue Flag Devices (and may not be of fabric but rather of metal). This section serves primarily as a Cross-Reference.

FLAGBOARDS, UK Mil - See Boards
METAL FLAGS, UK Mil - See Boards
FLAG SIGNALS, Blythe 1951 -See Blue Flag
BLUE FLAG DEVICES, Hayes -See Blue Flag
PORTABLE BLUE FLAG, Hayes -See Blue Flag
BLUE FLAG DERAIL, Hayes -See Blue Flag
DERAIL BLUE FLAG, ATT * -See Blue Flag
CHOCK FLAG, ATT* -Yellow Indicator Flag
* Atlantic Track and Turnout

4B9 Other Forms

a) Blue Flags

General Note. Blue Flags are 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 of metal though they remain blue.

Signs forms include:

PORTABLE BLUE FLAGS. Overarching term for all forms of Hayes Blue Flag forms.
DERAIL. White on blue disc attached by blue mast to derail device attached to rail.
STOP. Format as above.
STOP (PORTABLE). Preesumably 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 Application Co.

b) 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. Color patterns are often blue and white. They present graphic designs that correlate 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, permissable and closed areas, specific tracks of usage and related concerns.
Reference: Part F (which was influenced by European Signal codes).

c) Miscellaneous Signs

APPROACH SIGN. This is akin to Distant Boards which see.
Reference: Oxford-D.uden 1980

CHEQUERED SIGN. A Sign deenoting an atypical location for Signal.

Reference: Oxford-Duden 1980

SIGNAL-NOT-IN-USE SIGN. A self-explanatory term.
Reference: UIC-COST 1972

4B10 Targets

General Note I. The Target is an unlighted Signal consisting of distinctly shaped and colored segments of sheet metal. They are attached to the mast (also known as staff or spindle) of a Switch Signal. There is no central authority (or regional) for this form of safety aid. They are a mainstay of US railroads and employed by other systems including Canada, Philippines, Australia (SA-ANR), Japan. Camp 1903 offers an extensive coverage of Targets. Since Targets have changed little over the years that coverage remains valid.

General Note II. Targets are often combined with Switch Lamps and can therefore be deemed a partly-lighted Signal. However, Targets are often independent units; they are a separate unit even with Switch Lamps. The coverage will be primarily centered here in an unlighted setting.

General Note III. Many references are made simply to the term Target. That tends to belie the complexity of Targets. They come in many and diverse forms including positions, color, shapes, color-shapes, blind.

General Note IV. Targets are of two forms. The larger version can exist separately from a lamp. However, some Switch Lamps display a small target that is integral to the lamp. This target is a small circular disc that fits around the lens of the color of the lens. This form is a partly-lighted device. Both forms have the same name. The smaller version is sometimes termed a Day Target.

a) Overarching Terms

TARGET. The Target has been extensively reviewed in General Notes. The term is overarching in nature. Switch Target is an alternate term. A Switch Target Stand is a possible second variant form. Target can refer to a Signal form and also

to the metal pieces that make up the physical aspect. The pieces are more precisely known as a Vane and attached to a mast (or staff or spindle). This, is turn, connected to a Switch Stand (a separate, non-T-M mechanism but closely connected to Target).

Classification: #531
Type of Device: Unlighted Railway Signal
Operation: Messages conveyed through graphic symbols that include color and position dimensions.
Comments: Classification includes Targets and Track Indicators under this one three-digit designation. They need to be separated. The second term is more appopriately considered as partially-lighted. Targets are accompanied oft times by a Switch Lamp. But that is a separate apparatus and is not essential for a Target.
Reference: Camp 1903, AREA 1987-88

SWITCH STAND TARGET. A more precise term from REMC indicating what Targets are attached to.
Reference: REMC 1948

SWITCH TARGET. A more precise term though Target is more commonly employed. It can be activated either by Switch Stand or switch points. It indicates how switches are set.
References: ARSPAP-D, AAR SM 1983, UN 1954 (Philippines)

ILLUMINATED SWITCH TARGET. This term resembles a Ch. 3C entry; it is included here as a cross-reference.
Reference: REMC 1948

b) Morphological-related Terms

General Note. This coverage includes not only terms whose function is included in the title but also physical aspects directly pertainig to function: the shape of Targets as well as the color and position of Targets.

1) Shape

General Note. Shapes are somewhat localized but there are some recurring patterns. For example, Prism and Mask (US, ANR): prism suggests proceed, and masks suggest stop (from a main line perspective). A Blind Target indicates safety and proceed since the single vane is parallel to the tracks. Arrows ("fish-tails") denote 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 has further permutations. A former maker of Targets, Bethlehem Steel, 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 more accurate to speak of Obround and Obrotunds. An Obrotund is nearly spherical save for one diameter slightly larger than the other diameter 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 fromthe 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 1903

MAIN TRACK SWITCH TARGET. Main Track is denoted by prism target (diagonal rectangle with pointed ends) in green. When diverging route open then a mask-shaped Target is viewed from main track. This is in red. The second form (see GN IV) of Target/lamp (day target) may also be employed.
Reference: B & O 1953

SIDING & YARD SWITCH TARGET. This term has only the second and smaller form.
Reference: B & O 1953

SIDING DERAIL TARGET/SIDING DERAIL SWITCH TARGET. Messages include purple for derail while yellow denotes non-derail position.
Reference: B & O 1953

YARD SWITCH STAND. Yellow disc employed for passing siding White square indicates freight line open from passenger siding. It is partly lighted. Cross-reference with d)
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.
References: Foster 1983, Bethelem 1981

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) 1947

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 1981, Hayes 1971

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: 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. A Switch Stand is a mechanism through which points can be moved thereby opening or closing a desired section of track. The housing includes, gear works, throwing level, top cover, mast as well as 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, Camp 1903

AUTOMATIC SAFETY SWITCH STAND, REMC 1948
AUTOMATIC STAND, Camp 1903
AUTOMATIC SWITCH STANDS, Cleveland F & F
COLUMN-THROW STAND, REMC1948
DERAIL SWITCH STAND, ANR 1947
DOUBLE STAND, Bethlehem 1955
DWARF STAND Camp 1903
ENCLOSED GEARED TYPE PARALLEL THROW SWITCH STAND, Nelson 1971
GEARLESS SWITCH STAND, REMC 1948
GROUND THROW STAND, Camp 1903
GROUND THROW SWITCH STAND/GROUND-THROW SWITCH STAND, Camp 1903 (both)
HASTY TRIPLE STAND Camp 1903
HIGH BANNER TWO TIE SWITCH STAND/LOW BANNER TWO TIE SWITCH STAND, Nelson 1971, (both)
HIGH SWITCH STAND, Southern Pacific
HUB SAFETY AUTOMATIC SWITCH STAND, REMC 1948
INTERMEDIATE STAND, Camp 1903, Rail Products
LOW STAND, Camp 1903
LOW SWITCH STAND, Camp 1903
MAIN LINE SAFETY SWITCH STAND/MAINLINE SAFETY SWTICH STAND, REMC 1948 (both)
MAIN LINE SWITCH STAND, Camp 1903, Bird
PARALLEL-THROW SWITCH STAND, Bethlehem 1955
PONY STAND, Camp 1903
POSITIVE-ACTION SWITCH STAND, Bethlehem 1955
STONE DRUM SWITCH STAND, Camp 1903
SWITCH STAND, PARALLEL THROW, Foster 1983
STEELTON SWITCH STAND, Camp 1903
THREE-IN-ONE AUTOMATIC SWITCH STAND, REMC, 1948
YARD SWITCH STAND, ANR 1947

4C Acoustical and Radio Signals

4C1 Acoustical Signals

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 overarching term encompassing all forms of acoustical communication: station master's whistle, locomotive whistles, and Detonators.
Reference: UAR 1983

AUDIBLE DANGER SIGNAL. Phrase refers to message indication: sound and danger rather than a type of Signal.
Reference: Rolt 1982

AUDIBLE SIGNAL/AUDIBLE FOG SIGNAL. RONT employs the former term as a general term that includes various explosive devices but also the Audible Fog Signal. That device is not a general term but instead employed for a Signal alerting the driver to Distant Signal Aspect or Temporary Speed Restriction.
Reference: RONT 2001

AUDIBLE SIGNALLING DEVICES. A descriptive phrase in Rolt rather than a formal title.
Reference: Rolt 1982

AUDIBLE WARNING SYSTEMS. Seemingly a very general term. Yet it apparently focusses on Sound Signals associated with train stops.
Reference: Barwell 1983

RAILWAY SOUND SIGNALS/RAIL SOUND SIGNALS. A term from the Classification that includes Detonators and Track Crew Warning Signals. A separate term, Multi-Message Railway Aids, includes the audible dimension of Cab Signals and Level/Grade Crossings. A single segment that includes all Sound Signals whether exclusively acoustical or not might be considered for the Classification. Fusees need to be included. Second term is a variant form in Part J.
Reference: Part H, General Classification 2003, Part J, 2002

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 1983

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 1922, Blythe 1951, Philipps 1942, Rolt 1982

BANGER/CRACKER. Colloquial term for Detonator according to Jackson while RONT refers to it as slang. While Cracker is colloquial for RONT.
Reference: Jackson 1992

CLAYTON'S AUTOMATIC DETONATOR PLACER. Vanns provides full title that explains the works of the Placer.
Reference: Vanns 1997

CLAYTON'S FOGGING MACHINE. A "brand name" for one form of Fogging Machine.
Reference: Corbin 1922

DETONATING FOG SIGNAL. Alternate name for Detonator or Torpedo. The device was invented by E.A. Cowper. 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 1981

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 feet.

