TRANSPORTATION-MARKINGS

DATABASE:

TRAFFIC CONTROL DEVICES

TRANSPORTATION-MARKINGS:
A STUDY IN COMMUNICATION MONOGRAPH SERIES

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& THEIR DEVELOPMENT, 1750-2000
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Part Iii Volume III, Additional Studies,

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A Study in Communication Monograph Series

Brian Clearman

Mount Angel Abbey 1998

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CHAPTER FOUR TRAFFIC SIGNALS

CHAPTER FIVE TRAFFIC MARKINGS

PREFACE

The DATABASE (Part I i, ii, iii, iv) of TRANSPORTATION-MARKINGS: A STUDY IN COMMUNICATION MONOGRAPH SERIES) draws together the several various dimensions of T-M. It shares this drawing together function with the GENERAL CLASSIFICATION (Part H). But, paradoxically, Part H and Part I draw together by focussing on the individual entity: each T-M phenomenon. The Database demonstrates the unity and commonality of Transportation-Markings but presents each one in its separate state. Yet in that process the full panopoly of T-M is unfolded including their shared and connected state.

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

The Database examines the four modes of rail, road, aero, and marine T-M Safety Aids in separate studies though all remain components of Part I. The amount of labor required to prepare the Database precludes assembling all four modes of T-M in a single study (though eventually they may be united). The initial study included only Marine Aids to Navigation. This second segment focusses on Traffic Control Devices.

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

The use of the hyphen results in an image of T-M as a single and unified concept thereby reducing misunderstanding over the meaning of the term and especially of mistaking T-M with one of its constitutent elements. The end result

is an overarching term encompassing all forms of safety aids including those forms that incorporate Mark, Marker, or Marking in their names. New compound nouns are often hyphenated as Frederick Crews notes in his Random House Handbook. New compound nouns require the hyphen to signal to users that the resulting term is a unit not two independent words existing side by side which can be split apart without significant results. Developed compound nouns may retain the hyphen, become one word, or drop the hyphen without the term losing its character. But an early form of compound noun, including that of T-M, requires the hyphen. Regretably, only after a dozen years has it become apparent how much confusion was generated by T M without the hyphen. Hopefully a clearer, more emphatic Transportation-Markings will result.

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

A major reason for this situation has been caused by the classification: the classification employed largely official sources which sometimes retained as current 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, Marine Aids to Navigation. It is less prominent in Part Iii, Traffic Control Devices. This component of the Database follows official sources more frequently since official documents are more extensive and longer in duration than is the case with marine sources. On the other hand, official international TCD sources may not include some forms that a given national system includes. This results in some more restricted forms having a place in the Database which are not reflected in major international systems.

It is now 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. However, some limited alterations are included in this study 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 is completed. Over the years the classifications of T-M have been "revisited" many times. Now a further Classification Revisited Redux is required.

The TCD part of the Database has these basic subdivisions: Regulatory, Warning, Informative Signs, Traffic Signals, Traffic Markings, and two Appendices. The first presents a comparative review of Signs in various systems while the second discusses general TCD terms. The first Appendex is adapted from Part E, International Traffic Control Devices.

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CHAPTER ONE INFORMATIVE SIGNS

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U.S. Route Marker

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1B Informative Signs: Entries

1B1 Introduction, Overarching Terms & Message Configurations

General Note: The General Classification (Part H, 1994) has eight subdivisions based on U.N. 1968. However five of the groups can be reconfigured under a single heading of Destination & Distance Signs (U.S. 1961 and IAMM 1967 headings) or under Guide Signs (Canada 1976). Therefore the numerous UN 1968 headings will be subsumed under Destination and Distance Signs. U.N. GERSS 1952 has these Signs under two headings but they too can be gathered together under the one heading. A second major subdivision is that of Route Markers. This is a major grouping for a variety of systems including those previously mentioned as well as ECAFE 1964 but not UN 1968. It can be noted that U.N. 1968 includes a heading of Road Identification Signs which corresponds to Route Markers though it is omitted from the Annexes). The final two UN 1968 topics are merged into Signs Of General Information (SOGI). That title is from UN GERSS 1952. This results in just three major groupings for this category of Signs.

The Overarching and Sub-overarching terms are designated by OA (Overarching), and SOA (Sub-overarching). Those terms which are actual Sign entities are designated E for Entries. A term may have two or even all three designators.

a) Overarching & Sub-overarching Terms

ADVANCE DIRECTION & DIRECTION SIGNS [SOA/E]. This is a combined heading for UN 1949. The two sign types are separate for UN 1968, UN GERSS 1952 and ECAFE 1964. They correspond to Destination and Direction Signs of the Western Hemisphere. Both sets of terms can be regarded as a subcategory. These Signs can also be viewed as separate entities; which means they are individual sign types as well as a category.

DESTINATION & DISTANCE SIGNS [SOA]. This is a basic category for the Database. It stems from IAMM 1967 and U.S. 1961. Advance Direction & Direction Signs are comparable terms. The Signs give place destination as well as distance information to a given place.

DIRECTIVE SIGNS [SOA]. OBS through UK MOT 1950 is somewhat limited though Trip 1950 provides further information . This term from Trip is a basic category within Informative Signs for U.K.

GUIDE SIGNS [OA/SOA]. U.S. and IAMM 1967 employ this term as a general

term for the category otherwise known as Informative Signs. Canada uses the term for what are otherwise known as Distance & Destination Signs within the Informative Signs category.

INDICATION SIGNS [OA/SOA]. For UN 1949 this term includes denotes those Signs otherwise termed Signs of General Information; it is also includes Parking and Priority Signs. LN 1939 employs the same term for the entire category of Informative Signs. LN 1931 has an alternative title of Signs Giving Indications Only. It may be noted that categories for older systems had fewer Signs than newer systems.

INFORMATION SIGNS. [OA/SOA/E]. This term is broad in meaning and occurs in various contexts. The Spanish language version of IAMM 1981 employs Information (Senales de Informacion) in place of Guide Signs as a general term. U.S. MUTCD1961 includes a restricted term of Information Signs which was changed to General Information Signs in U.S. MUTCD 1971. These Signs are of a miscellaneous character.

INFORMATIONAL SIGNS. Eliot 1960 and Sessions 1961 include this term. It is possibly a historic or a very general term that encompasses a variety of Traffic Sign forms.

INFORMATIVE SIGNS [OA]. This term was apparently introduced by UN 1949 and is the primary term for this entire category in European practice and also for the Database.

PLACE & ROUTE IDENTIFICATION SIGNS [Part-SOA]. UN 1949 and CASATC 1950 include this Sign subdivision compassing two forms of Signs. The Database includes both forms within the subcategory of Destination and Direction Signs.

ROAD IDENTIFICATION SIGNS [Possible SOA]. UN 1968 includes this designation, which may be regarded a single Sign though it is the equivalent of Route Markers -- a multifaceted entity. The sign appears in Article 5 of Chapter II but not in the Annexes where details on Signs are to be found. The nature and extent of the Sign is not clear for UN 1968.

ROUTE MARKERS/ROUTE MARKER SIGNS [SOA/E]. This is a basic subdivision for a variety of systems. However. UN 1949 and UN 1968 do not employ the term. Canada 1976 adds "Signs" to Route Markers.

SIGNS GIVING INDICATIONS ONLY [OA]. This is the term of choice for LN

1931 for the general category of Informative Signs. See also Indication Signs.

SIGNS OF GENERAL INFORMATION (hereafter SOGI) [SOA]. This term from UN GERSS 1952 encompasses a broad spectrum of Signs that give various kinds of useful information. The term is employed as a Sub-Overarching term for this Sign category. Other Systems have a variety of fragmented terms that together cover what this one term includes. UN 1968 has Other Signs Providing Useful Information for Drivers of Vehicles, and Signs Giving Notice of Facilities Which May be Useful to Road Users. CASATC 1950 has Signs of General Interest. Indicative Signs has similar information in UN 1949.

IAMM 1967 includes General Information & Auxiliary Signs. Canada 1976 includes Off-Road Facilities Signs which, in turn, includes Recreation & Accomodation Signs, Essential Services Signs, Food & Fuel Signs. Canada also has Miscellaneous Information Signs. U.S. MUTCD1961 includes an Information Signs category that encompasses Rest & Information Area Signs, Service Signs, Parking Area Signs, Other Directional Signs, Mileposts, and a confusingly named Information Signs group (The last named was changed to General Information Signs in U.S. 1971).

b) Message Configurations

Message patterns have a threefold pattern in this category: (1) Destination & Distance (hereafter D & D), (2) Route Markers, and (3) Signs of General Interest. The messages are grouped by the systems within those patterns.

IAMM's D & D Signs have a white ground with black graphic and word symbols. High density traffic forms require a green ground with white graphic and word symbols.

UN 1968 has two configurations for D & D: either white or "light-coloured" symbols on dark ground or the reverse. Both forms are rectangular-shaped. UN 1949 follows a similar pattern except for a specific mention that Distance signs end in an arrowhead.

ECAFE 1964 and UN GERSS 1952 Sign forms are virtually identical in most instances. However, there is a nuanced difference in D & D Signs. ECAFE calls for rectangular signs with white ground and black letters (presumably numbers are also black). UN GERSS 1952 allows for either light ground and dark letters or the reverse pattern. The pattern chosen by ECAFE is the recommended one for GERSS.

Canada 1976 follows a pattern of white words, arrows, numbers on green ground. D & D Signs are rectangular though Fingerboard Signs end in an arrowhead. U.S. MUTCD 1961 offers two patterns: black symbols on white ground or white symbols on either green or black ground. Newer editions permit white on green only.

LN 1926 lacks D & D Signs. LN 1928 includes an Obligatory Direction Sign which displays a disc with blue ground and white arrow. LN 1931 specifies rectangular shaped signs which may end in arrowheads. Specific Sign color patterns are optional. However. red is not to be a major color for D & D. LN 1939 included two patterns: Blue ground with white lettering, or white ground or light yellow ground with black letters. Direction Signs can end in an arrowhead pattern.

The information available for CASATC 1950 and OBS 1950 is not complete. However, it would appear that OBS uses a pattern of white symbols on black ground; black symbols on white ground with black borders was adopted by OBS 1950.

IAMM 1967 employs rectangular shaped Signs for Guide (Informative Signs) though a "special shape" can be adopted for Route Markers and this shape is often that of a shield. These Markers, apparently, have a white ground and black symbols.

UN 1968 allows rectangles or shields for Route Markers. Symbols are white or "light-coloured" on dark ground (which is not defined further) or the reverse. The UN 1949 pattern for Route Markers is very similar.

ECAFE 1964 and UN GERSS 1952 have rectangular shaped Route Markers with black symbols on white ground.

Canada 1976 and U.S. MUTCD 1961 provide a complex message situation. Trans-Canada Route Marker displays a white maple leaf with green lettering on a ground that is white and green. Provincial Route Markers can have a variety of color configurations. Tabs have black graphic symbols and rim on white ground. One form of the Junction Tab has a green ground with white letters, words, rim.

U.S. Route Marker employs either a cut-out shield (the Sign plate is cut in the form of a shield rather than painted or embossed on a standard shaped sign plate. The cut-out shield was dropped by U.S. 1971). or a shield graphic symbol on square plate. Symbols have black numbers on white ground while the second form has a additional black ground. Interstate Route Markers have a cut-out shield with white numbers, letters, rim on red/blue ground. Tabs have black letters and

rims on white ground.

U.S. State Markers are very complex since all 50 States determine their design (U.S. 1984). Nearly all of these Markers are square in shape with black symbols, rims, borders and white ground. Frequently there is a white inset within a black ground. U.S. MUTCD has a recommended form which consists of black letters, white circle and black ground. Seven states have adopted that form. State graphic designs include various shield shapes, shapes of states, diamonds with one shield of the cut-off version and one plate rectangular in shape.

U.S. MUTCD 1971, and later editions, list other Route Marker forms including Business Loop and Spur (white on green), County (yellow on blue), Forest (White on Brown). County and Forest forms do not follow the shield forms (letters, numbers on plates without other design features). A national counties organization has a recommended the County Marker which some counties have adopted.

CASATC 1950 has a rectangular shaped Route Marker with emphasis on the vertical dimension. Arrows, letters, numbers are white on black ground. OBS 1950 seemingly does not have Route Markers.

IAMM 1967 employs rectangles with a vertical emphasis for General Information & Auxiliary Signs (Signs of General Interest). They have a blue ground with white insert. Black graphic symbols are applied to the white insert. White arrows, numbers, letters on the blue ground accompany the primary symbols.

Canada 1976 uses square plates for Off Road Signs (within the SOGI category). They have a brown ground and white symbols. Hospital and Airport Signs, in a different subdivision, are square with green ground and white symbols. The Cul-de-sac Sign also follows that pattern.

Other miscellaneous Signs from Canada include rectangular Sign plates with black symbols on white ground (County, First Aids), and white symbols on green (River & Lake. The Pedestrian Activated Signal Sign has black symbols on white ground but the Sign plate has a vertical emphasis. Canada 1985 replaces the older word version with one that has graphic symbols.

U.N. 1949 SOGI Signs are very similar to IAMM 1967 forms. U.N. 1968 Signs are in two forms: Other Signs Providing Useful Information for Drivers of Vehicles which have a blue ground and white symbols. Some of these forms are rectangular shaped while others are square. Signs Giving Notice of Facilities May Be Useful to Road Users have a green or blue ground with white or yellow insert

with black symbols (with some exceptions).

U.N. GERSS 1952 and ECAFE 1964 display black symbols on white ground for Informative Signs. UN GERSS permits, but does not recommend, a reverse pattern. ECAFE specifies rectangular-shaped signs.

U.S. 1961 has a complex list of Sign patterns for Guide Signs. Rectangular shaped Sign plates with black symbols (mostly in word form) on white ground are used for many Signs. White symbols on blue grounds are employed for Interstate highway Signs. Parking Area Signs have green symbols on white ground. U.S. 1971 and later editions change many black on white Sign patterns to white on green patterns. The Detour Sign now has black symbols on an orange ground (it was formerly black on white).

LN 1939 has few Signs in this group. They include Parking Signs displaying a blue ground with a white letter "P." The First-Aid Sign had a dark ground, white rim, white insert, dark symbols. LN 1931 Signs were of the same pattern.

OBS 1950 employs black letters, red and yellow ground for the No Waiting Sign. Waiting Limited Signs display a blue ground, white letters and red rim. CASATC 1950 contains little information about this category of Signs.

1B2 Destination & Distance Signs

ADVANCE DIRECTION SIGN. This Sign provides place information and directional arrows but without mileage indications. This Sign, from UN 1968 overlaps with Direction Signs which see. It is found in LN and UN systems.

ADVANCE/ADVANCE GUIDE/ ONE-MILE/TWO-MILE SIGN. This Sign indicates (in advance) upcoming interchanges. U.S. MUTCD 1961 includes the One-Mile Sign and the Two-Mile Sign as names of types of Advance Guide Signs. U.S. 1971 has a single Advance Guide Sign within which are various forms from quarter-mile to two mile. U.S. 1961 did not include the word "guide" in the name but these Signs are under a heading of Advance Guide Signs.

APPROACH DIRECTION SIGNS. This is listed only by Noble 1946. These Signs appear to be similar to Advance Direction Signs. They are positioned before junctions and include route numbers and the name of the next place along the route.

CITY NAME SIGNS. This term, from IAMM, is an alternative to the Place Name Sign of UN 1968. It is seemingly within D & D.

COMMUNITY INTERCHANGE SIGN. This Sign is split off from Interchange Sequence Sign in U.S. 1978. It is employed for communities having several exits. The exits are listed as well as the distance to them.

CONFIRMATORY SIGN. This Sign is very similar to the Confirmatory-Distance Sign of Canada 1976 or the Distance Sign of U.S. 1961. The contributor of the Sign, U.N. 1968, offers little information on the Sign. But the meaning seems clear: it confirms previously given information on place, route and distance.

DESCRIPTIVE SIGN. This Sign is found in CASATC 1950. CASTAC places this Sign within the Place & Route Identification Signs. While it is a form of Place Name Sign it may also fit the Signs of General Information group.

DISTANCE SIGN/CONFIRMATION-DISTANCE SIGN. Canada 1976 includes the second Sign which is similar to the U.S. 1961 Distance Sign. These Signs bear some resemblance to both Advance Direction and Direction Signs of U.N. 1968. The Canadian version includes no more than two towns. Mileage is listed but without arrows. The first town listed is the next to be encountered while the other would be the last stop on that route. For U.S. 1961 the second location would be the principal community on that route and a third location would be a significant point following the first town.

DIRECTIVE SIGN. This term is apparently exclusive to Tripp 1950 who speaks of Directive Signs within the Informative Sign category. Few details are given but presumably Directive Signs include Advance Direction & Direction, D & D functions. Information from OBS is not completed and therefore supplemental sources have been consulted including Tripp 1950.

DESTINATION SIGN. Canada 1976 provides several versions of this Sign. The Sign lists one to three place names with arrows but without distances. U.S. MUTCD 1961 includes a form similar to Canada's as well as a version with both arrow and mileage information.

DESTINATION & DISTANCE SIGNS. This term acts as the Sub-Overarching heading for this group of Signs within Informative Signs. The Signs give directions and distances to one or more locations with directions provided by small arrows imprinted on the Sign. IAMM 1967 has a category under this name but the Signs within it are not clearly tied to D & D Signs. U.S. 1961 has a category under the same name and individual Signs are clearly listed. Mexico includes a variant form in which a Route Marker is added to the Place name, arrow and distance Sign.

DIAGRAMMATIC SIGN. A Guide Sign for U.S. expressways and freeways. It presents a graphic image of exit patterns. It provides information traditionally supplied by several forms of Signs including Destination, Distance and Direction Signs. U.S. MUTCD 1971 and newer editions include the Sign. IAMM 1981 includes a similar Sign for Mexico.

DIRECTION INDICATOR. This Seems to be an informal synonym from Noble 1946 for the Direction Sign.

DIRECTION SIGN. This Sign, ending with an arrowhead, gives place names(s) and distance. It is distinct from Advance Direction Signs. It is found in UN, CASATC and ECAFE systems. The UN 1949 version of this Sign is clear and unambiguous; however, UN1968 gives an unclear picture of it since some Direction Signs appear similar to the Advance Direction form. The Canadian Fingerboard Sign is very similar to the UN 1949 form which see. CASATC includes Direction Signs partly within Advance Direction & Direction and partly within Place & Route ID Signs. One version includes arrows on the sign board while the other ends in an arrowhead.

EXIT DIRECTION SIGN. A Sign placed before the gore or at the gore. It displays route number/name, direction, destination, directional arrow symbols and information. It first appears in U.S. MUTCD 1961.

EXIT NAME PANEL. The term "Panel" may be similar in meaning to Tab. This Aid accompanies U.S. freeway and expressway signs and provides the numbers of exits at interchanges. Panel may suggest something substantially larger yet it is apparently the same (and perhaps function) of a Tab. Panels in some instances are, however, of considerable size.

EXPRESSWAY DIRECTIONAL SIGNS. This term seems to encompass Expressway Interchange Signs though it offers a more encompassing term for the larger topic of Expressway signage. These signs combine Route Marker and Destination Signs found on other roads. It is found in U.S. practice.

EXPRESSWAY INTERCHANGE SIGNS. A type of sub-overarching term encompassing Gore, Exit Direction, Advance, Next Exit Signs. It is from U.S. 1961 and later editions of MUTCD. It may also constitute a specific Sign type.

FINGERBOARD SIGNS. This term seems to describes the physical dimension rather than the Sign in its message role. However, the Fingerboard Sign is the formal name for the Sign in Canada 1976 and includes message and meaning; it

includes the physical dimension as well. The Fingerboard is akin to UN 1949 Direction Signs and some UN 1968 Direction Signs. It is a rectangular shaped board with an arrowhead end. It gives the name and distance of a single locale.

FINGERPOSTS/DIRECTION POSTS/GUIDE POSTS/SIGNPOSTS. Noble 1946 offers several historic terms that can be regarded as Direction Signs. Despite differences in names they are grouped together. Noble views Signposts and Fingerposts as synonyms. Direction Posts is a more accurate term for the function of offering directions. Guide Posts is yet another synonym. These Signs may be older than Milestones though not common until the era of turnpikes in the 18th century.

GORE SIGN. Gore has the meaning of a triangular piece of land. Gore Signs are located in the gore formed by diverging roadways. They indicate the diverging roads and are the final signs to mark such roadways. There are four forms though specific names may not exist for each. The first, Exit Sign, does have an official title. The second indicates destination, route number and directions. A third Sign can indicate a second exit, and a final Sign denotes lane(s) for through traffic.

INTERCHANGE SEQUENCE SIGNS. These Signs identify two and three interchanges in areas where interchanges are close together. The messages take ther form of names or route numbers. This form is from U.S. 1971

MILEAGE SIGN. U.S. MUTCD 1971 changed the name of the Distance Sign to Mileage Sign. However, U.S. MUTCD1978 reverted back to Distance Sign.

NEXT EXIT SUPPLEMENTAL SIGN. This Sign is employed where a series of Exits are widely spaced. The mileage is added to the basic Sign. The Sign was added in U.S. MUTCD 1961. U.S. MUTCD 1971 added the word "supplemental."

PLACE SIGN/PLACE NAME SIGN/PLACE IDENTIFICATION SIGN. These Signs refer to boundaries or limits of a town or city. UN 1949 and some LN systems give the first named Sign. Place Identification Sign of UN 1968 refers to built up areas. International Road Federation refers to IAMM's City Name Sign as a Place Sign which see.

PULL THRU SIGNS. This refers to a series of Signs for expressway and freeway interchanges exits that are replicated with the result of guiding or pulling motorists through a complex pattern of interchanges. The term appears in U.S. MUTCD 1978 and MUTCD 1988.

STREET NAME SIGN/STREET NAME PLATES. This Sign follows standard shape and color configurations. They mark urban and rural roads and can include the name of the agency responsible for road and Sign. U.S. MUTCD 1961 includes this form of Sign as a D & D type. The Sign displayed black symbols on white ground for U.S. 1961 but white symbols on green ground in U.S. 1971. Noble offers a slight variation with Street Name Plates.

SUPPLEMENTAL ADVANCE GUIDE SIGNS. U.S. MUTCD 1971 included this Sign which gives destinations other than those of the Interchange Signs.

1B3 Route Markers

a) Introductory Note & Overarching Terms

The category of Route Markers, for a variety of systems, includes a single entity: the Route Marker. While there is obviously variation in the actual number and letter symbols there is just one form. However, a few national systems include a great variety of Route Markers. This creates something of a problem when nations are signatories to one or other system and yet the nations have TCD elements outside those systems. Perhaps the extended Route Markers can be viewed as logical and acceptable dimensions of the appropriate systems. Route Marker coverage for the Database has two segments: b) Specialized Route Markers, and c) Route Marker Arrows and Tab Signs.

ROUTE MARKERS. Often this entity is a graphic symbol with a number designating a route and at most a few letters. A shield form is a common graphic symbol for this Aid. The word Marker -- instead of the word Sign -- is often a constituent element. Road systems in populous and physically large nation states with complex internal political subdivisions may have a series of Route Markers. Shield forms can vary greatly. For example in IAMM 1967, Venezuela has a nearly rectangular form with only muted elements of a shield, and Mexico has more of a traditional shield form though elongated.

ROAD IDENTIFICATION SIGNS. UN 1968 offers this term in place of Route Marker. Curiously, UN 1968, while including this Sign in Chapter II, Road Signs, (Convention on Road Signs and Signals) omits it from the Annexes where detailed coverage of Signs is to be found. UN 1968 does allow contracting parties to use a "route classification symbol" in place of rectangular-shaped Signs.

ROUTE-INDICATORS. This term, from IAMM 1967, is seemingly a synonym for Route Marker (which IAMM 1967 also employs). Indicator is an infrequent term in T-M. Among the few uses of the term are those of certain forms of older

Railway signals. Only IAMM 1967 includes this term.

b) Specialized Route Markers Terms

AUXILIARY MARKERS. These Markers accompany Route Markers that denote a specific route. Auxiliary Markers denote junctions, route directions, turns, temporary, by-pass, alternate, business routes, detours. The Database uses the Canadian term Tab in the Database For these Markers which are found in c). They are possibly exclusive to the U.S.

BICYCLE ROUTE MARKERS. This Marker, which is more akin to a Sign denotes roadways and partions of roadways set aside for bicyclists. The Marker is applies to all road users: bicyclists, motorists, pedestrians. It is found in Canada and in the U.S.

COMBINATION JUNCTION SIGN. This Sign is a substitute for Junction Assembly when multiple Route Markers are required. In U.S. MUTCD 1961 the Sign had a black ground, white rim, white words and insert, and black numbers. In U.S. MUTCD 1971 and newer editions the ground color was changed to green.

CONFIRMING ROUTE MARKERS. This term refers to a Route Marker and Cardinal Direction Tab (Marker) assemblage. The Confirming form are placed slightly beyond numbered route intersections. See also Reassurance Route Markers. Possibly exclusive to U.S. and found in editions of MUTCD.

COUNTY ROUTE MARKER. The National Association of Counties (U.S.) created this Marker to denote county roads and to distinguish the Marker from other forms. It is pentagonal-shaped with blue ground and yellow rim and symbols. It is first listed in U.S. MUTCD 1971.

FOREST ROUTE MARKER. This Marker denotes a U.S. forest road. The Marker has a brown ground, white symbols, and a parallelogram shape. It is included in U.S. MUTCD editions and presumably is from the U.S. Forest Service.

INTERAMERICAN HIGHWAY ROUTE MARKER. Route Markers under this heading denote the Central - American Highway - System. It is listed in IAMM 1967.

INTERSTATE ROUTE MARKER. This Marker is of a cut-out shield form denoting highways of the U.S. Interstate System. (Shields are of two forms: one is the image of a shield embossed on metal, and the other is an actual shield cut out

of metal sheeting). This Marker is from U.S. MUTCD 1961.

OFF-INTERSTATE BUSINESS LOOP MARKER/OFF-INTERSTATE BUSINESS SPUR. Both versions are of the Interstate Marker cut-out version. They display a green ground with white words and numbers. The word "spur" or "loop" is added. The Markers denote a extension of the interstate route that branches off to a business center. The Signs are from U.S. MUTCD editions.

PAN AMERICAN ROAD ROUTE MARKER. Route Markers under this heading mark the Panamerican - Highway - System. This forms appears only in IAMM 1967.

PROVINCIAL ROUTE MARKER. These Markers are designed and provided by the Provinces of Canada. They are described in general terms in Canada 1976.

REASSURANCE ROUTE MARKERS. This Marker is very similar to the Confirming Route Marker. They are placed between urban intersections and outside built-up areas. U.S. MUTCD 1961 employs this Marker.

ROAD MARKERS. A historic term appearing in Hawkins 7-92. It is included in the title of AASHO publication in 1925.

STATE ROUTE MARKER. This form of Route Marker is the the most diverse form in the U.S. State with every state having such a Marker. A recommended form exists which is square in shape containing a white circle with the route numbers; but only about seven states have adopted this model. The range of designs include several that suggest Speed Limit Signs. U.S. FHA 1983 illustrates the several forms of State Route Markers.

TRAILBLAZERS. This term refers to U.S. practice though it may well be found in other systems especially those of the Western Hemisphere. It is an assemblage consisting of a Route Marker, a Tab with the word "To," a Directional Tab and possibly a Cardinal Direction Tab. The assemblage is place along urban and other roads indicating directions to a numbered route. It is listed in U.S. 1961 and other editions of MUTCD.

TRANS-CANADA ROUTE MARKER. This Marker is found exclusively with Canada's Trans-Canada Highway and appears in Canada 1976.

TRUNK ROUTE MARKER. An historic term from Sessions 1961. It denotes the Route Marker for U.S. main or trunk roads in the 1920s.

U.S. ROUTE MARKER These Markers are found with U.S. Routes excluding highways of the Interstate System. Cut-out form was used in U.S. MUTCD 1961 and earlier. But the actual cut-out form dropped out with U.S. MUTCD 1971. The remaining version is a rectangle with black ground and white shield shape with numbers in black. The name of the state no longer appears in U.S. MUTCD editions.

c) Route Marker Tabs

U.S. 1961 appears to add a great many specialized forms of Route Markers. While Canada 1976 , a system akin to U.S. practice in many respects, has few such markers or so it seems. The seeming discrepancy is more a matter of semantics: various accoutrements and additions to basic Route Markers in Canada are termed Tabs not Markers while the U.S. labels all of the limited scope entities as Markers. The Canadian practice will be followed in the Database: Route Markers as such will be termed Markers. But various arrows and words appearing on separate plates but conjoined to Route Markers will be termed Tabs. Tabs can be viewed as appendages, extensions, supplements to primary Sign forms.

ADVANCE TURN ARROW TABS. These Tabs give advance information for a route that undergoes a turn or alter its direction. Tab and Route Marker usually display a horizontal format (in contrast to vertical arrangements of many other Tabs). This form is used in Canada and the U.S.

BY-PASS TAB. This Tab accompanying a Route Marker indicates the branch of a main route which eventually reconnects with the main route. This form is in use in Canada and in the U.S.

CARDINAL DIRECTION TAB SIGNS. These Tabs indicate route's direction: NORTH, EAST, SOUTH, WEST. They are found in Canada and the U.S.

DIRECTIONAL ARROWS TABS. These Tabs denote a change in route due to a road alignment turn or direction change. The Tabs are arranged horizontally. See also Advance Turn Arrow Tabs. Tabs are listed in Canada 1976 and U.S. MUTCD 1961 and later editions.

ENDS. This Tab indicates the End of a Route and accompanies the Route Marker. Canada 1976 and U.S. 1971 both include it.

JUNCTION TAB SIGNS. This Tab, in conjunction with a Route Marker, denotes an approaching intersecting route. Again, Canada 1976 and U.S. 1971 include it.

ALTERNATE TABS. U.S. 1961 includes a variety of Markers for Alternate Routes. These can be termed Tabs since they fit the definition of a supplemental plate with word forms in close proximity to a Route Marker. These Tabs include:

TEMPORARY MARKER TAB. This indicates a non-permanent segment of a regular route or a construction or emergency detour.

ALTERNATE TAB. This tab indicates an official alternate for a portion of a route.

BY-PASS TAB. This denotes a branch route through a city, congested or other area. The branch eventually rejoins the primary route. This is also listed with Tabs outside this segment.

RELIEF TAB. This form of Alternate Tab indicates a route that draws off vehicles from a congested route. The Relief Tab was dropped by U.S. 1971.

BUSINESS TAB. This Alternate Tab denotes a branch route into a commercial area.

DETOUR TAB. A temporary Tab denoting route temporary closed by an emergency blocking or closing the standard route. Black on white ground motif of U.S. 1961 is changed to black on orange in U.S. 1971 and later. See also Temporary Marker Tab.

DETOUR SIGN. While this is not a Tab though it constitutes an alternate to it. It has an oranged ground with black words in an arrow. It is found in U.S. MUTCD 1971.

1B4 Mileposts

General Note. Mileposts have had a long history yet they are ignored in a variety of twentieth century systems. Noble 1946 provides many details on ancient, medieval and early modern Mileposts and Milestones in various forms. These terms are included since they represent a major component of TCDs. Quite possibly they continue in use even if officially overlooked.

DIRECTION STONES. This term is from Noble 1946 for Milestones in The Netherlands.

