

THE SCIENCE
OF
HIGHWAY TRAFFIC
REGULATION

1899-1920

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It can be set down as a traffic axiom that familiarity by the Public with the General Highway Traffic Regulations is the Key to effective and economical traffic management. There is no substitute. It is easy to control a trained army, but next to impossible to regulate a mob.

BRENTANO'S

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An annual parade of the Mounted Traffic Squad of New York.

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TO THE MEMORY OF
MY FRIEND

Raymond Wellington Pullman

Major and Superintendent of Police of the
District of Columbia
1915-1920

A man of the highest ideals who was
cut off by untimely death in the midst
of usefulness and in the prime of life

I DEDICATE THIS BOOK

AS DIRECTOR AND ORGANIZER OF THE
HOME DEFENSE LEAGUE
OF THE
DISTRICT OF COLUMBIA

It was my privilege to serve under
Major Pullman, as the head of the
League, a second line of Police De-
fense, during the Great World War,
1917-1920

WM. PHELPS ENO

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FOREWORD

“*Street Traffic Regulation*,” the first book on the subject, published in 1909—nine years after actual work was begun and six years after the General Police Traffic Regulations were officially adopted in New York—led to immediate international interest on account of what they had accomplished in this country.

In the autumn of the same year the work was well started in Paris, but unforeseen interference necessitated a return in 1910 and again in 1912, when “*Le Problème de la Circulation*” was issued in the French language, 10,200 copies being distributed to officials and drivers. This book put the matter in simple and concrete form, resulting in the Regulations being officially adopted in Paris on July 10, 1912, followed by practically all of the recommendations contained in the book being put into effect.

In 1913-14, it was very generally reported that Traffic Regulation was better in Paris than in any city in the world.

The war, unfortunately, has largely undone what had been accomplished. This, however, can be easily and should be speedily remedied.

The Council of National Defense, U. S. A., through its Highways Transport Committee, has devoted itself during the past eighteen months towards the standardization of General Highway Traffic Regulations.

“*The Science of Highway Traffic Regulation*” brings the subject up to date, and if its precepts are followed will result in much saving of life, time and money.

I take this opportunity to correct a rather common misapprehension in regard to what the French papers have seen fit to call “*Le Système Eno*.” This system consists primarily in the education of the public in the Regulations which they are expected to follow. It is because of this basic principle that the system has been successful wherever given a fair trial. Secondly, the system comprises the adoption of all the plans, methods and principles contained in “*The Science of Highway Traffic Regulation*,” which will have accomplished its errand if it can drive its lesson home.

My sincere thanks are due to the many organizations, committees, individuals and publications which have given valuable assistance in the work. Without such help, success would not have been possible.

April 3, 1920.

PART I

General Highway Traffic Regulations

CHAPTER 1

A STANDARD TRAFFIC ACT

The importance of Transportation warrants the creation of a new department of the United States Government under a Secretary of Transportation. The Department should have three great sub-divisions under the headings, Land, Water and Air, each being under an Assistant Secretary. These great sub-divisions should again be subdivided as follows: Land into Railways and Highways; Water into Inland, Coastwise and Foreign; Air into such sub-divisions as further experience may dictate. Each of these smaller sub-divisions should be under an official with the title of Director.

This refers, however, to Transportation of all kinds, whereas we are dealing here with Highway Transportation only. It is to be hoped that we shall soon have a Federal Highway Traffic Act, although the same object can be attained slowly by one state enacting a scientific Traffic Act and other states following, until our aim, uniformity, is reached.

If, however, the United States Government should pass a Federal Highway Traffic Act now, results could be obtained almost immediately. The Act should apply to the District of Columbia and to the territories and to all post roads. It would then, without interfering with states rights, become National, since no vehicle could travel on a post road which did not comply with the Federal Act. (Note 1.)

The Act should contain the "General Highway Traffic Regulations with Direc-

tions for Drivers and Pedestrians" compiled for standardization and adopted by the Highways Transport Committee of The Council of National Defense, U. S. A., and approved by The National Highway Traffic Association. It should also contain amplifications of some of the provisions, as for instance, that on Lights and Sound Signals, (Note 2) which should be more explicit in the Act than is required in the brief Regulations for distribution.

The Act should also contain concisely all necessary conditions in regard to the use, construction, dimensions, equipment and registration of vehicles, and in regard to examinations, permits and licenses of drivers, etc. Only one permit or license should be required for a driver and one registration number for a vehicle. (See Note 3.)

All requirements of the Act should be comprehensive but concise, superseding existing laws and conflicting ordinances.

The Act should further provide measures for legal enforcement of the Regulations by fines and imprisonment for serious cases—especially when a "get away" is attempted after an accident.

Many states and some organizations have already attempted to write an efficient Highway Traffic Act and in some cases the State Acts have been adopted, usually with the result of befuddling the situation. The main object of all such instruments should be brevity, clarity and reasonableness.

Until such a Federal Highway Traffic Act can be enacted or until a State Traffic Act

good enough to be copied by other states is adopted by one state, it would be well for each town and city to revoke existing ordinances on Traffic and in their place pass the following simply-worded provision:

The Police Department (or in a town which has no Police Department, the Board of Selectmen, Town Manager or other competent authorities) are hereby authorized, empowered and ordered: To adopt and enforce the General Highway Traffic Regulations with Directions for Drivers and Pedestrians compiled for standardization and adopted by the Highways Transport Committee of the Council of National Defense, and to di-

rect, control and regulate, and when necessary divert or exclude, in the interest of public safety, health and convenience, the movement of pedestrian, animal and vehicular traffic of every kind in streets, roads, parks and on bridges.

Note 1: Refer to Part XI, letter from Charles Thaddeus Terry, dated Feb. 19, 1920.

Note 2: Harsh, confusing and unnecessarily unpleasant sound signals should be prohibited by law.

Note 3: A distinction should be made between those who drive private automobiles without pay, those who drive for pay and those who drive public automobiles which ply for hire. Drivers of all three classes should be made to pass examinations, after which they should be given certificates of competency. Drivers of the second class, in addition to certificates, should be given permits to drive, and those of the third class licenses to drive.

CHAPTER 2

THE CODE OF GENERAL HIGHWAY TRAFFIC REGULATIONS

NECESSITY FOR STANDARDIZATION

The secret of successful Traffic Regulation is in educating the public in the Regulations which they are expected to follow.

General Highway Traffic Regulations are those which contain all things essential for the largest city and nothing superfluous for the smallest village. Such Regulations should be standardized and their general use insisted upon throughout the whole country, since without their use it is impossible to regulate traffic safely or economically. Failure to realize this fact has always resulted in chaos and unnecessary loss of life.

In the scientific regulation of traffic the first and most important step is the education of those to be regulated. If this principle is followed, the work of the police will be that of prompters and assistants of the individual rather than that of enforcers of the regulations. Drivers and pedestrians, once they know their rights, will themselves become the real regulators, as they will resent infraction by those few—a constantly diminishing number—attempting to override the rights of others. This was once a theory, but to those familiar with traffic prob-

lems it has long since proven to be a fact. It is human nature, common sense, economical, and psychological. Again, if educational measures are relaxed, traffic regulation goes backwards. Much of the present trouble in New York is directly traceable to this, as is the chaotic condition now reported in Paris.

It has been no uncommon occurrence for the head of a police department, in order to camouflage his own culpability in failing to supply copies of the Regulations, to issue an order for the wholesale arrests of drivers for infraction of Regulations which they have not been given a practical chance to become familiar with.

The Regulations should be printed in four-page folders, 4 by 6 inches. Sufficient quantities should always be kept at police stations to be furnished on application and every driver before receiving his permit or license to drive should be required to pass an examination on these Regulations and

to carry a copy with him at all times when operating a car. Every policeman should not only habitually carry a supply of the Regulations in his pocket to be given to violators but he should mark with a cross the section violated. Provision should be made for distribution of copies of the Regulations to school children, who should be required to pass an examination on them, especially that part in relation to pedestrians.

The regulations, also printed on large placards about 14 by 20 inches, should be required to be displayed in prominent places, in all public garages, stables, schools, station houses, and other available public buildings and on standards in the streets.

The value of the Regulations is perhaps 95 per cent education and 5 per cent enforcement.

The police work necessary is in inverse proportion to the education of the public.

It can be set down as a traffic axiom that familiarity with the printed Regulations is the key to effective and economical traffic management. There is no substitute. It is easy to control a trained army, but next to impossible to regulate a mob.

The Highways Transport Committee is

trying to arrange, either with the Government Printing Office or with the printer who has done the work so far, to furnish the plates to any town, city, or state at a reasonable price, including insertion of name of town, city, or state. In this way the expense and trouble of typesetting can be avoided and the printing done locally, insuring uniformity in appearance as well as standardization in wording.

The committee have found a yellow paper with smooth surface which does not tear easily and is excellent for the folders. The placards should be about 14 by 20", printed in large type on yellow cardboard.

In addition to the folders and placards of General Regulations, every city would do well to issue a small pamphlet in which are set forth the penalties provided for infraction of the Regulations, the laws governing speed, lights, sound signals and other equipment. The pamphlet should also give precise information as to how drivers' permits or licenses and vehicular registration may be obtained; the regulations for approach to and departure from each theater and place of public assembly, a list of the one-way traffic streets, cab fares, etc. The pamphlet should be obtainable on application at any police station.

EDUCATION IS THE KEY TO REGULATION

GENERAL HIGHWAY TRAFFIC REGULATIONS

WITH DIRECTIONS FOR DRIVERS AND PEDESTRIANS

COMPILED FOR STANDARDIZATION AND ADOPTED BY
THE HIGHWAYS TRANSPORT COMMITTEE OF
THE COUNCIL OF NATIONAL DEFENSE, U. S. A.
MAY 8, 1919

ISSUED BY THE

[Space left for name of Town, City or State]

DEFINITIONS.

- "Highway"*—any Street or Road used as a public thoroughfare.
"Roadway"—that part of a highway for the use of vehicles.
"Sidewalk"—that part of a highway or park for the use of pedestrians.
"Crosswalk"—that part of a roadway, marked or understood, upon which pedestrians should cross.
"Safety Zone"—that part of a roadway from which vehicles, unless confined to rails, are excluded.
"Curb"—the edge of a roadway, marked or understood.
"Limit Lines"—boundaries of ranking or parking areas, safety or danger zones, crosswalks, etc.
"Vehicle"—any conveyance, including a horse. Hand or foot propelled conveyances and skaters are regarded as vehicles when on a roadway but as pedestrians when on a sidewalk or crossing a roadway on a crosswalk.
"Street (Railway) Car"—any public service vehicle confined to rails on roadway.
"Horse"—any saddle or harness animal.
"Driver"—any person in control of a vehicle.
"One-Way Traffic"—traffic restricted to one direction.
"Ranking"—standing vehicles behind one another parallel with curb.
"Parking"—standing vehicles alongside one another at an angle to curb.

PEDESTRIANS MUST AVOID CARELESS WALKING AND ESPECIALLY OBSERVE THE FOLLOWING DIRECTIONS TO INSURE SAFETY AND AVOID UNNECESSARY INTERFERENCE WITH ONE ANOTHER AS WELL AS WITH VEHICLES.

1. Keep to the right on sidewalk, crosswalk, roadway and passageway (but in highway without sidewalk, keep to left, so as to have clear view of approaching traffic).
2. Observe traffic before stepping from curb and keep off roadway except when crossing.
3. Cross roadway at a right angle (never diagonally) and if reasonably possible on a crosswalk.
4. Watch for traffic officer's signal and heed traffic signs and limit lines.
5. Stand on sidewalk or within safety zone while waiting for a street car or bus.
6. Face and step towards front of street car when alighting.
7. When necessary to pass behind a street car watch out for traffic.
8. On alighting from a street car or other vehicle, observe traffic before moving.
9. Enter and leave a car-stop safety zone at crosswalk only.
10. Do not stand in the middle of a sidewalk but on one side and out of the way of other persons.
11. Do not loiter on a crosswalk or before a public entrance.
12. When sidewalks are narrow use the one on the right.
13. Do not walk more than two abreast on a crosswalk or congested sidewalk, nor more than three abreast on any part of any highway.
14. Hand or foot propelled conveyances and skaters must observe regulations for VEHICLES when on roadway, but directions for PEDESTRIANS when on sidewalk or crossing on crosswalks.

SPECIAL VIGILANCE AT NIGHT

READ CAREFULLY

COMMIT TO MEMORY

UNDERSTAND FULLY

LIVES DEPEND ON IT

DRIVERS SHOULD AID IN REGULATING TRAFFIC

The following Regulations for vehicles (including street cars in so far as their being on rails will permit) shall be observed by the drivers thereof, who shall promptly comply with all orders by voice, hand or whistle from the police as to starting, stopping, slowing, approaching or departing from any place, the manner of taking up or setting down passengers and the loading or unloading of anything.

Vehicular or pedestrian traffic may be diverted by the police to avoid congestion or to promote safety and convenience.

ARTICLE I. RECKLESS DRIVING IS UNLAWFUL AND INCLUDES:

SECTION 1. Driving any vehicle when not legally qualified to do so, or when intoxicated, or when for any other reason not competent to drive properly.

Sec. 2. Driving any vehicle when it is not under practical control, especially at crosswalks and roadway intersections or junctions.

Sec. 3. Failing to exercise due care in crossing or entering the traffic of another roadway—bearing in mind that it is obligatory not to interrupt the traffic of the more important thoroughfare unnecessarily.

Sec. 4. Driving any vehicle across or into a safety zone.

Sec. 5. Exceeding a reasonable, considerate and safe speed rate under existing conditions or the speed rate established by law.

Sec. 6. Violating any of the following Regulations so as to cause danger or failing to take every reasonable precaution for safety or to obey any order of a traffic officer or any direction indicated by official traffic sign or limit line.

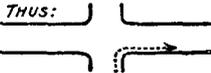
ARTICLE II. PASSING, TURNING, AND KEEPING NEAR CURB

SECTION 1. A vehicle passing or being passed by another shall not occupy more than its fair share of the roadway.

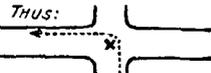
Sec. 2. A vehicle meeting another shall pass to the right.

Sec. 3. A vehicle overtaking another shall pass to the left, but must not interfere with traffic from the opposite direction, nor pull over to the right before entirely clear of the overtaken vehicle—but in overtaking a street car, pass to the right if clearway permits.

Sec. 4. A vehicle turning into a roadway to the right shall keep close to the right-hand curb.



Sec. 5. A vehicle turning into a roadway to the left shall pass around the central point of intersection of the two roadways,



except when directed by the traffic officer to pass in front of the central point of intersection,



and except when its turning radius will not permit passing around the central point of intersection without backing, provided the vehicle slows down or stops and signals effectively.

EXTRA CARE ON SLIPPERY PAVEMENT

CARE AT CROSSWALKS

TURN SLOWLY AND WITH CARE

SLOW AT INTERSECTIONS

KEEP NEAR RIGHT-HAND CURB

THE POLICE ARE THE OFFICIAL REGULATORS

SEC. 6. A vehicle shall keep as near as practicable to the right hand curb—*the slower the speed the nearer the curb.*

SEC. 7. A vehicle cruising for fares shall proceed fast enough not to impede following traffic.

SEC. 8. A vehicle on a roadway divided longitudinally by a parkway, walk, sunkenway, viaduct, safety zone, or cab stand, shall keep to the right of such division.

SEC. 9. A vehicle passing around a circle, oval or other form of centralized obstruction, shall keep to the right of such obstruction.

ARTICLE III. STOPPING, RANKING OR PARKING, WAITING, OBSTRUCTING TRAFFIC, BACKING AND FOLLOWING.

SECTION 1. A vehicle shall stop near the right hand curb only, except on a one-way traffic roadway where it may stop at either curb if the roadway is wide enough for three vehicles abreast. *This rule shall not apply to a designated ranking or parking space.*

SEC. 2. A vehicle shall not stop on a crosswalk nor within a roadway intersection except in an emergency.

SEC. 3. A street car shall not stop within five (5) feet of a street car ahead.

SEC. 4. A vehicle shall neither rank nor park so as to prevent the free passage of other vehicles in both directions at the same time; nor in one direction on a "one-way traffic" roadway; nor with any part of it or of its load extending beyond limit lines; nor within ten (10) feet of a fire hydrant.

SEC. 5. A vehicle waiting in front of an entrance to a building or a transportation station shall promptly give place to an arriving vehicle.

SEC. 6. A vehicle, when another vehicle is waiting to take its place, shall not remain in front of the entrance to a building or transportation, station, except while expeditiously loading or unloading, and, if horse-drawn and with four wheels, the horse shall stand parallel with the curb, faced in the direction of traffic.

SEC. 7. A vehicle shall not occupy a roadway so as to obstruct traffic.

SEC. 8. A vehicle shall not back to make a turn if doing so will obstruct traffic but shall go to a place with clearway enough for the purpose.

SEC. 9. A vehicle shall not follow another too closely for safety.

ARTICLE IV. OVERTAKING STREET CARS.

(WHERE NO CAR-STOP-SAFETY-ZONE OR PLATFORM IS PROVIDED)

A vehicle overtaking a street car, stopped to take up or set down passengers, shall stop or pass very slowly, carefully and considerably, not approaching said car nearer than eight (8) feet in any direction.

ARTICLE V. RIGHT OF WAY.

SECTION 1. A vehicle shall facilitate the right-of-way of Police Department and Emergency Repair vehicles of Public Service Corporations and Ambulances when in performance of duty *but this shall not relieve such vehicles from consequences of carelessness.*

SEC. 2. A vehicle, on the approach of fire apparatus, shall move out of its way or stop so as not to interfere with its passage.

SEC. 3. A vehicle in front of a street car, upon signal, shall immediately get off the track.

RECKLESS DRIVING IS INEXCUSABLE

RESPECT RIGHTS OF OTHERS
SAFETY

CONSIDER CONVENIENCE OF ALL
ALWAYS

COOPERATION IS NECESSARY FOR RESULTS

ARTICLE VI. SIGNALS.

SECTION 1. Drivers, to prevent accidents, must observe traffic, exercise caution and signal by hand or by some other effective method before slowing, stopping or backing; and, before turning, **especially to the left**, must indicate direction of the turn by the signal.

SEC. 2. Drivers when approaching or entering a curve or highway intersection or junction or coming to the top of a hill, **if roadway is obscured**, must use sound signal effectively and go slow.

SEC. 3. Drivers when crossing a crosswalk must go slow, take care, and signal when necessary to insure safety.

SEC. 4. Police whistle signals indicate by—

One Blast—that approaching traffic shall stop behind crosswalks;

Two Blasts—that halted traffic shall proceed;

Three or more Blasts—approach of fire apparatus or other danger.

SEC. 5. Vehicles must be equipped with lights and sound signals as prescribed by law, but sound signals shall not be used except for necessary traffic warning. **A moderate speed will reduce need for noisy signals.**

ARTICLE VII. RESTRICTIONS IN REGARD TO VEHICLES.

SECTION 1. A vehicle shall not be used when it is so constructed, enclosed, equipped or loaded as to be dangerous, to scatter its contents, retard traffic, or prevent the driver from having a view sufficient for safety; or when it is so loaded with iron or other material as to create loud noises while in transit, or when it is loaded with any material extending beyond its rear without being provided with a red flag by day and a red light at night on the rear end of the load.

SEC. 2. A vehicle unless confined to rails shall not tow more than one other vehicle and no tow connection shall be more than sixteen feet in length, without authorization by law or official permit.

SEC. 3. A motor vehicle left standing, without driver in charge, shall not be in such a condition as to prevent its being rolled out of the way in case of emergency, but it shall have its motor stopped and effectively secured against being started, its emergency brake set, and, if on a hill, its front wheels turned in the direction of the curb.

SEC. 4. A vehicle intended for commercial purposes shall not be driven by anyone less than sixteen years of age.

SEC. 5. No one shall ride upon or hold on to the rear of a vehicle without the driver's consent.

SEC. 6. Coasting is prohibited where dangerous.

SEC. 7. Opening a motor muffler cut-out on a highway within a city or village, or within 500 feet of a dwelling, school, church or hospital is prohibited.

SEC. 8. Dense smoke from motors is prohibited.

ARTICLE VIII. CONTROL, TREATMENT AND CONDITION OF HORSES.

SECTION 1. A horse shall not be unbridled nor left unattended in a highway or unenclosed area, without being safely fastened, unless harnessed to a vehicle with wheels so secured as to prevent the horse from moving faster than a walk.

SEC. 2. No one shall ride, drive or lead a horse on a slippery pavement, unless the horse is properly shod to prevent falling; over-load, over-drive, over-ride, ill-treat or unnecessarily whip any horse; crack or so use a whip as to excite any other one's horse, or so as to annoy, interfere with or endanger any person; or use a horse unless fit for its work, free from lameness or sores likely to cause pain, and without any vice or disease likely to cause accident, injury or infection.

SEC. 3. A led or ridden horse should be approached slowly and with extra care and consideration, particularly by motor vehicles.

ABOVE ALL USE COMMON SENSE AND CARE

GIVE SIGNALS CLEARLY AND IN TIME

OBSERVE RESTRICTIONS FULLY

AVOID DANGERS

MAKE SURE SIGNALS ARE UNDERSTOOD

HAVE DUE REGARD FOR SAFETY

BE CONSIDERATE

Note 1, Article I: Special stress is here laid on the necessity for caution being exercised at crossings, roadway intersections, and junctions where most of the accidents happen. If there were no other article or section in the regulations, familiarity with and observance of this one doubtless would eliminate the majority of traffic accidents.

Note 2, Article IV: Combines the advantages and avoids the faults of the many forms used in various cities. Eight feet is the clearance space required in New York, being all that is necessary for one line of vehicles and therefore logical and reasonable. Making this space more than 8' is unreasonable, and therefore practically unenforceable, increasing danger instead of minimizing it. It tends to tempt drivers to speed up just before a street car stops and at a place where the street car obstructs their view of vehicles coming through the cross streets. This has caused many collisions at intersections.

Note 3, Article V: The general clause on

right of way has been omitted to secure greater safety which is obtainable only through care exercised at crosswalks, intersections, and junctions. (See Article I.) The elimination of the right-of-way clause has been decided upon only after exhaustive attempts to give everyone a chance to express an opinion, and in the scores of letters received there was no protest against it.

The rule in New York of giving right-of-way to vehicles going north and south over those going east and west is fairly satisfactory there, and that of giving the right-of-way to a vehicle on the right works well enough when the traffic is light, but if carried out where traffic is dense it results in an inevitable and immediate tie-up, besides giving overimportance to traffic on small streets over that on thoroughfares. After all is said, there seems to be a practical consensus of opinion of those competent to judge that it is far safer to do without any general clause on right-of-way.

HOW TO MAINTAIN UNIFORMITY

The accompanying General Highway Traffic Regulations, with Directions for Drivers and Pedestrians, if changed without the approval of the Council of National Defense through its Highways Transport Committee, may not be utilized as officially approved by the Council (see note.) Organizations, officials, and individuals are invited to send in criticisms or suggestions, addressing same to the Highways Transport Committee of the Council of National Defense, Washington, D. C. Such changes and criticisms will be considered carefully by the Highways Transport Committee and adopted or rejected at meetings to be held periodically for this purpose.

In order to understand what the Council of National Defense is trying to do it is necessary to know first what had previously been done toward the object now being sought.

After trying in vain for over three years to get a suitable ordinance on traffic passed in New York City, it was discovered that the police already had sufficient power and, moreover, were absolutely ordered by the City Charter to regulate traffic. And so on October 30, 1903, the first printed traffic regulations were issued as police regulations

and not as an ordinance. On July 10, 1912, these regulations were officially adopted in Paris, and they have been reported as being used in a proposed set for London.

Between October 30, 1903, and the present time practically all the cities of the United States, and many in foreign countries, have adopted printed traffic regulations, every set of which has been founded on those in use in New York. Although codification of the regulations has ordinarily been intrusted to officials or committees to put in the form of an ordinance, they should never be in the form of an ordinance, but their adoption should be authorized by an ordinance, a city charter, or a State law. This unfortunate habit of different cities making their own traffic regulations has resulted in much confusion and danger.

The New York regulations have been many times revised, and in November, 1918, the Highways Transport Committee of the Council of National Defense began a further revision, which was sent broadcast throughout the country asking for suggestions and recommendations. This movement met with great response, scores of letters coming back, some approving the regulations without comment and others containing well-thought-out

suggestions, many of which have been adopted.

Besides this, most of those who assisted in former revisions of the New York regulations also assisted in this one.

In the revised regulations the word "Directions," when applied to pedestrians, has been used instead of "Regulations," because it is not possible to make brief regulations for pedestrians drastic enough for all conditions as well as reasonable at all times. As no law or regulation is advisable which can not reasonably be enforced, we must rely on education of pedestrians through directions which appeal to common sense.

The first part of the foregoing Regulations is devoted to "Definitions." The second part is devoted to "Directions to Pedestrians," covering the most important points in connection with the cautioning of the public.

"In the compilation of the General Highway Traffic Regulations and their revisions,

credit is especially due to Mr. S. W. Taylor, Editor of the *Rider and Driver* who has continuously and ably assisted from the beginning, to Capt. A. R. Piper and Mr. F. H. Bugher, both of whom worked on the Regulations during their tenure of office as Deputy Police Commissioners in charge of Traffic, to Professor Arthur H. Blanchard, President of the National Highway Traffic Association, to Mr. Justice Siddons of the Supreme Court of the District of Columbia and formerly Chairman of the District Commissioners, to Mr. W. H. Dumont of Paris, to Mr. Joltrain, for many years head of the Traffic Branch of the Police Department of Paris and to Mr. L. L. Robinson, Secretary of the Highways Transport Committee of the Council of National Defense and to many others who from time to time have given the Regulations close study."

Note: In the reorganization of the Council of National Defense on a peace basis, the Highways Transport Committee is now under the name of The Transportation Section of the U. S. Council of National Defense. Should the work eventually be transferred to some other governmental organization, public notice will be given.

For further details on the subject of this chapter, read Chapter 6 of Part IX.

PART II

Traffic Guides

Next in importance to familiarity with the printed Regulations by the Public are the Traffic Guides, consisting of Lines, Signs, Standards, Bumpers, Dummy Cops, Semaphores, Crowsnests, Lights, etc., which can be economically and should be extensively employed to guide the activities of both pedestrians and drivers.

CHAPTER 1

LINES

Lines in or on the pavement should be used to define crosswalks, parking and ranking spaces, safety and other restricted zones, etc., on roadways, and can also be employed to great advantage on sidewalks in congested areas to prevent certain parts of the walk from being blocked by people standing still or loitering, as for instance on 5th Avenue, where during the noon hour the walks are almost impassable on account of the overflow from manufactories.

It is always well to use paint lines in experimenting. If the surface is dry and clean when the paint is applied and if the paint is composed of the right materials, it will last much longer than one would think, as already proven by experiment. It is a question whether it is not best ordinarily to use paint, because lines in the pavement require different pavement materials, making the joints liable to give out in time. However, where safety or neutral zones are so located that vehicles do not often run over the joints, lines in the pavement itself are better as they avoid the necessity of repainting. The initial cost of painting consists largely in the time and skill required in marking out accurately. After that, if retouching is done promptly, the cost of maintenance is very small, even where traffic is the heaviest. Paint lines should be at least four inches wide and two coats are necessary to start them properly. When lines are to be painted on wooden pavement, shellac thoroughly before applying paint.

In commencing the regulation of traffic by lines in a city, select the most important places first; these will furnish an object lesson to the public. It is, however, worth more in safety and convenience than it costs to gradually extend the lines to crosswalks, restricted zones and ranking and parking spaces pretty generally.

For locations of lines, see diagrams in Part IV, Chapters 2, 6 and 8.

CHAPTER 2

SIGNS

Until a few years ago the only highway traffic signs were those at crossroads and junctions, giving the distance and direction to other towns and villages.

In November, 1903, one hundred blue and white enameled signs, directing slow-moving vehicles to keep near the right-hand curb, were put in use in New York. These were probably the first traffic regulation signs ever used.



White on Blue.

An improved form is given below:



Yellow on Black.

These signs have proven very useful and their number has greatly increased in New York but, curiously, other cities, except London, have not appreciated their educational advantages.

Within the past decade traffic signs have multiplied in numbers and in variety. They are of all sizes, colors, shapes and wording, according to individual fancy. This is, of course, confusing and unnecessary.

Everything that has to do with traffic should, as far as feasible, be uniform—signs as well as printed regulations. (Insurance companies will some time come to interest themselves in this fact.)

Signs should denote their meaning as far as practical by shape and by color. There should be only two colors on any one sign—one for the background and the other for the letters and graphics.

Experiment proves that black with yellow and red with white are the colors most easily seen when used in combination. Yellow on black is better than black on yellow, especially at night, as this combination shows the same at night as in the day.

Primary signs are those for warning and directing moving vehicles and should have vivid yellow letters, arrows or graphics on a black background. Signs for distance are included in primary signs.

Secondary signs are those for stationary vehicles, designating public parking spaces, cabstands, car and bus stops, etc., and should have the colors reversed, *i. e.* black on yellow.

Tertiary signs are those for the control of pedestrians, designating crosswalks, safety zones, etc., and should have red letters, arrows or graphics on a white background.

The combination of these colors in any signs for other purposes than official traffic signs should be prohibited near the curb in city streets and on any part of a country road.

There seems to be a growing opinion

among motorists that signs of warning should be simplified, and that perhaps one sign of general caution would be better than many, for the reason that if warned against some special danger one is apt to look for that only and forget others quite as important.

A sign with the word "SLOW"—even abbreviated to "SLO"—is sufficient for most purposes, and having but three letters, they can be larger.



Yellow on Black.

Or signs with "SLO" at the top in very large letters, then a graphic and below it what the graphic is intended to represent in smaller letters.



Yellow on Black.



Yellow on Black.

Where desired to state a special reason for caution—as the proximity of a school or hospital, the words “Care—School” or “Quiet—Hospital” is sufficient.



Yellow on Black.

General speed regulations should be National, but each state, city, town or village should have the right to limit speed rates locally at dangerous points by means of signs, preferably lighted at night.



Yellow on Black.

One-Way Traffic signs should be of the following pattern and 6'-6" to the bottom of the sign so as not to interfere with head room but to be seen over the heads of pedestrians. They should be on every corner of a One-Way Traffic street. The signs would cost but a fraction of a policeman's pay and be far better, especially as a policeman can not always be in attendance.



Yellow on Black.

Rotary Traffic signs at street intersections or junctions should be of the following pattern and about 4' to the bottom of the sign.



Yellow on Black.

Driveways across the sidewalk to the entrance of a building should have signs showing way to enter and way to come out.



Yellow on Black.

The signs already given are all the Primary Signs necessary or desirable. The following are Secondary signs with yellow background and black letters.



Black on Yellow.

There are now many signs in use in relation to parking which do not mean what they say, owing to ignorance as to the definition of parking. (See Chapter 2, Part I, the two last definitions.) As for example:



Improperly worded signs.

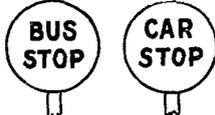
The preceding signs are intended to mean “do not ‘park’ or ‘rauk’ here.” Proper signs for the purpose are:



Black on Yellow.

If it is desired that vehicles shall not stop at all at a certain place, the second sign is the one to use.

Car and Bus Stop signs should be placed 6'-6" to the bottom of sign.



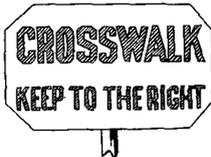
Black on Yellow.

Cabstand signs 6'-6" to bottom.



Black on Yellow.

There remain now only tertiary signs—those for the direction of pedestrians—which should be red on a white background. The most necessary of these is the one to denote the location of crosswalks, as follows:



Red on White.

No sign should have "Police Department" or any other words on the face except those necessary to express its meaning. Any such extra information, if insisted upon, should be on the back of the sign or on the standard.

CHAPTER 3.

TRAFFIC STANDARDS

Portable Traffic Standards are usually made of iron pipe about 1 3/4" in diameter and 4' high, with a round iron base.

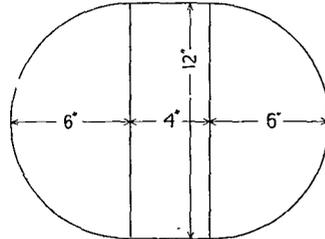
Lately many standards have been made larger, heavier, and higher, on the theory that they are harder to knock over. It has

been lost sight of, however, that if heavy standards are knocked over they are very apt to cause serious injury to pedestrians and vehicles.

Formerly where there was a row of standards at Safety-Car-Stop zones they were often connected with ropes and even with chains, iron rods or pipes. Such connections are a source of danger because if one standard is knocked over the others are apt to be pulled down with it.

Portable traffic standards should be only sufficiently heavy to keep them in place in a high wind.

The base of the standard should be in the form of an elongated circle to prevent rolling if knocked down.



The base should have a round hole in the center to receive the iron pipe which should be secured by a set screw or rivet. The iron pipe should not be screwed into the base as the thread weakens it, resulting in expense for replacements. Steel pipe is better than iron as it does not bend easily. In some instances a hickory or other hardwood stick is better than metal, as for example, for danger flags at street excavations. The base should be cast with a collar, to hold the pipe securely in a vertical position.



The height of the portable standard should not exceed 4'-6" unless it be one for a lamp to be used inside a restricted zone, remote from its border, where the chance of its being knocked over is small.

