

## Ford Report Documents Crash Damage

Ford Motor Company has prepared a report documenting the extensive and costly damage that occurs annually to cars it manufactures. The auto maker has found that *75 per cent* of its lease fleet vehicles are involved in damage-producing crashes each year. The company estimates that *55 per cent* of its cars used by the general public are damaged in collisions annually.

The report suggests that at least some of the delicateness is, in Ford's view, designed into its vehicles. "High hood damage" to the surveyed cars, it says, "reflected protruding hood designs as found on Mustang, Maverick, Falcon and Pinto."

The report, which has not been publicized, is entitled, "Vehicle Accident Damage Survey, January through December, 1970." It was prepared by Ford's vehicle research department and signed by B. C. Cartmell, manager of the department, and E. J. Rohn, supervisor of the department's assembly and serviceability research section. According to the summary, "It was the objective of this project to better define the frequency, magnitude of damage, component involvement and methods of vehicle collision repair." Ford officials have supplied the report to various insurance companies.

Dated April 20, 1972, the report was completed at least six months before the Congress completed deliberation on the Motor Vehicle Information and Cost Savings Act. With its low-speed damage prevention provisions substantially softened as a result of auto makers' representations, that legislation passed the Congress in October, 1972. Despite the great relevance of the Ford findings, especially their strong evidence that the Department of Transportation's authority to reduce car delicateness should not be limited to bumpers alone, the Congress was not provided with the findings.

The report consists of data compiled from three Ford surveys. One involved "results of a 7526 repaired vehicle survey made at 21 Ford and Lincoln-Mercury dealer repair shops" from January through June, 1970. That survey was later expanded to cover vehicle repair records at the same 21 dealerships for all of 1970. The expanded survey involved 13,145 repaired vehicles. In another survey the auto maker conducted "a visual

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inspection/mailback questionnaire parking lot survey . . . in the same cities where the dealership studies were made. Sixty-nine parking lots involving 4937 Ford Motor Company vehicles were randomly studied for observable damage." A third study involved a review of "repair records for 1970 model Ford lease fleet vehicles."

In its expanded dealer survey Ford researchers reported finding:

- The per vehicle repair average (total losses excluded) was \$297. "Most significantly, quarter panels were found to account for 25 per cent of the total repair costs, front fenders 16 per cent, front bumpers 7 per cent, hoods 7 per cent, front door outer panels 6 per cent . . . ."
- 39.2 per cent of the vehicles were damaged in the front, 33 per cent on the sides and 27.8 per cent in the rear.
- "Corners were involved in 39.8 per cent of all repaired accidents with fronts accounting for 23.7 per cent; rears, 16.1 per cent."
- "Front bumpers have the highest single involvement, 32 per cent of all cases. Rear bumpers were involved in 22 per cent of accidents and one or both bumpers in 52 per cent."
- "Front fenders were the next highest, each side being involved in 28 per cent of all cases. In combination, one or both fenders were damaged in 47 per cent of all repaired accidents."
- "Hoods, at 26 per cent, were involved nearly as often as each fender."
- "Grilles were repaired in 25 per cent of all accident vehicles surveyed."
- "One or both quarter panels were damaged in 41 per cent of all cases. Left sides were involved in 24 per cent of all cases, rights in 23 per cent."
- "Windshield replacements, as a result of accident involvement (as opposed to rock chips, vandalism, and other forms of damage), were found to be very low at less than 3 per cent."
- "One or both front doors were damaged in 26 per cent of the cases."
- "Bumpers, while very high in involvement frequency, are well below quarters and fenders in the composite repair cost average. Fronts are 7 per cent, rears are only 5 per cent."

(In its version of the Motor Vehicle Information and Cost Savings Act, the Senate had sought to give the Department of Transportation authority to regulate the fragility of cars in general. However, the Congress passed the House version of that bill, which limited the property damage regulatory authority of DOT solely to bumpers. Auto industry efforts played a significant role in the adoption of the House version. See *Status Report*, Vol. 7, No. 19, Oct. 16, 1972.)