TWR: the meaning is: 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.

RG New Systems: one detonator means stops; two mean caution. According to Corbin it consists of percussion cap and gunpowder.

Classification: #5400
Type of Aid: Acoustical Railway Signal
Operation: Explosive device placed on tracked and exploded by passing train. One or more messages were possible.
Comments: Detonator common name for device though Explosive can be used.
Reference: Hollingsworth 1983, UAR 1983, SA TWR 1964, Corbin 1922, New Systems 1984 RG

DETONATOR CONTAINER. Rather obviously, this container holds detonators. Therre are several related terms that can be included:

DETONATOR BOX. A case or box with at least six detonators.

DETONATOR CASE. Cylindrical case for Detonator.

DETONATOR HOLDER. Same meaning as above.

DETONATOR TIN. A cylindrical container of metal
Reference: RONT 2001

DETONATOR MACHINES. Are these akin to a Fogging Machine (ca. 1915) ?
Reference: Rolt 1982

DETONATOR PLACER. Mechanism (apparatus) that places at least one Detonator on rail. Lever operated device activated from lineside or sigalbox.

See Also: Fogging Lever Frame.
Reference: UIC-COST 1972, RONT 2001

DETONATOR SIGNAL. TWA employs this variant of the basic term. It clarifies the basic term. SA also uses the shorter Detonator form as well.
Reference: SA TWR 1962

DUPLEX DETONATOR. According to RONT this is one detonator with 2 explosive sets.
Reference: Jackson 1992

DUPLEX FOG SIGNAL. Term for a Detonator containing two units of explosives according to Jackson. This constitutes two Fog Signals. A Fog Signal is not a detonator mechanism but each package of explosives.
Reference: Jackson 1992

FLARE. Term for what is called a Fusee in the US. It is available in red, green, yellow colors. See Also: Fusee.
Reference: Calvert 2004

FOG. Jackson includes this as a term for Detonators albeit a very brief one.
Reference: Jackson 1992

FOG DETONATOR. A more precise form of the basic term of detonator. It is placed on the line at Distant Signals displaying caution.
Reference: Blythe 1951

FOG SIGNAL. Not an overarching term despite its appearance. Corbin employs it as a synonym for Detonator.
Reference: Corbin 1922

FOGGER. Jackson employs this term for Fog Repeater.
Reference: Jackson 1992

FOGGING LEVER FRAME. This is an audible Fog Signal. It consists of lever

frame which is employed for installing detonator on rail head.
Reference: RONT 2001

FOGGING MACHINES. A mechanism that automatically places Detonator on track, removes spent detonators and then adds a fresh Detonator.
Reference: Corbin 1922

FUSEES. RSD descibes this device as a "Chemical fire light, like a Roman candle giving a bright light ... ." It served as a stop or slow indication. It displayed red, green, or yellow color.
Reference: RSD 1911

NON-OPTICAL SIGNALS. This appears to be a very broad term for any Signals not visual. However, Mashour employs it as a Sound Signal denoting Fog Signalling Detonators.
Reference: Mashour 1974

TORPEDO. An explosive device affixed to the rail. It would explode when a train ran over it.
Reference: ARSPAP-D 1985

TORPEDO SIGNAL. Signal is added to core term thereby reducing ambiguity in meaning of Torpedo.
Reference: New System 1884 RG

TUBE DETONATOR/OPEN SECTION DETONATOR. RONT includes these terms without definitions.
Reference: RONT 2001

c) Level/Grade Crossing Sound Signals

AUDIBLE AUTOMATIC WARNING DEVICES. This term refers to Sound Signals at grade crossings.
Reference: Philipps 1942

AUDIBLE-PEDESTRIAN CROSSING. Terms refers to German practice. No formal name as such is attached to this device.
Reference: ERS-M 1995

AUTOMATIC BELL. Seemingly the word automatic has been added to indicate bells and other grade crossing safety aids that are not controlled and operated manually. Train crews direct traffic if automatic systems activated during frequency movements when train is standing on track circuit.
Reference: B & O 1927

BELL. A very general term though AAR SM gives it a specific meaning: an acoustical device at grade crossing that emits a warning upon approach of a train.

Classification: #5611
Type of Device: Acoustical Level/Grade Crossing Signal
Operation: Bell sounds in conjunction with other devices (Lighted Signals, possible barriers/gates).
Comments: Classification alludes to Crossing Bell which is a rare term. Bell in context of crossing can represent this range of Acoustical Signals.
Reference: AAR SM 1987

BELL, GONG. Luxembourg in ERS distinguished between Bell and Gong forms. RSD frequently viewed a gong as a part of a bell though it also included units termed gongs.
References: RSD 1911, ERS-M 1995

BELL, SINGLE STROKE. A signal indication generated by a single stroke.
Reference: ARSPAP-D 1965

BELL, VIBRATING. ARSPAP describes this as an audible signal that operates automatically "until the circuit is opened."
Reference: ARSPAP-D 1965

CROSSING ALARM. Advertisement form American Railway Signal Company in 1911. No details available.

Reference: RSD 1911

CROSSING BELL. Shorter name for Highway Crossing Bell.
Reference: RSD 1911

DOUBLE GONG HIGHWAY CROSSING BELL. This is a single unit with two gong units. Note: Gong and bell are separate in marine A/Ns. Gong means the hollowed spherical unit struck by a striker buoy gong has a similar shape to the railroad gone but larger.
Reference: RSD 1911

ELECTRIC FLAGMAN. A 19th century Electric Signal that was patented but perhaps not employed. It included a mechanical flag and bell. Was it a Crossing Signal?
Reference: Calvert 2004

ELECTRONIC BELL/ELECTRONIC WARNING BELL. No details on either form; presumably it refers to electronic mechanism rather than an electro-mechanical mechanism.
Reference: ERS-M 1995

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 1911

ENCLOSED TYPE GONG. A gong whose mechanism is within a metal housing.
See also: Enclosed Bell.
Reference: RSD 1911

GRADE CROSSING ALARM. This term is from Japan. It is presumably in a bell form though few details are given.
Reference: Japan Association 1975

HIGHWAY CROSSING BELL/BELL, HIGHWAY CROSSING. This is probably the basic term (US) encompassing various forms at grade crossings. It is integrated with Lighted Signals, signs, possibly barriers. Its function is to warn of approaching trains. ARSPAP-D reverses word order.
Reference: RSD 1911, ARSPAP-D 1965

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 (Australia)

HIGHWAY CROSSING SIGNAL. RSD includes one Signal, presumably a bell, under the heading of Chicago Highway Crossing (RR Supply Co). In most instancess signal in this context means a Lighted Signal rather than a Sound Signal.
Reference: RSD 1911

HOESCHEN CROSSING SIGNAL/HOESCHEN BELL SYSTEM. Historic term from early 20th century. Bell powered by magneto-generator that is activated by levers activated by train passing over interconnected rail.
Reference: King 1921

LOCOMOTIVE TYPE CROSSING BELL. A locomotive bell adapted to a grade crossing function.
Reference: RSD 1911

ROAD CROSSING SIGNAL. Signals of double flashing character at a crossing.
Reference: Calvert 2000

SKELETON BELL. According to RSD a Skeleton Bell is one whose mechanism

is uncovered.
Reference: RSD 1911

SOUND-BELL/SOUND BELL. Netherland's term for a level crossing safety aid.
Reference: Alkmaar.

VIBRATING BELL/BELL, VIBRATING. Bell terms that are presumably employed at grade crossings. Vibrating Bells activated when electric circuit is closed. They continue until circuit becomes open.
Reference: ARSPAP-D 1965

d) Cab & Train Control Sound Signals

CAB SIGNAL - SOUND.
General Note. Much of the Cab Signal coverage for this study is in Ch. 2 (as well as Systems in Ch 1). There is some mention of sound in that chapter. And Sound Signals are also part of other signals without specific mention in the title. This segment provides a specific focus on Cab and related Sound Signals.

Classification: #5610
Type of Device: Acoustical Railway Signal component
Operation: Sound Signal operates in conjunction with visual Signals.
Comments: This term represents all of Sound Signals for Cab Signal activity.

CAB SIGNAL, AUDIBLE. Cab-based device that emits sound under programmed situations. See Also 2D5,
Reference: AAR SM 1987

AUDIBLE CAB SIGNALLING/AUDIBLE-CAB SIGNALLING. This refers to GWR 1906 form. It is an informal descriptive term; indicator meant.
Reference: Nock 1978, Ellis 1966, Barwell 1983

AUDIBLE CAB INDICATOR/INDICATOR, CAB, AUDIBLE. This sound device is an air whistle. Whistle sounds when a change occurs in Cab Signal. Whistle continues to sound until acknowledged.