The top of the standard should be fitted with an upright ring easily removable, to be replaced when necessary by a lamp socket, bracket or sign. -

The bases and tops of portable standards should be painted bright red. The pipes with black and white bands from 8 inches to 12 inches wide. The top and bottom bands should be white.

Wherever a portable standard is used, a white disc considerably larger than the base of the standard should be painted on the pavement to insure the accurate placing of the standard, to afford it protection and to increase its visibility.



Stationary traffic standards on sidewalks should be placed one foot from the curb, the pipe being let into the sidewalk and set in cement. The iron pipe for stationary signs should be heavier than that for portable standards. The signs should be fastened to the top of the pipe by a dowel. The distance from the ground to the bottom of the sign should be 6 feet 6 inches. Stationary standard should be of a neutral color.

CHAPTER 4

TRAFFIC BUMPERS OR MUSHROOMS

The Traffic Bumper or Mushroom is a device for indicating, sometimes in conjunction with lines in or on the pavement, the limits

of restricted zones and for marking points on the pavement which should be travelled around, as for instance, at the point of intersection of central lines of two streets which cross each other at approximately right angles. The bumper consists of an iron disc 18" in diameter and 4" high. Care should be taken to corrugate the surface so that it will not be slippery and in order that it may retain paint. As in the case of signs, it can not be too strongly urged not to put any letters or directions on them, as these produce a smooth surface which is invariably slippery and which will not hold the paint. It is well to cast a hole in the center of a bumper into which can be inserted a stick or ball for the purpose of further visibility.

Bumpers should be kept painted white and should also stand on a disc painted white so that they can be easily seen.

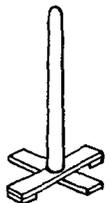
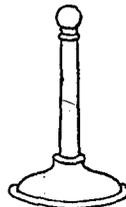
Several designs have been made for lighting bumpers by electricity. This, however, makes them easily breakable. If lighted, the holes in them should be filled with glass vault lights which are comparatively strong and will prevent the dust from obscuring the light.

A bumper should not be used at the center of an intersection of streets which cross each other at an angle not practically a right angle, etc. (See next chapter.)

CHAPTER 5

THE DUMMY COP

The Dummy Cop consists of a post designed as a substitute for a traffic officer. The first drawing of a Dummy Cop was



published December 24, 1904, the design being still in extensive use in some states.

There are many models of Dummy Cops, most of them equipped with a red flag during the day and a red lamp at night. Thousands of Dummy Cops are now in use and their number is constantly increasing. In fact, the Dummy Cop is far more effective and certainly more economical than any policeman other than a thoroughly trained and intelligent traffic officer.

The best colors for Dummy Cops are the same as those for traffic standards. A traffic standard is as effective as any other design of Dummy Cop. Wording or arrows are superfluous. The Dummy Cop should always stand on a good sized white disc to add further visibility and to insure accuracy of position.



In many places, especially since the Dummy Cop has proven so popular, permanent structures with lamps and signs, many of them ornamental as well as useful, have been built at the intersections of roadways in city and country. If permanent structures are to be used, the bases should be of such form as to deflect the wheels of vehicles striking them, and these bases should be

kept painted white except for about 6 to 12 inches at the bottom, which should be painted red.

A Dummy Cop (and the same may be said of a traffic bumper) should not be used at the center of intersection of streets which cross each other at an angle not practically a right angle as this practice makes the left-hand turn too acute. However, they may be used to advantage but more than one will be required at each intersection, according to local conditions.

CHAPTER 6

SEMAPHORES

The so-called "Go-Stop" semaphores now in general use are not practical in their present form because the signs on them have no neutral position. If the signs could be



A Defective Semaphore. It always indicates "Stop" or "Go." The signs should have a neutral position.

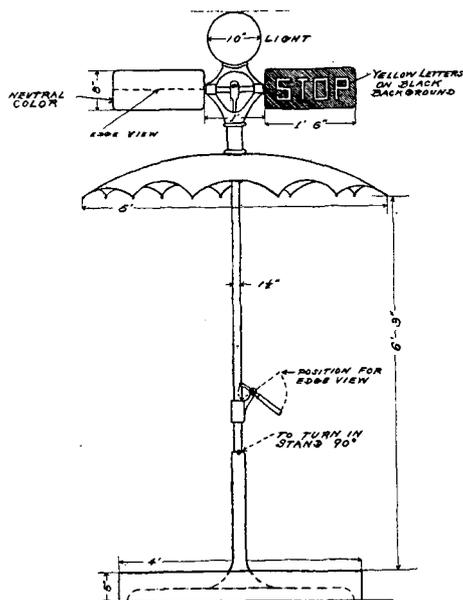
turned or dropped down so they could not be seen, the semaphore could be left in position when there was no traffic officer present and so serve as a Dummy Cop. It is a question, however, whether a semaphore is not more of a hindrance than a help in regulating traffic. It certainly is no material help to an experienced traffic officer and it is doubtful whether it improves the work of an inexperienced officer. An inexperienced officer is, after all, not nearly as good as a Dummy Cop, which, at least, does not interfere with traffic by incomprehensible gestures which tend to unnecessarily delay and confuse both drivers and pedestrians.

One of the objections to the use of the "Go-Stop" signal is that the traffic officer often fails to turn it promptly. When it is considered that the hours of duty are long and tedious, it is not to be wondered at that the officers are sometimes a little absent-minded. Another difficulty is that when a signal is turned against traffic the officer is often obliged to beckon individual vehicles forward in order to facilitate their movement. This necessarily results in uncertainty, as the drivers do not know whether to obey the semaphore or the hand signal of the traffic officer. The "Go-Stop" semaphore for individual work is not as good as the hand because the semaphore signals all vehicles in sight to go in one direction and to stop in another, while the hand of an officer can signal to them individually and weave them in and out without causing unnecessary delay.

The "Go-Stop" semaphore should be discontinued absolutely unless it can be so constructed that it will be practical to place its signs in a neutral position.

There is really no reason why a semaphore should display the word "Go" at all. It is better to let traffic move when not forbidden to do so and thus reduce the complications of construction of the semaphore by displaying only the one sign "Stop."

The following drawing shows one method of construction by which the signals can be placed in a neutral position. The handle turns the semaphore through an angle of 90 degrees when revolving around the shaft, and when it is desired to turn the signals flat to the ground in a neutral position the handle is simply pushed up. Notice the wooden platform 8" high and 4' square which covers the iron base of the stand and affords dry footing for the traffic officer as well as giving him the advantage of extra height.



The working drawing does not show colors, which should be the same as in preceding cut. The umbrella should be red.

CHAPTER 7

TRAFFIC CROWNSNEST

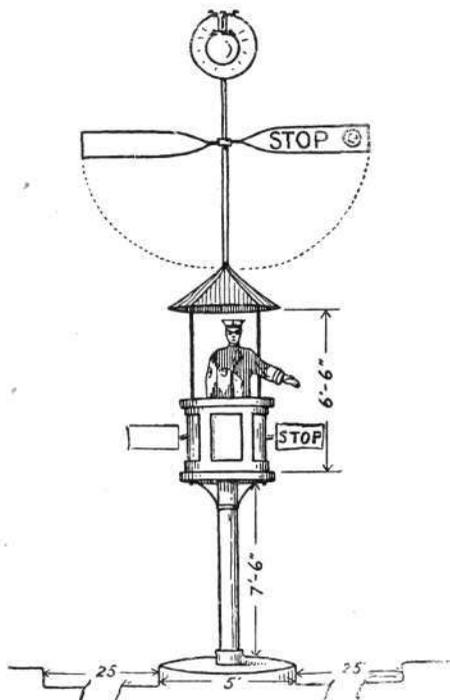
A Traffic Crownsnest (first recommended in an article published March 7, 1914, and in numerous articles and pamphlets since) is a raised and covered sentry box to be

located at important street intersections or foci. The traffic officer has a clear view of traffic in all directions, is moderately pro-

will probably make the Block System superfluous at least most of the time. The semaphores, however, are a safeguard when necessary to temporarily stop traffic in case of the approach of fire apparatus or other danger.

Telephone equipment furnishes direct communication with police and fire departments and nearest police station, and also with other Crowsnests if located on the same street, while electric push button signals connecting the Crowsnests indicate such warnings as "Clear the Street for Fire Apparatus," "Look Out for Runaway," etc. The indicators should show from which Crowsnest the signal is given in order that the distance of the approaching danger may be known. The Crowsnest is also equipped with an electric heater and a revolving stool adjustable as to height. The stool can be placed in position for use when required and when not needed, pulled out and set one side.

In 1917 the first of these Crowsnests was put in use in Detroit. This was modeled after the pattern above described except that an ordinary semaphore was used in place of the one with arms, which would be better as



tected from the weather, isolated from distractions and able to do more effective work than when on the street level.

On the Crowsnest there are two pairs of semaphore arms worked by electric switches. At night these arms carry a red light. Lower down on the Crowsnest, as shown in the drawing, are two other semaphore arms, located at a height where they can be seen from beneath an automobile hood. The upper arms are to signal vehicles some distance back and the lower ones to signal those nearby. The semaphore is for the Block System, although the more advanced method of Rotary Traffic at intersections



the falling and rising of the arms attract the attention of the eye. The arms could

be equipped with a tinkling bell to attract the ear also. In order to describe the working of the Crowsnest, extracts of letters from Detroit are given.

January 24, 1918.

“My Dear Mr. Eno:

“I have yours of the 18th inst. and in reply would say that we put the Crowsnest in operation at Woodward and Michigan Ave. on Tuesday, Oct. 9, 1917. I assure you that it was partly through neglect and partly owing to the pressure of other matters that I failed to do so. You say you are anxious to know all about it. I am anxious that you should. It was this way: Last summer one of the Aldermen suggested to the Commissioner ‘That something elevated be placed at this corner for the traffic man to stand on.’ I immediately recommended ‘Mr. Eno’s Crowsnest.’ Together with this recommendation I submitted a sketch similar to the one in your pamphlet. This recommendation was approved by the Commissioner and construction of the Crowsnest commenced. About a week after it was put in operation I reported to the Commissioner that ‘It proves to be a successful innovation beyond our expectations.’ We did not realize what an advantage the elevated position gives the officer. He has a clear view over the tops of street cars and automobiles and can command the whole situation for two or three blocks in all directions. Men at other corners in the vicinity work in conjunction with this master semaphore with the result that movement of traffic is noticeably faster and safer. Drivers and pedestrians frequently expressed their approval. It works to the advantage of the driver because they have the officer in it in plain view at all times from every angle. Direct telephone communication between the booth and First Precinct Station is another good feature.

“One of the better proofs of its success is that one officer can control the traffic alone, while heretofore it required two men. One of our oldest and best traffic officers who had been regulating traffic at this corner for years, after occupying the Crowsnest for one day, said ‘It is the best thing in the world.’

“I am enclosing herewith a cut of the tower clipped from a recent issue of ‘Popular Science.’ I was informed there was a

cut of it in ‘Popular Mechanics.’ You will notice the change in the type of semaphore. Under a separate cover I am sending you a photograph.

“The location of this tower, as you may remember, is in front of the City Hall. The Commissioner has ordered another one to be constructed at Michigan Avenue and Griswold Street, which is one block to the westward. * * * (S) W. P. RUTLEDGE,
Chief Inspector.”

February 2, 1918.

“My Dear Mr. Eno:

“Upon his return from Washington recently, Commissioner Couzens instructed me to forward to you a photograph of our elevated Traffic Booth which I am sending you under separate cover. It is situated at the intersection of Woodward, Michigan and Munroe Avenues in front of the City Hall, at one of Detroit’s heaviest traffic points.

“Your specifications were followed quite closely in its construction. Please note that the ‘Go and Stop’ signal is indicated below as well as on top. The lower one is specially for the benefit of drivers making a left turn, who come to a stop and await the signal to make the turn; also, it is of value to pedestrians who can not very well see the signal which is located on the top.

(S) GEO. A. WALTERS,
Secretary to Commissioner.”

February 26, 1918.

“My Dear Mr. Eno:

“Your suggestion that a seat similar to a bicycle seat might be placed in the ‘Crowsnest’ is a good one, and I will see about having one installed.

“I think I told you we were heating the tower by electricity. We also have a telephone in it which has been used to good advantage on more than one occasion.

(S) W. P. RUTLEDGE,
Chief Inspector.”

Subsequently several other Crowsnests of the same type have been added in Detroit.

Rotary Traffic, aided by Traffic Crowsnests, at important intersections will in my opinion eventually be adopted in regulating traffic on 5th Avenue in New York.

Crowsnests should be located from four to five blocks apart, although one at every intersection would not be a mistake.

CHAPTER 8

TRAFFIC REGULATION LIGHTS

(Not the lights to be carried on vehicles but those for regulating their movement in traffic)

On semaphores intended to open or close traffic alternately, red and green lights should be used. On Dummy Cops and traffic standards marking restricted zones or for some unusual danger on a highway, such as an open ditch or a pile of building or other material blocking the way, red lights should be used.

Another object of a traffic regulation light is the illumination of the spot where it is located. If this can be amply provided for, no red lights will be necessary, but the red flags provided for day-time should be retained. So far, no kerosene lamp has been made which will sufficiently illuminate its immediate vicinity, though one can be devised so as to be much more effective than any now used.

The best plan of all is, of course, to conduct electric wires beneath the surface of the roadway to whatever points it is necessary to illuminate or mark. This can be provided for economically when new pavements are laid, or done anyhow if the expense is warranted.

The so-called spot-light directed from the upper part of a building on to the ground is fairly good but wasteful of electricity. It is better to suspend an electric light by wires directly over the spot to be illuminated, and this is easily done without a great deal of expense.

The most important places of all to light are the centers of intersections of streets, especially if marked by Dummy Cops, traffic bumpers, or other devices.

PART III

The Rôle of the Police in Traffic Management

CHAPTER I

POLICE DUTIES IN REGULATING TRAFFIC

All policemen should be made to understand by the following general order from headquarters that they have general traffic obligations:

“You are hereby informed that it is the duty of every uniformed member of the police force to correct and instruct drivers and pedestrians in the traffic regulations and reprimand them for infractions thereof, and if an offense is committed with obvious intent to obstruct traffic or to interfere with the rights or safety of others, to take the driver's name, number and address, the vehicle number, if it has one, or in the case of a pedestrian, his name and address, and such other particulars as may be available for identification of persons or vehicles and report same at his precinct station or at Police Headquarters for action. In case of a serious or intentional offense, the offender should forthwith be arrested.”

In addition to the general traffic duties to be performed by all members of the police force, there are special duties which require a trained body of men—a traffic squad—consisting of men on foot, on horses, on bicycles and on motorcycles.

The men on foot should regulate traffic at street intersections and other congested points (see Note 1). Where the Block System is in force such regulation consists principally in stopping and starting traffic on each street in turn; but everywhere it should consist in facilitating drivers and pedestrians by direction with hand and voice when necessary. This can be done efficiently only by skillful traffic officers.

The mounted men should patrol and exer-

cise general supervision over traffic. Being higher up, they can see better than men on foot and are most valuable in reprimanding drivers for offenses and in teaching them to observe the regulations. The horses must, however, be carefully trained for this work.

Mounted traffic men should not be on stationary duty at street intersections nor elsewhere, nor ordinarily on streets with car tracks. It was the misuse of mounted men in New York that led to the mistaken idea that they were not needed for traffic work. This resulted in a reduction of their number and in sending most of them to the suburbs, where, in fact, bicycle and motorcycle men are more efficient. Their proper function is patrol duty, especially on such streets as 5th Avenue, on the river fronts and in parks, and they should be used on this duty in sufficient number.

A well-trained body of mounted police is essential to every large city for the management of parades, escort duty, suppression of riots, etc. A mounted traffic squad furnished this service economically, because daily traffic duty gives its members regular employment between times.

The bicycle men should patrol and exercise general supervision of traffic, particularly to see that in crowded streets parking and ranking are not abused and traffic delayed. (See Note 2.) Their flexibility and

Note 1: An unskilled traffic officer at a street intersection is a hindrance to and not an assistance in traffic regulation. It is far better to use a Dummy Cop or a traffic bumper unless a skilled man can be provided. Many of the men now on duty at intersections throughout the country should be given other jobs.

Note 2: Many more bicycle men could be used with advantage in every city to keep the streets open and clear for traffic. The general statement is true that in all cities more traffic officers are used than necessary at intersections and not enough on patrol.

speed enable them to cover a large territory effectively. Motorecyclists are particularly useful in the less crowded streets, suburbs and parks in regulating the speed of automobiles.

The management of traffic by the police adds but very little to the cost of police work, because the men composing the traffic squad are not withdrawn from regular police duty, but are so placed by their special assignments as to have an effective supervision of their locality and to be found readily in case of emergency. Their duty constitutes what might be called "fixed post duty" by men on foot, and "limited patrol duty" by men on horses and cycles.

The Traffic Squad, on account of its greater experience, is very efficient in the management of vehicles at theaters and other places of assembly and at the races.

It is manifestly impossible to lay down, in a reasonably brief form, rules which should always be enforced to the letter, and consequently considerable discretion should be left to the intelligence of the traffic officers themselves.

Uniformity of signals at crossings is much to be desired and has been taught lately at Police Headquarters in New York with excellent results.

CHAPTER 2

TRAFFIC BRANCH OF A POLICE DEPARTMENT

In London and Paris the Police Departments have branches known as the Public Carriage Office in the one and as *Le Bureau des Voitures Publiques* in the other, some of the duties of which are to examine and license drivers of public vehicles, such as cabs, trucks, sight-seeing cars, etc., and to make and enforce regulations in regard to the fitness and maintenance of such vehicles, including examination of taximeters, etc.

Every city should have a similar branch of its Police Department, to be appropriately

known as the Traffic Branch of the Police Department, with duties as described above, and also the following: The licensing of peddlers and registration of push-carts and regulations in regard thereto; control of obstructions on streets and sidewalks, including those necessitated by building operations since these affect the movement of traffic, etc., and in fact, the whole subject of highway traffic regulation.

Another important matter is the recording of accidents for the purpose of fixing blame and ascertaining cause with a view to devising prevention.

All police privates and officers, including members of the office force, men on foot and those mounted on horses and wheels who are regularly employed in traffic work, should be members of the Traffic Squad and directly under the Commanding Officer of the Traffic Branch of the Police Department. If details of men from the Traffic Squad are needed in emergency they should be assigned by the Commanding Officer on direction of the Chief Inspector. It goes without saying that all members of the Traffic Squad should understand that they are not withdrawn from regular police duty but must be ready to help wherever and whenever occasion arises in the same way that all policemen have general traffic obligations as explained in the foregoing chapter.

The head of the Traffic Branch should be fitted by natural talent as well as by experience for traffic work. The money-saving which a competent man at the head of the Traffic Branch can effect for any city is very large, not to mention the saving of life and the reduction in the number of accidents. Even in towns with but a small police force the supervision of traffic work should be delegated to a special officer who should not be outranked by any uniformed officer except the Chief Inspector.

Street Traffic Regulation has already become the most important branch of police

work, from an economic standpoint at least. Even in its present incomplete development the amount of money it saves the people of New York, for instance, very many times exceeds the cost of maintenance of the entire department. (See Part IX, Chapter 6.)

CHAPTER 3 TRAFFIC COURTS

On page 3 of "Street Traffic Regulation," published in July, 1909, there appears the following paragraph:

"It would still further tend to simplify and avoid trouble and waste of time if there were Street Traffic arbitrators at the Traffic Bureau and its branches, whose duties should be to examine all cases of street traffic accidents and breach of street traffic regulations, and decide what punishments should, in their opinion, be meted out or what damages should be paid. If the culprit chooses, he would, of course, have the right to resort to the courts, but in such cases the findings of the arbitrators should also be reported to them. Probably most of the traffic cases, by this method, would never go to the courts."

This paragraph, together with later talks on the subject, resulted in the present traffic court being established in New York City.

In large cities there is no doubt but that traffic courts should exist, and in a city like New York there ought to be more than one. In smaller cities and towns which have police departments the plan suggested in the second paragraph of this chapter might be ample for the purpose.

It should be borne in mind, however, that the education of the public in Traffic Regulations means the reducing of the necessity of traffic courts and the enforcement of penalties. The education of the public (see Chapter 2, Part I) is so cheap and the upkeep of courts so expensive that all necessary money should be spent on the former in order to decrease the large amount for the maintenance of the latter.

At each Traffic Bureau station and at traffic courts, diagrams of typical and special traffic intersections and junctions should be provided, to be spread on a table for the purpose of simulating accidents. Toy vehicles or little blocks made on the same scale as the diagrams should represent the different kinds of vehicles to illustrate how accidents occurred.

CHAPTER 4

POLICE HORSES, EQUIPMENT AND UNIFORMS

This seems a proper time and place to call attention to a chapter in "Street Traffic Regulation," published in 1909, under the above heading, and here reproduced with practically no changes. It shows how far conditions had been improved at that time. A comparison with present conditions is interesting:

"The Police Department obtains its horses by contract under specifications duly advertised in the City Record. The price per horse during the past two years has ranged from \$285 to \$310. The specifications call for sound bays, with black points, from 15½ to 16 hands high and from four to seven years old. After selection they are sent to the Department Training Farm and if within a probation period of thirty days they prove unsuitable for police work, especially as regards intelligence, they are returned to the contractor.

"Commissioner Bingham took exceptional interest in the selection of horses, having had, in addition to the regular Deputy Commissioner and veterinary surgeon, a personal representative, Major Charles A. Benton, U. S. A., retired (not connected with the department), present when the horses were selected, and it is largely due to his superior knowledge and care that the type recently purchased has been so appropriate and of such high quality. Formerly the horses were selected without much regard to fitness or appearance—lately they have been chosen with extreme care. Most of the stables were

in cellars, while now they are all above ground, well lighted and ventilated, and a farm for training and resting the horses has been provided on Long Island. Much of the credit for these improved conditions also is due to the same gentleman, and every man of the mounted squad is grateful to him for having a better horse to ride. Credit is likewise due to the trainers who have taken the raw material and turned out the finished product, and to a drill master, Martin D. Corbett, whose equal would be hard to find. With only occasional opportunities for practice, he has made a better showing than is often seen in any of our cavalry regiments with their regular and continued drills, though it is but fair to say that our cavalry are usually furnished by our pound-foolish government with mounts that are little better than caricatures and which would make a real horse shy if he met one of them on a dark night.



Martin D. Corbett.

“The practice of keeping the horses always on a walk is very bad. They should have the exercise of trotting and cantering from time to time.

“The saddles and bridles are of poor quality and improper shape. For such hard and constant use, only the best grade is economical. The high cantle tends to throw the rider forward when

his horse falls and increases the chance of injury; this tendency is augmented by the fact that the stirrup leather is hung about an inch and a half too far back. It is not fair to handicap men who often have to perform most dangerous duty by giving them unfit equipment and so unduly increasing the risk. The saddle should be of the best English model with not over $3\frac{1}{2}$ in. dip. The head should be square, as it gives more room to slide forward. There should be no knee rolls. A thin skirt soon forms into a depression which provides a more secure place for the grip of the leg. The saddle should be padded with felt, not cotton, and lined with good quality of leather—not with cloth, which soon wears out and allows the padding to get out of shape. A numnah of the form and color of the saddle should be used when needed. The box stirrups should be replaced by open ones of steel, allowing greater comfort in the change of position of the feet, as well as more safety and better seat when stopping a runaway.

“The bridles should be of most durable quality and have studs instead of buckles. The bradoon should be of the Baucher pattern, and the bit should have a wider and easier port, affording more room for the tongue. Bits and



Photo by Paul Thompson, N. Y.

Importance of Police Horses being trained to keep straight in traffic.

stirrups of polished steel look more workmanlike and are stronger than any of the non-rustable varieties and the little extra labor of keeping them bright is unimportant.

“The uniforms are altogether inappropriate. The coat should have a vent of suitable length in the center of the back, instead of those at the sides, which cause it to hunch up over the cantle. It should have a higher waist line and be fuller in the skirt. The overcoat is entirely unsuitable, being of infantry pattern, too clumsy and not cut in proper shape for the purpose. An overcoat on the lines of the cavalry style should be adopted. The breeches should be cut like ordinary riding breeches, quite full at the thigh. Similar criticism can be made of the uniforms of the men on foot. The body coat should be of better cut. The overcoat should be more in the form of a box-coat. The overcoat now used is not only uncomfortable and ugly, but seriously hampers the men when they have to run or perform other violent duties. Uniforms properly designed, cut and fitted, should cost no more than improper ones and would certainly be much more serviceable and impart a smarter appearance. (Note.)

“The usual police club is unsuitable for mounted men's use. It is too short to reach far enough beyond the horse's head, and is too thick and heavy. A hickory stick three-quarters of an inch thick and thirty-nine inches long would be far better. It should have a leather strap to slip over the thumb like that on a police night stick when necessary to use it like a saber. The upper end should be slightly weighted so as to balance properly for quick work. The advantages of this stick over a police club will be apparent to any one at all familiar with broadsword, saber or single-stick. In handling a crowd it is usually the man in the second line

whom it is desirable to reach with the stick rather than one in the first line. For this purpose the stick is practical, whereas the club is useless. It is a far more efficient weapon and at the same time is less apt to inflict lasting injuries than a club.”

Note: With a white rubber overcoat for the rain a traffic officer is rendered visible, but when the rubber coat is not used there should be a slip coat of light white material to wear whenever on duty at night at an intersection. The coat need not come below the waist. It would greatly add to the safety of the officer and make his signals easily seen by drivers and pedestrians.

A device to be used with a small storage battery to show lights on the head and in the hand of a traffic officer has been tried and I believe it may be useful. White gloves are desirable both night and day.



The first woman traffic officer, Washington, 1918.

PART IV

Special Highway Traffic Regulation

Special Highway Traffic Regulation is that which is brought about by the application of certain principles to the control of vehicles and pedestrians on the highway.

CHAPTER I

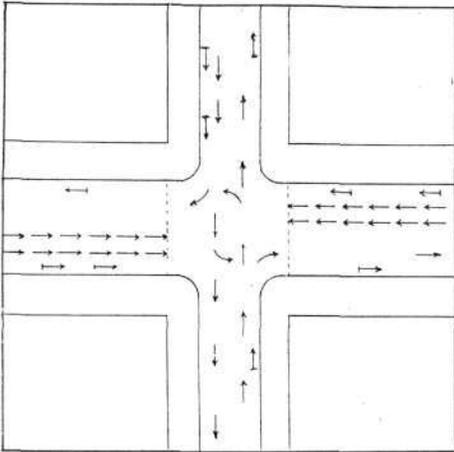
THE BLOCK SYSTEM

The Block System consists in stopping and starting vehicles alternately at an intersection of streets in order that traffic may proceed through each in turn.

It is the plan usually adopted for the management of traffic at important intersections, borrowed from England and put into effect in New York in 1902.

The following diagram shows the Block System at a typical intersection:

Plate I.



One of the objections to the Block System is that it delays traffic unreasonably. Vehicles accumulate behind the block and rush through in a mass when the block is raised instead of filtering through continuously and distributing themselves evenly over the surface of the street. If you watch the operation of the Block System

carefully you will see that just before the block is raised there is often a space ahead of from an eighth to a quarter of a mile which is practically unoccupied by vehicles. In other words, this space—sometimes as much as 50 per cent of the total street surface—is wasted so far as traffic is concerned.

Plate II.



Block System showing congestion behind block and vacant street space in front of it, thus using but half the street at a time and crowding the vehicles together instead of distributing them over the whole surface of the street.

One effect of the Block System is to greatly increase speed in order to make up for loss of time occasioned by the enforced stop thereby augmenting danger.

A record made for three months in 1909 at the intersection of 5th Avenue and 42d Street showed that the average stop of the Block System was 35 seconds, increased in 1913 to 37 seconds, and now probably as much as 60 seconds. Multiplying the average distance that a motor vehicle travels in one second by 60 seconds will show how far the vehicle has gone from the point where the vehicles behind are held by the Block System. This will give an idea of how much of the surface of the street is left unoccupied on account of the block. A vehicle going 20 miles an hour will cover $\frac{1}{3}$ of a mile or $6\frac{2}{3}$ blocks in 60 seconds. At the same place before traffic regulations were adopted in New York the delays sometimes lasted half an hour, although probably not more than a quarter as many vehicles passed this point as at present.

The plan of working the Block System simultaneously for half a mile or so is not practical because the unequal distribution of traffic due to the system itself results in holding up vehicles at some of the intersections at times when there is no necessity for it. (See Chap. 3 of Part IV, one-way traffic plan for 5th and Park Avenues.)

Before the "Go-Stop" semaphore was introduced traffic officers, especially the members of the New York Traffic Squad, were fast becoming most efficient in enforcing a partial Block System where the full block was not necessary. This consists in holding up or beckoning on vehicles by motion of the hand to facilitate their weaving in and out with the least possible delay. Reliance on the "Go-Stop" semaphore has interfered with the development of this important technique.

To sum up, since the Block System unduly delays traffic and dangerously increases speed, it should not be used except at very important intersections and at these only when the traffic is exceedingly heavy. Where an experienced officer can not be provided it

should not be used at all but the place of the officer should be supplied by a Dummy Cop or Traffic Bumper, around which drivers may make their turn as they see an opportunity to do so safely and conveniently.

The Traffic Crowsnest is an invaluable asset to traffic regulation at important intersections, whether the Block System or the Rotary System or a combination of the two is employed, as has already been proven in Detroit.

The principle of supplying a central object for vehicles to rotate around is fully described in the following chapter on "Rotary Traffic."

CHAPTER 2

THE ROTARY OR GYRATORY TRAFFIC SYSTEM

The most important principle for the control of traffic so far advanced.

Formerly at circles and similar barriers, where several streets converge, traffic went around in both directions, resulting in much confusion and many accidents. In the fall of 1903 it was suggested to go around the circle in one direction only. The plan is now generally called the "Rotary System," and the regulation for it is: "A vehicle passing around a circle, oval or other form of centralized obstruction shall keep to the right of such obstructions."

In 1905, the "Rotary System" was put into effect at Columbus Circle (see note) in

Note: In 1903, the New York Police Department asked that a plan be suggested for Columbus Circle, where accidents were occurring almost daily. It was advised that vehicles should keep to the right, going around the circle in one direction instead of two. In 1905, the plan was put in operation, but at first, owing to incomplete opportunity to explain it thoroughly beforehand, vehicles were made not only to go around the circle but also around the blocks immediately north and south of it, making an unnecessarily long detour. This was remedied a few months later, however.

Somewhat before this time, an outline of the plan was sent to the Police Departments of London and Paris, thinking there was a

New York in a temporary and rather crude form in which it unfortunately still remains. Iron standards with lamps surround a large space in the center which constitutes a safety-car-stop-zone for pedestrians and at the same time reduces the width of the roadway to necessary vehicular requirements. (See Plate I.)

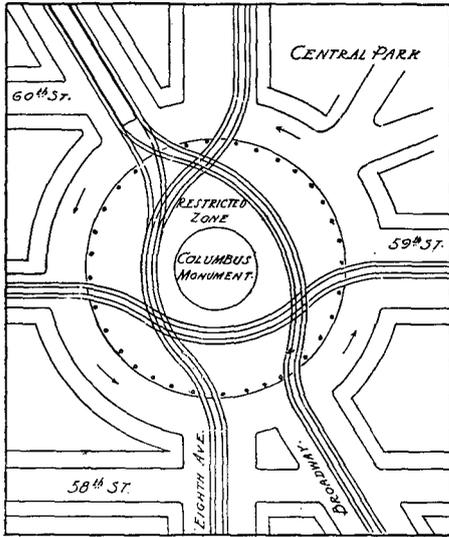


Plate I.—Temporary plan of Rotary Traffic of Columbus Circle.

A great improvement can easily be made in the temporary plan as shown in Plate II by the use of a line of Safety Zones around the circle, dividing the roadway into two parts. Painted lines on the pavement with a few properly designed signs on standards will accomplish this at a nominal cost. When the pavement has to be renewed the large circle in the center, the Safety Zones and crosswalks can be paved with different kinds of pavement from that on the rest of the street, thereby marking them permanently.

