

Last Year Alone

\$350 Million Spent Fighting Vehicle Fires

The American public paid almost \$350 million last year for fire department services associated with motor vehicle fires and fire related incidents, according to a study commissioned by the Insurance Institute for Highway Safety. That amount was more than 10 per cent of all firefighting costs in the U.S. during 1973.

“In 1973, fire departments responded to some 2.9 million fires, of which motor vehicle fires accounted for 565,000, or one-fifth. Incidents in which there was a threat of vehicle fire accounted for an additional 600,000 fire department responses. In fact, these responses to motor vehicle fires and fire-related incidents comprised nearly one-fourth of all alarms in 1973,” according to the study prepared by Robert R. Nathan Associates, a Washington-based consulting firm. The study pointed out that since 1963 vehicle fires have increased at a much greater rate than building fires.

“In addition to their high frequency and considerable cost, vehicle fires and fire related incidents pose special problems for local authorities. Unlike buildings, which can be required to conform with local fire codes and can also be inspected by local authorities to determine whether they pose special problems with regard to fires, motor vehicles are designed and built in only a few locations and consequently cannot be adequately controlled at a local level. Thus, the extent to which vehicle fires can be eliminated or ameliorated by better vehicle design and construction – including special attention to preventing and limiting crash-caused fuel spillage – can only be solved at the national level through the authority of the U.S. Department of Transportation,” the study pointed out.

Indirect costs of vehicle crashes such as fire, police, emergency care and other services are seldom, if ever, factored into cost-benefit studies that are used to shape public policy toward vehicle crashworthiness.

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The authors of the study said that the techniques developed in their research "may be used to estimate the allocable cost of motor vehicle fires on a municipal basis, and are susceptible to further development and modification so that the cost of any fire department emergency activity may be estimated on a local or national basis."

Elements considered in compiling the public cost of motor vehicle fires and fire-related incidents are shown in the figure below.

The Department of Transportation has improved its fuel system standard (FMVSS 301) since the Insurance Institute for Highway Safety demonstrated fuel system vulnerability to crash damage in a series of tests last year. Although the revised standard won't substantially affect cars until the 1977 model year, auto makers are seeking to weaken and delay it further. (See *Status Report*, Vol. 9, No. 12, June 18, 1974.)

Rep. John E. Moss (D-Cal.), chairman of the congressional committee that reviewed the IIHS crash tests, has said that he will renew his efforts to force NHTSA to further upgrade its fuel system rule.

Copies of the study are available by writing "Fire," Insurance Institute for Highway Safety, Watergate Six Hundred, Washington, D.C. 20037.

**THE ESTIMATED PUBLIC COST OF MOTOR VEHICLE FIRES
AND FIRE-RELATED RESPONSES, 1973**

Item	Cost (\$ million)		
	Total United States	Allocable to Motor Vehicle Fires	
		\$	%
Fully-paid and mixed fire departments			
Fire suppression:			
Emergency service time	67.3	7.7	11
Other time	2,377.2	271.0	11
Administration, communications and maintenance	262.8	37.0	14
Fire prevention	117.3	1.2	1
Training	49.8	.7	1
Other	221.0	---	---
Heavy apparatus depreciation charge	34.9	6.2	18
Volunteer fire departments			
Total expenditure	190.4	21.1	11
Heavy apparatus depreciation charge	40.3	3.9	10
Total	3,361.0	348.8	10

IIHS Study Finds No ASAP Payoff

The National Highway Traffic Safety Administration's \$78 million "Alcohol Safety Action Programs" failed to reduce highway crash fatalities and NHTSA claims to the contrary were based on a "fallacious" analysis, according to an Insurance Institute for Highway Safety study.

Had NHTSA used a sound method of evaluation, the study said, it would have found "no evidence of reductions in overall fatalities or in nighttime fatalities as the result of the Alcohol Safety Action Programs"

"In the absence of any evidence of an overall reduction in fatalities, it is only possible to conclude scientifically that ASAP's, as large scale social programs, have been ineffective," the study said.

NHTSA has supported 35 ASAP programs, costing an average of \$2 million each, from early 1971 to the present. The programs were carried out at the community level. They combined intensified enforcement of drunk driving laws with special campaigns for identifying and rehabilitating problem drinkers who drive, and for informing the public of the drunk driving problem. NHTSA claimed, for eight of the ASAP programs it evaluated, that "a small but significant reduction in fatalities has occurred which can be attributed to ASAP's at those eight projects for two full years of operations"

The Institute study, conducted by Dr. Paul Zador, examined the effectiveness of those eight programs and 20 more ASAP's, by comparing year-to-year variations in highway crash fatality patterns in the ASAP locations with those in comparable, non-ASAP locations, both before and during the ASAP's operational period. When compared to the non-ASAP locations, "the year-to-year fluctuations in the proportions of ASAP area fatalities reveal no systematic reduction in these proportions" during the years that ASAP was in effect, the study found.