MILEPOSTS/MILE MARKER. Mileposts are a narrow post or panel which indicates miles/ kilometers from the beginning of route, political boundary, or other designated point. U.S. MUTCD 1961 forms displayed black symbols on white ground or white symbols on either green or black ground. U.S. MUTCD 1971 and newer editions stipulate white symbols on green ground. Mexico, according to IAMM 1967 combines Mileposts with Route Markers. They are

similar to U.S. forms except longer in order to include the Route Marker. A working group of ECAFE 1964 included Mileposts though they are not included in the 1964 Code. That form originates in India and is in the form of Route Markers and Distance & Direction Signs. Mileposts are apparently not included by any other system. Mile Marker is employed by a USDOT brochure from 1979. It is identical with the Milepost. The brochure may possibly have employed that term in order to achieve symmetry with accompanying Route Marker forms.

MILEPOSTS. Mileposts in the Roman version constitutes a column-shaped stone rather than a wood post. The term probably has a dual character: vertical Sign and low-level Milestone form. Reference is Noble 1946.

MILESTONES. A historic term. Milestones range in age from ancient civilisations types to 19th century forms. They are similar in message and meaning to U.S. Mileposts. Noble sees the Milestone as stemming from Roman "milia passum" meaning 1,000 paces made by human steps. Milestones were known as Milliaries and possibly were set up to mark distances between "Mansiones" (Posting Stations). Many were carved stones giving distance in numbers to the next mansione. The stones were columns and might be round, oval or square.

KILOMETRE STONES. This term stems from French practice as recounted in Noble 1946. It is often an actual stone, white in color with pertinent information painted on the stone.Tops were painted according to the category of road. The stones give place names, distance, road numbers. They are pre-UN entities and current status is unknown.

LANDMARKS/GUIDES. Further terms from Noble 1946. He sees various stones on, near roads as Landmarks, as Guides to travellers.

MARK STONES. A historical term. It is found in early Britain even before the use of Milliary/Milliaries. This term is also from Noble 1946.

MARK/MARKERS. Noble 1946 employs these terms in a very general sense. They too are historic in nature.

ROAD MARKER. Noble 1946 applies this term to a stone that, while not a Milestone, marks a road in some manner. The exact purpose is not clear.

STONE MARKERS. Historic term from Noble 1946. The actual use of these Markers is somewhat vague. Quite possibly this is an alternate name for Milestone.

1B5 Signs of General Interest

Introductory Note. Two systems employ this term: ECAFE 1964 and UN GERSS 1952. However, neither system provides information on what constitutes that category. Other systems providing details on this form of Sign do not employ the terms of Signs of General Interest (SOGI). Instead, they use a variant term(s) for this category of Signs. But none of the variant terms encompasses the totality of these Signs as well as Signs of General Interest. For that reason SOGI is adopted for the Database.

a) Overarching Terms

DIRECTION, POSITION, OR INDICATION SIGNS. A second term from ECE 1995 that includes various words in a non-integrated manner. Many of these Signs are encompassed in UN categories of Advance Direction, Direction, and Confirmatory Signs. Several new signs are also included. Indication Signs is an older overarching term for what Europeans now refer to as Informative Signs. However, it now has a restricted meaning.

INFORMATION, FACILITIES OR SERVICE SIGNS. ECE 1995 employs this less than integrated phrase for what UN 1968 refers to as Signs Giving Notice of Facilities Which May Be Useful to Road Users. Admittedly, an awkward phrase though integrated.

GENERAL INFORMATION & AUXILIARY SIGNS. This is the overarching term for SOGI signs in IAMM 1967.

INDICATIVE SIGNS. This is the overarching term for this category in UN 1949 though UN 1949 has only limited Signs in the category.

INDICATION SIGNS/SIGNS GIVING INDICATIONS ONLY. LN 1931 and LN 1939 have only a few Signs corresponding to SOGI Signs and they are included in larger groups under these titles.

OTHER SIGNS PROVIDING USEFUL INFORMATION FOR DRIVERS OF VEHICLES/SIGNS GIVING NOTICE OF FACILITIES WHICH MAY BE USEFUL TO ROAD USERS. UN 1968 encompasses SOGI entities within two groups headed by these terms.

SIGNS OF GENERAL INTEREST/GENERAL INTEREST SIGNS. This term, the primary term for this category, is described above.

Canada 1976 has a series of terms for General Interest Signs. These include:

OFF-ROAD FACILITIES subdivided into:
RECREATION & ACCOMODATIONS
ESSENTIAL SERVICES
FOOD & FUEL

ROUTING TO SPECIFIC DESTINATIONS

MISCELLANEOUS INFORMATION SIGNS

U.S. 1961 and newer editions subdivides General Interest Signs into multiple categories some of which are sub-overarching categories while others are parts of such categories:
GENERAL INFORMATION SIGNS
GENERAL MOTORIST SERVICES
GENERAL SERVICE SIGNS
RECREATION AREA
RECREATIONAL & CULTURAL INTEREST AREA
REST & INFORMATION AREA SIGNS
REST & SCENIC AREAS
REST AREA

SERVICE SIGNS
TOURIST INFORMATION & WELCOME CENTERS
TOURIST ORIENTATED DIRECTIONAL SIGNS
PARKING AREA SIGNS
WEIGH STATIONS

INFORMATION SIGNS. This term has a restricted meaning and was later changed to General Information Signs.

RECREATION & CULTURAL category in U.S. MUTCD 1988 was subdivided into smaller groups:

GENERAL INFORMATION R & C
MOTORIST SERVICES R & C
ACCOMODATION SERVICES R & C
LAND R & C
WATER R & C

b) Services

ACCOMODATIONS/HOTEL/MOTEL/LODGING. A variety of terms indicate the nearby presence of public lodging. Most newer systems include one of these Signs. A graphic symbol representing a bed is employed by IAMM 1967 and U.N. 1968. Lodging for U.S. MUTCD1961 relied on word inscription; newer editions adopted graphic forms.

AIRPORT. This Sign indicates a nearby airport. It displays a representation of a plane. It is a Service Sign not a Warning or Regulatory Sign. It is listed in IAMM 1967 and Canada 1976. U.S. MUTCD 1971 includes a similar Sign. Canada 1985 adds a second form of this Sign that displays a small airplane (the original Sign is a representation of a commercial jet).

BREAKDOWN SERVICE/MECHANICAL HELP/ MECHANICAL SERVICES/SERVICE STATION. The various terms employ a very similar graphic symbol: a large wrench bearing resemblance to a pipe wrench. IAMM 1967 and IAMM 1981 adds a directional arrow. Argentina displays two wrenches, no arrow, but a supplemental plate indicating mechanic service. Mexico has a wrench of a different form and no word message or arrow.

FERRY BOAT. This Sign denotes ferry service and entrance. It displays a vehicle atop what appears to be a barge in water. It is a Service Sign rather than a Regulatory or Warning Sign. It appears in IAMM 1967.

FIRST AID/FIRST-AID/FIRST AID STATION. This symbol bears a graphic image of a Christian cross for several systems (Red Cross). U.N. 1949 and U.N. 1968 offers a Islamic Crescent (Red Crescent). U.N. 1968 employs a third symbol which is Iranian Lion and Sun (Red Lion & Sun). IAMM has the standard Christian symbol with some variation of design and color in national exhibits. Argentina adds a supplemental plate. But IAMM 1981 gives the hospital symbol ("H") for Ecuador for first aid.

FILLING STATION/FUEL/ GAS/GAS STATIONFUEL (DIESEL). These diverse terms are refer to the same matter:a refueling facility for motor vehicles. The symbol is frequently a representation of fuel pump. U.S. 1961 continued the practice of word inscription though that changed with U.S. 1971. Canada employs the term Fuel; U.S. adds Gas while IAMM adds Station to Gas. U.N. 1949 and U.N. 1968 use Filling Station. Seemingly there is no actual use of the term Petrol. IAMM adds an arrow while Argentina has its usual supplemental plate and no

arrow. IAMM 1981 refers to "gasolina" while Argentina refers to "combustible". Eucador and Mexico display a silhouette of a fuel pump without words or arrows. Canada 1985 adds a Fuel Sign (Diesel). It is very similar to the original Sign except for the letter "D" on the silhouette of the fuel pump.

FOOD/RESTAURANT/REFRESHMENT OR CAFETERIA. Restaurants are represented by what has become a nearly universal symbol: a crossed spoon and fork. But seemingly no knife. Argentina adds the usual supplemental plate and a portion of a plate with knife and fork but no spoon. Ecuador has a knife and fork superimposed on a white plate serving as an insert within a square black sign plate. Mexico has a white knife and fork on square, black ground. The Refreshment or Cafeteria Sign of U.N. 1968 Sign is represented by a coffee cup on saucer. U.S. MUTCD 1961 continued to employ word inscriptions while newer editions moved to graphics. Canada 1976 employs a coffee cup and saucer; Canada 1985 adds a knife and fork.

HOSPITAL. This Sign indicates the nearby presence of a hospital. U.N. 1949 created a sign with the letter "H" accompanied by the word Hospital in the national language. This has become a nearly universal symbol. Various users have dropped the word Hospital including Canada 1976. ECE 1995 places this Sign in the Special Regulation category.

NEXT SERVICES ... MILES. This Sign indicates distance to services rather than actual services. This Sign is from U.S. MUTCD 1961.

PHONE/TELEPHONE. This Sign denotes the nearby presence of a public pay phone. The graphic symbol for this phone is an obvious one: the handset of a conventional phone. U.S. MUTCD1961 employed a word inscription though a graphic symbolic representation was included in U. S. MUTCD 1971. IAMM adds an arrow indicating location of the telephone. Argentina omits the arrow but adds a supplemental plate with the word telephone in Spanish. Ecuador and Mexico omit the arrow.

c) Parking

Parking Signs bear a strong resemblance to one another though under a variety of titles. Major titles and descriptions include:

AUTHORIZED PARKING PLACE/AUTHORIZED PARKING-PLACE. LN 1931 and LN 1939 have a Sign identical to later UN Signs though with a longer title. LN 1928 adds a hyphen.

PARKING. U.N. 1949, U.N. 1968 and other systems indicate Parking by the letter "P" without word inscriptions.

Some other Parking Signs are:

PARKING AREA. These Signs indicate the location of a parking area rather than actual parking spaces. U.S. 1961 includes the word Parking headed by a very large letter "P" and accompanied by an indicating the location of the parking area.

PARKING ALLOWED. IAMM 1967 includes a Sign similar to the U.N. Sign. The Sign displays either the letter E or P according to the national language. An arrow is also included. Argentina omits the arrow and instead adds a supplemental sign referring to parking. Argentina follows this practice with many Guide Signs. Mexico omits the arrows and also lacks any words.

PARKING WITHOUT LIGHTS. OBS 1950 includes this Sign but few details are available.

PARK & RIDE. In U.S. 1978 and U.S. 1988 this Sign indicates parking area where parking and public transport or car pool options are available.

PARK & RIDE NEXT RIGHT. Expressway version of the previous Sign.

d) Recreation

BOAT LAUNCH RAMP. Canada 1985 adds this Sign. It displays a boat on trailer which, in turn is on a ramp at the edge of a body of water. Symbol and rim are white and the ground is brown.

CAMPING. This Sign indicates the close proximity of a campsite. It is represented by an illustration of a tent. IAMM 1967 and U.N. 1968 include this Sign.

CAMPING OR CARAVAN SITE. This Sign indicates that both tents and travel trailers are permitted. The illustration of a tent joins a representation of what is apparently a small trailer. It is from U.N. 1968.

CARAVAN SITE. This Sign indicates facilities near highways that are available for trailer site rentals. The Sign displays a representation of a small travel trailer. It is from U.N. 1968.

INFORMATION CENTER. This Sign indicates the location of a travel advice facility. This U.S. MUTCD 1961 Sign is seemingly similar to the Canadian

PICNIC SITE/PICNIC TABLE/PICNIC TABLES .... MILES. This sign indicates the nearby presence of the facility in question. Picnic Site is a U.N. term and includes representation of table and tree. Picnic Table is from Canada 1976 and displays a detailed representation of a table. Picnic Tables ... Miles is from U.S. MUTCD 1961 and is in a word form.

REST AREA. This Sign denotes a planned rest facility and is adjacent to a freeway or expressway. This U.S. 1961 Sign is in a word inscription format. This is also true of newer editions.

ROADSIDE PARKING AREA ... MILE/ROADSIDE REST ... FEET. This Sign denotes rest areas near rural highways. These Signs are examples of Rest and Information Area Signs. U.S. 1961 edition forms were in word and number format.

SCENIC AREA. This Sign indicates, in advance, areas exiting from a highway or expressway on U.S. highways. It is from U.S. 1961 and appears in newer editions.

SCENIC OVERLOOK. U.S. MUTCD 1978 and 1988 include this Sign. It follows the format of the Scenic Area and other related Signs. The Sign has two forms: an advance form indicating distance to the Scenic Area, and a more immediate form that omits distance but adds an arrow indicating location.

TENT CAMP. This Canadian Sign closely resembles the Camping Sign of other systems which see.

TRAILER CAMP. This Sign is similar to the Caravan Site Sign which see. This Sign displays a small trailer and is from Canada 1976.

TRAVEL INFORMATION. This Sign denotes a facility offering travel services. The Sign displays a large question mark. It is from Canada 1976.

TROLLEY PARK. This Sign has an alternate title of Caravan Site. The graphic symbols closely resemble the Caravan Site Sign of U.N. 1968. It is from IAMM 1967.

VIEWPOINT. Canada 1985 adds this Sign. It has a somewhat abstract appearance displaying two humans in pictograph form; one of whom is peering through a telescope. U.S. MUTCD editions seem to lack a similar Sign yet Signs denoting Viewpoint and Vistapoint are commonplace in many areas.

YOUTH HOSTEL. This Sign indicates nearby low cost lodging. A representation of tree and rustic house are displayed on the Sign. It is found in U.N. 1968.

A brochure of USDOT 1979 provides many more Recreational and Cultural Interest Area Signs than does MUTCD.These Signs have a brown ground, white symbols, white rim on square plates with curved corners. The plethora of Signs include: Winter Recreation Area (snow flake), Marina (anchor), Viewing Area (Camera), Rest Rooms (pictographs of woman and man; the woman is of the one-legged version), Food Service (Egg, Milk Carton, Apple, Toast), Post Office (Envelope), Mechanic (Wrench), Ferry (Car on Barge with waves), First Aid (Standard Cross Symbol in red), Parking (Letter P), Swimming (Pictograph of human and waves), Canoeing (Human representation, canoe, waves), Motor Boating (Boat, waves), Boat Launching Ramp (Boat on trailer on ramp partly in water), Sail Boating (Sail boat, waves), Ice Skating (Human representation with skates), Water Skiing (Human representation on skies on water), Snow Skiing (Human representation with poles, skies), Fishing (Fish, hook), Ranger Station (Human representation, building, flag), Amphitheater (Curved lines representing seating, rectangle representing stage), No Smoking (Cigarette with red oblique bar), Picnic Area (Picnic table), Camp Fire (Pieces of crossed wood and flames).

e) Miscellaneous

ACCESS FOR HANDICAPPED. Canada 1985 includes this Sign. It displays a human in pictograph form in a wheel chair.

ADVANCE SIGNS-EXIT MOTORWAY. These Signs or Panels indicates the distance to an exit. The Panels are three in number of an elongated rectangular shape displaying diagonal white stripes on blue ground and with the distance in kilometers.

ADVISED ITERNARY FOR HEAVY VEHICLES. This Sign from ECE 1995 notifies trucks of advised iternary. No details offered beyond that.

ADVISORY SPEED. This Sign from ECE 1995 is in the informative category rather than warning. It advises of appropriate speeds in various circumstances. The sign has white symbols on a blue ground.

BEGINNING OF BUILT UP AREA/END OF BUILT UP AREA. ECE 1995 has several versions of these Signs. The name of the area can be displayed in black letters on white ground and black rim, or in white letters on blue ground. The area can be graphically represented by silhouettes of a city with/without the name. The

end of such areas can be represented by red oblique bar over any of the previously described Signs.

BICYCLE ROUTE. This Sign alerts motorists and cyclists of an official bike route. It is white on green ground. It appears in U.S. 1971 and newer editions.

BUS STOP. This Sign includes a symbol of graphic representation of a bus indicating a scheduled stop. It is from IAMM 1967.

BUS STOP/TRAMWAY STOP. UN 1968 displays an outline of the bus or tramway in black on white insert on blue ground. ECE 1995 regards these Signs as part of the Special Regulation category.

COUNTY. This Sign is from Canada 1976. It is the only system with a Sign under this name. It is in a word inscription form with the the name of the County.

CROSSOVER SIGN/ADVANCED CROSSOVER SIGN. From U.S. 1988. It indicates openings in the median of divided highways not marked by other Signs. It has white words and arrow on green with white rim. Advanced Crossover form indicates distance to Crossover but no arrow.

CUL-DE-SAC. This Sign indicates a street with a single entrance/exit. Canada 1976 supplies this Sign. Dead End Street and No Outlet in U.S. 1971 are equivalents.

ESCAPE LANE. This Sign from ECE 1995 is similar to the U.S. Escape Ramp Sign. Though it is instead an Informative Sign with blue ground, white symbols except for a bar of white and red checks that represents the escape lane.

GENERAL SPEED LIMITS. This Sign of ECE 1995 is an Informative rather than a Regulatory Sign. It indicates general speed limits for a nation and may be posted near the national borders. The ground is blue and the name of the country and insert are white. Speed limits for built-up areas, outside built-up areas, and expressways are presented in black within red circles.

INFORMATION SIGNS. The name of this U.S. MUTCD 1961 Sign suggests a broad scope but it is relatively restricted in its role. U.S. MUTCD 1971 renamed this Sign category as General Information Signs which is more accurate. These signs are not direct guidance Signs though they provide a variety of information. The information can include political boundaries, geographical and cultural information. These Signs are diverse in messages and less tied to core Traffic Control Devices concerns.

NO THROUGH ROAD. This Sign indicates a road intended only for local use. The Sign has a blue ground, white bar representing a roadway and ended by a red box or bar. UN 1968 contains the sign as does ECE 1995.

MOTORWAY/END OF MOTORWAY. These Signs denotes the commencement of special operating rules on motorways and the end of these rules. ECE 1995 places these Signs in the Special Regulation category.

PEDESTRIAN OVERPASS/PEDESTRIAN UNDERPASS. These ECE 1995 Signs portray a pictograph of a person descending a flight of steps in the frist Sign and a pictograph of a person ascending an incline in the second Sign.

POLICE. Canada 1985 and U.S. MUTCD 1988 include this Sign. It is a Guide or Information Sign with white letters and rim on blue ground.

PROTECTED PEDESTRIAN WALK. This Sign denotes a walkway above or below motor vehicle level. The sign displays a pedestrian walking between parallel dotted lines. It is seemingly found only with IAMM 1967.

PEDESTRIAN ACTIVATED SIGNAL SIGNS. This Sign, associated with Signals, is included by Canada 1976. It is listed in the Miscellaneous Information Signs for Canada and is in a word format.

RIVER & LAKE. This Sign indicates River & Lake features that cross or parallel a numbered route. This Sign from is from Canada 1976.

ROAD FOR MOTOR VEHICLES/END OF ROAD FOR MOTOR VEHICLES. These Signs pertain to Roads not classified as motorways but having special rules. ECE 1995 places these Signs in the Special Regulation category.

SANITARY FACILITY. This Sign is from IAMM 1967 . The name suggests a wide range of facilities but the sign symbols displays only a representation of water running from a faucet in close proximity to a human hand. Argentina drops the arrow and adds a supplemental plate in word form. Venezuela displays a graphic of a large faucet. Mexico's version is a form of pictograph of faucet, water and hand.

SIGNS INDICATING NUMBER & DIRECTION OF TRAFFIC LANES. These Signs are from ECE 1995. ECE provides three versions: arrows representing traffic lanes denoting a lane bifurcating into two lanes; a lane following a diagonal pattern adjusting to a straight direction, and lanes entering a divided

highway zone.

SIGNS INDICATING CLOSURE OF A TRAFFIC LANE. This ECE 1995 Sign has two versions: a white arrow representing a lane merging with an adjoining lane on a blue ground, and black arrows with one arrow ended by a black bar on a white ground.

TRAFFIC SIGNAL SPEED SIGN. This U.S. Sign is an Guide Sign in U. S. MUTCD 1971 though listed as a Warning Sign in U.S. MUTCD 1961. It displays the message of "Signals Set for __MPH." It indicates a group of Signals coordinated for a given speed. Its color scheme is white on green in 1971 and newer editions.

TURN MARKER. The term and shape (shield) strongly suggest a Route Marker. The message supports that notion yet the addition of the letter "L" or "R" denotes advance notice of an upcoming turn in the 1920s when the Sign was employed. The Sign is included in Hawkins 7-92.

WEIGH STATION SIGNS. U.S. Weigh Station Signs include several forms:

ADVANCE SYMBOL.
ALL TRUCKS COMMERICAL VEHICLES NEXT RIGHT
EXIT DIRECTION.
GORE SIGN.

These signs have a green ground and white letters and numbers. One other Sign, All Trucks Commercial Vehicles Next Right has a black ground and white letters.

CASATC 1950 includes two public transit Signs though with few details documents:

SECOND STAGE.
TRAM STOP NO.__.

U.S. 1971 includes a variety of Miscellaneous Signs with few details:

DO NOT THROW LITTER
EMERGENCY & AUTHORIZED VEHICLES ONLY
KEEP OFF WET PAINT
NO DUMPING ALLOWED
NO FISHING FROM BRIDGE

CHAPTER TWO WARNING SIGNS

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__Miles
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2A2 Alphabetical Index

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2B Warning Signs: Entries

2B1 Introduction, Message Configurations, & Overarching Terms

a) Introductory Note & Overarching Terms

The various TCD systems arrange Signs according to different principles. Some systems, such as UN GERSS 1952, focus on the individual sign and offer only limited categories and other subdivisions of Signs. Canada, on the other hand, has produced a comprehensive system of subclasses and sections for all forms of Signs. UN 1968 provides a multi-level system of divisions and subdivisions for Regulatory Signs but it provides little in the way of an overarching structure for Warning Signs. Because the Database is predicated on an overarching structure with various categories and other divisions it became necessary to look elsewhere for a structure for Warning Signs. The resulting structure is a modified version of Canada's system. This structure places the various Warning signs into one of a half-dozen categories. While the Signs may be somewhat rearranged from their original positions the identity and function of the Signs has not been lost.

It may be noted that U.N. 1968 has more than one category for Warning Signs: All Signs for Intersections are in an independent category divided into Regulatory and Warning sections; Level-Crossing Signs are a separate group. All other Warning Signs are considered together.

The structure for Warning Signs is simpler than for Regulatory Signs. Regulatory forms have four main sections and one of those segments has five subdivisions and one of those further subdivisions has, in turn, five segments. Warning Signs has six basic segments without no further differentiation.

WARNING SIGNS. This is the term of preference in the Western Hemisphere: IAMM, Canada, U.S. This is also employed by ECAFE 1964. Some past U.K. publications also favor Warning Signs. The Database has adopted this usage.

DANGER SIGNS. European sources favored this term up to and including UN 1949.

DANGER WARNING SIGNS. UN GERSS 1952, UN 1968, & CASATC 1952 favor this composite term.

CAUTION SIGNS. Hawkins 7-92 includes a reference to Caution Signs which stems from older U.S. practice. Caution Signs were seemingly set apart from Warning Signs. However, Caution Signs include the diamond-shaped, black on

yellow format associated with Warning Signs. By 1935 Caution Signs were part of the Warning Sign category in the U.S. This historical usage is more in the form of a subarching term and perhaps more appropriate in miscellaneous terms.

GIVING WARNING OF DANGERS. U.K. practice as outlined in Noble 1946 includes the curious amalgam of Warning and Informative Signs but also a schema in which Warning Signs are presented as Giving Warning of Dangers. The adjoining standard categories of Prohibitory, Informative, Mandatory in U.K. offer conventional terms.

WARNING SIGNPOSTS. An outline of British practice by Noble 1946 includes mention of Warning Signposts rather than Warning Signs. Signpost has the full meaning of Sign and not merely a wooden post on which Signs are fastened.

ADVANCE WARNING SIGNS. The 1944 U.K. Committee added Signs to be used in advance of a danger. The Signs were to be standard warning signs accompanied by a plate indicating distance to the danger. There are some present day Signs which approximate that approach in other systems. Reference: Noble 1946.

b) Message Configurations

Colors, shapes, graphic and word symbol arrangements are largely fixed for the various systems. These comments pertain to Signs as described in the several categories of Warning Signs except where noted. UN 1968 approves of two models: 1) The form associated with Europe which is a equilateral triangle with one point up. It has a white or yellow ground and red rim. 2) The "American" model is diamond-shaped with yellow ground and back rim. The symbols for both models are black or dark blue.

U.N. GERSS 1952 and ECAFE 1964 add a third model: The double sign consisting of a triangle above a rectangle or diamond-shaped plate from UK OBS 1950 and CASATC 1952. The ground color is yellow and the symbol color is black or some other dark color. Borders, if present, are black or another dark color. ECAFE 1964 permits a white ground color with borders that are red.

IAMM 1967 specifies diamond-shaped Signs with yellow ground and black symbols and borders. Large Arrow Sign and Railroad Cross Buck Sign are exceptions. The border for IAMM is very similar to the rim of U.S. and Canada.

U.N. 1949 employed equilateral triangles with one point up. The Priority Road Ahead is an exception: it is a triangle with one point down. The Signs have a

white or light yellow ground; borders are red with symbols that are black "or dark."

Canada 1976 employs diamond-shaped Signs with yellow ground. Borders and graphic and word symbols are usually black. Temporary Condition Signs have an orange ground. The School Ahead Sign has a pentagon shape and white symbols and border. The borders are usually narrow and can be considered as rims.

U.S. MUTCD 1961 and newer editions employ diamond-shaped signs with black graphic and word symbols and a yellow ground color termed "highway yellow." Railroad Crossing Signs, Large Arrow Signs, Advisory Speed Plates are exceptions.

OBS 1950 employed white ground with black symbols and borders for the lower part of Signs which were rectangles. The upper sign displayed red border and white ground for the upper Signs which were triangles with one point up.

CASATC 1950 is similar to OBS except that the lower Sign ground color is yellow. Railway Crossbuck signs have red borders and white ground for CASATC, and yellow ground and black ground for a variant South African form.

LN 1939 offers a more flexible message configuration than more modern systems. Symbols can be either black or "very dark." or white or "pale yellow." Ground colors can be white, yellow or "dark". There is also a choice in border: red for light ground colors or black or "dark". Dark ground colors borders are to be red.

While details are limited for LN 1926 some information is available: the ground is to be dark and the symbol color is light. Only the hollow Sign has a border. The LN 1928 Committee Report offers a variety of possibilities and refrained from mandating any single approach. These options include white symbols on dark-blue ground; black symbols on white ground; black symbols on white ground with red border. An agreement was reached that the hollow triangle was to be red. LN 1931 does not include color pattern information for Danger Signs. However, nearly all of the 1931 Signs included are from LN 1926.

2B2 Roadway Alignment

a) Introductory Note & Overarching Terms. This segment manifests considerable coherence. While a variety of road situations are included under the topic of alignment the terms are limited. There are several forms of these Signs. UN 1968 includes Bends but not Turns. Older European systems included a Turn Sign that could be described as a "Hairpin" Turn (sometimes termed a Bend). UN

GERSS 1952 and ECAFE 1964 include both Turns and Curves but without accompanying terminology except for the overarching term. Western Hemisphere systems include both Curves and Turns. The term Bend is omitted. Bends and Curves appear to be synonyms though Turns constitute a separate entity.

CURVES. A possible Sub-OA term. IAMM includes all signs involved with horizontal changes in alignment under this term. It suggests a less sharp, though immediate, change. Other terms, including Bends, Turns, need to be examined for a fuller meaning.

DANGEROUS CURVES. This may appear to be a specific Sign title and that may be the case on occasion. But for ECAFE 1964 and U.N. GERSS 1952 it is a sub-overarching term for all forms of Curves. Those systems lack terms for individual entry in the category including the terms Bends and Turns.

DANGEROUS BENDS/BENDS. U.N. 1968 employs Dangerous Bends or Bends for a sub-overarching term. No names are given for the individual entities. Some members of the category are similar to those of U.N. GERSS 1952 and ECAFE 1964 though arrowheads are omitted.

HORIZONTAL ALINEMENT CHANGES/ROADWAY ALIGNMENT. Canada 1976 employs Roadway Alignment for this category while U.S. MUTCD 1961 has Horizontal Alinement Changes (Alinement is a second spelling in the U.S.). The Canadian term, and spelling, seems to encompass the variety of Signs more adequately. IAMM 1967 subsumes all of the Signs under Curves. UN GERSS 1952 and ECAFE 1964 employ Dangerous Curves.

TURNS. This is not an sub-overarching term yet it has a general character for a variety of Systems. It can be regarded as a synonym for other terms denoting changes in road alignment. It suggests a more sharp change in alignment as opposed to a more gradual, gentle change.

b) Specific Terms

BAD CORNER. A historic term from U.S. MUTCD 1935. Black on white and in word form. Hawkins 8-92.

BENDS/LEFT BEND/RIGHT BEND/SINGLE BEND TO THE RIGHT, LEFT. The term Bend apparently first appears with LN 1926 then LN 1939. Both UN 1949 and UN 1968 employ Bend exclusively. Bend may suggest a gentle appearance similar to what is termed Curve in UN GERSS 1952, ECAFE 1964, and the Western Hemisphere. However, a general purpose Bend Sign in UN 1949

has the graphic symbol associated with Sharp Turn in older European systems; Sharp Turn has the visual appearance of a "Hairpin" Turn. Double Bends and Reverse Bends are separate terms.

CHEVRON ALIGNMENT SIGN. This is a supplement or alternate to the Large Arrow Sign. The Chevron gives added attention to road alignment (horizontal) changes. It consists of bold chevrons in black on yellow ground embossed on rectangular-shaped plates. It is included in U.S. 1978 and U.S. 1988. Canada 1985 also adds this Sign.

CURVE, LEFT, RIGHT/SINGLE CURVE, LEFT, RIGHT. Curve, as already noted, is employed in U.S., Canada, IAMM 1967, ECAFE 1964 and UN GERSS 1952. It indicates a change in alignment that, while not sharp, is immediate.

DANGEROUS CORNER. From Manual on Street Traffic Signs, Signals, and Markings, 1930. It is in a word form with black letters on white. Hawkins 7-92.

LIMITED SIGHT DISTANCE SIGN. This Sign indicates the existence of curves where visual distance for stopping is inadequate. A supplement plate listing speed limit can be added. This Sign was added to U.S. MUTCD 1978.

TURN, LEFT, RIGHT/SINGLE, LEFT, RIGHT. Terms employed in the Western Hemisphere and also ECAFE 1964. Turns denote sharper curves. U.S. MUTCD 1961 and Canada 1976 establish the use of Turn and Curve Signs by determining the safe speed over sections of road affected with notable alignment change. ECAFE 1964, like UN GERSS 1952, uses the term Dangerous Curve as an overarching term for a series of graphic symbols though it lacks specific terms for each symbol. Canada 1976 employs a Turn Sign of a less sharp design. It is positioned between Turn and Curve but remains within the Turn configuration.

WINDING ROAD SIGN/RIGHT WINDING ROAD SIGN/ LEFT WINDING ROAD SIGN. This Sign indicates that at least three curves or turns are in close proximity for IAMM 1967. The Sign represents at least five curves for employment of the Sign in Canada and the U.S. Both have similar descriptions for the Sign. Both systems refer to Right Winding Road Sign and Left Winding Road Sign rather than Winding Road Sign with left and right forms. GERSS/ECAFE include the Sign within the Dangerous Curve category though there is no name for this specific form.

DOUBLE BEND, LEFT, RIGHT/DOUBLE BEND TO THE RIGHT, LEFT. League of Nations and UN 1968 employ the word "Double" for Signs with multiple bends/curves/turns. The graphic symbol shows a very dramatic and sharp

double change in alignment; the actual road condition could have several such changes in close proximity.