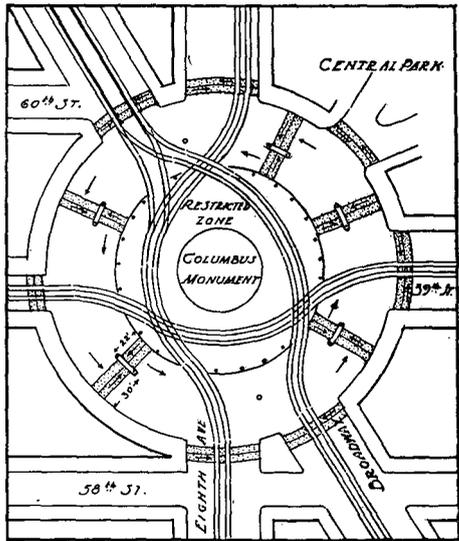
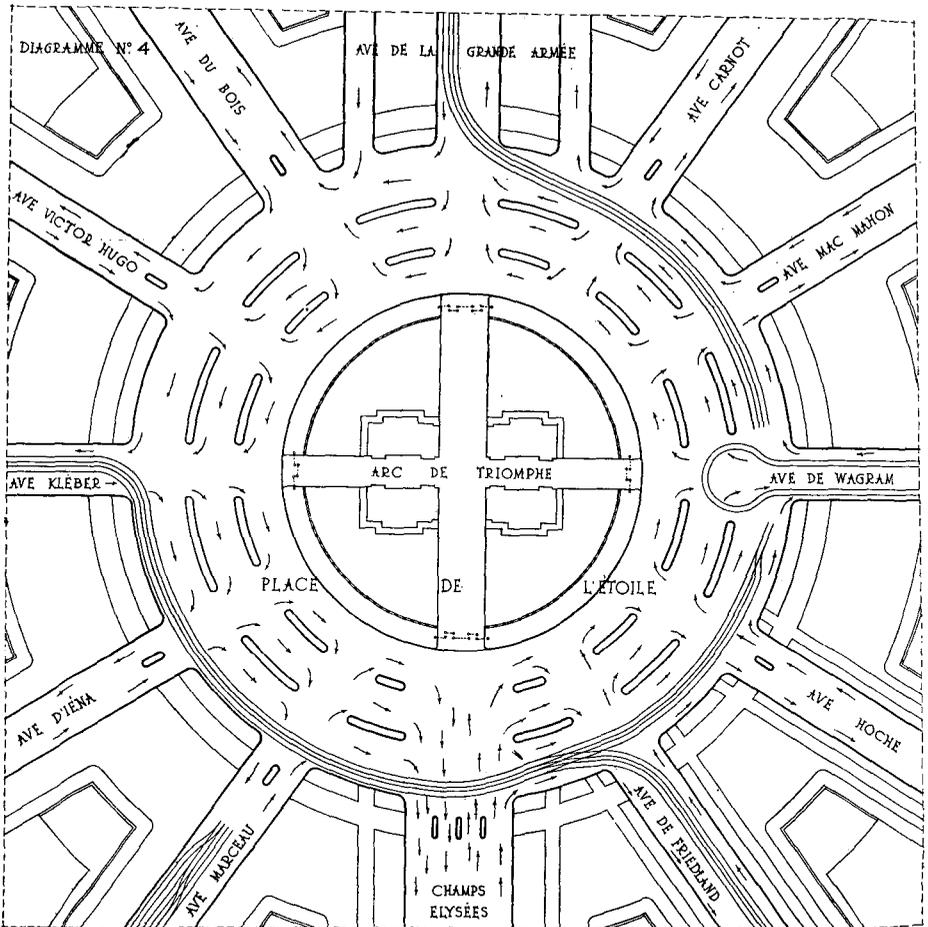


Plate II.—Improved Rotary Traffic for Columbus Circle, showing crosswalks and Safety Zones to canalize traffic as well as to assist pedestrians.

chance they might try it out. In 1907, the system was put in operation at the Arc de Triomphe in Paris, but whether due to the suggestion sent them from New York or not, is not clear. Mr. Eugene Hennard, of France, and Mr. H. Inigo Triggs, of England, have published excellent diagrams of the system for Paris and London and it is said that Mr. Camillo Sitte and Dr. Van Steuben have also advised the Rotary plan. These gentlemen called it the "Gyratory System," but it is now generally called the "Rotary System."

It is believed that the first trial of the system was made in 1909 in Columbus Circle, but it is not definitely known who first suggested it. However, it is such a good thing that all who have advocated it should be willing to share in the credit.

The second example of Rotary Traffic at the Place de l'Etoile around the Arc de Triomphe in Paris, where it was adopted in 1907, solving the greatest difficulties in one of the worst traffic centers of the world. (See Plate III.)



PLAN ROTATIF OU GYRATOIRE POUR LA PLACE DE L'ÉTOILE

Plate III.—Place de l'Étoile, with a dozen entering streets and three stub-end car lines. Traffic is divided into lanes all traveling in the same direction, to the right. The cut shows two lines of Safety Zones for crossing to the center circle and to canalize traffic. These Safety Zones are not yet built around the Circle, although those that were in pairs on the Champs Elysées have been spread apart, and a third one constructed between them, now dividing the central part of the Avenue into two alleys for motor cars. (See Part X letter from "Excelsior," August 13, 1913.)

In July, 1912, the "Excelsior" asked for a solution of the traffic problem at the Rond Point. This is given further on in Plate IV. The changes in the Safety Zones or Refuges on the Champs-Élysées were included in the plan.

The Rotary System has now been adopted

generally at all circles and similar barriers in every city of the world where there is any intelligent attempt at traffic regulation. There are, however, many open spaces where there is ample room to install a curbed circle, oval or other form of centralized obstruction or to indicate it by a different

pavement or by a limit line of paint with standards or bumpers, or both, and when this is done, Rotary Traffic can be installed to great advantage.

The plan for the Rond Point on the Champs-Élysées in Paris was under consideration and reported approved when the Avenue d'Antin caved in over the catacombs in 1914, and shortly afterwards the war came on and put a stop to all costly constructive work.

Notice again the three Safety Zones on the Champs-Élysées, which are also shown in Plate III. These divide the motor traffic in the center according to direction. Notice also that around the central refuge are shown eight small circular Safety Zones which are for the purpose of continuing the division of vehicles around the ellipse and for facilitating the crossing of pedestrians.

The attention of the authorities in Paris has lately been called to the fact that Rotary Traffic can be installed at the Rond

Point at a nominal expense by simply painting the outlines of the Safety Zones on the pavement and using lamps and signs on portable standards. This, of course, is not quite as good as having the Safety Zones raised or indicated by different pavement but it will answer all purposes of demonstration and all other purposes so long as the lines are painted occasionally.

Mr. Eugene Hennard, a French architect of distinction, has published many drawings for Rotary Traffic, one of which is for the Place de l'Opera in Paris. This plan leaves nothing to be desired provided the subways and sewers are not in the way of the tunnels for pedestrians, or at least allow for a sufficient number of them to answer the purpose.

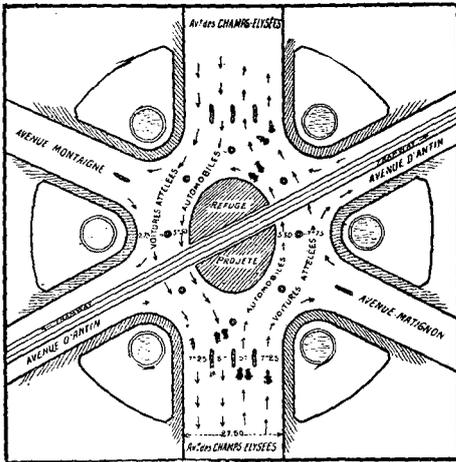


Plate IV.—Proposed plan for the Rond Point on the Avenue des Champs-Élysées. This heavily traveled avenue should have its traffic in each direction divided into two streams, horse drawn and automobile. It is crossed by two other avenues, one of them having a street railway line. Safety zones around the ellipse serve to continue the separation of traffic and assist pedestrians

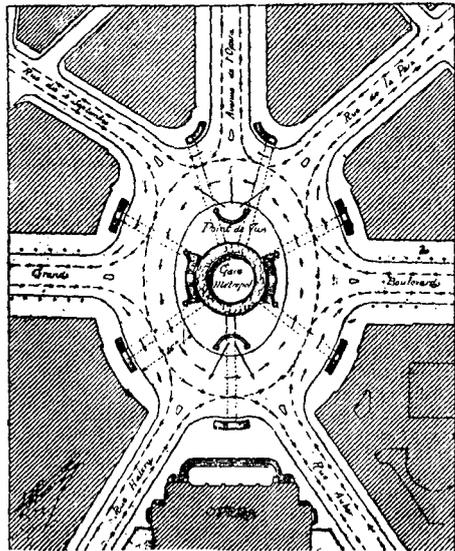


Plate V.

The diagram herewith given in Plate VI shows the only plan thus far published that will work satisfactorily at 5th Avenue from 39th to 42d Streets. It provides for cutting back the corners on a scientific radius, indicating a central restricted zone, Safety

Zones and crosswalks by different pavements and installing the necessary signs on standards and a traffic crownst in the center of intersection at 42d Street. This plan does not conflict in any way with the scheme of carrying the central part of the roadway of 42d Street under the surface of 5th Avenue, but will work in with it if it is feasible to construct the necessary tunnel between the top of the subway and the surface of 5th Avenue. (See Chap. 3, Part IV.)

With Rotary Traffic the central barrier does not always work out best as a circle. Its form at the Rond Point, as already shown, is an ellipse and the form for the proposed installation of the Rotary System at the point where Pennsylvania and New York Avenues and 15th Street, in Washington, D. C., come together, as shown by diagram VII, is a triangle with the corners rounded off.

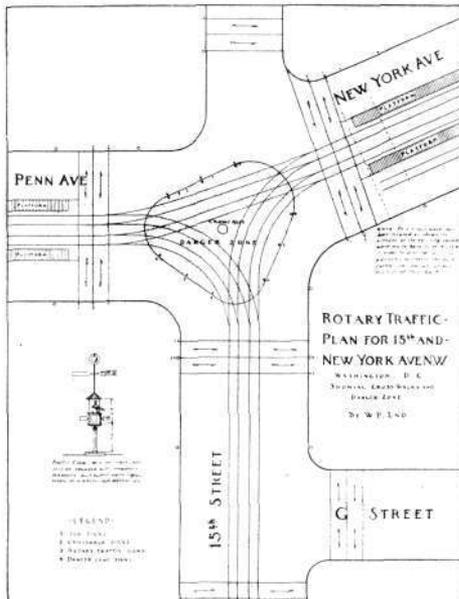
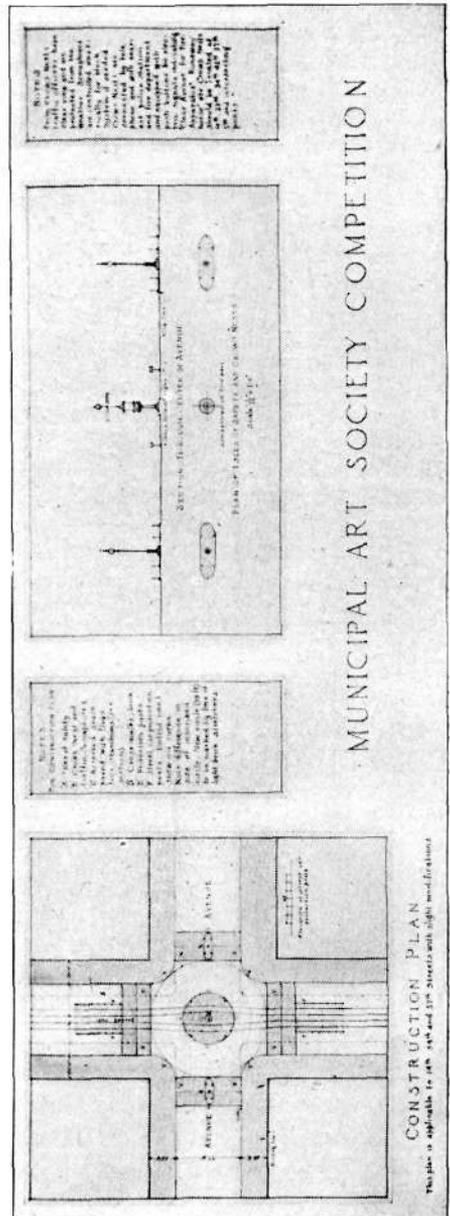


Plate VII. New York and Pennsylvania Avenues and 15th Street, Washington, D. C.



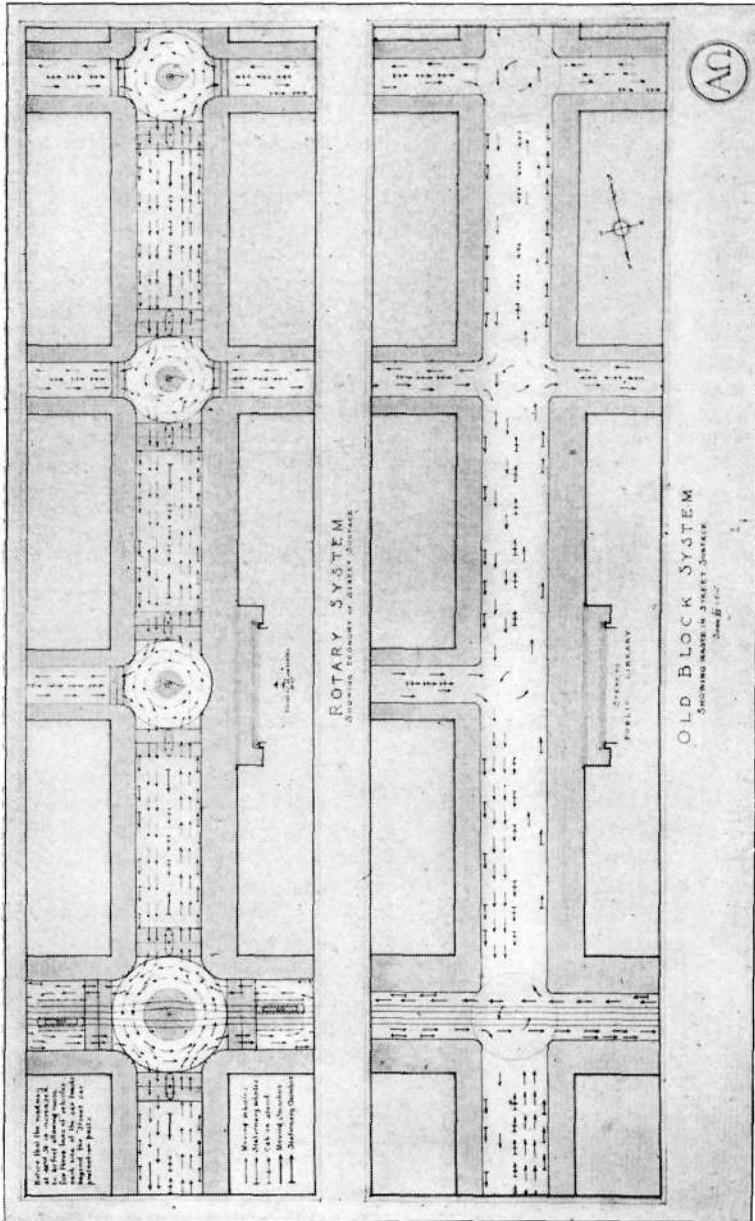


Plate VI.

There are a great number of problems similar to that shown in Plate VII in Washington and elsewhere where danger can easily be greatly reduced and traffic be vastly expedited by the use of the Rotary System. Each problem calls for individual study, however, and space will not allow for too many examples here.

In working out a diagram for Rotary Traffic, the particular form of central zone best suited to the local conditions must be selected. This kind of work is difficult and requires both ability and experience and therefore before a permanent plan is adopted involving expensive construction it is wise to give it a trial with paint.

A SUBSTITUTE FOR THE BLOCK SYSTEM

The "Rotary System" will work equally as well at an intersection where there is room enough, and with little or no police supervision, as it will at a focus of streets. It is a no-stop system, distributing vehicles more equally over the surface instead of bunching them as does the Block System, and therefore it will very greatly increase the traffic capacity of the street.

At an intersection of streets the principle to follow is exactly the same as at a focus of streets. In one case the pivotal zone to go round is large, in the other it is small, and that is the only difference. At a simple intersection of streets, vehicles will do exactly what they do now where there is no traffic officer in charge, *i. e.* the drivers will follow the general traffic regulation of going around the point of intersection before turning, but with a pivotal zone in the center they will be still further constrained to follow this rule.

The corners of streets are not now usually cut back on a large enough radius, especially for the "Rotary System," six feet being about the average. The scientific radius where streets intersect at right angles is one equal to the width of the narrower sidewalk

of the two streets. For acute angles it is greater and for obtuse angles less, the exact radius suited for any case being easily determined mathematically. (See Chapter 1, Part VII.) Where the scientific radius for rounding corners is used, the turning space at an intersection will often become sufficiently great for the installation of a pivotal zone around which traffic may rotate just as it now does around a large circle. (See Plate VIII.)

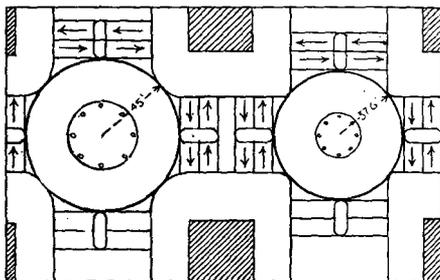


Plate VIII. Effect of large radii at curb corners. On the right, the curb corners have a radius of 6' and the inscribed circle a radius of only 36' at the left, with a 22' 6" radius for curb corners, the inscribed circle has a radius of 45' or ample for easy turns.

For all intersections where there is sufficient room, Rotary Traffic is strongly recommended, although it may possibly be advisable to use the Block System in conjunction with the Rotary System during congested hours where there are car tracks on one or both streets. Local conditions will determine this in each case.

In 1914 the Police Department of New York was prevailed upon to try Rotary Traffic at the intersection of 5th Avenue and 57th Street. The lines on the pavement were painted only once, the signs promised by the department were not provided and the trial was soon discontinued. Even in its crude form, however, it worked surprisingly well. But Rotary Traffic can not be given a really fair trial on such a street as 5th Avenue unless it extends over quite a distance, as the operation of the Block System

at points that feed the spot selected for the trial interferes with the normally even flow of traffic. It seemed probable that no traffic officers would be needed, as the system worked automatically. This groundless supposition largely influenced its discontinuance.

On very important thoroughfares such as 5th Avenue, there should be a traffic officer at each intersection during congested hours, as his supervision adds considerably to the comfort and safety of pedestrians and facilitates the rapid passage of vehicles.

Rotary Traffic was adopted in Detroit in 1915 at the intersection of Grand River and Farmer Streets, where space for the inscribed circle is somewhat less than it is anywhere on 5th Avenue, even without the corners cut back. The traffic officer stationed at this point before the "Rotary System" was installed had requested to be relieved as his nerves could no longer stand the strain. Now they have no traffic officer there. The scheme works automatically and satisfactorily. (See Plate IX.)



Plate IX. A small Rotary Traffic circle at Grand River Avenue and Farmer Street, Detroit, Michigan, which has eliminated the traffic officer formerly stationed there. While this point is at times very crowded, pedestrians have little trouble in crossing. If traffic separators in the form of Safety Zones were placed in the middle of each street just outside the Rotary Traffic circle, this would be still further avoided.

If there is any plan that can possibly increase the traffic capacity of our streets it ought to be given a fair and exhaustive trial. Should Rotary Traffic prove of as

much value at intersections as it has at foci of streets it will pay for the temporary trial in a day and in a month for all necessary construction for permanent installation.

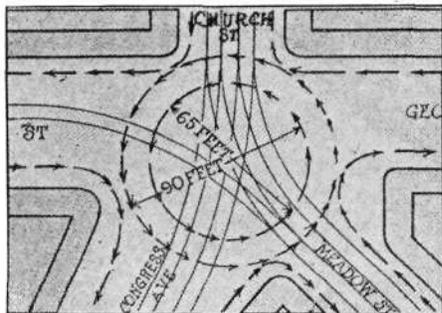
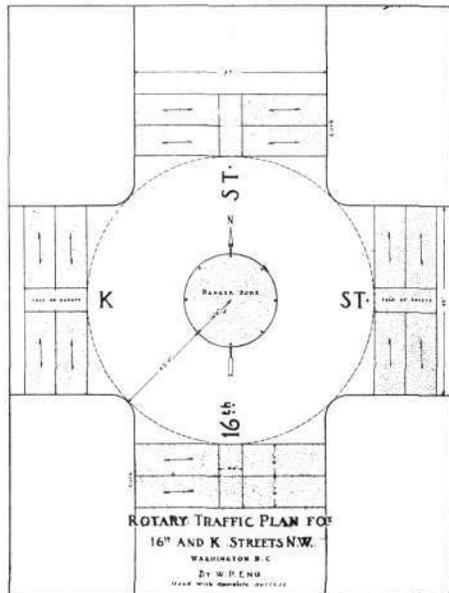


Plate X. Rotary Traffic in New Haven, Conn. The street railway crossing is rather complicated, but the traffic crosses the tracks where they are reduced to the minimum number. The inner circle is a restricted zone to everything except street cars.

In the spring of 1918, Rotary Traffic was put in operation in Washington, D. C., at the intersection of 16th and K Streets, and worked perfectly. (See Plate XI.)



XI

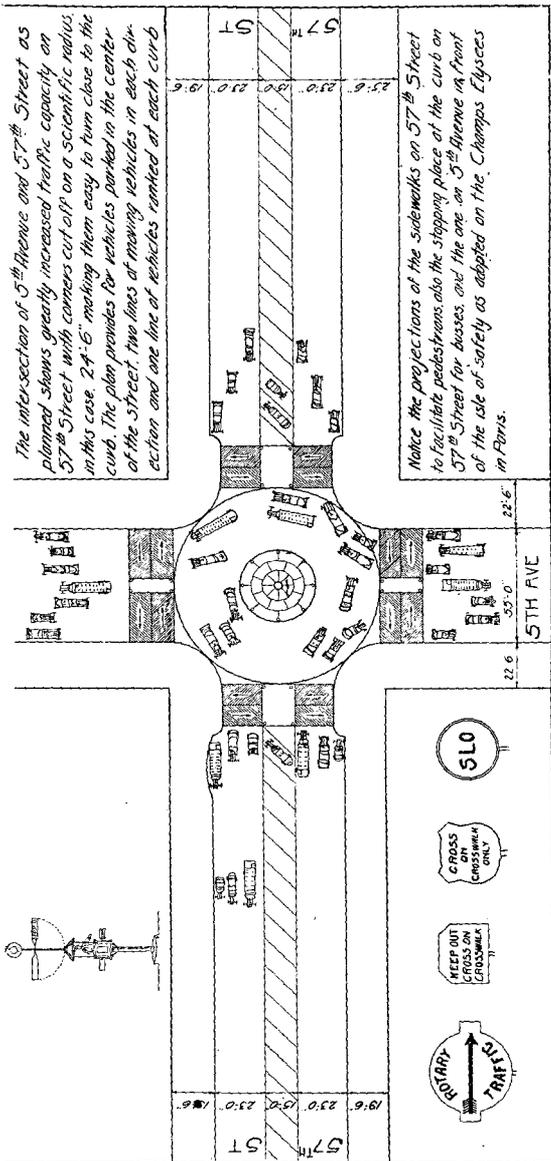


Plate XII.

Plate XII shows a still better plan for 5th Avenue and 57th Street designed to make 57th Street the finest shopping street in the world. The traffic capacity is increased from five to eight vehicles (counting the parking space in the center as equal to two lines of vehicles). The total width of the roadway is increased from 40' to 61', allowing 15' in the center for parking, 7' at each curb for waiting vehicles, and 16' between the parked vehicles in the center and the vehicles at the curb, or 8' for each line of moving vehicles. The sidewalk is reduced from 30' to 19½', or about the ideal width, which would be 20', or one-third of the width of the roadway.

Notice the Traffic Crowsnest for the center of intersection, the different pavements for the neutral zone, the Safety Zones, the crosswalks, the location of bus stops at the side of the street on 57th Street as at present, and in the center of the street on 5th Avenue as practiced on the Champs-Elysees in Paris.

The examples so far given for Rotary Traffic at intersections have been where the streets cross at right angles, *i. e.* 90 degrees. Where the angle varies from 90 degrees it will be seen by the following diagrams that two of the streets' corners get nearer to each other, while the other two get farther apart. This brings about a condition which requires different treatment to make Rotary Traffic possible, for while with the right angle the widest spaces were at the center of intersection, these are now the narrowest spaces and the widest spaces, of which there are now two of equal width, are moved out towards the ends of the farthest corners of the streets.

An angle of 45 degrees has been chosen to illustrate this type of intersection.

Plate XIII shows two streets of equal width crossing each other at an angle of 45 degrees. The whole width from building line to building line is 76'-8", which allows 46' for the roadway to accommodate two lines

of vehicles stopped at the curb, or 7' for each line and 8' for each of four moving lines. It also provides for sidewalks of 15'-4" each, or one-third of the width of the roadway, which width should be adopted where practical but not at the expense of contracting the space required for vehicles, *i. e.* 7' for stationary and 8' for moving vehicles.

Moving vehicles require more room on a curve than on a straight line because on a curve the back wheels do not exactly follow the front wheels. The amount of extra space allowed should be increased as the radius of the curve decreases.

The shape of the central zone in this case is that of an hour-glass and its dimensions are dictated by the distances required between it and the four street corners and by the axes of the two streets. Notice the position and the longitudinal divisions of the crosswalks designed to keep pedestrians off the street except where they are expected to be and where they can cross safely.

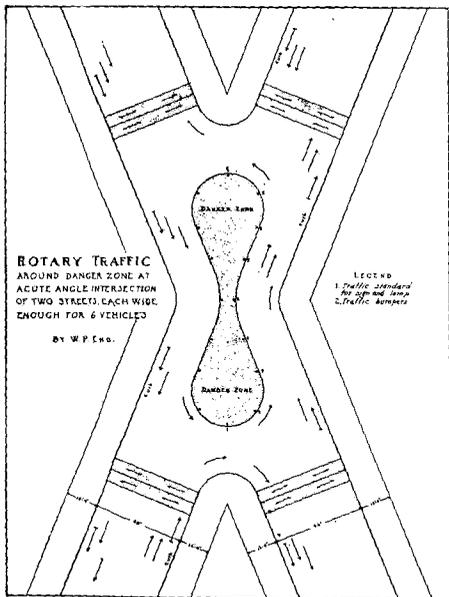


Plate XIII.

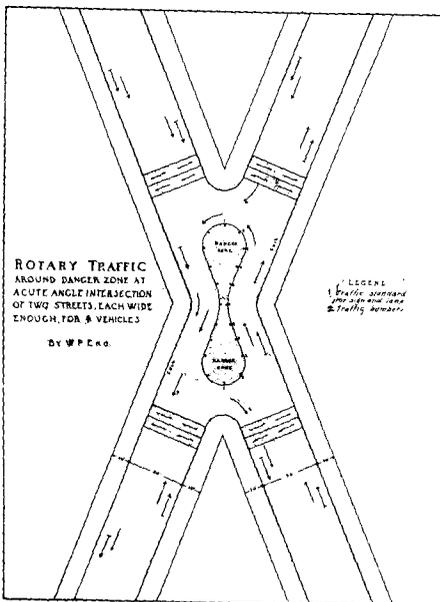


Plate XIV.

Plate XIV shows the proper lay-out for two streets, each designed for four lines of vehicles and intersecting at an angle of 45 degrees. It works out exactly as does that shown in Plate XIII.

Plate XV shows one street for four lines of vehicles, intersecting another for six lines of vehicles. This works out as do the preceding plans except that one of the controlling boundary side lines for the central zone is on the line joining the two corners of the streets that are farthest apart.

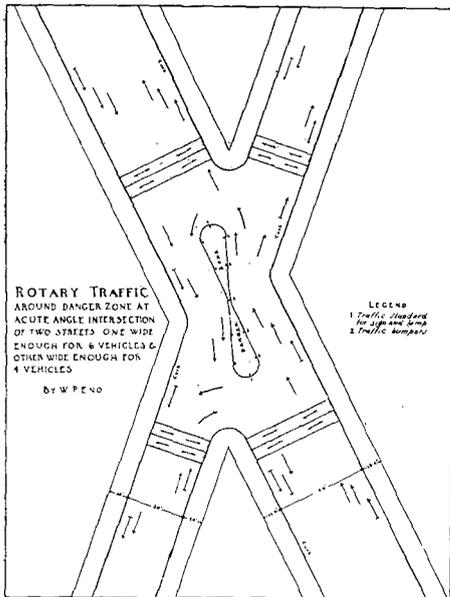


Plate XV.

Plate XVI shows two streets intersecting at 45 degrees, each designed for double car tracks and two lines of vehicles on each side of the car tracks. This works out as do the plans shown in Plates XIII and XIV, except that the side lines of the central zone are controlled by the overhang of the street cars.

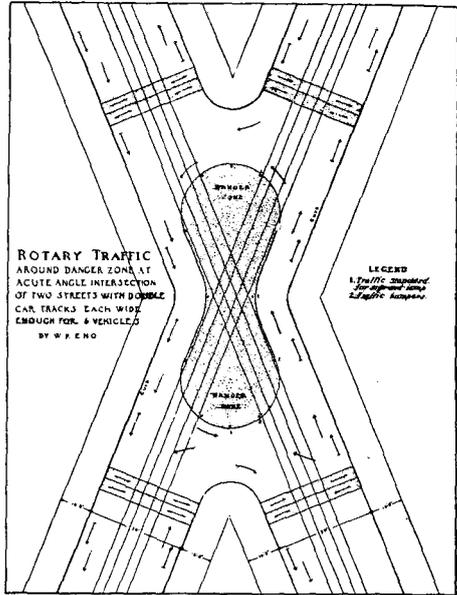


Plate XVI.

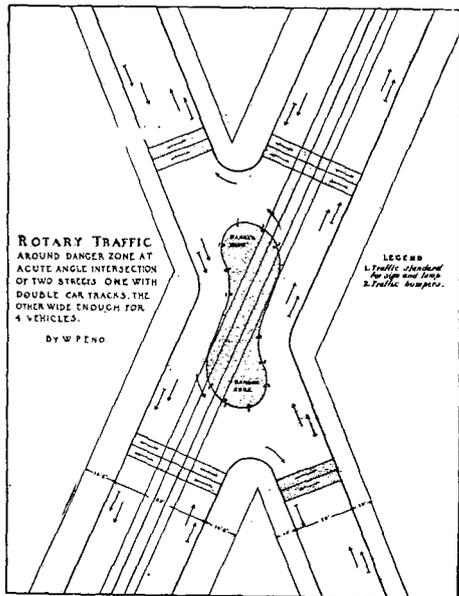


Plate XVII.

Plate XVII shows one street for four lines of vehicles intersecting another with double car tracks and space for two lines of vehicles on either side of them. Two of the side lines of the central zone in this case are controlled by the axial line of the narrow street and the other two by the overhang of the street cars.

The object of the foregoing diagrams is to show the principles involved rather than to solve each particular problem since the problems are so many and so varied that space will not permit of a solution of each.

As already stated, it took over two years to get Rotary Traffic even tried at a focus. Now it is the general rule throughout the world.

With the crying necessity for street traffic betterment the authorities should welcome

any promising suggestion, and especially the extension of one which had already proven so valuable in saving life and facilitating traffic that a trifle of what it has saved New York alone would pay for all the permanent construction and changes where it can be applied throughout the United States.

The following plate (from "Le Probleme de la Circulation 'Système Eno,'" published in 1912) shows how by simple changes in curb lines a dangerous traffic locality may be made safer and more convenient for both vehicles and pedestrians and Rotary Traffic rendered practical. The locality selected as an example is on the Grand Boulevard in Paris, where the rue Scribe and the rue Daunou enter it. There are countless other such traffic problems throughout the world where similar treatment would prove efficacious.

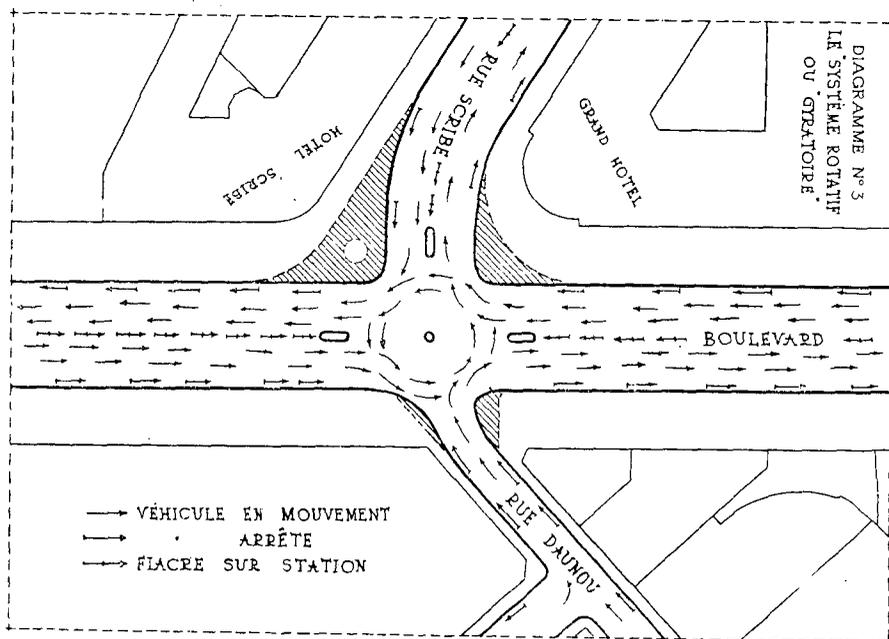


Plate XVIII.

CHAPTER 3

ONE-WAY TRAFFIC STREETS (Note 1)

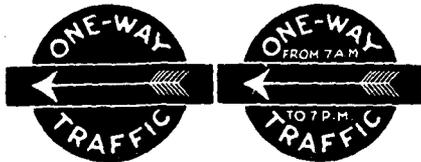
On the author's advice, One-Way Traffic was put in force in a few streets in New York in the spring of 1908; in Boston in the autumn of the same year; in Paris in 1909, where it has since been greatly extended, and in Buenos Aires in 1910. It is now used in many cities throughout the world. Rotary Traffic at circles or other forms of centralized obstruction is one example of it.