Reference: ARSPAP-D 1965

AUDIBLE INDICATOR. Term for sound dimension for Cab Signals.
Reference: FRA-RAR 1984

AUDIBLE SIGNAL. For Breen this is an indication not an indicator. For the second source it has appearance of overarching Signal yet specific use may belie that view. See also: Explosive Signals.
Reference: Breen 1980, Skabballonovich 1984

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 1983

CAB ALARM. A brief entry in source; no details are given as to nature of Alarm.
Reference: Japan Assn. 1975

CAB INDICATOR. According to Philipps, Cab Signal gives visual indications while Cab Indicator gives sound warnings.
Reference: Philipps 1942

CAB WHISTLE. Refers to Whistle which sounds completion to more restrictive indicator. See also next entry.
Reference: GRS 1954

CODE CONTINUOUS CAB SIGNAL WITH WHISTLE & ACKNOW-LEDGER. A Sound Signal that is an integral part of the Cab Signal assembly. See also 2D5.
Reference: FRA-3 1979

INDICATOR, CAB; AUDIBLE. A Sound Signal that is an integral part of the Cab Signal assembly. See also 2D5.
Reference: FRA-3 1979

KLAXON. Taylor speaks of Kaxon for proceed indication (on) for GWR ATC. Bell sounds for danger (off) indication. Barwell speaks of Siren.
Reference: Taylor 1949, Barwell 1983

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 arer activated.
Reference: Blythe 1951

WARNING HOOTER. This is part of the Strowger-Hudd ATC System. Brief blast if Signal clear; on-going blast if at danger until brakes on or mechanism reset.
Reference: Vanns 1997, Taylor 1949

WARNING WHISTLE/WHISTLE. Acoustical aid that sounds off when signal indication become more restrictive.
Reference: GRS 1954

WHISTLE SIGNAL. This is a Sign for UAR. Appearance belies reality. Cross-reference.
Reference: UAR 1983

e) Other Forms

BELL. A Switch Indicator Bell that alerted crew when train approaching switch The bell was part of ABS.
Reference: King 1921

FOG GONG. Electric gong affixed to Visual Signals as a warning in foggy weather especially when in danger position.
Reference: Jackson 1992

FOG REPEATER. Devices is visual not audible in nature. It is a Colour-Light exhibited in low visibility and which repeats indication of next regular Signal but

in advance.
Reference: Jackson 1991

STAFF WARNING SYSTEMS. Term refers to systems that warn track crews of approaching trains. Systems can be visual and/or audible. They include

MOVABLE AUTOMATIC WARNING DEVICE. ERS-H speaks of acoustical Signal without describing the form.

TRAIN OPERATED WARNING SYSTEM (TOWS). Description mentions an alarm sound but without giving its form.

INDUCTIVE LOOP WARNING SYSTEM (ILWS). A variant form of TOWS. Train crew has a "portable warning issuing device (PWID) that picks up Signals
Reference: ERS-H 1995

TRACK CREW WARNING SIGNALS. Term in Classification that can encompass all forms of Signals for track crew safety.
Reference: Part H, General Classification

TRACK INDICATORS. Term for largely obsolete visual and/or sound Signals that provided warnings for track crews. It was largely a visual signal but some forms included bells.
References: Hall Signal, Part F

4C2 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 ... 1983

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 1983

ELECTRONIC TOKEN SYSTEM. Alternate name for Radio Electronic Token Block (RETB).
Reference: Challenge 1983

EURO-RADIO. This is part of the ETCS System. It transmits ATP, ATC data.
Reference: ETCS... IJR 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 ... 1994, Welty 5-88 RA, Carley-WSJ, RN Plan 1998

RADIO-BASED TOKEN SYSTEM. This term is seemingly akin to other Electronic Token Arrangements though explanation not fully clear. It refers to Spoornet in South Africa.
Reference: Railways Need ... 1994

RADIO BLOCK. A shorter form of the basic Radio Block System term.
References: Whitehouse 1985, Brown 1984

RADIO BLOCK SYSTEM. This term is interchangeable with the Radio Token System. It lacks mention of Token but at the same time it is more specific by adding block to term.
Reference: Whitehouse 1985

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 1995

RADIO SIGNALLING. Seemingly a term covering all aspects of Signalling and controlling in ETCS.

Reference: ETCS 1983

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 ... 1994

RADIO TOKEN EQUIPMENT. This term seemingly refers to the physical appearance of Radio Token System.
Reference: ERS-H 1995

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 1981

RADIO TOKEN BLOCK SYSTEM. A longer, more precise version of the basic token.
Reference: Telecoms Expands ... 1995

RADIO TOKEN SYSTEM. This system replaces current token system with an electronic token. It involves human speech but also includes "electronic token data" via a display unit in cab.

Classification: #5550
Type of Device: Electronic Railway Signal
Operation: Tokens in an electronic form replace physical tokens. Radio communication transmissits tokens according to an agreed upon pattern.
Comments: Radio Token represents all electronic token forms and systems in this study.
Reference: Whitehouse 1985

RADIO TOKENLESS BLOCK. This term is interchangeable with the Electronic Token System.
Reference: Challenge 1983

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 1951

RETB SYSTEM. Acronym for Radio Electronic Token System.
Reference: A & W 1991

SAT-GUIDANCE SYSTEM/SAT-BASED GUIDANCE SYSTEM. Informal, descriptive terms for GPS System,
Reference: Carley, WSJ 1998

TOKEN BLOCK. This refers to a shorter version of Radio Token Block. No physical tokens are involved.
Reference: Railways Need ... 1994

TRANSPONDER. Trackside equipment that electronically transmit data to passing train.
Reference: RONT 2001

WIRELESS SIGNAL SYSTEM. This does not refer to radio but instead to Robinson's wire-less track circuit activated Signal System.
Reference: B & M 1981

4D Staff, Ticket, Token, Tablet, Train Order & Time Interval Terms

General Note. This sub-chapter includes diverse offerings. Many of the devices employ objects that are passed to a train crew while in a given section. Other forms include Tokenless methods and Time Interval processes. What they have in common is a lack of Lineside Signals though Signals at stations are present in some instances.

4D1 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 1921

ANNETT'S KEY. Key and lock device for seldom used sidings. On single lines it is part of Train Staff operations.
Reference: A & W 1991

AUTOMATIC ELECTRIC STAFF INSTRUMENT. An instrument that allows crews to receive staff while maintaining speed.
Reference: Queenslands SS 1965

AUTOMATIC STAFF EXCHANGING APPARATUS/AUTOMATIC EXCHANGE EQUIPMENT/AUTOMATIC TABLET EXCHANGE EQUIPMENT. Terms refer to apparatus for exchanging staff or other form of token. They are partly located on locomotive, partly next to track at signal box.
See also: Automatic Token Exchange.
Reference: VGR 1932, K & W 1963, Vanns 1997

ELECTRIC STAFF. According to Hammond this is another name for Tablet. It is also a component for Electric Token Methods.

Classification: 537.7.70.701

Type of Device: Movable Railway Signal
Operation: Instrument-released Staff required for entrance into block.
Comments: See Also Staff entry
References: Hammond 1964, Corbin 1922, Fraser 1919

ELECTRIC TRAIN STAFF. No details from VGR but presumably a variant of Electric Staff.
Reference: VGR 1932

ELECTRIC STAFF INSTRUMENT. Mechanism for releasing, retaining staff for a given section or block.
Reference: Shackleton 1976

ELECTRIC STAFF BLOCK SYSTEM. This term is from Canada. In this form train superiority is susperseded by possession of staff.
Reference: Canada UCOR 1961

ELECTRIC STAFF SYSTEM. Seemingly, it refers to the working of electric staff. It includes staff, instrument and operation of admitting and blocking of trains in a section by train crews.
Reference: Bird 1972

ELECTRIC TRAIN STAFF & TICKET SYSTEM. System similar to basic form save for using metal rather than paper tickets.
Reference: Taylor 1949

ELECTRIC TRAIN STAFF SYSTEM. This refers to a means for regulating train movements on single lines.
References: Bird 1972, RSD 1911, Starkey 1944

INTERMEDIATE SIDING JUNCTION INSTRUMENT. This is a special staff machine that allows access to sidings, junctions.
Reference: King 1921

LARGE ELECTRIC STAFF. One form of the Key Token Instrument which see.

It is made of steel and designed to be fitted into the correct machine only.
Reference: K & W 1963

O.E.S. STAFF. One Engine in Steam refers to the wood staff system which see. Term means that just one engine up and running on a line at a time.
Reference: K & W 1963

ONE TRAIN WORKING. This method employs a Staff. There is to be no other train in the block. Seemingly it is akin to O.E.S.
Reference: Leach 1991, A & W 1991

PERMISSIVE STAFF/PERMISSIVE ATTACHMENT. This is an adjunct to Absolute Staff System which see. This allows more than one train in a block at a time.
Reference: King 1921

PUSHER ATTACHMENT. This Attachment to Train Staff system allows movement of pusher engines.
Reference: King 1921

SINGLE LINE STAFF. A baton of wood or metal controls train movements.
Reference: RONT 2001

SINGLE LINE STAFF BOX. Container for Staff.
Reference: RONT 2001

SINGLE LINE TICKET. Supplemental ticked allowing second train to travel in direction of previous train with staff.
Reference: RONT 2001

SINGLE STAFF SYSTEM EQUIPMENT. Equipment for "One engine in steam" or "staff and ticket operations.
Reference: RONT 2001

STAFF. Refers to a staff or rod given to train crews for a 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 segmented into two or three pieces with each piece given to a train crew.

Classification: #537.7.70.700
Type of Device: Movable Railway Signal
Operation: Authority to entry a block dictated by possession of staff.
Comments: Classification omitted Movable Signals, 537 but included in Notes. Term of Movable Signals refers to those devices not fixed in place. Classification referred to Manual Staff. Probably inaccurate. Intended to set basic form apart from Electric Staff and other forms.
Reference: Corbin 1922. Hammond 1964

STAFF & WORKING. This is equivalent to Staff and Ticket systems. It refers to equipment and process of that form of train operations.
Reference: Vanns 1997

STAFF CATCHER. A device for delivering and retrieving Staffs.
Reference: King 1921

STAFF CRANE/CRANE, STAFF. A post and bars that supports a staff. It is placed near the tracks so staff could be reached from moving train.
Reference: RSD 1911

STAFF MANUAL BLOCK SYSTEM. This system is employed where no Signals are in service. It follows the basic token system format.
Reference: AAR-USSR 1960

STAFF POUCHES. Terms refers to sleeve within which Staff is positioned.
Reference: King 1921

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.