In addition, the Institute study said that NHTSA erroneously concluded that the eight ASAP's it analyzed were effective because the agency's measurement found "a significant change . . . in the relation between daytime and nighttime fatal crashes that followed the introduction of ASAP's. Since the probability that alcohol is involved in a fatal crash is much higher during nighttime than during daytime, and since the observed interaction corresponds to a decrease in the number of nighttime fatal crashes in comparison with daytime fatal crashes, NHTSA incorrectly concluded that ASAP's were in fact responsible for the observed interaction and, therefore, that ASAP's reduced the number of nighttime fatal crashes."

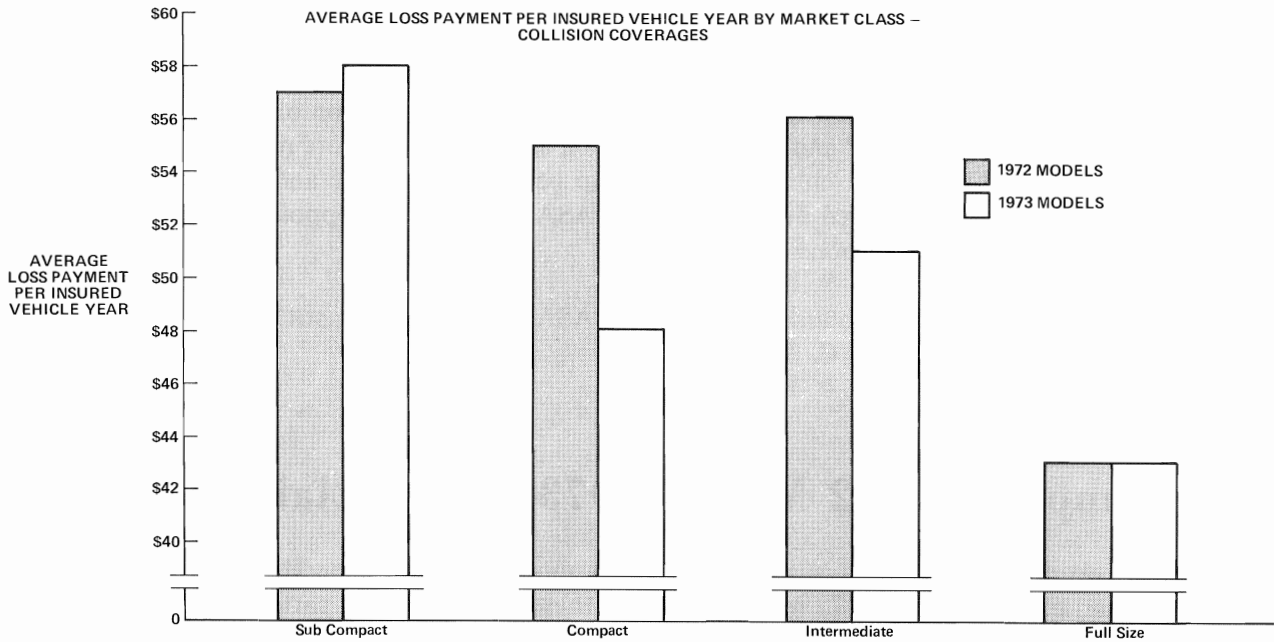
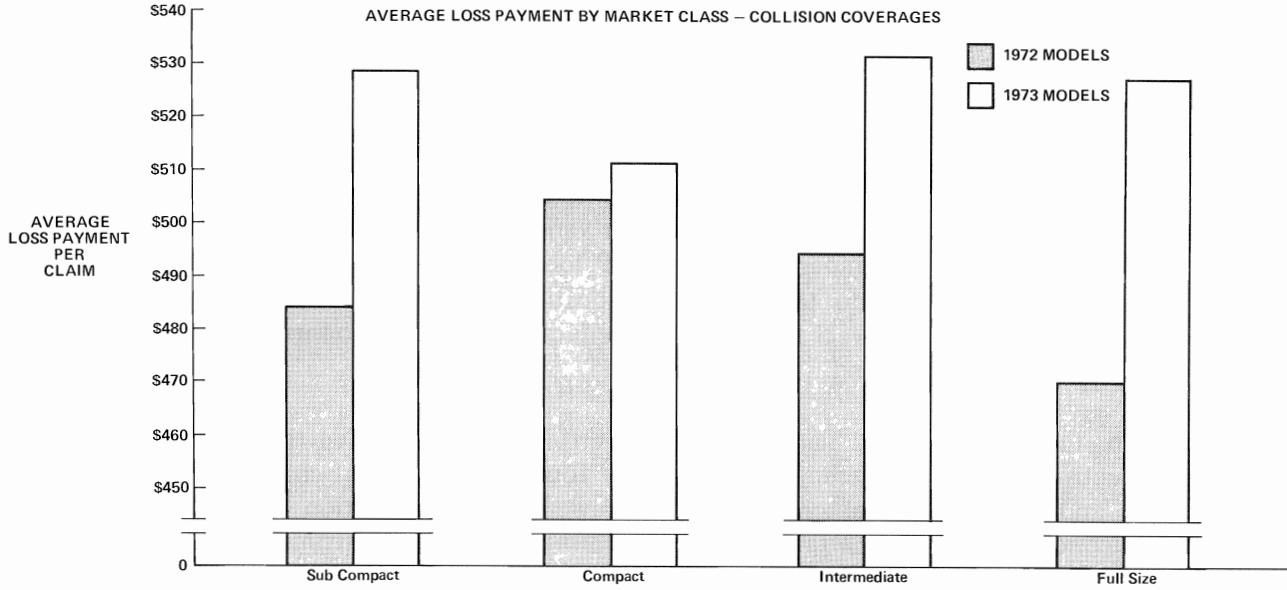
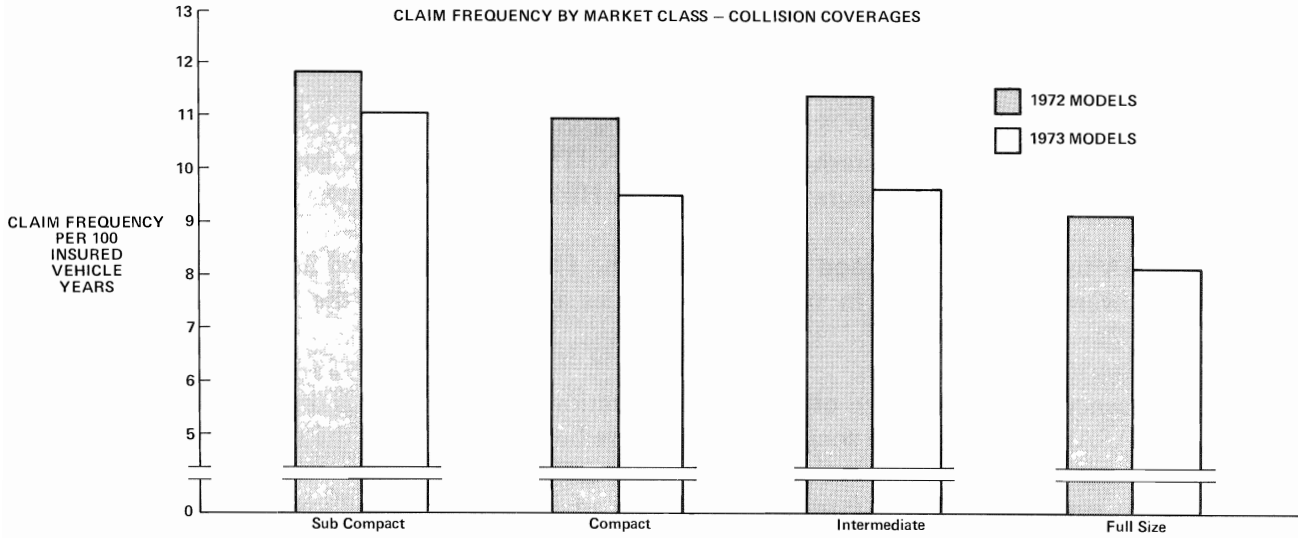
Actually, the Institute study pointed out, "this decrease in the proportion of nighttime fatal crashes was equally present *both* in the ASAP and in the comparison areas. It is therefore not justified to conclude that ASAP's were responsible for the changed relationship between nighttime and daytime fatal crashes; and, in fact, the fact that they occurred in areas without ASAP's forces the opposite conclusion, namely, that the ASAP's can *not* have been responsible."

