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ACCIDENT PREVENTION vs. ACCIDENT CAUSE

Maxwell Halsey

The author of the article, Maxwell Halsey, has had long experience in the traffic field. He is a graduate of the University of California at Los Angeles and of Harvard University. He served as Field Study Analyst, the Los Angeles Traffic Survey, 1925; Traffic Engineer, Chicago Traffic Survey, 1926; Statistical Analyst, Pittsburgh Traffic Survey, 1927; Traffic Engineer, Massachusetts State Traffic Survey, 1930-31. He was appointed Traffic Engineer for the Department of Public Works, Commonwealth of Massachusetts in 1932, and later was appointed traffic engineer for the National Bureau of Casualty and Surety Underwriters. In 1936 he was made assistant director of the Bureau of Street Traffic Research, its associate director in 1938. In 1941 he was appointed Executive Secretary, Michigan State Safety Commission and is author of the volume *Traffic Accidents and Congestion*.—EDITOR.

Can present police power offset the power of more gasoline?

The traffic accident handwriting is now on the wall. Successive nation-wide traffic death increases in 1945 clearly establish the trend. Up 30 per cent in August, up 40 per cent in September and up 53 per cent in October. The police profession now has its back to the wall. If it holds the line it is certain to get the credit. If it loses the fight it may get the blame.

As every police official knows there are now coming into prominence many traffic factors the effect of which will be in the direction of causing more accidents. The most obvious of these is the recent abolition of gasoline rationing. This reflects the victory and marks the beginning of the relaxation of many war-time restrictions. While all officials should be pleased at this new condition which will permit car owners to secure greater transportation values from their automobiles there are some very serious implications regarding its effect on accidents. Stated in its simplest form this means more gasoline, more travel, more chances to make an error in driving, and more chances to be hit.

Confronted with this new flood of gasoline and its potential ability to increase accidents each police administrator should immediately take stock of the situation, make his own determination of what may happen in his area and decide what steps he can take to keep the accident situation from getting out of hand.

There are no "plus" values in an accident increase — there are only death, injury and economic loss. And in addition there is the threat that the professional standing of the police may be reduced if accidents go up. It is difficult if not impossible for a department charged with the responsibility of providing "public safety" to explain satisfactorily why it was unable to keep deaths from increasing. John Public understands death and injury but the administrative difficulties of inadequate budget and personnel are too complicated to be explained easily to each taxpayer.

Thus the police of the nation are confronted with a serious challenge. Can they be ingenious enough to keep more gasoline from causing more accidents with their present budget and manpower, or will they have to permit accidents to rise and possibly take the blame for it?

In order to evaluate the current situation and make administrative decisions it is first necessary to establish a basis or foundation upon which plans and programs may be built. To do this it is necessary to clearly visualize what controls the level of accidents.

The Traffic Accident Formula: The following premises are suggested: (This assumes that in a general way the individual human being who is a driver will not by himself change very much from year to year in his attitudes, his desires, and his normal ability to make mistakes. Thus the human factor is assumed to be a constant which is moved in one direction by one set of factors and in the opposite direction by another set of factors.)

- I. The level of accidents will always be a balance between the pressure of things that cause accidents and the pressure of accident prevention efforts.
- II. If accident prevention efforts are increased and the accident causes remain constant then accidents will be reduced.
- III. If accident causes increase and accident prevention efforts remain the same then accidents will increase.
- IV. If accident causes increase and accident prevention efforts increase (both in the same amount) then the volume of accidents will remain the same.
- V. The amount that accidents increase or decrease will depend upon the amount of increased pressure applied by prevention efforts or by accident causing pressure.
- VI. There may be a time lag in the accident increasing effect of more gasoline and there may also be a time lag in the accident decreasing effect of an accident prevention program.

