

CONTRIBUTION TO PUBLIC SAFETY BY HIGHWAY MAINTENANCE AND TRAFFIC CONTROL OPERATIONS

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In the early days of the highway department, public safety by highway maintenance and traffic control operations was no problem. Highway maintenance was no problem either because there were few roads except county roads, and traffic consisted of horse drawn vehicles and a few automobiles.

The old time maintenance man usually helped construct the road and upon its completion, maintained it. In those days the maintenance crew consisted of two or three men in winter and the only equipment used were picks and shovels. There was usually a dump truck too. This crew would keep the drainage open and patch holes in the surface. In the summer time the crews would be increased to 20 or 30 men and two or three dump trucks. The ditches were cleaned "by hand" from one end of the road to the other. Major patching was also done by hand.

No one thought of cutting weeds or trees to improve sight distances. We had no signs. Occasionally you might see a sign at the town limits which told you how far it was to the next town. These signs were put up by the towns. Usually if you wanted to know how far it was to the next town you asked someone and quite often you might find the distance to be twice that far.

Truck traffic was very light. One old timer told me that in his territory he recalled there were only two trucks and the maintenance crew always knew when either of them would be on the road. This was sort of an event and the men would all stand off the road and watch them go by.

Our district office staff has grown too. In those days there was the district engineer, his assistant and a stenographer. Today we have an assistant for each division, with superintendents, safety supervisors and several stenographers and clerks.

The division of maintenance and the division of traffic are two of these divisions. Each has a director in Frankfort and a representative in each district who is responsible to his district engineer for all work in his division. These two divisions are very closely related in their duties and responsibilities.

Before 1949 "traffic" was a part of the maintenance division. In a sense the traffic division is more concerned with public safety than the maintenance division and therefore, may be called specialists in public safety while maintenance is more concerned in upkeep of the roads. However, the work of both divisions should be closely coordinated to accomplish the maximum in public safety on our highways.

For example, the processing of all right of way encroachment permits, with a few exceptions, is a function of the maintenance division. These permits originate with the applicant in the district and after being reviewed and approved by the district engineer are forwarded to the central office for final action by the division of maintenance. The majority of applications for encroachment permits in the 9th district are for private or commercial entrances to the highway, which have a direct bearing on public safety. These proposed entrances should be carefully studied by an experienced engineer and before final approval is given should be reviewed by a qualified traffic engineer, whose primary interest is public safety.

Rigid standards should be adopted as to location, width and length of all approaches, especially commercial entrances. The maintenance department should give consideration to reconstructing if necessary all existing entrances which create traffic hazards. It has been suggested that this be done at the department's expense if necessary. It is believed that in many instances the owner of the business establishment would be willing to bear all or part of the cost as such an improvement would undoubtedly enhance the value of the enterprise. A similar policy has been adopted in Michigan and reports indicate the program is a success.

The division of traffic contributes to public safety in several ways. This division makes studies of high accident locations and makes recommendations for their correction. Sometimes signs can be erected to eliminate the accidents. Traffic counts and studies are made for signals, speed zones, safe speeds, etc. Traffic engineering assistance is available to cities that desire this service. The most apparent service is the erection of road signs. These signs may be classified into three groups according to their significance; information, warning and regulatory. Many of the signs are of course for information only; however, there are thousands of warning signs on our highways. The most common of these are the curve, winding road, side road, slow, no passing signs, etc.

The division of traffic has so called "sign crews" in every district who devote their time entirely to traffic problems. One of the chief duties of this crew is the erection of signs.

The traffic engineer and sign crew foreman do more than just put up a sign, however. The need of the sign is first determined. The type of sign must be carefully selected to assure the motorist of proper information or warning. This sign must be placed at the correct distance from the point of danger, so that the motorist will have time to take the needed action. The proper height above and distance from the pavement must also be considered, so that it can be seen day or night. The placing of signs along our highways is not a hapazard job performed by any laborer on a maintenance crew.

The advisory speed sign is one of the newest types of sign to join the traffic control operations family. These signs advise the motorist the safe speed on the curve just ahead. They are undoubtedly a contribution to public safety. However, we believe a more satisfactory method of determining the recommended speed should be adopted as it is not unusual to "make" curves at 15 or 20 miles per hour faster than the speed advised. We have in some instances found the advisory speed too fast. The result is that the average motorist will cease to observe the speed recommended and sooner or later have an accident because of his lack of respect for road signs.

One of the greatest hindrances to the present arrangement of destination and warning signs are the commercial signs along the side of the highway. Such commercial signs make the signs of the highway department appear inconspicuous, and very often they are overlooked because of the attraction of the commercial signs in the vicinity. We believe that the elimination of the commercial signs from the right of way and from the vicinity of the highways would materially add to the effectiveness of the signs of the Department of Highways.

Since the construction of high type roads has increased the speed of motor vehicles, and as a result accidents are increasing, we would advocate that overhead or overroad signs be placed on all the junctions of the high speed roads, such signs to be suspended on cables stretched across the highways or on bracket arms extending over the lanes affected, and placed far enough away from the junctions to adequately warn the motorist that an intersection is ahead. These overhead signs could also be effectively used on dangerous curves or at other dangerous places where signs on the side of highways would possibly be obstructed by parked vehicles, buildings or otherwise.

Another contribution to public safety that may be mentioned is pavement marking. All of you are familiar with the railroad grade crossing markings, school zones, etc. "Traffic" also maintains the parking lines and cross walks thru many towns and cities thruout the state on streets maintained by the department.

