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Manual on Uniform Traffic Control Devices for Streets and Highways

Prepared by the National Joint Committee on Uniform Traffic Control Devices:

American Association of State Highway Officials

Institute of Traffic Engineers

National Committee on Uniform Traffic Laws and Ordinances

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American Municipal Association

U. S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
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Submitted by the American Association of State Highway Officials
to the Bureau of Public Roads, U.S. Department of Commerce,
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[1] During 1960, but subsequent to the preparation of this Manual, W. H. KLAPPROTH, City Traffic Engineer, Austin, Tex., succeeded Eugene Maier as a Committee member.

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INTRODUCTION

Traffic control devices are all signs, signals, markings, and devices placed on or adjacent to a street or highway by authority of a public body or official having jurisdiction to regulate, warn, or guide traffic.

Modern highways and vehicles operating thereon, together with changes in our way of life, have resulted in ever-increasing ranges of travel to the end that highway users have come to depend on traffic control devices for information, warning, and guidance. So great is this dependence that uniform, high-quality devices are necessary to productive use and public acceptance of any highway regardless of its excellence in width, alinement, and structural design.

The need for high uniform standards was recognized long ago. The American Association of State Highway Officials (AASHO) published a manual for rural highways in 1927 and the National Conference on Street and Highway Safety published a manual for urban streets in 1929. But the necessity for unification of the standards applicable to different road and street systems was obvious. To meet this need, a joint committee of the American Association of State Highway Officials and the National Conference on Street and Highway Safety developed and published in 1935 the original edition of this Manual on Uniform Traffic Control Devices. That committee, though changed from time to time in organization and personnel, has been in continuous existence and has been responsible for periodic revisions of the Manual, including this 1960 edition.

Membership on the National Joint Committee on Uniform Traffic Control Devices has changed considerably during the years. The Institute of Traffic Engineers joined the Committee in 1942 and the National Committee on Uniform Traffic Laws and Ordinances replaced the National Conference on Street and Highway Safety in 1948. In 1960 the Committee was reorganized to include members from the National Association of County Officials (NACO) and the American Municipal Association (AMA). Currently the latter two associations each appoint two chief administrative officers as representatives. The American Association of State Highway Officials appoints seven members, two of whom are chief administrative officers. The Institute of Traffic Engineers appoints seven members (usually city traffic engineers),

and the National Committee on Uniform Traffic Laws and Ordinances appoints seven members. Members from the National Committee on Uniform Traffic Laws and Ordinances represent nonofficial associations and organizations. They also provide necessary liaison to insure agreement between the Uniform Vehicle Code, the Model Traffic Ordinance, and the Manual.

The six chief administrative officers appointed by the three associations of officials (AASHO, NACO and AMA) have major concern as to matters of policy in representing their respective associations. All modifications or new Manual materials must be approved by the five sponsoring organizations. Such approval constitutes both official and professional endorsement of use of the Manual in all States, counties, and cities.

Requirements of Traffic Control Devices

Any traffic control device should meet five elementary requirements:

1. It should be capable of fulfilling an important need.
2. It should command attention.
3. It should convey a clear, simple meaning.
4. It should command respect of road users.
5. It should be located to give adequate time for response.

In addition, devices which control or regulate traffic must be sanctioned by law.

Four basic considerations are employed to insure that these requirements are met. They are: design, placement, maintenance, and uniformity.

Design of the device must assure that such features as size, contrast, colors, shape, composition, and lighting or reflectorization where needed, are combined to draw attention to the device; that shape, size, colors, and simplicity of message combine to produce a clear meaning; that legibility and size combine with placement to permit adequate time for response; and that uniformity, reasonableness, size, and legibility combine to command respect.

Placement of the device must assure that it is within the cone of vision of the normal user so that it will command attention; that it is positioned with respect to the point, object, or situation to which it applies to aid in conveying the proper meaning; and that its location, combined with suitable legibility, is such that a driver traveling at normal speed has adequate time to make the proper response.

Maintenance of devices must be to high standards to assure that legibility is retained, that the device is visible, and that it

is removed if no longer needed. Clean, legible, properly mounted devices in good working condition command respect. They have a businesslike appearance that implies that they are official and enforced—thus earning the respect of motorists. In addition to physical maintenance, functional maintenance is required to keep traffic control devices current. The fact that a device is in good physical condition should not be a basis for deferring needed replacement or change. A device must be functionally sound or it has outlived its usefulness. Furthermore, carelessly executed maintenance can destroy the value of a group of devices by throwing them out of balance. For example, replacement of a sign in a group or series by one that is disproportionately large may tend to depreciate others in the vicinity; maintenance must be functional as well as physical to guard against such occurrences.

Uniformity of traffic control devices simplifies the task of the road user because it aids in instant recognition and understanding. It aids police courts and road users by giving everyone the same interpretation. It aids public highway and traffic officials through economy in manufacture, installation, maintenance, and administration.

Simply stated, uniformity means treating similar situations in the same way. The use of uniform traffic control devices does not, in itself, constitute uniformity. In fact, using a standard device where it is not appropriate is as objectionable as using a nonstandard device.