All streets not wide enough for two vehicles should, of course, have One-Way Traffic at all hours of day and night. All streets not wide enough for four vehicles should have One-Way Traffic at least during the busy hours and to avoid confusion, it is usually better to make them One-Way Traffic at all hours.

Where two streets are practically parallel and near together, this system has been very successful, and in Paris has solved many problems which formerly seemed hopeless.

In New York, many down town streets should be restricted to One-Way Traffic and it would greatly improve conditions uptown if most of the narrow crosstown streets were restricted in the same way.

Attention is drawn to the fact (see Note 2), however, that it is stupid and wasteful to have One-Way Traffic streets unless proper signs are abundantly provided, indicating the direction of the movement of traffic. A sign costs about \$2 and a policeman twice that per day. The economy is plainly evident.



Yellow on Black.

An article in "Motor Travel" of November, 1917, herewith reproduced, shows a

careful study of the conditions from 14th to 59th Streets, New York, at that date, and the principles brought out in the article are suitable for consideration wherever the establishment of One-Way Traffic streets is contemplated. Since the article was written a good many of the streets that had been restricted to One-Way Traffic in New York have been changed. A closer study of the question might well result in selecting practically all the streets suggested for One-Way Traffic without changes in direction of the vehicular movement.

ONE-WAY AND TWO-WAY STREET TRAFFIC
How the New System should be applied to East and West Streets in New York from 14th to 59th Streets, inclusive.

By
WILLIAM P. ENO

I had intended to write this article before, having made a careful study of One-Way Street Traffic some years ago, especially in regard to its suitability on the East and

Note 1: One-Way Traffic is not new. It was used in Pompeii for streets wide enough for only one vehicle. The ancients were wiser than we, realizing that two vehicles could not pass where there was room for only one. They used signs with the picture of a chariot moving in the proper direction. In Havana, One-Way Traffic had been in operation in the afternoon for many years on two of the most important shopping streets, but they had no signs.

Note 2: The signs now in use for One-Way Traffic in New York are not suitable, because they are not easily seen or read by the drivers. Traffic signs should be uniform in color and brief in wording. Primary signs are those for warning and directing the movement of traffic. They should have vivid yellow letters or arrows on a black background (see Part II, Chapter 2), and should be placed low enough to be seen by a driver from under an automobile hood. The best height is one sufficient to clear the head, or 6' 6". The signs can be put on ordinary traffic standards for experimental use and, when the One-Way Traffic streets are definitely decided upon, they can be put on permanent standards embedded in the sidewalk near the curb. The signs should, of course, be placed on each corner with the arrows pointing the direction in which traffic is to move. Another way is to suspend the signs on a wire from the buildings over the center of the street at the beginning of each block. If this is adopted, the arrow should be omitted and the signs should have the word "Open" or "Closed" as required.

West streets from 14th to 59 Streets, inclusive.

I am impelled now to avoid further delay by the fact that the authorities are already widening the roadway of 44th Street and have decided to widen that of 38th and other streets. Of course, the streets which should remain Two-Way Traffic streets are the ones to widen first and both 38th and 44th Streets, in my judgment, should be made One-Way Traffic streets and therefore should not be widened, at least without further consideration and not until after a practical trial has been had by actual but inexpensive experiment to determine definitely which streets should be for One-Way and which for Two-Way traffic.

Such an experiment can easily be made without any change in curb lines, simply by the use of suitable signs marking clearly each street where traffic is to be restricted to one direction.

There are three fundamental conditions which should be observed in deciding which streets shall have One-Way Traffic and which shall have Two-Way Traffic:

FIRST: WIDE STREETS

On account of their width the following streets should have Two-Way Traffic: 14th, 23d, 34th, 42d and 57th Streets.

SECOND: STREETS BORDERING ON PARKS

Any street bordering on a park should have Two-Way Traffic because traffic should not be diverted from its natural course further than necessary. Therefore the following streets should have Two-Way Traffic: 17th, 26th, 40th, and 59th Streets.

THIRD: THE RELATION OF ONE-WAY TRAFFIC STREETS TO TWO-WAY TRAFFIC STREETS

It is highly desirable that a One-Way street should have its traffic move in the same direction as traffic moves on the side nearest it in an adjacent Two-Way Traffic street, otherwise, it will occasion unnecessary distance to be traversed and an extra

street to be crossed—therefore, the following streets should have their traffic move East: 16th, 19th, 22d, 25th, 33d, and 56th Streets, and the following streets should have their traffic move West: 15th, 18th, 21st, 24th, 27th, 35th, 43d and 58th Streets.

Now we have provided for all streets up to 27th Street, inclusive, except 20th Street, and as we can not make it a One-Way Traffic street and comply with all the aforesaid fundamental conditions, we should make it a Two-Way Traffic street.

Between 27th and 33d Streets we have to provide for 28th, 29th, 30th, 31st and 32d Streets, an odd number (five) of streets. If we make 29th Street a Two-Way Traffic street we can make the other four One-Way Traffic streets and comply with the required conditions.

Between 35th and 39th Streets we have to provide for 36th, 37th and 38th Streets, an odd number (three) of streets, and as in the preceding case, 37th Street should have Two-Way Traffic and 36th and 38th Streets One-Way Traffic to comply with the required conditions.

Between 40th and 42d Streets we have but one street, 41st, and as it can not be made a One-Way Traffic street and comply with the conditions, it should be a Two-Way Traffic street.

From 43d to 56th Streets we have twelve streets, an even number. These can alternate, according to direction, as One-Way Traffic streets and comply with the conditions.

Between 57th and 59th Streets, we have only 58th Street, which must be a Two-Way Traffic street, as it can not be a One-Way Traffic street and comply with the conditions.

The whole list of streets, then, from 14th to 59th Street, inclusive, worked out as already described, is as follows:

Two-Way Traffic East and West	One-Way Traffic East	One-Way Traffic West
14th St.	16th St.	15th St.
17th St.	19th St.	18th St.
20th St.	22d St.	21st St.
23d St.	25th St.	24th St.
26th St.	28th St.	27th St.
29th St.	31st St.	30th St.
34th St.	33d St.	32d St.
37th St.	36th St.	35th St.
40th St.	39th St.	38th St.
41st St.	44th St.	43d St.
42d St.	46th St.	45th St.
57th St.	48th St.	47th St.
58th St.	50th St.	49th St.
59th St.	52d St.	51st St.
	54th St.	53d St.
	56th St.	55th St.

Too much stress can not be laid on the great importance of never making structural changes to facilitate the management of street traffic until a very careful study of the situation has been made and ample opportunity has been given for criticism and suggestion.

The expense of widening the roadway of a business street is not limited to setting the curb lines back and repairing the pavement, but includes the cost of interference to traffic during the progress of the work and in many cases also the very large expense of moving back the vault lines under the sidewalk to the new curb lines.

Undue haste and lack of competent consideration has already led to several costly traffic blunders in New York City and will increase their number unless longer notice is given and public discussion welcomed."

ONE-WAY TRAFFIC PLAN FOR FIFTH AND PARK AVENUES.

Forecast: A plan for trying One-Way Traffic on Fifth Avenue has been devised by Dr. John A. Harriss, Deputy Commissioner in charge of Traffic. There is no record of One-Way Traffic being tried on wide streets except on the Champs Elysées in Paris when this Avenue was used on race days for traffic to go up early in the afternoon and to come back after the races were over.

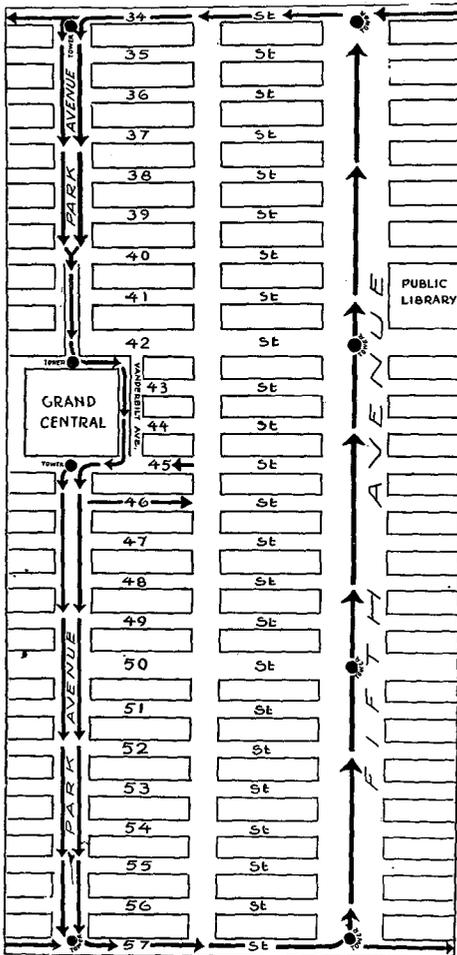
Unlike the Champs Elysées, however, the flow of traffic north and south on Fifth Avenue at all times is pretty nearly equal in each direction and therefore the use of One-Way Traffic does not seem to be called for.

The trial of the plan will, however, be educational and tend towards the elimination of the idea of One-Way Traffic on the Avenue, thus opening the door for serious consideration of Rotary Traffic—the only method which will utilize the traffic capacity of the roadway to its fullest extent. One-Way Traffic on so wide a thoroughfare will demonstrate more than ever that Isles of Safety are essential. With Two-Way Traffic it was necessary to cross but two lines of vehicles moving in the same direction while with One-Way Traffic pedestrians will have to cross four and sometimes five lines of vehicles moving in the same direction. Without Isles of Safety this will be most dangerous when there is no officer present to halt traffic.

Description and cuts from the "Rider and Driver"

"BELT LINE" OF ONE-WAY TRAFFIC ON FIFTH AND PARK AVENUES.

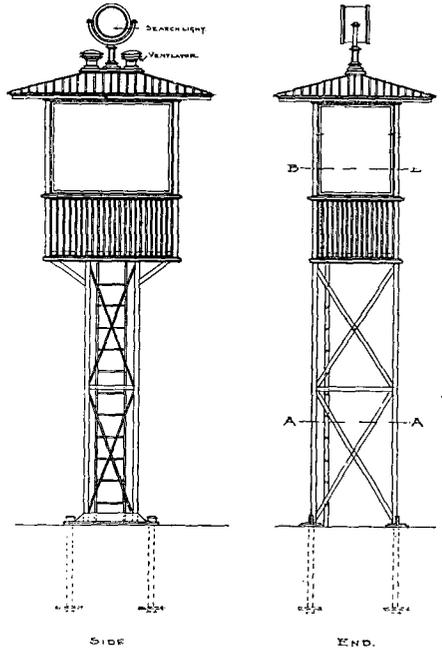
With traffic moving South on Fifth Avenue and North on Park Avenue, as indicated by the arrows, and between the hours of 10 a.m. and 5 p.m., it is expected that a much more fluent movement will be maintained and the time greatly reduced, each intervening block also becoming a unit of "rotary traffic," which means one-way traffic in a circle.



"POLICE DEPARTMENT
City of New York

Office of Special Deputy Police Commissioner
New York, February 5, 1919.

ONE-WAY TRAFFIC ON 5TH AND PARK AVENUES
Beginning Monday, February 16th, the Police Department will introduce an innovation in the regulation of street traffic, on 5th and Park Avenues, between 34th and 57th Streets.



THE POLICE SIGNAL TOWERS ON FIFTH AVENUE

Beginning at 10 a. m. and continuing until 5 p. m., and between the cross streets mentioned, traffic will move south only on 5th Avenue and north only on Park Avenue, thus forming what may be termed a 'belt line' of 'rotary traffic' which, although the area mentioned forms a square, means one-way traffic in a circle.

Traffic on Madison Avenue, which bisects

the belt-line area, and on 6th Avenue will be maintained as two-way traffic.

Vehicles going north or south on Madison or 6th Avenues may turn at any available block (according to one-way traffic regulations in force on the cross streets) to reach 5th or Park Avenues, and the same may be done on leaving either 5th or Park Avenues, east or west, to reach any point desired.

Police signal towers are to be erected at 57th Street, 50th Street, 42d Street, 38th Street and 34th Street, similar to signal towers on the railroads, from which the movement of traffic on 5th Avenue and cross streets will be controlled by flash lights, telephone and push button signals, operating between the towers and to be observed by the traffic officers, also, at the intersection semaphores.

The floor of the towers will be 12 feet above the roadway to afford a clear view for their occupants, and the towers will be so provided at the base as to sheer off passing vehicles, thus becoming, in addition to their specific purpose, 'Isles of Safety' for pedestrians crossing the Avenue at those points.

The signals to be flashed from the towers up and down the Avenue, day and night, will be as follows:

Red Signal: Traffic shall move on 5th Avenue and all cross traffic from the side streets shall stop behind the building lines, or white limit lines when marked on the roadway.

Yellow Signal: All traffic on 5th Avenue as well as side streets shall stop behind the building lines, or limit lines when marked on the roadway, so as to give clear intersections.

Green Signal: Traffic from the side streets shall proceed."

RESULTS OF OBSERVATION ON FIRST TRIP.

In order to form an intelligent opinion of the work of the new plan on 5th Avenue, I went to New York on the morning of March 8th and stayed until the afternoon of March 12th, spending most of the time on the street corners and on front seats on top of 5th Avenue busses, studying the working of the plan.

At 42d Street there were ten policemen on the street and three in the tower. At 34th Street there were two policemen in the tower and nine on the street and at every intersec-

tion a surprising number of them. Even with all this man force there was much confusion and unnecessary delay to pedestrians, with apparently no increased traffic capacity for vehicles. Of course, the number of officers employed can be gradually decreased as the people become familiar with the plan, but even so, it will probably take many more men than any plan so far proposed.

It would tend very much to reduce police work if the Police Department would resume the campaign of education of drivers and pedestrians through a more liberal use of the printed regulations, preferably using the revision given in Chapter 2, Part I of this book, which it was represented that it would do, instead of a set revised up to March 18, 1915, and reprinted without change as late as December 11, 1919. On the first page of the Regulations will be found Directions to Pedestrians which if known and followed would make unnecessary the employment of so many policemen.

During the time I was in New York the traffic was going in both directions and it was said that the authorities were hesitating about trying One-Way Traffic on 5th Avenue at all. The flash signals also have been changed as follows: Red signal: All traffic stops, Yellow signal: E. & W. traffic stops, Green signal: N. & S. traffic stops. If One-Way Traffic is to be put in force the block system will have to be retained because there will be too many vehicles to be accommodated at the intersection for the Rotary System to work satisfactorily. This is explained by the fact that all vehicles on the Avenue will be approaching from one direction instead of two.

If Two-Way traffic is to be retained, the block system should be discarded because the unequal distribution of vehicles, due to the system itself, results in holding them up at some of the intersections at times when there is no local necessity for such delay.

RESULTS OF OBSERVATION ON SECOND TRIP

There were certain defects with the plan which I sensed on my first trip of observation but was not absolutely sure I thoroughly understood. I therefore went to New York on March 23d, remaining until the 27th. I spent my time on the Avenue watching from sidewalks, windows and bus tops, and in addition by taking taxis many times. It was evident that the traffic on the roadway had been reduced in volume especially at non-crowded hours, when on account of the delays of the continuous block system it takes as long to go a certain distance as it does in crowded hours. You will understand this when you consider that if the block lasts sufficiently long for the crowded cross streets, it will be much longer than necessary for those streets where there it not much traffic. If a photograph were taken from an aeroplane over the center of the Avenue at non-crowded hours it would show little patches of vehicles on the Avenue standing absolutely still while waiting for others to cross instead of being allowed to close up behind the vehicles ahead.

I took the time frequently between given points and found that it did not vary essentially at crowded hours from what it was before, but that at non-crowded hours it was very much greater.

The average policeman will, of course, be satisfied as the work is very much easier for him. Private cars and taxicabs during the non-crowded hours leave the Avenue as soon as possible to avoid the unnecessary delays. The Bus Company must be elated as the use of the Avenue is being largely abandoned by other vehicles to its use.

Procrastination in giving Rotary Traffic a fair trial can but result in continued curtailment of traffic capacity on the Avenue. (See Chapters 1 and 2 of Part IV.) Rotary Traffic has also the advantage of not needing any traffic officers except during con-

gested hours when one man will be sufficient at any intersection, especially if placed in a traffic crow'snest such as those now used in Detroit.

CHAPTER 4

THE ELIMINATION OF THE LEFT-HAND TURN

(See Note)

The elimination of the left-hand turn has been tried in a good many cities, but there are few places where its advantages counterbalance its disadvantages.

The elimination of the left-hand turn in New York on 5th Avenue at 34th and 42d Streets does not, in my opinion, warrant putting the rule in force. I speak of these two places as they are familiar to so many and it is easy to study them there. The Rotary System would be far better. (See Chapter 2, of Part IV.) If the elimination of the left-hand turn is adopted anywhere, care should be taken to see that at the next street vehicles may make a left-hand turn.

Note: In December, 1914, it was proposed by the Police Department of New York to adopt the elimination of the left-hand turn from 26th to 58th Streets, inclusive. At the request of the 5th Avenue Association, I attended a meeting at the Police Department with about twenty of the merchants on the avenue who wished to lodge their protests. One example of what the elimination of the left-hand turn would effect killed the proposal, although it has come up again from time to time but in a lesser degree and where the damage is not as serious. The example I gave was of a vehicle coming down 5th Avenue and wishing to stop on the east side of the avenue just below 42d Street. In order to accomplish this feat it would have had to turn to the right over to 6th Avenue, make one left-hand turn there, go down 6th Avenue to 40th Street and make another left-hand turn there, then proceed through 40th Street to 5th Avenue and make another left-hand turn there and then proceed up to a point just below 42d Street. Therefore, to avoid one left-hand turn on 5th Avenue the vehicle would have to make two left-hand turns on 6th Avenue and then another one when it got back to 5th Avenue at 40th Street, but this one, according to the arguments of the other side, did not constitute a left-hand turn on 5th Avenue because the vehicle was first going along 40th Street and then turning into 5th Avenue instead of the opposite—going along 5th Avenue and then turning into 40th Street.

CHAPTER 5

SEGREGATED STREET TRAFFIC

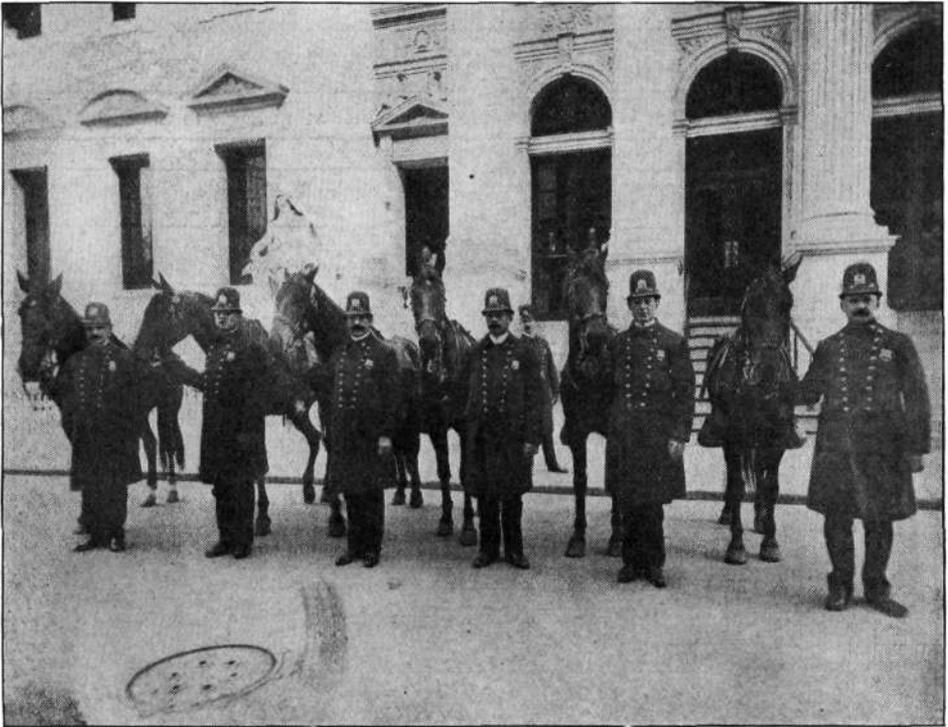
It took a long time for the Police Department of New York to realize that it had authority to exclude traffic of any special kind from any special street. This right was first conveyed to it by Section 315 of the New York City Charter. The realization now of this power is a step in advance, but it should be used with great discretion and after careful study of the situation.

It is not at all necessary or advisable to exclude light traffic (and by this I refer not only to light passenger vehicles but to light delivery wagons, or to any other light, fast moving vehicles which do not obstruct

traffic on account of their slow pace) from any street. All vehicles, however, when moving slowly should be forced to keep near the right-hand curb.

On some important shopping streets, such as 5th and Madison Avenues, heavy, slow moving vehicles should be excluded during congested hours, and cruising cabs should be obliged to move briskly when in the stream of traffic in order not to impede following vehicles.

Cruising cabs should, however, not only be obliged to move quickly when on a congested street, but should be obliged to limit the distance they travel on such a street when not carrying fares.



The world's first mounted traffic squad, New York City, 1903.

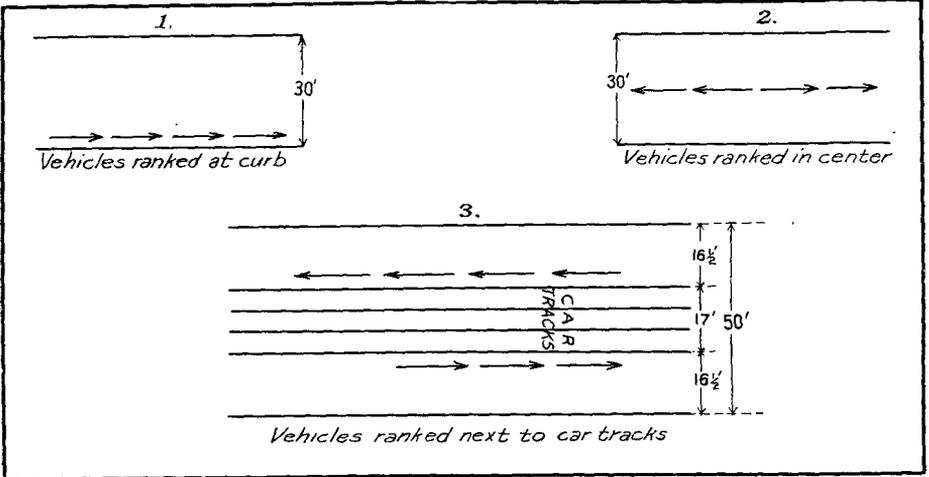
CHAPTER 6

RANKING AND PARKING

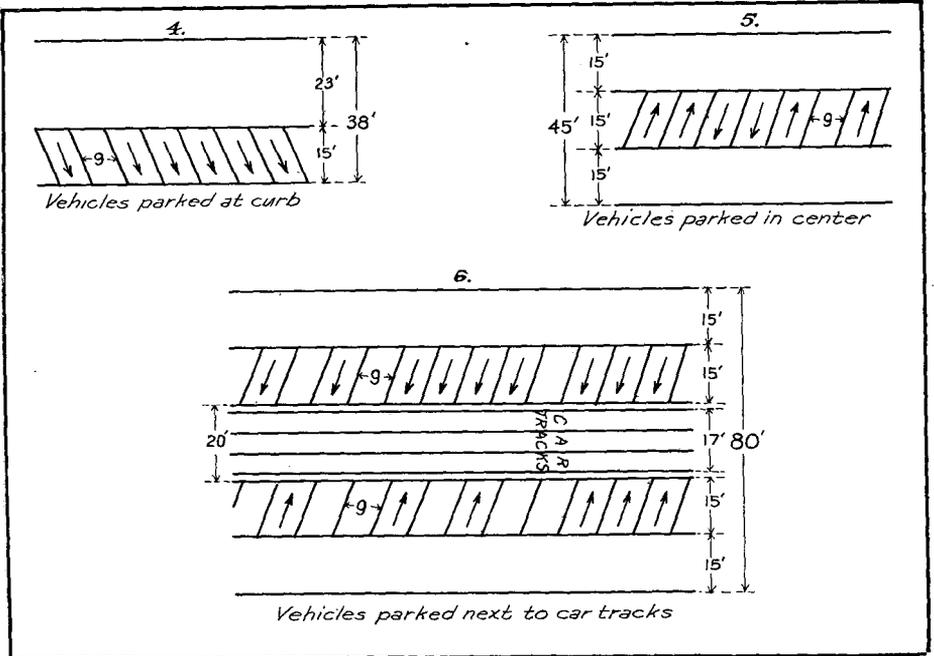
The terms "Ranking" and "Parking"

are not synonymous. There is a marked difference between them. The definitions are as follows:

"Ranking—Standing vehicles behind one another parallel to the curb."



"Parking—Standing vehicles alongside one another at an angle to the curb."



When vehicles are ranked, no one of them can move out of the line independently of the others unless considerable waste space is allowed for between them, whereas when they are parked, being parallel to one another, any one of them can move out of the parking space without causing any other one to move.

In considering the question of Ranking and Parking we must take into account the requirements of the General Highway Traffic Regulations. (See Art. III, Secs. 4, 5 and 6.) No part of the Regulations has had a more careful study by more people. The considerations involved are complicated because it is difficult to preserve the rights of all and at the same time refrain from imposing more restrictions on any one than is absolutely necessary. There is no reason why a vehicle should not rank anywhere or park anywhere where warranted by the width of the roadway, provided Sec. 5 or Art. III is observed, which reads as follows:

“A vehicle waiting in front of an entrance to a building or a transportation station shall promptly give place to an arriving vehicle.”

This, of course, requires that the driver of the former shall be on his vehicle ready to pull out immediately on the approach of the latter. Such strictness as this implies is absolutely necessary on roadways where the importance of getting to the curb is paramount, as for instance on those roadways devoted to retail trade and to a slighter degree, perhaps, on those devoted to residences. Where business predominates the necessity of allowing sufficient time to load or unload has to be considered. In this case, Sec. 6 of Art. III is the regulation which applies. It reads:

“A vehicle, when another vehicle is waiting to take its place, shall not remain in front of the entrance to a building or transportation station except while expeditiously loading or unloading, and, if horse-drawn, and with

four wheels, the horse shall stand parallel with the curb, faced in the direction of traffic.”

In enforcing both Secs. 5 and 6, it is well to consider that a vehicle either ranked or parked is out of the way of traffic and that it should not be forced into the flow of traffic again until another vehicle comes to take its place. It is a case where the old adage, “Let sleeping dogs lie,” applies. It must also be clear that while these sections should be enforced strictly when or where congestion exists, they need not be so closely observed when and where it does not exist. Every intelligent driver should refrain whenever possible from standing his vehicle where it will block access to the door of a building or to a transportation station.

GENERAL RANKING AND PARKING SPACES

There are many spaces which should be regarded as natural or general Ranking or Parking spaces, according to the amount of room which can be allotted without restricting the flow of traffic on the roadway. (See Sec. 4 of Art. III, which reads as follows:)

“Sec. 4. A vehicle shall neither rank nor park so as to prevent the free passage of other vehicles in both directions at the same time; nor in one direction on a ‘one-way traffic’ roadway; nor with any part of it or of its load extending beyond limit lines; nor within ten (10) feet of a fire hydrant.”

Such spaces are better marked out by paint limit lines, but whether marked or not marked, they should be free for vehicles to rank or park in. Among such spaces are those alongside parks, vacant lots, public and vacant buildings, and buildings where the doors or entrances are not in use. Briefly, these spaces may be defined as all those not in front of a regularly used entrance to a building or to a transportation station. All such spaces should be open to general ranking and parking unless there is a sign erected by the police prohibiting it.

No private signs should be allowed but the police should furnish signs on request of property owners if the reason given is adequate.

The economy of room for waiting vehicles as well as for moving vehicles on many congested roadways is so important that it is well worth while to define every such space that can be used to hold one or more vehicles by paint lines.

SPECIAL RANKING AND PARKING SPACES

Besides the general ranking and parking spaces already described there are many others especially adapted to providing for waiting vehicles. Some of these are in the center of streets; some, in very wide streets are next the car tracks and others are where streets come together at acute angles. These spaces are often of irregular shapes, filling space not required for lines of moving vehicles. It is of the utmost importance that all such available spaces in the congested parts of cities be scientifically marked with paint limit lines or be paved with a different kind of pavement from the rest of the roadway and furnished with signs with the words, "Public Ranking Space," or "Public Parking Space," as is best adapted to the local possibilities. In these spaces vehicles should usually be allowed to remain indefinitely unless at certain hours it is necessary to limit their time, when the sign should have on it such additional wording as is necessary, as for instance, "30 Minutes from 3 to 7 P. M."

Parking spaces should have stalls not less than 8' or more than 9' wide for vehicles marked by paint lines. Stalls for trucks, sight-seeing vehicles, etc., should be wider.

Vehicles should be parked at an angle to the curb of 90 degrees, 45 degrees, 37½ degrees, or 30 degrees, as is best adapted for local conditions. The width of a parking space located in the middle of a street where vehicles are to be parked at an angle of

90°	should be at least	15'
45°	“ “ “ “	15'
37½°	“ “ “ “	14'
30°	“ “ “ “	13'

When the parking space is next to the curb these widths can be reduced 1' each, respectively, as a portion of each vehicle can project over the curb about that much when necessary.

Vehicles should never be parked at an angle of 90 degrees to the curb except in certain locations when waiting for the termination of the races, theater, etc., or when loading or unloading merchandise, and in some instances on cab stands. If parking at an angle of 90 degrees to the curb it is apparent that to get into a stall in the parking space will very often necessitate backing once or even several times.

When vehicles park they should drive directly into their stalls and back out when ready to leave. This method will avoid seriously retarding other traffic if the time chosen to back out is when there is a slight let up in traffic.

If the opposite is done, *i. e.* passing the stall to be occupied and backing into it, it must always retard the vehicles which are directly behind.

If ranking spaces are marked in the middle of the street the side lines should be about 6' apart. If at the curb, one line about 6' from the curb should be used.

Some streets are wide enough to park on both sides and allow room for one line of vehicles moving in each direction. Others can have vehicles parked on one side and ranked on the other, provided the necessary room for moving vehicles is left in the middle.

In One-Way Traffic streets, if a parking space is to be marked on one or both sides, the stall lines should slant towards the approach of traffic.

CHAPTER 7

CAB, HACK, TRUCK AND SIGHT-SEEING VEHICLE STANDS

Cab, hack, truck and sight-seeing vehicle stands should be marked by signs giving the number of such vehicles each stand is intended for. The vehicles should be *ranked* usually in the middle of the roadway or next the curb, as best suits each locality. There are, however, a considerable number of places where vehicles can be *parked* advantageously either in the middle of the roadway or at the curb. At such places an angle of 90 degrees is ordinarily to be preferred, as it best enables vehicles to leave the parking space so as to proceed in either direction with equal facility. However, this is not always the case. Sometimes such stands are located in the center of the roadway where, if other vehicles are *ranked* at the curb, there is not sufficient room for them to join in with the moving traffic without manouvering by backing and thus impeding it. In this case an angle of 45, 37½ or 30 degrees should be substituted.

When *parked* at the curb vehicles should be backed into the parking space so as to drive directly out into the traffic when leaving. *This latter method is exactly opposite to what is advised for usual parking purposes.* (See Chapter 6, Part IV.)

In 1909, I made an exhaustive study of the Public Carriage Service in both London and Paris, which was reported in a pamphlet entitled, "Street Traffic Conditions, Public Carriage Service and Automobile Licensing in London and Paris." In 1913, at the request of Mayor Gaynor, I assisted in laying out the stands in New York very much as they still exist. Up to that time there had been few vehicle stands, nearly all being at the curb, and there were no signs specify-

ing the number of vehicles allowed on the stands.

The regulations in regard to the licensing of public vehicles up to 1913 were very bad. Much credit is due to Miss Sophie Irene Loeb for her excellent work in getting these matters corrected, especially in reducing the fare, in requiring taximeters to be examined and in putting the whole matter under Government supervision.

When Miss Loeb began the work she found that the hotels were selling the privilege to certain cab companies of standing next their buildings in the public highway for something over \$500,000 a year, and that no cabs except those belonging to the companies employed by the hotels were allowed to occupy the stands. This has now been done away with and any public cab may stand on any stand and pay no bribe to any hotel for the privilege. Afterwards, Miss Loeb was of great assistance in Chicago. I feel sure that any city desiring a better cab service would do well to profit by Miss Loeb's experience. In Washington, D. C., this matter is still extremely bad. Perhaps it is suffering from practically the same conditions that held New York in their grip?

CHAPTER 8

STREET CAR AND BUS STOPS

Formerly cars always stopped on the far side of the street, except at fire, hospital and school streets, where they stopped at both sides. In 1904, the "near side" ordinance was passed in New York at the instigation of the author, but it was soon repealed. In 1914 this ordinance was re-enacted and was made to include busses, which, however, have now been excepted.

The reasons given for preferring the "near side" stop were safety and reduction in the number of stops.

As far as safety is concerned, the author after more extensive observation believes the "far side" stop to be the safer, both for cars and for busses. If cars always stopped at every intersection and never ran over it, the "near side" stop would be safer, but the compulsory "near side" stops are only at fire, hospital and school streets and lead to confusion as well as to inconvenience. For example, one element of danger with the "near side" stop for cars is that they are apt to overrun the intersection, and if fire apparatus or ambulance is coming through the other street it may find in its path a stationary car, which has to start up before it can get out of the way.