REVERSE CURVE, LEFT, RIGHT. This Sign is largely confined to the Western Hemisphere. Reverse has the same or similar meaning to "Double" in UN and LN practice. A Reverse Curve Sign indicates curves going in opposite directions and which are close together.

REVERSE TURN, LEFT, RIGHT. The previous comments largely apply here though turns have sharper angles than curves.

SHARP CURVE. Hawkin's essays on MUTCD include early U.S. Signs. Sharp Curve is from Idaho in the 1920s. It is more of a case of a variant name than a new form of horizontal road alignment Sign. Reference: Hawkins 7-92.

SHARP TURN. Most older European systems included this sign which resembles a "hairpin" turn". UN 1949 has a Bend Sign of the same design.

LARGE ARROW SIGN/DIRECTIONAL ARROW/BI- DIRECTIONAL ARROW. These Signs indicate a sharp alignment change and can be employed to warn of impending curve or turn; they can also be used at T and Y intersections that constitute hazards. IAMM speaks of Directional and Bi-Directional Arrows. This Sign is found in IAMM 1967, U.S. MUTCD editions. The IAMM and U.S. Signs are very similar though the titles differ. U.S. has Large Arrow which can display either single or double-headed arrows.

DANGEROUS REVERSE BEND WINDING TO THE RIGHT, LEFT. These Signs are from CASATC 1950. They are similar in design to the Double Bend Signs of UN 1968.

DANGEROUS SHARP TURNING TO THE RIGHT. This Sign from CASATC 1950 is somewhat similar to Reverse Turn Signs of Western Hemisphere systems. Apparently there is no comparable Sign to the left.

2B3 Roadway Conditions

a) Introductory Statement & Overarching Terms. It is possible to subdivide this segment of Warning Signs into many small pieces. But numerous small fragments has little value since the Signs thereby less easily cohere. Therefore the various forms of these Signs are grouped into informal sections within the the category of Roadway Conditions. It can be debated what the title of this category should be. Roadway Features is a possible title as well as Roadway Conditions.

Neither is fully adequate. Roadway Conditions may be somewhat more inclusive. Canada speaks of features and of road configuration changes. Possibly Roadway Conditons more easily takes in features and changes.

ROADWAY SURFACE CONDITIONS/SPECIAL ROADWAY FEATURES/ ROAD SURFACE PHYSICAL CONDITIONS. U.S. 1961 employs Roadway Surface Conditions for a subdivision name while Canada 1976 has Special Roadway Features. IAMM 1967 descibes this category as "Signs-- indicating physical conditions of road's surface". Other systems often lack appropriate subdivision terms. The Database term is an adaption of all three terms with emphasis on U.S. 1961 and IAMM 1967.

b) Specific Terms

UNEVEN ROAD. This constitutes a general purpose term. UN 1968 notes that it can be replaced by the more specific terms of Bumps and Dips. For UN 1968 Uneven Road is represented by a graphic symbol with two bumps. Many other systems have a similar term and image. It can denote roughness in pavement, bumps, ridges, drain lines across the roads and other impediments.

GUTTER. LN 1926 employs this for the English-language term though the imagery is the same as that for Uneven Road in other systems. However, the French word "Cassis" in 1926 is employed in Paris 1909 along with Uneven Road as the English-language translation.

BUMPS/DIPS. These are commonly employed terms and can provide more specificity than Uneven Road or can simply replace Uneven Road. The graphic symbol for Bump often manifests a single bump. The Dip symbol can have the image of a concave depression. U.S. MUTCD 1961 and newer editions employs word inscriptions rather than graphic symbols. A variety of systems include these Signs including IAMM 1967, ECAFE 1967, UN GERSS 1952.

PAVEMENT DROP-OFF. Canada 1985 includes this Sign but apparently no other system does so. It has an orange ground, black symbols and indicates an abrupt end to the pavement edge.

PAVEMENT ENDS. This Sign indicates the extent of paved road for a given route. The Sign is found among some newer systems. Canada offers a graphic symbol displaying an image of pavement/ unpaved roadway. U.S. MUTCD 1961 employs a word inscription but U.S. MUTCD1971 and newer editions include a graphic representation.

ROUGH ROAD. This Sign denotes a road in poor condition. The graphic symbol is of three or more bumps. It is not found with UN 1968 though UN GERSS 1952 includes it.

SOFT SHOULDER. This Sign, seemingly exclusive to the U.S., employs a word inscription. It is from U.S. MUTCD 1961 and extends into the 1978 edition.

CROSS-DRAIN OR DIP. The Sign is a double-sign (familiar to OBS) and the graphic appearance is closer to that of a Bump Sign than a Dip Sign of the more conventional form. It is exclusive to CASATC 1950.

DANGEROUS SHOULDER. ECE 1995 adds this Sign of a graphic representation of a car tilted: one wheel on solid ground, and one on unstable ground. No indication of the nature of the condition other than it is dangerous.

LOOSE GRAVEL. This Sign refers to situations where gravel may be thrown up by passing vehicles. U.N. 1968, U.S. MUTCD1961 and IAMM 1967 include this Sign.

HILL/DANGEROUS HILL/DANGEROUS DESCENT/ DANGEROUS ASCENT/DANGEROUS STEEP DESCENT TO R OR L/HILL __IN__/STEEP ASCENT/BIKE HILL. The variety of names refer to a relatively narrow range of messages. However, the range of messages can be expanded by Sign models and variations of those models. Hill can be a unitary sign centering on descents only but it can also encompass a descent form and an asscent form. Hill can be subdivided into semi-autonomous descent and ascent forms. UN 1968 considers the Dangerous Descent and Steep Ascent Signs as separate entities.

A graphic symbol displaying a black triangle surmounted by an auto facing upward or downwards is the most common form of these signs. UN 1968 offers three versions: image of an auto, a percentage figure, or a ratio figure. U.S. 1961 has a word form only. Canada 1976 has a graphic symbol and a supplementary educational tab (dropped in Canada 1985) with the word form. None of the European systems before 1949 includes a Hill Sign under any title. U.S. MUTCD1971 and newer editions follows the Canadian practice.

U.S. MUTCD 1978 includes a Steep Descent for Bicycles which displays a bike on a black triangle signifying sharp descent. Canada 1985 adds a Bike Hill Sign.

___% GRADE/NEXT___MILES/___% GRADE [&] ___MILES SUPPLEMENTAL PLATES. They can be added to Hill Signs in the U.S. That appear in U.S. MUTCD 1978.

DRAW BRIDGE/HUMP BRIDGE/NARROW BRIDGE/ NARROW STRUCTURE /ONE LANE BRIDGE/OPENING BRIDGE/SWING BRIDGE. This amalgamation of different kinds of Signs for bridges may overly conflate a diverse topic. UN 1968 includes the Swing Bridge which is representated by a graphic image of a single open span. The Draw Bridge displays a double span as does the Opening Bridge Sign (included in Canada 1985). The former is from IAMM 1967 and the later from UN GERSS 1952. Mexico has a single span representation. The Hump Bridge Sign of OBS 1950 employs the graphic symbol of the Bump Sign employed in several systems.

Narrow Bridge, Narrow Structure, One Lane Bridge all denote narrow passageways for vehicles rather than bridges that open up. Only a limited number of systems include these signs. The U.S. formerly employed only word inscriptions while other systems display graphic symbols. U.S. MUTCD 1971 added a graphic representation. Mexico in IAMM 1981 has a similar Sign. Canada 1976 broadens the concept by speaking of Narrow Structure but the graphic representation is very similar to IAMM 1967 and UN GERSS 1952. It can refer to culverts, subways, overpasses that decrease the width of the roadway. Educational Tabs with word inscriptions from Canada 1976 have been dropped. The Tabs existed as a transition from word to graphic symbols and were intended as temporary in nature.

ROAD NARROWS/NARROW ROAD/CARRIAGEWAY NARROWS/ PAVEMENT NARROWS/PAVEMENT-WIDTH TRANSITION SIGN. A variety of these terms refer to a closely focussed sign type. Both UN 1949 and UN 1968 refer to Carriageway Narrows Signs. Canada 1976 refers to Pavement Narrows (became Road Narrows, Road Narrows L/R in Canada 1985) while other systems employ Road Narrows. The graphic symbol is of two designs: UN GERSS 1952 and ECAFE 1964 show two thick black lines wide at one end and narrow at the other which represent reduction of lanes. The more common form displays black lines outlining a road with multiple lanes that eliminates a lane in one direction. Surprizingly the U.S. in 1961 employed the graphic image though with rows of dashes to denote which lane kept/lost a lane. U.S. 1971 redesigned the sign and dropped the dashes. U.S. MUTCD renamed the Sign the Pavement-Width Transition Sign; that is a literal description of the Aid. U.S. MUTCD 1961 also included maintained a word inscription sign under the heading of Road Narrows though that meant a road less than two-lanes in its total width rather than an elimination of a lane.

OBS 1950 employed one Sign form for Narrow Bridge or Road Narrows. It followed the usual double-Sign approach with a symbol identical to that of UN

GERSS 1952 and ECAFE 1964. It contained an appropriate word inscription. Narrow Road from U.S. MUTCD 1948 has the same meaning as Road Narrows.

LANE REDUCTION TRANSITION SIGN. U.S. 1988 Has this Sign It is a new name for Pavement Width Transition Sign.

BIKEWAY NARROWS. This U.S. MUTCD Sign is in word form and analogous to the Road Narrows Sign.

ADDED LANE SIGN. This is U.S. MUTCD 1988. This Sign notifies motorists of the convergences of roadways without merging of traffic. Sign has representation of two roads converging flanked by a straight arrow and by a curved arrow that becomes straight.

LANE ENDS MERGE LEFT (RIGHT)/RIGHT (LEFT) LANE ENDS. These Signs from U.S. 1971 are supplements to Pavement Width Transition Signs. The second Sign serves as an advance Sign. Canada 1985 includes Right(Left) Lane Ends Signs. They are in graphic form and indicate one lane left or right.

There are a few other signs in the Road Conditions segment that are found in only a fewer systems. Some other Signs that could appropriately be found in this segment are found in Intermittent Moving Hazards.

RUNWAY TRUCK RAMP___MILE/RUNWAY TRUCK RAMP SIGN. These Signs denote escape ramp for runaway Trucks on steep descents. U.S. MUTCD 1978 and 1988.

SAND/GRAVEL/PAVED SUPPLEMENTAL PLATES. These can be added to the previously described Runway Truck Ramp Sign.

DIRECTIONAL ARROW/BI-DIRECTIONAL ARROW/ LARGE ARROW/ CHECKERBOARD SIGNS. These Signs are apparently confined to the Western Hemisphere. They indicate a dramatic direction change either for all traffic in one direction or for left or right directions. Substantial curves, turns, T and Y intersections are appropriate locations. The Directional Arrow Sign indicates one direction but does not require staying to right of some object in contrast to a "Keep Right" Sign at medians, divided highways, etc. U.S. 1961 refers to a Large Arrow Sign which is the same Sign though larger. Canada 1976 employs Checkerboard Signs that contain arrows and have the same function. Canada also has a version of the Checkerboard Sign that denotes the termination of the road. The Checkerboard Sign has black and yellow checks except for the center portion which is yellow with the appropriate arrow in black.

CLEARANCE/LOW CLEARANCE SIGNS/NARROW CLEARANCE/ LIMITED WIDTH. Low Clearance Signs indicate limited space overhead for vehicles especially large trucks. Limited Width and Narrow Clearance Signs indicate narrowness of driving lanes or roadway. Symbols are frequently in feet or metres within arrows indicating clearance. One or more of these Signs are found in IAMM 1967, ECAFE 1964, UN GERSS 1952, Canada 1976, U.S. 1961. But not in UN 1968 and older European systems. Mexico has a variant form that includes a silhouette of a truck within arrows that indicates reduced horizontal or vertical clearance. Supplemental plates give the dimensions of the limited clearance. U.S. forms evolved from words to symbol/word forms and to supplemental plates with words. U.S. MUTCD 1978 dropped the plates.

ROAD LEADS ON TO QUAY OR RIVER BANK. This Sign indicates close proximity to water or a dangerous water situation near a driving lane. It is found only with UN 1968.

2B4 Intersections

a) Introductory Note & General Terms. Canada 1976 has a subdivision termed Concealed Roads for several forms of intersections but without specific names. However, Canada 1985 adds names: Right Angle Intersection, Acute Angle Intersection, "T" Intersection Signs. Canada 1976 and U.S. MUTCD 1961 both include a segment for advance warning of TCDs which are separate from Intersections. However, IAMM 1967 includes all of these forms together in a category termed under "Crossings" and that practice is followed in the Database though under the term Intersections.

b) Specific Terms

CROSS ROAD/CROSS-ROAD/CROSSROAD. One of the oldest Road Signs of any form. This Sign, in some form, is found in every system past and present. There are two forms: St. Andrew's Cross (X) and St George's Cross (+). U.N. 1968 offers both models; one for the European form of sign; one for the American model. U.N. GERSS 1952 provides an alternate form in which the priority road is indicated by widing the axis of the cross whose referent is the priority road. Older European models have a white symbol on black ground.

CROSS STREET. This historic term is from Manual on Street Traffic Signs, Signals, & Markings in 1930. Possibly an early term for the current Cross Roads Sign. Reference is Hawkins 7-92.

DANGEROUS FORK SIGN. These Signs, which are similar to Y Symbol Signs, are from CASATC 1950. One has a representation of two forks set evenly at diagonal angles from the primary road. A second form has one fork set at an diagonal angle from a second vertical arrow. A third version bears resemblance to the Merging Traffic Sign.

DANGEROUS T-JUNCTION SIGN. This Sign is similar to a T Symbol Sign; it is from CASATC 1950. It has a Double Sign format as is the case with other CASATC Signs.

DELTA SIGN. This Sign from Mexico appears in IAMM 1981. It indicates an intersection which has three branches connected with the intersection and that forms a triangular island.

SIDE ROAD. This Sign denotes the intersection of a secondary road with the primary road. The graphic symbols consist of a black horizontal bar attached to a vertical bar; it has right and left versions. The term is found in IAMM 1967, Canada 1976, U.S. MUTCD 1961. LN 1939, UN 1968, ECAFE 1964, and UN GERSS 1952 include the Sign though without naming it.

ROAD IN WHICH ANOTHER ROAD ENDS AT A JUNCTION SIGN. This lengthly title is from LN 1939. It is similar to a Side Road Sign.

"T" SIGN/T INTERSECTION SIGN. This sign, in the form of a "T", denotes a intersection where a left turn or a right turn is necessary. Canada 1976 adds the word "Intersection. Other systems, including IAMM 1967, include the Sign.

"Y" SIGN/Y INTERSECTION SIGN. This sign indicates a change in direction is required though the change is diagonal rather than a sharp turn to right or left. The symbol has the appearance of the letter "Y". ECAFE 1964 and UN GERSS 1952 include the Sign though unnamed. Canada 1976 adds the word "Intersection".

SUCCESSIVE TEES SIGN. This Sign displays two side roads that branch off opposites sides of a primary road in relatively close proximity but not directly across from each other. The focus of the Successive Tees Sign is similar to Signs for T-shaped intersections but slightly separated. The Sign is from IAMM 1967. U.N. 1968 includes a similar Sign but unnamed.

TRAFFIC CIRCLE/ROUNDABOUT. These Signs indicate the approach of a circular or rotary junction. The graphic symbol displays three curved arrows arranged in a circular pattern. Traffic Circle is supplied by IAMM 1967. It is known as an Roundabout for U.N. 1968 and OBS 1950 .

ROAD INTERSECTION SIGN. This Sign appears to be an overarching category but it, instead, represents a single, specific Sign in U.N. 1949. It is the single form of intersection Sign for that System other than the Roundabout. This Sign displays a St Andrew's Cross.

ROAD JUNCTION/ROAD JUNCTIONS SIGN. These Signs also give the sense of a general category but instead they refer to a single specific Sign. These Signs are from OBS 1950. The first is in a single form approximating the Side Road Sign. The second sign is similar to IAMM 1967's Successive Tee Sign. Both are of the Double Sign format.

MERGE/MERGING TRAFFIC SIGN. This sign indicates convergence of roadways rather than the intersection of roadways which remain separate and distinct. The symbol displays a vertical bar capped by an arrow head with a second bar converging at a diagonal angle. The Sign may be confined to the Western Hemisphere: IAMM 1967, Canada 1976, U.S. MUTCD1961 (word form), . U.S. MUTCD 1971 (graphic symbol form).

SIGNAL AHEAD SIGN. This Sign provides advance notice of an isolated Traffic Signal. The graphic representation of a Signal may include the the standard colors of red, green, yellow. This Sign is found largely in the Western Hemisphere and also in OBS 1950. U.S. 1971 changed to a graphic symbol. Mexico includes a variant design of the IAMM form. See following entry for related Signs.

SIGNALS AHEAD SIGN. This Sign is from Canada 1985. It indicates that motorists should be prepared to stop. The Sign is flanked by Flashing Beacons. The Sign can be mounted with Beacons on a large background board or Sign and Beacons can be free standing. See also previous entry.

STOP SIGN AHEAD/STOP AHEAD. This sign indicates the nearness of a Stop Sign when a Stop Sign can only be seen a short distance. It can be installed for other reasons including the occurence of many accidents at an intersection. IAMM 1967, Canada 1976, U.S. MUTCD1961, and U.N. GERSS 1952 include this Sign. The U.S. 1961 version is in a word inscription format only but newer editions of MUTCD include a graphic symbol of a Stop Sign on the Stop Ahead Sign accompanied by an arrow. IAMM 1967 and IAMM 1981 have a word form and supplemental plate with distance to Stop Sign; Mexico instead has a graphic representation of a Stop Sign and arrow.

YIELD AHEAD SIGN. The rationale for this sign is similar to that of the Stop Ahead Sign: there is too little visibility to see the intersection except at close

range. Therefore advance warning is required. The U.S. MUTCD 1961 form is in a word inscrption format but newer editions contain a graphic symbol of a Yield Sign on the Yield Ahead Sign. This Sign is also found in Canada (Canada 1985).

DOUBLE ARROW SIGN. This sign found in Canada 1976 and U.S. MUTCD 1961 and newer editions. It denotes situations where traffic can flow in one direction on both sides of traffic islands, and various obstacles. The Canadian version is in a graphic form with both arrows and representation of an object while the U.S. version has arrows only. Sources include Canada 1976 and U.S. MUTCD 1961 and newer editions.

2B5 Intermittent Moving Hazards

Canada 1976 contains a category of Intermittent Moving Hazards that encompasses pedestrians, school children, trains, and inanimate moving objects (including road surfaces that are slippery because of moisture and falling rocks). No other system has such a category. Other systems may include some of the members of the category but not the subdivisions (or they have smaller subdivisions). There is substantial merit in the Canadian approach and it is adopted/ adapted for theDatabase.

FALLEN ROCK/FALLING ROCK OR LANDSLIDES SIGN. This and other Signs of inanimate objects may be regarded as relating to road conditions or possibly other hazards. However, they represent an off-and-on situation not directly tied to road-related situations. Signs with Graphic symbols display rock formation with pieces of rocks breaking loose. UN 1968 and Canada 1976 include the Sign. U.S. 1961 has a word inscription form; newer editions have a graphic form.

HIGH WATER. This Sign may be more fitting in Other Hazards or Road Conditions. Yet the experience of fast rising water -- no matter the source -- strongly suggests the Intermittent Moving Hazard category. Seemingly only the U.S. includes this Sign. U.S. MUTCD 1961 includes a listing of Other Warning Signs but without pictures of this miscellaneous collection of Signs.

SLIPPERY WHEN WET SIGN/SLIPPERY ROAD SIGN. This Sign denotes hazardous road during rain and other conditions. The graphic symbols can include an auto at an angle followed by lines representing skid marks. This Sign too could fit into other categories including the Road Conditions category. Several systems have this Sign include Canada 1976, U.N. GERSS 1952, ECAFE 1964, U.S. 1961. U.S. MUTCD 1961 displayed word forms while newer editions have graphic forms.

USE SECOND GEAR/USE LOWER GEAR/TRUCKS USE LOWER GEAR. These Signs refer to truck operations on steep slopes. They are from U.S. MUTCD 1971 and newer editions.

CROSSING NO GATES/GATES OR LEVEL CROSSING BARRIER/LEVEL CROSSING WITH BARRIER/LEVEL CROSSING UNGUARDED/ LEVEL CROSSING/ GUARDED LEVEL-CROSSING/ LEVEL CROSSING/ LEVEL CROSSING GUARDED BY GATES/LEVEL CROSSING WARNING CROSS/LEVEL CROSSING STOP SIGN/UNGUARDED LEVEL CROSSING/UNGUARDED LEVEL-CROSSING/LEVEL-CROSSING WITH GATES /LEVEL-CROSSING WITHOUT GATES/RAILWAY ADVANCE WARNING/RAILWAY CROSS-BUCK SIGN/UNPROTECTED RAILROAD-CROSSING/ PROTECTED RAILROAD CROSSING. Signs dealing with railway/-road/level-crossings are among the most common Warning Signs and included by all systems. Frequently these forms of Signs are a subdivision themselves. Level-crossing is the preferred terminology in European practice and systems so influenced. There are a great many Sign terms in this group yet they refer to a narrow range of messages which create a high degree of coherence. Railroad Advance Warning Signs in U.S. MUTCD 1961 and newer editions are black on yellow with St. Andrew's Cross. Hawkins 7-92 includes a Railroad Sign from AASHO 1927 which displays a Saint George Cross (or plus sign).

Signs for Railway Crossings with gates often display a representation of a gate. Those lacking gates frequently display a picture of a locomotive or a section of track imposed on a St Andrew's Cross. The U.S. displays a St Andrew's Cross accompanied by the letter "R" flanking the Cross; this is also the practice of Ecuador. Cross Buck Signs are often a St Andrew's Cross rather than a representation embossed on a Sign plate. Such Signs are larger than many other Traffic Signs. U.S. MUTCD1971 moved Railway Crossbuck Signs to the Regulatory category from the Warning category.

ADVANCE CROSSING SIGN. U.S. MUTCD1978 distinguishes between Crossings and Advance Crossings. Advance Crossing indicates possible though not expected entry onto a roadway by cyclists, animals, etc. Crossing Signs include double line indicating actual crossing; especially at human crossings.

BEWARE OF ANIMALS. Animal-related Signs are found with only a few systems. However, more modern systems often include animal-related Signs: UN 1968, ECAFE 1964 and Western Hemisphere systems. National codes may, of course, contain Signs missing from international codes. However, this first of the animal Signs is found only in ECAFE 1964. In most instances UN GERSS 1952 is the repository of Signs found in ECAFE though not in this instance. The

ECAFE 1964 graphic representation is difficult to identify. It is perhaps a composite of several animals or possibly a water buffalo.

CATTLE OR OTHER ANIMAL CROSSING. This Sign has two versions in this category for UN 1968: a domestic animal which may be a cow (though a quite stout cow), and a wild animal which may be a deer, stag or similar beast.

CATTLE CROSSING. This Sign, in IAMM 1967, bears a strong resemblance to that of the previous Signs from UN 1968. U.S. MUTCD 1961 includes this Sign in word form; newer editions have graphic representations. Canada 1985 also includes this Sign.

DEER CROSSING. Signs under this title are found in IAMM 1967 and U.S. MUTCD 1961. IAMM employs a graphic representation very similar to that of the second sign of U.N. 1968 (Cattle Crossing or Other Animal Crossing). U.S. MUTCD 1961 uses words but a graphic image is included in the1971 edition. Canada 1985 also includes this Sign.

MOOSE CROSSING SIGN. Canada 1985 appropriately add a Moose Crossing Sign which displays a great beast with dramatic antlers.

RANGE CATTLE. This Sign appears in U.S. MUTCD 1961. It is one of a series of Other Warning Signs. No representation is included.

2B6 Construction & Maintenance Signs

It can be debated whether or not this segment is needed since most systems have a single Road Works Sign. However, at least two systems Canada and the U.S. have many Signs in of this sort and therefore the segment is needed. Both unitary Road Work Signs as well the expanded Signs of those two systems are included.

ROAD WORK/ROAD WORKS. This general purpose Sign is the only Construction & Maintenance Sign for a variety of systems. It warns of the approach of a road work area. It is found in U.N. 1949 and U.N. 1968, U.N. GERSS 1952 and ECAFE 1964. Canada 1976 speaks of Road Work instead of Road Works. Canada's version has a pictograph character to it while other versions bear a more literal resemblance to the human form. U.N GERSS 1952 is akin to the Canadian version though a variant design. The Road Repairs Ahead Sign of IAMM 1967 is similar.

ROAD REPAIRS AHEAD SIGN. IAMM 1967 contributes this Sign which is similar to the Road Work Sign though the graphic representation is somewhat

different. Mexico has a variant form of the IAMM Sign in IAMM 1981.

ROAD WORK AHEAD. This U.S. MUTCD 1961 has a word inscription format. That is true of all U.S. Construction and Maintenance Signs of that time. The Signs have a yellow ground while more recent Signs have an orange ground.

MEN WORKING SIGN. Hawkins 7-1992 includes this Sign which originates with AASHO 1927.

U.S. has a broad range of C & M signs. These include:

ROAD CONSTRUCTION ... FEET/DETOUR AHEAD/ROAD [STREET] CLOSED ... FEET/ONE LANE ROAD ... FEET/MEN WORKING/FRESH OIL/ROAD MACHINERY AHEAD/ SHOULDER WORK AHEAD/ SURVEY [CREW] PARTY SIGNS/FLAGGER/ FLAGMAN ... FEET/ LEFT [RIGHT] LANE CLOSED [AHEAD]/SINGLE LANE ... FEET/WORKER/ WORKER/BLASTING ZONE __ FEET/TURN OFF 2- WAY RADIO/END BLASTING ZONE/END CONSTRUCTION/PILOT CAR FOLLOW ME.

Canada also has a variety of Signs in this category which is termed Temporary Conditions & Developments. Symbols consist of pictographs of person, flag and survey equipment. These Signs include:

ROADSIDE DIVERSION/DETOUR/FLAGMAN/SURVEY CREW/ TRUCK ENTRANCE SIGNS.

2B7 Other Hazards Signs

This segment contains two groups of Signs: a) General or Alternative Danger Signs present in many systems, and b) miscellaneous forms found in one or, at most, a few other system.

European systems have had two general purpose Danger Signs. One form continues to this day and it displays a !. The form is termed General Danger Sign or equivalent title. The other form is a hollow Sign and is associated with LN forms. There are three members of this group:

a) General or Alternative Danger Signs

OTHER DANGERS. A Sign under this heading is found in UN 1949 and UN 1968. The 1949 version has a vertical bar while the 1968 form has an exclamation

point.

GENERAL DANGER SIGN. LN 1939 includes the red hollow triangle Sign under this title. No mention of climatic factors in the accompanying description. It can serve as a substitute for the other Danger Signs. A supplemental plate illustrates or describes the actual danger.

ALTERNATIVE GENERAL DANGER SIGN. The General Danger Sign has this title in LN 1928. It is hollow in order to be usable in several climatic conditions. LN 1926 has the same sign where it is referred to as a Hollow Sign.

ALTERNATIVE SIGN. LN 1931 employs this title for the hollow sign. "[A]tmospheric conditions" dictate the use of the hollow Sign.

DANGERS OTHER THAN THOSE INDICATED BY SIGNS 1-6 BIS. An awkwardly termed Sign. LN 1939 includes this Sign which has the standard shape and color. It displays a broad vertical bar which is termed an "exclamation mark" though it lacks the usual period. UN 1968 (Other Dangers) has a similar sign with a conventional exclamation point. LN 1931 describes the graphic symbol as a vertical bar not as an exclamation mark.

PELIGRO. This Sign from Chile can be translated as Danger. It is used to advise the driver of the existence of some danger arising from problem or difficiency in the road: different levels of pavement, water drains, chuck holes, etc. This Sign displays the normal warning shape of a diamond with yellow ground, and black dashes forming an octagon. It appears to be a type of general purpose or miscellaneous Danger Sign suggesting older European Signs designed to cover a variety of problems.

b) Miscellaneous Forms

ADDITIONAL PANELS. UN 1968 and ECE 1995 has a number of Additional Panels including two for Warning Signs. These Panels are akin to supplemental plates in the U.S. One indicates the distance to a Warning Sign while the other indicates the length of roadway to which the Sign refers. Both are rectangular in shape with black letters and numbers on white ground.

ADVISORY EXIT SPEED SIGN. This Sign indicates exit speed when road conditions and other factors require notification of the recommended speed. The Sign follows the standarding Warning Sign colors of black on yellow. Word messages list the exit and speed limit, or ramp and speed limit. It is found in U.S. MUTCD 1971 and newer editions.

ADVISORY SPEED PLATE. This is a Warning Sign not a Regulatory Sign. It accompanies appropriate Warning Signs where speed reduction is needed. U.S. MUTCD 1961 and newer editions contain the Sign.

AIRFIELD/AIRPLANE. These Signs indicates an airport or low-flying planes. UN 1968 includes the first Sign under Airfield with a representation of a commercial airplane which refers to low flying planes. IAMM 1967 employs the term Airplane which, curiously, refers to an airport or to planes. An Airport Sign can also be found in Regulatory Signs.

BRIDLE PATH. A Miscellaneous Sign for U.S. MUTCD 1961. It is part of the Other Warning Signs list which lack visual representation.

CHEVRON/CHEVRON ALIGNMENT SIGN. This Sign consists of rectangular shaped panels with each displaying a single large black chevron on yellow ground. It can replace or supplement the Large Arrow Sign. The Chevron gives additional warning of changes in road alignment. U.S. MUTCD editions include it and Canada 1985 adds the Sign.

CROSS-WIND SIGN. This Sign found in UN 1968 displays a representation of a airport wind-sock. IAMM 1967 has a version displaying a palm tree in a full gale; it indicates the presence of strong side winds.

DEAD END SIGN/NO OUTLET SIGN. These Signs warn of a street lacking outlet other than the point of entry. It is from U.S. MUTCD 1971.

DIVIDED HIGHWAY AHEAD SIGN. Canada 1985 includes this Sign with a display of a vertical black bar representing a highway intersected by horizontal bars with arrow heads pointing left and right.

DIVIDED HIGHWAY SIGN. This Sign indicates the beginning of a section of highway divided by a barrier. An older version in the U.S. had a word message while a new version displays a graphic symbol indicating highway is to become divided. For a time a supplemental plate with a word inscription was retained. IAMM 1967 and Canada 1976 also include this Sign.

DIVIDED HIGHWAY ENDS. This Sign announces the end of a divided highway. U.S. MUTCD 1971 had a word form but later dropped in favor of a graphic form. IAMM 1967 and Canada 1976 also include this Sign. The Sign has a reverse symbol of the Divided Highway Sign indicating the highway is to unite.

HAZARDOUS CONDITION SIGN. This Sign from U.S. MUTCD 1978 refers to bicycles. It displays a bicycle at a angle with curved lines accompanying it. The format is similar to that of the Slippery When Wet Sign. A Supplemental Plate can have one of several messages including Slippery When Wet, Steel Deck, Rough Pavement, Ford, Bridge Joint.

CHILDREN SIGN. A variety of systems that have Children Signs lack School Signs (or vice versa). Apparently only IAMM 1967 has both. Graphic representations often display two children in motion. IAMM 1967 refers frequently to a playground rather than a school area locale yet this Sign displays one child at play. School Signs are seemingly more associated with the Western Hemisphere.

CONGESTION SIGN. ECE 1995 adds this Sign. It indicates areas of serious traffic congestion by an illustration of three cars in close proximity to one another.