Motorists may not take full advantage of the un-rationing

of gasoline immediately. Thus the exposure climb may be staggered. In any given community or state the carry over effect of a strong accident prevention program may temporarily hold down the effect of greater exposure. It may take some time for a new and more vigorous enforcement program to reach its full effect. Thus a predicted increase or decrease in accidents may come earlier or later than originally anticipated.

But sound police plans should not be discarded because of an inability to establish firm dates. Time lags will not change the ultimate relationship between cause and effect. More gasoline will produce more accidents (other things being equal). More education-enforcement will produce fewer accidents (other things being equal). The pressures are there and the strongest will move the accident curve up or down.

Attention may now be directed to some of the ways in which more gasoline will produce more difficulty on streets and highways.²⁵

Increased Accident Exposure Samples: Increase in traffic volume will produce such things as the following:

- (1) At a relatively light intersection, an approaching car is more apt to have a car unexpectedly come out from a side street.
- (2) At a relatively heavy intersection a given traffic situation may contain eight cars instead of four and thus be more complicated.
- (3) On a given street there will be more traffic and hence the necessity of more passing with its attendant hazard.
- (4) A mile driven for pleasure is apt to be more dangerous than a mile driven for business due to a difference in attitude. Available gas is apt to be used first for business and what is left over will be used for pleasure. As more gas becomes available there may be a proportionally greater increase in pleasure driving.
- (5) Low mileage drivers will now drive more and reach out farther from their garages. They will not be as safe as a "C" book driver who has been driving relatively high mileage. These less safe miles of travel will create more critical traffic situations where an error in judgment may produce an accident.

Accident causing pressure is now definitely being increased through the release of more gasoline. Therefore, whether we get an increase in accidents, and how much, will be determined specifically by just how much we are able to increase accident prevention efforts. There is nothing that we can do to keep the causes from increasing, such as more gasoline. But there should be something we can do about increasing accident prevention pressure — unless we wish to admit defeat and accept

another possible additional 10,000 dead in 12 months.

The Police Must Meet the Crisis Alone: While the long-run accident problem can only be met by a well-balanced accident prevention attack composed of enforcement, education, engineering and motor vehicle administration, it is unfortunately true that none of these, with the exception of enforcement, can move fast enough to produce significant results in three months or in six months.

Driver Training in High Schools cannot materially affect the total number of accidents in a period of less than five years.

School Boy Patrols have already reached a high level and cannot make an additional large volume reduction of accident.

Traffic Engineering can not get more personnel and more equipment fast enough to materially reduce the total number of accidents in less than a year. New safer designed roadways will not make themselves felt strongly in less than five to ten years.

The administrative difficulties of applying driver license controls make it improbable that they could cut accidents significantly in less than 12 months.

Thus an immediate threatened increase in accidents in three months can only be met by an enforcement attack coupled with a public educational program.

Therefore, in the traffic accident formula the only accident prevention pressures suggested are restricted to enforcement and public education when geared to enforcement on an action program.

Short Range and Long Range Programs: The police administrator must constantly deal with two kinds of program. A long range program composed of fundamental improvements necessary to deal with the long range problem, and a short range program to deal with sudden and temporarily violent upsurges in the accident picture. Both are essential. Neither one replaces the other. The short range program cannot solve the long range problem. The long range program cannot move fast enough to meet the threat of a sudden increase in accidents.

The Speed of Gasoline Increase Poses a Serious Problem: You can turn on more gasoline with a valve — a simple administrative ruling by O.P.A. and in a few months have a considerable increase in travel. But you can't turn on more police budget and manpower with a valve. It would take six months to a year to make even a little progress in this direction. Thus a serious problem of timing is present. One accident causing force can move in a few months whereas one accident prevention force can't move much in less than a year.

It would seem a foregone conclusion that if an accident prevention force does not move quickly then the rapidly moving force of more gasoline will automatically produce more accidents.

Need for a Specific Plan: The police administrator is somewhat in the position of an army commander who can see that the enemy's invasion barges have just left the enemy shore and knowing what will happen when they land knows that he must have a plan to meet the attack. The police administrator knows that more gasoline is now "on the way," he also knows what will happen when it makes itself felt and he likewise knows that he must have a plan to meet this attack.