References: Blythe 1951, Simmons 1986

SUBSIDIARY ELECTRIC STAFF WORKING. The term suggests electric staff employed as a secondary or subsidiary system with lighted and other signals as primary.
Reference: Bird 1972

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.
References: Hammond 1964, Barwell 1963

TRAIN STAFF SYSTEM/TRAIN-STAFF SYSTEM. Staff and Staff Systems are core terms and common terms. "Train" adds a degree of precision. Ellis offers a hyphenated form; the single source so doing so. Ellis speaks of staff or baton.
References: Hammond 1964, ARSPAP-D 1965, Ellis 1958

W & T ELECTRIC STAFF SYSTEM. System character of device made clear by adding that term. Commonly employed aid until largely superseded by Key Token Working.
Reference: Bianculli 2003

WEBB & THOMPSON ELECTRIC STAFF INSTRUMENT. According to VR it replaced Tyer Table Instruments.
Reference: Wooley 1958-1 (VR)

WEBB & THOMPSON ELECTRIC STAFF. A "brand name" for electric staff.
Reference: Starkey 1944

WOODEN STAFF/WOODEN TRAIN STAFF. K & W is specific about the nature of this staff. This is the most elementary form of the system and is intended for lightly travelled lines. G.A. adds train to basic term.
Reference: K & W 1963, SA GA 1947

PAPER TICKET METHOD. This method links Wooden Train Staff and Paper Ticket. Paper Ticket given to each of a group of train crews with only the last one receiving the staff.
Reference: SA GA 1947

STAFF & TICKET/STAFF-&-TICKET. Term has same meaning as Staff & Ticket System which see.
Reference: K & W 1963

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. The last train receives the staff. Ellis adds hyphenated form.

Classification: 537.7.70.701
Type of Device: Movable Railway Signal
Operation: Authority for presence in block required ticket.
Comments: General comments on Movable Signals given with Staff entry
References: Corbin 1922, Fraser 1919, Shackleton 1976

TICKET SYSTEM. Blythe employs this term in lieu of more common and complete Staff & Ticket System terms. A second version included a staff that could be segmented into two or three pieces.
Reference: Blythe 1951

TRAIN STAFF & TICKET. A more precise version of the basic term, Staff & Ticket.
Reference: VGR 1932

TRAIN STAFF & TICKET SYSTEM. A variant form of the basic term of Staff & Ticket System.
Reference: Starkey 1944

WOODEN TRAIN STAFF & PAPER TICKET METHOD. The terms form a unit in SA railway operations. They are the equivalent of Staff & Ticket System.

Reference: SA GA 1947

3 Token Forms

AUTOMATIC TOKEN EXCHANGES. A method for exchanging token while train remains at speed.
Reference: K & W 1963

BALL TOKEN/BALL-TOKEN. These tokens represent one form/shape of movable objects used in Token System.
Reference: UN 1954, Westinghouse Saxby

BLOCK TOKEN. Employed as part of single line operations in Electric Token Block System.

LONG SECTION TOKEN. Controls train movements on more than one section. Intermediate signalbox not on or in RETB area.

SECTION TOKEN. Controls train movements on single line. Token required to enter section.
Reference: RONT 2001

ELECTRIC TOKEN. Tokens are a part of the system consisting of machines at opposite ends of blocks that are electrically connected. Withdrawal of one token blocks a withdrawal from other end until token replaced.
Reference: ERS-V 1995

ELECTRIC TOKEN APPARATUS. This is seemingly equivalent to Electric Token Instrument.
Reference: A & W 1991

ELECTRIC TOKEN BLOCK EQUIPMENT. No definitions given. The term includes types of tokens, catchers, machines, other equipment.
Reference: RONT 2001

ELECTRIC TOKEN INSTRUMENT. This Instrument 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: K & W 1963

ELECTRIC TOKEN METHODS. Overarching term for severeal single-line working methods. Electric staff or tablets are employed.
Reference: Hammond 1964

ELECTRIC TOKEN SYSTEMS. This term is similar in meaning to Electric Token Methods.
Reference: Hammond 1964

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 1954

ELECTRIC TOKEN SYSTEM/ELECTRIC TOKEN BLOCK. Term refers to machine handling token that are interlocked between opposite ends of section which is carried out electrically. Several forms of the system omit reference to electrical character.
Reference: ERS-V 1995

KEY TOKEN (I). A 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 1963, Nock 1980, Shackleton 1976, Allen 1952

Classification: # 535.7.70.702
Type of Device: Movable Railway Signal
Operation: Possession of Electrically-related Token required for entrance into block.
Comments: See Also: Electric Token System, Token
Reference: ERS-V 1995

KEY TOKEN (II). For ERS-V this refers to BR block system for single lines.
Reference: ERS-V 1995

KEY TOKEN BLOCK SYSTEM. Basic term with addition of Block. Key Token is predicated on blocks but it is often not included in terms.
Reference: UAR 1983

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.
References: Sig. Eq. Review 1981, Tyer & Co.

KEY TOKEN SYSTEM. Terms refers to Tyer Key Token Instruments controlling and regulating traffic by releasing and "freezing" tokens for a section of track as required.
Reference: Sig. Eq. Rev. 1981

NEALE'S BALL TOKEN INSTRUMENT. Short form of next term.
Reference: Westinghouse Saxby Farmer

NEALE'S SINGLE LINE COMBINED BALL TOKEN & BLOCK.
Single line system involving tokens, releasing mechanisms, telephone hand sets for coordinating release of token and trains.
Reference: Westinghouse Saxby Farmer

NO SIGNALMAN KEY TOKEN. Train crew operated single line Token not signal crew.
Reference: RONT 2001

NO SIGNALMAN REMOTE KEY TOKEN WORKING/NO-SIGNALMAN

REMOTE KEY TOKEN WORKING. Refers to instruments handled by train crews with remote supervision.
Reference: ERS-H 1995, Leach 1991

NO SIGNALMAN TOKEN BLOCK. Equivalent of No Signalman Token Working.
Reference: Leach 1991

NO SIGNALMAN TOKEN SYSTEM EQUIPMENT. RONT often adds "Equipment" to terms including here.
Reference: RONT 2001

ONE TRAIN WORKING. New term for O.E.S.
References: A & W 1991, Leach 1991

SIGNALMAN-TO-SIGNALMAN TOKEN WORKING. This form is employed for single lines.
Reference: Leach 1991

SIGNALMAN TO AUTOMATIC OPERATED TOKEN WORKING. This form employed for terminal branch operations and multiple trains.
Reference: Leach 1991

SINGLE LINE TOKEN INSTRUMENT. An overarching term for apparatus employed in Token systems and maintained at signal boxes.
Reference: Vanns 1991

TOKEN. Short form of key token which see. It can be noted that Key Token sometimes has meaning of block system for single lines employing tokens. See also Token System.
References: Allen 1952, Ellis 1966

TOKEN BLOCK SYSTEM. Variation of basic term; this version adds block to title.
Reference: UN 1954 (Japan)

TOKEN SIGNALLING. This provides a convenient heading for the various components. Hollingsworth speaks of token as having several forms: staff key, tablet, ball. Simple systems contain the one token so one train only can pass through.
Reference: Hollingsworth 1983

ELECTRIC SINGLE-LINE TOKEN SYSTEM. This system allowed trains to safety travel either direction since tokens are at both ends, and tokens and Signals are interconnected.
Reference: Hollingsworth 1983

TOKEN TYPE BLOCK INSTRUMENT. Ball Token moved from train to train without a passage through to block instruments.
Reference: UN 1954 (Japan)

TOKEN-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, and Diamond in blue. Rectangle are for special requests.
References: Hollingsworth 1983, Tyer & Co (Field & Grant).

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 1991

TYER'S KEY TOKEN INSTRUMENT. Maker's name is attached to basic term.
Reference: Kenya Railways

VAN SCHOOR TRAIN TOKEN SYSTEM. A system that includes both crossing tablets and absolute tablets.

Reference: SA TWR 1964

4D4 Tablet & Tablet & Token Forms

BALL TABLET TOKEN INSTRUMENT. Term included in a listing of manufacturers' products in Jane's. Specific entry is that of Westinghouse Saxby. This instrument is a mechanism through which tokens held, released, and train operations are conducted.
Reference: Jane's 1988-89

ELECTRIC TABLET/ELECTRIC TRAIN TOKEN. Object are dispensed to train when entering block. Second term may be a variant term or form of the basic term.