- 49 per cent of repairs cost \$200 or less. (Vehicles considered "total wrecks and scrapped" were not included in the survey.) The company found a "hard drop off in repair volume in the \$100 and lower groups."

In their parking lot survey the Ford researchers, checking only Ford-made vehicles, "collected unrepaired damage data in randomly selected parking lots." According to the report, "Each survey team was schooled before their field work in an effort to ensure consistency of definition." The report adds that,

(cont'd on page 4)

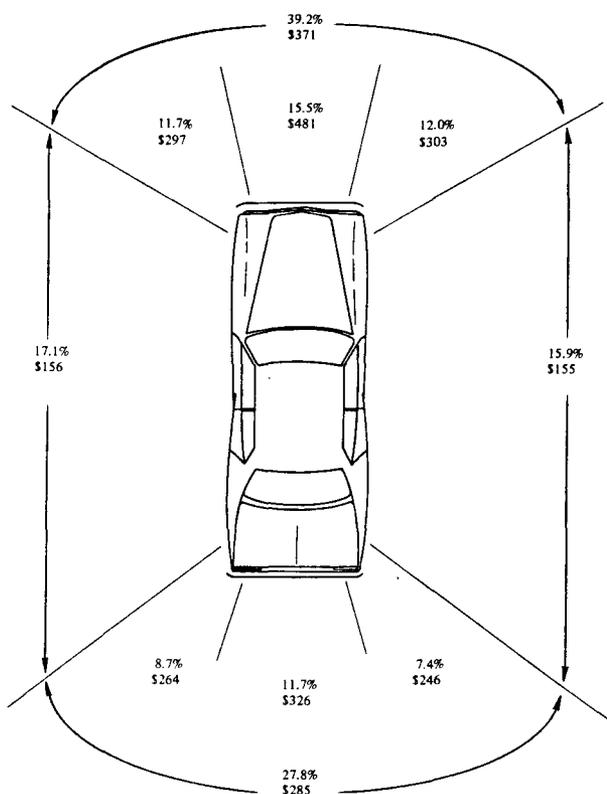
## *GM Claims Little Damage Around The Corner*

General Motors Corporation claims that cars are damaged at their corners in only 7 per cent of crashes—so seldom, GM says, that the safety administration ought to drop part of its bumper standard requiring corner protection.

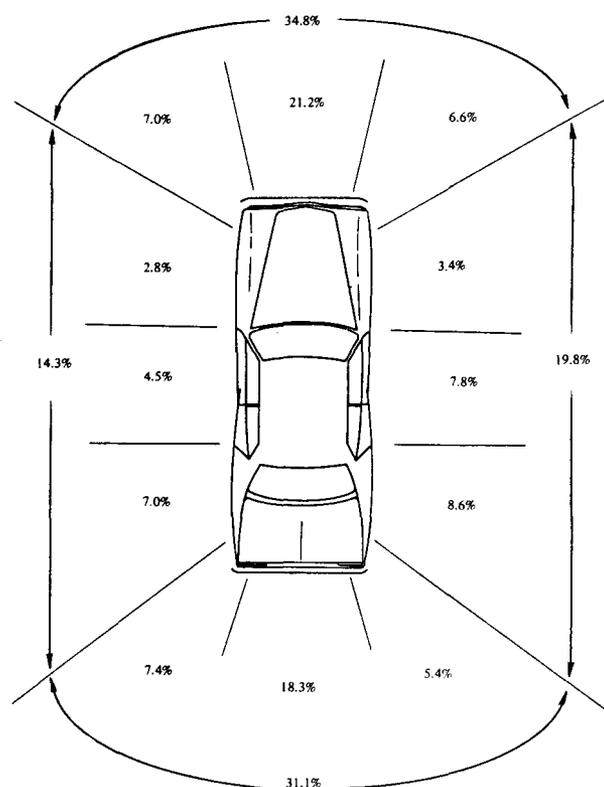
The company, in a petition asking NHTSA to drop part of the corner protection requirement, claims that insurance industry data showing that corners are damaged in 40 per cent of all crashes are “a gross over-estimate.” Its petition does not mention Ford Motor Company’s studies showing that corners are damaged in 26 to 40 per cent of collisions involving its products. (See story above.) Ford’s charts, depicting the damage its researchers found, are reprinted below.