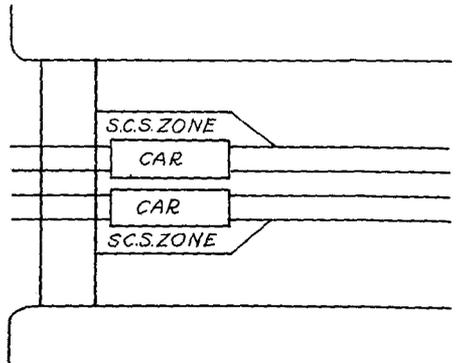
Another danger is that a vehicle coming through an intersecting street is uncertain whether the car will stop or not before crossing and takes the chances of crossing in front of it.

The "near side" stop for cars is better in one respect only, in that it reduces the number of stops, thereby increasing the number of cars that can be run in crowded hours within a given space of time.

The "near side" stop for busses is a great mistake. It is less practical for the bus to approach the curb; it retards following traffic and is dangerous for passengers getting on or off. It has been discontinued in New York for these reasons.

All things considered, the author has reached the conclusion that the "far side" stop has the balance of advantage and that the compulsory "near side" stop should be discontinued at all streets—fire, hospital and school streets included—but at these latter streets cars should slow down before crossing. Local conditions and requirements, however, should determine whether the near or the far side stop should be

selected for each particular location. An essential requirement should be that the car stop be located just before reaching or just beyond a crosswalk. (See Cut.)



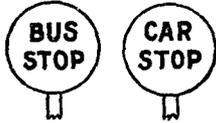
Where the blocks are short, as they are in New York on the north and south streets, it is not unreasonable to reduce the number of stops for both cars and busses so that instead of being at every intersection they would be at every second intersection.

The stops for cars should be at the important streets and at intermediate streets, dividing the distances between to suit local conditions and having no stop nearer another than one block on east and west streets (about 600'), or further than three blocks on north and south streets, about 700').

The stops for busses should be located, not only according to their distance from one another but also according to local conditions; for instance, where there are no entrances to buildings and consequently no real necessity for other vehicles stopping at the curb. Examples of such places on 5th Avenue are the Public Library, the Union Club, the Gotham and Waldorf-Astoria Hotels, St. Patrick's Cathedral, etc., etc.

All stops for cars and for busses should be clearly marked by signs with black let-

ters on a bright yellow background. (See Part II, Chapter 2.)



Safety Car Stop zones were first recommended for upper Broadway in New York in the summer of 1914. They are now in rather general use in many cities. If a Car Stop Safety Zone with a raised platform is furnished, the platform should have the end towards the approach of the traffic bevelled so as to deflect a vehicle striking it. This end should be painted with vertical black and white stripes, the outer or corner stripe being white. The corner should also be furnished with a light at night placed on a stationary standard painted with black and white bands. (See Chapter 3, Part II.)

If a Safety Car Stop zone has no platform or no platform occupying all of it, it should be outlined by white paint lines accentuated by movable standards or traffic bumpers, or both. (See Chapters 3 and 4 of Part II.)

There are many streets where there is not sufficient space for a Safety Car Stop zone if it is to function all the time. In this case a very good plan is to mark out the safety zone with paint lines, using traffic bumpers to accentuate its boundary. When not in use by people waiting for or getting in or out of a street car, vehicles may disregard its boundaries and as the traffic bumpers are only 4" high, the wheels can straddle them.

Under no circumstances should traffic standards be connected by ropes, chains or pipes. It is a most dangerous practice.

CHAPTER 9

REGULATION OF VEHICLES AT LARGE GATHERINGS, SUCH AS THE THEATERS, OPERA AND BALLS

A plan was published in 1900 in the "Rider and Driver" and republished in "Street Traffic Regulation" by the author in 1909. It was first put in operation on the night of November 25, 1903, nearly four years after its first appearance, and proved an immediate success, having reduced the time taken to send all the carriages away from the Metropolitan Opera House to less than thirty minutes, and this on the first night of its trial, when formerly it often took an hour and a half.

This plan, with slight changes, is the one still in use. Since it was made, car tracks have been laid in 7th Avenue, more theaters have been built, and all the while traffic has been increasing, and, of course, rendering the conditions more difficult to cope with. This is probably the first plan of its kind ever made for the handling of traffic at

large gatherings, and it has since served as a model. No new principles have been advanced since then, and only minor changes have been made.

The plans at many of the other theaters are still unsatisfactory. Some can easily be improved, while others are difficult of solution.

Quite as serious as the problem around the Metropolitan Opera House have become those at 34th and 42d Streets. Both of these problems can be made much simpler by widening the roadbeds of the two streets, and making room for three lines of vehicles instead of two each side of the car tracks.

As we realize now that we can not remedy some conditions, we should, in the future, use preventive measures. No theater should be allowed to be built which has not an exit for the use of returning vehicles on a street

where there are no car tracks, and even then the number of theaters with exits or entrances near together should be limited within reason, based on experience. The following is the plan herein referred to:

SUGGESTIONS FOR THE MANAGEMENT OF VEHICLES AT LARGE GATHERINGS

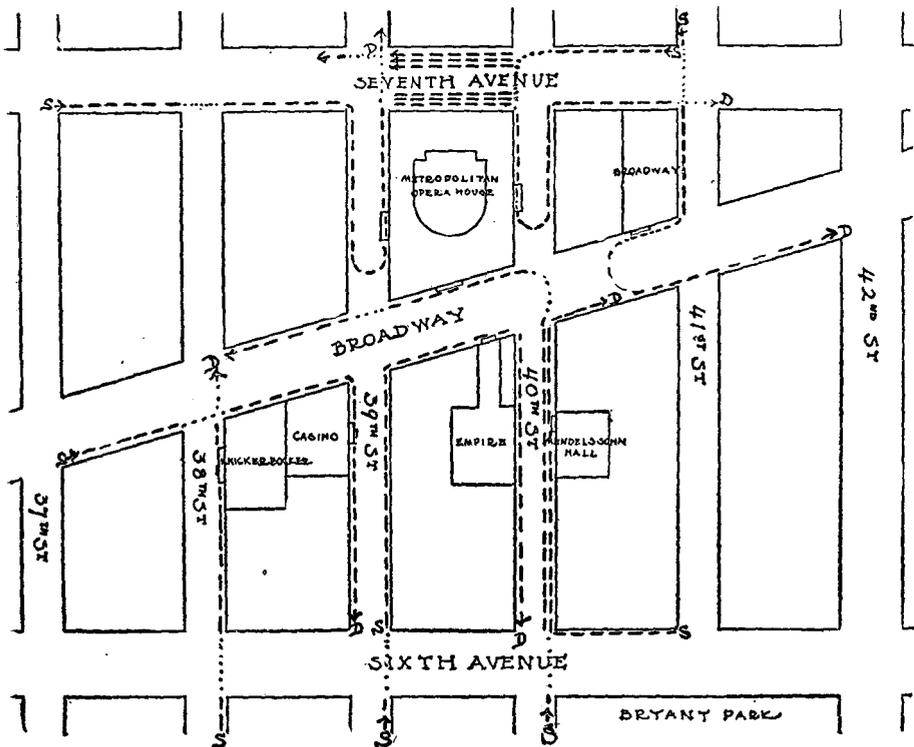
“In the article published in this journal JANUARY 20, 1900, entitled “Reform in Our Street Traffic Most Urgently Needed,” it has been said: “The management of vehicles at the opera, theatres and other entertainments should be carefully studied, and specially trained, expert and competent police assigned to such duties. Vehicles

should never be allowed to discharge or take on passengers on the left-hand side, but should always proceed in the same direction as the regular traffic of the street.”

To proceed further; other general rules should be laid down to cover all cases and special ones for the opera, theatres and other entertainments in public places.

Waiting vehicles should approach the exit on the right-hand side of the street in single line. This line should be formed far enough away from the exit to prevent congestion of traffic near the door.

At balls and other entertainments where the guests leave at different times, the front of the line should be kept at least 50' back



S INDICATES START.
D DISPERSAL POINT.

from the exit, so that vehicles in the line can be called out one by one, by number, and come to the front as required.

At the opera and at theatres, where the audiences leave practically at the same time, the first vehicles in the line should be at the exit at the termination of the performance. If the owners are not ready to take it within two minutes from the dropping of the curtain, it should be sent forward to come in again at the end of the line. After that the others should be allowed to block the way for not more than 15 seconds each and then come in again at the back of the line.

The most difficult problem to handle is that between 38th and 41st Streets, where the Metropolitan Opera House with three exits, the Knickerbocker Theatre, the Casino, the Empire Theatre, the Broadway Theatre and Mendelssohn Hall are located.

This locality has been selected to show what has been heretofore an almost hopeless tangle and how it can be straightened out.

The Opera and all these theatres do not always end their performances at the same time, but they are liable to overlap each other.

For the sake of the argument it is assumed that they terminate simultaneously.

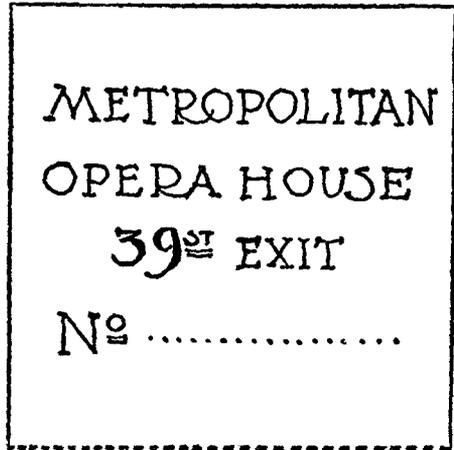
It will be seen by the diagram where it is proposed that each line shall form in single file for each particular exit, how it shall proceed to the exit and how it shall keep on to the point of dispersal.

A numbered check is now given to the driver of a carriage and to the owner at the entrance, and on the reverse side of this check should be printed the necessary directions.

The form of a proposed check for the 39th Street exit of the Metropolitan Opera House is given as an illustration.

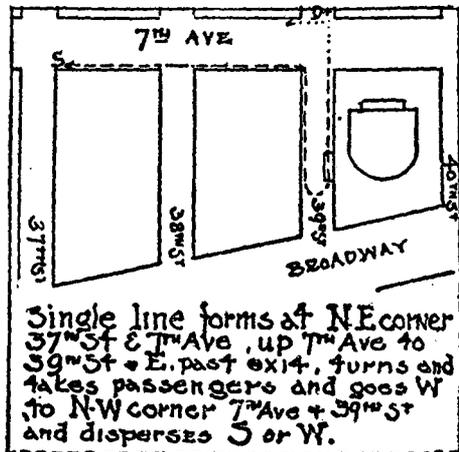
To further facilitate speed and convenience an employee of the Opera House or theatre should ascertain the numbers of, say, the first ten vehicles in line, and put them

in order on a blackboard inside the (Note 2) vestibule, and then get the next ten, and so on; or, better still, a keyboard, similar to that of a typewriter, manipulated from the



CARRIAGE CHECK.

sidewalk, with an indicator inside the vestibule, on which the numbers would show in order. By this arrangement those waiting



REVERSE SIDE CARRIAGE CHECK.

would know of the approach of their vehicles and be ready for them.

If the porte-cochères of the Metropolitan

Opera House were taken away (Note 3) and the sidewalk from the 39th Street door to the 40th Street door, by the way of 7th Avenue, were entirely covered by a roof projecting several feet over the street, so as to cut off any drip, it would facilitate matters, as several vehicles could be filled at the same time. This would also make it easier for people to get out of these doors and the ordinary use of the sidewalk would not be interfered with.

It will be seen by the diagram how 7th Avenue, between 39th and 40th Streets, could be used for vehicles standing where they could be easily found and taken by the owners. In good weather many prefer to have their vehicles stationed where they can find them without waiting for the line.

It is evident that all calling of vehicles would be unnecessary, except where the people come out at different times, as at balls and receptions, and by the use of a system of transparent numbers this also could be easily obviated. (Note 4.)

If the proposed plan is adopted, doubtless improvements and changes will suggest themselves and result in a short time in a very simple and perfect system.

To successfully carry out this reform, at first a very ample number of officers should be employed to form and keep the lines, prevent cutting in, etc., and keep the street intersections open. Soon the drivers would become accustomed to it and the number of officers be reduced, and finally probably fewer needed than are employed now.

The creation of a new office should be strongly advocated—that of Commissioner or Manager of Street Traffic. The incumbent should be a member of the police force. He should have under him an efficient staff of officers, all the bicycle police and all other police in control of the general traffic of the streets, and of vehicles at public and private entertainments.

It should be his duty to keep a record of every traffic accident and its causes.

To him notice should be given of private and public entertainments, and he should assign the necessary officers for management of vehicles and furnish them with a plan for the same.

To him all complaints should be made and he should be held responsible for all failures to furnish efficient service.

He should have control of all hack and truck stands, of the examination of drivers of numbered vehicles, including motormen and automobilists, and of the issuing of license cards.

He should see that the rules of the road are posted up in all public stables and at the hack and truck stands.

He should furnish special rules and regulations for vehicles at each theatre and place of public entertainment, and be empowered to enforce them.

In all cases he should be outranked only by the Chief Inspector.

The services that an efficient officer could render in such a position can hardly be overestimated, and his salary should be sufficient to procure the best talent."

New York, February 10, 1900.

Note 1: Large diagrams applying to each theatre or door of theatre or opera house should be placed on the walls of the vestibules, high enough to be seen over the heads of the people standing.

Note 2: There has lately been put in the Metropolitan Opera House a mechanical contrivance which accomplishes this very thing, but it takes two men to work it, whereas the one suggested in this article in 1900 could be worked by one man.

Note 3: This suggestion, made in 1900, would seem to be equally as valuable now as it was then, and would greatly add to the general comfort, especially on stormy nights. I can see no objection to the same plan being carried out at all the theatres, and the city should grant the necessary permits.

Note 4: A few months after this article was written the electric carriage call was invented and put in general use. This has proved a most valuable device and would be more valuable if, whenever a line of vehicles extends back for a long distance or around a corner, there were located an extra indicator so that it could be easily seen by the drivers on each portion of the line. Of course, the indicators could all be operated simultaneously from the same switch. In fact, the theatres should be obliged to erect as many indicators as the Bureau of Street Traffic thinks desirable.

PART V

Highways: Their Principal Component Parts

Definition: "Highway"—any street or road used as a public thoroughfare. "Street" is the term applied to a highway in a city; "Road" to a highway in the country. A street is usually bounded by building lines; a road by property lines. Most streets and roads were laid out before there was any study of traffic regulation and are narrower than they would have been had there been vision of the future.

There are a good many treatises on widths of highways in their entirety. I shall treat only of the three principal component parts of a highway—that is, Roadway, Sidewalk and Crosswalk.

CHAPTER 1

ROADWAYS

Definition: "Roadway"—that part of a highway for the use of vehicles.

I shall confine this chapter to a consideration of width and cross-section. Country roadways should not be less than 18' wide—20' is better. More than 20' is not desirable except to facilitate three vehicles passing. For this 26' is about right. To provide for four lines of vehicles, 32' is recommended as a minimum and 40' as a maximum.

It is probably too late to prevent the use of vehicles with an outside width of 8'. The adoption of a 7' rule would have been more comprehensively economical, especially in cities.

The narrowest city or village roadway that should be laid out in the future should be wide enough to accommodate four lines of vehicles.

In computing the widths of roadways Allow 8' for a moving vehicle

7' for a ranked vehicle

13' to 15' for parked vehicle in middle of roadway

12' to 14' for parked vehicle at the curb

(See Part IV, Chapter 6)

18' for double car track

9½' for single car track

These figures being established, the necessary width of any roadway, according to what it is to accommodate, can be decided upon. Where it is desired to provide for vehicles being parked it is well to allow a little extra space if feasible.

CROWNING OF ROADWAYS

Roadways should be crowned sufficiently to shed the water and no more. There is no reason why the pitch should be greater at one point than at another, except in the gutter, where it should be slightly increased so that one may step over and not into the water.

The curved line ordinarily used in crowning is bad because the paving is nearly flat in the center of the street and increases in pitch as it approaches the gutter, thus making skidding more probable. This is especially noticeable in parts of Paris where it is carried to such an extent that the side of the roadway is exceedingly dangerous to drive upon when the pavement is slippery.

In New York the tendency has been the reverse, and in many places the roadway is often covered with puddles on account of insufficient pitch. In London, the pitch is slight, but on account of the extreme care with which the paving is laid, water seldom stands.

An even pitch in a straight line from the

center of the street to the gutter is preferable to a curved line. This, of course, leaves a ridge where the two lines meet, but so slight that it is readily eased off.

In London, in some of the wide streets with cab stands in the center, there is a slight depression about 6' wide running longitudinally and connected with the sewer.

A grating in the center of the roadway covering a trough, connected with the sewer would be of great service to get rid of snow as the grating could be opened and the snow shovelled in. If this plan were adopted there would be no necessity for gutters at the curbs, as the water would be carried from the curb to the center of the roadway.

Not sufficient attention has so far been given by engineers to cross sections of roadbeds, especially to those outside of cities and villages. Whenever there is an appreciable curve to a roadway the water should be drained to the inside of the curve only and the outside of the curve should be banked up, increasing in height, as the curve increases. The calculation of just how much to slant the cross section of a roadway is complicated on account of the numerous factors entering into the computation so that after allowing for every conceivable factor, the common sense of experience must be applied. The main object of raising the outside of the roadway is to counterbalance centrifugal force. If this is done, safety is increased and wear and tear diminished. Of course, the amount of centrifugal force to counteract depends largely on the speed of the vehicle. Now as the wear and tear of the vehicle on the roadbed increases as the speed increases, too low an estimate should not be made for this, but due consideration should be given to the fact that if the pitch is too great, slow-moving vehicles can not travel so safely or with so little wear and tear. About $17\frac{1}{2}$ miles an hour should be assumed as the normal average speed rate on a flat roadway, but where there is a

grade the rate should be decreased gradually to the vanishing point. The speed rate of $17\frac{1}{2}$ miles is based on the following assumption: 1st, that 20 miles an hour is a fair rate for the average motor car, and 15 miles for extra heavy cars, such as trucks, etc., the mean being $17\frac{1}{2}$ miles.

CHAPTER 2

SIDEWALKS

Definition: "Sidewalk"—that part of a highway or park for the use of pedestrians.

As a general rule, the proportionate width of a sidewalk to a roadway should be about one to three. However, consideration must first be given to how many vehicles are to be accommodated on the roadway, allowance being made for them according to the figures in the preceding chapter.

CHAPTER 3

CROSSWALKS

Definition: "Crosswalk"—that part of a roadway, marked or understood, upon which pedestrians should cross.

Crosswalks should be marked by 4" paint lines with a dividing line in the middle, and arrows marking direction.

The work of marking crosswalks with paint should be begun in the congested areas of a city and gradually extended. The chief expense is in the first marking. If retouching is promptly done it costs but very little to retain the lines. Good white paint will last a long time, proportionate, of course, to the volume of traffic passing over it.

Pavements should be dry and cleaned off with a stiff brush before paint is applied, and if the pavement is of wood, the surface must be thoroughly shellaced before being painted.

Vitrified brick makes the dryest and most satisfactory crosswalk, but this or any other kind of pavement differing from the main surface of the roadway increases the wear

and tear at the joints and consequently the cost of maintenance.

Crosswalks need not and should not be as wide as the sidewalks unless the sidewalks are very narrow.

Most sidewalks are restricted in width by lamp posts, trees and hydrants at the curb and by projections at the building line. Crosswalks need not be wider than the available part of the sidewalk; that is, the part between the lamp posts, etc., and the projections at the building line, nor is it really necessary to have them as wide as this even, since sidewalks are used not only for moving pedestrians but for those standing still while no one on a crosswalk should stop unnecessarily. It is usually best to locate a crosswalk tangent to the circle described within the four street corners, notwithstanding that it requires pedestrians to go a few feet out of their way to use it. It is certainly much safer for all concerned and leaves the street intersection free for turning vehicles. However, if the crosswalk is

not set back as far as this from the intersection it should at least be set back either to where the curve of the corner begins or as near that as possible.

As our roadways and sidewalks were for the most part laid out before traffic regulation was considered, trees, lamp posts, hydrants and culverts are often located where crosswalks should meet the curb.

Where trees can not be moved the ground where they stand should be covered by an iron grating to avoid stepping on the muddy ground.

Crosswalks should be at as near right angles to the roadway as possible—the shortest way to cross and diminishing danger and interference with vehicular traffic.

The suggestions given can usually be followed but there are so many different factors that enter into a decision as to the exact location of a crosswalk that it is important to leave the marking out to someone with experience. (For signs see Part II Chap. 2.)

PART VI

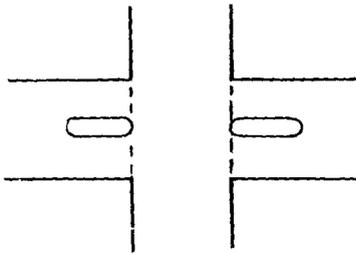
Safety and Other Restricted Zones

SAFETY ZONES

Definition: "Safety Zone"—that part of a roadway from which vehicles, unless confined to rails, are excluded.

Zones of Safety, also called Isles of Safety or Refuges, serve two purposes. They furnish safe stopping places for pedestrians in crossing crowded roadways, relieving congestion on sidewalks and dividing or canalizing traffic, thus assisting in bringing about vehicular order.

Zones of Safety have been in successful use for at least half a century in Europe; and their number is being constantly increased. They have also been adopted quite largely in South America. It is only in the United States, and especially in New York, that their adoption has been tardy, due to the fact that the people of this country usually have to get all their experience first hand. The Safety Zones on 5th Avenue at 42d and 44th Streets should not have been taken away but others should have been put at every intersection on the Avenue.



Wrong Way.

Permanent Zones of Safety are usually raised places in the roadway, the height of a sidewalk, though in many cases it is just as well to define them by paint limit lines with traffic standards, signs and bumpers and lamps at night.

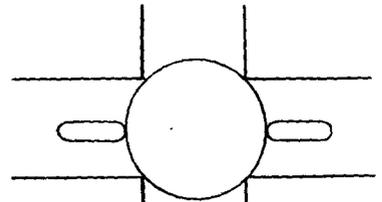
On installing Zones of Safety we should determine first how much roadway width can be spared. Their length should usually be

not less than 15 or more than 30 feet. The best form is that of a parallelogram with elliptical ends. In Paris the ends are round, in London, elliptical; elliptical is best because, should a vehicle strike, it would be with a more glancing blow.

Until recently Zones of Safety have been placed nearly in a line with the curb. This reduces the turning space at the roadway intersection. It is better to place them with one end tangent to an inscribed circle, thus leaving all the turning space possible.

There is usually but one line of Zones of Safety in the center of a roadway, but in some extremely wide roadways like the Champs-Élysées in Paris, there were formerly two lines—always bad—as the vehicles on the central part of the roadway are not separated as to direction.

In July, 1913, however, the two zones of safety were moved apart and an intermediate one installed (see Part X, notice dated Aug. 13, 1913, Chapter 2), thus dividing the roadway into four parts; the central



Right Way.

ones for motor and the side ones for horse-drawn and other slow mercantile vehicles. Another great advantage of Zones of Safety is the facilitation of bus stops (see Part IV, Chapters 2 and 8).

Zones of Safety can be used around circles to divide traffic into two lanes, as shown by the permanent plan for Columbus Circle and the one for the Rond Point in Paris, or

into three lanes as the Place de l'Etoile. (See again Part IV, Chapter 2.)

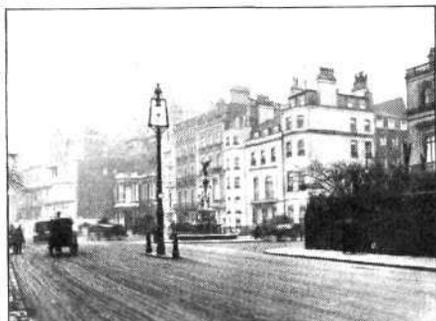
Zones of Safety are much used abroad to fill spaces left irregular by the intersections of streets, where they are of great value to pedestrians and in facilitating traffic regulation.

OTHER RESTRICTED ZONES

Definition: "Other Restricted Zones"—

those parts of the roadway from which one or more kinds of traffic are excluded.

Besides Zones of Safety, which are intended for the use of pedestrians only, there are other restricted zones into which pedestrians should not enter; others into which neither pedestrians nor vehicular traffic, except that confined to rails, should enter. (See again Part IV, Chapter 2.)



Photos by Paul Thompson, N. Y.
Pictures showing popularity of Isles of Safety in London.

PART VII

Minor Physical Changes to Assist the Movement of Traffic

CHAPTER 1

CUTTING BACK CORNERS

Until recently, sidewalk corners have usually been rounded off without any fixed theory. A small radius was adopted before we had motor vehicles. Traffic was slow then and there was less of it. Horse-drawn vehicles could turn shorter and the matter was of little moment.

With a small radius, motor vehicles can not keep close to the curb when turning a corner but must necessarily keep out towards the middle of the street, thus wasting valuable space and retarding traffic.

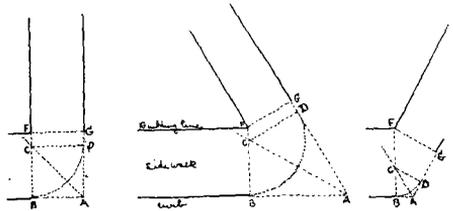
The proper radius to use in all cases is the largest one which does not narrow the sidewalk where the curb is parallel to the building line, or, in other words, the curve must not begin until the point on the curb is reached where a perpendicular let fall from the intersection of the building lines of the two streets, cuts it.

Lately some city engineers have again used a rule of thumb plan of cutting back corners on a radius of a certain number of feet instead of on the scientific principle of the largest practical radius.

Where the proper radius is adopted, the turning space at the intersection of two roadways; that is, the circle inscribed within the four corners will, in some instances, become sufficiently large for the installation of a central zone around which traffic may rotate, just as it now does around large circles such as Columbas Circle. Then the Rotary System can replace the Block System. (See Part IV, Chapter 2.) By this method the diameter of the inscribed circles at 5th Avenue intersections would be from 75 to 100' or more.

The following diagrams show the method of construction. In the case of right angles,

the radius is equal to the width of the narrower sidewalk; at acute angles it is greater, and at obtuse angles, less.



Problem: To find the proper radius.

Construction: Drop perpendiculars FB and FG from the corner of the building line to the curbs. Prolong the two curbs until they intersect at A . Bisect the angle BAD . Then, using the point C , where the bisector of the angle BAD intersects one of the perpendiculars as a center, and with CB as a radius, describe the arc BD . This is the required curve to which the curb should be cut back.

CHAPTER 2

CHANGES IN CURB LINES

We are not responsible for curb lines which were laid out before traffic regulation became a necessity, but from now on, the laying out of new streets, the widening of old ones and the rearrangement of foci should be done only under expert advice.

When Broadway was widened from 25th to 33d Street a few years ago, the property owners were obliged to cut off projections of show windows, etc., and set back their vault lines in order to widen the roadway. But it was not widened enough for an extra line of vehicles between the car line and curb, so little was gained so far as vehicular traffic was concerned, while space was robbed from the sidewalk and property owners put to needless expense. One foot six inches

more on each side taken from the sidewalks would have amply repaid all expense, as the advantage of another line of vehicles on each side would have been worth all it cost. A scale plan with explanations of how the changes could have been made economically was published in "Street Traffic Regulation," in 1909, and if followed would have prevented this mistake.

Again in 1913, another mistake was made when Columbus Circle was repaved. A successful solution would have resulted if the recommendations and diagrams in "Street Traffic Regulation" had been followed. Alterations should have been effected in curb lines; and Safety Zones should have been constructed dividing the roadway around the Circle.

And yet another serious error was that made before the McAlpin Hotel was actually under construction. This is even more serious in view of the fact that sooner or later the problem will have to be met by arcading the building and putting the sidewalk underneath it. The authorities were urged to straighten the building line between 33d and 34th Streets when the plans of the hotel were being drawn. It would then have been simple and would have solved a serious traffic problem beside actually adding value to the property.

Such mistakes should be guarded against in future, especially as there are many other difficulties to be overcome just as important as those already mentioned.

In the same volume a plan was presented for the junction of 5th Avenue and Broadway at Madison Square, now, however, justifying a restudy. It can probably be arranged so as to provide for Rotary Traffic around a circle or other form of centralized obstruction and ample parking spaces for vehicles. Scientifically solved, it must enhance real estate values in that locality as well as simplify traffic control.

The Broadway junctions with 6th and 7th

Avenues, the Central Park West problem and others call for expert study before plans for changes are finally adopted.

New York is, however, not the only city which is suffering from neglect to obtain competent advance advice on traffic matters in order to take advantage of opportunities for betterment when they occur. About 1909, the Café Durand on the rue Royale in Paris was torn down. This was an opportunity to set the new building back, widening the thoroughfare where it merges into the Boulevard and doing away with the still existing bottle neck. There are dozens of such cases where knowledge of traffic requirements would have been worth enormous sums.

THE PLACING OF CAR TRACKS

Where car tracks turn a corner it is important that the corner be cut back as far as practical to avoid having the cars approach nearer it than necessary. In fact, the space between car and curb should be as great when turning a corner as when going in a straight line.

Street car companies usually have been permitted to locate their tracks without other consideration than their own interests. An easy turn occasions less wear and tear on rolling stock and rails and this accounts for its adoption, but while it is economically advantageous to the car companies, it is bad from a general traffic standpoint.

All installations of, and changes in, car tracks should be made with the approval of the City Engineer, who should be held strictly responsible for mistakes.

ANOTHER SIMILAR LINE OF MISTAKES

The Strauss fountain at the Plaza occupies space that is worth thousands of dollars every year for waiting vehicles. When this is thoroughly appreciated the fountain will be removed. In future such mistakes can be avoided by employing expert advice.

PART VIII

Major Physical Changes to Assist the Movement of Traffic

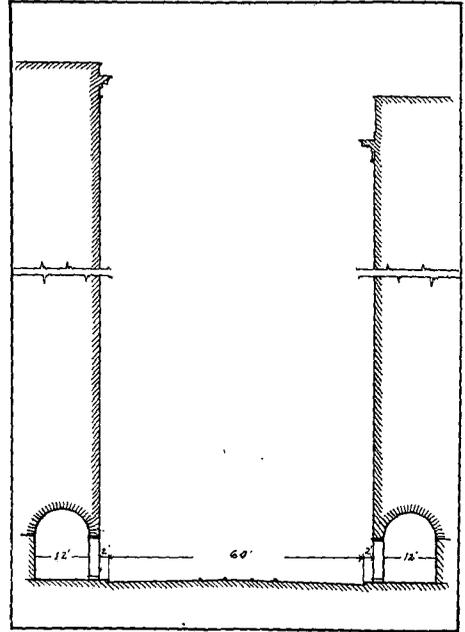
CHAPTER 1

WIDENING ROADBEDS, INCLUDING ARCADING OF SIDEWALKS

Before widening roadways already constructed we should refer to Part V, Chapter 1, on "Roadways," and as far as practical follow the principles laid down for the computation of widths of new roadways. Read also Chapter 2 of Part V on "Sidewalks," which must be taken into consideration when increased width of roadway is to be arranged for.

There are many streets already built up which are much too narrow for their present traffic requirements. The roadways must be widened to provide for it. There are two ways to accomplish this: one to cut back the buildings on one or both sides of the street, and the other to arcade the buildings on one or both sides of the street. If the buildings are not of much value, the former method will naturally be chosen, but if the buildings are expensive and suitable for their purpose it would be extravagant. In this event we can fall back on the arcade method applied to one or both sides of the street. In applying the arcade method we should remember that there must be left a width of at least 2' outside the building projections to provide enough room for the opening of vehicle doors.

Take as an example the problem of what to do with East 59th Street in New York. The street is 60' wide. Many of the buildings are too valuable to demolish or to be cut back all the way up. They must therefore be arcaded on one or both sides. If arcaded on both sides, a roadway perhaps as much as 56' wide is obtained (56 plus 2 plus 2 equals 60). If arcaded on one side a



roadway 48' wide and one sidewalk 10' wide is possible (48 plus 10 plus 2 equals 60).

There must be double car tracks and room for two lines of vehicles on each side of them. Forty-eight feet will just give this, but 50' would be better. The sidewalk of 10' is also rather skimpy.

Now, in view of the increasing traffic importance on East 59th Street, it would seem wiser to arcade both sides at once. There will be a little compensation, also, by this method because we shall not have to move the car tracks.

CHAPTER 2

NEW STREETS

New streets should never be decided upon without thorough consideration being given the question by engineers, business men and the general public. Public hearings should be held and everyone given a chance to express an opinion. To create a new street is a serious undertaking, and whether it is done

with good or bad judgment, the results will probably be permanent.

New streets are seldom justifiable until it is certain that those already in existence can not be made to accommodate the traffic by reasonable changes. (See Part VIII, Chapter 1.)

CHAPTER 3

PLAN OF CITY WHERE NO THREE STREETS CROSS AT THE SAME POINT

The accompanying plan shows a unit area, one mile square, surrounded by similar areas. The reserved spaces are for parks, playgrounds, municipal buildings, hospitals, opera houses, theaters, schools, churches, etc.