Classification: #537.7.70.704
Type of Device: Movable Railway Signal
Operation: Electrically-released Tablet discs permits entrance of train into block.
Reference: Fraser 1919

ELECTRIC TABLET INSTRUMENT. This is presumably an apparatus dispensing metal tablet discs when line is clear, and which freezes tablets when line occupied.
Reference: VGR 1932

ELECTRIC TABLET SYSTEM. An Electric Token method using Tablets (discs about six inches in diameter). The instruments are electrically interlocked.
Reference: Hammond 1964

ELECTRIC TRAIN TABLET METHOD. SA train operation method employing Tyer's Tablet Method.
Reference: SA GA 1947

SINGLE LINE TABLETS. This term is a synonym for Tablets in general.
Reference: Vanns 1997

TABLET BLOCK SYSTEM. A block operation based on exchange of tablets.
Reference: UN 1954

TABLET BLOCK TRAIN OPERATIONS. Term probably describes the use of Tablet Blocks in train operation and control situations.
Reference: UN 1954

TABLET INSTRUMENT. This is a reference to a traditional form but in a revamped version involving radio interconnections and long-distance operations.
Reference: Brown 1984

TABLET SYSTEM. A 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 1951

TABLETS. Small pieces of metal employed in interlocked instruments that control train movements.
References: Allen 1952, Corbin 1922

TABLET CATCHER. Mechanical device for catching (or receiving) a tablet to/ from a train.
Reference: RONT 2001

TABLET POUCH. Device attached to loop employed for transferring single line tablets between train crew and signal staff.
Reference: RONT 2001

TABLET MACHINE. Signalbox instrument that includes single line Tablets employed for control of single lines.
Reference: RONT 2001

TABLET SYSTEM OF WORKING. Train opeeration based on tablets and tablet instruments.

Reference: Starkey 1944

TYER'S ELECTRIC TRAIN TABLET. More explicit version of the basic Tablet term.
Reference: Kenya Railways

TYER'S #7 TABLET INSTRUMENT. This device displays three 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 1964

#6 TYER'S TABLET MACHINE. Term is seemingly a synonym for Instrument.
Reference: A & W 1991

TYER'S TABLET INSTRUMENT. Term for the mechanism controlling tablet operations. It releases and holds tablet as required thereby maintains safe train operations.
Reference: Starkey 1944

TYER'S ELECTRIC TABLET SYSTEM/TYER'S TABLET SYSTEM. This model was patented in 1878. It replaced older, simpler arrangement and was more fool-proof since electrical connections interlocked respective instruments.
Reference: Ellis 1958, Vanns 1997

5 Tokenless Forms

General Note. Segment can be viewed as a portion of 1E though elements closely related to Token Systems. Some systems employ Tokens of some forms.

SCOTTISH REGION TOKENLESS BLOCK. This system simulates traditional token working. There are no physical tokens though pulses are transmitted. This Token is not referred to as Electronic Tokens by Leach.
Reference: Leach 1991

TOKENLESS BLOCK. This term refers to Radio Electronic Token System which

see.
Reference: Challenge 1983

TOKENLESS BLOCK EQUIPMENT. This term refers to Radio Electronic Systems. Tokenless Block can also refer to visual, non-radio forms.
Reference: KNR 1985

TOKENLESS BLOCK SYSTEM EQUIPMENT. RONT often adds "Equipment" to term s including Tokenless Block System.
Reference: RONT 2001

TOKENLESS BLOCK WORKING/TOKENLESS BLOCK SYSTEM. This is similar to Token Working but no tangible token is given out. Signal crews and machines colloaborate closely and admit trains only to clear section. The second term seems to be a close approximation of Working.
References: Hammond 1964, UN 1954, Japan Assn. ca. 1975

TOKENLESS BLOCK INSTRUMENT. Device for interlocking and employed for both single and double lines. UN notes that Tokenless Block Instrument are from F.S. (SABIB) Type; Siemens and Halse (Germany), and SNCF Type (France), Sykes (UK).
References: Alkmaar, UN 1954

TOKENLESS BLOCK WORKING . A system bearing some resemblance to lock and block operations in which Signal not released in block until train has passed the Signal. It is an electrical system and without tockens.

Classification: #537.7.70.705
Type of Device: Movable Railway Signal
Operation: A system that electrically controls signal in blocks without tokens.
Reference: UN 1954

4D6 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 1953

BANNER TYPE TRAIN ORDER SIGNAL. This T.O. followed the Banner form of Signal. It employed a rope for raising, and lowering signal indications.
Reference: ARSPAP-H 1953

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 1953

BOX TYPE TRAIN ORDER. Modified form of Banner Box Block Signal. Removal of red cloth banner denoted proceed.
Reference: ARSPAP-H 1953

CENTER-PIVOTED, 2-POSITION TRAIN ORDER SIGNAL. This is more of a description of a Signal rather than a formal name.
Reference: ARSPAP-H 1953

DOUBLE-ARM UQ TRAIN ORDER SIGNAL. Term for Train-order that incorporates physical appearance of the Signal.
Reference: King 1921

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 1953

ELECTRO-MECHANICAL TRAIN ORDER SIGNAL. This form was for a modern version (1906) in contrast to earlier forms which were entirely of a mechanical nature.
Reference: ARSPAP-H 1953

NINETEEN ORDER. Train order message: Delivered without train stopping. Signature was not required.
Reference: A & W 1991

SLOW ORDER. A written order for speed reduction at a specific location in the Train Order System.
Reference: A & W 1991

TELEGRAPH TRAIN-ORDER SYSTEM. Term describing a common means of train operations and regulation in mid-19th century.

Classification: 537.7.71.710
Type of Device: Partial Movable Railway Signal
Operation: Train orders in conjunctions with Signals give operational instructions.
Reference: Ellis 1958

TELEPHONE TRAIN ORDER SIGNAL. Signals mounted on regular Signal mast indicate -- when red -- if train crew should stop and receive orders or go to siding.
Reference: UN 1954

THIRTY ONE ORDER. Term within Train Order system. Signature required on order which means train must stop.
Reference: A & W 1991

TIMETABLE & TRAIN ORDER (T & O)/TIME TABLE & TRAIN ORDER SYSTEM. Term refers to a method based on time tables and train orders. UN (for US) indicates TT for scheduled trains while non-scheduled trains requires instruction by TO. Calvert adds System to the basic term.
Reference: Armstrong 1978, UN 1954, Calvert 2004

TRAIN ORDER BOARDS. Term for Boards that give Signals in Train Order system. Found at stations.
Reference: King 1921

TRAIN ORDER/TRAIN-ORDER. A method of train operation by issuing of orders; may not included fixed Signals.
References: Hollingsworth 1983, Ellis 1958

TRAIN ORDER SIGNAL/TRAIN-ORDER SIGNAL. A variety of sources give altered versions of the meaning of this Signal. A sampling includes:

AAR SM: A Signal indicating whether or not the train has an order to pick up.

RSD: A Signal at a station (telephone or telegraph) indicating train to stop for orders (relating to its presence on the track).

ANR/SA: Double arm Semaphore: red arm/black arm. Messages: 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. Green and yellow light: station closed.

ARSPAP-SS: Train Order Signal is a Two-Way Single Lamp Signal as in ANR.
References: ARSPAP-SS 1948, ANR, RSD 1911, AAR SM 1983

TRAIN ORDER SIGNALS OF THE COLOR LIGHT TYPE. In this form no indication is given until train activates Signals. If red, stop for orders; if green, proceed.
Reference: ARSPAP-H 1953

TRAIN-ORDER SYSTEM. This is little different in meaning from Train Order term. It constitutes a Train Operation method.

Classification: 537.7.70.711.
Type of Device: Partial Movable Railway Signal
Operation: Signals and physical print form orders direct train operatons.
Reference: FRA-3 1979

TRAIN-ORDER WORKING. Term is equivalent to system. British-influenced

operations often employ working.
Reference: Cunliffe 1968

WRITTEN TRAIN ORDERS. An older form of train operation that continues in use as an signal/control system.
Reference: FRA-2 1979

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 1953

4D7 Time Interval Forms

TELEGRAPH BLOCK OR TIME-INTERVAL SYSTEM. Seemingly these are interchangeable terms for Northen Pacific Railroad.
Reference: K & T 1988

TIME INTERVAL SYSTEM/TIME-INTERVAL SYSTEM. RSD, which employs the hyphenated form, notes it employed where block system is lacking. Torpedoes and fusees are a part of this method of spacing. ARSPAP-H version omits hyphen. See Also: Torpedoes, Fusees.
References: RSD 1911, K & W 1963, ARSPAP-H 1953

TIME INTERVAL METHOD. Meaning of this system is probably little different from Time Interval or Time Interval System. It consists of control of train movement by time-tables, train orders, train schedules.
References: ARSPAP-H 1953

TIME INTERVAL/TIME-INTERVAL. This is not a Signal form in a direct sense. It refers to method of spacing trains by time.

Classification: 537.7.70.712
Type of Device: Time spacing system which may include acoustical devices.
Operation: A time-based system.

Comments: See Also: Time Interval System
References: K & W 1963, Allen 1982, ARSPAP-H 1953

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 worrking.
References: K & W 1963, Blythe 1951

TIME SYSTEMS. Seemingly a variant of Time Interval which see.
Reference: B & M 1981

4D8 Other Forms

DIRECT TRAFFIC CONTROL (DTC). Train movement operations under direction of train dispatcher.
Reference: Kanner 1992

SPACE INTERVAL METHOD. A method based on sections or blocks which are considered in Chapter 1.
Reference: FRA-3 1979

TELEGRAPH & TICKET METHOD. Ticket issued to train after line clear. This is determined through telegraphic communication.
Reference: UN 1954 (Thailand)

TELEGRAPH BLOCK SYSTEM. A telegraph communication relays instructions for train operation. Also an alternate for Manual Block System.