Copies of the study may be obtained by writing "ASAP," Insurance Institute for Highway Safety, Watergate Six Hundred, Washington, D.C. 20037.

Makers Compared

HLDI Compares 1972 Model, 1973 Model Claim Payments

Insurance claim payment data suggest that 1973 model cars are generating substantially fewer collision claims than corresponding 1972 models, but that these gains are being partially offset by increases in the average loss payment per claim, according to a report from the Highway Loss Data Institute.



In the four major market classes of the study – sub compact, compact, intermediate and full size – “the claim frequencies for the Ford models in both years were substantially higher than for the models of the other manufacturers.”

In general, claim frequencies were lower for 1973 models than for 1972 models for the corresponding manufacturer and market class.

The report compared collision coverage data for 1972 and 1973 models for the four major market classes. Data for the 1972 models were based on a calendar year period one year prior to that used for the 1973 models. By using two calendar year periods a year apart, “the results for each model year were obtained from vehicles whose ages were, in general, the same as those of the other model year.” This avoided any bias due to vehicle age.

The report aimed to compare “changes in performance” between 1972 and 1973 model cars that may have resulted from the federal safety standard (FMVSS 215) that only required no damage to “safety related equipment” on 1973 model cars in five mile per hour front-end and two and a half mile per hour rear-end tests. Although the standard was not primarily intended to reduce low-speed crash damage, it was widely hoped that there would be such a reduction, the report said.

The comparison, however, is “conservative, in that it understates the difference in loss experience between the two model years, because one intervening year of inflation will have tended to increase both the average loss payment amounts and the claim frequencies for the 1973 models.”

The results were based on collision coverage data, with exposures for each market class ranging from 37,420 to 133,598 insured vehicle years. All figures were standardized to minimize differences that might be due to driver age and insurance deductible amounts.

LOSS PAYMENT BY MARKET CLASS

Claim frequencies for 1973 models in each of the four major market classes were lower than for 1972 models in the corresponding market class. Reductions in claim frequency ranged from 0.8 (7%) to 1.7 (15%) claims per 100 insured vehicle years.

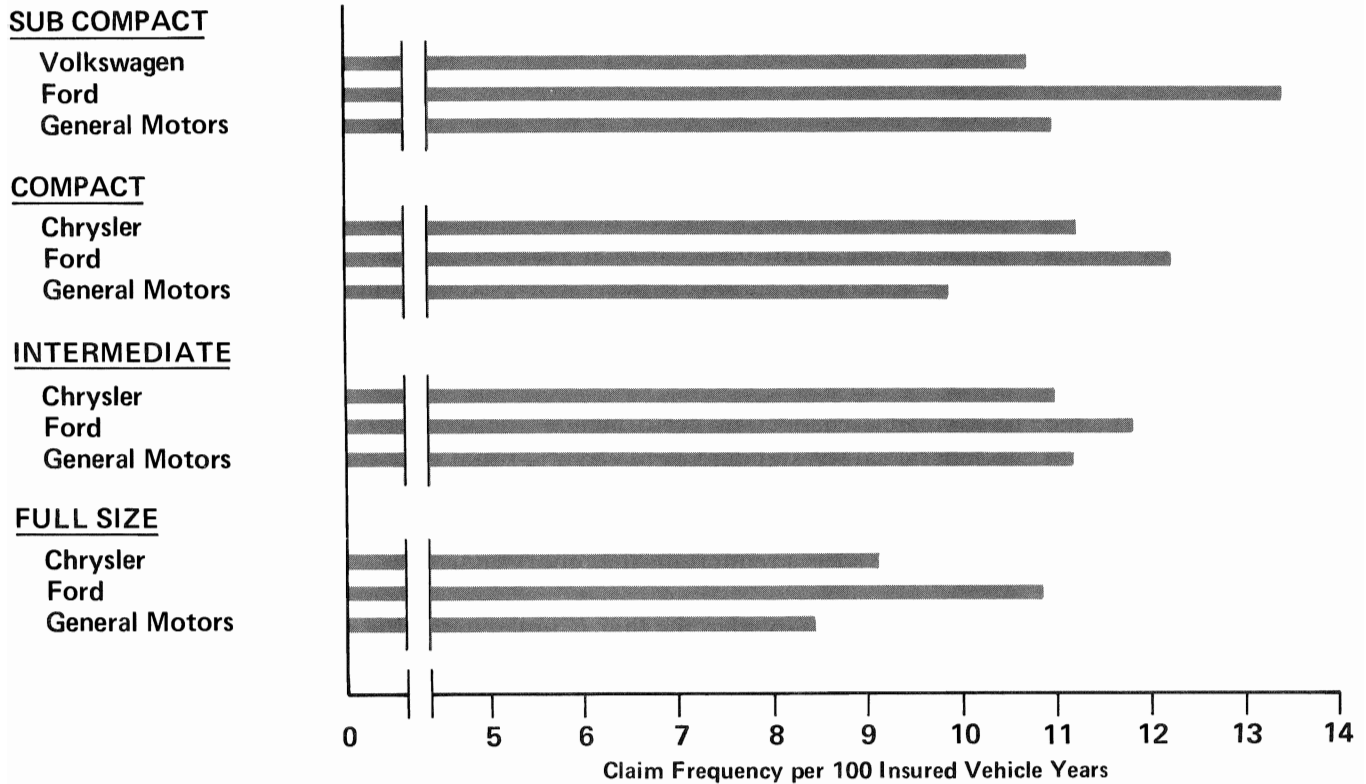
Average loss payments per claim for each market class were higher for 1973 models than for 1972 models, with increases ranging from \$7 to \$57.