CROSS WALK. This Sign designates a cross walk rather than a pedestrian crossing though the two forms clearly overlap. U.S. MUTCD 1961 may be the only system with such a Sign. But no representation is included.

PEDESTRIAN CROSSING AHEAD SIGN/PEDESTRIAN CROSSING SIGN/ PEDESTRIAN CROSSWALK. A Sign found in many systems. A single adult figure -- nearly always male -- is displayed between lines for UN 1968; Canada 1976 has one line; ECAFE, UN GERSS 1952 no lines. U.S. MUTCD 1961 retained word inscriptions for this Sign as well as many others. But newer editions offered graphic versions. Canada 1985 replaces older forms with pictographs.

PLAYGROUND AHEAD SIGN/PLAYGROUND SIGN. Few systems include these Sign. Canada 1976 includes a representation similar to that of IAMM 1967 (for the Childen Sign) though the Sign refers to a playground situation. In newer editions of MUTCD the U.S. includes a representation of a teeter-totter with pictograph figures (but not in U.S. MUTCD 1988).

SCHOOL SIGN/SCHOOL AHEAD/SCHOOL CROSSING/ SCHOOL ZONE. These Signs display great diversity. The Canadian School Ahead Sign is pentagonal shaped with white rim, blue ground and white figures. Canada 1985 replaces old human figures with pictographs. The U.S. 1971 School Advance Sign is pentagonal-shaped with black symbols on a yellow ground. The School Crossing Sign is similar but with lines added (indicating crosswalk). IAMM 1967 has a diamond shaped sign with two non-descript children embossed on it. ECAFE 1964 and UN GERSS 1952 displays two children with the male child the

larger of the two. UN 1968 has a similar pattern.

SCHOOL BUS STOP AHEAD SIGN. This Sign provides advance notice of school bus stops where limited visibility of such Signs occurs. Word message format is used in U.S. MUTCD 1971 and 1978. Canada 1985 displays a silhouette of a bus with representation of flashing light and pedestrians in pictograph form.

SCHOOL CROSSWALK SIGN. Canada 1985 displays pictographs of two people over a horizontal line. And older version of this Sign had a large "X" and the word School.

SCHOOL SPEED LIMITS SIGN. A partial warning and partial regulatory Sign. The word school, in black and yellow, is attached to Speed Sign or is even an integral part of a School Speed Sign. It appears in U.S. MUTCD 1971 and newer editions.

SNOWMOBILE CROSSING SIGN. This Sign from Canada 1985 display a silhouette of a snowmobile next to a graphic design of a crossing zone.

BICYCLE CROSSING WARNING SIGN/CYCLISTS ENTERING OR CROSSING. These Signs denote bicycles crossing, entering a roadway. The Canadian version displays a bicycle without rider; U.S. MUTCD 1971 has a similar Sign. The second Sign, from U.N. 1968, has a rider on bicycle; but as is often the case the rider is male. IAMM 1967 has an apparent unisex figure on a bicycle.

SLIPPERY WHEN WET BICYCLE PATH SIGN. This Sign is from Canada 1985. It displays a bike with skid marks.

FARM MACHINERY. This Sign indicates places where farm machinery may be on the road, or crossing a road. The graphic representation is of a tractor with farmer. It is found with IAMM 1967 and U.S. MUTCD 1971.

TRUCK CROSSING/TRUCK ENTRANCE SIGN, RIGHT, LEFT. These Signs indicate where trucks cross a road or enter a road. These Signs appear to be confined to U.S. MUTCD editions and Canada 1976. The Canadian Truck Entrance Sign displays a truck next to a segment of road. One version has the truck to the left of the road representation while the the truck is to the right in the second form. U.S. MUTCD 1961 lacks representation of the Truck Crossing Sign. Newer editions include a graphic representation though only in the Construction and Maintenance category.

EXIT. This Sign is listed in U.S. MUTCD 1961 in the Miscellaney category. There is no illustration. The Sign appears in newer editions of U.S. MUTCD as an Exit Only Sign. It is a Warning Sign but appears in the Regulatory category in U.S. MUTCD 1971 and since.

FACTORY ENTRANCE. This Sign appears in U.S. MUTCD 1961 as an example of a Miscellaneous Warning Sign. There is no representation of it.

NO PASSING ZONE SIGN. This Sign indicates a No-Passing Zone that is marked by Pavement Markings. The Sign is pennant-shape (triangle with one point horizontal) with word inscription. U.S. MUTCD 1978 and 1988 include it.

NOTICE BOARDS. Noble 1946 includes this Sign which apparently refers to private Traffic Signs in the 19th century. The uses included caution (danger) signs at sharp curves, hills by cycling groups.

ROAD DIVERSION. This Sign can be regarded as a road detour Sign though under a different name. It contains a graphic representation of a road detour route and is included in ECAFE 1964.

RULE OF ROAD. This Sign indicates which side of the road traffic travels in a given country. ECAFE 1964 includes this Sign in three formats: Keep Right, Keep Left and Move to Right versions. The Signs appear at the borders of a nation.

SNOWFLAKES. ECE 1995 includes this Sign with Additional Panels section. It indicates ice or snow conditions that create slippery road conditions. The sign is black on white. It is not clear why the Sign is a Regulatory Sign in Additional Panels. It is similar to the Slippery When Wet Sign which is a Warning Sign in various systems.

TEMPORARY TWO-WAY AHEAD. IAMM 1967 alone includes this Sign. It can be contrasted with Signs indicating permanent two-traffic situations. Two-Way Traffic and Two-Way Traffic Ahead Signs for Canada and the U.S. are in the Regulatory category (But U.S. 1971 included the Two-Way Sign as a Warning Sign).

UNEVEN TRACKS. This Sign is listed in U.S. MUTCD 1961 without explanation (It is listed among "Other Warning Signs" none of whom are described). Newer editions of U.S. MUTCD do not mention it. The Rough Road Sign may be similar to it.

CHAPTER THREE REGULATORY SIGNS

3A Indexes: Category and Alphabetical
3A1 Category Index
Outline of Categories:
Priority Signs
Prohibitive & Restrictive Signs
Prohibitive & Restrictive of Entry
" " " of Turns/U-Turns
" " " of Overtaking
Speed Limits
Miscellaneous, Single Forms & End of Prohibition or Restriction
Mandatory Signs
Parking & Standing Signs
Contents of Categories:
3B Regulatory Signs Entries
3B1 Priority Signs
Give Way/Yield Sign
Stop Sign
Priority Road Sign/End of Priority Sign
Stop, Children Crossing Sign
Additional Panels
Slow-Major Road Ahead
Halt at Major Road Ahead
3B2 Prohibitive & Restrictive
a) Prohibitive & Restrictive of Entry
(1) One-Way & Both Direction Forms
No Entry Sign
Do Not Enter Sign
Direction Prohibited Sign
Closed to All Vehicles in Both Directions/Closed to All Vehicles Sign
(2) Categories of Exclusion
No Entry for any Power Driven Vehicle Except Two-Two-Wheeled Motor Cycles w/o Side Car Sign/ No Entry Motor Cycles/... Cycles/...Mopeds/...Goods Vehicles/... Any Power Driven Vehicle Drawing a Trailer Other Than A Semi-Trailer or a Single Axle Trailer/... For Pedestrians/
No Entry for Animal-Drawn Vehicles/...For Handcarts/...

Power Driven Agricultural V.../Vehicles Carrying Dangerous Goods for Which Special Sign Plating is Prescribed

No Entry for Goods-Carrying Vehicles/No Entry for Motor Vehicles/No Entry for Bicycles

Motor Traffic Prohibited/Motor Lorries Pr./Motor--cycling Pr./Cycling Pr./Riding [Horses] Pr. Cycling Pr./Riding [Horses)Pr.

No Trucks/No Passenger Cars/No Animal-Drawn Carts/ No Bicycles/No Farm Machinery

No Motor Vehicles/No Trucks/Trucks Excluded/ Commercial Vehicles Excluded/Pedestrians Excluded/ Commercial Vehicles with Lugs Pr./Pedestrians, Bicycles, Motor-Driven Cycles Pr./ Pedestrians & Bicycles Pr./No Bicycles/Cycling Pr./Bikes, Trucks, Motor Cycles Pr Pr.

Play Street: Prohibited All Vehicles __To__Unless Calling at Premises in the Street

(3) Vehicular Exclusion: Weight, Height, & Length

No Entry for Vehicles Having An Over-All Width Exceeding... Metres (...Feet) Sign/No Entry for Having an Height Exceeding ... Metres (...Feet) Sign/ No Entry For Vehicles Exceeding ... Tons Laden Weight Sign/No Entry For Vehicles Exceeding ... Tons on One Axle Sign/No Entry For Vehicles or Combination of Vehicles Exceeding ...Metres (... Feet) in Length Sign

Weight Limit Sign (LN 1931 & LN 1939) Maximum Width of Vehicles/Maximum Height of Vehicles (1939 only)/No Entry for Vehicles Having an Axle Weight Exceeding ... Tons (UN 1949)/Axle Weight Limit ... Tons/Maximum Load Per Axle

Weight Limit ... Tons/Axle Weight ...Tons Sign/No ... Tons Sign/No Trucks Over ... Lbs Empty Weight Sign/Weight Limit ... Tons Per Axle ... Tons Gross Sign

Maximum Load Sign/Maximum Height Sign/Maximum Width Sign/Maximum Length Permissable Sign.

(4) Miscellaneous & Single Forms

Driving of Vehicles Less Than ... Metres (... Yard) Apart Prohibited Sign

b) Prohibitive & Restrictive of Turns & U-Turns (About-Turns)

No Left Turn/No Right Turn/Turning to the Left (R) Right Prohibited/Turn Left (R)/No Turn on Red/Right Turn on Red After Stop/No Right Turn on Red Traffic Signal/ U-Turns Signs/No About-Turn (U-Turns)/ No Turns/

Do Not Block Crossroads

c) Prohibitive & Restrictive of Overtaking (Passing) Forms

Overtaking Prohibited Sign/Overtaking By Goods Vehicle Prohibited Sign

Do Not Pass Sign

No Overtaking Sign

Stopping Prohibited

d) Prohibitive & Restrictive: Speed Limits

Maximum Speed Limited to the Figure Indicated Sign/ Maximum Speed Zone/Speed Zone Ahead/Speed-Limit Speed Limit Sign/Speed Limit 30 MPH/30 MPH Speed Limit/Truck Maximum/Truck Speed Limit Sign/Night Speed Limit Sign/Minimum Speed Limit Sign/Reduced Speed Ahead/Reduced Speed Ahead/Speed Zone Ahead Reduced__Speed MPH Speed Limit __& Minimum Speed Limit

e) Miscellaneous, Single Forms & End of Prohibitive or Restrictive Forms

Additional Panels

Dangerous Goods Prohibited

Do Not Block Crossing

Inspection

Passing w/o Stopping Prohibited

Stop (Customs) Sign/Customs Sign/Stop Near Customs

Use of Audible Warning Devices/Prohibited Sign/Horn Blowing Prohibited Sign/Silence Sign

End of all Local Prohibitions Imposed on Moving Vehicles Sign/End of Prohibition of Overtaking Sign Speed Limit De-Restriction Sign

End ___ Mile Speed Sign/End of Speed Limit

Truck Inspection Station/Commercial Vehicles Next R/ Truck Inspection Advance Sign/Truck Inspection Station Exit Signs

3B3 Mandatory Signs

Direction to be Followed Sign

Compulsory Circulation Sign (I)

Pass This Side sign

Compulsory Circulation (II)
Keep Your Right/Turn Left Only/Turn Right Only/Keep Straight Ahead/Trucks to Right-Lane/Two Way Traffic Ahead/Pedestrians to The Left Signs/Turn Left (R) Signs/ Left (R) Turn Only
Left (R) Turn Only Lane/Straight Through or Left (R) Turn Only Lane/Right or Left Turn Lane Only/All Movements Permitted Lane/Straight Through Lane Only Sign/Double Right (L) Turn Only/Straight Through & Double Left (R) Turn Only/Two Way Left Turn Lane/Three Lane Turn Movement Sign
Compulsory Roundabout Sign
Compulsory Cycle Track/Compulsory Foot-Path/ Compulsory Track for Riders on Horseback/Compulsory Minimum Speed/End of Compulsory Minimum Speed/ Snow Chain Compulsory Signs
Divided Highway Crossing
Lane-Use Control Signs
Mandatory Movement Signs/Option Movement Signs/ Mandatory Turn/Signs/Double Turn Signs
Slower Traffic Keep Right/Trucks Use Right Lane/ Truck Lane ___Feet Signs/Keep Right Signs
Slower Traffic Keep To Right/Slower Traffic Use Right Lane
One Way Sign/One Way Signs
Keep Left [Right] Dual Carriageway/ Turn Left [Right] One Way Only Signs
Entry Only-One Way Street
One-Way Sign (II)
Passing Lane Ahead
Preferential Lanes Sign
Begin Right Turn Lane Yield to Bikes
Signs Indicating a Regulation or Danger Warning Applying to One or More Traffic Lanes
CompulsoryMinimum Speed Applying to Different Lanes/ Compulsory Minimum Speed Applying to One Lane/Speed Applying to Different Lanes
Signs Indicating Lanes Reserved For Buses
Snowmobile Route/Snowmobile Prohibition
Truck Route/All Trucks Commercial Vehicles Next Right
Lane Use Restriction Sign
Yield Centre Lane to Opposing Traffic Sign

Tunnel
Keep Left/Turn Left/Keep Left of Island Signs
Keep Right Except to Pass
Left Lane for Passing Only
Road Closed/Road Closed__Miles Ahead-Local Traffic Only/Road-Closed/Road Closed to Thru Traffic
Slower Traffic Use Right Lane
Travelpath Restriction Sign

3B4 Standing & Parking Signs
Parking Sign
No Parking/Restricted Parking/No Parking & No Stopping
No Parking/No Waiting/Parking Signs/Prohibition of Parking
Waiting Prohibited/Stopping Prohibited Signs
No Parking/No Parking __ to __/No Parking Except Sundays & Holidays/No Stopping or Standing/One Hour Parking/No Parking Loading Zone/No Stopping/No Standing Anytime/No Parking Bus Stop
Parking Prohibited/Parking Prohibited Zone/ Standing & Parking/ Alternate Parking/Limited Duration Parking Zone/Parking Signs
Handicapped Parking
End of Parking
Parking Prohibition Zone/Parking Prohibited at Certain Times Zone/Parking Zone/End of Parking Prohibited Zone/ End of Parking Zone
Limited Duration Parking Zone Exit Sign
Restricted Stopping or Waiting Sign
Waiting on Alternate Sides Sign
No Parking on Pavement/No Stopping on Pavement/No Parking Except on Shoulder/No Parking/ Emergency Stopping/Emergency Parking Ony Signs
No Waiting This Side Today/Waiting Limited to __ In Any Hour Signs
No Parking/Parking Signs
No Parking - Bike Lane
Multiple Parking Control
Rural Parking Control/Rural Stopping Control
Stopping is Prohibited
Urban No Stopping Signs/Stopping Control Sign/Rush Period Stopping Control Sign/Part Time Stopping Control Sign

Urban Parking Control/Parking Control/Part-Time/Parking Limit

3B5 Pedestrian Crossings
- No Pedestrian Crossing
- Pedestrian Crossing Sign
- Pedestruab Crosswalk/Playground Crossing/School Crossing
- Use Ped Signals
- Yield to Peds
- Use Cross Walk
- Cross on Green Light Only/Cross on Walk Signal Only/Push Button for Green Light/Push Button for Walk Signal

3B6 Miscellaneous Regulatory Signs
- No Hitchhiking
- Civil Defense Signs:
  - Evacuation Route
  - Area Closed
  - Traffic Regulation Post
  - Maintain Top Safe Speed
  - Road Use Permit Required for Thru Traffic
  - Emergency Aid Centers
    - Decontamination Center
    - Registration Center
    - Welfare Center
    - Medical Center
  - Fallout Shelter__Miles

3A2 Alphabetical Index

End of Prohibition of Overtaking Sign: End of all Local
End of Speed Limit
Entry Only - One Way Street
Evacuation Route

Fallout Shelter ... Miles

Give Way

Halt at Major Road Ahead
Handicapped Parking
Horn Blowing Prohibited

Inspection

Keep Left [R]: Slower
Keep Left [Right] Dual Carriageway
Keep Left of Island
Keep Right
Keep Straight Ahead
Keep Your Right

Lane-Use Control Signs
Lane-Use Restriction Sign
Left Lane for Passing Only
Limited Duration Parking Zone Exit Sign

Maintain Top Safe Speed: Civil Defense
Mandatory Movement Signs
Mandatory Signs
Mandatory Turn Signs
Maximum Height Sign
Maximum Height of Vehicles
Maximum Length Permissable Sign
Maximum Load Sign
Maximum Load Per Axle
Maximum Speed Limited to the Figure Indicated Sign
Maximum Speed Zone
Maximum Width Sign
Maximum Width of Vehicles
Minimum Speed Limit
Miscellaneous Regulatory Signs

Motor Lorries Prohibited
Motor Traffic Prohibited
Motorcycling Prohibited
Multiple Parking Control

Night Speed Limit
No About Turn (U-Turns)
No Animal-Drawn Carts
No Bicycles
No Entry
No Entry for Animal-Drawn Vehicles
No Entry for Any Power Driven Vehicle Drawing a Trailer Other Than a Semi-Trailer or a Single Axle Trailer
No Entry For Cycles
No Entry for any Power Driven Vehicle Except Two-Wheeled Motor Cycles w/o Side Car
No Entry for Bicycles
No Entry for Handcarts
No Entry for Pedestrians
No Entry for Goods-Carrying Vehicles
No Entry for Motor Vehicles
No Entry for Vehicles Having An Axle Weight Exceeding Tons __Weight Limit
No Entry for Vehicles Having An Over-all Width Exceeding ... Metres (...Feet)
No Entry for Vehicles Having A Height Exceeding ... Metres (... Feet)
No Entry for Vehicles Exceeding ... Tons Laden Weight
No Entry for Vehicles Exceeding ... Tons on One Axle
No Entry for Vehicles or Combination of Vehicles Exceeding ... Metres (... Feet) in Length
No Entry For Goods Vehicles
No Entry For Mopeds
No Entry For Motor Cycles
No Entry Power Driven Agricultural Vehicles
No Animal-Drawn Carts
No Bicycles
No Farm Machinery
No Hitchhiking
No Left Turn

No Overtaking
No Parking
No Parking/Bike Lane
No Parking Bus Zone
No Parking & No Stopping
No Parking __ to __
No Parking Except on Shoulder
No Parking Except Sunday & Holidays
No Parking Loading Zone
No Parking on Pavement
No Passenger Cars
No Pedestrian Crossing
No Right Turn
No Right Turn on Red Traffic Signal
No Trucks
No Trucks Over Lbs Empty Weight Limit
No Turns
No Turn on Red/Right Turn on Red After Stop
No U-Turns
No Stopping on Pavement
No Stopping on Shouler
No Stopping or Standing
No Waiting
No Waiting This Side Today

One Hour Parking
One Way
One Way [II]
One Way Only
Option Movement
Overtaking By Goods Vehicle Prohibited
Overtaking Prohibited

Parking
Parking & Standing Signs
Parking Control: Urban Parking
Parking Limit: Urban Parking
Parking Prohibited/End of Parking Prohibited Zone
Parking Prohibited Zone/Parking Prohibition At Certain Times Zone
Parking Zone: Parking Prohibited Zone
Part Time: Urban

Part Time Stopping Control: Urban
Pass This Side Sign
Passing Lane Ahead
Passing w/o Stopping Prohibited
Pedestrian Crossing Sign
Pedestrian Crosswalk Sign
Pedestrians & Bicycles Prohibited
Pedestrians, Bicycles, Motor-Driven Cycles Prohibited
Pedestrians Excluded
Pedestrians to the Left
Play Street: Prohibited All Vehicles __ to __Unless Calling at Premises in the Street
Playground Crossing: Pedestrian Crosswalk
Preferential Lane Sign
Priority Signs
Priority Road Signs/End of Priority
Prohibition & Restrictive: Speed Limit
Prohibition & Restrictive: of Entry, Turns, U-Turns, Overtaking
Prohibition of Parking: No Parking
Prohibitory Signs
Prohibitive & Restrictive Signs

Reduced Speed MPH
Reduced Speed Ahead: Speed Zone
Regulatory Signs
Restricted Parking: No Parking
Restricted Stopping or Waiting
Riding [Horses] Prohibited
Road Closed
Road Closed __Miles Ahead - Local Traffic Only
Road Closed to Thru Traffic
Road Use Permit Regulations for Thru Traffic: Civil Defense
Rural Parking Control
Rural Stopping Control

School Crossing: Pedestrian Crossing
Signs Indicate Speed Limit Applies to Different Lanes
Signs Indicating a Regulation or Danger Warning Applying to One or More Traffic Lanes

Signs Indicating Lanes Reserved for Bus
Silence Sign
Slow - Major Road Ahead
Slower Traffic Keep Right
Slower Traffic Keep to Right
Slower Traffic Use Right Lane
Snow Chains Compulsory
Speed Limit __ & Minimum Speed Limit: Speed Zone
Speed Limit Applying to Different Lanes
Speed Limit/Speed-Limit
Speed Limit De-Restriction Sign
Speed Limit 30 MPH
Speed Zone Ahead
Standing & Parking
Stop, Children Crossing
Stop (Customs) Sign
Stop Near Customs Sign
Stop Sign
Stopping is Prohibited
Stopping Prohibited: Waiting Prohibited
Straight Through or Left: Left (R) Turn

Three Lane Turn Movement
Traffic Circle
Traffic Regulatory Post: Civil Defense
Travelpath Restriction
Truck Inspection Station Advance
Truck Inspection Station Exit
Truck Lane __Feet Signs
Truck Maximum: Truck Speed Limit
Truck Route
Truck Speed Limit
Trucks Commercial Vehicles Next Right
Trucks to Right-Lane
Trucks Use Right Lane
Tunnel Sign
Turn Left (R)
Turn Left [Right] Only
Turn Left [Right] One Way Only
Turning to the Left [Right] Prohibited
Two Way Left Turn Only

Two Way Traffic Ahead

Urban No Stopping Sign
Urban Parking Control
Use of Audible Warning Devices Prohibited Sign
Use Cross Walk
Use Pedestrian Signals

Vehicles with Lugs Prohibited: No Motor Vehicles

Waiting Limited to __ In Any Hour
Waiting on Alternate Sides
Waiting Prohibited
Weight Limit
Weight Limit ... Tons
Weight Limit ... Tons Per Axle ... Tons Gross

Yield Signs
Yield Centre Lane to Opposing Traffic Sign
Yield to Ped

3B Regulatory Signs-Entries
3B1 Priority Signs

UN 1968 has created a new category of signs termed Priority Signs that bridges some of the Signs of the Regulatory and Warning categories. The Stop Sign, the Yield/Give Way sign, and Signs regulating the priority of vehicles are all part of this segment. While other systems may have created a subdivision for the Stop Sign and Yield Sign they do not have a priority group. The UN category is partly adopted for the Database; however, Warning Signs for priority matters are to be found within the Warning category.

GIVE WAY/YIELD SIGN. This Sign requires stopping when traffic is present on intersecting routes. This sign is triangular in shape with a single point downwards. UN 1968 refers to it as having a white ground and red border without other symbols. The IAMM 1967 version has a somewhat narrow border when Yield or Ceda El Paso is added and a wider one when no words are included. U.S. MUTCD 1971 and newer versions has a border so wide that it could be considered as a ground color with a white insert and white rim. The older Yield Sign displayed a yellow ground with black rim and the world "Yield" in black. ECE 1995 has a Give Way Sign similar to UN 1968 except that ECE permits a yellow ground. The Give Way Sign is not found in older systems.

SLOW-MAJOR ROAD AHEAD SIGN. U.K. included this Sign in OBS. It displays the triangle within circle from LN followed by message consisting of the word Slow followed by broad black horizontal bar intersected by a narrow vertical bar (akin to that of a priority road sign) and concluded with the words "Major road ahead." The Sign may constitute a form of Yield Sign. UK MOT and Noble 1946 also include this Sign.

STOP SIGN. This Sign requires a full stop before entering an intersection. UN 1968 has two models of the Stop Sign and the American model is the first rather than second for the UN (frequently the European model for Traffic Signs is the first model in UN 1968). That model is octagonal in shape with white rim, red ground and the word "Stop" in white. The second model, the European, is circular with a white or yellow ground and a red border. Within this model is the Give Way Sign (Triangle with red border) and within that is the word "Stop."

U.S. MUTCD editions adds supplemental plates for the Stop Sign that read FOUR-WAY and ALL-WAY. U.S. MUTCD 1961 includes the four-way form and U.S. 1971 added the second.

IAMM 1967 employs the American model. UN GERSS 1952 also adopted that

model but added a black horizontal bar with vertical insert upon which the word "Stop" is printed in white; the ground color is also white; ECAFE 1964 employs the GERSS version. According to IAMM 1981 Uruguay uses the GERSS version. IAMM 1967 and IAMM 1981 approves a choice of four words for the Stop message: Stop, Alto, Arrete, Parada. UN 1949 employs the European model; LN 1939 has a similar Sign though it was classified as a Warning Sign. UN ECE 1995 has adopted the American model.

OBS 1950 adopted the European model and added a plate with white ground, black rim and the word inscription: Halt at Major Road Ahead. CASATC 1950 deploys a disc with red border and white ground and a rectangular plate with the word "Stop."

HALT AT MAJOR ROAD AHEAD. This is the U.K. version of the Stop Sign. It combines the European model of the Stop Sign with a plate with white ground, black rim and a word inscription. See also Stop Sign coverage above.

PRIORITY ROAD SIGN/END OF PRIORITY SIGN. This Sign denotes priority or right of way. A second sign indicates cessation of priority. These are apparently found only in UN 1949 and UN 1968. The sign is diamond shaped ("square with one diagonal vertical"). It has a black rim, white border, yellow or orange center. End of Priority has the same sign with a black or gray band running diagonally across the sign plate; the band can also consist of black or gray lines.

ADDITIONAL PANELS. ECE 1995 provides Additional panels or supplemental plates denoting priority routes. The symbols display a segment of roadway at intersections with black symbols on white ground.

STOP, CHILDREN CROSSING SIGN. This Sign from Noble 1946 is a Regulatory Sign of the Mandatory form. Details on the message dimensions are lacking.

3B2 Prohibitive & Restrictive Signs

a) Prohibitive & Restrictive of Entry

1) One-Way & Both Direction Forms

Methodological Note: UN 1968 is the benchmark for Signage. UN 1968 and preceding forms (primarily European in orgin) are first in the discussion of most Sign types. U.S. and Western Hemisphere types occupies second place (many of

which are in UN 1968 but with a different point of origin). OBS and variant forms are included when applicable.

OBS through MOT and Noble 1946 speaks of Prohibitory Signs rather than Prohibitive Signs. The variant terminology does not greatly alter the meaning if at all.

Visual Appearance. All of these signs (message part) are circular shaped (though the underlying Sign plates may be rectangular or square). The Sign varies in size according to location. Ground color is white or yellow. The Border is red and wide. Graphic symbols and word inscriptions (when present) are black or dark blue. Oblique bars (when present) are red sloping downward, left to right.

NO ENTRY SIGN. This Sign indicates entry prohibited for all vehicles. This Sign has two models. One displays a sold red disc save a horizontal white bar. The other displays a vertical black arrow with oblique bar. This sign has a white or yellow ground with wide red border. There are alternate names for this Sign as the following discussion will indicate. Older European forms are very similar though LN 1928 has a full-width bar and a supplemental plate indicating No Entry. LN 1928 also offered an alternate form with No Entry painted on the disc.

OBS 1950 employed a red disc with white bar, white border and black rim. No Entry was embossed on the white bar in black letters. CASATC apparently did not include this Sign.

DO NOT ENTER SIGN. This Sign is the equivalent of the No Entry Sign. U.S. MUTCD 1961 employed the word inscription form with this Sign: a square sign plate with white ground, black rim and the words "Do Not Enter" in black. U.S. now follows the U.N. pattern though the words "Do Not Enter" are added. A supplemental plate with the words One Way may be added. A WRONG WAY supplemental plate with white words on red ground was added by U.S. MUTCD 1971. It is also included by Canada 1985. Canada 1976 included Educational Tabs for Signs in transition from word to graphic forms but these have been dropped for this and other Signs.

DIRECTION PROHIBITED SIGN. The No Entry Sign becomes Direction Prohibited in UN GERSS 1952. This is the mandatory Direction to be Followed Sign with an oblique bar. UN 1968 has a different design for that Sign. IAMM 1967 employs the GERSS form which follows the second model of UN 1968.

CLOSED TO A LL VEHICLES IN BOTH DIRECTIONS/ CLOSED TO ALL VEHICLES. This sign displays the basic form of red border and white or yellow

ground. There are no other symbols displayed. It is included in UN 1968 and older European systems but found in other systems. Older sources speak of Closed to All Vehicles without explicitly of saying "In Both Directions."

2) Exclusion Categories of Vehicles Forms

NO ENTRY FOR . . . SIGNS. There are a diverse and numerous group of No Entry signs that follow the basic no entry pattern though indicating different categories of exclusion. These Signs include:

NO ENTRY FOR ANY POWER DRIVEN VEHICLE EXCEPT TWO-WHEELED MOTOR CYCLES W/O SIDE-CAR/... MOTOR CYCLES/CYCLES/MOPEDS/ GOODS VEHICLE/... ANY POWER DRIVEN VEHICLE DRAWING A TRAILER OTHER THAN A SEMI-TRAILER OR A SINGLE AXLE TRAILER/ ... FOR PEDESTRIANS/FOR ANIMAL-DRAWN VEHICLES/... FOR HANDCARTS/... POWER DRIVEN AGRICULTURAL VEHICLES/...VEHICLES CARRY-ING DANGEROUS GOODS FOR WHICH SPECIAL SIGN PLATING IS PRESCRIBED

UN 1968 employs the pattern of disc with white or yellow ground, red border, red oblique bar and graphic symbols representing the object of the exclusion. Many of the graphic symbols date back to the early twentieth century though representations of autos and trucks are periodically updated.

ECE 1995 contains a variant of the No Entry ... Any Power Driven Vehicle Drawing a Trailer that lacks any qualifying words. A supplemental plate with tonnage can be added to the ECE Sign. ECE 1995 adds a Sign for truck transporting dangerous goods; This Sign displays a silhouette of a truck in orange with red circle and bar.

NO ENTRY FOR GOODS-CARRYING VEHICLES/NO ENTRY FOR MOTOR VEHICLES/NO ENTRY FOR BICYCLES. UN GERSS 1952 includes basic forms of this category of Signs though titles may differ with those of UN 1968. ECAFE 1964 follows the UN GERSS pattern.

MOTOR TRAFFIC PROHIBITED/MOTOR LORRIES P/MOTORCYCLING P/CYCLING P/RIDING HORSE/P. LN 1928 offers an alternate formulation. The LN 1928 signs are also at variance with other LN systems: LN 1928 uses the double-sign system of U.K.

NO TRUCKS/NO PASSENGER CARS/NO ANIMAL-DRAWN CARTS/NO BICYCLES/NO FARM MACHINERY. For these Signs IAMM 1967 followed the UN GERSS 1952 pattern with circular discs and oblique bars. However, Sign names are different from similar Signs of other systems.