Classification: 537.7.70.713
Type of Device: A non-fixed communication for train operations.
Operation: A telegraphic system for train instructions.
Comments: See Also Telegraph Block in 1E1.
Reference: Part H 2003, Tratman 2003

TELEGRAPH MESSAGE SYSTEM. Presumably train control exclusively by

telegraph. HDS speaks of "T.O. or Telegraph Message System." In US Train Order is via telegraph.
Reference: Starkey 1944

TELEGRAPHIC ORDER METHOD OF TRAIN WORKING. A train operation system worked through a passage of telegraph messages.
References: SA Instruction 1962

TELEGRAPHIC ORDERS. These are written orders to train crews via telegraph.
Reference: Nock 1978

TICKET & SECTION ORDER SYSTEM. This term is found in a single source. Few details are included.
Reference: VGR 1932

TIME-CODE SYSTEM. Only limited information is available for this apparently unique term.
Reference: B & M 1981

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.
References: FRA-2 1979, Hollingsworth 1983

TIME-TABLE OPERATION. This variant form gives a clearer view of the Time Table as an operational method.
Reference: Henry 1942

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 Chapter 1E though it is also very much part of this segment.
Reference: Signalbox website, Kanner 1992, Railways Need 1994 IRJ

4E Level and Grade Crossing Signs, Signals, Gates, Barriers and Related Accoutrements

General Note I. The Level and Grade Crossing entity is unique since it also appears in the TCD portion of the Database. Entries in the TCD study are from the view of road transportation. The railway study has a somewhat similar approach though a focus on railway activities is also present. TCD and Rail coverage significantly overlaps within the T-M studies yet it remains distinct within the two fields. Some components of L/G Crossings are considered in other segments of this study. This is especially the case with sound forms. The TCD part of the Database can also be consulted. In the first edition this sub-chapter drew together these safety aids by means of a category index/word list format. More entries are found in this edition though the original format partially remains. Terms are batched when appropriate. The first segment includes general terms for safety devices as well as terms that specifically include components of a crossing installation. Other segments include barriers (or gates) in various configurations. Lighted, unlighted, and sound dimensions are included in separate segments.

4E1 Integrative Level and Grade Crossing Terms

General Note. This category includes terms that encompass a variety of safety aids at crossings. Rarely would any of the terms refer to a single device. The category can also constitute a general term for crossing safety. Many or most of the terms in the category end in Protection, System or Devices.

ACTIVE WARNING DEVICES. These devices include Lighted Signals, Gates, Bells.
Reference: Miller 1989

AUTOMATIC DEVICES. Term not defined. Presumably it refers to active devices that include Flashing Lights, Gates, Bells.
Reference: Malone 1986

AUTOMATIC PROTECTION. Undefined but presumably it refers to active

safety devices.
Reference: Malone 1986

AUTOMATIC SAFETY INSTALLATIONS FOR LEVEL CROSSINGS. It is an automatic flashing-light installation including bells and half-arm barrier. Barrier can include lights. White flashing message signifies crossing ok while red indicates danger.
Reference: Alkmaar.

AUTOMATIC WARNING DEVICES. No description given. It probably includes active devices such as Signal Lights and other active equipment.
Reference: Malone 1986

AUTOMATICALLY CONTROLLED LEVEL-CROSSING (GRADE CROSSING) PROTECTION. This term includes Bells, Flashing Lights and half-barriers.
Reference: Cunliffe 1968

AUTOMATIC LEVEL CROSSING PROTECTION. An overarching term though some specific uses may refer only to Road Traffic Signals. It is operated by a train approaching crossing.
Reference: RONT 2001, Cunliffe 1968

CONVENTIONAL TRACK CIRCUIT-OPERATED LEVEL CROSSING APPROACH WARNING SYSTEM . A system in which train activates track circuit which causes audio-visual devices to operate.
Reference: Chandrika 1998

CROSSING DEVICE. An overarching term. No details given.
Reference: K & T 1988

CROSSING PROTECTION. Arrangement of Signals or interlocking equipment so designed to elimate crossing collisions.
Reference: King 1921.

CROSSING WARNING DEVICES. Term refers to Highway Grade Crossing Signal and Highway Grade Crossing Warning Device.
Reference: AAR SM 1983

CROSSING WARNING SYSTEM. No details given. Audible as well as Visual?
Reference: C & S RA 1996

ELECTRIC FLAGMAN. A system that alerted track crews of an approaching trains. The device was later developed into a Level Crossing Traffic Warning System.
Reference: LC 1991

GRADE CROSSING WARNING DEVICE. Term not described. Possibly audible as well as visual.
Reference: China ... RA 1986

GRADE CROSSING WARNING SYSTEM. A possible overarching term. Brief mention in a general description of railway safety systems.
Reference: FRA-1 1978

HIGHWAY CROSSING ALARM. A historic Hall Signal device. It displayed a disc that warned of danger when red. Alarm suggests a sound dimension.
Reference: RSD 1911

HIGHWAY CROSSING PROTECTION/HIGHWAY GRADE CROSSING PROTECTION. B & O includes Automatic Bells, Flashlight, Gates, Wig-Wag Under the first term.
Reference: RHGCP 1951 (2), King 1921 (1), Phillips 1942 (1), B & O (1)

HIGHWAY CROSSING SIGNAL. Perhaps this should be moved to Signals. Though B & M includes Crossing Signs, Locomotive Type of Bell, and Wigwag Signals under the term.
Reference: B & M 1981

HIGHWAY CROSSING WARNINGS & CONTROLS. A general term for gates,

lamps, cantilever signals, controls and related elements.
Reference: Safetrans

HIGHWAY GRADE CROSSING WARNING DEVICE. Term for a Warning System that includes bells, gates, and signals.
Reference: AAR SM 1983

HIGHWAY GRADE CROSSING WARNING SYSTEM. Interconnected Devices and Controls indicating a train's approach or presence at a grade crossing.
Reference: AAR SM 1983

LEVEL CROSSING PROTECTION. The various means of promoting safety at crossings. It includes manual barriers, open crossings with signals, automatic half and full barriers.
Reference: UIC-M

LEVEL CROSSING TRAFFIC WARNING SYSTEM. A system employed sensors linked by radio. Detection of train activates sirens and flashing lights.. Based on Electric Flagman.
Reference: LC 1991

LUMINOUS SIGNAL. Meaning unclear. Reference refers to Flashing Lights or Luminous Signals. Possibly a reflectorized device?
Reference: Jane's 1987-88

PASSIVE WARNING DEVICES. Term includes Crossbucks "and other passive devices." Contrast this term with Active Warning Devices which see.
Reference: Miller 1989.

PROTECTIVE CROSSINGS. No definition. Presumably it refers to crossings protected by safety devices.
Reference: Malone 1986

PROTECTIVE DEVICES. An overarching term though undefined.
Reference: Malone 1986

RAILROAD-HIGHWAY GRADE CROSSING PROTECTION. A general term encompassing safety features and devices.
Reference: RHGCP 1953

TRAIN-ACTIVATED WARNING DEVICES. Undefined but probably an overarching term.
Reference: Malone RA 1986

WARNING DEVICES. Possibly a shortened form of Active Warning Devices.
Reference: Malone 1986

WARNING SYSTEMS. Not defined. It may be similar to Active Warning Devices. Term workable within context of railroad operations.
Reference: Miller 1989

4E2 Lighted Level & Grade Crossing Signals

a) Free-Standing Signals

ADVANCE WARNING SIGNAL (HIGHWAY CROSSING). A device consisting of a flashing yellow light (and Sign) linked to railroad crossing Signal. Provides advance warning of approaching train.
Reference: Safetrans (Raco publication)

AGA HIGHWAY DANGER SIGNALS/AGA TWO-COLOR HIGHWAY DANGER SIGNAL These are acetylene-powered devices with flashing letters upon approach of train. Second form gives off green flashes (when no train is approaching) as well as red flashes when train is nearby.
Reference: King 1921

BARROW CROSSING WARNING INDICATOR. This term from A & W does not include a description of the Indicator. RONT describes Barrow Crossing as one tht is employed only by the station staff. It is located at the end of a station

platform.
Reference: A & W 1997, RONT 2001

CANTILEVER SIGNAL. Signal mounted on cantilever structure above roadway.
Reference: Safetrans

COLOR-LIGHT HIGHWAY SIGNAL. Term specifically refers to earlier 20th c. Signal. It displayed two lights. Termed a Type K.
Reference: GRS 1925

CROSSING SIGNAL Seemingly the term refers to Lighted Signals. Employed in close proximity to Audible Signal in older source.
Reference: REMC 1948, Malone 1986

FLASHING LIGHTS. Common term for Flashing Signals at Grade Crossing. See Also: Flashing Light Signal.
References: Jane's 1987-88, Miller 1989

FLASHING LIGHT HIGHWAY CROSSING SIGNALS. A more extensive version of a basic term. It appears in a study of Flashing Lights.
Reference: Cox 1971

FLASHING LIGHT SIGNAL/FLASHING-LIGHT SIGNAL. A general term for Signals. It refers to crossing usage when in that context. Two flashing lamps in red conforms to AAR specificiations.
Reference: RHGP 1953, REMC 1948

FLASHING LIGHT TYPE. One of two forms of Visual Warning Signals. The form is that of Wig-Wag Type Signals. They appear in an older study.
Reference: REMC 1948

FLASHLIGHTS/FLASHLIGHT SIGNALS. South African term for Crossing Signals.
Reference: Starkey 1944

GRADE CROSSING SIGNAL. Signal employed at crossing. Functioned together with Highway Approach Signal which see.
Reference: King 1921.