It should be stated most emphatically that the recognition of this problem by the police administrator and the development by him of a plan to meet it is far more important than what the plan is or what its details are. A relatively poor plan vigorously executed might be better than no plan at all. It is almost certain that in the absence of a plan, accidents will continue to increase.

Administrative Plans Utilizing Only Present Police Personnel Must Do the Job: Since it appears probable that police departments cannot get more budget and more personnel quickly enough to meet the accident threat of more gasoline in the next few months, then they are forced to conclude that whatever can be done must be done with the present resources of the department. Some additional personnel can be obtained from the ranks of returning soldiers but it will take months of training before their value will be felt. In addition it appears likely that labor management unrest may reduce the man hours of officers available for traffic enforcement work.

This situation is not pleasant to contemplate since it must be presumed that the department has already been using its present manpower to the best of its ability and that its men cannot be expected to do much more work than they have been doing.

How then can the police administrator get more enforcement and better enforcement quickly with no more men and money than he now has?

Administrative Possibilities: Since practically no more police man hours of enforcement can be obtained immediately, then the only method of improvement lies in the direction of trying to obtain a greater accident prevention return out of every available man hour of enforcement. This constitutes an attack on the effect of man hours rather than on the number of man hours.

But here again answers are not easy because it must be presumed that each police administrator has already been using

each man hour of enforcement as efficiently as he knew how.

The point should be made, however, that since 1933 the administrator has not been confronted with a severe potential rising accident curve and has rightly concentrated his administrative thinking on long range 365-days-a-year programs. Now, however, he must also think in terms of an additional plan for the next three months and the next six months.

It is also believed that the police administrator can arrange to have things take place which will multiply the effectiveness of a police man hour without changing that man hour or without making any major changes in what the officer does with that man hour.

The following are possibilities submitted for consideration:

- (1) Coordination of the police enforcement attack of many cities on a basis of route, area, state, region or the nation.

A united police attack will create a greater effect on the public with the same number of police man-hours than would separate attacks by these same cities. The Nation-Wide Brake Emphasis Program for Traffic Safety and the three Michigan State-Wide Emphasis Programs are examples of this method of attack.

- (2) Increased safety educational activity by police departments to back up, support and advertise the arrest and court fine aspect of their enforcement program.

Even if the number of traffic fines is high and the "enforcement index" is high it is still possible that the maximum values of these are not being obtained for lack of a sufficiently intense and coordinated educational program.

Relatively few police departments have had the benefit of posters, leaflets, newspaper and radio program tied right into the traffic violations which their department is emphasizing through enforcement.

- (3) Capitalizing on the horse-sense threat of more accidents through more gasoline to secure:
 - (a) More funds for safety education.
 - (b) Slightly stiffer fines by the court and traffic violations bureau.
 - (c) More license suspensions and revocations through requiring, for example, only three repeater violations rather than four repeater violations.
- (4) Increasing warnings by police officers (verbal or written) if this can be done without reducing arrests due to some officers preferring to substitute a warning for an arrest.

It is believed that if arrests can be held at a high level that instructional warnings can magnify the effect of the arrests that are being made.

- (5) A plea to the individual officer emphasizing the responsibility of the department and calling upon him for special effort during the coming emergency.

If the individual officer can be made to be interested in the coming increase in the size of the accident problem he may try just a little harder, be just a little more alert and thus observe more violations of a type warranting enforcement action. Certainly it would appear to be good police administration for the police administrator to take his men into his confidence and take the position that "all of us in the department face a very real problem."

After having spent time and money for many years through advertising methods to increase the public interest in a safety program it would seem appropriate to spend a little of the same effort directed at the officers themselves. The author has yet to see the first poster or leaflet designed exclusively for the officers' benefit.