Average loss payments per insured vehicle year decreased for the 1973 compact and intermediate models, remained unchanged for full size models and increased slightly for sub compacts.

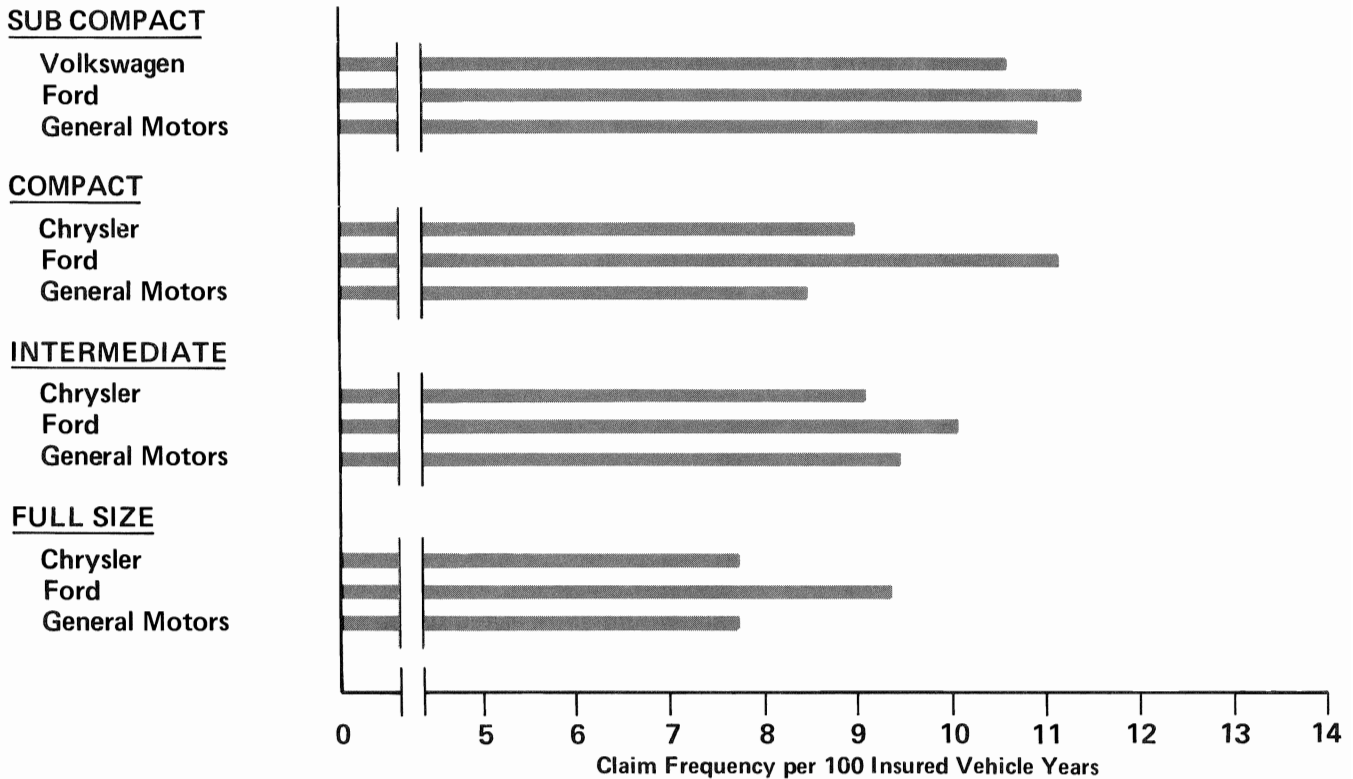
The results (shown on page 4) were “consistent with expectations that in real-world insurance data, any effect of improved bumpers on the 1973 models would show up primarily as a reduction in the claim frequency for these vehicles rather than a reduction in the average loss payment amount.”

Under collision coverage, claims are made only when the crash damage exceeds the deductible amount. If the 1973 models showed less damage in low-speed crashes but equal or more damage in crashes that exceeded the limits of the bumpers (as indicated by some of the Insurance Institute for Highway Safety crash tests of 1973 models), the claim data would show a reduction in frequency, since damage in very low-speed crashes would be eliminated or reduced to an amount less than the deductible. This would “not necessarily reduce the average loss payment amounts, since the manufacturer’s design and parts pricing decisions may either maintain or augment the cost of the damage in the claims that remain.”

**CLAIM FREQUENCY BY MARKET CLASS AND MANUFACTURER –
1972 MODELS – COLLISION COVERAGES**



**CLAIM FREQUENCY BY MARKET CLASS AND MANUFACTURER –
1973 MODELS – COLLISION COVERAGES**



LOSS PAYMENT BY MARKET CLASS AND MANUFACTURER

Results (shown on page 6) were computed within each market class, by manufacturer, in “an attempt to determine the influence of specific designs adopted by the manufacturers to meet the requirements of FMVSS 215.” American Motors Corp. results were not included because of an insufficient amount of data. IIHS crash test results for 1973 and earlier models showed that the variations in designs adopted can have “a dramatic effect on the cost to repair damage” in crashes at speeds exceeding those in the standard.

