

## PHASE TWO

## A THEORY OF DRIVER MOTIVATION

The Results of Structured Group Interviews with Civic and Service Club Groups:  
Traffic Safety Views of Older Drivers

by

SAFETY SECTION STAFF

(The opinions, findings, and conclusions expressed in this report are those of the authors and not necessarily those of the sponsoring agencies.)

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## SUMMARY OF FINDINGS

Each of the following statements represents the opinions of a majority of the interviewed subjects. There was some dissent on several points and the minority views are included where appropriate.

1. Adults viewed personal automobiles as the most convenient form of transportation. While there are other modes of mobility they only delay the inevitable function of an individual operating a motor vehicle to reach his destination.
2. Driving pleasure can be expressed along some hypothetical curve. Pleasure increases with driving mileage up to about 6,000 to 8,000 miles annually, and beyond that point the curve slopes to zero at approximately 40,000 miles per year.
3. Interview participants expressed the idea of an approach-avoidance conflict with highway transportation. The daily convenience and speed of automobiles interfere with the pleasure of driving, while to drive for pleasure forces one to seek out scenic parkways or lightly travelled roads.
4. Slow drivers, farm and construction vehicles, and inadequate highways were the primary reasons given for constrained freedom of mobility.
5. Police enforcement of speed laws was depicted as one safety factor which does not work in the intended fashion. The practice of concealing the cruiser and waiting for passing motorists is less than desirable for maximizing the safety contribution of the police. Sharply divided opinions were given on the use of the marked vs. unmarked police car and the hiding of radar units.
6. Without exception, the groups confirmed that radar and speed measurement devices served as great restrictive devices on speed.
7. Different speed limits for cars and trucks elicited considerable expressions of concern. Traffic would flow more smoothly and evenly if all vehicles moved at roughly the same speed. It was an annoyance when a motorist would not travel near the posted limit, but absolutely infuriating to have the state sanction and enforce different travel speeds.
8. Highway signs drew criticism as restrictive factors because one of their purposes is to make driving easier and more pleasurable and this function is not being carried out. Because of the great number of highway signs and their apparent lack of uniformity, drivers must spend more time than is necessary and safe in selecting useable information.

9. There was near unanimity of opinion on the subject of driver education; those interviewed clearly were in favor of it. It indeed was a step in the right direction and, whatever the merits of the curriculum, simple exposure would have positive benefits for students.
10. Attitudes of young people could not help but be improved since the inclusion of driver education into the high school program would indicate the importance attached to it by society at large.
11. The practice of showing movies of traffic crashes, particularly those depicting serious bodily injury, should be encouraged. These movies serve as a reminder of what can and does happen in auto accidents.
12. Speed, inattention, and alcohol were the most often mentioned accident contributing factors, and the combination of the three creates an even more critical problem.
13. The driver's attitude plays a significant role in traffic accidents. A bad temper, self-centeredness, competitiveness, and discourtesy all contribute to highway crashes.
14. Speed was considered to be related to conditions. It was generally held that 70 mph was a safe speed on interstates and 55 mph was fast enough to travel on two lane roads.
15. Posted maximum safe speeds on curves were considered unrealistic. Drivers feel they can go about 15 mph above the posted limit and still drive safely.
16. Adults were equipment—material oriented in their approach to accident prevention. The most vociferous demands were for the elimination of three lane roads. Yield signs were also roundly criticized.
17. Although each group felt the courts were too lenient with the habitual offender, there was a sharp division over the granting of discretionary authority to judges.
18. Suggested highway improvements were concerned with signs, road markings, shoulders, and the elimination of the three lane road. Improvements in all these areas are within the current capabilities of the Highway Department.