Only the diagonal avenues run north and south and east and west. The lettered and numbered streets run northeast-southwest and northwest-southeast, so that the sun will strike the houses on both ends during the course of the day. This is thought to be an improvement on L'Enfant's plan of Washington, where the lettered and numbered streets are laid out with the cardinal points of the compass.

Only two streets or avenues intersect at any one point. This avoids the congestion that results where several streets pour their traffic together into a vortex, as for example, at Columbus Circle in New York City.

The avenues or principal streets are 125' wide. This gives 20' for each sidewalk and 30' for each of two roadways, with a central strip 25' wide for street cars, walks and bridle paths, trees, etc., as may be required. Wherever necessary the central strip can be used either for a surface car line, for a de-

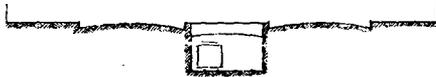
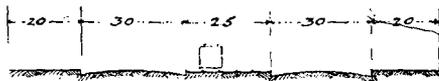
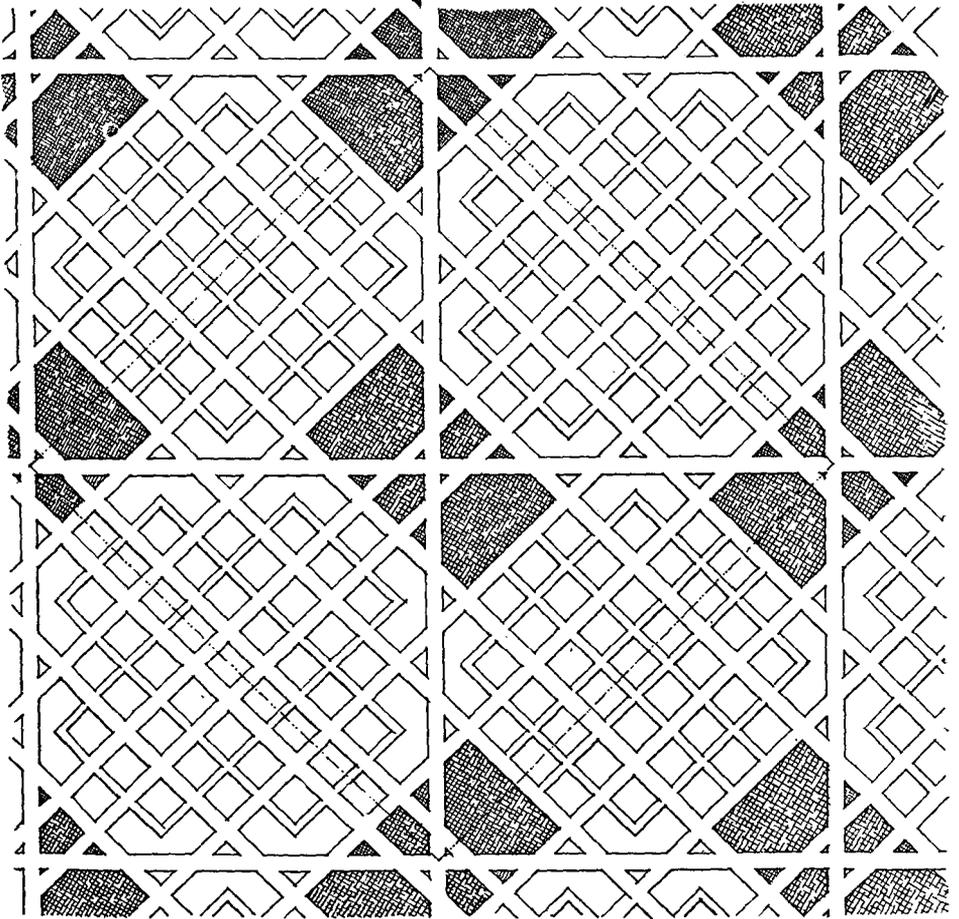
pressed railway or for a subway, as shown below.

The subway could be widened if necessary so as to provide for four tracks. Indeed, if required, it would be possible to put surface, depressed and subway lines in the same street.

The narrower streets are 70' wide, allowing 15' for each sidewalk and 40' for the roadway, which gives room for four lines of vehicles and space for cabstands and waiting vehicles in the middle.

If car lines were placed on all the wide streets, the greatest distance necessary to walk from any house to the street car would be one block and a half, and not more than two transfers would be required to get within one block and a half of any other house in the city.

This diagram and explanation first appeared in "Street Traffic Regulation," published in 1909. Subsequently the American City Bureau had a large map of it made which was shown at the City Planning Exhibit in the New York Public Library in 1913 and other places in this country and South America.



CHAPTER 4

PLAN FOR CUTTING THROUGH BLOCKS FOR CITY RAILWAYS

In 1897 a plan was submitted to the Rapid Transit Commission of the City of New York for cutting through the blocks for subway, surface and elevated railways, with bicycle roadways on top.

It was proposed to have one of these combination transportation lines on each side of the city, the one on the east side being east of 4th Avenue and the one on the west side being west of 6th Avenue, the two joining in a loop at the end of the island. At that time there were very few buildings of great value where these lines would have been located. It would have been necessary to have lowered only two sewers. In cutting through the blocks it was estimated that a strip of land 25' wide would actually be required, but of course the line would not usually have struck the exact division between lots and in most cases more land would have had to be bought than would be used for the roads themselves. It was, however, estimated that the improvement to the neighborhood would result in increased real estate values, warranting increased taxation, thereby justifying the purchase of more land than the roads would actually occupy.

The subway tracks were to be just below the surface, requiring no tunneling and being used for express trains. On the surface there would have been a surface line, up one flight an accommodation line and up two flights a local express line. These four lines of two tracks, each carrying trains at a uni-

form speed, would have furnished what is now quite impossible by any one system in operation. With two lines of this kind, one on each side of the city, there would have been sixteen tracks in all, probably furnishing as great, if not greater, transportation facilities than that now furnished by all subways and elevated lines put together and at a cost of probably not more than that of one subway.

CONVENIENCE TO THE PUBLIC

To get to the lines one would be obliged to travel east or west only, and on reaching either system one could board a car on any level, transferring to another at will.

On top of the structures there were to be open bicycle roadways, and at intervals storage rooms, where bicycles could be checked so that those desiring to wheel up and downtown would have an open path with no other traffic on it and ample facilities for storing wheels or renting them.

This plan was reported by the Rapid Transit Commission as having been received and it probably was duly pigeonholed. It seems now as though a valuable suggestion was turned down through lack of foresight.

Had this plan proved successful it could have been duplicated one block further east and one block further west, giving a total of thirty-two car tracks and four bicycle roadways up and down town.

CHAPTER 5

SUGGESTED PLAN FOR GREATER CENTRAL RAILWAY STATION ABOVE HARLEM RIVER, UTILIZING THE SUBWAY UNDER BROADWAY AND 4TH AND PARK AVENUES FOR A FEEDER

For years back the Grand Central Station has been periodically altered or pulled down and rebuilt to accommodate increasing traffic. A few years from now the same thing will happen again as the capacity of the station is already beginning to be inadequate.

In 1901 it was suggested that a greater central station be located above the Harlem River, utilizing the first subway, extending under Broadway, 4th Avenue and Park Avenue, as a feeder. This would have made it possible, when one wished to reach the Greater Central Station above the river, to go to any of the present subway stations,

purchase tickets, check luggage and change at the Greater Central Station for road and train desired; the luggage also being distributed at this point.

Instead of purchasing land in the vicinity of 42d Street it would have been possible to sell enough there to buy all that could be required in the future above the Harlem River, thus providing for all time for all roads now leaving the Grand Central Station as well as for others which might come in to the city.

This plan was never carried through but was suggested as one worthy of consideration at the time.

CHAPTER 6

CORKSCREW RAILWAY RUNNING BACK AND FORTH BETWEEN THE RIVERS

Many people have gone far uptown to live because there was no transportation to large areas on the east and west sides of the city. These areas have remained dormant for many years waiting to be improved until they could be made accessible.

A corkscrew subway connecting both rivers east and west is suggested, beginning downtown and running north under one of

the streets next the river and continuing north until the Island widens out somewhat and then crossing the city under one of the cross streets, then up along the river front for, say, half a mile and crossing again to the other side of the city, then up again, say, half a mile and crossing again, continuing the same process indefinitely northward so far as required.

PART IX

Miscellaneous Articles on and Connected with Traffic

CHAPTER 1

EMERGENCY TRAFFIC REPAIR VEHICLES

Often vehicles break down in crowded thoroughfares at busy hours, causing expensive delays.

Emergency repair vehicles equipped with

derricks and other suitable appliances should be kept on hand by all large cities as an economical measure to quickly relieve the trouble.

CHAPTER 2

PARADES

In "Street Traffic Regulation," published in 1909, the following paragraph appeared in relation to improvement in New York: "Improving the management of parades and so arranging them and directing their routes and times as to avoid unnecessary interference with other interests, and allowing traffic to cross them at short intervals of time. Parades, now that it has become so exceedingly necessary not to impede business, should usually be relegated to streets where there is comparatively little traffic."

In another article, written some years later, it was said that every large city should have a parade parkway with permanent grandstands where all parades could

be held and not seriously interfere with traffic. This parade parkway or avenue need not necessarily be within the city proper, but might, in all justice, be located outside the congested part of the city so long as it be provided with ample transportation service.

The saving in the aggregate which such an arrangement would bring about would more than pay for the interest on the money expended. Since we are, or we should be, attempting to restore business and prosperity after the war, all saving that can be effected should be most carefully looked into and the best means adopted to bring it about.

CHAPTER 3

TREES ON HIGHWAYS

On the streets of many cities, notably Washington, trees have been planted, but neglect to trim them has, in many cases, resulted in restricting the width of the roadways to such an extent that high vehicles can not keep near the curb, very materially interfering with traffic. The trees should be trimmed up now; but how much better it would have been had this been done when they were first planted, and periodically afterwards.

No part of any tree should come within

15' of a roadway outside of the curb line, and over the sidewalk there should be a clearance of 8'. In making these calculations it must be taken into consideration that when the foliage of trees is heavy with rain it hangs down lower than it ordinarily does and the heights of 15' and 8' respectively are no more than are absolutely necessary.

Not only is this suggestion a utilitarian one, but the effect is far better than when the trees are allowed to grow as they please.

CHAPTER 4

HIGHWAY TRAFFIC ENGINEERING AS A PROFESSION

Highway Traffic Regulation has now become an important branch of Highway Engineering. Many engineers, architects and city planners are already devoting much attention to the subject and their number is increasing as the usefulness of the work is appreciated.

Highway Traffic Engineering may be divided into three parts: First, that in relation to the control of traffic by such simple means as can be effected through printed regulations, the use of signs, standards, Dummy Cops, bumpers, semaphores and crowsnests, and especially by the scientific marking of lines on or in the pavement in order to canalize vehicular traffic and to define safety and other restricted zones, crosswalks and parking and ranking spaces, etc. Second: that in relation to such comparatively economical improvements as may be effected by changes in car tracks and curb lines in streets already in existence. Third: that in relation to the widening of streets where the building line is cut back or where sidewalks are put underneath buildings in arcades, and where new streets are cut through or tunnels or subways are built in order to carry vehicular traffic under another street, as has been talked of for years for 42d Street at 5th Avenue.

Many mistakes made in New York will survive as examples of unskillful engineering due to insufficient knowledge of traffic requirements. One of these examples is the widening of the roadway of Broadway from 25th Street to 33d Street. (See Chapter 2, Part VII.) Another example is the widening of 23d, 34th and 42d Streets, where the curbs have been set back more than enough for two lines of vehicles between car track and curb but not sufficient for three lines. There is now about 17½' between the cars and curb, 1½' of which is wasted and might just as well have been left in the sidewalks.

The recent widening of Madison Avenue is another example of this. The corners here also have been cut back on a rule of thumb radius, whereas the greatest possible radius should have been used which does not narrow the sidewalk where the building line is parallel to the curb. (See Part VII, Chapter 1.)

If cities do not employ those who have made a study of traffic requirements, or at least welcome their advice, such mistakes will, of course, continue and money be still further wasted without accomplishing the best results.

There are many places in crowded cities where eventually it will be necessary to set back building lines or to put sidewalks in arcades underneath them. There are other instances where economy in transportation will justify new streets. Definite scientific knowledge is essential to all such problems. Again, many of our smaller cities have streets so laid out as to form a bottle-neck, where traffic is congested and where a little forethought and technical knowledge would save vast sums if the matter is given attention now while old buildings are still standing and before new ones are allowed to be constructed without conforming to a definite prearranged plan. One of the many examples of this is in the city of Norwalk, Conn., which has one of these bottle-necks, and as yet no attention has been given to the requirements of the future.

Another problem which should have prompt consideration is the construction of broad highways, starting well back from the center of congestion and going around cities or villages, to be used for through traffic, thus avoiding crowding of city streets by through traffic. In many cases these improvements would pay for themselves, if intelligently planned, by increasing the value of the property along their line.

CHAPTER 5

THE RÔLE OF TRAFFIC REGULATION IN RECONSTRUCTION OF FRANCE

“*New France*” (in its October, 1918, number) published an article entitled, “*An American System of Great Benefit to France*,” the editor requesting a letter setting forth what traffic management could do in the reconstruction of the country. The letter asked for follows, in part:

1771 N St., Washington, D. C.,

Nov. 15, 1918.

Mr. Denys Amiel, Editor of The New France.

MY DEAR MR. AMIEL:

In reply to your inquiry as to what I hope can be done for the “France of tomorrow” in relation to the great problem of Traffic Regulation, I am writing you this letter of suggestion.

The officials in Paris have shown themselves already so receptive that not much remains to recommend except the few new things developed since I left Paris in 1912.

These are being embodied in a new book on traffic regulation now in course of preparation.

SUGGESTIONS FOR THE RECONSTRUCTION PERIOD

The roads of France and Belgium are the arteries through which must pass all the millions of tons of supplies, materials and men required for every possible purpose. The Reconstruction Period must have the best ability to bring about adequate results and to prevent wasteful expenditure and being obliged to do work over again.



Mounted traffic officer in New York, and mounted municipal guard in Paris.

The work divides itself into three parts:

(1) Building new roads and repairing old ones with careful study of cross-sections to avoid skidding and of width to accommodate modern vehicles economically but not wastefully. The rounding or easing off of corners on scientific principles is very important, as in the matter of turnouts during construction and repair.

(2) The actual enforcement of the movement of traffic in compliance with the printed regulations (see note), brought up to date, under trained police traffic officers and by the use of such contrivances as "Dummy Cops," "Traffic Bumpers," "Traffic Crownssets," standardized traffic signs, etc. Paint lines for marking crosswalks, danger zones and refuges and for canalizing vehicular and pedestrian traffic should be prodigally but scientifically employed, since this method will go further to reduce danger than any other.

(3) Management of transportation by scientific loading and routing and the avoidance so far as possible of vehicles returning empty.

All branches of the work should be put into the hands of those who have not only

had experience but who have the natural talent necessary for the best service.

When the study of the regulation of Street Traffic was begun 18 years ago, and for many years thereafter, hardly anyone gave it serious thought. Now, however, Highway Traffic Regulation is becoming an important branch of civil engineering and there is beginning to be a goodly number of men competent to render service and who would be honored to cooperate with French engineers who are also working along the same lines

Yours very sincerely,

(Signed) W. P. Eno.

Note: The present traffic trouble in Paris is due to two principal causes: First, neglect to keep up the campaign of education of drivers and pedestrians in the regulations which they are expected to follow; Second, the greatly increased vehicular and pedestrian traffic. The second cause can not be removed, but it can be managed by the removal of the first cause. In other words, if the educational campaign is again vigorously resumed the trouble will speedily decrease. The first thing to do is to again put in use the printed regulations which were officially adopted in Paris, July 10, 1912 and later substitute for them (when satisfactorily translated), the regulations promulgated by the Council of National Defense May 8, 1919. (See Part I, Chap. 2.) The second step is described in Part II, Chaps. 1 to 8 inclusive, and the third in Part IV, Chaps. 2, 3, 6, 7 and 8.

CHAPTER 6

TRAFFIC REGULATIONS AND THEIR VALUE (Note)

A Discussion of the Function and Results of Traffic Regulations, with a Review of the Work of Standardization Undertaken by the Highways Transport Committee

Written for distribution at the Annual Convention of the American Road Builders Association, held in New York, commencing February 25, 1919, and reprinted from "Good Roads," published February 22, 1919.

By WILLIAM P. ENO*

*Chairman Advisory Committee of the Highways Transport Committee of the Council of National Defense, U. S. A., and of the Regional Committee for the District of Columbia.

In order to understand what the Council of National Defense is trying to do it is necessary to know first what had previously

been done towards the object now being sought.

After trying in vain for over three years to get a suitable ordinance on traffic passed in New York City, it was discovered that the police already had sufficient power and, moreover, were absolutely ordered by the

City Charter to regulate traffic. And so, on October 30, 1903, the first printed traffic regulations were issued as police regulations and not as an ordinance. On July 10, 1912, these regulations were officially adopted in Paris and they are now being used in the codification of the set for London.

Between October 30, 1903, and the present time, practically all the cities of the United States and many in foreign countries have adopted printed traffic regulations, every set of which has been founded on those in use in New York. Although codification of the regulations has ordinarily been entrusted to officials or committees to put in the form of an ordinance, they should never be in the form of an ordinance, but their adoption should be authorized by an ordinance, a city charter or a state law. The method of every city making its own traffic regulations has resulted in much confusion and danger.

The New York regulations have been many times revised and about two months ago the Highways Transport Committee of the Council of National Defense made a further revision which was sent broadcast throughout the country asking for suggestions and recommendations. This movement has met with great response, scores of letters coming back, some approving the regulations without comment and others containing well thought-out suggestions, many of which have been adopted.

Since this work by the Council of National Defense began, the regulations have been reprinted five times and it is hoped that by March 1, 1920, the finished product will be ready for standardization.

General highway traffic regulations must be brief or they will not be read, clear or they will not be understood, and reasonable or they can not be enforced. They should contain everything essential for the largest city and nothing superfluous for the smallest village. They should be a part of a standard traffic act, embodied in it as a unit.

The act should contain all necessary information and law on the use of highways, although all such details are not necessary as an educational measure.

The value of printed traffic regulations, properly utilized, is perhaps 95% for education and 5% for enforcement. If every pedestrian and driver knew the regulations there would be but few violations. In fact, the people themselves can be made the real regulators of traffic, for when they know their duties and their rights they resent disregard of the regulations by others. This has been proven many times and in many places during my traffic work of about 20 years. I absolutely know that if proper regulations are intelligently circulated and placarded there will be but little trouble in enforcing them. The police work necessary is in inverse proportion to the education of the public.

Failure to comply with the principles I have just enunciated has always resulted in needless loss of life, and when this has awakened public censure, police departments, in order to divert attention from their own shortcomings, have frequently resorted to wholesale arrests of drivers and pedestrians who violated regulations which they had been given no practical opportunity to learn.

It can be set down as a traffic axiom that the intelligent use of proper printed general highway traffic regulations is the keynote to the whole subject. There is no substitute. To say the least, it is difficult to regulate people without informing them what you want them to do. It is easy to control a trained army, but next to impossible to regulate a mob.

The regulations are printed in a 4-page folder form and on placards of larger size. Both forms should be kept to be had on demand at all police stations. The folders should be carried in the pockets of policemen, to be given to anyone disregarding any provision, the officer calling attention to the

particular article and section violated and marking it with a cross. The placards should be required to be affixed in all public stables, garages, schools and police station houses and such other suitable places as may be available.

The regulations should be taught in all schools, including kindergartens, and, if necessary, from the pulpit. The plan of the Council of National Defense includes asking life insurance companies to insist upon the universal adoption of the regulations and requesting horse, automobile and road periodicals to keep the regulations standing and all other public spirited magazines or weeklies to join in a week's campaign for highway safety and to occasionally call attention to the regulations editorially. It also hopes that our movie theatres will lend their valuable assistance in the ways they know so well how to employ.

Any thoughtful person will admit that people posted as to their duties can carry them out with but little help from the police, whereas if they are not so informed it would be impossible for the whole United States Army to regulate traffic in our country.

This article is primarily on general highway traffic regulation, which is brought about by the education of drivers and pedestrians in brief, clear and reasonable printed regulations, enforced when necessary under legal authority.

All other regulation comes under the head of "special highway traffic regulation," which should be accomplished by the application to the control of drivers and pedestrians of certain clearly defined principles, augmented when necessary by police assistance, the use of limit lines, traffic signs, standards, bumpers, crowsnests, etc.

It is not practical here to go into the details of special highway traffic regulation, but in the future much will be accomplished by standardized signs, improved semaphores, so constructed as to be able to be turned to a neutral position, traffic standards, bumpers, crowsnests, etc., and particularly by the extensive and scientific use of paint lines on the pavement defining

safety, danger and neutral zones and cross-walks.

Rotary traffic, which has already solved some of the most difficult traffic problems, will solve eventually many others in very simple ways.

The only way the world can make up for the cost of the war is by so administering public as well as private enterprises in the future that they may function economically without waste of life or loss of money. Traffic regulation will do its share and it is a very large one, if you will stop to figure.

In figuring we must adopt premises which are necessarily more or less conjectural, but are founded on a study of traffic of over 20 years. I venture to give these figures for what they are worth.

There are now probably at least 10,000 lives lost yearly in the United States due to traffic accidents. If there were no traffic regulations there would probably be twice as many. If traffic regulations were twice as effective there would probably be half as many. In other words, 15,000 lives would probably be saved yearly by traffic regulation if it were as perfect as it can be made. The courts have placed the value of a life at \$10,000.

This would mean a saving of	\$150,000,000
Assuming that there are 110,000,000 people in the United States, and that the value of perfected regulations would be 1 ct. per day per person, we would have 110,000,000 x 1 ct. x 365.....	401,500,000
Assuming that there are 10,000,000 vehicles in the United States and the advantage of increased efficiency, diminution of wear and tear and repairs, at an average of 25 ct. per vehicle per day, we have....	912,500,000
	<hr/>
	\$1,464,000,000

To the foregoing figures, very properly, could be added the cost of funerals, doctors, use of hospitals, etc., outside of the unnecessary loss of life and the pain from accidents.

This seems so stupendous that it is hardly believable, but I feel that the estimate is much lower than the reality. The first argument, perhaps, that anyone would present who wished to prove the estimate too large would be to say that the estimate of saving 1 ct. per day per person is too great, but when you come to think that there is probably no one, even if bedridden, who is not saved something, either directly or indi-

rectly, through the cheaper and more expeditious delivery to him of most of the things he uses, 1 ct. per day per person is a conservative estimate.

I have made this rough estimate as applying to the United States, but it applies equally as well to every country in Europe and perhaps to a lesser degree to all the countries of the world.

Note: Notwithstanding that this chapter repeats much that has already been said, it is here reproduced to give emphasis to that most important part of traffic regulation—**The education of the public in the Regulations which they are expected to follow**—and because of its ending on the economic value of the Regulations when properly carried out.

CHAPTER 7

SUGGESTIONS FOR SNOW MANAGEMENT AND REMOVAL

Not until snow on sidewalks is *not* thrown on roadways will the trouble begin to be properly attacked. Snow on sidewalks should be piled on sidewalks next to the curb with spaces left open in front of entrances to doors of buildings. This work, as well as keeping gutters open, should be the duty of property owners.

The street cleaning department should, 1st, clear crosswalks; 2d, use road scrapers to carry snow to center of roadway where the width of roadway is sufficient to allow this being done without impeding passage of one line of vehicles on each side of the center pile of snow; 3d, dispose of snow in center

of roadway; 4th, dispose of snow piled on sidewalks next to curb; 5th, in soft weather and rain all the regular street cleaning men should turn out to cut cross-drains to gutters.

Work should be begun when the snow begins to fall instead of waiting until a large amount has fallen.

Divide the city into districts, each district under a deputy, and each district being subdivided, each sub-division being under a foreman and all of the regular force trained so that when snow falls the extra men employed may be directed in their work by the regular employees.

PART X

Historical

Prior to 1903 in American cities there were no rules for driving known to drivers or police. Vehicles made their way as best they could through an inextricable mass of other vehicles headed in every possible direction. In December, 1899, I wrote my first traffic article entitled, "Reform in Our Street Traffic Most Urgently Needed," although for many years before that time I had been making a study of the subject.

This article was followed by another entitled, "Suggestions for the Management of Carriages at Entertainments" and by still another entitled, "Rules of the Road Revised." These three articles were copied in whole or in part in many daily, weekly and monthly publications, encouraging me to issue the three together in pamphlet form. The pamphlets contained endorsement slips which were returned by the police and fire departments of the City of New York with the signatures of practically all the officers manifesting the deepest interest taken by these departments in the attempt to increase the safety of streets.

In the article entitled "Suggestions for the Management of Carriages at Entertainments" (see Part IV, Chap. 8), a plan was proposed which apparently called into being the electric carriage call. The general plan adopted at that time for the handling of vehicular traffic at entertainments was the first one ever perfected and has been the basis of all others used since.

At first, work was attempted through the Board of Aldermen. My efforts seemed to interest them, particularly as to what personal benefit I expected to get out of it. In February, 1902, I asked the Police Com-

missioner then in office for a conference. He replied in part:

"With regard to a conference, it does not seem to me that such is necessary or desirable inasmuch as the duties of this department do not comprise the framing of laws or ordinances but rather their enforcement. Inasmuch as I am so very busy with the enforcement of the law, unless it should appear that such a conference is desirable, I must ask you to excuse me."

Of course, this was not very encouraging to anyone attempting to do a public service, and a better opportunity had to be waited for.

On January 1, 1903, Major-General Francis V. Greene (see Part XI, letter dated October 14, 1909) consented to fill out the unexpired term as Police Commissioner at the request of Mayor Seth B. Low. On January 7th, the Mayor wrote asking me to call on the 12th, and on the 13th General Greene wrote me in part as follows:

"As soon as a few more pressing matters (and there are only a few more pressing than the congestion of street traffic) are disposed of, I intend to take up this matter with a view to improving the present conditions, which are very bad. At that time your suggestions will have very careful consideration and I shall then probably ask you for a personal conference."

This led to much work together and a lasting friendship.

Soon after this, Captain A. R. Piper, U. S. A., Retired (see Part XI, letter dated October 30, 1909), was placed in charge of traffic and was sent to London to study the subject. When I called him by telephone

he replied immediately that he had before him the different articles and pamphlets which I had written, that he was sailing for Europe the next day and requested me to wait where I was until he could get to me, which I did.

Much of the success of traffic development must be accorded to General Greene, who had the foresight and intelligence to encourage the attempt being made for the public good, and also to Captain Piper, who worked so faithfully and intelligently under General Greene.

During this police administration three mounted policemen were put on 5th Avenue. On December 7, 1903, I wrote to General Greene and got the number increased to six.

In February, 1903, I caused to be introduced in the Board of Aldermen an ordinance on the "Rules of the Road." There was much opposition to it by some of the members of the Board, owing to the fact that one of them had compiled an ordinance which he wished to have adopted. The articles and sections of his ordinance appeared to be taken largely from mine, but they were so badly mixed up by rearrangement and rewording and by unimportant interpolations and important omissions, that it was opposed by the Police Department, as tending rather to complicate than to simplify. Meanwhile the Department was finding it extremely difficult to make any headway with Traffic Regulation.

It was at this juncture that having made a careful re-examination of the City Charter, Penal Code, Sanitary Code and existing ordinances, I was convinced that *the Police Department was already vested with sufficient power to regulate traffic* without the help of the Board of Aldermen, from which it was apparently impossible to get any intelligent action. I therefore embodied the more important provisions of my ordinance in the form of a folder, called "Rules for Driving," which I took to the Police Com-

missioner, telling him that it was to be issued for the instruction of drivers, and representing to him that it would have more effect if signed by him and distributed through the department. On examination of the legal references which I placed before him, he recognized his powers as being sufficient, and complied with my request. This little folder, the first printed police traffic regulations, dated October 30, 1903, contained about five hundred words and has been the basis of all of the Traffic Regulations of New York, Paris and other American and foreign cities.

As the Police Department had no available funds, I furnished the folders and placards of regulations for seven years or more.

The Regulations being adopted as Police Regulations made it unnecessary to consider the Board of Aldermen, and since that time these Regulations and revised editions have controlled traffic.

On the same day that the "Rules for Driving" were approved I obtained permission from Jacob Cantor, President of the Borough of Manhattan, to erect one hundred blue and white enamelled signs. These signs have proven useful for many years and are probably the first traffic signs in the world for the direction of the movement of vehicles. (See Chapter 1, Part II.)

Unfortunately, after getting things well in hand, that bugbear to anyone attempting to accomplish constructive work—a change of administration—took place, and a new Mayor and new Police Commissioner with new deputies came into office on January 1, 1904. By appointment, due to the letter of a high official in Washington, I called on the new Police Commissioner, who received me with great politeness and even enthusiasm, telling me that he knew about the work; had been watching it and intended to follow it up and improve it if possible. The interview lasted a long time, during

which I endeavored to enumerate and explain all the things which I considered should be done to further perfect the system.

I left his office under his protest, promising to come back, but from that day to this I have never been able to speak to him, although after my conference with him, when things were going so badly, I wrote him many times, making engagements repeatedly, all of which he broke without apology.

The folders of "Rules for Driving" were stopped. This was followed by great activity in traffic work, especially in the increasing of mounted men on traffic service, but these men were, most of them, standing alongside their horses and doing no better work than they could have done on foot. However, this was something that inured to the benefit of the succeeding Commissioner, General Theodore A. Bingham, who took office on January 1, 1906.

General Bingham (see Part XI, letter dated February 19, 1912) at first did not take as much interest in Traffic Regulation as he did afterwards, but he has made up for this seeming indifference since leaving office and there is no man more enthusiastically interested in Traffic Regulation than he, as he has since made the definite statement that he did not appreciate at the time the results of the work which was being attempted and that he regretted he had not done so, as it was the one new and important thing in police work.

The Deputy Commissioner in charge of Traffic at this time was Frederick H. Bugher, (See Part XI, letter dated February 29, 1912) a hold-over from the preceding administration. Together we worked out many problems and revised the Regulations three times. In fact up to the termination of Mr. Bugher's tenure of office there had been but two short periods where any constructive work was done in Traffic

and this state of affairs has continued at least until very recently.

During all this time, however, the members of the Traffic Squad have never flagged in interest and have always kept on doing conscientious work, until now they equal, if they do not excel, any traffic officers in the world.

During these years I published many articles and several pamphlets on the subject of Traffic which were largely read and given a great many press notices.

Since the time when I began work on Traffic Regulation I have kept a series of scrap books, numbering now some two dozen, containing about twelve thousand clippings and many letters. A good many of the newspaper articles are full-page size, printed both in American and French papers and many of the articles are in other foreign languages.

In 1909, I published "Street Traffic Regulation," the first book on that subject. I gave copies of this book to the entire Traffic Squad in New York, sent them to the Public Libraries in America and abroad and to various police departments.

In the summer of 1909 I went to Europe, principally to study the public carriage service in London and Paris. On my arrival in London, I sent a copy of my book to the Police Commissioner, Sir Edward Henry, and was immediately asked to call, although he was at that time in Paris. I deeply regret that I never met him, although we had quite a little correspondence. However, I found at the department Mr. Suffield Mylius, who represented the Police Commissioner during his absence. He afforded me every possible facility to find out exactly what they were doing. I was greatly interested in their methods of examining drivers and in their sets of records of all kinds, including complaint cards. All these forms

are gotten up in a most complete and efficient manner.

I want to mention here, however, that those of Sydney, N. S. W., Australia, are to some extent an improvement on the London forms from which they were taken. The official in charge of Traffic in Sidney, N. S. W., is Mr. Alfred Edward (See Part XI, letter dated November 5, 1909), with whom I have corresponded for many years, he having written me first in regard to some of my articles. Mr. Edward is the author and compiler of the traffic ordinances and laws for Australia and no one has done better work on this subject than he.

After studying the public carriage service in London for about three weeks, I went to Paris and on my arrival sent one of my books to the Préfet de Police, Mr. Louis Lépine and one to the world-renowned Dr. Bertillon. (See Part XI, letter dated August 1, 1912.) Within two hours after receipt of my book, by Mr. Lépine, I received a note from him asking me to call. On my arrival at his office I found the Préfet de Police surrounded by practically his whole staff—some twenty being present. Mr. Lépine told me that he thought I had something which would be of value to them and that he wanted to know all about it. He said, "I do not speak English, but I read it a little, and I have already had your regulations translated, which I want you to revise." He asked me if I would be so kind as to explain to him several of the things which he had found in the book, particularly those in relation to One-Way Traffic and to the Mounted Traffic men.

One-Way Traffic had been put into effect in New York on some of the downtown streets in 1908. It is not a new idea, as I supposed it was at the time—in fact, it had been used in Pompeii, before the Christian Era, on the narrow streets, many of which were wide enough for but one line

of vehicles at a time. These One-Way Traffic streets were marked with signs, showing a chariot headed in the direction in which traffic was to move. I also found in 1908 two streets in Havana which had been for years restricted to One-Way Traffic during the busy hours of the afternoon.

One-Way Traffic streets were inaugurated in Paris (see Part IV, Chap. 3) just after I sailed for home in 1909 and have since been satisfactorily extended to dozens of pairs of streets.