Engineering Study Required

The decision to use a particular device at a particular location must be made on the basis of an engineering study at the location. Thus, while this Manual describes the application of the various devices, it is not intended as a substitute for engineering judgment. Nor is it intended to discourage the imaginative application of the standards and principles which the Manual prescribes. Both engineering judgment and imaginative application are essential to true uniformity.

Furthermore, the National Joint Committee on Uniform Traffic Control Devices has provided for limited and rigidly restricted recognition of proposals for experiment or research which it believes may hold promise for advances in this ever-developing field. The Joint Committee requests that it be informed of all new significant research and development which may affect future designs, standards, and uses. The Committee will periodically review the standards with the objective of revising those which

can be improved. Such review and revision will be based largely on the finding of approved experimentation and research.

Legal Authority

In the case of regulatory devices, the meaning of each and the actions required of motorists and pedestrians should be specified by State statute, or by local ordinance or resolution. There is still wide variation in these laws throughout the country, however, and the same device does not everywhere and always mean the same thing to highway users. Obviously, uniformity of rules of the road is fundamental to true uniformity of traffic control devices.

Two publications by the National Committee on Uniform Traffic Laws and Ordinances are specifically designed to provide the content and language of legislation needed to give regulatory devices the same meaning in all jurisdictions. These are the Uniform Vehicle Code (chapter 11, Rules of the Road) for States, and the Model Traffic Ordinance for municipalities.[1] Both the Code and the Ordinance require the placing of signs or other traffic control devices to make some of their provisions effective, and both define the legal meaning of certain devices. The Code directs the State authorities to adopt a manual for a uniform system of traffic control devices, and the Ordinance requires devices under municipal jurisdiction to conform thereto. The adoption of this legislation is a logical first step toward uniformity.

Responsibility for Control Devices

The responsibility for selecting, installing, operating, and maintaining traffic control devices rests with a multitude of jurisdictions. In many States, State and local officials are required by statute to conform to this Manual, or to a State manual which must be in substantial conformance with this Manual. Federal legislation provides that any signs, signals, or markings installed on highways constructed with Federal-aid funds (since December 20, 1944) shall be subject to approval of the State highway department with the concurrence of the Secretary of Commerce, who is directed by the law to concur only in installations that promote safe, efficient highway use. Bureau of Public Roads regulations, in practical application of the law, call for con-

[1] The *Uniform Vehicle Code* (1956), $1.00, and the *Model Traffic Ordinance* (1956), 50 cents, are published by and available from the National Committee on Uniform Traffic Laws and Ordinances, 702 Sheraton Bldg., 711—14th St., NW., Washington 5, D.C.

formity with standards adopted by the American Association of State Highway Officials, approved by the State highway department, and concurred in by the Federal Highway Administrator.

On all streets and highways the need is great for high, uniform standards of traffic control to protect the public investment in the Nation's roads and streets, and to foster safety, convenience, and economy of operation.

In many jurisdictions, particularly small counties and cities, the problem is not simple. Qualified engineers are needed to exercise the engineering judgment inherent in the selection of traffic control devices, just as they are needed to locate and design the roads and streets which the devices complement. Yet many small jurisdictions with responsibility for traffic control do not have qualified engineers on their staffs. Those jurisdictions should seek assistance on difficult problems from the State highway department, their county, a nearby large city, or a qualified traffic consultant.

Small cities and counties should find this Manual of great value in meeting their responsibilities for traffic control. The standards and principles enunciated here are just as applicable to their problems as they are to large metropolitan areas. These standards and principles can be of great value in finding solutions to traffic situations and weighing the merits of proposals advanced by various citizen groups.

Guiding Principles

This Manual sets forth the basic principles that govern the design and usage of traffic control devices. These principles appear throughout the text in discussions of the devices to which they apply, and it is important that they be given top consideration in the selection and application of each device.

The standards in this Manual apply to any and all streets and highways regardless of type or class or the governmental agency having jurisdiction. Where a device is intended for limited application only, or for a specific system, the text specifies the restrictions on its use.

Although this Manual, wherever practicable, includes detailed references to standards for the Interstate System of highways, the *Manual for Signing and Pavement Marking of the National System of Interstate and Defense Highways,* published by the American Association of State Highway Officials, should be consulted in the planning of any signing or marking projects on the Interstate System.

Definitions

Certain terms are defined as they appear initially in this Manual. In addition, such terms and all others for which definitions are needed are presented in appendix A. These terms are grouped alphabetically under each of five headings: General, Signs, Markings, Signals, and Islands.

1960 Revision

In addition to a great many minor changes that are intended to make the design and application of traffic control devices more adequate for modern highways, without wide departure from the basic standards of previous editions, this 1960 revision of the Manual now includes specific provisions for signing expressways, with references to standards for the Interstate System wherever applicable. It also includes, for the first time, an extensive special treatment of traffic control devices for highway construction and maintenance operations (part V) and a group of special signs for emergency civil defense applications (part VI). Standards for traffic signals (part III) have been modernized in keeping with technical advances in that field.

It is assumed that a reasonable time will be allowed for the gradual replacement of any existing installations that may be made obsolete by the new standards.