## SYNOPSIS OF FINDINGS

## Phase One — Phase Two

1. For adults, driving is equated with transportation; for students, vehicle operation satisfies psychological needs.
2. Driving represents freedom from the home and parental control and provides enjoyment and excitement in the teenagers' view. They attach special importance to the automobile as a sanctuary and place of privacy.
3. Both adults and students view driving as pleasurable, but adults see pleasure as decreasing after 6,000 to 8,000 miles annually.
4. Students indicated that parents, the police, and the community, in approximately that order, interfered with their freedom in a car. Adults felt restrictions on their driving behavior were exercised by other drivers and road conditions.
5. To teenagers the exercise of police power is viewed as gamelike in which an individual seeks to avoid the punitive exercise of this power.
6. Adults confirmed that radar and speed measurement devices such as VASCAR serve as restrictive measures. Whatever individual feelings about these devices, the fact is that they force compliance with the posted limits.
7. Students not enrolled in a driver education program and adults were optimistic of the effects of the program. Students currently enrolled in a program were more cynical about its application and usefulness.
8. Adults felt that movies of serious accidents etch a permanent image on the mind of the viewer and the showing of such movies should be part of any driver training. Teenagers indicated that these scare movies would not have a lasting effect upon their driving behavior.
9. There was a consensus of opinion that driver education courses can help in teaching the techniques and skills of driving a car and in this way they are beneficial.
10. Both adults and students thought the primary causes of accidents were: (1) inattention, (2) general incompetence, (3) bad attitudes, (4) high speed, and (5) alcohol.
11. Students were not concerned with speed, in fact, they regarded speed as one of the pleasurable elements associated with driving. The majority wanted to travel between 65 and 75 mph. No one wanted to drive 55 mph or below. Adults did not express a desire to drive as fast as the desired speed of teenagers. Their limits were 55 mph on two lane roads and 70 mph on interstates.

12. Both adults and students expressed greater interest in minimum speed limits, rather than maximum speed limits. They thought the police should also be on the lookout for the slow driver. The establishment and enforcement of minimum speeds was desired.
13. Adults were equipment — material oriented and students were self and peer group directed in their approach to accident prevention.
14. A large number of interviewed subjects, both student and adult, expressed resentment against what they felt was selected or discriminatory enforcement of the law. Students expressed the idea that their age caused this practice to be carried out against them, while adults said that individuals' social position in the community sometimes led to them being extended special privileges. One of the greatest objections to current enforcement practices is an alleged lack of uniformity in penalties given highway offenders. Sentences should be the same for similar offenses regardless of the judge, the district, or the age of the offender. They also felt too much leniency is shown the habitual offender.
15. There was near unanimous agreement that the elimination of three lane roads was the primary area of needed highway improvement. It was indicated that sight distances also need improvement at both intersections and on hills. There were also some stated opinions that highway people are not fully committed to road safety design.
16. Signs and signing was depicted by both adults and students as an area needing improvement. It was suggested to decrease the number of signs and standardize those that remain in the aspects of position and wording.

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## BACKGROUND AND PURPOSE

The first phase report of this study, "Virginia Youth and Traffic Safety", presented the findings of structured group interviews with approximately 500 Virginia high school students. The project was initiated in order to determine the real or imagined differences between the assumptions that teachers and traffic safety program administrators make about driving behavior and the opinions held by young people. An accurate reflection of these disparate views should yield useful indications to persons active in the field of traffic safety in determining the priorities for educational program content.

Another issue of some concern was whether or not the views expressed by young people differed markedly from those expressed by older persons. The expectation was that older persons might be more inhibited in their responses and more cautious about expressing opinions that might clash with conventional thought. It was further felt that by virtue of their experience and less capricious driving, they would voice fewer enthusiastic comments on the various questions. The identification of assumptions older drivers entertain about driving behavior was deemed worthwhile. These ideas could be used as a clue for the development of educational programs and systems which could improve automobile operator performance.

Approximately 300 members of various civic and service groups in the Charlottesville, Virginia area consented to participate in this phase of the study and to serve as interview subjects. Eleven interview sessions were held with groups of approximately 20-35 subjects each. Two of the interview groups were womens clubs and approximately 50 of the interview subjects came from these two groups.

The obvious bias that would be introduced into the results from interviews with these subjects should be acknowledged. It could reasonably be said that persons who belong to civic clubs demonstrate by their very membership an interest in social issues. Also, it would be true that members of such clubs would tend to be of middle class status and therefore more strongly aligned and identified with the mores of traditional society. It could not be said that these interview results speak for

anyone other than the groups from which they are taken. Yet the subjects interviewed represent a microcosm of conventional thought from average middle class citizens and their expressed opinions serve as a guide for evaluating their impressions of highway safety matters.

The purpose of the study is: to identify significant areas in which there is an apparent variance between the behavioral precepts of traffic safety campaigns and campaigners and those held by selected interview subjects. Secondly, it was hoped that some likely alternatives to orthodox or conventional safety thinking could be proposed.

## METHODOLOGY

Groups of adult drivers were sought for the second phase of this study and since the only readily available groups were civic and service clubs, approximately twenty such clubs were asked to participate. Representatives, usually program chairmen, of the clubs were asked if they would be willing to be a party in a traffic safety program in which club members could express their personal views. They were not informed of the study of which this was a part, nor were they told that the presentation would, in fact, be an interview. Presumably, club members were merely told that the program of the evening would concern traffic safety and would be conducted by the Virginia Highway Research Council. Eleven of the twenty groups agreed to cooperate.