It is curious how an innovation almost invariably creates protest and complaint. I was in Paris in 1910 when the system of One-Way Traffic was started on the Rue Daunou and Rue de Capucines. I stood on the corner of the Rue Daunou when the traffic was prohibited from passing through from the Boulevard to the Rue de la Paix. This narrow street had been so jammed with vehicles attempting to go through in both directions that it sometimes took half an hour to cover one block, but as soon as the One-Way Traffic plan was put in operation, one wondered what had become of the vehicles. As a matter of fact, there were more of them, but they moved freely and rapidly in one direction and confusion had completely disappeared. However, the shopkeepers got up a petition stating that before this system was tried there were many vehicles in front of their doors, but that now there were very few. They did not realize, of course, that there were few because they had gone about their business, and that they had ample opportunity to stop to take up or set down passengers in front of the stores if they so desired. When this was understood the opposition immediately ceased.

To Mr. Lépine's suggestion to try the Mounted Municipal Guard in the regulation of traffic I replied that it would not be successful unless his men and horses were trained for the purpose first, and this proved to be the case. They are a splendid body

of men, mounted on superb horses, but are equipped with helmets, swords and cuirasses—a most unsuitable outfit for the purpose. However, they were continued on duty for the best part of a year.

Mr. Lépine asked me if there was anything he could do to facilitate my work, and I told him that I had come especially to study public carriage service in Paris, as I had already done in London, and would appreciate anything he could do to assist my work. He immediately put at my service Mr. Parris, Inspector of Police, who reported to me every day and took me to witness the examination of drivers, both those for public and private vehicles, etc. This work was extremely interesting and on my return to America I wrote a pamphlet entitled, "Street Traffic Conditions, Public Carriage Service and Automobile Licensing in London and Paris."

About this time I called on my old friend, Philippe Bunau-Varilla (see Part XI, letter dated May 11, 1912), formerly Chief Engineer of the Panama Canal under the French Administration. He had become interested in some of my pamphlets on Traffic and I later sent him a copy of my new book which I found on his desk when I called. He talked with me about it and said that he thought the "Matin" would like to undertake a campaign with the idea of solving the traffic difficulties which then existed in Paris. A few days after this Mr. Hughes Leroux, one of the editors, was put in charge of the campaign and on November 23, 1909, published the first article on the subject in the "Matin." This was followed up by numerous other articles and the matter was taken up by other papers also. We had one thousand of the folders printed which had been translated by the orders of Mr. Lépine.

Just before my departure I received several communications from a member of the Municipal Council, who was also the owner of two daily papers in Paris, asking me to

send him all data that I had in relation to Traffic, as he was very much interested in the subject. I not only did this but asked Mr. Wm. Dumont, who was at that time Mr. Leroux's secretary, to translate any parts of my book which this gentleman wished to read, and after my return to America I sent him all articles which I had previously published and Mr. Dumont translated these also and had many interviews with him.

I sailed from Paris for America in December, 1909. The New York papers were extremely interested in the efforts that had been made in Paris. I was met by a number of reporters, who came down the bay on a tug boat for an interview and the New York papers were flooded with articles on the subject.

I then went on with my work in New York, but later in the year received word from Mr. Dumont that matters did not seem to be going well in Paris, and I made up my mind to return early in the summer of 1910. Upon my arrival I called upon Mr. Lépine. This time he seemed to be lacking in interest, saying that this aforementioned member of the Municipal Council was compiling an ordinance on Traffic and that nothing could be done until this was completed. This member of the Municipal Council had also compiled a report on Traffic. This report contained numerous quotations from my book and consisted of two hundred and seventy-two pages. The first part of the book was largely made up of a discussion of my work, showing how bad it was, and the last part contained a list of recommendations which he had taken from it. This, of course, was a great surprise to me, as I had expected co-operation in my work from this gentleman instead of meeting with a tendency on his part to appropriate it. I did not know at first exactly what to do as there was evidently considerable political backing behind this attempt. Mr. Dumont, however, had an inspiration and suggested that we go to the

Bourse de Travail, the headquarters of many of the syndicates.

We first went to see the head of the Cab Drivers' Union, the name of which is the "Chambre Syndicale des Cochers et Chauffeurs de Voitures de Place de la Seine." Mr. Fiancette was the head of this organization. It contained at that time about nine thousand members, but when I was last in Paris in 1912 its membership had increased to thirteen thousand and five hundred. We asked Mr. Fiancette how he liked the system which the papers had called the "Eno System." He said he did not like it at all, and when requested to give his reasons, he said that the authorities were changing it all the time and arresting his men without reason. I then showed him the little folder which had been left with the Police Department for distribution on my departure from Paris in 1909. He looked at it and said, after reading part of it, "Why, this is just what we wanted—this is splendid—why did they not give us this before? If they had given us this there would have been no trouble." He then sent for Mr. Delmas (succeeded by Mr. Guinehard (see Part XI, letter dated January 23, 1916), the head of l'Union Syndicale des Transports et Mantections which had at that time 22,000 members, and also for Mr. Miraillet (see Part XI, letter dated January 18, 1916), the head of the Federation Nationale des Entrepreneurs de Transports which is the owners' association, and at that time had a membership of 70,000 distributed throughout France. These gentlemen immediately fell into line and agreed that what I had done was what they needed in Paris and manifested great interest and a desire to bring about better vehicular regulations in the streets.

The next day Fiancette, accompanied by several other members of the Chambre Syndicale, came to my hotel and presented me with an engraved certificate of honorary

membership in their association. They invited me to come again to the Bourse de Travail, which I did many times, and Fiancette and the heads of the other two Syndicates together went over the Regulations again to see if any further improvements could be made.

Under date of September 17, 1910, I sent a circular letter, approved by the Syndicates, to the following: Le Préfet de la Seine,



Le Préfet de Police, Le Président et les Membres du Conseil Municipal, Le Président et les Membres de la Chambre de Commerce, Les Membres de la Commission de la Circulation (see Le Problème de la Circulation Pub. 1912). In this letter I went into a minute comparison between the Regulations which I had presented and the ordinance which the member of the Municipal Council, whom I mentioned before, succeeded in getting adopted in place of my regulations. In the letter it was demanded that this ordinance be rescinded and that my regulations be restored.

A few days after this I sailed for America. The work had consumed practically all of my time while on this visit to France and I hoped that something might be accomplished thereby. Shortly after my arrival in America I received a cablegram from Mr. Dumont saying that the Cab Drivers had decided to strike if the ordinance was

not rescinded, and I thereupon both wrote and cabled, urging that this action be deferred until I could return once more. The difficulties of this kind of work in any foreign country with but an imperfect knowledge of the language had become apparent to me and I decided to write a small book on the subject of Traffic Regulation for distribution in France, which I did, the title of the book being "Le Problème de la Circulation 'Système Eno.'"

On my arrival in Paris on April 26, 1912, I went immediately to see the Préfet de Police and told him that my book would be distributed as soon as I could get it printed. I had some ten thousand copies struck off and after numerous interviews with the authorities was requested by Mr. Lépine to go over the Regulations with Mr. Joltrain (see Part XI, letters dated July 2 and 10, 1912), in direct charge of traffic. Mr. Joltrain and I went over the Regulations very carefully and made some slight changes and on July 10, 1912, these Regulations were officially approved by Mr. Lépine and I had 100,000 of them printed in folder form and 1,000 placards. The placards were put up in all police stations and in public stables and garages. The pamphlets were distributed to the cab drivers through their organizations and the pressure brought to bear on the authorities by these organizations was so strong that there seemed little chance of the work going backwards to any great extent.

I had some difficulty in persuading the Préfet de Police to place the cabstands in the middle of the streets. I wanted this done on the Boulevard but he said there was not enough room. However, when I pointed out that there was a cabstand on each side of the Boulevard and that if he would take the two away and put one in the middle there would be more room than there was before; he saw that that was really so.

Shortly after this Mr. Lépine resigned his

office and Mr. Hennion was appointed in his place. He adopted many things recommended in my book, "Le Problème de la Circulation 'Système Eno,'" including putting cabstands in the middle of the streets, some structural changes, including the spreading apart of the two lines of Isles of Safety on the Champs-Élysées and the placing of a third between them, thus dividing the traffic on that important thoroughfare into four instead of three parts, so that motor vehicles which traveled in the center were divided according to direction. The motor busses, however, travel at the outside with the horse-drawn vehicles, and pull over in front of the Isles of Safety to take up and set down passengers. *This is the plan which should be followed in New York on 5th Avenue, as it would add much to the convenience of the public and avoid congestion at the curbs* (see Part IV, Chap. 2). Mr. Hennion also recommended the adoption of my Rotary Plan at the Rond Point (see Part IV, Chap. 2), which I had furnished to the "Excelsior" (see Part XI, article dated Aug. 13, 1913) at the request of that paper and which was republished in the report of the Third International Road Congress, for which I was selected to write on Traffic, representing the United States. This report was published in 1913. There is no doubt but that this plan is the only solution for the Rond Point. It was reported to have been approved in 1913 and its adoption was postponed on account of the caving in of the Avenue d'Antin roadway over the catacombs. Since then the war has delayed its adoption. Reports from France show, unfortunately, that the work has dropped backwards and that traffic conditions in Paris are again in a state of chaos. This is due to two causes—one, that the amount of traffic has increased, but the main cause is the letting up on the educational campaign which was well under way in 1912. (See note at end of Chap. 5, Part IX.)

Since my return from Europe I have devoted most of my time to Traffic Regulation in this country, although the work has spread since my first visit to Paris, to many other European countries, to South America, and lately to Japan. In 1909, after my return from Paris, General Charles H. Sherrill (see Part XI, letter dated May 2, 1912), who was then Minister to the Argentine, wrote asking me to send some of my books on traffic to him, saying that the head of the Police Department in Buenos Aires was always a military man and that the one then in power was a friend of his and would appreciate very much if I would send him some traffic data, which I accordingly did. I was invited down there most cordially but could not go at that time. They have adopted my ideas on many points, and the following year an article appeared in one of our papers suggesting that a delegation be sent to Buenos Aires from New York to see how to regulate Traffic as it was so much better done there than in New York.

I have been to a good many of the cities in this country to see what was being done along Traffic lines, among them Detroit, where I went in October, 1916, to speak on Traffic for the National Safety Council. They are using paint there very extensively in marking lines on the pavement, a method which I have been recommending for years for New York but have been unable to get adopted. It is a very successful method and is bound to be in the future a large factor in bringing about better management of vehicles and eliminating danger.

In November, 1918, when Police Commissioner Couzens, of Detroit, was in Washington, he told me that they had just constructed one of the Traffic Crowsnests which I had been trying to get adopted in New York for many years. I have since had several letters from Inspector Rutledge (see Part II, Chap. 7), of Detroit, now First

Deputy Commissioner of Police, saying that the Crowsnests have been so successful that they have ordered a large number of others.

Right here I want to say that after nearly twenty years of work on Traffic I have found that the greatest difficulty of all is to get permission to be of assistance. Once in a while I have met a really intelligent and progressive official in charge, but usually instead of encouraging my efforts to be of use, they have tried to head off the work, which has made its progress very slow and tedious.

I regret exceedingly that I have been unable to do as much for Washington, where I live, as I would like to have done. From March 21, 1904, efforts have been made by me and by committees on which I have served to bring about the safety of the people of Washington and the smooth movement of traffic.

On July 14, 1914, or ten years after the beginning of the work, the New York Regulations published in folder form were put into effect when Mr. Justice Siddons (see Part XI, letter dated March 8, 1920) was Chairman of the District Commissioners. On January 1, 1915, new Commissioners were appointed and the use of the folder discontinued. The death rate from traffic accidents had become so appalling, being about twice as great in Washington as in New York, that on May 8, 1918, I wrote the Chairman of the District Board, offering my services. At this time the death rate was one per week, but afterwards it became much greater. On May 9th, the Chairman of the Board replied to my letter, asking for details of my suggestions. On May 12th, I responded, giving such details as were necessary, but nothing resulted therefrom. Then in self-defense, as so many complaints came to me personally, I published in the Washington Evening Star of January 21, 1919, an article disclaiming responsibility for traffic conditions

which people naturally supposed I had had a hand in controlling. On May 8, 1919, the General Highway Traffic Regulations with Directions for Drivers and Pedestrians, compiled for Standardization and Adopted by the Council of National Defense, U. S. A., through its Highways Transport Committee, were issued and again an attempt was made to get them put into use in Washington.

For the six months ending December 31, 1919, the death rate through traffic accidents in Washington was 82 per year. On December 16, 1919, a Senate Committee on Investigation was appointed. This committee consists of Senators Dillingham, Calder, Ball, Shepherd and King. Some hearings have been held and others are to follow.

It is possible, with the aid of this able Committee, the present Commissioners, may be willing to better these unnecessary and deplorable conditions.

There is no city in the world so well laid out for the regulation of traffic as Washington. There are no serious traffic problems. It is the easiest city in the world in which to regulate traffic.

Not only should Traffic Regulation be as good as it can be made in Washington on account of the saving of lives and the preservation of property of its citizens, but also because as the Nation's Capital it should serve as an example of a perfectly regulated city to the rest of the United States.



GINZA STREET, in Tokio, famous as the Broadway of Japan, now has traffic cops, 1920.

PART XI

In presenting the following letters, etc., to the Public, it is hoped that the personal factor may be eliminated from consideration.

The merits of any plan or system depend not on the recommendations of the person who advances it, but on the opinion of those familiar with its practical worth.

The letters, etc., are printed chronologically.

*From Charles Sooysmith,
Consulting Engineer,
71 Broadway, New York.*

April 12, 1904.

Dear Sir:

I read with interest those of the articles sent me which I had not seen. It seems to me in your suggestion that a comprehensive plan for the sub-surface improvements should be made now, you have hit upon about the most important thing possible to think of for the city's future welfare. I hope something will come of the suggestion, if not, as you predict, the time is not very far off, when then-existing underground works will block most needed additional ones.

*Yours sincerely,
(Signed) Charles Sooysmith.*

October 13th, 1909.

My Dear Mr. Eno:

Your book on Street Traffic Regulation is a great credit to your ability and long continued effort in the interest of the City of New York. The majority who read and study it, will appreciate only the results of your labor. To me the book is a record and history of many hard fought battles. Fights against stupid, ignorant opposition; fights against political pull; fights against tradition and fights against custom. The people little know how long and how persistently we fought the opposition which arose with every new step we took, but in your book almost every paragraph to the initiated, is a record of one more fight won. The City owes you a debt of thanks (which you will never receive) for the great assistance you have rendered the several city officers who have from time to time taken

an interest in better traffic regulation; it owes you a debt too, for the time and money you have so freely given in this traffic work.

The placing of a concise set of regulations in the hands of drivers and police; the cautionary signs for slow moving vehicles, and the mounted police regulating traffic are monuments to your energy and intellect, and you should be proud of the architecture and position of these monuments.

Wishing you even greater success in your efforts abroad, I remain with many thanks for the copy of the Regulations.

*Sincerely,
(Signed) Alexander R. Piper,
Captain U. S. Army, (Retired),
Formerly Deputy Police Commissioner, and the first one appointed in charge of traffic.*

*303 North Street,
Buffalo, N. Y.,*

*Mr. W. P. Eno,
1771 N Street,
Washington, D. C.*

October 14, 1909.

My Dear Sir:

I have just been looking over your book on Street Traffic Regulation of which you were good enough to send me a copy, and it reminds me how deeply the city of New York—and through it, all the large cities—are indebted to you for the persistent, intelligent and well directed efforts which you have made for ten years past to improve the traffic conditions on crowded thoroughfares. The traffic regulations of the Police Department were first issued in 1903, when I was Police Commissioner,

at your suggestion and in accordance with the recommendations of Deputy Commissioner Piper whom I had sent to London to study the problem there. These regulations have never been revoked but have been modified and improved, with increased experience, until now the traffic is regulated in a manner befitting a city of its importance; and the slim young patrolman on his well groomed horse is now one of the best known and most popular sights in the city. It is impossible to imagine, now, the existence of traffic without the regulations. Their suspension for an hour during the busy part of the day would result in blockades involving large financial losses and would probably precipitate a number of riots.

The plan for street traffic regulation owed its inception to you, and you have followed it up consistently and persistently to its present almost perfect development; and in so doing, you have conferred a benefit upon New Yorkers, and the dwellers in other large cities, of very large proportions. I beg leave to congratulate you heartily upon the success of your efforts.

Sincerely yours,

(Signed) F. V. Greene,

Gen. U. S. A. Police Commissioner of New York City when the work was started.

Police Department,
Traffic Branch,
Philip & Hunter Streets,
Sydney, N. S. W.

Nov. 5, 1909.

Dear Mr. Eno:

I am in receipt of six copies of your book on "Street Traffic Regulation" and desire to thank you for your kindness and courtesy.

So far as my knowledge goes, this is the only record upon the subject and must have entailed a very great amount of personal labor in its compilation.

The comprehensive history of the progress made since 1900 shows the great difficulty which exists in the principal city of America in introducing a reform, even when like that of Traffic, the necessity for reformation was obvious to a casual observer.

It also shows, however, what a wonderful city New York must be, from the fact, that

between 1900 and 1908, the Traffic Staff increased from nothing to over 750 men, 130 of whom are mounted on horses and 18 on bicycles. * * *

I trust that your trip to England will be enjoyable, and if you see anything regarding traffic, or motor traffic control that you consider of importance, I shall be pleased to hear about it.

With thanks and kind regards,

Yours faithfully,

(Signed) A. Edward.

New York Transportation Co.,
49th St. & 8th Avenue,
New York, N. Y.

Feb. 5, 1910.

William Phelps Eno, Esq.,
1771 N Street,
Washington, D. C.

Dear Sir:

The excellent results of the educational work you have done in New York are, I think, apparent to all who are concerned in conducting any form of public or private transportation service, and I should like you to know that I as one of them highly appreciate what you have done.

With many thanks, believe me,

Very truly yours,

(Signed) R. W. Meade, Pres.

Washington, D. C.,
March 3, 1910.

The Regulation of Street Traffic.

One of the most noticeable things about the life of the time and one of the most universal is the very active movement in evidence for the beautification and general improvement of cities. It includes not only everything that goes to make a city attractive and beautiful, but everything that can contribute to the comfort or convenience of its citizens. One of the latest matters, despite its importance, to receive attention, has been the regulation of street traffic. Every one at all familiar with conditions in the congested suburbs of any of our large cities, but especially of New York, is aware of the danger and delay which has been attendant upon the regular movement of traffic. There has been no system nor effective regulation, every one having been left to take his chances and get on as best he could.

Accidents were numerous and the loss of time very serious.

It seems strange that such an intolerable state of things should not have been taken in hand by the municipal authorities, but such was the case, and it was left to a public-spirited citizen, observant and alert, to make a careful study of the situation and suggest improvement and remedies. Mr. William Phelps Eno, of New York, after familiarizing himself with foreign methods, about ten years ago devised a system which comprised all the best foreign ideas on the subject, in combination with those he had evolved as peculiarly applicable to New York. He first induced the Police Department to detail a handful of officers to test his plan, and so well was it found to work that there has grown up now a large, especially selected traffic squad who keep things moving everywhere throughout the city without the clashing, friction and exhibition of obnoxious energy found necessary in other days. Mr. Eno was ably seconded by Mr. Frederick Bugher, Assistant Police Commissioner, and they have together brought the system up to a point of perfection which has found eager imitation both in London and Paris.

Letter by Archibald Hopkins, of the Court of Claims, to the Cincinnati "Inquirer," March 3, 1910.

161 Devonshire Street,
Boston, Mass.,
January 20, 1911.

William Phelps Eno, Esq.,
Washington, D. C.

My Dear Mr. Eno:

The following is the passage of my address before the Interstate Commerce Commission on January 11th referring to you: "Ten years ago the crying demand in New York and in all the large cities, the greater threat of the future, and the embarrassment of the present, was the congestion of traffic. Everyone of you remember what the condition in New York was ten and nine years ago. One of those theorists, a man with brains, and with public spirit, William Phelps Eno, came to the conclusion that traffic regulation on the New York streets would remove congestion; that it would save immense time to the passers, to the working men, as well as to the pleasure seeker. It then seemed as if that city would need to put through new streets in order that the

traffic might move through that great and growing city. And today, with an extraordinary increase of population and of business in New York, you pass through its streets, teeming with vehicles and with human beings, practically without interruption—why? Because William Phelps Eno was willing to and able to bring to the attention of the people of New York and of the officials of New York as he has since to the officials of Paris and of various other cities in Europe and America, the possibility, by thought and regulation, of making that traffic move practically without interruption through existing streets. That is scientific management applied to the solution of that problem."

The reference was in connection with the delays in freight transportation.

Yours very truly,

(Signed) Louis D. Brandeis.

Since appointed Associate Justice
of the Supreme Court of the
United States.

Copy of Telegram

New York City,

July 22, 1911.

Mr. William P. Eno,

Saugatuck, Connecticut.

Accept everlasting gratitude of members
of Traffic Squad Benevolent Association for
your loyal support of amendment to Jackson
Law saving Traffic Squad.

Sergeant P. F. Craue,

President.

February 19, 1912.

Mr. Wm. P. Eno,

My Dear Sir:

It gives me pleasure to add my testimony to the value of your work and studies in the matter of handling street traffic in large cities.

No one, so far as I know, has ever written upon the subject. While you have deeply studied it and given the results of your work in publications of the utmost clearness and value.

You have performed a valuable public service and it is only to be hoped that authorities in charge of traffic will be willing merely to use the results of your work.

placed ready before them and only needing to be utilized.

*Wishing you continued success in your chosen work and with warm regard,
Believe me,*

Very sincerely yours,

(Signed) Theo. A. Bingham,

*Brig. Gen'l U. S. Army (retired)
formerly Police Commissioner,
City of New York.*

Oakdale, Long Island, N. Y..

Feb. 29th, 1912.

Dear Mr. Eno:

No one knows better than I how hard you have worked and how much you have accomplished in improving conditions relative to the movement of vehicular traffic in New York City. Having served four years as Deputy Commissioner of Police in charge of street traffic, I consider myself qualified to speak of the great assistance you have given to the New York Police Department in the working out of the traffic regulations. You will, no doubt, remember the many hours you and I worked together over the exact wording of each paragraph of the regulations. I shall always be indebted to you for your assistance. If your ideas, especially with reference to public hacks could be put in force without political interference, it would work wonders for the hack using public and would also greatly facilitate the general movement of street traffic. One of the most needed reforms in New York City today is the proper licensing of all drivers especially those driving public vehicles for hire. I know of no better system than the one suggested in your book. It has done a great deal of good because it has interested the public and explained to them the practical side of the regulation of street traffic. When I was Deputy Commissioner of Police I caused to be distributed to each member of the Department attached to traffic precincts a copy of your book and I assure you that they benefited by reading it. * * *

You need no better illustration of what the public thinks of the regulation of traffic in New York than was given last summer when an effort was made to abolish the traffic police. Your work had much to do with the way in which the citizens rose and

demand of the legislature that the New York Traffic Police be kept intact. * * *

Assuring you of my highest regard,

Believe me sincerely,

(Signed) F. H. Bugher,

*Formerly Deputy Police Commissioner
in Charge of Traffic for four years.*

*To Mr. Wm. P. Eno,
Washington, D. C.*

*The Outlook
287 Fourth Avenue
New York*

*Office of
Theodore Roosevelt*

February 29th, 1912.

My Dear Mr. Eno:

I have received your book on street traffic regulation. You have done a genuinely valuable piece of work. No one can compare the condition of the traffic in New York streets, and especially the down-town traffic, after your work was done with that of ten or twenty years ago without realizing the value of your service to the city. When I was Police Commissioner, I was necessarily in touch with this whole question, and am therefore in a position to recognize what you have done.

Sincerely yours,

(Signed) Theodore Roosevelt.

*Mr. William P. Eno,
1771 N Street,
Washington, D. C.*

*The Fifth Avenue Association,
New York, March 12th, 1912.*

*William Phelps Eno, Esq.,
1771 N Street,
Washington, D. C.*

Dear Mr. Eno:

I am sure that no one thinks of the regulation of traffic in this great city of ours without its at once suggesting your name.
* * * * *

When we organized this Association several years ago, I hailed with delight the generous and earnest way in which you responded to my requests to help us in doing something along traffic lines. You came to our meetings; you delivered inspiring and instructive addresses, and you enabled me to distribute your most valuable book on this whole subject among some of our leading

people. When you were not able to be in this city, you helped me with your advice by letter, and you aided me to make better replies to statements concerning traffic that I thought should be combated.

Personally and officially, I have been extremely interested in your work. * * * May I express the hope that while you are going abroad to undertake more work there, you will not neglect us? We need you very much and, as an Association, we are very appreciative of what you have done for us, and for our section.

Yours very truly,

(Signed) Robert Grier Cooke,
President.

Chamber of Commerce
of the State of New York
65 Liberty Street,
New York

March 15, 1912.

William P. Eno, Esq.,
1771 N Street,
Washington, D. C.

My Dear Mr. Eno:

I learn from our mutual friend, Mr. George E. Ide, that you are about to go abroad to renew your studies and labors in connection with the traffic regulations in large cities.

The public-spirited and very effective work you have done along those lines in this city is worthy of commendation and is highly appreciated by those who are familiar with the same.

I wish you a pleasant journey and a most successful experience abroad.

Yours very truly,

(Signed) B. Hepburn,
President.

The Merchants' Association of New York
54-60 Lafayette St.,
March 16, 1912.

William P. Eno, Esq.,
1771 N Street,
Washington, D. C.

My Dear Sir:

The people of New York are under great obligation to you as the originator of effective measures for abolishing the chaos of team traffic which formerly prevailed in our streets. From your valuable suggestions

and your energetic work proceeded the methods formulated by Captain Piper and adopted by General Greene, then Commissioner of Police.

The Traffic Squad was organized as the instrument for giving effect to the suggestions originated by you, and it has since continued to be a most useful means of traffic regulation.

The Merchants' Association has been continuously interested in this subject and particularly in promoting the work of the Traffic Squad, and has, therefore, become familiar with your useful and untiring work in this connection. On its behalf I am glad to make acknowledgment of your useful public service in organizing street traffic, and thereby promoting the interests of business men and the comfort and convenience of citizens.

Yours very truly,
The Merchants' Association of
New York.

By (Signed) Henry R. Towne,
President.

5 rue Beaujon,
Paris
2 Mai, 1912.

Mon Cher Eno:

Je regrette infiniment que vous n'ayez pu venir à Buenos-Aires. Ce regret fut partagé non seulement par les autorités de la préfecture de Police mais encore par toute la Presse. Je vous dirai que nous avons fréquemment discuté avec eux votre campagne—devenue internationale—pour l'amélioration du trafic des rues.

Il est donc naturel que cette presse si éprise de progrès a une Police aussi intelligemment dirigée sont reçus avec satisfaction les exemplaires de votre livre, qu'ils ont obtenu par mon intermédiaire, et que, avec la promptitude habituelle des Argentines à s'emparer de nouvelles idées, ils aient utilisé telles indications leur apparaissant le plus susceptible d'adaptation à l'accroissement si rapide de cette extraordinaire cité. Vos livres ont été très utiles mais il est fâcheux que vous n'ayez pu les accompagner pour la continuation du succès de vos travaux si désintéressés.

Bien à vous
(s) C. H. Sherrill.
Ex-Ministre Plenipotentiaire des Etats
Unis pres la République Argentine.

Paris, le 11 Mai 1912.

53 Avenue d'Iéna,
Paris.

Mon cher Ami,

Il y a entre l'oeuvre que vous avez poursuivie et la mienne plus de points communs que l'on ne pense.

Le système circulatoire de l'être vivant comprend les gros vaisseaux, les artères, qui portent la masse du fluide sanguin aux petits vaisseaux, aux artérioles, et celles-ci le distribuent aux moindres de nos molécules vivantes.

De même ce corps colossal qu'on appelle l'humanité a un système circulatoire qui comprend les artères principales et les artérioles de distribution.

Les unes et les autres sont également indispensables.

J'ai consacré ma vie à la plus colossale de ces artères, au Canal de Panama. Vous avez consacré la vôtre aux artérioles en nombre infini qui distribuent les produits de l'industrie de l'humanité à chacune de ses molécules: l'Homme.

Votre oeuvre a été large et féconde parce qu'elle prenait sa racine dans un sentiment désintéressé de dévouement à la collectivité.

Elle a été couronnée d'un succès brillant parce que l'esprit scientifique en a dicté les étapes.

Elle a rencontré sur son chemin la résistance passive de l'égoïsme et de l'ignorance, mais elle en a triomphé.

Vous pouvez avec orgueil regarder l'ordre, la méthode et la discipline qui aujourd'hui remplacent dans beaucoup de grandes villes, notamment à New York, la confusion, l'irrégularité et la violence.

Votre oeuvre en Amérique est complète. Vous êtes venu en France l'y poursuivre, poussé par ce mystérieux attrait qui ramène l'homme vers la patrie de ses ancêtres. Vous fermez ainsi la longue boucle qui a poussé en Angleterre d'abord, puis en Amérique, Jacques de Henne, encore citoyen de Valenciennes à la fin du siècle. Vous avez déjà fait beaucoup ici, mais tout n'est pas terminé. Quand il en sera ainsi, votre système, de Paris gagnera tout l'univers.

C'est vous qui aurez été le chef d'orchestre d'une harmonie inespérée.

Et vous aurez, en déterminant le rythme, rendu un grand service à tous.

Serviteurs communs de la circulation artérielle de l'humanité, nous pourrions quand sonnera l'heure nous endormir en pensant que nous n'avons pas été tout à fait inutiles.

N'est-ce pas là la récompense suprême de l'effort.

A vous

(Signe) P. Bunau-Varilla.

Formerly chief engineer of the Panama Canal, co-signer with John Hay, of the Hay-Bunau-Varilla treaty, which made the Panama Canal possible; first minister from the Republic of Panama to the United States, and decorated several times for valuable engineering work at the front during the late war.

Mr. William Phelps Eno

Grand Hotel, Paris.

Copy.

Embassy of the
United States of America.

Paris, July 1, 1912.

Colonel William Phelps Eno,

Grand Hotel, Paris.

My Dear Colonel Eno:

Your thoughtfulness in sending me your pamphlet "Le Problème de la Circulation" is very much appreciated, especially the copy which you have been so kind as to dedicate to me.

The "Eno System" of street traffic regulations is so well known throughout North and South America and Europe, that it would be superfluous for me to add praise to that which has already been made by the many technical men competent to pass on its merits. Nevertheless, even a layman like myself is daily impressed, both here and in New York, by the rapidity with which the heavy traffic is enabled to move through the most crowded streets without delay or annoyance, and with a saving of life which could not have been possible under former conditions. This condition is, of course, due to your initiative.

Please accept my congratulations for the success which you have attained and, believe me,

Very sincerely yours,

(S) Myron T. Herrick.

Préfecture de Police
Secrétariat Général
Inspection Divisionnaire.
de la
Circulation & des Transports
Cabinet
de
L'Inspecteur Divisionnaire

Republique Française
Paris, le 2 Juillet 1912.

Cher Monsieur.

Monsieur le Préfet de Police s'est entretenu avec moi de la très intéressante brochure que Monsieur Eno a bien voulu lui remettre, et dont il m'a également fait hommage.

Monsieur le Préfet ma chargé de vous dire qu'il donnerait volontiers son approbation à la publication du règlement contenu dans cette brochure, mais sous réserve de certaines modifications qui permettraient de mettre ces règlements en concordance avec les ordonnances de police en vigueur.

Il m'a donné mission de m'entendre avec vous et avec Monsieur Eno, à ce sujet. Je me tiens donc à votre disposition, et serai très heureux de vous recevoir dans mon cabinet quand vous aurez quelques instants à me consacrer.

J'aurais vivement desire écrire également à Mr. Eno, mais je n'ai pas son adresse à Paris, ce qui m'a empêché même de le remercier de l'envoi de sa brochure.

Veillez agréer, Cher Monsieur, l'assurance de mes sentiments tout dévoués.

L'Inspecteur Divisionnaire :
Signé : Joltrain.

Monsieur Hugues Leroux,

Rédacteur au Journal "Le Matin."

Préfecture de Police
Secrétariat Général
Inspection Divisionnaire
de la Circulation
et des transports.

République Française
Paris, le 10 Juillet 1912.

Cher Monsieur.

Ainsi que je vous l'avais promis, je viens de soumettre à Monsieur le Préfet de Police

la nouvelle notice réglementaire concernant la circulation modifiée dans les conditions convenues entre nous.

J'ai l'honneur de vous informer qu'après en avoir pris connaissance, Monsieur le Préfet m'a chargé de vous dire qu'il donnait son entière approbation.

Agréer, cher Monsieur, l'assurance de mes sentiments les plus distingués.

L'inspecteur divisionnaire,
Signé : Joltrain.

Monsieur William Phelps Eno,
au Grand Hôtel, Paris.

Fédération Nationale
des
Entrepreneurs de Transports,
Siège Social : 10, rue de Lancry

Paris, le 27 Juillet 1912.

Monsieur William Phelps Eno,
Grand Hôtel,
Paris.

Cher Monsieur,

J'ai l'honneur de vous exprimer tous mes remerciements, tant en mon nom personnel qu'au nom des Syndicats adhérents à notre Fédération, pour le zèle inlassable avec lequel vous avez poursuivi le but que vous vous êtes proposé d'atteindre : l'amélioration de la circulation dans Paris.