The Insurance Institute for Highway Safety has submitted the Ford findings to the safety administration to use in its assessment of GM’s petition. As now written, the corner protection provisions of the exterior impact (bumper) standard (FMVSS 215) would be effective for 1974 model cars. They would be limited to protection of specified “safety-related” devices at simulated crash speeds of up to three miles per hour.

**DEALER REPAIRED DAMAGE  
DISTRIBUTION**



**UNREPAIRED DAMAGE  
DISTRIBUTION**



"The often found body side dent-and-dings caused by adjacent car doors were excluded. So was obvious vandalism." The researchers left "mailback questionnaires" on each damaged car that they studied. "Over 30 per cent of the surveyed owners responded." the report says.

In this survey the company reported finding:

- "The percentage of observed unrepaired damage varied from a low of 49 per cent in Kansas City to a high of 84 per cent in the Boston area. The overall average was 64 per cent."

- "The average age of vehicle surveyed was 4.2 years . . . and as would be expected, older vehicles show more unrepaired damage than newer ones." According to the report, "1971 model cars averaged one unrepaired case of damage for every three cars surveyed despite the fact the survey was conducted only 10 months after new model introduction (on an average, the 1971's were probably less than 6 months old.)"

- "Three out of every four 1966 models showed at least one area of unrepaired damage."

- Observed unrepaired damage, which tended to be less extensive than that found in the dealer survey, was found on rear bumpers "most frequently" (14.2 per cent) "followed by right quarters (13.5 per cent), left quarters (11.6 per cent) then hoods (10.3 per cent). In combination, one or both quarter panels were damaged 25 per cent [of the time] while fenders were [damaged] 17 per cent [of the time]."

- "High hood damage (more than front bumpers) reflected protruding hood designs as found on Mustang, Maverick, Falcon and Pinto." (See *Status Report*, Vol. 7, No. 2, January 31, 1972.)

- "Front areas were predominatly impacted above the bumper; sides and rears were mostly hit at or above bumper height."

- "In the questionnaire reply, owners were asked to indicate by 1st, 2nd, and 3rd choice what areas of the vehicle they felt required most in need of damage protection [sic]. Front bumpers were first closely followed by doors. Front fenders were third followed by rear bumpers." Further details were not included in the report.

Although unrepaired vehicle damage found in the parking lot survey tended to be less extensive than that found in the dealer survey, the report said that, "Indications are, however, that this minor damage is particularly annoying to vehicle owners. It as much as anything has led to use of such terms as 'cosmetic egg-shells' and 'designed-in delicateness.' This low cost minor damage is also irritating to the owner because if he does have it repaired, it comes out of his pocket. It is generally below insurance reimbursement levels."

The third portion of the study, for which the auto maker did not give details, involved 13,098 Ford fleet vehicles. According to the report, "The average annual collision involvement rate" of those cars "was found to be 75 per cent and the average repair cost (including petty cash settlements) \$155." The report noted that these cars were "generally operated in more damage prone but less severe impact metropolitan traffic conditions."

## Correction

Designations for Maryland and Virginia were transposed in the left-side scale on the chart "Annual Motor Vehicle Deaths Per 100,000 population" that appeared in *Status Report*, Vol. 8, No. 1, Jan. 3, 1973. Properly designated, the line representing Virginia is above the line representing Maryland.

## 'Recalled' Child Seats Seldom Corrected

Manufacturers of an estimated 33,000 child car seats recalled for safety defects in 1972 say that less than 20 per cent of the substandard units have been returned to them for modification or replacement.