The interviewer used the same interview structure and format as that used with high school groups modified to reflect the change of audiences (see Figure 1). The same interviewer handled all of the groups.

The only significant difference in the conduct of the interviews in this phase and those in high schools was that a tape recorder was used to record the discussion. This device was not used with the high school groups since it was feared that students would be intimidated by the presence of the machine and afraid that it would give teachers access to their private views.

In this case it was reasoned that the older people were not significantly influenced by the presence of a tape recorder and would be less inclined to let it alter their expressions. Further, the tape recorder was felt to be an invaluable aid in abstracting the results of the interviews for comparative and analytical purposes.

The day following the interview session, the interviewer used a small desk recorder to transcribe the meeting results and to make his own observations on the interplay behavior among the various individuals present. Eleven abstracts of interview sessions were prepared and used for the compilation of the results.

## Figure 1. Driver Behavior Interview

## Driver Motivation Study Group Interview

I am \_\_\_\_\_ of the Virginia Highway Research Council at the University of Virginia. We are currently engaged in a number of studies related to the problem of highway safety and we have come to you to ask your help. We are concerned with driver behavior (why the driver drives the way he does) and the highway safety problem in general.

We are trying to find out more about the reasons for a motorist's behavior. In designing roads and highway safety programs certain presumptions concerning the people these programs affect have to be made. We have come to you feeling that you can give us an idea of what people think about some of the questions that bother us in the highway safety program.\*

- (1) The first thing we need to know is why you want to drive? What do you want out of driving a car?

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- (2) What restrictions limit your freedom of action in a car?

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\*This interview form is substantially the same as that used in interviewing high school students in the phase 1 study. Some changes and deletions have been made in order to more appropriately communicate with older persons.

Figure 1 (continued)

(3) What do you think of driver education programs? What effect do you think these programs have had on your children? What have your children gotten out of the course?

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(4) What are the factors or driving habits that you feel most often lead to, or contribute to, traffic accidents?

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(5) How fast do you want to go in a car?

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(6) How can highway accidents be prevented?

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(7) What problems do you see in the highways themselves? How can they be improved?

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## RESULTS OF THE DRIVER BEHAVIOR INTERVIEW

Why Do You Want to Drive?

As expected, responses to the first question (Why do you want to drive, and what do you want out of driving a car?) were more muted and appropriate for an adult audience than replies given by teenagers. Initial responses were almost uniformly concerned with the view that automobiles provide the most convenient form of transportation.

Further questioning usually disclosed the idea that while driving was indeed convenient and fast, individuals were often habitualized so that no alternatives to automobile driving were considered.

The question of convenience served as an effectual topic for discussion among most interview groups. Other forms of transportation, they usually said, only postponed the inevitable, ultimately one would find himself dependent upon the automobile to reach his destination. In intercity transportation airplanes, trains, busses, etc. may prove more convenient, but portal to portal movement requires autos. Intracity movement has become clogged and congested with automobile traffic yet the auto remains the most convenient way for many people to travel.

It was typical for groups to produce a member whose extensive driving each year (40,000 - 50,000 miles annually) led him to abhor any pleasurable aspects of driving and consider it only as a task requiring constant and extreme vigilance. Commonly, other group members would report that driving pleasure seemed to be a matter of diminishing returns, depending upon individual preferences, the more driving one accumulates. It was suggested that driving pleasure can be expressed along some hypothetical curve. Pleasure increases with driving experience up to about 6,000 to 8,000 miles annually and beyond that the curve slopes to a zero point at approximately 40,000 miles of travel per year (see Figure 2).

It was consistently pointed out that the pleasurable connotation associated with driving has been undergoing a change over the past few years. The Sunday afternoon drive will now be subjected to numerous qualifying judgements such as type of roadway, kind and amount of traffic that will be encountered, speculation of required speed limits, etc. The increasing complexity of driving is now manifest in these considerations that must be given to the so-called pleasure drive.

Numerous observations were made concerning the type of vehicle that people will buy, with emphasis being placed upon the pleasurable aspects of automobiles. Among the features cited were four speed transmissions, air conditioning, racing style hub caps, and multicolored, racing style paint. Less frequently cited were such things as radios, power steering and brakes, and tinted windshields.