La notice approuvée par M. le Préfet de Police le 10 Juillet constitue un progrès considérable dans la réglementation de la circulation. Je sais bien que les prescriptions nouvelles vont à l'encontre des habitudes prises et de la routine; mais j'ai l'espoir avec le concours actif des Syndicats des chauffeurs et des cochers, les conducteurs se rendront compte qu'ils bénéficieront tout les premiers des facilités de circulation attendues.

Il y a d'autres questions à résoudre, notamment celle du stationnement des voitures de place. A vrai dire, la question de la circulation proprement dite ne sera complètement résolue que lorsque le stationnement aura été équitablement fixé; mais ce sera l'oeuvre de demain et laissez-moi espérer que vous voudrez bien nous continuer le concours

que vous avez bien voulu nous accorder jusqu'ici.

Je vous prie d'agréer, Cher Monsieur, l'expression de mes sentiments les plus distingués.

Pour la Fédération,

Le Président,

Signé: Miraillet.

Copy

Préfecture de Police
Direction Générale des Recherches.
Service de l'Identité Judiciaire.

Paris, Aug. 1, 1912.

Mon cher Monsieur Eno

Moi aussi j'ai conservé un souvenir très vivace de votre visite, la première, dites vous, que vous ayez faite lors de votre arrivée à Paris. J'ai suivi avec grand intérêt vos efforts pour régulariser la circulation et j'ai admiré les résultats que, progressivement, vous avez obtenus. Je ne me suis pas contenté d'admirer, j'en ai profité moi-même comme tous les Parisiens. Dix fois peut-être vous m'avez sauvé la vie par vos règlements si bien compris de la circulation. Je suis, en effet, malheureusement arrivé à l'âge où il ne faut plus compter sur le coup de jarrêt spontané qui, au dernier moment, vous sauvera de votre inattention. Grâce à vos règlements, où je suis passé maître, je sais

en effet à l'avance le trajet que mes ennemis, automobiles ou hippomobiles, sont désormais astreints à suivre.

Jugez si je vous suis reconnaissant de ce résultat et combien la lettre aimable que vous avez bien voulu m'écrire m'a rendu fier.

Veuillez agréer, Mon Cher Monsieur Eno, l'assurance de ma très haute considération.

(Signed) A Bertillon.

P. S. Puisque vous avez conservé un si bon souvenir de votre portrait signalétique que, je me permets de vous en adresser deux nouvelles épreuves.

Chambre de Commerce
de Nancy

Nancy, le 14 Février 1913.

Exposition de La Cité Moderne,
1re Quinzaine d'Avril 1913

Object:
Cité Moderne

Monsieur Eno
Collaborateur à "Je Sais Tout,"
Paris.

Monsieur,

Je viens de lire avec le plus vif intérêt l'étude que vous avez publiée dans "Je Sais Tout," numéro du 15 Janvier, sur le Problème de la Circulation.

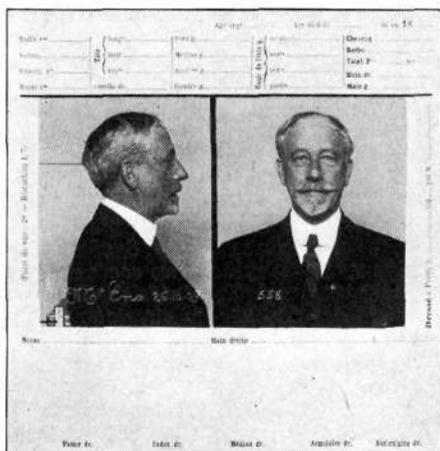
Je dois vous dire que la Chambre de Commerce de Nancy et la Société Industrielle de l'Est organisent pour le mois d'Avril prochain une Exposition de la Cité Moderne. Nous avons le dessein de grouper, sous cette rubrique, les divers plans et projets qui tendent non seulement à améliorer et à embellir la ville, mais à la rendre plus commodément habitable.

Ne pensez-vous pas que nous pourrions faire une place dans cette Exposition aux documents que vous avez mis en oeuvre. Je vous serais très reconnaissant de bien vouloir examiner cette question. Nous serions très heureux s'il vous était possible de seconder nos vues.

Veuillez agréer, Monsieur, l'assurance de mes sentiments les plus distingués.

Le Secrétaire General:

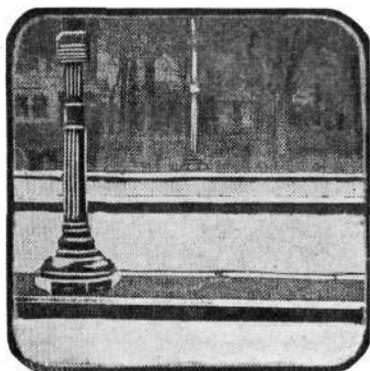
(Signed) N. Witte.



Photograph of the author taken by
Dr. Bertillon himself.

Excelsior — *Aug 13-13.*

Le triomphe du système Eno.
Une fois de plus, les principes de l'Américain William Phelps Eno, l'importateur en Angleterre et en France du système de circulation giratoire, viennent de triompher. C'est le système des trois refuges qu'il préconisa que le préfet de police ordonna récemment comme le seul capable d'améliorer la circulation des véhicules aux Champs-Élysées. Déjà, entre le rond-point et le Grand Palais, il existe trois séries de ces triples



Le triple refuge aux Champs-Élysées.

refuges, canalisant ainsi la circulation des automobiles et donnant naturellement une plus grande sécurité aux piétons. Les deux refuges extérieurs de chaque série sont ceux qui existaient jadis, mais qu'on a écarté l'un de l'autre; au milieu, on a édifié le refuge central, qui sera bientôt surmonté d'un reverbère.

Naturellement, le système des trois refuges sera généralisé d'un bout à l'autre de la splendide voie parisienne.

Translation
Federation Nationale
des
Entrepreneurs des Transports
Siege Social: 10 Rue de Lancry
Paris, le 18 Janvier, 1916.

Dear Mr. Eno:

After the application in Paris during three years of the principles that you have always upheld concerning vehicular traffic in large cities, permit me to tell you that experience

has demonstrated the truth of your foresight.

After quite natural blunderings, since it was a matter of correcting long-standing mistakes, the drivers quickly learned the new rules, and if at times there has been reason lately for the Police to ignore infractions of traffic regulations, it has been because so many of the experienced drivers have been mobilized and replaced by less experienced men. But this unusual state of affairs has made it possible to show that even with inexperienced drivers the congestion of traffic has been much reduced, thanks to measures which were taken very largely from suggestions which you gave in 1912 to the authorities then in charge of traffic. It is only just to add that the Prefect of Police and especially M. Joltrain, Inspector General of Vehicular Traffic in Paris, have brought to their administration of the rules, all the good will and tact that could be wished for.

Please accept, dear Mr. Eno, my best wishes.

(S) M. Miraillet,
President.

In 1912 there were over 120,000 drivers of business vehicles in France employed by this federation.

Translation

Federation Nationale
des
Moyens de Transports
Siege Social
Bourse du Travail, 3 rue du Chateau-d'Eau
Paris

Paris, le 23 Janvier, 1916.

Monsieur Eno:

Having heard that you intend to publish a book on traffic problems in the principal cities of the United States and Europe I wish to offer you my congratulations on your intention. This book will appear at just the right moment and will contribute valuable directions for bettering traffic conditions in large cities.

In Paris, thanks to your efforts and in spite of the inertia of the departments concerned, your system has been applied in part and gives excellent results. Your method has enormously ameliorated traffic conditions here, the hindrances are lessened daily, in large proportions. Let us hope that the complete adoption of your educative and non-

repressive system will give Paris an almost perfect circulation.

Sincerely,

(S) J. Guinchard.

In 1912 there were over 70,000 members of this association.

Introduction to Pamphlet issued under the auspices of the National Safety Council in 1916:

The National Safety Council takes pleasure in presenting a new pamphlet on "Street Traffic Regulation" by Mr. William Phelps Eno, probably the most expert adviser on such matters in the world.

In New York Mr. Eno revolutionized traffic regulation, thereby saving more money annually through one branch of police work than it costs to run the whole Police Department.

In Paris "Le Système Eno" is the official traffic regulating system of the French capital. London has adopted many of Mr. Eno's ideas. The Traffic Branch of the Police Department of Sydney, New South Wales, adds splendid testimony. From the Argentine Republic come words of appreciation. Chicago also acknowledges a debt of gratitude.

If Mr. Eno had headed his pamphlet "The Science of the Street" and couched his language in scientific terms, had he confined himself to academic discussion or given us long tables of statistical data, much of its value would have been lost, but he writes in the language all may read and understand.

"L'Evenement" October 3, 1916.

Reported from the front:

Le Système Eno

On reste étonné de la facilité avec laquelle la circulation intense et ininterrompue s'effectue sur les routes. Les longs et interminables convois automobiles sont doublés par les rapides camionnettes sanitaires, les cavaliers ont leur piste spéciale sur les bas-côtés du chemin et de placides gendarmes, drap rouge à la main, remplacent aux carrefours le traditionnel agent et le légendaire bâton blanc si chers aux boulevardiers.

Les voitures hippomobiles de ravitaillement en vivres ont des parcours qui leur sont exclusivement réservés pour la plus grande joie des pauvres chevaux des conducteurs—et des impatients automobilistes. Il y a un sens obligatoire, une réglementation

severe de la circulation, un code de la route, un véritable système Eno intelligemment pratiqué.

Après la volonté créatrice, après l'idée directrice, se manifeste l'esprit de méthode d'application qui coordonne les efforts dans l'harmonie des rendements.

La Petite République

Le 8 Juillet, 1919

Comment Refaire Nos Routes

M. Eno

Nous donne de bons conseils

Dans une lettre adressée, à la Petite République, il nous indique comment améliorer la circulation.

A la suite d'un article publié ici même sous le titre: "Et le système Eno" du problème de la circulation, nous avons reçu de M. Eno, une lettre où le très distingué créateur du système perfectionné de la circulation des rues veut bien nous donner d'intéressantes précisions sur la façon dont nous pouvions reconstruire ou réparer nos voies de communication détruites ou abîmées par la guerre.

Avant d'expliquer les méthodes que préconise M. Eno, rappelons en quelques mots comment son système fut appliqué à Paris dans des circonstances que l'on a peut-être oubliées.

Comment Fut Appliqué le Système Eno

En 1909, M. Lépine qui était préfet de Eno, auteur de l'ouvrage fort connu en Amérique: "Street Traffic Regulation" (Réalement du Trafic des Rues), et lui demandait des conseils.

Une longue conférence avait lieu qui donnait naissance au nouveau mode de circulation mis depuis en pratique, à Paris sous le nom de Système Eno, et qui nous dota de voies montantes, de voies descendantes et nous permit de ne plus attendre des heures lorsqu'il s'agit de traverser le carrefour Montmartre.

Depuis, M. Eno a beaucoup travaillé. Augmentant sans cesse ses connaissances, ses conseils extrêmement intéressants peuvent donner d'excellents résultats si l'on sait en profiter et surtout si l'on veut les appliquer à temps, pendant cette période de reconstruction intense qui doit suivre l'oeuvre dévastatrice de la guerre.

Nos Belles Routes d'Autrefois

Il faut avoir vu les routes de France et

de Belgique pour se rendre exactement compte du travail qui doit être fait pour remettre tout cela en bon état. Defoncées par les lourds camions des convois de ravitaillement, par les autos des armées qui égrenaient sur ces voies leur incessant chaplet, par les obus, par les canons et par les convois de munitions, les routes, qui jadis faisaient notre orgueil, ressemblent actuellement à ces chemins primitifs, tels qu'on en trouve dans les villes qui naissent.

Et dans nos cités, dans nos villes dévastées, non seulement les rues sont détruites, mais encore elles ont perdu en grande partie les maisons qui les bordaient, parfois du reste il faut le reconnaître, un peu étroitement.

C'est le moment d'appliquer toutes les méthodes suggérées par la pratique et par la réflexion.

Ce Qu'il Faut Faire

M. Eno, dans l'ouvrage qu'il vient d'écrire à cet effet, prévoit trois grandes divisions.

Il s'agit d'abord de construire de nouvelles voies et de réparer les anciennes après avoir soigneusement étudié les sections de croisement pour éviter un stationnement indéfiniment prolongé.

De plus les routes devront être suffisamment larges pour que tous les véhicules puissent circuler, se dépasser, se croiser sans causer d'accidents.

Cependant, il ne s'agit pas de se lancer dans des dépenses exagérées et de gâcher de l'argent pour construire des routes hors de proportion.

Le but doit être atteint mais non dépassé.

De plus les tournants et les angles doivent être établis suivants des principes scientifiques et non pas au hasard comme on l'avait toujours fait jusqu'à présent.

En principe, tout doit être élargi, et surtout des perspectives doivent être ménagées pour permettre aux conducteurs d'apercevoir la voie dans laquelle ils vont avoir à s'engager.

Tout cela doit être observé non seulement dans les constructions, mais aussi au cours des réparations qui seront si nombreuses.

Ensuite, il faut prévoir qu'avec le trafic intensifié que nous devons subir, il sera absolument, nécessaire, principalement dans les villes, d'organiser, de réglementer la circulation.

Pour cela, il faut déjà recruter des hommes soigneusement éduqués qui seront

chargés de faire la police et de diriger les convois de voitures dans le sens où ils doivent aller.

Il sera également nécessaire de multiplier les indications écrites, les signes conventionnels indiquant les croisements, les carrefours dangereux.

Il faudra établir des refuges, des passages, des facilités pour les piétons.

Enfin, il faudra aussi étudier très sérieusement le problème des transports. Apprendre à faire des chargements méthodiques et éviter, autant que possible que des véhicules retournent à vide.

Il Faut Trouver Des Competences

C'est en remettant à des hommes de talent et expérimentés le soin de débrouiller toutes ces difficultés que l'on obtiendra une solution raisonnable du problème.

Un peu partout on trouvera les bonnes volontés et M. Eno lui-même qui tant de fois nous donna des preuves de son talent et de sa réelle obligeance ne refusera certainement pas de nous aider une fois encore.

Seulement, pour cela, il faut d'abord le lui demander, et il faut avoir surtout la volonté très nette de faire quelque chose de bien et de définitif.

The Secretary of the Interior
Washington

February 26, 1920.

My Dear Mr. Eno:

You are doing an invaluable work—a pioneer work—for you are meeting one of the most vexatious problems of our time. To bring order out of chaos is more than a man's job.

Cordially yours,

(S) Franklin K. Lane,
Secretary of the Interior.

Mr. William Phelps Eno,
1771 N Street,
Washington, D. C.

Commissioners on Uniform State Laws
New York State Board
Charles Thaddeus Terry
100 Broadway, New York
Francis M. Burdick
De Ruyter, New York
Carlos C. Alden
Marine National Bank Building
Buffalo, New York

February 19, 1920.

Mr. William P. Eno,
1771 N Street,
Washington, D. C.

My Dear Mr. Eno:

I have yours of the 18th inst. and hasten to reply to your inquiry.

The statement which you make and which you propose to put in your book is correct and sound for the reason that the United States Government has superior jurisdiction over post-roads. Furthermore, a Federal Highway Traffic Act, such as you mention, would doubtless be so drawn, at least it could be so drawn, as not to interfere with any police powers of any of the states, even though the roads affected were not, strictly speaking, post-roads.

With cordial personal regards and best wishes, I remain,

Very faithfully yours,
Chas. Thaddeus Terry.

The above letter is in reply to a question as to whether statement in Part I, Chapter 1, is correct. Mr. Terry is probably the greatest legal authority on such subjects, having been council for the American Automobile Association and the National Automobile Chamber of Commerce.

Robert Lansing,
1323 18th Street,
Washington, D. C.

February 28, 1920.

My Dear Mr. Eno:

It is a matter of congratulation to the public that you are about to publish a new volume entitled "Science of Highway Traffic Regulation," because there has been so general a recognition of the value of your earlier book upon this subject.

As a pioneer and as a master in the field of regulating traffic in our streets in order to avoid collisions and to safeguard life your views based upon careful study and practical experience will be of the utmost value. What you, a single individual, have already accomplished in bringing order out of chaos in the crowded streets of our cities and in lessening the possibility of accidents will be a monument to the great public service which you have so generously rendered.

It is as one who has been benefited by your labors that I desire to express my

thanks and appreciation to you, with the hope that you will continue to give the world the results of your further study of this great subject of traffic regulation.

With my sincere regard, I am,

Very cordially yours,
(S) Robert Lansing.

Resigned as Secretary of State of the U. S. of America, February 14, 1920.

EXTRACTS FROM CIRCULAR LETTERS
FROM HIGHWAYS TRANSPORT COM-
MITTEE, COUNCIL OF NATIONAL
DEFENSE, U. S. A.

December, 1918.

The vitally important subject of highway traffic regulation, which is inalienably linked up with the broad subject of highways transport, is to be given specialized attention by the District of Columbia Highways Transport Committee, the Chairman of which is Mr. William P. Eno, a recognized authority on the subject of traffic regulation.

Mr. Eno has not only been recognized by authorities in many countries as eminently qualified to present a detailed traffic program, but distinct recognition has been given to his advanced views on this subject in the adoption by the authorities of Paris of his highways traffic regulations. Mr. Eno was active in connection with the organization of the first traffic squad in the city of New York, and instrumental in bringing about traffic regulations of that city.

January 4, 1919.

(a) Uniform State Traffic Law

On account of the number of agencies working on laws in the various states, and in view of the fact that there will be so much interstate highway traffic, the Highways Transport Committee has tried to bring together the various interests so that a uniform set of traffic laws may be submitted to the states. Already much work has been done by our National Committee to coordinate the work of other organizations, and a resolution was passed at the recent Highway Convention in Chicago endorsing the movement to draft a set of uniform regulations. It is hoped that we will be able to forward to each of the state organizations a summary of what has been

accomplished and suggestions can be made and legislation introduced where it is satisfactory to the various states. Suggestions will be welcomed by the national office.

(b) Police Traffic Regulations

Mr. William P. Eno, considered a world's authority on police traffic, has associated himself with the Washington Committee, and it is hoped that with his advice and guidance a uniform set of police traffic laws can be adopted throughout the country. While our people moved around in the various states before the war, since that time they have been even more active and it is now more important than ever that these drivers of motor vehicles should know the traffic regulations. If these police traffic regulations are uniform it will simplify travel, and with the ever increasing number of motor vehicles if this work is carried out it will be of great benefit to the Nation. Mr. Eno will direct a campaign through our organizations to develop this work.

Excerpt from pamphlet sent with the completed regulations by the Highways Transport Committee on May 8, 1919:

INTERPRETATION OF REGULATIONS AND DIRECTIONS

The United States Council of National Defense, through its Highways Transport Committee, in submitting herewith proposed standardized uniform highway traffic regulations and directions, as indicated in letter recently sent you, desires to offer some suggestions touching its nation-wide campaign to the end that accidents on the highways be decreased.

Mr. William P. Eno, chairman of the advisory committee for the Highways Transport Committee, to whom credit is due for the vast amount of detail work necessary to put in proper form these suggested regulations and directions, has made, at the request of the Council of National Defense, pertinent recommendations which should be followed if results hoped for from this campaign are to be brought about.

He discusses the imperative need for the adoption of such printed highway traffic regulations and directions and their standardization. Without this general adoption, in his opinion, all else would be comparatively useless.

A Circular Letter

June, 1919.

Prepared originally by Mr. William P. Eno, a world authority on police traffic, these regulations and directions have since been submitted for constructive criticisms to Secretaries of State, State Highway Commissioners and Engineers, judges and lawyers, publicists who have given close study to this question; traffic authorities in some of the larger cities, the American Automobile Association, the National Automobile Chamber of Commerce, the Highway Industries Association, the National Highway Traffic Association and to scores of individuals competent to pass upon this question.

President	Executive Committee
Arthur H. Blanchard	Walter R. Addicks
Vice-President	David Becroft
David Becroft	Arthur H. Blanchard
Secretary	Robert Grier Cooke
Elmer Thompson	William P. Eno
Treasurer	Richard W. Meade
George H. Pride	Joseph K. Orr
	George H. Pride
	Samuel W. Taylor
	Elmer Thompson
	Jefferson DeMont Thompson

NATIONAL HIGHWAY TRAFFIC ASSOCIATION
OFFICE OF THE PRESIDENT
BROADWAY AND 117TH STREET
NEW YORK CITY

May 8, 1919.

Mr. William P. Eno,
 Chairman, Highways Transport Committee
 Advisory Committee,
 1771 N Street, Washington, D. C.

Dear Mr. Eno:

Your favor of May 7th containing latest draft of the "General Highway Traffic Regulations," dated May 8, 1919, at hand.

It gives me pleasure to state that the National Highway Traffic Association hereby adopts as its standard the "General Highway Traffic Regulations" as printed and amended under date of May 8, 1919.
 * * * * *

Anticipating the pleasure of seeing you in New York on the 14th, I remain, with kindest regards,

Sincerely yours,

(S) Arthur H. Blanchard,
 President.

AHB/C

*Supreme Court of the District of Columbia
Chambers of Justice Siddons*

March 8, 1920.

My dear Mr. Eno.

I am very glad to learn that you are about to publish a book on the "Science of Highway Traffic Regulation." There is no one so competent to do this as you, and I trust I shall not be accused of flattery if I add, that in your unremitting zeal and disinterested labors in a cause that daily becomes more and more vital to people everywhere, you have revealed the crusader's character and spirit.

It may not be amiss to recall what I personally know of your efforts in behalf of Traffic Regulations in the nation's Capital.

It is now about eight years since you enlisted me in your body of disciples to spread the gospel of sound regulation, and many an hour was spent by them, under your leadership, in the study of the underlying principles of the subject, and in the formulation of those principles in clear, concise and simple terms appropriate for enactment into law. During the period that I served as one of the Commissioners of the District of Columbia, further progress was made in the adoption, for the District, of most of the regulations then proposed, and since I have been a member of the Supreme Court of the District, we have continued in association

in perfecting and promoting the adoption of the regulations as far as possible.

The latest work in which I had a share was done in connection with the Highways Transport Committee of the Council of National Defense, and then it was that the larger aspect of this matter was driven home upon me.

It would unduly lengthen this letter to point out the reasons of the national importance of standardization of and uniformity in Traffic Regulation. Enough to say that the motor driven vehicle has become an enormous factor in interstate commerce, and the frontier lines between the States of the Union are becoming more and more vague and shadowy as the automobile tends to obliterate them. It is not too much to say that a sound body of General Highway Traffic Regulations, if adopted, will greatly aid in the unification of the people of the country, promote commerce and diminish the tragedies directly due to improper regulations or none at all.

In conclusion, let me say that I trust your book will have a wide circulation if for no other reason, for its educational value, and education on the subject is the chief prop of effective regulation.

Very sincerely yours,

(Signed) F. L. Siddons.

*Mr. William P. Eno,
1771 N Street,
Washington, D. C.*

PART XII

List of Books, Pamphlets, Articles and Addresses on Highway Traffic Regulation

(A) by the Author and (B) by Others

A

Books

- Street Traffic Regulation—Published July, 1909.
- Le Problème de la Circulation—published in French July, 1912.
- Home Defense League Manual of the District of Columbia—published May, 1917.
- The Science of Traffic Regulation—published April, 1920.
- The first Police Traffic Regulations for New York, dated October 30, 1903, and all revisions since that time.
- The Police Traffic Regulations for the City of Paris—dated July 10, 1912, etc.

Pamphlets

- Suggestions for the Management of Carriages at Entertainments—published Feb. 1900.
- Suggested Rules and Reforms for the Management of St. Traffic—published Feb. 1902.
- Rules of the Road Revised—published May, 1902.
- Rules of the Road and Other Ordinances Regulating Street Traffic Pending Before the Board of Aldermen, February, 1903—published February, 1903.
- How to Improve City Car Service—published May, 1907.
- Street Traffic Conditions, Public Carriage Service and Automobile Licensing in London and Paris—published February, 1910.
- Report on Fast and Slow Moving Traffic on Roads for the Third International Road Congress—published in English, French and German, 1913 (republished in Der Strassenbau, Halle, Germany).
- Street Traffic Regulation as It was, Is and Ought to be—published by National Institute of Social Sciences, December, 1915.
- Street Traffic Regulation—published by the National Safety Council, August, 1916.
- Essentials for the Efficient Regulation of Street Traffic—1917 (reprint from "The Official Register" of the Policemen's Benevolent Association of Westchester, Inc., New York State).

Magazine and Newspaper Articles

- Reform in Our Street Traffic Most Urgently Needed—Rider and Driver, Jan. 20, 1900.
- Rules of the Road Revised—Rider and Driver, January 5, 1901.
- Improvement in Street Traffic—Rider and Driver, November 14, 1903.
- Street Traffic Regulation from an Economic Standpoint—Rider and Driver, Jan. 2, 1904.
- Street Traffic and Civic Transportation—Rider and Driver, March 12, 1904.
- Revised Traffic Regulation—Rider and Driver, December 24, 1904.
- Rules for Driving and St. Traffic Regulations Revised—Rider and Driver, Dec. 24, 1904.
- Street Traffic Regulation—Synopsis, Past, Present and Future—Rider and Driver, January 28, 1905.
- Proposed Widening of 5th Avenue to Improve Traffic Conditions—Rider and Driver, November 17, 1906.
- The Taximeter Cab—Rider and Driver, June 8, 1907.
- National Speed Regulations Proposed for Motor Vehicles, Bicycles and Horses—Rider and Driver, October 5, 1907.
- Automobile Road Signs—Rider and Driver, October 12, 1907.
- National Licensing for Motor Drivers and National Numbering for Motor Cars—Rider and Driver, November 16, 1907.
- Two Street Traffic Problems of Vital Interest to New York—Rider and Driver, October 15, 1910.
- Saving Life, Time and Money—American Conservation, July, 1911.

Le Problème de la Circulation par W. P. Eno.—*Je Sais Tout*, January 15, 1913.
 Traffic Regulation at Capital—Rider and Driver, February 13, 1913.
 Standardized Street Traffic Regulation—Rider and Driver, March 15, 1913.
 The Demand for Uniform Traffic Rules—Rider and Driver, August 30, 1913.
 Isles of Safety for Fifth Avenue—Rider and Driver, September 13, 1913.
 Standardized Street Traffic Regulation—*American City*, September, 1913.
 Traffic Semaphores and Crowsnests—Rider and Driver, March 7, 1914.
 New Traffic Plan at 57th St. and Fifth Avenue—Rider and Driver, December 19, 1914.
 Police Duties in Regulating Traffic—Rider and Driver, November 27, 1915.
 Essentials for the Efficient Regulation of Street Traffic—Year Book of the New York State Association of Chiefs of Police, 1916, and The Official Register of the Policemen's Benevolent Association of Westchester, Inc., New York State, 1917.
 Traffic Regulation—*National Municipal Review*, January, 1917.
 Rotary Traffic Regulation at Street Intersections—*Municipal Engineering*, Mar. 1917.
 Safety Isles for Traffic Protection—*American City*, April, 1917.
 Street Traffic Regulation in Relation to Public Safety—Rider and Driver, July 21, 1917.
 One-Way and Two-Way Street Traffic—*Motor Travel*, November, 1917.
 The Rôle of Traffic Regulation in Reconstruction of France—*The New France*, December, 1918.
 Educate People on Rules to Curb Traffic Accidents—*Washington Star*, Jan. 21, 1919.
 Traffic Regulation and Their Value—*Good Roads*, February 22, 1919.
 America's Traffic Accidents Too Numerous to Mention—Written for Bulletin No. 52 Highways Transport Committee, U. S. Council of National Defense. Reprinted in the *American City*, March, 1920, etc.

Addresses

National Traffic Regulation—Address before National Legislative Convention held in District of Columbia to Favor National Registration Bill, February, 1910.
 Street Traffic Regulations in Relation to Public Safety—Address delivered at the Fifth Annual Safety Congress National Safety Council, Detroit, Oct. 20, 1916.
 Rotary Traffic—What it has already done and what it is capable of—Address delivered to Engineering Association for the Advancement of Science at the Automobile Club, December 28, 1916, etc.

B

Book

Lectures on the Regulation of Traffic, by Alfred Edward, Superintendent, and Fred. N. Brack, Inspector, New South Wales Police, 1920.

Magazine and Newspaper Articles

Rules of Road Revised. Mr. Eno suggests changes and additions for better management, etc.—*Brooklyn Daily Standard Union*, January 30, 1900.
 Regulations of the Road—*Brooklyn Citizen*, February 17, 1902.
 Proposed Street Traffic Reforms—*New York Times*, February 23, 1902.
 Plans to Overcome Congestion of America's Crowded City Streets—*Boston Journal*, January 19, 1903.
 New Traffic Rules Empty Opera House in Little More than Half Hour—*New York Herald*, November 21, 1905.
 American Who is Introducing New York Traffic Rules in Paris—*Evening World*, November 27, 1909.
 Paris Streets Are Ruled by New Yorker—*New York World*, December 5, 1909.
 American Street Traffic Regulations Find Favor with Paris Authorities—*New York Herald*, December 15, 1909.
 Ancient Paris Taking Lessons from Young New York on How to Make Her Streets Both Safe and Useful—*New York Herald*, December 26, 1909.
 National Convention to Urge Federal Auto Law—*Morning Telegram*, February 13, 1910.

Le Problème de la Circulation—Le Temps, June 3, 1910.
 Cochers et Chauffeurs—Le Matin, June 18, 1910.
 Circulez—Soleil, June 26, 1910.
 Circulez! Oui—Mais Comment? (full page letter of Mr. Eno's)—Le Matin, June 24, 1910.
 Règlement Concernant la Circulation Sur la Voie Publique—Le Matin, June 24, 1910.
 Circulez! Oui—Mais Comment?—Le Matin, July 1, 1910.
 Circulez!—Le Matin, July 31, 1910.
 Traffic on Streets—Washington Herald, February 5, 1911.
 American Solves Traffic Problem in Paris (full page)—New York Sun, May 12, 1912.
 Contre l'encombrement de Paris—Le Matin, June 23, 1912.
 La Circulation sans danger—Excelsior, July 29, 1912.
 La Circulation des Véhicules à Paris—Le Temps, September 27, 1912.
 Washington's "Gyratory" Regulations and the "Doctor of Traffic Problems," Who Made Them—Washington Star, May 18, 1913.
 Comment se Forme une Spécialité la Circulation dans les Grandes Villes—Le Spectateur, June, 1913.
 Advocates Reform in Control of Street Traffic—New York Herald, September 8, 1913.
 Améliorons toujours la circulation parisienne—Excelsior, September 25, 1913.
 Le Système Infaillible—Nouvelles, November 22, 1913.
 How Traffic Regulation in Paris is Being Revolutionized by an American—American City, January, 1914.
 The Science of Street Traffic, by Arno Doseh—World's Work, February, 1914.
 A Cause for Thanksgiving—Rider and Driver, March 7, 1914.
 One-Way Traffic Street is Urged in this City by Inventor of System—New York Evening World, June 11, 1914.
 To Try Rotary Traffic on 5th Avenue—New York Times, September 6, 1914.
 W. P. Eno Describes Ideal Traffic Rules—Washington Star, October 17, 1914.
 New Yorker Here to Study Tryout of Traffic Rules—Detroit Free Press, February 6, 1915.
 Advocates Standard Street Traffic Rules. Mr. Eno of this city addressed the National Safety Congress at Detroit—Washington Star, October 20, 1916.
 Standardizing Traffic Rules—Motor Age, September 28, 1916.
 W. P. Eno Says Rotary Plan is Traffic Need—New York Sun, November 26, 1916.
 Duluth Adopts Eno System—Motor Age, January 18, 1917.
 New Street Traffic Bills Would Strip the Cities of Police Regulating Powers, by Sophie Irene Loeb—New York World, March 13, 1917.
 Welch Traffic Law a Calamity if Passed, says Eno—New York Tribune, April 1, 1917.
 Bringing Parisian Sons of Liberty to Order—American Motorist, August, 1917.
 Offers Suggestion to Relieve Traffic. W. P. Eno Would Vary Hours of Working in Federal Departments—Washington Star, December 20, 1917.
 Eno Traffic Tower Urged for Use Here—Washington Star, February 25, 1918.
 Detroit Has New Idea in Traffic Control—Automobile Journal, June 10, 1918.
 An American System of Great Benefit to France—New France, October, 1918.
 Federal Traffic Act is Advocated—Washington Star, January 12, 1919.
 Traffic Law (Syndicated Article), by Frederick Haskin—January, 1919.
 La Circulation dans Paris doit être réglementée—Journal, May 14, 1919.
 Comment Refaire nos Routes. M. Eno vous donne de bons conseils—La Petite République, July 8, 1919.
 Suggestions for the Utilization of the Accompanying Proposed Uniform Highway Traffic Regulations and Directions. Pamphlet issued by the United States Council of National Defense through its Highways Transport Committee—June, 1919.
 Les Embarras de Paris—Moniteur de Paris, October 12, 1919.
 Suggested General Highway Traffic Regulations—American City, October, 1919.
 La Circulation à Paris—La Justice, November 8, 1919.

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Plates for printing the four pages of General Highway Traffic Regulations, as shown on pages 4, 5, 6 and 7 of this book, including the insertion of name of Town, City or State, date, etc., and also printed copies of the regulations ready for distribution may be secured from the Printer. Prices on application.