At a time when difficulties are about to increase it may be well to review the position of the motorist who is on the receiving end of the enforcement program, and to try to discover if any adjustments can be made in public education to gear it more closely to an enforcement program. After all it is the effect on him which is the ultimate objective.

The Position of the Motorist: The individual driver is exposed to accident hazards as he drives and also is exposed to safety education-enforcement. How well he gets along depends upon which exposure is the greatest. Thus it is a logical conclusion that if the driver is to be subjected to a greater accident exposure, the only way to protect him against this is to increase his exposure to safety education-enforcement. The degree of his *past* exposure to accident prevention activity simply will not be enough to protect him against a greater hazard in the future.

The greater hazard caused by more gasoline is easy to visualize in terms of traffic situations. The fewer the vehicles the driver finds on the roadway the fewer traffic situations there will be in which he is forced to make a critical decision in which a mistake in judgment would produce an accident. The more vehicles the driver confronts the more traffic situations there will be for him to commit an error which will result in an accident. Thus more gasoline means that each car will drive more miles and will thus confront more vehicles and pedestrians per day and therefore create more traffic situations in which critical judgments must be made.

The errors of the driver in these additional traffic situations can be influenced by safety education-enforcement in many ways such as the following:

- (a) He can be made more safety conscious and thus enter critical traffic situations more carefully.
- (b) He can be made to think more of safety and hence spot potentially hazardous traffic situations and stay out of them.
- (c) He can be made to enter dangerous traffic situations more slowly and thus more easily get himself out of difficulty.
- (d) He can be made to increase his observance of specific rules of the road with the result that he will have fewer accidents due to these causes.

Thus it is known in advance that by stepping up the safety enforcement *contacts* between the driver and the officer that this will better prepare the driver to take care of himself.

In trying to make administrative improvements in an educational-enforcement attack to make the results greater without increasing the number of police man hours, it would seem worthwhile to study the enforcement situation from the motorist's point of view.

How the Motorist Looks at Enforcement

The end product of an enforcement program is to sufficiently impress the individual offender to result in his changing his driving habits in the direction of safer driving. If this effect is produced then accidents will be reduced. If this effect is not produced then the efforts expended only result in public distaste for the police.

Thus it is important to try to figure out what the individual motorist thinks about each enforcement action and then to adjust these enforcement actions in such a manner as to cause the correct reaction on the part of the motorist.

(1) *All motorists resent being arrested:* It must be assumed that practically no human being enjoys being arrested. In all but extreme cases the motorist hypnotizes himself into thinking that he was right and that the officer was wrong. This may not be correct but it is a practical fact which must be recognized and accepted.

Because motorists resent being arrested and having to pay a fine it is absolutely imperative that the enforcement action must be supported by a strong educational program to explain *why*.

(2) *Few motorists know exactly what they did that was wrong — why it was wrong — and how they should have driven:*

In some cases the motorist may have a general idea of what was wrong — but this not enough to keep him out of trouble. It must be assumed that if the motorist does not know exactly what he did that was wrong that he will resent the arrest. Thus the arrest would cause resentment primarily and not necessarily produce an accident prevention attitude.

Thus again it is imperative that the enforcement be accompanied by an educational action; namely, to tell the motorist exactly *what* he did that was wrong, *why* it was wrong and exactly *how* he should have driven. If done properly this may become a strong lever in helping to make the violator appreciate the fact that the arrest and fine were necessary.

(3) *Warnings will not be taken seriously unless there are enough fines to give substance to the warning:* A motorist may misinterpret a non-supported warning as a meeting with an officer in which he, the motorist, talked the officer out of arresting him.

Thus warnings must be made to be closely associated by the motorists with the arrests. This can only be achieved by an educational attack. This essential relationship may be strengthened by:

- (a) Use of written warnings rather than verbal warnings alone.
- (b) A follow-up file of warning cards which add to the driver file and may become an added factor in converting a second or third warning ticket to an actual arrest and fine and in the suspension of a license.
- (c) Spreading the word around about the numerical relationship between warnings and arrests.