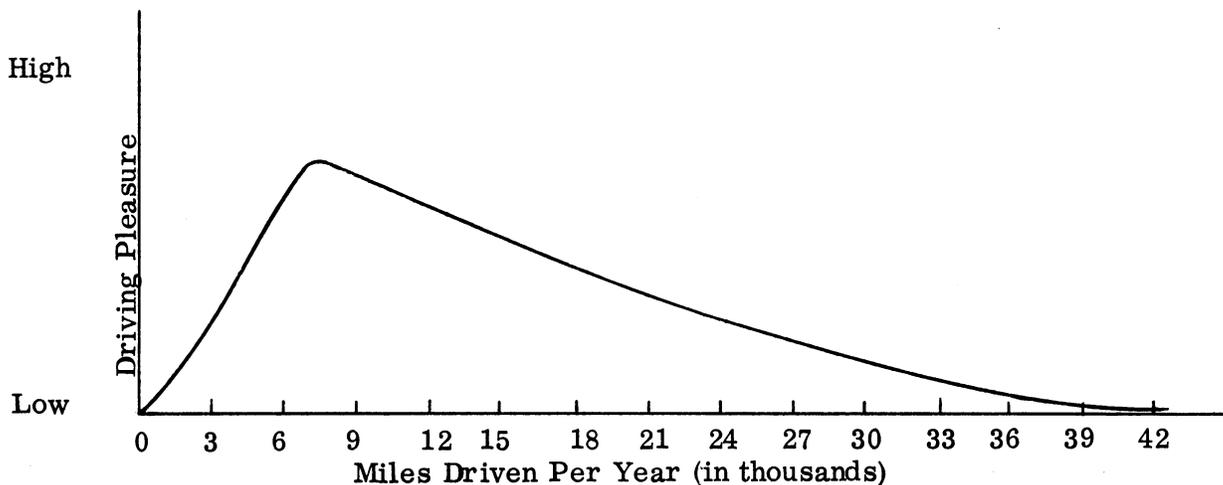


Figure 2. A hypothetical relationship between the pleasure derived from driving and the annual number of miles driven.

Two schools of thought emerged on this issue. The dominant group (about 2 to 1) said that these features were introduced and popularized among drivers due to the basic discomfort and unhappiness aroused by driving, and were purchased in order to make some kind of fundamental psychological substitution. The consensus of opinion among the majority was that these devices are surrogates; that they serve as pleasure substitutes. The less vocal group felt that these devices and gadgets had arisen in response to a basic human need for a method to counteract boredom rather than to give pleasure. They also felt that people seek excitement and relief from tension through driving and that the anxiety that is sometimes attributed to driving is largely illusory.

Due to the extreme importance currently attached to automobile transportation, the matter of pleasure related to driving can not be easily determined. For example, the beauty and relaxation afforded by viewing outdoor scenery is pleasurable, but the transportation required of such a trip can be most unpleasant. Automobile transportation provides freedom of action, independence, and security which other modes of transportation deny and these factors also serve as sources of satisfaction.

The size of a car can be related to what a driver seeks from driving. For example, drivers of large roomy vehicles were felt to be seeking security. Physical security plays a large part (protection from external forces), and the affirmation of community and social status yielded a secure feeling for the ego. Small car drivers appear to be rather self-assured and self-confident, even to the point of being overbearing in their security. For these people, the Volkswagen has become something of an inverse status symbol. Interview subjects mentioned that such things as economy and maneuverability have been given increased emphasis and that in order to rationalize the new significance of these features considerable discomfort will be tolerated.

It was almost uniformly felt by interview participants that there is an approach-avoidance conflict with highway transportation. Automobile driving is fast and convenient but seeking these elements precludes the enjoyment of driving. Conversely, to drive for pleasure means that one must seek out scenic parkways and lightly travelled roads.

Great concern was expressed by many subjects on the growing congestion and crowding on urban streets and intercity roads such as Virginia's interstate highways. Many individuals felt that higher speeds and increased traffic volumes were pushing some motorists (notably not themselves) beyond their physical and emotional capabilities. They said this problem was aggravated by an increasingly affluent society in which more and more members can secure automobiles.

A corollary to this notion of congestion was that driving presents an excellent opportunity to express equality. Many respondents said that despite a person's socio-economic station, there is no hierarchy on the highway. Hence it was felt that congestion is a natural consequence of this phenomenon, with more and more people striving to assert themselves.