The Department of Transportation, which forced the recall campaigns last year, does not know—nor has it any way to find out—how many of the seats have been taken back. Car seat manufacturers are not required to keep records of purchasers for use in defect notification campaigns or to report defect repair rates and other recall information to DOT. Auto makers and tire manufacturers are subject to such requirements.

A *Status Report* telephone survey of the child seat makers who were required to recall the substandard car seats reveals that they can only give approximate numbers of how many seats were recalled—about 33,000—and how many have actually been returned or otherwise brought into compliance with the federal child seat standard (FMVSS 213). Their estimates indicate that less than 20 per cent of the seats have been replaced or brought into compliance. The figure compares with 75 per cent return in vehicle recall campaigns, according to a DOT official. (Auto makers have been required to report recall repair records to NHTSA since October, 1971.)

Since the manufacturers had no record of purchasers, most said they sent letters to stores selling the products. Virtually all the makers commented on the difficulty of knowing who the purchasers were. The only method of reaching the consumers, in most cases, was a public news release issued by DOT.

NHTSA later checked to see that the products as revised were in compliance, an official said, but had no way of determining how many customers had been reached in the recall campaigns.

The safety administration issued public defect notices on Feb. 8, 1972, and May 24, 1972, involving a total of five car seat manufacturers. Revised installation procedures were required for two makers, and replacement models were required for three makers.

The manufacturers, and their responses to a *Status Report* survey, are as follows:

**COSCO HOUSEHOLD PRODUCTS**, Columbus, Indiana — About 10,000-12,000 seats were involved, according to Insurance Manager Kenneth Dunn, who said approximately 800-1,000 were returned for replacement. The company was able to trace some owners through warranty cards mailed by purchasers. (About one out of four customers returns a product warranty card, Dunn said.) The company mailed letters to those purchasers who could be identified through the warranty cards or through stores. Involved were model nos. 13-168 and 13-169, manufactured between April 1, 1971, and Oct. 31, 1971.

**PRIDE TRIMBLE, INC.**, Burbank, California — About 15,000 seats were involved, of which some 4,000 were returned by stores for revised instructions, according to Dave Raushel, who supervised the project. He said "very few people," perhaps 20-25, replied to the general notice through the news media. The models involved are no longer manufactured. They "never did sell well," he said. Model nos. 875-879 were involved for those seats manufactured between April 1, 1971, and Nov. 30, 1971.

**FRANK F. TAYLOR, INC.**, Frankfort, Kentucky — Approximately 2,600 seats were involved, according to Sales Manager Robin Dollase, who said about 700 were returned for replacement. Of those, he said stores returned some 100-150. Dollase said he was "surprised we got as many back as we did." Some of the seats returned were other models, unaffected by the recall. Model nos. 786 and 787 were involved.

BUCKEYE PLASTIC CO. (now a division of Peterson Baby Products), Reynoldsburg, Ohio — Approximately 3,500 seats were involved, according to Chris Christianson, marketing manager for Peterson Baby Products. There “does not appear to have been any records of consumer response” kept by Buckeye Plastic Co., Christianson told *Status Report*. DOT had ruled that revised installation instructions would have to be issued to bring the seats into compliance with federal regulations. Christianson said that the company did send those received instructions to retail outlets that had an inventory of the seats. The models in question have now been discontinued because they were outsold by other products in the company’s line, according to Product Manager Kevin Connor. The recall involved model nos. 1280 and 1290.

FIVE FILER BROTHERS, Grove City, Pennsylvania — About 4,000 seats were involved, according to Mrs. David Filer, who said perhaps 300 were returned. Of these, she estimated 40 or so came from individuals, the balance from stores. The company, a maker of canvas-and-tube products, no longer makes child seat systems.

## Tail Pipe Problems Significant In Carbon Monoxide Deaths

Lack of a proper tail pipe or improper positioning of the tail pipe was “the essential problem” in most of ten investigated cases involving 14 fatal and one nonfatal carbon monoxide poisonings in non-moving vehicles, two research workers have reported.