NO MOTOR VEHICLES/NO TRUCKS/TRUCKS/EXCLUDED/ COMMERCIAL VEHICLES EXCLUDED/PEDESTRIANS EXCLUDED/ VEHICLES WITH LUGS PROHIBITED/COMMERCIAL VEHICLES WITH LUGS PROHIBITED/ PEDESTRIANS BICYCLES MOTOR-DRIVEN CYCLES PROHIBITED/ PEDESTRIANS AND BICYCLES PROHIBITED/NO BICYCLES /BIKES, TRUCKS, MOTORCYCLES PROHIBITED. The U.S. MUTCD 1961 Signs contains word inscriptions exclusively though some U.S. 1971 Signs use graphic symbols. U. S. practice expanded graphic symbols, including the use of red discs and oblique bars, in 1978. There is some overlap in types of Signs between IAMM 1967 and U.S. 1961. Canada 1985 employs pictographs. IAMM 1981 includes a Mexican sign combining prohibition on bikes, trucks and motorcycles together.

PLAY STREET: PROHIBITED ALL VEHICLES __ TO __ UNLESS CALLING AT PREMISES IN THE STREET. OBS has, apparently, one sign in this category; it follows the double-sign pattern of OBS. CASATC 1950 apparently has no signs in this category.

3) Vehicular Exclusion: Weight, Height and Length Forms

UN 1968 offers five Sign models in this category. The Sign pattern consist of a disc with red border and white or yellow ground. The oblique bar is absent.

NO ENTRY FOR VEHICLES HAVING AN OVER-ALL WIDTH EXCEEDING ... METRES (... FEET) SIGN/NO ENTRY FOR VEHICLES HAVING AN OVER-ALL HEIGHT EXCEEDING ... METRES (... FEET) SIGN/NO ENTRY FOR VEHICLES EXCEEDING ... TONS LADEN WEIGHT SIGN/NO ENTRY FOR VEHICLES HAVING A WEIGHT EXCEEDING .. TONS ON ONE AXLE SIGN/NO ENTRY FOR VEHICLES OR COMBINATIONS OF VEHICLES EXCEEDING ... METRES (... FEET) IN LENGTH SIGN

Symbols consist of numbers, word abbreviations and graphic symbols indicating the limits covered by the sign. All symbols are in black. UN GERSS 1952 Signs are very similar to UN 1968 Signs except there is no Sign indicating maximum weight per axle limitations.

WEIGHT LIMIT SIGN (LN 1931 and LN 1939)/ MAXIMUM WIDTH OF VEHICLES/MAXIMUM HEIGHT OF VEHICLES (Both 1939 only)/NO ENTRY FOR VEHICLES HAVING AN AXLE WEIGHT EXCEEDING ... TONS (UN 1949). Pre-Un 1968 systems have Signs resembling UN Signs though LN 1931 and LN 1939 refer to "Limits" rather than "No Entry" when specified limits are exceeded.

WEIGHT LIMIT ... TONS/ AXLE WEIGHT LIMIT... TONS SIGN/NO TRUCKS OVER ... LBS EMPTY WEIGHT SIGN/ WEIGHT LIMIT .... TONS PER AXLE ... TONS GROSS SIGN. U.S. 1961 has one Sign in this category, Weight Limit ... Tons Sign. U.S. 1971 offers the other versions. U.S. MUTCD 1978 offers a graphic version of various Signs for trucks with tonnage limits.

MAXIMUM LOAD SIGN/ MAXIMUM HEIGHT SIGN/ MAXIMUM WIDTH SIGN/ MAXIMUM LOAD PER AXLE SIGN/MAXIMUM LENGTH PERMISSABLE SIGN. IAMM 1967 Signs closely resemble those of UN GERSS 1952 (which are those of UN 1968 as well). However, the names are different.

OBS 1950 AND CASATIC 1950 apparently lack signs in this category.

4) Miscellaneous & Single forms

DRIVING OF VEHICLES LESS THAN ... METRES (... YARDS) APART PROHIBITED SIGN. This UN 1968 Sign follows the established format with symbols that include graphic representations of autos as well as the necessary numbers indicating spacing distance.

b) Prohibitive & Restrictive: Turns & U-Turns Forms

NO LEFT TURN/NO RIGHT TURN/TURNING TO THE LEFT PROHIBITED/TURNING TO THE RIGHT PROHIBITED/NO U-TURN SIGNS/ NO ABOUT-TURN (U-TURN) SIGNS/NO TURNS. These Signs present selective prohibtions as well as general prohibitions. UN 1968 displays the basic pattern with these Signs: Disc with white or yellow ground, red border, and oblique bar over appropriate graphic symbol of arrow to left or right or curved. UN 1949 includes identical Right Turn and Left Turn Signs but no U-Turn Sign. UN 1949 speaks of Turning to the Right or Left Prohibited rather than No Right Turn or No Left Turn.

UN GERSS 1952, IAMM 1967, ECAFE 1964 all follow that basic form. GERSS employs the UN 1949 names while IAMM and ECAFE use No Right Turn, No Left Turn and No U-Turn. UN GERSS speaks of an About-Turn (U-Turn)

Prohibited Sign. UN GERSS allows for an expanded sign with word inscription. Krampen 1983 includes illustrations of that form (and other allied forms). This form includes a rectangular shaped plate with the basic graphic form occupying the upper part of the plate while the word inscription "No U Turn" in black letters takes up the lower portion of the plate. This holds true for No Right Turn and No Left Turn Signs.

U.S. MUTCD 1961 displays the standard U.S. rectangular plate with black rim, white ground and black letters denoting No Left Turn, No Right Turn, No Turns and No U Turns. U.S. 1978 has two plates with the word inscription in the lower plate and the UN graphic symbol in the upper plate. There are word only forms for No Right, No Left and No U Turns. No Turns is in a word format configuration only (and dropped in U.S. 1971).

Apparently OBS 1950 and CASATC 1950 lack Turn Prohibition Signs.

TURN LEFT (RIGHT) SIGNS. These Signs are from Canada 1976. They may be unique to Canada: a green annular ring encircles left or right turn arrow (annular ring indicates an action that must be carried out). White ground with black arrow. A red ring with oblique bar, of course, indicates prohibition of a course of action.

NO TURN. This Sign has same format as the previous Sign from Canada. It indicates straight passage required. It has a white ground, black arrow surrounded by green annular ring.

NO TURN ON RED/RIGHT TURN ON RED AFTER STOP. The first Sign appears in U.S. MUTCD 1978. It replaces the second Sign that was added to U.S. MUTCD 1971.

NO RIGHT TURN ON RED TRAFFIC SIGNAL SIGN. Canada 1985 adds this Sign that includes the standard right turn arrow with oblique bar and disc combined with a representation of a traffic signal with red lens.

DO NOT BLOCK CROSSROADS. This Sign from Mexico appears in IAMM 1981. It is placed at those city intersections which use or do not use Traffic Lights. In such intersections, normally used by faster moving traffic, there are frequently formed lines for vehicles which obstruct transversal traffic and this Sign addresses that problem..

c) Prohibitive & Restrictive: Overtaking (Passing) Forms

OVERTAKING PROHIBITED SIGN/OVERTAKING BY GOODS VEHICLE

PROHIBITED SIGN. Signs that speak of passing prohibitions are from the Western Hemisphere. Overtaking, a more literal meaning, is used in Europe. UN 1968 has two forms of the first Sign. The first form, within the basic Regulatory Sign model, has graphic symbols displaying a black auto and a red auto;. this signifies no passing. The other model has two black autos and an oblique bar signifying no passing. The second Sign also has two models for UN 1968. The message pattern is that of the general prohibition Sign: symbols either denote a red truck and black auto, or two black vehicles but with an oblique bar.

UN GERSS 1952, ECAFE 1964, IAMM 1967 all include an Overtaking Prohibiting Sign with oblique bar. None employ the two color vehicle model. However, UN 1949 displays the two vehicle form but without the bar.

DO NOT PASS SIGN. U.S. MUTCD 1961 (and U.S. 1971 and 1978) employs a word inscription approach: rectangular Sign with white ground, black rim and black letters with the inscription.

OBS 1950 apparently lacks a passing prohibition indication.

NO OVERTAKING SIGN. CASATC 1950 has a unique form with an unclear meaning: A two part sign with white disc and red border surmounting a rectangular plate with yellow ground and a graphic symbol of a curved arrow which overlaps a graphic symbol representing a roadway. The symbols are accompanied by a directional arrow.

STOPPING PROHIBITED SIGN. This Sign denotes places where it is prohbiited to take on, drop off passengers. It appears in IAMM 1981 for Mexico.

d) Speed Limit Forms

MAXIMUM SPEED LIMITED TO THE FIGURE INDICATED SIGN. The basic speed regulatory Sign has a complex title for UN 1968. The Sign follows the standard pattern but with numbers rather than graphic symbols; letters are in black.

MAXIMUM SPEED ZONE. This ECE 1995 Sign displays the speed in black letters with red circle on a white rectangular shaped ground accompanied by the word Zone. The end of the Zone is marked by a similar sign except for a black circle and an oblique band of black stripes

SPEED-LIMIT SIGN/ SPEED LIMIT SIGN. This is the standard title for the Signs performing this function; UN 1949 has a hyphenated version. A

supplemental plate (rectangular with a red rim) can be added that denotes the beginning of the speed limit in question.

UN GERSS 1952 includes a Speed Limit Sign that is similar though the word "Miles" is added to the sign. Krampen, in his review of UN GERSS, includes a rectangular plate with the above display augmented by the words "Speed Limit". ECAFE 1964 follows the GERSS pattern. IAMM 1967 has the basic design with either Mile or KM added to the numbers. A supplemental plate can be added denoting either "Steady" speed or "Minimum" speed. IAMM 1981 includes national practices including a variant form of Speed Sign for Uruguay: maximum speed is indicated by placing a horizontal bar about the listed speed accompanied by a downward pointing arrow. Minimum speed is denoted by the reverse practice. A fixed or steady speed has a bar above and below the listed speed without an arrow.

LN 1931 and LN 1939 Sign models follow the essential pattern though KM has been added. LN 1928 offers a large rectangular sign plate though with white ground, black rim and word and numbers in black.

SPEED LIMIT 30 MPH/30 MPH SPEED LIMIT SIGNS. These signs represent U.K. practice and includes the actual speed limit in the name. The Signs refer to the limit for built-up area. References are U.K. MOT 1950 and Noble 1946. Noble has a variant form that excludes the word "speed."

TRUCK SPEED LIMIT SIGN/NIGHT SPEED LIMIT SIGN/ MINIMUM SPEED LIMIT SIGN/TRUCK MAXIMUM. Speed regulation Signs in U.S. MUTCD1961 and newer editions contains many models that follow either the basic mode of white ground and black letters or a reversed pattern of black ground and white letters. The basic sign is rectangular with the word inscription Speed Limit followed by the speed. A sign for Truck Speed Limit is square with the word "Truck" and the numbers denoting speed limit. A sign denoting night speed has a black ground, the word "Night" and the maximum speed. A final sign indicates Minimum Speed with those words and the appropriate speed. Canada has a similar Sign for night speed limits as well as the Truck Maximum Speed Sign.

SPEED ZONE AHEAD/REDUCED SPEED AHEAD/ REDUCED ___SPEED MPH/SPEED LIMIT___ & MINIMUM SPEED LIMIT. These are further U.S. Signs from the U.S. MUTCD 1971 and newer editions that offering refinements in speed regulations.

e) Miscellaneous, Singles Forms , & End of Prohibitive or Restrictive Forms

DANGEROUS GOODS PROHIBITION SIGN. Canada 1985 adds a Sign prohibiting high risks products from some routes. This Sign is related to the Dangerous Goods Route Sign in Mandatory segment. This Sign displays a black diamond with a red circle and oblique bar imposed over it.

PASSING WITHOUT STOPPING PROHIBITED SIGN. For UN 1968 and for many Europeans the technical meaning of overtaking has the meaning of Passing for those in the Western Hemisphere. Passing is mentioned in UN 1968 but it has a different meaning. The Sign indicates a prohibition against passing a customs house. The Sign displays the basic regulatory pattern. Though it lacks an oblique bar and instead contains the word "Customs" in two languages with a black horizontal bar. The sign can be employed for other purposes when the word "Customs" is dropped and other messages are inserted; however, examples are not given.

STOP (CUSTOMS) SIGN/CUSTOMS SIGN/STOP NEAR CUSTOMS SIGN. Customs Signs for UN 1949 and IAMM 1967 Signs are identical to UN 1968. However the word "Customs" may or may not be included in IAMM. The Stop Near Customs Sign of of LN 1939 is also identical to UN 1949. The Customs Sign is included within the Mandatory category for LN 1931.

CASATC 1950 employs the OBS style of double Sign for Custom as well as for other purposes. The Sign, described as a RESTRICTION NOTICE has a disc with a white ground, red border, and a rectangular plate in yellow with the word "Customs" in black letters.

USE OF AUDIBLE WARNING DEVICES PROHIBITED SIGN/HORN BLOWING PROHIBITED SIGN/SILENCE SIGN. Horn restriction Signs are listed under a variety of names. The first named Sign is from UN 1968. It follows the standard format with a graphic symbol of a horn and oblique bar. UN GERSS 1952 and ECAFE 1964 have the second Sign. IAMM 1967 has a similar sign under the heading of "Silence."

END OF ALL LOCAL PROHIBITIONS IMPOSED ON MOVING VEHICLES SIGN/END OF SPEED LIMIT SIGN/END OF PROHIBITION OF OVERTAKING SIGN. These Signs for UN 1968 have diverse purposes. However, the Sign format has many points of commonality with a core focus within that commonality: ending of prohibitions. These Signs are circular with a white or yellow ground. There are no borders though a rim color (black) can be included. The Signs display a diagonal band running from right to left. The band can be black, dark gray, or a series of black and gray lines forming a band. A

general ending of prohibition Sign lacks any symbol denoting the object of the prohibition. An ending of speed limitation includes a speed limit beneath the band. An ending of overtaking prohibition includes symbols of autos beneath the band. UN 1949 has a very similar End of Speed Limit Sign though not illustrated in the Protocol.

Two other speed restriction cancellation Signs include:

SPEED LIMIT DE-RESTRICTION SIGN. This Sign ending restrictions is from CASATC 1950 . It consists of the Speed Sign with a black "x" over the speed limit printed on the lower plate. The OBS 1950 Speed Limit Ends Sign (Derestricted Sign) is classified as a Warning or Informative category sign.

END ___ MILE SPEED SIGN. This sign from U.S. MUTCD 1961 has the same size and format as the Speed Limit with the addition of the word "End" above the listed speed limit. It is omitted from U.S. 1971. Speed zones can be ended by posting Signs with a different speed limit which eliminates using an end of speed Sign.

ADDITIONAL PANELS. ECE 1995 provides supplemental plates or Additional Panels which indicate the focus of Sign. These Panels include one of truck tractor and trailer, and one of a truck with trailer. They have black symbols on white ground; an exempt version is also provided. This form displays, for example, a trolley car accompanied by the word "except" denoting the Sign pertains to all forms of vehicle except the one displayed.

INSPECTION SIGN. This Sign from Mexico appears in IAMM 1981. It consists of a representation of an uniform cap and denotes an inspection site. The representation of the cap is placed within a red circle without an oblique bar. Supplemental plates can further delineate the nature of the inspection.

TRUCK INSPECTION STATION SIGN/COMMERCIAL VEHICLES NEXT RIGHT/TRUCK INSPECTION STATION ADVANCE SIGN/TRUCK INSPECTION STATION EXIT SIGNS. The first named Sign has a perhaps curious appearance: a graphic representation of a truck accompanied by a line ending in a circle containing, apparently, a weight indicator arrow denoting a truck inspection station. The second Sign is in word form. The third and fourth Signs replicate the first Sign accompanied by 2 km and an arrow respectively. These Signs are from Canada 1985. Most U.S. Weight Inspection Signs are in the Informative category. One Sign, All Trucks Commercial Vehicles Right is in the Regulatory category. That Sign has white words on black ground.

3B3 Mandatory Signs

Mandatory Signs for UN 1968 are circular with a blue ground and graphic symbols in white or some other light color. UN 1968 has an alternate that displays white ground, red rim and black symbols.

DIRECTION TO BE FOLLOWED SIGN. This Sign has Left, Through, Right and Through/Right versions. The arrows are large, follow a contemporary design and are sans serif. This version follows the basic Mandatory Sign pattern. However there is an alternate which consists of a rectangular plate with focus on the horizontal dimension and white rim, black ground and white arrows. This Sign is from UN 1968.

LN 1928, LN 1931, and LN 1939 all have a model of the Direction to be Followed Sign. LN 1928 has a different design for the arrow but the format is similar to that of the newer models and mirrored by UN 1968; UN 1949 has the same model.

UN GERSS 1952, ECAFE 1964, IAMM 1967 offer a different model of this sign. This model has a white ground, the red border associated with other Regulatory Signs and black arrows. IAMM has a different name for this Sign:

COMPULSORY CIRCULATION SIGN (I). This Sign, displayed at intersections, indicates direction to be followed. The symbol is of a black horizontal arrow pointing to the right. See also Compulsory Circulation Sign (II).

PASS THIS SIDE SIGN. This UN 1968 Sign is very similar in purpose to the Compulsory Circulation Sign of IAMM 1967. The IAMM Sign parallels the second model (the first model is that of the European model and the second is the American; there are a few exceptions) of UN 1968; this is similar to that of UN GERSS 1952.

COMPULSORY CIRCULATION SIGN (II). This Sign follows the same pattern as the first Compulsory Circulation sign model except that the arrow points downward. It is displayed on obstacles within the street and denotes direction to be followed.

DIVIDED HIGHWAY CROSSINGS. This Sign is listed in U.S. MUTCD 1978. It consists of a supplemental plate attached to a Stop Sign that indicates an approach to a road that is physically divided. This Sign can also stand alone. A graphic representation of the divided highway is provided on the Sign plate.

KEEP YOUR RIGHT/TURN LEFT ONLY/TURN RIGHT ONLY/KEEP STRAIGHT AHEAD/TRUCKS TO RIGHT-LANE/TWO WAY TRAFFIC AHEAD/PEDESTRIANS TO THE LEFT SIGNS. These Signs are found in IAMM 1967. They follow the basic UN GERSS/ IAMM/ECAFE Regulatory sign configurations. According to IAMM 1981, Mexico follows the UN form of a representation of barrier and arrow curving to the right. Newer editions of U.S. MUTCD also include that form. Mexico also has a updated version of graphic symbols for the Trucks to Right Sign.

LEFT(RIGHT) TURN ONLY LANE/STRAIGHT THROUGH OR LEFT (RIGHT) TURN ONLY LANE/ RIGHT OR LEFT TURN LANE ONLY/ALL MOVEMENTS PERMITTED LANE/STRAIGHT THROUGH LANE ONLY SIGN/DOUBLE RIGHT (LEFT) TURN ONLY/STRAIGHT THROUGH & DOUBLE LEFT (RIGHT) TURN ONLY/TWO WAY LEFT TURN LANE/ THREE LANE TURN MOVEMENT SIGN.This series of Signs appears in Canada 1985. They are square in shape with white rim, black ground, and white arrows.

COMPULSORY ROUNDABOUT SIGN/ TRAFFIC CIRCLE. This sign displays a graphic symbol of a curved arrow broken into segments that form a circle. IAMM contributes the term Traffic Circle; the first term is from UN 1968.

COMPULSORY CYCLE TRACK/COMPULSORY FOOT-PATH/ COMPULSORY TRACK FOR RIDERS ON HORSEBACK/COMPULSORY MINIMUM SPEED/END OF COMPULSORY MINIMUM SPEED/SNOW CHAINS COMPULSORY SIGNS. These signs, while focussed on divergent objects, are similar in scope and appearance except for differences in graphic symbols. These Signs are from UN 1968. UN 1949 includes only the Cycle Track and Minimum Speed Signs.

DO NOT BLOCK CROSSING. This is a Mexican Sign that appears in IAMM 1981. It is a rectangular shaped Sign with horizontal emphasis. The ground is white and the letters are black.

LANE-USE CONTROL SIGNS. The U.S. has a series of Signs under this general heading. There are also other U.S. MUTCD 1961 (and newer editions) Signs that are similar to Direction to be Followed Signs though outside the Lane-Use Control category.

MANDATORY MOVEMENT SIGNS/OPTION MOVEMENT SIGNS/ MANDATORY TURN SIGNS/DOUBLE TURN SIGNS. They are rectangular in shape, with white ground and black lettering and arrows. The

Optional Movement type offers an option which may either call for straight through passage or a turn passage. The Mandatory Turn Sign is square in shape with white ground, black rim and black lettering or symbols. The Double-Turn Sign includes aturn-only lane and a turn or straight through option.

Mandatory Movement has one Sign form: arrow and one word: "Only." Optional has a double arrow indicating either a turn or straight-through direction but without any words. Mandatory Turn has a word message: "Left (R) Lane Must Turn Left (R)." Double Turn Sign combines the Mandatory and Optional Movement Signs and can be either left or right.

Canada has similar Signs under the heading of Overhead Lanes. These signs are white on black instead of black on white. They lack the Double Turn Sign but have other forms including Right or Left Turn Lane form, an All Movement form, Straight Through form and a Two Left Turn Form. The last two Signs exist in the U.S. but outside the Lane-Use group.

TWO WAY LEFT TURN ONLY/CENTER LANE-LEFT TURN ONLY. The first term is the current term and denotes lane in center for left turns in both directions. There are two versions: arrows only and arrows with words. The second term is an older form; the first is from U.S. MUTCD 1978.

PASSING LANE AHEAD SIGN. This Sign was added by Canada 1985. It displays a vertical arrow with arrowhead joined by a second arrow which branches off to the right indicating a passing lane is nearby.

PREFERENTIAL LANES SIGNS. These Signs first appear in U.S. MUTCD 1978. They denote lanes that are open according to the type of vehicle or number of riders. The Signs are marked by a black box or bar containing a white diamond. The forms include: Buses & Car Pool Only __Hours ___Days; Buses & 4 Riders Car Pool ___Hours___Days; Restricted Lane Ahead; Restricted Lane Ends.

BEGIN RIGHT TURN LANE YIELD TO BIKES. This U.S. Sign refers to Lane-Use Control Sign refers to situation where motor vehicles and bicycles share the same driving lane. The Sign has black symbols on white ground.

SIGNS INDICATING A REGULATION OR DANGER WARNING APPLYING TO ONE OR MORE TRAFFIC LANES. ECE 1995 has created a "Special Regulations" sub-category within the Regulatory category that encompasses various Regulatory and Informative Signs. An attempt has been

made in the Database to arramge these Signs according to UN categories. However, these particular Signs refer to Warning as well as Regulatory Signs. Yet they appear to have a Mandatory character and are placed here. They include three distinct Signs:

COMPULSORY MINIMUM SPEED APPLYING TO DIFFERENT LANES
COMPULSORY MINIMUM SPEED APPLYING TO ONE LANE/SPEED LIMITS APPLYING TO DIFFERENT LANES. These Signs have a blue ground, white arrows indicating lanes, white circle and white numbers indicating speed. A white disc, black numbers and red disc are present for speed limits.

SIGNS INDICATING LANES RESERVED FOR BUSES. ECE 1995 gives example of such Signs. They include a panel with white ground, three black arrows representing lanes and a blue disc overlaid on one lane with the silhouette of a bus. Two lanes have downward pointing arrows and one upward pointing. The bus lane is one of those with a downward direction. A second form with all lanes upward pointing includes a rectangular insert atop one arrow with the silhouette of a bus.

SLOWER TRAFFIC KEEP RIGHT/TRUCKS USE RIGHT LANE/TRUCK LANE ____FEET SIGNS/ KEEP RIGHT (L) SIGNS. These U.S. MUTCD 1961 Signs are Mandatory Signs similar to other U.S. Signs of this category in format. U.S. 1971 and newer editions offers graphic forms for Keep Right, Left Signs. However, word forms are retained. Canada 1985 has graphic forms for similar Signs.

SNOWMOBILE ROUTE/SNOWMOBILE PROHIBITION. Canada 1976, like the U.S., divides Regulatory Signs into a variety of categories based on functional needs. The European experience, by contrast, has created several sub-categories with precise boundaries. Therefore such a Sign in UN parlance would be partly in Prohibition category and partily in Mandatory category. However the Signs are kept together in the Mandatory category reflecting Canadian practice. The Snowmobile Route displays a snowmobile within a green annuluar ring while the prohibition has a red ring and oblique bar. The ground of both signs is white and the snowmobile symbol is in black.

TRUCK ROUTE/ALL TRUCKS COMMERCIAL VEHICLES NEXT RIGHT. TheseSigns are from U.S. MUTCD1971. They are similar to Signs in previous entry (Slower Traffic Keep Right, et.al.).

LANE USE RESTRICTION SIGN. This Sign from Canada 1985 indicates lanes

off limit to a class of vehicle. This Sign portrays a silhouette of a truck with red circle and oblique bar imposed on it. A downward pointing arrow indicates the lane that is off-limits.

YIELD CENTRE LANE TO OPPOSING TRAFFIC SIGN. This Sign added by Canada 1985 is in word format.

ONE WAY SIGN/ONE-WAY SIGNS. These are SOGI for UN 1968 but Regulatory (with the character of Mandatory Signs) for U.S. One version of these Signs, with an elongated rectangular shape, follows the alternate design for UN Signs. The sign has a black ground, white rim, white arrow and black lettering. A second form has the standard U.S. rectangular shape and customary color and symbol configurations. U.S. MUTCD 1978 adds additional plates for some of these Signs which include graphic symbols. ECE 1995 has this Sign in the Special Regulation category that encompasses Informative and Regulatory Signs. Noble 1946 opines that France may have first employed this Sign since he observed it in France long before its appearance elsewhere.

TUNNEL SIGN. ECE 1995 includes this in the Special Regulation group. It is possibly a Mandatory Sign. Seemingly no other system has this Sign. The Tunnel Sign has the appearance of a tunnel entrance on white insert within a blue ground. It gives special rules for travelling in the tunnel. Ending of those rules is indicated by the same Sign with a diagonal red bar across the Sign panel.

KEEP LEFT[RIGHT] DUAL CARRIAGEWAY/TURN LEFT [RIGHT] ONE WAY ONLY SIGNS. OBS 1950 includes these Mandatory Signs. Both include the two-sign format. They consist of a disc with white ground and red border accompanied by rectangular sign plate with white ground, black border and black lettering and, when required, black arrows. Noble 1946 speaks of Dual Carriageway Sign without reference to Keep Left/Right. The meaning may be the same.

KEEP LEFT/TURN LEFT/KEEP LEFT OF ISLAND SIGNS. These terms are supplied by Noble 1946. They reflect official U.K. directives of 1946 though later OBS information is somewhat different.

KEEP RIGHT EXCEPT TO PASS. Canada 1976 includes this Sign which indicates that drivers are to stay in right lane except when passing.

LEFT LANE FOR PASSING ONLY. This Sign from Mexico appears in IAMM 1981. It is a rectangular shaped Sign with emphasis on the horizontal dimension and black letters on white ground.

ONE-WAY SIGN (II). CASATC 1950 includes a Sign very similar the to U.N. Direction To Be Followed Sign. However the ground color is red and the arrow is yellow.

ROAD CLOSED/ROAD CLOSED __ MILES AHEAD - LOCAL TRAFFIC ONLY/ROAD-CLOSED/ROAD CLOSED TO THRU TRAFFIC. Signs from U.S. MUTCD editions. These Signs indicate various types and degrees of closures of streets and roads. They are rectangular in shape with a horizontal axis. The ground color is white and letters and numbers are in black.

SLOWER TRAFFIC KEEP RIGHT/SLOWER TRAFFIC KEEP TO RIGHT. The first sign, from U.S. 1971, has a meaning similar to that of Keep Right Except to Pass. The second Sign, from Canada 1976, indicates an added lane for slower traffic.

SLOWER TRAFFIC USE RIGHT LANE. IAMM 1981 includes this Sign for Mexico. It is a rectangular shaped Sign with horizontal emphasis and black letters on white ground.

ENTRY ONLY-ONE WAY STREET. Peripatetic Noble found this Sign in London. It displays a red disc but instead of "No entry" it announces entry to a one way street.

TRAVELPATH RESTRICTION SIGN. This U.S. MUTCD Sign is termed the Travelpath Restriction Sign. It divdes a path into pedestrian and bicycle portions. A representation of pedestrian and of bicycle accompany left and right (or right and left) word messages. The Sign is black on white ground.

3B4 STANDING & PARKING SIGNS

Parking Signs are an integral part of Regulatory Signs for most systems. For some systems the Parking Signs are elements within the spectrum of Regulatory Signs while in other systems they are a separate subdivision. The exception to this is UN 1968 which separates Standing and Parking signs from Regulatory and also from Informative Signs. These Signs are partly Informative Signs and partly Regulatory Signs. In the Database they are kept together in Regulatory except Signs that provide information about parking (such as signs indicating the location of parking areas).

The format for these Signs in U.N. 1968 have this appearance: the Signs are circular with a blue ground and red border and any oblique bars are red. There are

numerous Signs referring to parking though the range of messages is restricted. This coverage incorporates national systems because of different terms.

PARKING PROHIBITED/STANDING & PARKING PROHIBITED/ ALTERNATE PARKING/LIMITED DURATION PARKING ZONE/PARKING SIGNS. The Parking Prohibited Sign has an alternate format approved by U.N. 1968: circular in shape with white or yellow ground, red border and red transverse bar. A symbol denoting Parking is added in black. A supplemental plate can be added with specifics of the prohibition as well exceptions to the prohibition. ECE 1995 has the Parking Prohibited Sign in the Special Regulation category but the Sign is assigned here for the Database.

Alternate Parking Sign can be employed instead of the Parking Prohibition Sign when parking is approved on opposite sides of the street. Roman numbers or other symbols indicate the days for authorized parking on each side. The Roman numbers are printed on the Signs.

Additional panels of rectangular shape employing the same color format can be added to give additional information about parking regulations. These panels are termed Models 1 through 4 (Model 1 is a supplementary sign denoting meters that the Sign message covers; Model 2 supplies kilometers accompanied by arrows; Model three gives left, right, bidirectional horizontal arrows with meters; Model 4 gives vertical arrows: up, down, bidirectional).

UN 1968 and ECE 1995 include Additional Panels that indicate the scope of parking prohibitions, restrictions. These consist of black arrows on white ground and may include distance in meters of the Sign in question.

HANDICAPPED PARKING. ECE 1995 includes this Sign with the Additional Panels segment. The Sign displays a pictograph of a wheel chair and person in white on a blue ground. U.S. MUTCD 1988 has a Reserved Parking Sign with symbol designating handicapped parking though not under that name.

LIMITED DIRECTION PARKING ZONE EXIT SIGN. This Sign from UN 1968 is square in shape with a light colored ground. A disc with Parking Prohibition Sign indication is displayed in light gray with a band diagonally over that message. The band is black, dark gray with an alternate of gray/black stripes.

RESTRICTED STOPPING OR WAITING SIGN. This Sign from U.N. 1949 is the equivalent of the U.N. 1968 Parking Prohibited Sign.

WAITING ON ALTERNATE SIDES SIGN. This Sign from UN 1949 is similar

to the 1968 Alternate Parking Sign except that two sets of Roman numerals are present: the side, and number -- where parking is prohibited -- is placed on light ground, while the prohibited side, and number is on dark ground.

PARKING SIGN. This Sign is regarded as an Informative Sign For UN 1949 and LN 1939.. This helps to explain why U.N. 1968 placed all Parking Signs together outside Regulatory and Informative Signs. Formerly, Parking Signs were within Regulatory whether restrictive or not. However, U.N. GERSS 1952 and ECAFE 1964 subsume all parking-related Signs together in Regulatory Signs which is the viewpoint of theDatabase. For UN GERSS 1952 and ECAFE 1964 the standard format for Regulatory Signs is followed.