It would seem that many of the judgements made by members of the interviewed service and civic clubs concerning traffic congestion and the ability of drivers to cope with the increasing complexities are correct. It appears that their assessment of the psycho-social implications of driving behavior have some basis in fact. If it may be assumed that these judgements are factual, then immediate consideration should be given to steps which must be taken to continue satisfactory levels of transportation service while remaining cognizant of the needs driving satisfies.

Tests could be designed and instituted which would measure a driver's ability to cope with and react to driving conditions encountered at different speeds and to different configurations. These test results could be used to issue driving permits with restrictive provisions. Some drivers, for example, could be prohibited from driving on interstate routes or expressways while others could be prohibited from driving during certain hours. The purpose would be to keep people from having to encounter situations they are unable to handle.

It is possible that this idea would constitute an affront to the feelings of liberty and equality that are held by the driving population. If so, the implications would have to be explored, but it is clear that many people now extended the privilege of driving can't fully manage it. The avoidance aspect of this approach-avoidance conflict has begun to predominate.

#### What Limits Your Freedom of Action in a Car ?

The most immediately apparent difference in responses between the adult groups and the high school students was that the older persons felt restrictions on their behavior were exercised by other drivers and road conditions while the teenagers tended to feel that their parents, the police, and the community, in that order,

restrained their driving behavior. The civic and service groups complained of slow drivers, farm and construction vehicles, and inadequate highways as the primary reasons for their constrained freedoms.

The most interesting bit of speculation to emerge from this portion of the interviews was the notion that speeding may in fact be in the interests of safety. Several of the interview subjects said that when speeding they were extremely conscious of driving conditions and, correspondingly, aware of police vehicles. This heightened awareness of surroundings, they claimed, made them far better drivers. They felt that while driving at legal speed limits they became dull, lethargic, and much slower to react. They said that this lethargic state in which they usually drive while within the law leads to accidents.

Police enforcement of speed laws was also mentioned as a safety factor which does not work in the intended fashion. Some subjects said that the police in placing radar units on flat or downhill sections of highway actually do a disservice to highway safety. Motorists could safely exceed legal limits on these segments of highway but try to compensate by speeding on curves or more dangerous locations where radar would not be present. They further mentioned that the police practice of concealing the vehicle and waiting for passing motorists is less than desirable for maximizing the safety contribution of police. Drivers are more affected by seeing police cruisers on the highway — they remind them of proper driving behavior and create a "halo effect."

Police use of unmarked cars drew conflicting comments from the groups and there seemed to be a fairly even split on the issue. One group contended that unmarked cars constituted an underhanded method of law enforcement and promoted a feeling of disrespect for the law. These people usually said that drivers would be more inclined to observe and respect the law if police officers seemed to reflect a feeling of trust and if they served more as reminders than hunters. Conversely, the view was expressed that many motorists are not going to respect posted speed limits and that the best way to keep these individuals in check is to keep them in suspense and in fear of apprehension.

Without exception however, the groups confirmed that radar and speed measurement devices such as "VASCAR" serve as the greatest restrictive measures. Much as these devices may be disliked, and whatever the individual feelings about them promoting or diminishing respect for law enforcement, the fact is that they force compliance with the posted limits. It was often mentioned by the interview subjects that certain locations, certain kinds of places (where concealment of the unit would be easy), and the simple fact of not having seen one recently will cause one's idle thoughts to shift to "radar". Such thoughts can be indeed sobering and invariably bring down the speed of the vehicle. Yet it was still debated as to whether or not this speed reduction actually was in the interest of highway safety or merely a reaction from fear of retribution.

Many interview subjects remarked that the National Safety Council's defensive driving campaign seemed to be paying off in that graduates came to recognize "the other guy" as a significant restriction on driving freedom. The club members often remarked that driving involved a conscious effort to keep alert to the possible

inattention or carelessness of others. This mental alertness considerably diminishes the pleasurable aspects of driving and reduces the freedom of action one enjoys while operating a motor vehicle.

The subject of differential speed limits for cars and trucks was also mentioned as a restrictive factor by a few of the subjects. These people stated that traffic would flow more smoothly and evenly if all vehicles moved at roughly the same speed. Hence it was an annoyance to find some motorists who would not travel at or near posted limits, but absolutely infuriating to have the state sanction and enforce different travel speeds. While it was mentioned that good reasons existed for some of the differential limits, e.g. towed vehicles, it was argued that all vehicles should be required to meet certain minimum posted speeds.