William C. Masemore, an investigator formerly with the Office of the Chief Medical Examiner of Maryland, and Russell S. Fisher, M.D., Maryland’s Chief Medical Examiner, presented the results of their study at the recent annual meeting of the Society of Automotive Engineers. The cases, which they examined in depth, were drawn from an earlier study done by the same authors and Susan P. Baker, M.P.H., of the Johns Hopkins School of Hygiene and Public Health, and Irvin M. Sopher, M.D., formerly of the chief medical examiner’s office. (See *Status Report*, Vol. 7, No. 9, May 8, 1972.)

The ten cases, they said, involved a 1963 Volkswagen Beetle, two fatalities; a 1964 Plymouth Sport Fury convertible coupe, one fatality; a 1962 Chevy II Nova four-door sedan, two fatalities; a 1962 Chevrolet Biscayne two-door sedan, one fatality; a 1965 Ford Mustang Fastback, two fatalities; a 1963 Pontiac Grand Prix two-door hardtop, two fatalities; a 1968 Chevrolet Impala convertible coupe, one fatality; a 1969 Chevy II Nova, one nonfatal poisoning; a 1961 Oldsmobile F85, one fatality, and a 1966 Ford Country Squire station wagon, two fatalities. Seven of the cases took place in 1971, two in 1970, and the tenth in an unspecified year.

“In order to cause CO poisoning,” Masemore and Fisher said, “the exhaust gases containing CO must enter the passenger compartment of the vehicle. The exhaust system on a vehicle should be designed to carry the exhaust gases produced during the operation of the vehicle safely away from the vehicle. However, the exhaust systems existing on vehicles examined by the authors often did not perform the vital function of carrying and directing the exhaust gases away from the vehicle and thus away from the passenger compartment.

“In most of the cases investigated, the essential problem with the exhaust system was either the lack of a proper tail pipe or the improper positioning of the tail pipe. In order to carry the exhaust gases away from the vehicle, the tail pipe must be extended out beyond the side or the rear of the vehicle.

“It was not surprising to find that in older vehicles and poorly maintained vehicles, the tail pipe of the exhaust system may have rusted off or fallen off and not been replaced. However, in several cases the original tail pipe equipped on the vehicle was poorly designed and had apparently never extended far

enough beyond the vehicle body. If the tail pipe is too short or is positioned so that the gases exiting the pipe strike the adjacent vehicular components, such as fenders, quarter panels, rear valances, or rear bumpers, there is a distinct possibility of exhaust fumes accumulating under the vehicle.”

In addition to recommending exhaust system designs to remedy the tail pipe problems they found, Masemore and Fisher also recommended that:

- Exhaust system components, trunk floors and spare tire wells be built of heavier-gauge metal and treated to resist rust and corrosion;
- Clamps connecting exhaust pipe sections to each other and to the vehicle’s underbody be designed to “resist jamming or interlocking” in impacts to the tailpipe or undercarriage;
- Trunk floors be designed as single sealed units to prevent CO leakage into passenger compartments.

They also urged stricter state inspection systems to find CO leakage problems; training of auto repair mechanics to test vehicles for CO leakage and to repair leakage problems; greater education of vehicle owners as to the dangers of CO leakage, the acceleration of rust and corrosion with the aging of their vehicles, and the need for vehicle maintenance to prevent CO leakage.

Single copies of the paper may be obtained by writing “SAE Carbon Monoxide Report,” Insurance Institute for Highway Safety, Watergate 600, Washington, D.C. 20037.

## **DOT Gives States Six Months To List Boobytraps**

If a recently issued Department of Transportation memorandum means what it says, a nationwide inventory of roadside boobytraps in gore areas along federal-aid highways will be completed by May or June of this year. At present, no inventory exists of hazards along federally funded highways, whether in gore areas or elsewhere.

The memorandum—referenced as IM 40-5-72 and issued by DOT’s Federal Highway Administration—is the first step in an agency program to require that state highway departments place energy absorbing “crash cushions” at gore area hazard sites in order to protect occupants of vehicles that may stray off the road momentarily.