Center line marking of the main traveled highways is another important contribution to public safety. This is a service that should be extended to all "hard" surfaced roads and done more often. This will require more equipment and perhaps should be handled by the district.

The construction of high speed highways has made the old style intersection obsolete. The present speed of travel demands that an intersection have the minimum of stops and delays for traffic. Many of these intersections are constructed with traffic channelization islands and cloverleaf designs.

These traffic channelization islands should be so constructed that the traffic will follow an easy to find way through the intersection. The islands should be plainly marked with reflectorized paint and illuminated at night so the motorist can plainly discern them well in advance. Also destination signs should be placed and the information on them should be adequate but as concise as possible. Direction and destination signs for channelized intersections should be erected only after a *very careful* study has been made of where to put them. These signs sometimes confuse rather than help the motorist. Stop signs should not be erected except where the design requires them unless it is found they are absolutely necessary after observing the installation in operation.

All curves where there is any likelihood of the motorist losing control of the vehicle should be protected with modern guard rail, delineated at night. The road surface at all such curves should be surfaced with materials having the least tendency to become slippery during rainy weather.

Trees and shrubs along the outside of dangerous curves should never be cut as they provide an excellent warning to the motorist that he is approaching a curve. This is especially true at night.

In this discussion we cannot overlook the maintenance division which also makes an important contribution to public safety. This division not only strives to keep the motorist happy with a nice smooth ride but it does a gigantic job of keeping its roads physically safe.

In the winter when the snow comes the maintenance man works around the clock under very disagreeable and sometimes hazardous conditions to keep the roads open to traffic by removing snow and ice, spreading granular materials, etc.

Slick surfaces are deslicked, many miles of guard rail are erected at hazardous locations, sight distances are improved on sharp curves by cutting trees and vegetation from the right of way. Low shoulders and pot holes must be given prompt attention. All of these services contribute to public or traffic safety.

Public safety, however, is not entirely an obligation of the High-

way Department's maintenance and traffic control operations, it is everybody's business and must be discussed and thought about by everybody. Meetings like this is a good place to begin. Safety is a personal matter. Motor vehicles accidents have already killed one million. Some of us will be a traffic accident fatality in the second million.

With the coming of the horseless carriage we became much more conscious of road building. In the last 30 or 40 years, we have seen our highway transportation system grow into one of the biggest businesses in this country. But has our highway system kept pace with the automobile — with its 200 horsepower engines and its 100 miles per hour speed? Should our roads be built to such standards?

Today's standards for road design contribute to our effort to check accidents on our highways; however, we haven't designed the "dream" road, where the accident can't happen. Some of our four lane highways have resulted in a higher accident ratio instead of reducing accidents. Modern highways encourage higher speeds which inevitably result in accidents.

Our job is to make our roads safe for reasonable speeds by a system of good maintenance and traffic control. However, even if we can come up with the perfect system, it won't work if the driver wants to kill himself.

We have been talking among ourselves about highway safety and we are sold on the project — but we have got to talk to the driver. This will have to be done by educating him. He must realize his relationship between his everyday living, working, playing and the highway. Some of our automobile manufacturers have already begun a program of educating the public for highway safety.

In these days our children drive at an early age. Note, that I did not say *learn* to drive at an early age. Many of these children as well as adults know how to start, steer and stop, but actually do not realize their responsibility to the other fellow. Many are unfamiliar with traffic laws. All of you are gentlemen and wouldn't think of trying to beat the other fellow into the bank or to the nearest seat in church but the minute some people get into an automobile he turns from Dr. Jekyll into a Mr. Hyde, with no regard for anyone but himself — the idea being to get there first before the other guy gets the parking space.

Where could we find a better place to educate our future drivers than in our public schools, where they can *learn* at an early age to be safe drivers respecting the other fellow's rights. Perhaps, public education in traffic safety is just as important as good engineering and traffic control.

Along with good engineering and education, we need — enforce-

ment. Our judges can do much not only for enforcement but also for education. All traffic violations should come in to the judge's court. Too many traffic tickets are "fixed". The judge should give particular attention to "traffic violators". Penalties should be of a nature that would prevent the violator from being a second offender. However, I do not advocate fining every driver who violates a traffic regulation. The judge may accomplish more with some people by talking public safety to the offender.

Driver's license are too easy to get. I once heard a young lady tell of her experience when she qualified for her driver's license. She became so upset, she couldn't even drive the car back from the test course, but she got her driver's license just the same. Drivers should be required to pass driver's tests before the license is issued. Drivers should be re-examined each year before they get their new license.

The traffic laws and its officers must be respected by all the people. I know of no better way to gain this respect than for the officer to enforce the law and the judge to do his duty when an offender is brought to his court.

In conclusion I want to make the following recommendations:

- (1) That the division of traffic review and approve all encroachment permits which affect the flow of traffic on the highway.
- (2) Consideration be given to the reconstruction of all existing entrances where traffic studies indicate a traffic hazard exists.
- (3) That safe standards be established for the construction of all entrances and that these standards be rigidly enforced.
- (4) All traffic control signs be reviewed with the idea of removing as many signs as possible, thus eliminating the trend of too many signs.
- (5) That appropriate action be taken to control the erection of commercial signs.
- (6) That consideration should be given to highway lighting especially at important road junctions where channelization has not eliminated accidents.
- (7) That action be taken to promote the education of the driver and that driver training be extended in our high schools.
- (8) Promote and encourage traffic law enforcement in the courts.

Engineering, education, enforcement and traffic control operations must work together to succeed in this important job, public safety.