Highway signs also drew criticism as restrictive factors because one of their purposes is to make driving easier and more pleasurable and this function is not being completely carried out. Because of the great number of highway signs, their lack of uniformity, and their obscure meanings and terminology, drivers must spend more time than is necessary and safe in selecting useable information. Signing should be radically altered in order to reduce the number of signs to a minimum. The position and wording of remaining signs should be changed to reflect information most likely to help the uninformed.

#### What Do You Think of Driver Education Programs?

There was near unanimity of opinion on the subject of driver education; adults clearly were in favor of it. The most often cited reason for the unqualified support was the simple fact that insurance companies grant premium deductions for graduates of high school driver education programs. In the view of many of these driver education advocates, no more evidence was required than the endorsement of the insurance companies, since these profit oriented concerns would never opt to subsidize a program without conclusive payout.

The adults interviewed seemed to feel that one could hardly be critical of driver education. It indeed was a step in the right direction and whatever the merits of the curriculum, simple exposure to the program would have positive benefits for students. In this regard driver education can have benefits of two distinct types. Persons outside the family and rated as experts in terms of knowledge and driving habits can better impart the mechanics and skills of driving to young people. Secondly, the attitudes of the young people could not help but be improved since inclusion of driver education in the program at the high school level would indicate the importance attached to it by society at large.

Such criticism as was directed at driver education generally centered around its limited availability and audience. Many respondents felt that such driver education as is currently offered in the public schools reaches too few students. The interview sessions were held prior to the law requiring students between the ages of 16 and 18 years to take driver education before obtaining an operator's license. In light of this factor, the criticism of limited offering to students is negated in the state of Virginia.

These subjects also felt that not enough care is devoted to the preparation of comprehensive programs and the selection of qualified teachers. Also, driver education should go beyond the public school system and embrace as many adult drivers as young ones. Advocates of this point of view usually were parents of young drivers and they remarked that their children had learned and developed good driving habits which had taken the parents many years of trial and error to develop.

Both the classroom and behind-the-wheel phases of driver education should be offered to all students. Classroom instruction tends to be wasted effort unless the students have the opportunity to put their knowledge to work in a behind-the-wheel setting. This point, many felt, had been missed by public school administrators in that a driver education program reached many students in a classroom setting, but that few students received behind-the-wheel instructions. Here again the current program of driver education is at variance from obtained remarks of the adults because of a time lapse and a change in the law. Most public high school students now take a driver education course which includes textbook, simulator, and behind-the-wheel training.

Some group members pointed out a fallacy in most driver education programs: participation is voluntary and the students most inclined toward good driving habits will opt to take the course. These respondents said that any evaluation studies of these programs were invalid since the participants did not reflect a random distribution of all high school students.

Defensive driving also emerged as a significant factor in the discussion of driver education. Numerous participants remarked that either their children or the children of friends had developed impressive attitudes toward defensive driving. They were now in the habit of considering possible outs and remedies for all likely situations. These habits had been taught in the driver education classes and students were encouraged to think of all possible emergency situations and the possible crash avoidance techniques to use. This type of critical incident thinking could be highly significant in the future.

Knowledge of stopping distances for automobiles was also mentioned as a beneficial element of driver training courses closely related to defensive driving measures. Driver education students seemed highly impressed by the distances required to react, brake, and stop a car and very often tended to relate these facts to their parents and friends. Parents, in turn, tended to be impressed and a chain reaction occurred which spread the word in a manner that was bound to promote a consciousness of this defensive driving factor.

A large number of participants suggested that the practice of showing movies of traffic crashes, particularly those depicting serious bodily injury, should be encouraged. They felt these movies serve as a reminder of what can and does happen in auto accidents and the horror of viewing these scenes will etch a permanent image into the mind of the viewer. This factor was of importance since the results of driver training appear to be a lasting part of each graduate's driving experience.

While the public schools institute driver education programs, they have not chosen to apply rigorous standards to those who teach the courses. Respondents often stated that the teachers of driver education are usually coaches or physical education instructors and may not be specifically prepared to teach the course. Interview subjects usually followed up these critical comments with reference to the fact that coaches or physical education teachers were not to blame, nor were they incapable of giving quality instruction; it merely appeared to be a situation in which school administrators had failed to consider special instruction for these teachers. The effect was felt to partially negate the likely benefits of the driver education course.

### What Factors Contribute to Traffic Accidents?

Inattention was thought to contribute heavily to automobile accidents. Individuals who do not take proper note of their driving environment are the ones who cause, indirectly, more accidents than the person who is aware and, therefore, is watching in front, behind, and on both sides. The use of the rear view mirror is a very helpful habit, and although this procedure occupies a great deal of time, it makes an individual aware of his surroundings.