Under the memorandum, state highway departments are required to:

- Make “every effort . . . on new and reconstruction highway projects to attain a design that is free of hazardous fixed objects.” Where it is “not feasible to provide a design that has no hazardous elements . . . the design and initial construction should include a suitable crash cushion” that must be in place prior to opening the project to traffic. FHWA’s division engineer “is not to approve” state plans on projects that don’t comply.
- “. . . establish a definite review program” to identify conditions in gore areas and “other similar” cases along existing federal-aid highways that require crash cushions; develop cost estimates “either for installation of crash cushions or preferably for other minor remedial treatment that would make them unnecessary” at the identified locations, and develop “a schedule plan for the early treatment” of the inventoried locations. “As a general objective the identification and inventory should be accomplished in six months and the crash cushion installation or other treatment scheduled for completion within two years.”

DOT's memorandum is the latest in a series of developments concerned with the prevalence of man made and natural hazards along the nation's federal-aid and other highways. Last spring the federal government's General Accounting Office issued a report critical of DOT's inaction in getting states to clear roadsides of boobytraps. Among other things, the report called on DOT to undertake "meaningful inventories of hazardous locations . . . to provide the highway administration and the states with a basis for determining (1) the magnitude of the overall highway hazard problem in the states, (2) the total estimated cost of correcting the hazards, and (3) the order and pace at which safety improvement work should be done to timely and significantly reduce highway accidents, deaths and injuries." (See *Status Report*, Vol. 7, No. 12, July 3, 1972.)

In October, the chairman of the House Public Works Committee sponsored a premiere of IIHS's new film, "Boobytrap!" a documentary examination of the roadside hazard problem. (See *Status Report*, Vol. 7, No. 19, Oct. 16, 1972.) At that time an FHWA official told *Status Report* that "less than a dozen" states were conducting surveys to identify and catalogue "hazardous fixed objects" along their highways.

## **Researchers Analyze Energy Absorbing Devices**

Analytical methods for predicting the effectiveness of a variety of energy absorbing devices have been developed by researchers at the University of Denver's Research Institute.

Although their study deals with the use of energy absorbing devices in automobile bumper systems, the researchers said that their work can be applied to "selection and design of suitable energy absorbers for a variety of applications" such as in "safety belts, guard rails, steering columns, seat systems, test sled decelerators, landing gears, rail car couplers, elevator snubbers and other devices needing to absorb energy in a managed fashion." The study, conducted by R. J. Green, Ph.D., and A. A. Ezra, Ph.D., was supported by the Insurance Institute for Highway Safety.

The researchers examined approaches using extrusion, material deformation and friction methods of energy absorption. Extrusion systems, such as water bumpers and devices similar to conventional vehicle shock absorbers, absorb energy by compressing and pushing a liquid or a solid through a small opening into a chamber or the outside air. With material deformation devices, such as crushable honeycomb or collapsible tubes, energy is absorbed in the crushing, bending and stretching of the material. Friction devices utilize the friction of materials rubbing together to absorb energy. Several of the devices examined by the researchers used both material deformation and friction methods of energy absorption.

Of the devices tested and evaluated, the researchers rated the extrusion type devices and two of the material deformation systems—"collapsing tube" and "tube and mandrel"—as the best. Of the extrusion devices tested, the researchers said that the water bumper had the "lowest efficiency of energy absorption" and thus may cause "higher potential damage" than other extrusion devices to the car frame in a crash. An advantage of some of the extrusion devices over the material deformation devices studied is the ability to take repeated impacts, the researchers noted. (Some manufacturers are using extrusion devices on their current models, and such approaches have been used with great success for many years in aircraft landing gear, recoil devices and other applications.)

The researchers said that the purpose of energy management systems is to dissipate "the energy of impact harmlessly in a controlled manner." They emphasize that this should not be approached with devices which merely store crash energy and then immediately release it, such as elastic springs, since such devices can allow unnecessarily high forces.