GRADE CROSSING SIGNALING. Undefined term though meaning is clear: the system of Signals and presumably other safety devices at crossings.
Reference: Malone RA 1997

HIGHWAY APPROACH SIGNAL. An advance Signal 300 feet from crossing. An earlier 20th c. form. Employed with Grade Crossing Signal which see.
Reference: King 1921

HIGHWAY GRADE-CROSSING PROTECTIVE SIGNALS. Variant term for Signals providing protection at crossings.
Reference: Welty 2-1988

HIGHWAY CROSSING SIGNALS/SIGNAL, HIGHWAY CROSSING.
Terms for electric-powered Signals providing road traffic protection at railroad-highway grade crossings. AAR favors the second form of the term. King 1921 refers to Signals of that time: Union Three-Aspect Automatic Flagman and Wigwag Crossing Signal.
Reference: ARSPAP-D 1965, King 1921

LED HIGHWAY CROSSING LAMP. BNSF proposed lamp with longer life and longer range.
Reference" C & S PR 1986

LEX-C HIGHWAY GRADE CROSSING FLASHING LIGHT UNITS.
Redesigned equipment with fewer parts and less weights.
Reference: Armstrong RA 1982

PRE-WARNING SIGNALS. Signal employed when side-roads and curves are near a level-crossing. Term found in The Netherlands.
Reference: ERS-M 1995

LEVEL CROSSING SIGNALS. A category of Signals in UAR Code.
Reference: UAR 1983

LEVEL CROSSING WITH FLASHING LIGHT SIGNALS. This form lacks barriers but has Flashing Lights. Bells may be present in some locales.
Reference: UIC 1972

LEVEL CROSSING WITH A SIGNAL SYSTEM TO GIVE WARNING OF THE APPROACH OF TRAINS. A category within level crossing segment of UAR Code.
Reference: UAR 1983

MINIATURE WARNING LIGHTS (MWL)/MINIATURE R/G WARNING LIGHTS. Lights for pedestrians crossings and also minor roads. Red indicates stop, geen denotes clear and unlighted lamps indicates Beware.
References: RONT 2001, A & W 1991, Leach 1991 (l)

RAILROAD-RAILROAD GRADE CROSSING SIGNAL. An overarching term for Signals at crossings for railroads in the second half of the 19th c. Railroad-Highway Crossing Signals in the 20th century refer to trains and road traffic.
Reference: ARSPAP-H 1953

SIGNAL, FLASHING LIGHT. Highway Crossing Signal term often given by two flashing red lights in US. See also Flashing Light Signal.
Reference: ARSPAP-D 1965

SIGNALS FOR TRAMWAY LEVEL CROSSING. Term is within category of Siding, Light Railway and Tramway Signals for M & H in early 20th c.
Reference: M & H

TRAM CROSSING SIGNALS. Refers to tram operations crossing rail lines. Not a road-rail intersection situation.
Reference: SA TWR 1964

VISIBLE WARNING SIGNALS. Term includes Flashing Light Signals and now obsolete WigWag Signal for source employing term. Term works within railroad context.
Reference: ARSPAP RHGCP 1953

WIG-WAG SIGNAL. A two-phase Signal consisting of a "moving banner in daylight. And Light at night which could be either flashing or moving. Variant terms may also have variations on the core description.
Reference: RHGCP 1953

WIG WAG/WIG WAG TYPE/WIG WAG CROSSING SIGNAL. First term is a commonly used short form. Second term is a variant form. Third can be seen as fuller version of the basic term.
References: Jackson 1992 (l), REMC 1948 (2), King 1921 (3)

4E2 c) Lighted Crossing Signals Attached to other Devices

General Note. Lighted Signals are often listed with Gates and other Devices. They are listed here with needed notes. Gates and Barriers are considered more extensively in 4E3 and subdivisions. Overarching terms that do not list components in the title are in 4E1.

AUTOMATIC CROSSING GATES & FLASHING LIGHT-SIGNALS.
Reference: USSR-AAR 1960

FLASHING LIGHTS & GATES.
Reference: Miller 1989

GRADE-CROSSINGS WARNING DEVICES.
Reference: US&S 1986

LEVEL CROSSING GATES, BARRIERS & WARNING SIGNALS.
Reference: Jane's 1987-88

4E3 Barriers & Gates

General Note. This collection of terms includes forms that can be called gates as well as some which approximate mobile garden fences. Lights and sound Signals are frequently included. Variant terms are often little different from basic terms. Half-barriers are considered separately because of the variety of forms.

a) Overarching Terms

BARRIERS. Device for blocking access to crossing. It is a movable installation. The term can include Full Barriers and Half Barriers.
Reference: UIC CST 1972

LEVEL CROSSING BARRIER. No definition in RONT. It includes Automatic Barriers, Half Barriers and Manually Controlled Barriers.
Reference: RONT 2001

b) Barriers, Full Barriers, & Gates

General Note. Terms includes Barriers that are indetermiate in description as well as those explicitly full in scope. Gates are also included Form of operation is also included.

FULL BARRIER. A Barrier that encompasses the entire width of the roadway.
Reference: UIC CST 1972

1) Automatic Barriers

General Notes. Automatic Barriers manifest a variety of terms. The core term description may encompass all of the entries:

AUTOMATIC BARRIER. Automatic barriers are activated by approaching trains. Reference: RONT 2001

Other similar terms include:

LEVEL AUTOMATIC BARRIERS, ERS-M 1995

LEVEL CROSSING WITH AUTOMATIC BARRIER, ERS-M 1995

Variant Terms That May Approximate the Core Terms:

AUTOMATIC BARRIER CROSSING LOCALLY MONITORED, RONT 2001
AUTOMATIC GATES, REMC 1948
AUTOMATIC LIFTING BARRIERS, Vanns 1997
BARRIER GATES, USSR-AAR 1960
CROSSING GATES, A & W 1991
ELECTRICALLY OPERATED LIFTING BARRIERS, Alkmaar
GATED LEVEL CROSSING, RONT 2001
LEVEL CROSSING BARRIER, Leach 1991
LEVEL CROSSING GATES, A & W 1991
LEVEL CROSSING WITH FULL BARRIER, UAR 1983
LIFTING BARRIERS, A & W 1991, Vanns 1997
LIFTING BARRIERS LEVEL CROSSING, RONT 2001

More specialized forms include:

BOOM GATES. Term for a barrier that resembled a gardent fence. It was placed on rubber tires and positioned by electric motors. It was a form of full barier. Reference: A & W 1991

ELECTRO-HYDRAULIC PEDESTRIAN BARRIERS. Term that includes the means of operation.

Reference WBS (Aus)

ON CALL BARRIER CROSSING (OCB). Call to signalbox resulted in raising of gate. Eventually the gate would lower automatically. Audible alarm signalling lowering of gate. No visual Signal.
Reference: Leach 1991

LIFTING BARRIER LEVEL CROSSING. Crossing with barrier that is raised in order to permit passage.
Reference: RONT 2001

ROBOT BARRIER GATES. A product of Robot Industries. Involves vehicle detection and closed circuit TV. Signal Eq. 1981

SHORT-ARM GATES. A partial gate that creates pathway for vehicles present on the crossing.
Reference: REMC 1948

WICKET GATE. Level crossing gate that signalbox can lock when train approaching. It is a pedestrian crossing.
Reference: Jackson 1992

2) "Manned" Barriers constitute a subdivision in UK as well as other nations. Network Rail employs Manually Operated instead. There are several versions and variant forms.

MANNED GATE CROSSING, A & W
MANNED BARRIERS, Leach
MANNED BARRIERS CROSSING, Leach
    MCB/LOCAL//MCB/REMOTE//MCBCTV(See Below)//TOB (See Below)
MANNED LEVEL CROSSING
    LOCALLY CONTROLLED MANNED LEVEL CROSSING. This form of crossing has full barriers or gates. A "crossing keeper" or "signalman" operated the installation.

REMOTELY CONTROLLED MANNED LEVEL CROSSING. No definition is given for this form.
Reference: RONT 2001

CCTV MONITORED REMOTE BARRIER CROSSING. A "manned" barrier activated by trains approaching the crossing. A signalbox maintained surveillance from a remote location.
Reference: Leach, 1991

Network Rail employs "Manually Controlled" in place of "Manned":

MANUALLY CONTROLLED GATE (MG)
MANUALLY CONTROLLED BARRIER (MCB)
MANUALLY CONTROLLED BARRIER PROTECTED BY CLOSED CIRCUIT TELEVISION (MCB-CCTV)

Variant Forms Include:

MANUALLY CONTROLLED BARRIERS (MCB), Leach

POWER-WORKED MCB, A & W 1991
This includes:
AUDIBLE WARNING DEVICES
TRAFFIC LIGHTS
BARRIERS

A version of manual or "manned" systems:

TMO (=TRAINMAN OPERATED [BARRIER]), A & W 1991
TRAINMAN-OPERATED BARRIER (TOB), Leach 1991

c) Half Barriers & Gates

HALF-BARRIER. UIC describes this unit as a device that moves and extends over half of the width of the road. Referred to as a gate in some nations. Signals and bells may be present.