Two causes of driver inattention were: (1) conversations with passengers, and (2) vehicle comfort, which includes such factors as power steering, power brakes, air conditioning, etc. The auto today so nearly operates by itself that the human element of control has been much decreased in importance and, consequently, people take driving less seriously than they should.

Speed plays a significant role in highway accidents. Nearly everyone agreed that it was an important consideration, especially in combination with drinking while driving and the use of an offensive technique of vehicle operation.

Several members expressed the idea that speeders may be good drivers and that they aren't always unsafe. A driver can operate a vehicle above the posted limit when there are no other cars on the road, when he is in good physical and mental condition, and has control over the car's speed.

The slow driver should be required to pull over and permit traffic to flow freely. He is the indirect cause of many accidents, and the police should be on the lookout for this driver as well as the speeder. Some drivers may not be able to control their car at high speeds and as a result they drive slowly. If the slow driving is the result of age, or physical or mental disability, these people should not be driving at all. The establishment and enforcement of minimum speeds might lead to a reduction in the number of traffic accidents.

The truck speed differential came in for criticism. The consensus of opinion was that it should be eliminated. When trucks move slower than cars a dangerous situation is created, especially during rainy weather when the rainfall is not sufficient to keep the windshield clean, and the film sprayed by trucks blinds the operator of a passing vehicle. If trucks moved with the traffic, there would be little need to pass.

The automobile industry's emphasis on speed and horsepower also contributes to traffic accidents. The practice of advertising wins at race tracks, increased horsepower, etc. was thought to encourage speeding and careless driving.

Following too close or "tailgating" was an important contributor to traffic accidents. It was pointed out that when one attempts to remain at a safe distance someone else closes the gap, and you are again driving too close and the danger is repeated.

Self-centeredness was considered to significantly affect the driver's attitude. The "he's not going to get ahead of me" attitude greatly contributes to traffic accidents. The counterpart of the defensive driver, the offensive driver, was thought to be the person for whom one should be on the lookout.

Many drivers assume a competitive attitude when driving and this aggressiveness causes accidents. The overconfident person, who may not be as good a driver as he thinks he is, also causes traffic accidents. This driver feels that rules are for everyone but himself and consequently he creates a hazard on the highway.

A bad temper is also a factor contributing to traffic crashes. Accidents seem to occur in the mornings and in the evenings, times of heavy traffic volumes, and during these periods the driver's mental attitude and attention, or lack of it, influences crashes.

Personal amenities appear to be forgotten when people drive a car and impoliteness and discourtesy cause accidents. When they get behind the wheel of a car, people assume an aggressive and discourteous attitude and feel it is the duty of other drivers to make way for them and their inherent right to all of the highway.

There were a number of criticisms which might be considered as highway problems or concerns. Among these were the fact that "blind" intersections could be the cause of accidents, soft shoulders may cause an accident because of the drop off from the pavement to the shoulder, and poorly marked roads create dangerous areas by allowing passing where it is not proper or safe.

The use of yield signs was criticized as a poor practice and it was felt that they all should be replaced by stop signs at intersections. Drivers have a tendency not to stop and observe traffic when there is only a yield sign at the intersection.

The ease and comfort of driving on interstate roads also is a cause of some accidents because of the deceptively safe feeling one has at high speeds, coupled with the possibility of being lulled to sleep while driving. California's freeways were praised as to their countermeasure activities. The embedded projections in its roads are designed to keep the driver alert and if he changes lanes he hears a "bump" and thus is forced to attention and action.

In summary the following factors were thought to be the primary causes of accidents.

- (1) Inattention -- daydreaming, mind wandering, preoccupation with business, etc.,
- (2) general incompetence -- failing to use good sense and due care,
- (3) disregarding traffic signs and signals,
- (4) poor attitude -- impatience, competition, and discourtesy,
- (5) high speed and following too close, and
- (6) not driving defensively.

#### How Fast Do You Want to Travel in a Car?

Automobile speed is determined to a major extent by road conditions, the kind of area in which one is travelling, the condition of the vehicle, weather conditions, the extent of driving experience, and of course, posted speed limits.

Although vehicle control diminishes as speed increases some individuals do not have control over their cars even at a speed of 25 mph. A driver's mental attitude toward speed may change, and thereby determines the maximum speed at which he wants to travel, i. e., one day he may not feel like driving fast while on another day he really desires to "fly".