One of the researchers warned the National Highway Traffic Safety Administration of similar problems while the agency was writing its bumper standard. That warning was not reflected in the standard as issued. (See *Status Report*, Vol. 6, No. 4, March 1, 1971.)

(NHTSA's standard on bumpers, FMVSS 215, currently requires one five mile-per-hour frontal and one two and a half mile-per-hour rear-end barrier impact. Beginning with the 1974 model year the rear-end impact will be raised to five miles-per-hour and a car's bumper, including its corners, will also be required to withstand repeated pendulum impacts.)

## **1968 Alcohol Report Summary Timely In 1973**

*In 1968 The Department of Transportation, as directed by the Highway Safety Act of 1966, submitted a report to the Congress detailing the role of abusive alcohol use in highway losses. "The 1968 Report to Congress on Alcohol and Highway Safety" remains a basic document in the field.*

*Because of current interest in the problem of alcohol abuse combined with driving, an excerpt from the report's summary is reprinted below. Single copies of the complete report, including tables and figures, are available at no charge from "Alcohol Report," Insurance Institute for Highway Safety, Watergate 600, Washington, D.C. 20037.*

The use of alcohol by drivers and pedestrians leads to some 25,000 deaths and a total of at least 800,000 crashes in the United States each year. Especially tragic is the fact that much of the loss in life, limb, and property damage involves completely innocent parties.

The problem was first identified in 1904, and was first shown to be serious in 1924. Since then, every competent investigation has demonstrated that the immoderate use of alcohol is a very major source of highway crashes, especially of those most violent. In fact, it contributes to about half of all highway deaths, and to appreciable percentages of the far more numerous nonfatal crashes.

### **THE ROLE OF THE HEAVY DRINKER**

Research shows that more than half of adults use the highways at least occasionally after drinking. However, the scientific evidence is irrefutable that the problem is primarily one of persons, predominately men, who have been drinking heavily, to an extent rare among drivers and pedestrians not involved in crashes.

Alcoholics and other problem drinkers, who constitute but a small minority of the general population, account for a very large part of the overall problem. Their involvement in highway crashes and violations after drinking heavily is one of the many tragic derivatives of their deviancy and pathological behavior in society as a whole, and to be dealt with properly must be approached in the larger context. There are at present virtually no programs in the country in which alcoholism specialists and medical and behavioral scientists participate in the evaluation of people coming to attention because of alcohol-related highway problems; to determine the types of drinkers involved, and to reduce repetition in the future.

## **DRINKING TEENAGERS AND SOCIAL DRINKERS**

Fatal and other crashes of teenagers and young adults also frequently involve hazardous amounts of alcohol. Adults who use alcohol immoderately, but not identified as problem drinkers by the research to date, are also frequently involved. On the basis of considerable scientific evidence, light drinking, although shown to have adverse effects, is clearly not the source of most of the problem, but its exact role is at present unknown because of insufficient research.

## **PARALLELS TO ALCOHOL IN RELATION TO OTHER FORMS OF VIOLENCE**

Overall, the relationship between alcohol and highway crashes and violations parallels in many ways the long known, and very frequent relationship between alcohol abuse and other forms of violence.

## **TIME OF DAY AND DAY OF WEEK**

Crashes involving alcohol occur at all times of day. During the morning rush hours, however, they are relatively uncommon—a principal reason for the low fatality rates at this time of day. In sharp contrast, the overwhelming majority of alcohol-involved crashes occur during the late afternoon, evening, and nighttime hours. So greatly does the abusive use of alcohol contribute to crashes at these times of day that the odds are very high that it was involved in any serious crash. In illustration, in one study the odds were found to be more than eight to one that the driver fatally injured in a single vehicle crash between nine p.m. and midnight had been drinking heavily.

While there is an excess of alcohol-related crashes on Saturdays, they are very common on all days of the week. This is believed to reflect both the fact that heavy drinkers do not confine their use of alcohol to weekends, and that social drinking increases on weekends.