Reference: UIC COST 1972

Similar terms and references for Half-Barriers include:

AUTOMATIC HALF ARM BARRIER INSTALLATION, Alkmaar
AUTOMATIC HALF BARRIER, Cox (Holmes) 1971
AUTOMATIC HALF BARRIER CROSSING (AHB), Leach 1991
AUTOMATIC HALF-BARRIER CROSSING, RONT 2001
AUTOMATIC HALF BARRIER LOCALLY MONITORED (ABCL), Leach 1991
CROSSINGS WITH AUTOMATIC OPERATED HALF BARRIER, Nock 1962
LEVEL AUTOMATIC: HALF BARRIER, ERS-H 1995
LEVEL CROSSING HALF BARRIER, ERS-C 1995

Related terms include:

AHB CROSSINGS. UK acronym for Automatic Half Barrier. A & W 1997

AUTOMATIC BARRIER CROSSING. This is also a Half-Barrier. The specific term specifically includes Traffic Signals. RONT 2001

AUTOMATIC LEVEL CROSSING & HALF GATE. Alkmaar

DOUBLE HALF BAR & FULL BARRIER CROSSING. ERS-M 1995

ELECTRIC LEVEL CROSSING WITH HALF BARRIERS & SIGNALS. Jane's 1987-88

GATES & AUTOMATIC HALF-BARRIERS. Cox (Holmes) 1971

UIC includes more specialized terms:
DOUBLE HALF BARRIER. This is an installation with Half Barriers for each half of the roadway.
SINGLE HALF BARRIER. How does this differ from half-barrier. UIC gives both forms.

4E4 Open Crossings

General Note. Crossings without barriers are termed Open Crossings in UK and other nations. Crossings may have no controls or only Signs. Others have Signals and are frequently termed Automatic Open Crossings.

AUTOMATIC OPEN CROSSING. Displays Road Traffic Signals. No barriers.
Reference: RONT 2001
AUTOMATIC OPEN CROSSING LOCALLY MONITORED (AOCL), Leach
AUTOMATIC OPEN CROSSING REMOTELY MONITORED (AOCR), Leach
(Network Rail has comma after Crossing in previous two entries)
AUTOMATIC OPEN LEVEL CROSSINGS, A & W 1997
LEVEL AUTOMATIC OPEN CROSSINGS

UNGATED BARRIER LEVEL CROSSING. A form lacking physical barrier.
Reference: RONT 2001
OPEN CROSSING (OC). May display Signs only. But Flashing Lights may be present.
Reference: Leach 1991 , A & W 1997
OPEN LEVEL CROSSING. Marked by Signs only. RONT 2001
UNCONTROLLED OPEN CROSSINGS/OPEN CROSSING WITH NO CONTROLS. Crossings with Signs only.
Reference: Leach 1991

4E5 Sound Signals

AUDIBLE AUTOMATIC WARNING DEVICES, Phillips 1942
AUDIBLE-PEDESTRIAN CROSSING, ERS-M 1995
AUTOMATIC BELL, AAR SM 1987
BELL, AAR SM 1987
BELL, GONG, AUDIBLE WARNING, UIC CST 1972
CROSSING ALARMS, RSD 1911
CROSSING BELL, RSD 1911
DOUBLE GONG HIGHWAY CROSSING BELL, RSD 1911

ELECTRONIC BELL/ELECTRONIC WARNING BELL, ERS-M 1995
ENCLOSED CROSSING BELLS, RSD 1911
ENCLOSED TYPE GONG, RSD 1911
GRADE CROSSING ALARM, Japan Assn.
LOCOMOTIVE TYPE CROSSING BELL, RSD 1911
HIGHWAY CROSSING ALARM, RSD 1911
HIGHWAY CROSSING BELL, RHGCP 1953
HIGHWAY CROSSING BELL-ELECTRONIC/HIGHWAY CROSSING BELL-MECHANICAL, WBS (Aus)
HOESCHEN CROSSING SIGNAL/HOESCHEN BELL SYSTEM, King 1921
LOCOMOTIVE TYPE CROSSING BELL, RSD 1911
ROAD CROSSING SIGNAL, Calvert 2004
SKELETON BELL, RSD 1911
SOUND-BELL/SOUND BELL, Alkmaar
VIBRATING BELL/BELL, VIBRATING, ARSPAP-D 1965

4E6 Signs & Boards

AUXILIARY SIGN. Signs placed beneath Flashing Lights. They include Stop Sign in vertical design, and Stop on Red Signal.
Reference: REMC 1948

BARRICADE SIGN. Sign indicates construction of grade crossing or repairs at crossing.
Reference: AREA 1987

CLOSE UP ROAD WARNING SIGN. South Africa term for Halt Sign.
Reference: SA SS 1936

CROSSING SIGNS. As known as Crossbuck Sign in SM. Short form of Highway Crossing Sign in AREA.
References: AAR SM 1983, AREA 1982

CROSSBUCK SIGN. In Europe this is known as a St. Andrew's Cross. US Signs

often display the word Railroad on one arm, and Crossing on the other.
Reference: REMC 1948

DISTANT WARNING SIGN. Preceeds Halt Board which see. Displays cross form. [Halt Board listed with Level Crossing before Halt Board].
Reference: Starkey 1944

DISTANT ROAD WARNING SIGN. Cross (US Crossbuck) at Level Crossing. Sign made up of reflector beads ("reflector lenses).
Reference: SA SS

GATES NOT WORKING SIGN. Message of Sign presented in reflectorized form.
Reference: AREA 1990

HIGHWAY AND BARRICADE SIGN. AREA refers to these form of Signs as meeting federal standards. No other details are given. See also TCD studies and US MUTCD publications.
Reference: AREA 1990

HIGH CROSSING SIGN/HIGHWAY GRADE CROSSING SIGN. Sign indicates location of railway grade crossing.
Reference: AREA 1983 (1), AAR SM 1987 (2)

ILLUMINATED SIGN. Sign attached to Hoeschen Bell when in operation.
Reference: King 1921

LEVEL CROSSING HALT BOARD. Displays red reflectorized wordings. Flashing Lights accompany Sign.
Reference: Starkey 1944

SIGN BOARD. Indicates position of Level Crossing.
Reference: Starkey 1944

RAILROAD CROSSING SIGN. Two Signs are under that heading:

AT THE CROSSING which is the Crossbuck Sign with number of track Sign.,

ADVANCE WARNING SIGN (& WITH FLASHING LIGHT) which is a circular-shaped Sign with St George Cross and "RR" embossed on the plate. The Sign has a yellow ground and black symbols.

Reference: AREA 1929

REFLECTOR BUTTONS. Term in REMC. They are metal crossbuck Signs comprise of reflector buttons.
Reference: REMC 1948

ROAD SIGNS & SIGNALS AT LEVEL CROSSING. Overarching term for all safety devices. Reference: UAR 1983

SAINT ANDREW'S CROSS. Included in coverage without details. Netherlands employs a double cross sign.
Reference: ERS-M 1995

SAINT GEORGE'S ADVANCE WARNING BOARD. Displays a square with white ground and black cross (or plus sign). Indicates to train crew that an AOCL is 300-600 yards away. A second Sign combines St George and Speed Restriction Sign some 100-300 yards away.
Reference: A & W 1991

SECOND TRAIN COMING SIGN. An illuminated Sign indicating second train after an earlier train had activated the barrier or gates.
Reference: Vanns 1997

SIGNS (CROSSING). REMC sometimes employs short form for Crossing Signs . Sign sufficiently precise when in a context of Railroad publications.
Reference: REMC 1948

WARNING SIGNS FOR LEVEL CROSSING. Overarching term for these Signs which includes the Crossbuck and Track # Signs.
Reference: WBS (Aus)

4E7 Other Forms

General Note. This segment includes references to crossings that may or may not include safety devices. Miscellaneous terms that do not fit previous categories are also included.

ACCOMODATION CROSSING/ACCOMONDATION LEVEL CROSSING. A private crossing.
Reference: Jackson 1992, RONT 2001

BARRIER TYPE PROTECTION.. This term refers to physical obstruction not a gate or similar construction. It consisted of cables or a streel construction that is either raised or lowered into position. Lamps, Signs, Signals could be present as well.
Reference: REMC 1948

OCCUPATION LEVEL CROSSING. A private crossing.
Reference: RONT 2001

PEDESTRIAN CROSSING. Exclusive for pedestrian use. Uses include a public path where bridge or underpass are lacking.
Reference: RONT 2001

PUBLIC ROADWAY LEVEL CROSSING. "A Level Crossing carrying a public road across the railway."
Reference: RONT 2001

ROAD USER OPERATED LEVEL CROSSING. Road user operated "field type gates."
Reference: RONT 2001

SEISMIC BASED TRAIN ACTUATED APPROACH WARNING AT LEVEL CROSSING. Train activates "seismic transducer" therey activating "audio-visual alarm." This is both visual and acoustical.

Reference: Chandrika 1998

THE ORION - 300 LEVEL CROSSING APPROACH WARNING SYSTEM. Orion detects traffic circuit changes (caused by trains) thereby activating "audio-visual alarm." This is both visual and acoustical.
Reference: Chandrika 1998

TRAIN CREW OPERATED LEVEL CROSSING. Crossing whose operatation is under control of train crew rather than signal or other staff. Crossing included barriers or gates.
Reference: RONT 2001

USER-WORKED CROSSINGS. Networkrail includes a category known as User-Worked Crossings. They are private crossings. Some public use may be authorized in some cases. They include:

USER-WORKED CROSSING PROTECTED BY MINIATURE WARNING LIGHTS (UWC-MWL). The light units display red and green lights. Gates may be user-operated; lifting barriers may be in use.

USER-WORKED CROSSING WITH TELEPHONE. Similar installation augmented by telephone link to signal staff.

FOOTPATH CROSSING. Pedestrian crossing primarily. Stiles or wicket gates are employed. Miniature warning lights may be included.

BRIDLE PATH. Variant of Footpath Crossing.

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