In reality, there is substantial agreement between the male and female samples as to top speed of travel. The adult civic club male segment generally held that 70 mph was a safe speed for interstate highways and 55 mph was fast enough for two lane roads in Virginia. The members of the ladies clubs considered 65 mph as their top interstate speed (this is not significantly different) and 55 mph for two lane roads.

For the most part, it was felt by all groups that posted maximum safe speeds for curves are unrealistic. Drivers feel they can go about 15 mph above the limit as posted and still drive safely.

An interesting comment was made concerning the psychology of the maximum speed on the speedometer. If the automobile manufacturers would mark a maximum of 120 mph (so that 60 mph would be in the center) on their gauges drivers might be less likely to reach for higher speeds.

Auto comfort level was also considered a factor in speed. In a large and/or heavy car, a high speed does not appear to be as great as in a smaller car and therefore drivers of large cars tend to go faster. The smooth ride on the new high-ways, especially the interstate, gives the feeling of control and comfort and speed is deceiving.

Also while driving in the rain most people do not slow down because the comfort level is not reduced to any great extent and people are led to believe the road is as safe as when it is dry.

### How Can Highway Accidents Be Prevented?

On this question the adults were equipment--material oriented in their approach. The majority of their suggestions centered around the building and maintenance of better roads and increased and stricter law enforcement. Other recommendations include better education, judicial reform, and signing improvements.

Specific highway features depicted as needing improvement include road shoulders, three lane roads, blind curves, and pull overs for bus stops to prevent the congestion of lines of cars, especially on hills.

The judicial system also came in for a fair amount of criticism. The courts were felt to be too lenient with the habitual offender. Opinion was sharply divided on the issue of a discretionary power for judges. Some persons felt that judges should determine only guilt or innocence and that penalties should be set by legislation. Others felt that there should be maximum and minimum sentences and that the judges should operate within these limits. Both groups, regardless of the factor of judicial discretion, considered consistency in what the courts are doing, notwithstanding the area of the state or the person with whom they are dealing, as being of primary importance.

It was suggested that every time there is a highway fatality a trained investigator should determine the cause of the accident. The roles of road design, vehicle design, driver error, and mechanical failure need to be determined.

Another preventive measure suggested was the use of special signs located at the particular spot of a fatality stating the number of individuals killed. This mechanism would be particularly effective in making drivers aware of the potential dangers of a specific segment of highway.

There was a split in the feelings among group members in the use of police vehicles. Some individuals felt that there should be more unmarked police cars because some people are adept at detecting marked cars. Others said that the more conspicuous the cars the better, since drivers are beneficially affected by seeing police cruisers on the highways.

There is an overemphasis on the unsafeness of cars; more accidents are caused by bad drivers than by unsafe cars. One suggestion was that a test of mental stability, judgement, reactions, etc. be devised to be used in addition to the current test on laws and vehicle operation.

The prevention of traffic crashes is a multifaceted problem that involves the cooperation of vehicle operators, the motor vehicle manufacturing industry, and state and federal highway programs and departments. With all three working together, the carnage which now occurs on the roads of the nation can be greatly reduced.

The initial comment of every group was concern over the use of three lane roads. They were believed to be the most dangerous type and were termed "death traps". However, if they must remain in the road system, it was recommended that road markings allow only alternate passing for each direction of travel and no passing at the crest of hills.

Better signs and road markings were recommended to communicate notice well in advance to persons unfamiliar with a particular highway. Uniform signs and markings would minimize confusion and make it easier for drivers in strange areas to adjust to the unfamiliar surroundings. In this regard signs were not explicit enough, and there may be more than one exit for the same place with insufficient identification to distinguish this fact for the motorist. On the interstate highways there is even a greater need for good signs because of the high speeds. The key to the whole problem is the advance warning that interviewees felt is extremely important. It was generally held that the element of surprise should be eliminated.

A driver's vision is obstructed on many secondary roads, particularly at intersections, and at these locations "blind" spots should be eliminated. It was also pointed out that there is a need for shoulders or extra lanes on which trucks, busses, or slow moving cars could pull off so as to maintain the flow of traffic. The bottlenecks created by these vehicles result in driver impatience which in turn leads to the performance of dangerous maneuvers by the operators of passing autos.

Sight distances at some crossovers were criticized as being poor and it was believed that more thought and engineering judgement should be used in determining where they are placed.

In general, most adult objections to current highways revolved around the three lane road dilemma and the inadequacy of signs and signing.