Claim frequencies for 1973 models were lower than for corresponding 1972 models in all except two cases – the sub compacts from General Motors and Volkswagen – in which the results remained the same. However, in every market class, “the claim frequencies for the Ford models in both years were substantially higher than for the models of the other manufacturers.”

The average loss payments per claim for the 1973 models “showed increases over the 1972 models from the same manufacturer in the corresponding market class.” In most cases, there were substantial increases, the report said.

Average loss payments per insured vehicle year for the 1973 models were “in general” lower than the similar 1972 model results.

Copies of *Automobile Insurance Losses, Collision Coverages: A Comparison of Results for 1972 and 1973 Models*, Research Report A-1, May 1974, are available in single copies by writing to “HLDI A-1,” Highway Loss Data Institute, Watergate Six Hundred, Washington, D.C. 20037.

‘TAGS’ Trial Results Released

The Insurance Institute for Highway Safety has announced initial results of a demonstration project it initiated to test a new technique – “TAGS” – for identifying, through rapid mass screening of vehicle registration plates, vehicles and persons that may be involved in some types of unlawful activity.

Institute President William Haddon, Jr., M.D., addressing a recent regional conference of the American Association of Motor Vehicle Administrators, said that although the six-month-old project is still in its trial phase, “preliminary results of the project indicate that the TAGS technique may have potential both for strengthening the ability of police to identify and apprehend persons involved in such unlawful activity as driving with suspended or revoked permits, driving stolen vehicles or vehicles with stolen registration plates and driving unsafe vehicles, and for increasing the rapidity and rate of police identification of stolen cars.”

The project – called TAGS, Haddon said, because it involves vehicle registration plate data – is being carried out jointly by the Maryland State Police, Maryland Motor Vehicle Administration and IIHS, which provides technical support. The agreement initiating the project was signed by Maryland’s Motor Vehicle Administrator, Ejner J. Johnson; Col. Thomas S. Smith, Superintendent of Maryland State Police and Haddon.

TAGS POTENTIALS

“Ordinarily,” Haddon said, “on-the-road enforcement activities depend on the observation by police of aberrations – such as erratic driving, vehicle malfunction, or vehicle involvement in a crash – that

draw attention to the vehicle and its occupants. Not routinely available to police has been a means for real-time screening, from the huge population of on-the-road vehicles and drivers that are *not* acting aberrantly, of those involved in or associated with illegal activity.”

TAGS, he said, represents an attempt to provide such real-time screening. He explained the project’s operation on a typical day:

- The TAGS staff obtains from the motor vehicle administration and the state police a computerized list of Maryland registration plate numbers associated with: stolen vehicles (about 11,000 plates); stolen plates (about 9,000 plates); suspended or revoked driving permits (about 22,000 plates of vehicles owned by drivers with suspended or revoked permits or vehicles in which the offense or offenses leading to suspension-revocation were committed); warrants (about 4,000 plates associated with vehicles owned or operated during commission of a crime); repair orders (about 39,000 plates of cars ticketed by police for violation of vehicle inspection standards).

- The TAGS staff places the computerized list of plate numbers in the computer storage unit of a specially designed TAGS observation vehicle – an unmarked van – equipped with its own computer and computer storage unit, and also with two keyboard-display screen units connected to the computer. The TAGS staff is now ready to begin operation, accompanied by two on-duty state police cars that stay within radio range of the observation vehicle.

- The TAGS driver cruises a preselected highway segment at a speed slightly slower than the flow of traffic. Two observers, each seated at one of the van’s computer keyboard-display units, read registration plates of vehicles in the stream of traffic and punch the plate numbers – at a rate of about 100 per hour per observer – into the keyboard. The computer instantly compares each punched-in plate number with those in its storage unit, and signals the observer whether or not the punched-in number matches a plate number in the storage unit.

- If the punched-in number *does not* match one in the storage unit, the observer continues to read and punch in plate numbers until a match is found. If the punched-in plate number *matches* one in the storage unit, the computer transmits to the observer, via the display screen, pertinent information about the plate and, if available, the driver associated with it. The observation vehicle staff radios an accompanying state police car that a match has been made and provides the trooper with the matched plate number and other information.

- Enforcement activities are the responsibility of the accompanying state police cars. Using the “matched plate” information, the trooper may at his discretion stop the vehicle for further investigation, radio the police barracks for additional information, or place the vehicle under observation.

- The trooper informs the observer by radio of his action on the “matched plate.” The observer punches this information into the computer storage unit for retention and future evaluation. At the end of the day, the TAGS staff removes the computerized information from the observation vehicle for processing to evaluate the project’s results.