Preventive and other police activities directed at this problem must be concentrated in the hours when it is most serious. The same applies to the staffing and state of readiness of hospital and related emergency services that work to salvage the injured and dying, whether or not they have contributed to the damage they have suffered. In fact, many hospitals, police, and emergency services are least prepared for such activity at night and on weekends, the times of greatest need.

## **COUNTERMEASURES AND THEIR EFFICACY**

Present enforcement, legal, and administrative approaches contribute considerably to the detection and handling of individual cases. The extent to which they have reduced the magnitude of the problem or the contribution of each of the several relatively distinct types of drinkers involved, is as yet unknown. That better approaches are needed to augment those now in use is indicated not only by the continued, tragic magnitude of the problem, but also by recent findings that appreciable percentages of those whose licenses have been suspended or revoked for alcohol-related offenses continue to drive. Attention must especially be directed at the development of constitutionally acceptable methods for screening highway users suspected of drinking, as well as those whose violations and crashes are not known to involve alcohol, to determine if they have been drinking to hazardous extents. Such screening is practiced in the United Kingdom under recently enacted legislation. In the United States, however, the so-called "implied consent" statutes under which many breath and blood tests are used apply only in situations in which drivers have already been arrested for driving while intoxicated or for similar offenses.

## **IMPLICATIONS FOR OTHER MEANS OF REDUCING INJURY AND DEATH**

The historic intractability of the problem of alcohol in relation to highway safety and the likelihood that it will be difficult to reduce the continuing predominant role of heavy drinkers in the near future make

particularly important countermeasures that attack other portions of the sequences that lead to the end results of property damage, injury, and death. Thus, improvements in vehicle and highway crash design of types already greatly reducing death and injury in crashes of whatever primary cause, and whether involving "innocent" or other individuals, must be emphasized. Emergency services must also be made far more effective. This is not to suggest a less than all-out attack on the abusive consumption of alcohol in connection with highway use. Rather, it recognizes that all practical means for reducing the nation's staggering highway losses now averaging 10,000 casualties each day from all causes, must be employed to the fullest extent possible.

## THE DEARTH OF RESEARCH

It is only during recent years that the complexities of the overall problem have begun to be identified by the few research workers concerned with the field. Less than a score of qualified research scientists are now known to be at work on this serious problem either in the United States or elsewhere in the world. This is in sharp contrast to the thousands of research workers studying traditional social and medical problems. Yet this major source of human morbidity and mortality will continue to plague our mechanically powered society until its ramifications and many present questions have been exhaustively explored and the precise possibilities for truly effective countermeasures determined. . . .

### *Siegfried Heads IIHS Board*

W. V. Siegfried, vice president of Nationwide Mutual Insurance Co. has been elected chairman of the board of governors of the Insurance Institute for Highway Safety. He succeeds James R. MacKay, senior vice president of Fireman's Fund Insurance Co. MacKay remains as a member of the board.

Other board members include:

Paul Benbrook, executive vice president, Maryland Casualty Co.; James W. Ferriman, senior vice president, Insurance Company of North America; Martin D. Fishel, senior vice president, United Services Automobile Association; Hal F. Holtz, vice president, Sentry Insurance; T. Lawrence Jones, (ex-officio), president, American Insurance Association; Ralph J. Ladd, president, Michigan Mutual Liability Co.; Vestal Lemmon (ex-officio), president, National Association of Independent Insurers; Thomas C. Morrill, vice president, State Farm Mutual Automobile Insurance Co.; Robert B. Morrison, assistant vice president, United States Fidelity and Guaranty Co.; Donald L. Schaffer, vice president, Allstate Insurance Co.; Frank E. Walton, vice president, The Travelers Insurance Co.; Roger H. Wingate, vice president, Liberty Mutual Insurance Co.; Paul S. Wise (ex-officio); president, National Association of Automotive Mutual Insurance Co.

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the highway  
loss reduction

## STATUS REPORT

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