PARKING PROHIBITED ZONE/ PARKING PROHIBITED AT CERTAIN TIMES ZONE/PARKING ZONE/END OF PARKING PROHIBITED ZONE/ END OF PARKING ZONE. These Signs from ECE 1995 include the standard UN graphic symbols on a rectangular shape white ground accompanied by the word Zone. The end of restriction Signs display the symbols in gray with an oblique bar in a band of narrow black stripes. These Signs are part of the Special Regulation category.

NO PARKING/RESTRICTED PARKING/NO PARKING & NO STOPPING SIGNS. These Signs are terms from IAMM 1967. They follow the general lines of Regulatory Signs especially of the UN GERSS 1952 style of Sign configurations: The first letter gives the word for parking in the national language. The placing of an oblique bar imposed on it denotes No Parking. A "X" shaped symbol denotes No Parking and No Stopping. The Parking Sign can be accompanied by a supplemental plate adding additional information.

NO PARKING/NO WAITING/PARKING SIGNS/ PROHIBITION OF PARKING. LN 1931 includes a square sign with blue ground and white "P" for parking permitted areas. The traditional disc with blue ground, red border and oblique bar denotes No Waiting; The addition of "P" indicates No Parking. The older LN 1928 Parking Sign was circular in shape; the LN 1931 Sign is the same except for shape. The 1931 No Waiting Sign displayed a blue ground, red border accompanied by a supplemental plate with the word inscription "No Waiting." Noble 1946 refers to a Prohibition of Parking Sign in U.K. which follows the European practice. The variant name has the appearance of the No Parking Sign of LN 1931.

WAITING PROHIBITED/STOPPING PROHIBITED SIGNS. The Parking Sign symbols of LN 1939 are followed in newer systems though the names of the Signs are different. A second form of Waiting Prohibited Sign included the word

inscription, "No Waiting This Side on Even Dates" but the name of the Sign was unchanged.

NO PARKING/NO PARKING __ TO __/NO PARKING EXCEPT SUNDAYS & HOLIDAYS/NO STOPPING OR STANDING/ONE HOUR PARKING/NO PARKING LOADING ZONE/NO PARKING BUS STOP SIGNS/NO STANDING ANYTIME. Parking regulation Signs in U.S. MUTCD 1961 and newer editions lack an overarching parking prohibition and restriction format that can be employed and refined through supplemental plates. Instead a series of Signs are needed to convey the intended messages. Prohibitive messages are in red while those permitting parking are in green. The Sign plates are rectangular with white ground, red or green rims and red or green letters and numbers. A Guide Sign giving directions to parking areas has a white ground, is of larger size with green letters and appropriate areas; that Sign is outside the Regulatory category. These Signs are for urban use. Rural Signs are larger in size than urban forms though they display the same format of white ground, red rims and red word and number messages.

NO PARKING ON PAVEMENT/NO STOPPING ON PAVEMENT/NO PARKING EXCEPT ON SHOULDER/NO STOPPING EXCEPT ON SHOULDER/NO PARKING/ EMERGENCY STOPPING/EMERGENCY PARKING ONLY SIGNS. These rural Signs in U.S. MUTCD 1961 were referred to in the previous paragraph. They are found on expressways and have a white ground, black rim and black words. In U.S. MUTCD 1971 symbols are red on white ground except Emergency Signs which remain black on white. U.S. MUTCD 1978 adds graphic forms for no parking in bus zones and in tow-away zones.

NO WAITING THIS SIDE TODAY/WAITING LIMITED TO __ IN ANY HOUR SIGNS. These Signs are from OBS 1950. The first has a red border, yellow ground and word inscription in black. The second Sign has a blue ground, red border and white inscriptions.

NO PARKING/PARKING SIGNS. CASATC 1950 also divides these Signs between Regulatory and Informative. Parking restrictions display discs with yellow ground, black inscriptions and red borders. Parking signs are rectangular with blue or yellow grounds and white or black inscriptions. They continue the double-sign tradition previously described.

NO PARKING/BIKE LANE. This U.S. MUTCD 1978 Sign has two forms: word form and a graphic form. The word form has red letters on white ground with red rim and the word No in white on red inset. The second form has the traditional red

circle and oblique bar on black P accompanied by the words Bike Lane in red on white ground with red rim.

MULTIPLE PARKING CONTROL. These Canadian Signs have a dual module and triple module forms. The dual form has stopping and parking restrictions; the triple form has stopping, parking restrictions and limited duration information.

RURAL PARKING CONTROL. Canada 1976 includes a series of Signs under this heading:

RURAL PARKING CONTROL
RURAL STOPPING CONTROL

The first Sign has a letter "P" with red circle and oblique bar superimposed on it. The second Sign replaces the "P" with an octagon.

STOPPING IS PROHIBITED. A Mexican Sign that appears in IAMM 1981. It denotes places where it is forbidden to board or let off passengers.

URBAN NO STOPPING SIGNS. Canada 1976 includes a series of Signs under this heading:

STOPPING CONTROL SIGN
RUSH PERIOD STOPPING CONTROL SIGN
PART TIME STOPPING CONTROL SIGN.

The basic sign displays a black octagon with red circle and oblique bar on white ground with black rim. The second Sign adds hours and days the basic message is operative. The final Sign has longer periods of operation though not full time.

URBAN PARKING CONTROL. Canada 1976 has several Signs within this group:

PARKING CONTROL
PART-TIME
PARKING LIMIT

The basic Sign displays a black "P" with oblique bar and circle in red on white ground with black rim. The second Sign gives hours and days for part-time prohibition. The Parking Limit Sign has two versions: 30 minute limit on certain days, hours and a 60 minute version.

3B5 Pedestrian Crossings

CROSS ONLY AT CROSS WALKS. This Sign from Canada 1976 and U.S. MUTCD 1971 is in word form. It indicates passage permitted only within specified limits.

NO PEDESTRIAN CROSSING. This Sign from Canada 1976 and U.S. MUTCD editions indicates areas closed to movement of pedestrians.

PEDESTRIAN CROSSING SIGN. ECE 1995 offers a new form of Pedestrian Crossing Sign consisting of a pictograph of a pedestrian crossing zebra stripes that represent a crossing. This sign has white graphics on a blue ground. ECE also has human representation in black between dashed lines within one triangular inset on blue ground in a square shape Sign. A white figure on dashed lines on blue ground with white border and a shape that suggests a triangle on rectangular base (or pentagram that is nearly triangular). These signs are in the Special Regulation category of ECE.

PEDESTRIAN CROSSWALK/PLAYGROUND CROSSING/ SCHOOL CROSSING. Canada 1976 has a distinctive Sign shape and configuration for these Signs: the key word is accompanied by a large bold "X" signifying crosswalk.

USE PED SIGNALS. This is a U.S. Sign for bicycles. It displays those words in black on a white ground with black rim and representation of bicycle in black. Ped is an abbreviation for Pedestrian. Reference is U.S. MUTCD 1988.

YIELD TO PEDS. This Sign from U.S. MUTCD 1988 is similar to the above Sign except for the word message.

USE CROSS WALK. This Sign from U.S. MUTCD 1978 includes the phrase Use Cross Walk accompanied by an arrow.

The following Signs refer to movements of pedestrians controlled by Traffic Signals:

CROSS ON GREEN LIGHT ONLY
CROSS ON WALK SIGNAL ONLY
PUSH BUTTON FOR GREEN LIGHT
PUSH BUTTON FOR WALK SIGNAL

3B6 Miscellaneous Regulatory Signs

Most Regulatory Signs of whatever system can fit into the preexisting categories of UN 1968 (with some modifications). However, some Signs resist those categories yet remain Regulatory in nature. These Signs include U.S. Civil Defense Signs which admittedly have become archaic; Nonetheless, they remain in MUTCD. They include:

EVACUATION ROUTE
AREA CLOSED
TRAFFIC REGULATION POST
MAINTAIN TOP SAFE SPEED
ROAD USE PERMIT REQUIRED FOR THRU TRAFFIC
EMERGENCY AID CENTERS
 DECONTAMINATION CENTER
 REGISTRATION CENTER
 WELFARE CENTER
 MEDICAL CENTER
FALLOUT SHELTER __ MILES

These Signs almost always display black symbols on white ground with black rim. The Evacuation Sign, however, is white on blue ground with white rim. The Fallout Shelter Sign includes the radiation symbol in yellow and black.

NO HITCHHIKING. This U.S. Sign followed word form format in the 1971 edition. U.S. 1978 and newer editions have a graphic symbol displaying hand, thumb and red circle with oblique bar.

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4A2 Alphabetical Index

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Chapter 4B Traffic Signal Entries

4B1 Traffic Control Signals

a) Overarching Terms & General Note for Traffic Signals

General Note. Systems of Traffic Control Devices have long given detailed attention to Traffic Signs. Details on shapes, colors, graphic and other symbols, purpose are found even in early systems of a simple nature. While Traffic Signals have received substantially less attention even in some relatively recent systems. Traffic Signals have a limited range of messages and do not require the quantitative coverage that Signs require. Nonetheless, the attention given to that form of TCD seems limited. This is especially the case in European systems. (which extend beyond Europe) which give less coverage, include fewer forms, and often lump diverse forms under a few headings or even a single heading.

UN 1949 does not include Pedestrian Signals and subsumes Level Crossing Signals under a broader category ("Supplementary Provisions Concerning Level-Crossings" encompassing Signs, Signals, Sound Signals). UN GERSS 1952 omits Pedestrian Signals, refers somewhat indirectly to Level Crossing Signals and has the single term of Traffic Signals for this category of TCDs. UN 1968 has much more extensive coverage but all Signals are considered under one of two headings: Signals for Vehicular Traffic and Signals for Pedestrians.

In other nations, including Japan and many nations of the Western Hemisphere the coverage is more substantial. Various Signals are given names in their own right, more forms of Signals are available. Traffic Signals have a larger place in TCD forms and usage. Even an older document such as U.S. MUTCD 1948 includes a broad range of specific forms of Signals.

This situation creates a problem for the Database: the UN 1968 provides an overall direction and structure for the coverage and yet various Signals are missing in the UN documents or at least have a diminished role. To address the problem theDatabase has set up an organizational structure that, while influenced by UN 1968, also includes Signal forms more familiar outside UN 1968 and outside Europe. The result may not represent a full correlation of the organization and the Signals. Yet, hopefully, will prove to be workable. Notes on differences in approaches to Traffic Signals are included in the coverage of this category.

Overarching Terms include the following entries:

HIGHWAY TRAFFIC SIGNALS. This term may seem to be a specialized form

of Traffic Signal; possibly an archaic form. Yet it is a current and primary term for all forms of Traffic Signals in the U.S. In fact, all lighted TCD forms except lighted Signs and Barricade Lights are included. Since the term is repeated in one MUTCD edition after another the term may be a historic one that it is handed down over the years and retaining pride of place even if not extensively employed. Perhaps confusingly, the MUTCD subdivision for this topic is entitled Signals not Highway Traffic Signals. Many Traffic Signals, of course, are not found on highways. Proposed documents for a new edition of Traffic Signals indicate that the bare term Signals is to be replaced by Highway Traffic Signals.

LIGHT SIGNAL. A plausible Traffic Signal term though it fails appear in any system; only Noble 1946 includes it.

ROAD SIGNALLING. This is a term in League of Nations publications referring mostly to Road Signs. Signals and Markings had a restricted and even non-existent (in the later case) role in LN. which indicates Signs, not Traffic Signals, are the locus of the term.

ROAD SIGNALS. Zuniga includes this term in a 1969 essay. It may be informally coined since it is not otherwise used. UN 1949 adopted the title of Protocol on Road Signs & Signals. However, Road Signals is not employed in that document.

SIGNALS. A plausible title yet apparently not frequently found in the literature. It is very general and lacks a mode-specific character. IMSA 1981 includes the term and it is a general heading in MUTCD documents (though not employed otherwise). Signals may be acceptable in a framework of Traffic Control Devices. This is analogous to the use of the bare term Markings when placed in a context of Traffic Control Devices.

SIGNALS FOR VEHICULAR TRAFFIC. This somewhat convoluted term is the primary term for UN 1968. It includes various forms and functions of various signals (other than pedestrian and level-crossing). Specific terms for Signals within that category are lacking. UN 1949 and UN GERSS 1952 use the more conventional term of Traffic Light Signals.

STREET TRAFFIC SIGNALS. Webster 1960/1966 may be the only source employing this term. It is comparable to other terms of this category and has little to recommend it over more commonly employed Signal terms.

TRAFFIC LIGHT SIGNALS. This is the primary overarching term for UN

GERSS 1952, UN 1949, and ECAFE 1964. It has more of an international cast than Traffic Control Signals though there is no specific usage in the Western Hemisphere. UN GERSS and ECAFE coverage of this form of TCD is exclusively under this term. UN 1949 considers Level Crossing Signals separately. It also appears in Noble 1946.

TRAFFIC LIGHTS. A plausible alternate term for Traffic Light Signals yet it apparently appears only in Noble 1946; a largely historical source.

TRAFFIC SIGNALS. This might seem to be the primary term for Signals in TCD. Yet it is somewhat restricted in usage. Canada 1976, IMSA 1981 (International Muncipal Signal Association) and several individual authors employed the term but there seems to be little use of it beyond that. U.S. MUTCD editions places the term within ( ) after Traffic Control Signals. It is retained as the general overarching term for the Database since it includes the key words of Traffic and Signal and can encompass many other related terms.

b) Specific Entries

General Note. It is perhaps curious there are more overarching terms for Traffic Signals than specific terms for Traffic Control Signals. Several factors appear to be at work in this: overarching terms for all forms of Signals in the TCD category are double in purpose: overall and specific at the same time; some systems have had few Signals and what appears to be overarching is little more than a reference to Signals with a stop-and-go function at intersections; some systems have a variety of functions within the overall term but lack names for those specific functions. As a result, this segment will have few new terms but will include references to previously described terms.

TRAFFIC CONTROL SIGNALS. This term in use in Canada, the United States, and other Western Hemisphere nations and selected other nations, is quite possibly the most specific term for those Signals controlling stop-and-go functions at intersections. It distinguishes between this function and more specialized functions and differentiates between a term encompassing many or all TCD Signal functions and the specific intersection control function.

SIGNALS FOR VEHICULAR TRAFFIC. This term from UN 1968 is an overarching term (and described previously) yet much of its content has reference to stop-and-go operations.

STREET TRAFFIC SIGNAL. This term from Webster 1960 and 1966 while

somewhat vague suggests an intersection function as a primary component.

c) Messages

U.S. MUTCD

1948:
Three or more lenses: Red, Yellow, Green (in that order)
Yellow means: Indicates change in message (Y follows G)
Allows vehicles in/near intersection to clear intersection.
Flashing yellow: when stop & go character not required.
Arrows: straight through/left-turn/right-turn
Color & Position of Lenses: (Top to Bottom, Left to Right): R/Y/G/Straight Through/Left-turn/Right Turn/Wait (Don't Walk)/Walk.

1961:
Circular Green: Proceed Straight Through, Right, Left
Steady Yellow: Red to follow soon/Green ending
Steady Red: Stop before crosswalk/or short of intersection
Green Straight-Through Arrow: Straight Through, no turns
Green Turn Arrow: 1971 simpler, clearer explanation

1971:
Circular Green: Proceed
Green Arrow: Proceed according to indication of arrow
Yellow Arrow: Green ending; red is about to activate.
Circular Arrow: as above
Circular Red: Stop at stop line
Red Arrow: Arrow's direction not to be acted upon
Flashing Red: Stop before proceeding; rules for Flashing Red similar to those for the Stop Sign
Flashing Yellow: A caution Signal

1978:
This is similar to MUTCD 1971 except that 1971 required sign for right turn on red while 1978 required sign to prohibit that turn.

1988:
This is similar to MUTCD 1978 except that 1988 Flashing Red Arrow and Flashing Yellow Arrow is added. Meaning is that of Circular Red and Circular Yellow except that the Flashing Arrows directed only to drivers affected by arrows. Proposed amendments for a new edition of MUTCD appear similar to that of 1988 though the format of the material is markedly different.

CANADA 1976:
Green: Vehicles can proceed straight through, turn left or right (unless turns prohibited)
Amber: Red signal to follow soon
Red: Stop before cross walk; edge of intersection if absent
Green Arrow: Proceed, following movements
Flashing Green Left Turn Arrow: Motorists can proceed left, right, or straight (unless another TCD prohibits straight or right turn movements)

UN GERSS 1952 & UN ECAFE 1964:
Three-color Signals:
Red: Vehicles are not to go beyond specified point (seemingly national agencies determine that point since it isnot given in the document)
Green: The term proceed is not used; instead the message is: "traffic may pass the signal"
Amber: It follows green indication; vehicles not to pass unless too close for a safe stop

Two-color Signals:
Red plus Green: Meaning conforms to that of amber

Single Flashing (Intermittent) Amber: Message is "Proceed with caution"
Single Flashing (Intermittent) Red: Message is "Stop, then proceed with caution"

Vertical arrangement of lenses: Red, Amber, Green

Flashing Red at Intersections: Approved for intersections in these systems in contrast to UN 1968

Level Crossings: Two Red Lens. This parallels Western Hemisphere practice which requires two lens for this role

These systems refer to the needs of the color-blind by remarks about using shape

and color to address that problem.

LEAGUE OF NATIONS:

LN 1939: Committee adopted "the principle of the meaning attached to red, amber, and green lights" which suggests a full coverage of Traffic Signal communications had not been carried out.

Portugese communication to that Committee provides more specific coverage of Traffic Signal messages:
Red denotes Danger or Prohibition
Green denotes Road Clear
Amber denotes Attention
The order of lenses: red, amber, green

LN 1928: There are some references to Red Lights but the coverage does not give a solid sense that these constitute Traffic Signals

LN 1931 (Revised 1933):
Red: Stop
Amber: Stop if not already in intersection; proceed through intersection if if already in intersection
Green: All Clear

UK (Tripp) 1950:
Red: Stop, stay behind Stop Line
Red & Amber: This combination indicates Stop "but be prepared to go when the Green shows"
Green: Proceed
Amber: Stop unless in or very near to intersection
Green Arrow with Red Indication: Proceed according to meaning of arrow

UN 1968:
Non-Flashing:
Green: Proceed
Red: Do Not Proceed (beyond Stop Line, equivalent)
Amber: Do Not Proceed unless vehicles proximity to stop line would make stopping unsafe

Flashing:
None in two-color or three-color system
Green Arrow: Movement according to arrow

Red, Amber Arrows: None in UN 1968

ECE 1995: Similar in meaning to UN 1968 though there are some changes:
Arrows can replace the solid colors of Red, Amber, Green
(This has reference to situations other than lane directions).
Arrows have one of two forms: Colored arrows on
black background, or black arrows on colored background.

d) Traffic Signal Operations.

General Note. The terms of this segment are not directly Traffic Signal terms. Yet the terms of operations are often attached to the term Signal thereby becoming a Signal term even if not in a physical or functional sense. Some some systems do not refer to the operational dimension though there are other systems which make that reference; therefore these terms are included.

AUTOMATIC SIGNALS. This term is found in some U.K. literature. It refers to a mechanical Signal in contrast to traffic control by police officers.

FIXED-TIME SIGNALS/FIXED TIME SIGNALS. Some U.K. sources and MUTCD 1948 use this term. It is the equivalent of a Pretimed Signal.

MANUAL SIGNALS. In some U.K. literature this term refers to police traffic regulation. Compare with Automatic Signals.

PRETIMED SIGNALS. These Signals follow a predetermined pattern generated by electromechanical or electronic means. A series of Signals can be coordinated according to a schedule.

TRAFFIC-ACTUATED SIGNAL. These Signals operate according to traffic flow demands. A version known as Full Trafffic Actuated refers to a Signal at an intersection where all approaches are actuated by traffic. Semi-Traffic Actuated Signals indicates Signal operation where only secondary approaches are actuated by traffic demand.

TRAFFIC-ADJUSTED SIGNAL. This term appears in MUTCD 1961. It is a form of Traffic-Actuated Signal in which adjustments in operations are made after monitoring traffic patterns over a broad area. The resulting pattern affects a series of installations.

VEHICLE-ACTUATED SIGNALS. This U.K. term has the meaning of a Traffic-Actuated Signals.

4B2 Pedestrian Signals

PEDESTRIAN SIGNALS/SIGNALS FOR PEDESTRIANS ONLY/ PEDESTRIAN-OPERATED SIGNALS. These Signals are for pedestrians not vehicles though they are tied to motor vehicular movements and interact with Traffic Signal actions. Pedestrian Signals may be pre-timed or pedestrian-actuated. Only newer systems include these Signals. Both UN 1949 and UN GERSS 1952 omit the Signal. Canada 1976 includes a Pedestrian Signal function though there is no specific title for the Signal. The last-named term is from Tripp 1950 and is the equivalent of the more commonly employed terms.

The message component is made up of various forms of lights, words and graphic symbols:

UN 1968 (and ECE 1995) employ non-flashing forms in a three color version. Green indicates crossing may be made safely. Amber indicates do not cross but if in roadway continue movement. Red indicates vehicles not to enter roadway. A two color form displays indications that include a flashing green indication denoting the crossing period is nearly over and the red indication is about to be initiated. The two-color form is regarded as preferable to three-color forms though the later is permitted. Lensess in these Signals display silhouettes of pedestrians: a standing figure for red and a walking figure for green.

U.S. MUTCD 1948 employed standard Traffic Signal housing with circular lenses. The lens had an orange ground, black horizontal band and the words "Walk" or "Wait" etched in the glass. Wait/Walk messages were changed to Walk and Don't Walk because the original messages have a similar appearance. A second form used neon tubing with the word messages of "Walk" and "Don't Walk"; both messages were to be in red.

U.S. MUTCD 1961 used the message of Walk and Don't Walk exclusively. There were two approved means of conveying the message: Green (Walk) and Red (Don't Walk) in gas-filled tubing, and White (Walk) and Orange (Don't Walk) in incandescent lighting. White is not qualified as being Lunar White nor is the Orange as Portland Orange in contrast to later practice.

U.S. MUTCD 1971. Messages were displayed from rectangular shape units with negative (stop) messages in Portland orange, and positive (go) messages in Lunar white. The Don't Walk message was in fixed lights and indicated no movement to be made. A flashing message indicated the Walk message was turning to a Don't Walk message indicating too little time for a safe crossing. A steady Walk

message indicates safe passage while a flashing message denotes vehicle-pedestrian conflict possible.

U.S. MUTCD 1978 continued the two box form of 1971 but added a single box form with both walk and don't walk messages. A graphic symbol was added in this edition that displayed a Portland orange hand and a Lunar White pedestrian silhouette. The older green and red gas-filled tubing form was dropped. U.S. MUTCD 1988 has a similar pattern of technology and messages; that edition adds a single box form for the graphic symbol form as well as the word form.

Canada 1976 displays a two-box form with orange and lunar white messages. Only the graphic symbols of orange hand and lunar white pedestrian are used.

4B3 Traffic Signals-Other Forms

EMERGENCY-TRAFFIC SIGNALS/TRAFFIC CONTROL SIGNALS FOR EMERGENCY VEHICLES. This Signal creates a right-of-way for emergency vehicles. The physical Signal form is similar to that of a standard Traffic Control Signal. A Sign indicating emergency services accompanies the Signal. A Flashing Beacon may act as an advance indicator of the Signal. The Emergency-Traffic Signal is employed in UN 1968, ECE 1995, and U.S. MUTCD systems. UN version refers to fire-fighting vehicles only. U.S. MUTCD uses the second term.

TRAFFIC SIGNALS FOR ONE-LANE, TWO-WAY FACILITIES. This Signal appeared in U.S. MUTCD 1978 though it seems likely such a Signal existed prior to1978. The Signal is intended for a bridge or tunnel too narrow for two vehicles to pass one another. While U.S. MUTCD 1978 speaks of tunnels or bridges it would seem that narrow roads or damaged sections of roads would require the Signal. Standard Traffic Signals are employed though conditions for use differ from standard Signals: the one-lane, two-way situation has a unique character: since it assigns the right of way priority on an alternating basis for the same lane.

TRAFFIC SIGNALS AT FREEWAY ENTRANCE RAMPS/ TRAFFIC SIGNALS FOR FREEWAY ENTRANCE RAMPS. This Signal controls vehicles entering a freeway by admitting vehicles in increments through Traffic Signal indications. The Signals are of standard design and have at least two colors (Red, Green) and may have three (Red, Yellow, Green). This Signal is found in U.S. MUTCD 1978. FHA 1997 (Amendments for new MUTCD edition replaces "at" with "for."

MOVABLE BRIDGES SIGNALS/DRAWBRIDGE SIGNALS/SWING BRIDGES/TRAFFIC SIGNALS AT DRAWBRIDGES/TRAFFIC CONTROL

SIGNALS FOR MOVABLE BRIDGES. U.S. MUTCD 1978 and MUTCD 1988 employ a new term that better describes bridges that move by rising or by revolving: Movable Bridges Signals indicate times when it is unsafe to proceed. Drawbridge Signal is the most common term for these Signals. UN 1968 includes Signals for bridges within the Signals for Vehicular Traffic category. No specific name is given for the Signal which refers to swingbridges. Three-color Signals for Bridges have these messages: constant green indicates bridge is open to traffic; if long periods occur without closing the bridge then Flashing Yellow can be used. Red is for stop. FHA 1997 includes the last named term for the new edition of MUTCD.

LANE CONTROL SIGNALS/LANE-USE CONTROL SIGNALS/LANE DIRECTION SIGNALS/LANE DIRECTION CONTROL SIGNALS/LANE-DIRECTION CONTROL SIGNALS. These multiple and variant terms apply to Signals regulating traffic on a given lane. The Signal is employed where periodical reversing of traffic is required (for example, rush hour variations of a temporary nature). The Signal refers largely to Canada, and the U.S.

Messages include:
Downward Green Arrow: Lane Open
Steady Yellow "X": Vacate Lane/Lane to Close
Steady Red "X": Lane Closed
Flashing Yellow "X": Left Turn Permitted

4B4 Flashing Beacons

a) Overarching Terms

TRAFFIC BEACON. This seems to be an under-used term. Only a few U.S. trade literature publications of a dated vintage include the term. Yet it seems a plausible overarching term paralleling Traffic Signals and Traffic Markings. However, it is not a key term in the Database since it employed only infrequently.

FLASHING BEACON. Flashing Beacon is probably the most important general overarching term for this category and it is the most important specific term. The term Signal often refers to a T-M that has multiple and changing messages while the word Beacon has an unchanging message (even if multiple or multi-faceted). Railway and road lighted T-M forms are often viewed as Signals while marine and aero forms are mostly Beacons forms. The Flashing Beacon resembles a marine Aid to Navigation from the viewpoint of its message.

The Flashing Beacon is associated with a variety of nations in the Western Hemisphere and some Eastern Hemisphere nations including Japan. It has, at best, a limited role in LN and UN systems. In fact, the Flashing Beacon with red lens is prohibited in UN 1968 for intersection control. By contrast, UN GERSS 1952 included both amber and red forms. Nations employing the Flashing Beacon have continued to do so after UN 1968. UN 1968 refers to several functions for the Flashing Beacon within the category of Traffic Signals for Vehicular Traffic. These functions exclude the use of Flashing Beacons with red at intersections. UN 1968 does permit use of this Signl for low-flying airplane warning and ferry-boat landings warnings; these are not found in U.S. practice. UN 1949 and UN 1968 allow a single red lens at level-crossings which is clearly opposed to Western Hemisphere practice and that of other nations (railroad crossings can be confused with other locations if two red lenses are not employed). Noble 1946 notes the use of flashing red lights (the term Flashing Beacon is not included) in France; this predates UN 1949.

The older forms of the Flashing Beacon are of a unitary nature (housing is one unit containing multiple lenses) while newer forms contain one or more segments of a single Traffic Signal housing; a single installation may have four or more segments.

The term Flashing Beacon is employed in Canada 1976, older editions of U.S. MUTCD and in some traffic control and engineering literature. A logical alternative to Flashing Beacon would be Traffic Beacon (which see) but the later term only rarely is used.

U.S. MUTCD 1971 and newer editions have largely eliminated the term Flashing Beacon and instead use terms describing each form: Hazard Identification, Speed Limit, Intersection Control, and Stop Beacons. The core term Beacon is included in newer editions of MUTCD. U.S. MUTCD 1948 includes the color in the title: Flashing Yellow Beacon, Flashing Red & Yellow Beacon. However, proposed amendments for a new edition of MUTCD brings back Flashing Beacon and the various forms are back together. U.S. MUTCD included a subchapter entitled "Special Traffic Signals" with clearly differentiated sections for the various forms (except Pedestrian Signals which occupied a separate subchapter). U.S. MUTCD 1971, 1978, 1988 included all of these Signals, including Pedestrian Signals, in adjoining sections that were marked off less emphatically. But the proposed new edition drops "Other Highway Traffic Signals" and gives each form a subchapter. Instead of each kind of Flashing Beacon having a section within a large subchapter, all forms of Flashing Beacons are together in a subchapter devoted to those forms.

BEACON. Older U.S. MUTCD editions speak of Flashing Beacon but newer editions refer to specific forms as noted above as noted above and to occasional references to Beacons; older editions did not refer to Beacons in that manner.

b) Specific Terms

FLASHING YELLOW BEACON, FLASHING RED & YELLOW BEACON. U.S. MUTCD 1948 includes the color(s) in the official name of Flashing Beacons. The Beacons in question conform to current forms under other names. U.S. MUTCD 1948 does not include a Beacon under the title of Flashing Red Beacon and seemingly no references to such a title are in the literature. Though, of course a Flashing Beacon with red-only lens are commonplace.

HAZARD IDENTIFICATION BEACONS. U.S. MUTCD 1971 and newer editions employ this term . Its functions existed before the title was employed. It consists of at least one circular yellow lens. It can mark obstructions, supplement Warning Signs, crosswalks (mid-block), and act as supplement to a variety of Regulatory Signs. See Also: Warning Beacon.

INTERSECTION CONTROL BEACON. This form of Flashing Beacon may be the oldest form of this Signal type and is found in a variety of nations. This Beacon may have yellow-only lens, yellow and red lenses, or red-only lenses. At least two directions of traffic are covered by the Beacon. For Canada this is labeled a Flashing Beacon. At All-way Stops there are red lenses only.

SPEED LIMIT SIGN BEACON. This Beacon consists of one or two flashing yellow lenses accompanying a Speed Limit Sign. It is found in U.S. MUTCD 1971 and newer editions. The 1988 edition allows a single lens version when the lens is oversized.

STOP SIGN BEACON. This MUTCD form accompanies a Stop Sign. It consists of one or two segments of a standard Traffic Signal housing. It displays a flashing red light.

WARNING BEACON. FHA 1997 changes the name of the Hazard Identification Beacon for the new edition of U.S. MUTCD.

4B5 Lighting Devices

General Note. U.S. MUTCD includes a variety of Lighting Devices for Construction and Maintenance purposes. The Devices are not confined to the U.S. though only the MUTCD has extensive coverage. Other sources, including Noble

1946, make reference to Lights for special purposes including obstructions. These Devices include:

LIGHTING DEVICES. These are Constructions & Maintenance Devices supplementing Signs, Barriers and Channelizing Devices. Most of them have a TCD character though Floodlights are largely non-TCD.

FLOODLIGHTS. They are included in the Database since they can have direct bearing on flagger stations and crossing zones in construction areas.

HAZARD IDENTIFICATION BEACONS. This entity is largely a a conventional, non C & M Aid. But they are employed for C & M perations.

STEADY BURNING ELECTRIC LAMPS. These Lamps are of low wattage and yellow in color. They mark obstructions and barriers, and they are added to longitudinal barriers for delineations of vehicles lanes through construction zones.