(4) *The Adult Driver May Not Pay Much Attention to a General Safety Education Program Unless It Is Directly Coupled With an Action Enforcement Program:* It is with reluctance that the conclusion is reached that a general safety program is not effective when applied alone.

When a motorist reads in the newspaper, sees on a poster or leaflet that a particular driving act is dangerous he may not think much about it.

But if he reads all this and then is stopped, warned or arrested, or reads that a lot of other motorists have been apprehended, then it is believed that he will be considerably impressed by the combined attack.

If this line of reasoning is believed then it may be concluded that safety education for adult motorists should never be used unless coupled with a specific enforcement program on the same identical subject, and at the same identical time.

(5) *Ideal Sequence of Motorist Reaction:* Whenever it is possible, then, the motorist should react as follows:

- (a) He reads in the paper of accidents due to a particular driving act and that the police are going to launch a program to emphasize this act through warnings and arrests. He may not think too much about this but he will look harder for the officer and will subconsciously drive more safely.
- (b) He reads in the paper about how many motorists have been stopped, warned and arrested. This will make him think seriously about the subject because he may figure that he may be stopped. He may drive more safely and he will be in a frame of mind to read posters and leaflets and have them impress him.
- (c) He is stopped by an officer and warned. This will impress him because he has read about it and knew that it might happen to him.
- (d) He is stopped and arrested. He may not like it but he has read about the program and knows at least a little about it and is a little more open-minded about being sold on the rest of the reasons.
- (e) He will be convinced that the accident situation is serious, that the police mean business, and with good reason, and he will drive more safely to stay out of accidents and to keep from being stopped again.

If this total approach can be arranged it might well increase the effect of present arrests so much that it could have a significant effect on accidents in as short a time as three months.

Conclusion: This presentation has tried to show: *First*—That the police of the nation are confronted with a very real threat through the beginning of a relaxation of wartime restrictions typified by the releasing of more gasoline.

Second — That the accident pressure of more gasoline will be so rapid that it cannot be offset by more budget and more manpower because these cannot be obtained quickly enough.

Third — That the threatened increase in accidents can only be offset by each police administrator making a *plan* for his department right now.

Fourth — That the only enforcement gains that can be obtained will be brought about by administrative arrangements that will increase the *effect* of the present police enforcement man hours, expended substantially in the same manner as they are now.

Fifth — That the increased accident exposure to the motorist can only be met by increasing his exposure to safety educational enforcement, the chief measure of which is the number of personal contacts per week between the motorist and the traffic officer.

The advent of more gasoline, for the first time in many years, marks the beginning of increased police problems. More gasoline alone may increase accidents in any city, county or state and immediately place the police administrator in an unfavorable light. This first immediate challenge must be met successfully because unfortunately there are other post-war threats already on their way in varying degrees of intensity. More common among these are the following:

- I. *Traffic Exposure*
 - (1) More traffic, more chances to be hit.
 - (2) Dropping of all rationing.
 - (3) 1940 doubled by 1960.
 - (4) Shift back to highway from city with end of all rationing.
 - (5) Expansion of recreational traffic.
- II. *Higher Speed*
 - (6) Dropping of 35-mile limit.
 - (7) Dropping of tire rationing.
 - (8) Release after war strain.
 - (9) New cars with speed less noticeable.
 - (10) Desire to save time in a fast changing world.
- III. *Unsafe Vehicles*
 - (11) Superannuated vehicles.
 - (12) Shortage of parts.
 - (13) Shortage of mechanics.
 - (14) Especially unsafe at higher speed.
 - (15) Higher speed of new vehicles among old vehicles.
- IV. *Unsafe Roadways*
 - (16) Inadequate maintenance.
 - (17) No reconstruction.
 - (18) No new construction.
 - (19) Worn out signals.
 - (20) Worn out signs.
 - (21) No new signals.
 - (22) No new signs.
 - (23) No new street lights.
- V. *Post-War Releases*
 - (24) Release of nervous tension at war being over.
 - (25) Desire to celebrate victory.
 - (26) Unsettled working conditions.
 - (27) Effect of war environment on veterans.
 - (28) Increased social activities.
- VI. *Untrained Drivers*
 - (29) Reduced driver training.
 - (30) Reduced chances for experience.
 - (31) Young drivers brought up on slow speeds.
 - (32) Carry over of commando driving.
 - (33) Reduced enforcement.
- VII. *Fewer Safety Workers*
 - (34) On leave in armed forces.
 - (35) On leave in war factories.
 - (36) Diverted to war assignments.
 - (37) Diverted to crime assignments.
 - (38) Loss of men through higher pay.
- VIII. *Less Interested Safety Workers*
 - (39) Less traffic reduced apparent importance of safety.
 - (40) Competition of glamour of sabotage.
 - (41) Have spent time on ride sharing and staggering of hours.
 - (42) Uncertainty as to draft status.
 - (43) Feeling of futility due to shortages.
- IX. *Reduced Budget*
 - (44) Less traffic income.
 - (45) Less total budget.
 - (46) Less traffic budget.
 - (47) Renewal of construction budget.
 - (48) Renewal of equipment budget.
 - (49) Reduction of personnel budget.

It is the sincere hope of the author that the police will be able to mobilize, regroup and launch their resources in such a manner that there will not be a continual increase in accidents in the years ahead. If the police can overcome the effect of this first post-war threat of more accidents then they will have a fighting chance to hold the line and keep other post-war accident causing factors from actually succeeding in increasing accidents still more. If the police fail to meet this immediate threat and accidents increase 50% to 75% then it is feared that the next three years will witness the sad picture of the police desperately pursuing a continually rising accident curve before the added pressure of more educational enforcement can catch up with and successfully effect the increase in the pressure of accident causes.

In its effect on the field of police administration, the advent of more accident causing pressures and an outbreak of more accidents is not much different from an outbreak of more bank robberies or more kidnapping. They are a challenge to the police profession. How much more to the credit of the police it would be if they are able to keep accidents from increasing to pre-war levels, thus saving 10,000 or 20,000 lives a year rather than to have the deaths go up and then ultimately pull them down.

The Coming Public Relations Problem of the Police: The police administrator has a public relations to consider. He obviously does not want his department to be blamed unfairly for an accident increase if one should happen.

Thus to protect his department from unfair criticism he has a responsibility to at least warn the public and government leaders that his department may not be able to hold accidents in check due to the department's reduced manpower and an increase in the severity of the problem with which it must deal. At the same time, of course, he must announce that his department does have a plan and that it proposes to take extraordinary and perhaps unprecedented measures to keep accidents from increasing.

Then, if accidents do increase in spite of his department rising to the occasion and conducting an especially vigorous prevention program, he is in a much better position than if he had not made the situation clear at the very beginning. On the other hand, if accidents do not rise this fact will in all likelihood be attributed to the special program conducted and can be viewed as a credit to the department. The administrator has still left himself in a position where he can logically ask for more budget and manpower on a basis of still more gasoline, still older cars and ultimately more vehicles.

The police of the nation are about to be placed in a difficult position through no fault of their own. They are to be given a more difficult problem with which to deal at a time when most departments have lost 25% of their men. Somehow the American public must be made aware of this situation just as they have been made aware of the service problems of the railroads and the telephone companies to a point where many citizens expect less service and are not quite so apt to criticize the companies.

If the police are able to hold the line and the public can be made to appreciate this then their reputation for spending the taxpayer's money efficiently should be increased. They should be in a position to point out that they know how and can reduce accidents and that if the community or state wants accidents further reduced that this can be achieved with more personnel and more manpower. Nothing succeeds like success and a department that is successful should have a better chance of getting more budget and more manpower than one which may not be recognized as being successful in reducing accidents.