PRELIMINARY RESULTS

Haddon told the AAMVA regional meeting that during 80 representative days of operation in Baltimore County, the TAGS project activity involved:

- Observation and entry of more than 66,000 registration plates;
- Matching of some 600 plate numbers with numbers in the observation vehicle computer;

- Stopping of more than 200 vehicles;
- Law enforcement action in more than 50 cases.

“The TAGS trial operation in Baltimore County produced matches of observed plates with plates in the computer storage unit at an average rate of about 10 per six-hour operations period. A short trial period in Baltimore City produced the considerably higher average rate of about 50 matches per six-hour operations period,” he reported.

“As the TAGS demonstration project proceeds, results will continue to be evaluated by the three participating organizations,” Haddon said.

Congress Considering Buzzers

Buzzer Ineffectiveness Confirmed

As Congress considers legislation to revive the buzzer-light safety belt system as an alternative to the ignition interlock, Insurance Institute for Highway Safety research has confirmed that buzzer-light systems do not substantially increase belt use.

The new Institute study found that in 1973 models, all of which had a buzzer-light belt system, the total use rate for drivers was 28 per cent – with only 7 per cent using lap-shoulder combinations. Observation of 1972 models showed no significant difference between those with buzzer-light systems and those without the systems. The driver use rate was 25 per cent in 1972 cars *with* warning systems and 23 per cent in those *without* the system.

A 1972 Institute study, which first reported that the buzzer-light system did not significantly increase belt use, had termed the device a “public health failure.” (See *Status Report*, Vol. 7, No. 17, Sept. 18, 1972.)

COMPARISON OF DRIVER BELT USE

<u>Belt Use</u>	<u>1972 Models No Buzzer- Light</u>	<u>1972 Models Buzzer-Light Equipped</u>	<u>1973 Models Buzzer-Light Equipped</u>	<u>1974 Models Interlock Equipped</u>
	<u>Per Cent</u>	<u>Per Cent</u>	<u>Per Cent</u>	<u>Per Cent</u>
None	77	75	72	41
Lap Only or Lap and Shoulder Combination	23	25	28	59

Sometime during this session, the House of Representatives is expected to vote on legislation (HR 5529) which would allow purchasers of 1975 and later model cars to choose between ignition interlocks or buzzer-light belt systems. NHTSA officials have told *Status Report* that the agency expects a move to ban ignition interlocks altogether.

The new IIHS research also found that even though belt use in ignition interlock equipped 1974 models increased significantly over usage in 1973 and earlier cars, more than 40 per cent of the drivers of

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ignition interlock equipped cars still did not use the available safety belts. The findings were in a report by Dr. Leon S. Robertson, IIHS's senior behavioral scientist.

While the increased belt use in 1974 cars "will undoubtedly reduce the incidence and severity of injury in these vehicles," Robertson stressed that large numbers of drivers of 1974 cars still remain "unprotected by restraint systems in low to moderate speed, as well as high speed, crashes."

The new Institute study found that overall driver usage (lap belt only or lap-shoulder belt) for 1974 ignition interlock equipped cars was 59 per cent. The observations covered usage in six urban areas: Baltimore, Md.; Houston, Tex.; Los Angeles, Cal.; the New Jersey suburbs of New York City; Richmond, Va. and Washington, D.C. The Institute's preliminary report, which covered observation in three of the urban areas, found a 53 per cent overall usage rate. (See *Status Report*, Vol. 9, No. 6, March 26, 1974.)

Given the large number of people who do not use belts in ignition interlock equipped cars and the advanced state of passive restraint technology, "further delay in the implementation" of the National Highway Traffic Safety Administration's passive restraint standard (FMVSS 208) "would not be in the public interest," Robertson said.

Copies of the study are available by writing "Interlock," Insurance Institute for Highway Safety, Watergate Six Hundred, Washington, D.C. 20037.

Nationwide Refuses To Pay For Boobytraps

Nationwide Mutual Insurance Company, the fifth largest auto insurer in the United States, has announced that it will no longer pay to repair or replace "dangerous highway boobytraps that kill and maim thousands of motorists each year."

In letters to 23 governors, in whose states the company does most of its business, Nationwide's President John E. Fisher said, "The company will pay for the replacement of hazardous fixtures if the damaged units are replaced by devices that are safe and properly installed. The company will withhold payment for the replacement of hazardous fixtures if the damaged units are replaced by devices that are not safe or are located in unsafe areas." Traditionally, insurers have paid claims from highway departments for roadside structures damaged by policyholders.

"These roadside boobytraps," Fisher noted, "include immovable signposts and light poles, improperly installed guardrails that impale victims or guide their autos into death-dealing concrete abutments and bridge pillars, and other roadside hazards that don't allow an errant driver a second chance once his auto leaves the road."