WARNING LIGHTS. These are portable units with lenses, and yellow in color. They can be either steady-burning or flashing. There are three forms:

Type A, LOW INTENSITY FLaSHING WARNING LIGHTS employed on Barricades, Drums, Vertical Panels, Advance warning situations.

Type B, HIGH INTENSITY FLASHING WARNING LIGHTS found at advance warning sites, or independently.

Type C, STEADY-BURNING units delineate detour curve edges, lane changes, lane closures.

SPECIAL LIGHTING UNITS. These Units are trailer-mounted and supplement Signs, Pavement Markings, maintenance lighting.

ADVANCE WARNING ARROW PANELS. These are "sign panels with matrice of lights" that supplement other TCD forms. There are three forms:

Type A, Low speed urban streets functions.

Type B, "Intermediate facilities for maintenance or moving operations on high-speed operations."

Type C, "[H]igh-speed, high-volume construction projects[.]"

Messages are of four forms:

Left/Right Arrows- Flashing, sequential

Left/Right Chevrons- Sequential

Double Arrows- Flashing

Caution- Multiple lamps, direction not indicated.

4B6 Grade/Level Crossing Signals

FLASHING-LIGHT SIGNAL/FLASHING LIGHT SIGNAL. This term (and

variant form) refers to Railroad Crossing Signals. It consists of two horizontal red flashing lights and indicates the the presence of a train on the tracks on or near the crossing. MUTCD 1988 omits the hyphen. Single lens are allowed in UN practice which can create confusion with the Flashing Beacon in nations where they are employed. UN 1949 has a section on level crossings but no specific name for Signals at level-crossings. UN 1968 subsumes level crossings into the Signals for Vehicular Traffic category.

NO RIGHT (LEFT) TURN SIGNAL. U.S. MUTCD 1961 includes this as a Signal. The device consists of a Sign topped by a flashing yellow Beacon. Only this edition lists it as a Signal. Newer editions refer to the Sign but not the accompanying Signal.

RAILROAD GRADE CROSSING SIGNAL. This is the equivalent of the Flashing-light Signal though with a more explicit title. Flashing-light Signal tends toward vagueness outside of a railroad crossing context. This term may be exclusive to U.S and listed in U.S. MUTCD 1971. (It can be noted that IAMM 1967 reprints parts of U.S. MUTCD 1961 and thereby includes the term). Older editions of MUTCD emply the overall category heading of Railroad-Highway Grade-Crossing Protection while newer editions use Traffic Control Systems for Railroad-Highway Grade Crossings for the same purpose.

TRAIN APPROACH SIGNAL/TRAIN-APPROACH SIGNAL. This term (and variant form) is a catch-all term for all forms of Lighted Safety Aids at Railway/-road crossings. It may be accompanied by the words "And Gates." The term refers mostly to the Western Hemisphere. Canada 1976 employs the non-hyphenated form while U.S. MUTCD 1971 and older editions use the second form; U.S. MUTCD newer editions have dropped the term.

WIG WAG SIGNAL. An now obsolete Signal consisting of a red light mounted in a disc attached to a mechanism that acts as a pendulum. U.S. MUTCD 1948 and 1961 included it.

CHAPTER FIVE TRAFFIC MARKINGS

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Word Markings: Arrow Markings
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5B Road/Traffic Markings: Entries

5B1 Overarching & Sub-Overarching Terms With General Notes

a) Overarching Terms with General Notes

General Note I: Markings, in this perspective, is one part of Transportation-Markings. It is **NOT** a synonym for T-M despite the erroneous practice of some who redefine T-M as merely another term for Road/Pavement/Traffic/ Carriageway Markings. The word Markings requires a second qualifying term for this portion of TCDs. The segment on Overarching Terms will take up the specific terms. In general it can be said that the word Markings alone is not adequate (though when placed within a TCD context it may be adequate). Pavement Markings is often employed as an overarching term, and while it encompasses much of the subject it does not adequately include all aspects. Road Markings and Traffic Markings are in a virtual dead-heat as the primary, overarching term for the subject; therefore both are employed in the Database. Carriageway Markings can be considered a possible alternate.

General Note II: If one focusses on the core element of Signs and the core elements of Road/Traffic Markings there is little confusion over what the terms means, what the respective functions are. But if one moves away from the core meaning then confusion can be generated over the meaning of Road/Traffic Markings and of Signs. Therefore, some remarks on how they differ, how they overlap, what constitutes their core identity are needed.

Many markings are of a horizontal nature; nearly all of the remaining forms are vertical but short or nearly so. Signs are always vertical and in most instances well off the ground. One may not be able to say precisely what height a Marking can be or what a Sign has to be but Signs are nearly always taller than vertical Markings. U.S. Mileposts, for example, are short. Road/Traffic Markings applied to obstructions may have a more developed vertical dimension.

Markings may have word and numerical forms when horizontal. But Markings on the pavement with words and numbers are clearly not Signs. Markings of a vertical nature may have graphic symbols but these have a different character than those of Signs: graphic symbols for Markings cover the surface: solid colors, stripes, bands (one may ask about about a series of small reflectors on background material though even in that case the reflectors occupy the surface). Signs with graphic symbols (and without words/numbers) occupy a portion of the

sign board but do not cover it. Even in the case of Warning Chevron Signs the symbols occupy only part of the sign board.

Markings may not exhibit all core characteristics: horizontal or very short, lack of graphic/word symbols, symbols encompassing the surface but one or more of the principles is solidly in evidence and all three may be present.

Homburger regards Milepost Markers as Markings. But MUTCD places Mileposts in Signs. The presence of word/number symbols supports the MUTCDr view. Dangerous overpasses/underpasses may be encompassed in Markings (black/yellow stripes) but even in that instance words and numbers that are present are Signs with an identity separate from Markings.

U. S. MUTCD 1988 adds the Barricades and Channelizing Devices segment to Markings. Those forms of TCDs appear to conform to the Marking configuration since they lack Signs though Barricades are higher in vertical dimension than Delineators and some other forms of Markings.

Noble 1946, a major historic source, offers a variant view of Traffic Markings. He remarks that "white lines on carriageways (roadways) are also considered as being traffic signs." This suggests a broad view of Signs as being anything aiding road safety without regard to its character.

ROAD MARKINGS. The term Road Markings (along with Road Signals, Road Signs) is commonly employed in Europe (and in documents allied with European practice). Possibly there is an underlying philosophy in Europe that attaches TCD forms to the road while Western Hemispheric practice relates TCD forms to the movement of vehicles; that is, to traffic. This is a hypothesis that may be little more than speculation. European practice often refers to Road Signals, and Signs, Markings but not to Traffic Control Devices or even Road Control Devices. In short, there is no overarching term in use in Europe. The Database prefers Traffic Markings since it more directly relates to movement of vehicles and pedestrians.

TRAFFIC MARKINGS. This term needs to be seen in tandem with Road Markings. It is a frequently employed term especially in the Western Hemisphere. The term closely allies Pavement and other Markings with traffic situations. It is the preferred term for the Database though Road Markings remains a pivotal term.

MARKINGS. A probably overly inclusive term that can be confused with T-M or other forms of TCDs. This usage of the term is largely confined to the Western Hemisphere and especially to North America. It can be noted that Markings is used within a context of TCD (the term is not used independently but within

publications under the heading of Traffic Control Devices. In that context, Markings, in this usage, comprizes an overarching term akin to that of Road, Traffic Markings. References include Canada 1976, all MUTCD editions and RORT 1965 (UK).

ROADWAY MARKINGS. A term apparently employed only by Traffic Control Devices Handbook (hereafter TCDHB) 1983. It can be used as a synonym for more frequently employed terms. The word "Roadway" seems to be an equivalent of Carriageway. TCDHB also refers to On-the-Roadway Marking which may suggest a narrower scope.

HIGHWAY MARKINGS. This term, rarely employed, is a possible overarching term. Highway may suggest rural roads and therefore outside towns and cities. However, in U.S. parlance, Highway can have a broader meaning as can be seen in the term Highway Signals. RDPHB 1981 includes a few references to the term.

CARRIAGEWAY MARKINGS. A term employed as an OA term by a variety of sources especially in U.K. and European sources. Carriageway is the equivalent of roadway and Carriageway Markings may suggest Roadway Markings which see. References include UN 1968, UN ECE 1995, RORT 1965, MOT 1969.

b) Sub-Overarching Terms

1) Broader Forms

SURFACE MARKINGS. An infrequently employed term. It may be closer in meaning to Pavement Markings than for Road or Traffic Markings. Though a broader usage cannot be ruled out. Surface Markings in ECE 1957 are those on the surface but they also include "Other Markings." See Also: Road Surface Markings.

ROAD SURFACE MARKINGS. For ECE 1995 and UN 1968 this term is an apparent synonym for Road Markings as both terms are apparently regarded as having the meaning of Pavement Markings. ECE 1995 Marking of Obstructions is within Road Markings; obstructions are apparently outside Surface Markings.

PAVEMENT MARKINGS. This term is absent from UN1968 and ECE 1995, and is little used in Europe. It is employed in UN GERSS 1952 and UN ECAFE 1964. It also frequently used in the Western Hemisphere. It is an overarching term for UN GERSS 1952. ECAFE employs it in a similar way though ECAFE includes Curb/Kerb Markings. For Canada 1976 it is one of two subdivisions for this category. For U.S. MUTCD it constitutes one of several primary categories.

ROADWAY DELINEATION/TRAFFIC DELINEATION MARKINGS. The first is a sub-overarching term of possible confusion. Often times the related term Delineator refers to reflective elements on short posts at the edges of roadways. However, RDPHB 1981 defines Delineation devices as any object (other than Signs) that helps to guide, offer track data, direct vehicles on a roadway. This means that everything except Barricades & Channelizing Devices, and Obstruction Markings are within Roadway Delineation. It is possible that even parts of those two categories would be included as well. This use of Delineation qualifies therefore a sub-overarching term and possibly a partly overarching term. The second is from a RDPHB source and is a possible alternative term.

2) More Restricted Forms

BARRICADES & CHANNELIZING DEVICES. These Devices are tied to North American practice. They are often associated with Construction & Maintenance work though the U.S. added a non-C & M section in 1978. Barricades are larger than many other Traffic Markings yet they lack recognizable Sign elements. Channelizing Devices are often of small stature and movable.

HAZARD MARKINGS. Canada 1976 employs this term for various Obstruction Markings. It is conjoined with Delineation Markings thereby creating a basic category. All Markings -- other than Pavement Markings -- are in that combined group.

LONGITUDINAL MARKINGS. The primary characteristic of these markings is that of length which parallels the direction of pavement. They consist of lines broken, and continuous, single and double which indicates Centerlines, Lane lines, Roadway edges, occasionally obstructions. The term is a general one for a variety of systems.

OBJECT MARKINGS. U.S. MUTCD editions use this term for various Obstruction Markings. It is the equivalent of the Canadian Hazard Markings.

OBSTRUCTION MARKINGS. A plausible term for TCDs yet is it employed in the literature? It may be more appropriate in Aeronautical Navigation Aids.

TRANSVERSE MARKINGS. These entities run across driving lanes and other roadways. They frequently take the form of Crossing Markings and Stop Lines.

5B2 Pavement & Curb Markings

a) Longitudinal Markings

(1) Center Line Markings

CENTER LINES/CENTER-LINE MARKINGS/CENTER MARKINGS/CENTERLINE STRIPES/PAVEMENT CENTERLINES.

General Note. These various terms refer to a common function: a line affixed to the center of a roadway dividing the opposing directions of traffic. Canada 1976 employs a different term that may more clearly describe the function: Directional Dividing Lines. The variety of lines and meanings can be summed up in a few basic norms.

UN GERSS 1952 and ECAFE 1964 speaks of a single solid line that is not to be crossed. UN 1949 refers to Road Markings in general terms without a precise description of Centerlines. UN 1968 has no precise term for this function though it does refer to the use of broken lines in that role. UN 1968 includes that function within the Traffic Lane Markings category (Traffic Lane Markings constitutes a separate category in some systems). U.S. MUTCD includes a broken yellow line as one allowing passing (overtaking). Double solid lines prohibit passing in both directions. A single yellow line in conjunction with broken line prohibits passing in one direction (the direction in which the solid line appears). Canada, UN 1968, ECAFE 1964, UN GERSS 1952 all permit yellow or white for color codes for this purpose. All but Canada 1976 permit silver or light gray as fulfilling the requirements for white.

DIRECTIONAL DIVIDING LINE. Canada 1976, as previously noted, employs a more descriptive term for Centerlines. Canada employs a broken yellow line in rural areas while a single solid line denotes prohibition on passing. Undivided multi-lane highways are marked by a double solid line. Four lane roads in urban areas have a single solid line. High speed highways have double solid line.

DOUBLE CENTER LINES. This term appears in Hawkins (11-92) and refers to U.S. MUTCD 1948. This appears to be a separate term. Other sources include various of lines within the single term Center Lines but in this instance one form takes on a separate name and identity.

(2) Edge Lines

EDGE LINES/EDGE MARKINGS/EDGE-MARKINGS/ EDGE OF CARRIAGEWAY MARKINGS/PAVEMENT EDGE LINES/ PAVEMENT EDGE LINE MARKINGS/PAVEMENT EDGE MARKINGS/ BORDER LINES INDICATING THE LIMITS OF THE CARRIAGEWAY/ CARRIAGEWAY EDGELINE. These terms carry out what appears to be a

single function: Lines that denote the edge of pavement rather than lanes within a roadway/carriageway. Canada 1976 offers a variant form of Edge Markings: a white solid line on the right of the lane but yellow when to the left. UN 1968 allows either yellow or white lines which can also take the form of reflective elements ("reflex reflectors"), studs or buttons. UN GERSS 1952 has only general norms and nothing specific on Edge Markings and other functions. UN ECAFE 1964 is often very similar to UN GERSS but in this instance ECAFE is notably different. ECAFE calls for broken lines or an alternate pattern providing it is different from Lane Markings. A continuous line is permitted if color or width is different from what are termed barrier lines. Studs, reflectors, buttons can be employed or serve as an alternate.The UN 1968 term seems very cumbersome: Border Lines Indicating the Limits of the Carriageway. U.S. MUTCD follows the standard practice of white solid single lines on the edges of the roadway. However, the left lines are yellow on divided highways and on one-way streets.

(3) Lane Markings

CHANNELIZING LINES. These Lines are double, white, continuous, or a wide single Line. They are employed to create traffic islands when traffic flowing in the same direction can travel on both sides of the Lines. The term is from U.S. MUTCD editions.

LANE LINES. A term largely found in the Western Hemisphere. These Lines delineate lanes on multi-lane highways (in each direction). They commonly display broken, white, single lines. References include Canada 1976, U.S. MUTCD editions, RDPHB 1981, RORT 1965 (the last named source is from U.K.).

LANE LINES AT CONTROLLED INTERSECTIONS. These Lines represent a U.K. practice (RORT 1965). They are installed at and adjacent to signalized intersections where multiple lanes are possible with roadway delineation. Greater flow of traffic through the intersection is thereby made possible.

LANE MARKINGS. This is a seemingly informal term from Hawkins 7-92 that serves as an synonym for Lane Lines. However, Hawkins often employed the more common term of Lane Lines.

LANE REDUCTION TRANSITION MARKINGS. This form of Pavement Marking indicates where lanes are reduced and simultaneously provides guidance for traffic as it merges into fewer lanes. This form is found in several U.S. MUTCD editions.

PAVEMENT-WIDTH TRANSITION MARKINGS. An older name for Lane Reduction Transition Markings which see.

RESERVED LANE MARKINGS. An uncertain term yet a plausible one for setting aside lanes for specific categories of vehicles. It is valid at least in an informal sense.

ROAD MARKINGS FOR A LANE RESERVED FOR CERTAIN CATEGORIES OF VEHICLES. These Markings, from ECE 1995, denote lanes for a special category of motor vehicle. Solid or broken lines separate these lanes from general-purpose lanes. Words may be added when needed (for example, Bus).

TEMPORARY LANE MARKINGS. Hawkins 11-92 notes the addition of short-term Lane Markings for Work Zones in U.S. MUTCD 1988.

TRAFFIC LANE MARKINGS. UN 1968 employs this term for Centerline and Lane Markings. The term suggests the category of Traffic Lane Markings though encompassing Centerline Markings even if not by name.

(4) Other Longitudinal Markings

GUIDE LINES FOR TURNING VEHICLES / TURN MARKINGS/TURNING MOVEMENTS OF VEHICLES. The first term is from ECAFE 1964. It consists of broken lines marking left/right turns; arrows may be added. The curved lines delineate the path of turns and offer instruction on making turns. U.S. MUTCD 1948 and 1961 uses the term Turn Markings. UN GERSS 1952 mentions Turning Movements of Vehicles but without details. UN 1968, ECE 1995 employs Guide Lines... with the meaning of lines indicating means for making left/right turns in nations where traffic is right/left handed.

MARKING OF OBSTRUCTIONS[DUAL CATEGORY]. Major entry in the Other Pavement and Curb Markings segment.

MARKINGS AT PARTICULAR LOCATIONS. ECAFE 1964 employs this term to indicate passing/overtaking prohibitions. It consists of continuous single lines and is similar to Marking for Particular Situations from UN 1968.

MARKING FOR PARTICULAR SITUATIONS. This term from UN 1968 and ECE 1995 may be a possible sub-overarching term. Yet it appears to focus mostly on the single role of prohibition of overtaking (passing) due to limited visibility. It is similar to ECAFE's Markings at Particular Locations.

MARKING EXTENSIONS THROUGH INTERSECTIONS OR INTERCHANGES/PAVEMENT MARKING EXTENSIONS THROUGH INTERSECTIONS. U.S. MUTCD 1971 employs the first term for intersections of complex design or limited visibility. Roadway markings are extended into and through intersections. These are to be broken, single, white lines. Some situations may require lanes of greater emphasis. These are termed Channelizing Lines whose functions include turning movements. Homburger employs the first term which is probably very similar.

NO-PASSING ZONE MARKINGS/NO-PASSING-ZONE MARKINGS. Canada 1976 uses solid yellow lines that adjoin broken centerlines for marking a no-passing zone. The side of the broken line with the solid line is the area of prohibition. U.S. MUTCD practice is similar. The term in U.S. MUTCD 1948 has a second hyphen.

RAISED PAVEMENT MARKERS (RPMs). Many Pavement Markings are of a paint form or of thermoplastic materials. However, some Pavement Markings have the form of Raised Pavement Markers. They are employed in more hazardous situations (exit ramps, approaches to bridges, curves) and may stand alone or be associated with painted lines. White and yellow forms have the meanings assigned to painted lines. Red Markers have the meaning of Wrong Way Signs. Blue may denote fire hydrants. Some forms are reflectorized while others lack reflectorization. There are a variety of terms and variations in use:

RAISED REFLECTIVE PAVEMENT MARKERS/RAISED REFLECTIVE MARKERS/REFLECTIVE PAVEMENT MARKINGS/PAVEMENT MARKERS.

Other terms include: SNOWPLOWABLE REFLECTIVE MARKER/ RECESSED REFLECTIVE MARKER. These terms refer to forms that can either sustain scraping action or are recessed and thereby immune to scrapping movements by machinery.

REFLECTING ROAD STUDS/CATSEYES. These terms are UK in origin. Catseyes were applied to reflector objects in the 1920s during the development of the Marker. Noble 1946 makes mention of Reflector Studs including red forms.

RUMBLE STRIPS/RUMBLE STRIPES/AUDIBLE ROADWAY DELINEATION. RDPHB includes Rumble Stripes as a possible RPM use. No other surveyed source includes. The last-named term is from a source title in RDPHB.

STREET CLEARANCE & TRANSIT VEHICLE GUIDE LINES. Canada 1976 uses this term to indicate the presence of streetcar overhangs. These lines thereby provide guidance to the operators and to other motorists.

b) Transverse Markings

CROSS-WALK/CROSSWALK LINES/CROSSWALKS/ CROSSING MARKINGS/PEDESTRIAN CROSSINGS. Various Crosswalk Marking terms have the same focus: to clearly delineate the pedestrian zone across intersections. The nature of these Markings can vary substantially. ECAFE 1964 employs "zebra" stripes for this purpose. UN GERSS 1952 stipulated solid transverse lines which outline the crossing; a geometric pattern can also be used. ECE 1995 and UN 1968 mark crossings with Stripes. U.S. MUTCD editions offer several possibilities: the basic pattern are solid white lines bordering the crossing. Diagonal lines can be added between the solid lines. A second alternate permits a series of rectangular-shaped bars delineating the crosswalk. Canada 1976 uses solid white lines for crosswalks. Homburger 1977 refers to Crossing Markings. Homburger's practice is unusual in that it is rare that Marking is added to crosswalk or crosswalk lines. Pedestrian Crossing is used in lieu of Crosswalk and Crosswalking Lines by ECE 1995 and UN 1968.

CYCLIST CROSSINGS. Not all systems have Road/Traffic Markings for this purpose. U.S. MUTCD editions have Bicycle Lanes which extend through intersections but not special Cyclist Crossings. UN ECAFE 1964 has Markings both for Cyclists and Pedestrians. Cyclist Markings are similar to those for Pedestrians though they can be distinguished from them. UN 1968 and ECE 1995 include broken lines in the form of squares which outline the crossing.

INTERSECTION MARKINGS. This term from Canada 1976 can be viewed as a sub-overarching term. It includes Crosswalk Lines and Stop Lines.

LINES INDICATING POINTS AT WHICH DRIVERS MUST GIVE WAY. This lengthly term is from UN 1968 and ECE 1995. It displays one or two solid lines and indicates the point at which motorists must give way (yield in Western Hemisphere) to intersecting traffic. A series of triangles can substitute for the solid lines.

RAILROAD CROSSING MARKINGS/RAILROAD CROSSING ADVANCE MARKINGS/RAILROAD-HIGHWAY GRADE CROSSING PAVEMENT MARKINGS/APPROACHES TO RAILROAD CROSSING MARKINGS/ APPROACHES TO RAILWAY CROSSING MARKINGS. There are apparently no Level Crossing Markings in UN 1968 and other systems since the documents

are silent on such much Pavement Markings for UN and European practice. Nearly all of this form of TCD is to be found in the Western Hemisphere. Canada 1976 displays a double white solid line in a diagonal configuration near the tracks. U.S. MUTCD 1978 and 1988 presents a multifaceted approach : a broad stripe or bar near the track then two additional stripes or bar some distance from the track. These stripes flank a large "X" which, in turn, is flanked by a pair of "R"s. U.S. MUTCD 1948 and 1961 display a double diagonal stripe near the track. While newer editions have a single diagonal Stripe. Homburger 1977 includes two transverse lines near the track.

STOP LINES/STOP BARS/LIMIT LINES. These Lines and Bars are the most common of all Transverse Markings. Nearly all systems have some form of this Traffic Marking. The diversity of terms does not indicate a broad range of forms. The Stop Line displays a broad line, frequently white, at the approaches to an intersection. Homburger 1977 offers alternate terms (the last two terms) which are included in the Database though not included in various systems.

TRANSVERSE LINES AT CONTROLLED JUNCTIONS/ TRANSVERSE LINES AT UNCONTROLLED JUNCTIONS. RORT 1965 frequently uses this term for Stop Lines. RORT suggests a double broken line for uncontrolled intersections (those lacking Signals, Stop/Halt Signs).

c) Other Pavement & Curb Markings

ARROW MARKINGS/LEGENDS & SYMBOLS/WORD MARKINGS/WORD MESSAGES/WORD & SYMBOL MARKINGS. Arrow Markings in ECAFE 1964 indicate directions assigned to various lanes. UN 1968 employs the wording of ECAFE 1964. For Canada 1976 the word Legends has the meaning of Words. Recommended uses include school, slow, right/left lane, stop. Homburger 1977 employs Word Messages rather than Word Markings. Word Markings for ECAFE 1964 uses words for place names, route numbers, various brief messages including stop, bus, taxi. UN 1968 is very similar to ECAFE 1964. Words & Symbol Markings is the preferred term for U.S. MUTCD editions. Words are also symbols but only graphic symbols are so classified.

APPROACH MARKING FOR OBSTRUCTIONS IN ROADWAY/MARKING OF OBSTRUCTIONS. These Markings have a dual character: they are Pavement Markings and also Obstruction Markings; the later are largely non-pavement based. The Marking of Obstructions from UN 1968 corresponds to Object Markings and is therefore considered in that category. The first term consists of Channelizing Lines in a nearly elipse pattern accompanied by diagonal lines or chevrons surrounding the object in question. On non-divided highways this

Marking is in yellow; on divided highways it is in white. It is found in U.S. MUTCD 1971 and newer editions.

COLORED PAVEMENT. This term is employed by U.S. MUTCD editions. Details on how much painted pavement is needed for Colored Pavement markings are not given. Colors include red for Stop Sign Approaches; yellow for medians dividing traffic (in opposite directions); white for Shoulder Delineation, Channelizing Islands, Crosswalks.

CURB MARKING/CURB MARKINGS FOR PARKING RESTRICTIONS. A variety of Traffic Markings have reference to curbs. Some of these are related to Object Markings and are thereby dual in character. U.S. MUTCD 1961 marks island curbs in traffic, also those at "T" intersection curbs. There are also Curb Markings for Parking Restrictions including fire hydrants. U.S. MUTCD 1971 refers to non-parking Markings on curbs as Roadway Delineation which is also dual in nature. ECAFE 1964 uses Curb Markings for parking restrictions and also to improve visibility. This later form has the appearance of contrasting checks though colors are not given in ECAFE 1964. Homburger 1977 notes that Curb Markings are to be yellow in color for parking restrictions, prohibitions. Homburger includes the color code of California for Curb Markings: Red for stopping or standing prohibited; Yellow for commercial loading zones; White for passenger loading zones, Green for brief parking; Blue for handicapped. California has a more comprehesive code for Curb Markings than other sources. See Also Curb Markings for Delineation.

DIRECTIONAL MARKINGS. An apparently historic term from U.S. MUTCD 1948. These markings consisted of Route Numbers painted on the pavement. The practice is no longer followed though ECAFE 1964, and UN 1968 indicate similar practices is approved for use.

EXIT & ENTRANCE INTERCHANGE RAMP MARKINGS. These Markings are from U.S. MUTCD 1961 and newer editions. They constitute a form of Channelizing Line. The entrance form consists of a wide white line that aids merging of traffic entering freeway with the through traffic. The exit form displays double white lines with crosshatching that delineates ramp from main stem of freeway.

MEDIAN ISLANDS FORMED BY PAVEMENT MARKINGS. This term is found in U.S. MUTCD 1971 and 1978. It consists of double yellow lines that create median islands as a divider for traffic moving in opposite directions. Crosshatching can be added to the lines.

PARKING MARKING/PARKING SPACE MARKINGS/ PARKING SPACE LIMITS/ PARKING SPACE LINES. U.S. MUTCD 1971 has several forms of the first named term. These forms include complete outlining of the space; outside lines interspersed with short Transvere Markings denoting the length of the space; and "plus" Markings denoting side, front, back dimensions. U.S. MUTCD 1961 speaks of Lines rather than Markings. Canada 1976 uses the term Parking Markings. These forms include many forms: crosses at corners of spaces, front and back lines, small painted indicators on curbs. ECAFE 1964 refers to Limits and has two forms: right angle parking with side lines and oblique space lines; parallel parking has front and back lines and short side lines.

REFLECTIVE PAVEMENT LEGENDS. A historic term (or an informal descriptive term) from Sessions 1961 that refers to word and graphic symbols painted, embossed on pavement. It is part of the Arrow, Word and Symbol group but listed separately because of the distinctive term.

STANDING & PARKING REGULATIONS. UN 1968 permits restrictions on curbs (kerbs) or carriageways to curbs, carriageways. This is also included by ECE 1995.

5B3 Hazard & Delineation Markings

a) Hazard/Obstruction Markings

General Note. While this form of TCD is found in many systems and nations it is notably developed in North America. Some of the terms may be confusing. For the U.S. the general heading is Object Markings while the type of TCD within Object Marking is Object Marker. For Canada the general heading is Hazard Markings and the specific type is Hazard Marker. At one time U.S. Object Markers were known as Hazard Markers (see Reflective Markers).

HAZARD MARKERS. Canada 1976 divides this category into two groups: Markings on Objects Adjacent to the Pavement and Markings on Objects Within the Roadway. The first group of objects includes bridge piers & abutments, and bridge ends & other fixed hazards. The second group includes safety zones, loading islands, median, dividers; bridge piers & abutments; structures with restricted overhead clearance. Approach Pavement Markings for Obstructions Within the Roadway is included with Pavement Markings. Hazard Markers are a standardized unit displaying black/yellow diagonal stripes in the shape of rectangles with vertical emphasis and mounted on a metal post.

CLEARANCE MARKERS. These term is supplied by Homberger 1977. They are

found in California practice. It is of rectangular shape and is of two sizes. The smaller has a white ground and three yellow reflectors. It is somewhat similar to the U.S. Type 1 (which see) though larger. The second form is similar to Type 3 except that the stripes are black and white instead of black and yellow. Canada 1976 has similar markings for "low clearance structures."

MARKING OF OBSTRUCTIONS. UN 1968 contributes this term. This Marking consists of a panel of diagonal stripes that identifying obstructions. The stripes are sharply contrasting but the colors employed are not given. Black/white or Black/yellow patterns are the most likely. ECE 1995 follows the same pattern.

OBJECT MARKERS. This is the primary term for the U.S. in marking various forms of obstructions. There are three forms in use:

Type 1 which consists of yellow reflective discs on a yellow diamond-shaped ground, or yellow discs on black diamond- shaped ground, or simply, a yellow diamond-shaped ground coated with reflective material. Homberger 1977 has a similar Marker though that version can have either yellow or reflectors.

Type 2 consists of yellow reflective discs on white ground, 6 by 12 inches (vertical dimension), yellow reflective material on metal plate in the same configuration, and yellow reflective material of the same dimensions but horizontal.

Type 3 consists of 12 by 36 inches panels with black/yellow diagonal stripes. There are two forms: a left upward slant form and a right upward slant form. The foci of these Object Markers are objects in the roadway, or objects adjacent to the roadway. In addition to these specific types are stripes painted on larger surfaces such as bridges abutments. Object Markers are within the the subdivision of Object Markings.

A related TCD entity, though separate from Object Markers, is the End of Road Marker which see.

END OF ROAD MARKER. This term is from U.S. MUTCD 1978 and 1988. There are three versions: red discs on red diamond, red discs on black diamond, red reflective diamond. The End of Road Marker is within the Object Markings category but apart from Object Markers .

REFLECTIVE MARKERS. This term from U.S. MUTCD 1948 and 1961 can be seen as a sub-overarching term including Hazard Markers and Delineators. U.S. Hazard Markers became Object Markers in newer editions of MUTCD.

b) Delineators

General Notes. Delineation can refer to whatever supplies guidance and tracking data as noted earlier (RDPHB 1981). This category focusses on those objects usually found at edges of roads which are usually mounted on short metal posts. Some terms refer to the function of delineation without negating physical aspects. Other terms seem to refer more to the physical components though there is no hard and fast line between the "physiological" and "morphological" dimensions. The delineators may consist of small reflective discs or units of reflective material attached to small metal posts.

Messages. Color patterns for U.S. MUTCD editions are those of Pavement Edge Markings. Truck escape ramps are marked by red Delineators; red Delineators can also be employed as Wrong Way indicators. U.S. MUTCD editions also refer to Raised Pavement Markers which are part of the Pavement Markings category, and employed on curves and related situations. Canada 1976 employs white or yellow Delineators according to Pavement Edge Lines norms.

The terms are diverse though they refer to a relatively restricted role. The terms include:

DELINEATORS/ROAD DELINEATORS/ROAD-EDGE DELINEATORS, POST MOUNTED MARKERS/POST-MOUNTED DELINEATORS/ ROAD-EDGE DELINEATOR MARKERS/SHOULDER DELINEATION MARKERS/ROADSIDE DELINEATORS/ROAD-DELINEATION MARKERS/POST DELINEATORS/ROADSIDE DELINEATORS/ ROADWAY DELINEATORS.

GUIDE MARKER/GUIDE POST. The first term serves as an synonym for Delineators in Homberger 1977. RDPHB includes the second in a source title.

BIDIRECTIONAL REFLECTIVE DELINEATORS/MONODIRECTIONAL MARKERS. Canada 1976 permits two-sided Delineators on undivided roads. Monodirectional forms are used on divided roads.

CURB MARKINGS FOR ROADWAY DELINEATION. This is a Pavement & Curb Marking entity but it is mentioned here since it is part of delineation. The location is different but the material and focus is the same. This form is applied to island curbs in traffic and serve to direct traffic around an obstruction. White reflectorized material is employed if traffic can travel either side of the objections; yellow to the right only. Reference: U.S. MUTCD 1988.

c) Barricades & Channelizing Devices.

General Note. This section is also tied to North American practice. International systems give little if any attention to these entities and only selective national publications are available outside North America. This coverage suggests terms and entities with at least latent significance beyond North America.

CHANNELIZING DEVICES. This segment, along with Barricades, was a Construction & Maintenance component for U.S. MUTCD until 1978 when a non-C & M section was added to regular Traffic Markings. For Canada these Markings remain in the Temporary Signs & Devices category. Channelizing Devices can take several forms including Traffic Cones and Tubular Markers. Color patterns follow standard Traffic Marking Patterns.

TRAFFIC CONES/TUBULAR MARKERS/CONES/VERTICAL PANELS/ PORTABLE FLASHER SUPPORT/DRUMS. These Safety Aids are orange in color. There are also other forms: Vertical Panel with orange and white diagonal stripes (similar to Delineators which see); Portable Flasher Support consisting of a barricade board or plank with white and orange stripes on triangular supports. Drums, of an oil-drum form (30-55 gallon capacity). They display either orange/white horizontal stripes, or black/ white stripes. Canadian drums are mostly orange in color though limited white stripes are permited.

BARRICADES. U.S. MUTCD has three forms:

Type I. This form is a portable unit with a single, short rail and a light weight "A" frame support. Color patterns for the rail are orange/white or black/ white patterns for Construction & Maintenance. The Non-C &M pattern is in a red/white pattern. All three Types have the same color pattern configuration.

Type II. This form has a single, long rail on a heavy "A" frame structure. This form, though not of a portable nature, can be moved.

Type III. This form is often of a permanent nature. It has three rails which are fastened to posts or skids.

U.S. MUTCD 1988 does not specify support systems for Barricades as was the case in the 1978 edition.

Canada has two versions:

HEAVY BARRICADES and LIGHT BARRICADES.

These forms are very similar to the three rail U.S. version and the light weight single rail type respectively. They display black/orange color patterns.

Appendix I: Comparative Survey of Signs (Adapted from Part E, 1984)

i Introduction

The Database is concerned with the individual T-M phenomenon. It is not primarily concerned with the systems that spawn the individual Transportation Marking. Yet the system of T-M -- in this case Traffic Signs -- can not be ignored since the Signs are an integral part of a given system. Therefore this Appendix outlines the various systems that include signs. The basic sign categories (Warning, Regulatory, Informative) are also integral to the Signs and the systems are presented in that format.

Several topics need to be discussed in this Appendix in addition to the previously described topic. There are many systems of Signs yet not all are included. 1) What systems are included and why others are omitted? 2) The various systems reflect two, and perhaps three strains of approaches to Signs and the strains need to be reviewed. 3) Finally, the three basic categories of Signs may have alternate names in some systems. In addition, there are also sub-categories present in some systems that require inclusion.

Appendix I also includes a review of general terms for Signs. Appendix II takes up general terms for the full spectrum of Traffic Control Devices.

ii Traffic Sign Systems

A four-fold schema can determine which systems are to be included in the Appendix:

a) regional systems
b) systems transcending a region
c) global systems
d) national systems transcending a nation.

Regional systems include IAMM 1967, CASATC 1950. ECAFE 1964 is similar to UN GERSS 1952 and therefore not included. ECAFE 1964 remains a source for the individual entities.

UN 1949 may appear global but its sphere of influence was in Europe & selected non-European states. Therefore, it seems reasonable to qualify it as a "system transcending a region."

UN 1968 is global in scope and quite possibly UN GERSS 1952 can so be regarded.

U.S. MUTCD 1961 is an example of a national systems which very much transcends a single nation. UK 1950 (its development extended over the years1903-1950) but reached its final form in about 1950) also has had influence beyond one nation. For this study it is termed OBS 1950 or Old British System to distinguish it from the newer British system of the 1960s. Much of the UK work took place in 1944 but promulgation did not take place until 1950. UK MOT prepared a summary history and chart of UK efforts in about 1950. Noble 1946 has considerable coverage of the

matter including the 1944 work. Canada's TCD system is important to T-M especially in regard to classification schema and to various Sign forms. Yet it does not appear to be a system notably apart from Western Hemisphere practice (that is a view that can be contested). Various provinces worked out practices that incorporated U.S. MUTCD ideas before the Canadian system was created. The Canadian system is not included in the Chart though it is a major influence on the Database.

iii Traffic Signs Approaches

There have been two prominent strains or "streams" of Sign systems: The "European system" and the "American system". The European system began on a limited basic in 1909, expanded in 1926, 1928, and 1931. Further work was undertaken in 1938 and 1939 but remained unfinished because of World War II. All but the 1909 effort was under the auspices of the League of Nations. Since the quaternity of 1909-26-28-31 underlays the recognizable "European system" of later years it can be often represented by a combined column in the chart. 1938-1939 represents a further stage in development and requires a separate column. The UN 1949 is an extension and expansion of older efforts and continues the European tradition rather than representing a global effort. It too has a column in the chart.

The "American system", a less cohesive and comprehensive endeavor, has influenced many Western Hemisphere systems as well as the 1952 UN GERSS draft. This system refers primarily to U.S. TCD developments. The 1961 edition of MUTCD is included in the chart because it was in use when UN 1968 took place. The 1948 edition might have been included since it is a factor in UN GERSS 1952. Space limitations as well a shared approach of 1948 and 1961 reduces any need to include 1948.

The 1984 edition of Part E omitted IAMM 1967 in large part because of space considerations. Yet IAMM, even though sharing the American system approach, should be included since IAMM was also influenced by GERSS 1952. This created a hybrid system combining the U.S. approach with many graphic symbols (in contrast to mostly word symbols in U.S. 1961). IAMM 1967 is now included in the chart.

UN GERSS 1952 represents a milestone in TCD systems since it brought together the best features of major previous approaches. While it never received international approval it has been employed by several regional and national agencies and has influenced later regional and global efforts including IAMM 1967, ECAFE 1964, and UN 1968. It is included in the chart.

There is a third approach though of a more limited scope: The double panel signs of UK (termed the Old British System (OBS) in T-M studies). This system displays the appropriate symbol accompanied by a rectangular shaped panel with graphic and/or word symbols. The

system evolved in UK from 1903 to the 1950s. The upper sign generally followed the European system while the lower sign was more of the English contribution though graphic symbols followed European designs. CASATC 1950 followed the British pattern; both UN GERSS 1952 and UN 1968 included it though UN 1968 to a lesser degree. LN 1928 is substantially patterned after the UK approach. UN 1968 gives primary attention to two systems but permits usages similar to OBS. UN GERSS 1952 presents a three-fold Sign System approach: European, American, and CASATC/UK.

CASATC 1950 was included in the original chart. OBS 1950 was not included in the 1984 edition of Part E. It is included in this study.

iv Sign Categories

The Sign categories of Warning, Regulatory, and Informative not infrequently have alternate titles. In addition, there are a variety of sub-category terms in use.

Warning Signs: European agreements from 1909 to 1949 employed the term Danger Signs. UN 1968 compromised with Danger Warning Signs. U.S. practice and IAMM employ Warning Signs; ECAFE also preferred that term. Both CASATC and GERSS adopted the term Danger Warning Signs. Some U.K. sources employ a curious hybrid: Warning and Informative Signs though the former seems to dominate that category; other U.K. sources employ Warning Signs.

The term Informative Signs is used in the UN 1949, CASATC 1950 and UN GERSS 1950 documents. Older documents were less likely to include this category; The LN 1931 document included a cumbersome phrase, "Signs Giving Indications Only" for that category. The LN 1939 effort referred to Indication Signs. UN 1968 split this form of Sign into Informative Signs Other Than Parking, and Signs Providing Useful Information on Parking. U.S. and IAMM spoke of Guide Signs instead.

Regulatory Signs includes two basic phases: prohibitions (acts not to be performed), and mandatory (acts that must be performed). The two basic segments in Regulatory Signs led to a large variety of terms and sub-terms are found in Regulatory signs. LN 1931 included a general category of Signs Giving Definite Information divided into Signs Prohibiting Passage, and Signs Indicating an Obligation. LN 1939 speaks of Prohibitory or Mandatory and each word constituted a subdivision of that category. UN 1949 provided a general category of Signs Giving Definite Instructions divided into Prohibitory and Mandatory. CASATC 1950 supplied a unified heading of Prohibitory and Mandatory.

U.S., GERSS and IAMM offer a single category of Regulatory Signs. UN 1968 offers a more complex range of terminology: Regulatory Signs Other than Standing & Parking divided into three groups: Prohibitive or Restrictive,

Mandatory, and Priority. There is also a special category of Standing and Parking Signs.

Abbreviations for the Chart

W/WO = With, Without
L-C = Level-Crossing
L = Left
R = Right
DRL = Double Bend, Right then Left
C-LC = Center & Left of Center
C-RC = Center & Left of Center
L & R-C = Left & Right of Center
LC/C = Left of Center & Center
T = T-shaped junction or intersection
Y = Y-shaped junction or intersection
U = U-turns
MV = Motor Vehicles
MC = Motor Cycles

v The Chart

Warning Signs

1909 [pre-LN/1926/1931 LN
Uneven Road 09/28/31
Gutter Road 26
Sharp Turn 09/28/31
Bend 26
Cross-Road 09/26/28/31
Level Crossing 09
L C w/ Barrier 26
L C Guarded 31/Guarded L-C 28
L C Unguarded 26/31/Unguarded L-C 28
Alternative 31/Alternative General Danger 28
Hollow 26
Other Dangers 31
Concerning Right of Way 31

1939 LN
Uneven Road
Sharp Turn
Single Bend to L, R
Double Bend to L, R
Road End in Junction w/Another Road
Road in Which Another Road Ends at a Junction
Level-Crossing w/wo Gates
Approach to a School Entrance
Other Dangers
General Danger
Approach to a Major Road
Cross-Road

1949 UN
Uneven Road
Dangerous Bend(s) General, Right, Left, Double Bend R/L, L/R
Road Intersection
Level-Crossing w/w o Gates
L-C in the Immediate Vicinity
Dangerous Hill
Carriageway Narrows
Opening Bridge
Road Works
Slippery Carriageway
Pedestrian Crossing
Children

Beware of Animals
Intersection w/ a Non-Priority Road
Other Dangers
Priority Road Ahead
Cross-Road

1950 Old British System
Bend
Level Crossing
Two Way Traffic
Round-About
Crossing No Gates
Hill
Low Bridge Headroom
Hump Bridge
Road Junction
Narrow Bridge (or Road Narrows)
Double Bend
Children
School
Signals Ahead
Cross Road

1950 CASATC
Crossroads
Gate or Level Crossing Barrier
Cross-Drain or Dip
Gate & Motor Gate, L, R
Motor Gate
Unguarded Level-Crossing
Level-Crossing Warning Cross
Level-Crossing Stop
Dangerous Curve
Dangerous Junction
Narrow Bridge
Dangerous Fork, Center/LC, C/RC/LC/RC
Danger
Dangerous T-Junction
Dangerous Sharp Turn, R
Dangerous Steep Descent to L, R
Road Narrows Dangerously
Traffic Circle, L, R
Dangerous Reverse Bend Winding to L, R
Children
Overhead Bridge

1952 GERSS
Dangerous Curves, Sharp, R, L, Double
Road Intersections, Cross Road, L, R, T, Y,
Intersections with a Minor Road, or Non-Priority Road, Cross Road, L, R, T, Y
Stop Sign Ahead
Priority Road Ahead
Uneven Road
Bump
Dip
Rough Road
Dangerous Hill: Dangerous Ascent, Dangerous Descent
Road Narrows
Narrow Bridge
Opening Bridge
Road Works
Slippery Road
Pedestrian Crossing
Children
Beware of Animals
Low Clearance

Narrow Clearance
Level-Crossing
Level-Crossing Guarded by Gates

1961 U.S.
Turn
Curve
Reverse Turn
Reverse Curve
Winding Road
Large Arrow, L, R, Double
Cross Road
Side Road, L or R: 45 degrees or 90 degrees
T Symbol
Y Symbol
Stop Ahead
Yield Ahead
Signal Ahead
Merging Traffic
Pavement-Width Transition
Road Narrows
Narrow Bridge
One-lane Bridge
Divided Highway
Divided Highway Ends
Two-way Traffic
Hill
Bump
Dip
Pavement Ends
Soft Shoulder
Slippery When Wet
School
School Crossing
Railroad Advance Warning
Railroad Crossbuck
Crossing Signs: Cross-Walk, Deer, Trucks, Pedestrian, Cattle
Double Arrow
Low Clearance
Advisory Speed
Advisory Exit
Traffic Signal Speed

1967 IAMM
Turn, L, R
Curve, L, R
Winding Road
Reverse Turns
Reverse Curves
Cross Roads
Side Road
T
Y
Successive Tees
Traffic Circle
Merging Traffic
Signal Ahead
Stop Ahead
Street Car Crossing
Rough Road
Bump
Dip
Hill
Road Narrows
Narrow Bridge
Drawbridge
Road Repairs Ahead

Temporary Two Way Ahead
Directional Arrow
Bi-Directional Arrow
Falling Rocks
Slippery When Wet
Loose Gravel
Cyclists
Farm Machinery
Pedestrian Crossing
School Zone
Children
Cattle Crossing
Deer Crossing
Low Clearance
Limited Width
Unprotected Railroad-Crossing
Protected Railroad-Crossing
Railroad Crossbuck
Divided Highway
End of Divided Highway
Airplane
Cross-Wind

1968 United Nations
Dangerous Bends, L, R, DBLR, DBRL
Dangerous Descent
Steep Ascent
Carriageway Narrows
Swing Bridge
Road Leads onto Quay or River Bank
Uneven Road
Slippery Road
Loose Gravel
Falling Rocks
Pedestrian Crossing
Children
Cyclists Entering or Crossing
Cattle or Other Animal Crossing:
Wild, Domestic
Road Works
Light Signals
Airfield
Cross-Wind
Two-Way Traffic
Other Dangers
Cross-Roads
Stop Sign Ahead
Yield Sign
Level Crossing w/wo Gates
Tramway Intersection
Level Crossing Immediate Vicinity
Level Crossing-Additional Panels

Informative Signs

1931 LN (Signs Giving One Indications)
Authorized Parking Place (& 1928)
Caution
First-Aid Station
Place
Direction

1939 LN (Caution Signs & Indications Signs)
Caution Signs
Caution
Approach to a School Entrance
Indication Signs
Authorized Parking Place

First-Aid Station
Place
Direction
Advance Direction

1949 UN
Indication Signs
Parking
Hospital
First-Aid Station
Mechanical Help
Telephone
Filling Station
Priority Road
End of Priority
Advance Direction & Direction Signs
Place & Route Indentification Signs

1950 Old British System
Direction Signs
Parking Place Signs

1950 CASATC
Curve
Fork, L & R, LC/C
Junction
Sharp Turning to R, L
Steep Winding Descent, L, R
Road Narrows
T Junction
Hospital
First Aid
General
Pedestrian Crossing
Telephone
Filling Station
Service Station
Loading Zone
Rank for Taxis
Parking
Bus Stop
Tram Stop
Second Stage
Major Road Ahead
Advance Direction & Direction Signs
Place & Route Indentification Signs
Direction
Place Names
Descriptive
Route Markers

1952 GERSS
Advance Direction Signs
Direction Signs
Route Markers
Signs Giving General Information

1961 U.S.
Route Markers & Auxiliary Markers
Route Markers
Auxiliary Route Markers
Confirming & Reassurance Route Markers
Junction Markers
Combination Junction
Advance Turn Arrows
Directional Arrow
Directional Assemblies
Alternative Route Markers

- Temporary Markers
- Alternative Markers
- By-Pass Marker
- Business Route Marker
- Detour Marker
- Detour Arrow Sign
- Cardinal Direction Marker
- Trailblazers

Distance & Destination Signs
- Destination Sign
- Distance
- Street Names
- Expressway Directional
- Gore
- Exit Directio
- One-mile Advance
- Two-mile Advance
- Next Exit

Information Signs
- Rest & Information
- Service

Next Services
Parking Area
Mile Posts
Information

1967 IAMM (Guide Signs)
Route Markers
City Name Signs
Traffic Flow Indication
Road Open or Closed Sign
General Information & Auxiliary Signs
- Parking Allowed
- Phone Service
- Mechanic Service
- Gas Service
- First Aid
- Sanitary Facilities
- Restaurant
- Hotel/Motel
- Camping
- Airport
- Ferry Boat
- Trolley Parking
- Caravan Site
- Bus Stop

Protected Pedestrian Walk
Advanced Guide Signs

1968 United Nations
Informative Signs Other Than Parking Signs
Advance Direction Signs
Direction Signs
Place Identification Signs
Confirmatory Signs
Pedestrian Crossing Signs
Other Signs Providing Useful Information for Drivers of Vehicles: Hospital, One-Way, No-Through Road, Tramway Stop, Road Open or Closed with Panels
Signs Giving Notice of Facilities Which May be Useful to Road Users:
- First Aid
- Miscellaneous

Signs Providing Useful Information on Parking
Parking
Exit from Limited Duration Parking Zone

Regulatory Signs

1928 LN
- Signs Prohibiting Passage
- All Vehicles Prohibited
- Motor Traffic Prohibited
- Motor Lorries Prohibited
- Motorcycling Prohibited
- Cycling Prohibited
- Riding Prohibited
- Speed-Limit
- No Entry
- Compulsory Direction
- No Waiting
- Vehicles Weighing Over ... Tons Prohibited

1931 LN (Signs Giving Definite Instructions)
- Signs Prohibiting Passage
  - Closed to all Vehicles
  - One-Way Road or Entry Prohibited
  - Certain Classes of Vehicles Prohibited: All, MV, MC
  - Weight Limit
  - MV Weight Over 5.5 Tons
  - Maximum Speed
  - Waiting Prohibited
  - Parking Prohibited
- Signs Indicating An Obligation
  - Direction to be Followed
  - Stop Near Custom-House

1939 LN (Prohibitory or Mandatory Signs)
- Prohibitory Signs
  - Closed to all Vehicles
  - One-Way Road or Entry Prohibited
  - MV Prohibited
  - MC Prohibited
  - MV (MV, MC) Prohibited
  - Pedal Cycles Prohibited
  - Weight Limit
  - Maximum Width of Vehicles
  - Maximum Height of Vehicles
  - Speed Limit
  - Stop Near Customs Office
  - Waiting Prohibited
  - Stopping Prohibited
- Mandatory Signs
  - Direction to be Taken
  - Road to be Taken by Cycles
  - De-restrictions on the Removal ...

1949 UN Signs Giving Definite Instructions
- Prohibitory Signs
  - Closed to all Vehicles in Both Directions
  - No Entry for all Vehicles
  - Turning to the R, L Prohibited
  - Overtaking Prohibited
  - No Entry for all MV Except MC w/o Sidecars
  - No Entry for all MV
  - No Entry for Goods Carrying Vehicles Exceeding ... Tons Laden Weight
  - No Entry for Pedal Cyclists
  - No Entry for Vehicles Having Overall Width Exceeding ... Metres (... Feet)
  - One-Way
  - No Entry for Vehicles Having An Axle Weight Exceeding ... Tons
  - Speed Limit
  - End of Speed-Limit
  - No Entry for Vehicles Having Overall Height

No Entry for Vehicles Having Overall Height Exceeding ... Metres (... Feet)
No Entry for Vehicles Exceeding ... Tons Laden Weight
Stop at Intersections
Stop (Customs)
Restricted Stopping or Waiting
Waiting on Alternate Sides
Mandatory Signs
Direction to be Followed
Compulsory Cycle Track
Compulsory Minimum Speed

1950 Old British System
Prohibitory Signs
Prohibition of:
Waiting
Parking
Speeds (Over Given Limits)
Exclusion of Types of Traffic or all Traffic (From Specific Roads)
Mandatory Signs
Directions on:
Turns, L, R,
Keep L, R
Halt- Major Road
Children Crossing

1950 CASATC (Prohibitory & Mandatory Signs)
Restriction Notice
No Overtaking
Speed Limit
Stop
Speed Limit Restriction
De-restriction Notice
Level Crossing Stop
No Parking
Stop-signal for Scholar Patrol
Compulsory Cycle Track
No Stopping

1952 UN GERSS
Stop
Direction Prohibited
Turning to the R, L, Prohibited
About-Turn (U-Turn) Prohibited
Overtaking Prohibited
No Entry for Vehicles Having an Overall Width Exceeding ... Metres (... Feet)
No Entry for Vehicles Having an Overall Height Exceeding ... Metres (... Feet)
No Entry for Vehicles Exceeding ... Tons Laden Weight
Speed Limit
Direction to be Followed
Restricted Parking
Parking Prohibited
No Entry for Goods-Carrying Vehicles
No Entry for MV
No Entry for Bicycles
Horn Blowing Prohibited

1961 U.S.
Stop
Yield
Speed Limit
Special Speed Limit
Night Speed Limit

Minimum Speed Limit
Speed Zone Ahead
End ... Mile Speed
Turn Prohibited, R, L, All, U
Lane-Use Control Signs at Intersections
Do Not Pass
Pass with Care
Slower Traffic Keep Right
Trucks Use Right Lane
Truck Lane ... Feet
Keep Right
Do Not Enter
No Trucks
Trucks Excluded
Commercial Vehicles Excluded
Pedestrians Prohibited
One-Way
Two-Way Traffic Ahead
End-One-Way
Parking & Stopping
No Parking on Pavement
No Parking Except on Shoulder
Walk on Left
Pedestrian Crossing
Keep Off Median
Road Closed ... Miles Ahead
Local Traffic Only
Weight Limit

1967 IAMM
Stop Sign
Yield
Do Not Enter
No Left Turn/No Right Turn
No U-Turn
No Parking
Restricted Parking
No Parking & No Stopping
Do Not Overtake
Do Not Change Lane
No Trucks
No Passenger Cars
No Animal-Drawn Carts
No Bicycles
No Farm Machinery
Maximum Load
Maximum Height
Maximum Load Per Axle
Maximum Length Permissable
Maximum Speed
Silence
Customs
Chains (or Spikes) on Tires
Keep Your Right
Compulsory Circulation
Turn Left Only
Turn Right Only
Keep Straight
Trucks to Right-Lane
Two Way Traffic Ahead
No Pedestrians
Pedestrians to the Left

1968 UN
Regulatory Signs Other Than Standing & Parking
Priority Signs
Give Way
Stop

Priority of Road
End of Priority
Priority for Oncoming Traffic
Priority over Oncoming Traffic
Prohibitive or Restrictive Signs
No Entry
Closed to all Vehicles in Both Directions
No Entry For ...
Driving of Vehicles Less Than ... Metres (...Yards) Apart Prohibited
No R/L Turns
No U-Turns
Overtaking Prohibited
Overtaking by Goods Vehicles Prohibited
Maximum Speed Limit
Use of Audible Warning Devices Prohibited
End of All Local Prohibitions
End of Speed Limit
End of Prohibition on Overtaking
Passing W/W.O. Stopping Prohibited (Customs)
Mandatory Signs
Direct ion to be Followed
Pass This Side
Compulsory Roundabout
Compulsory Cycle Track
Compulsory Foot Path
Compulsory Track for Riders on Horseback
Compulsory Minimum Speed
End of Compulsory Minimum Speed
Snow Chains Compulsory
Standing & Parking Signs
Parking Prohibited
Standing & Parking Prohibited
Alternate Parking
Limited Duration Parking Zone

vii Overarching Terms for Traffic Signs

The basic overarching and sub-overarching terms within Traffic Signs are considered early in the Appendix. There seems to be no "natural" place for listing and describing general Sign terms whether primary terms or historical or peripheral terms. A section might be added to one of the three chapters on Traffic Signs for that topic but no one chapter represents all Signs. It may be more workable to discuss terms in this Appendix.

Highway Signs
Road Signs
Roadside Traffic Signs
Road Traffic Signs
Sign Boards
Signing
Signs
Street Traffic Signs
Traffic Signs

The three most important terms are Signs, Road Signs and Traffic Signs. Signs is a pivotal term for Communications and Semiotics. Confusion results in the theoretical, overarching use of the term Sign, and the specific use of the same term. Some TCD sources employ the term Sign internally in publications after first employing a compound term for the titles of publications. For example, Canada refers to Traffic Signs in tables of contents and general usage but then refers to Signs or a

and general usage but then refers to Signs or a subcategory such as Regulatory Signs.

Road Signs is a frequently employed term by many systems including UN, ECE, IRF, IAMM. The term refers to the road rather than to vehicular traffic. A similar approach can be seen with Road Signals and Road Markings. There seems to be an underlying rationale and philosophy when some sources use Traffic (indicating movement of vehicles) in conjunction with T-M terms while others employ Road indicating the surface over which vehicles travel.

Canada and the U.S. often use the term Traffic Signs. And that is the basic term for the category. The U.S. includes Traffic Signs in glossaries and introductory coverage but employs the single word Sign in tables of contents and general coverage. While Signs and their usage are essentially the same the use of road or traffic suggests a difference in attitude, in approach.

A variety of other terms and composite terms can be found in the literature. Sign Posts and Sign Boards appear in older and historical usage. Both terms may suggest the physical aspect of the Sign but not the message dimension. Yet the message aspect is an integral part of the Sign Post and Sign Board. Highway Signs finds occasional use though it is more common in older sources. It enjoys some recent use in the work of the International Conference on Highway Sign Symbology (1972).

League of Nation documents often refer to Road Signalling. However, that term has little, if anything, to do with Traffic Signals. Instead, that term applies mostly to Signs. Other terms include a composite term of Road Traffic Signs (From Zuniga who is rooted in the Western Hemisphere though with a global perspective). Roadside Traffic Signs (from Tripp, an English source in 1950 when OBS was in use, and UN 1949 in part), Street Traffic Signs (from Hawkins whose writings focus on the history of U.S. TCDS and documents). Occasional use is made of Highway Symbol Signs and Symbol Signs; the later term can be easily confused with more communication and semiotic studies.

The term Traffic Signs -- along with Traffic Signals and Traffic Markings -- is preferred in this study. The terms suggest vehicles more directly. Road, at least in U.S. practice seems to be one type of surface for travelling on while streets and highways are other surfaces. The term road does not seem to be a fully general, overarching term.

Appendix II

i General Overarching Terms

The several chapters of the monograph offer an appropriate venue for those overarching terms representing the entire spectrum of Road/Traffic Signs, Signals, Markings. This Appendix has been added to encompass general overarching terms. A summary listing of terms for each of the categories is also included as are cross-categories terms.

The Western Hemisphere and Australia includes a full-spectrum term: Traffic Control Devices TCD). The term, of U.S. provenance (TCD coined in 1934 and 1935 though process of development unknown), includes all forms of safety aids that focuss on road and traffic needs. However, the term has not found universal application. In fact, there is no alternative term in European practice. Probably the only alternative terms are Road Devices in Australia and Traffic Devices by a U.S. author.

UN 1949, UN 1968 and UN GERSS 1952 employ Road Signs and Signals which would seem to exclude Road Markings. However, Road Markings are included in those publications even if absent from the titles.

ECAFE 1964 employs a cumbersome title which is at least comprehensive: Road Signals, Signs, Pavement Markings & Signs for Road Works.

League of Nations publications use Road Signals (1931) and Road Signalling (1928, 1933 revision of LN 1931, and 1939). The term is employed either as an overarching term for the full spectrum of Safety Aids or perhaps a virtual synonym for Signs since LN publications are mostly Sign-orientated in content.

Zuniga offers an overarching term that is comprehensive though more wordy than TCD: Signs, Signals, Markings. The term is satisfactory if the user is aware that the unqualified terms of Zuniga's terms refer to road safety concerns.

It may be instructive to review general overarching terms for other T-M forms as a backdrop to TCD terms. Marine and Aeronautical Safety Aids have overarching terms (at least for some nations): Marine Aids to Navigation, Aeronautical Navigatin Aids. But Railway/Railroad Safety Aids lack an overarching term. Often times Railway/Railroad Signals includes all forms of Safety Aids including Rail Signs, Rail Markers. That situation is reminiscent of terms for road safety for a variety of systems, of nations.

Traffic Control Devices, therefore, seems a suitable term for the field though admittedly it has not met with universal acceptance.

ii Major Terms for the Categories of Traffic Control Devices

It may be helpful to include a summary of terms for the categories of Signals, Signs, Markings together. These terms have already been discussed in the several chapters but separately.

Traffic Signals: Traffic Light Signals, Traffic Signals, Traffic Control Signals/Signals for Vehicular Traffic

Traffic Signs: Road Signs, Traffic Signs, Road Traffic Signs, Highway Signs, Roadside Traffic Signs

Traffic Markings: Road Markings, Traffic Markings, Pavement Markings, Carriageway Markings

iii Cross-Category Terms

A variety of systems have reorganized parts of the Sign categories or created special topical categories. Often times the Signs within those segments are very similar to the Signs of the regular categories though additional Signs may be included.

UN GERSS 1952 has no special categories though Level-crossing Gates, Lights are attached to Warning Signs for level-crossings.

UN 1949 has a section called "Supplementary Provisions Concerning Level-Crossings." It contains Panels, Signs, Gates, Half-Gates, Signals. Signs are primarily in the Warning group.

UN 1968 has rearranged a variety of categories:
Regulatory Signs Other Than Standing & Parking Signs
Informative Signs Other Than Standing & Parking Signs
Regulatory Signs Other Than Priority, Standing & Parking Signs
Standing & Parking Signs
Signs for Road Works (Includes Markings by lights or reflecting devices and also Barriers)
Level-Crossings (Gates, Half-Gates, Lights, Panels)
Signs Regulating Priority at Intersections, Danger Warning Signs at Approaches to Intersections & Signs Regulating Priorities on Narrow Sections of Roads

The Database has retained the basic categories of Informative, Regulatory, Warning Signs despite UN 1968. The basic groups remain valid though the complex UN pattern is a valuable corrective to misconceptions on the workings of Signs.

Canada 1976 includes a Temporary Conditions Signs and Devices category. This category refers to Construction and Maintenance and other short-term situations. Some of the Signs are special to that category though others are similar to regular Signs though color usage is at variance.

U.S. 1978 has several special categories:

Traffic Controls for Streets & Highway Construction & Maintenance (the 1988 edition adds Utility & Emergency Operations to that category)

Traffic Controls for School Areas

Traffic Control Systems for Railroad-Highway Grade Crossings

Traffic Controls for Bicycle Facilities

UK MOT (Old British System) has a category of Warning & Informative Signs whose Signs are nearly all are of a warning nature with the remaining similar to Regulatory Signs.

CASATC 1950 includes categories of Temporary Road Signs, and Traffic Light Signs (the later includes Signals and various Sign/Light Assemblies).

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