Fisher pointed out that a Pennsylvania study attributed 357 highway deaths to fixed objects struck by cars during a six-month period. In the same period, 290 persons died in crashes with other cars.

Fisher said Nationwide would "intensify its claims investigation of highway fixtures" damaged in crashes involving the company's policyholders. The repair or replacement of damaged fixtures, providing they are non-hazardous to the public, will be paid through normal claims procedures.

"Just as a motorist would not replace a faulty tire on his car with another faulty tire," Fisher concluded, "insurance companies should not waste policyholder funds to replace a mistake with another mistake."

If Many Fail, It's Defective, Court Rules

A "large number of failures" is sufficient proof that a vehicle component is defective, a federal court recently ruled. The court said that "failures in performance," which happen "unpredictably and catastrophically," of wheels used on a large number of 1960-1965 General Motors pickup trucks alone justified a National Highway Traffic Safety Administration finding that those wheels had a safety related defect.

Judge Oliver Gasch of the U.S. District Court for the District of Columbia, who wrote the decision, ordered GM to send defect notification letters to owners of the affected trucks. The decision is considered a substantial victory for NHTSA, an agency official told *Status Report*. GM is appealing Judge Gasch's decision and defect notification order. (The case is *U.S. v. General Motors Corporation*, U.S. District Court for the District of Columbia, civil action No. 3298-70, decided June 13, 1974.)

The decision is expected to have implications for NHTSA's defect investigation on lower control arm failures in 1965-1970 Ford passenger cars. Earlier this year, at a NHTSA hearing to challenge the agency determination of no defect, the Insurance Institute for Highway Safety and the Center for Auto Safety argued that the nearly 300 confirmed failures in performance of the lower control arm clearly demonstrate that the arm has a safety related defect. (See *Status Report*, Vol. 9, No. 6, March 26, 1974.) NHTSA is "still reviewing" its position on the lower control arm failures, NHTSA officials told *Status Report*.

In the wheel case, GM had argued that the agency must prove that the wheels "were not properly designed or manufactured" and that they were not overloaded at time of failure. Rejecting that argument, Gasch said GM's position would force NHTSA to show that "every failure was not due to owner abuse" before it could declare a defect. A defect notification campaign must be conducted "not only when there was a cognizable defect in design or manufacture but also when the evidence reveals a large number of failures of components or materials, *i.e.*, *failure in performance*, regardless of the cause (emphasis in original)," Gasch said.

Deficient Safety Plans Get One-Year Approval

The Department of Transportation has given Iowa, Maryland, Nebraska and Puerto Rico eleventh hour approval of their highway safety programs for the 1975 fiscal year. Those jurisdictions had failed to enact federally prescribed highway loss reduction measures and, as a consequence, faced the loss of federal approval – and funding – of their programs.

In letters sent to the four jurisdictions, the Federal Highway Administration and the National Highway Traffic Safety Administration indicated that they have not made a final decision to invoke the penalties. Pending that decision, the agencies said, "We have concluded that full-year approval is the only type of approval that would not cause undue disruption to your programs."

The reprieve gives these jurisdictions an additional year to enact the required measures. The agencies have said that they will hold public hearings before any money is withheld. (See *Status Report*, Vol. 9, No. 12, June 18, 1974.) Any decision to withhold funds will now affect FY 1976 funds rather than FY 1975 funds, as DOT had originally planned.

House Would Cut Funds For Belt Law Incentives

The U.S. House of Representatives has voted to deny funds to the program, supported by the Department of Transportation, to award incentive grants to states that pass safety belt usage laws.

The House struck the \$32 million NHTSA request for incentive grants authorized by the 1973 Highway Safety Act. Grants equal to either 10, 15 or 25 per cent of a state's funds under the 1966 Highway Safety Act were to be awarded, according to how many of the National Highway Traffic Safety Administration criteria for such laws were met. Puerto Rico, the first U.S. jurisdiction to enact such legislation, received a 25 per cent grant before the House voted to cut off the funds. (See *Status Report*, Vol. 9, No. 12, June 18, 1974.)

The House Appropriations Committee had recommended the vote against NHTSA's request for incentive grant funds. Rep. William H. Harsha (R-Ohio), who introduced an amendment on the floor to reinstate incentive grant funds, claimed that safety belt usage laws could save over 10,000 lives and prevent 100,000 serious injuries annually. In addition, "once safety belt use laws are on the books," he said, "there will be no further need for interlocks" that are presently required on 1974 cars in an attempt to increase belt usage.

In heated debate, several members denounced the incentive grants as an attempt to "bribe" state legislators and also attacked the alleged inconvenience of interlocks.

Further action on the appropriations measure now rests with the Senate Appropriations Committee.

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the highway
loss reduction

STATUS REPORT

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