

## Energy-Road Loss Data Compiled

An Institute paper, pulling together available hard data bearing on the energy shortage's possible effects on highway losses, has warned against the dangers of "interpreting any early changes in highway losses, if such occur, as being indicative of real trends due to the energy shortage."

The paper stresses the difficulties of reaching scientifically reliable projections as to the energy shortage's short and long-term implication for human and economic highway losses. Single copies are available by writing, "Hard Data on Energy Shortage and Highway Losses," Insurance Institute for Highway Safety, Watergate Six Hundred, Washington, D.C. 20037.

As described by its introduction, the paper pulls together "known facts and results concerning several especially well documented aspects of the situation that are changing and that might change."

At the same time, it avoids unsupported speculation on the energy shortage's precise long-term effect, whether upward or downward, on highway losses, cautioning against the dangers of interpreting short-run changes in losses as indicating the effects of the energy shortage. The report points out:

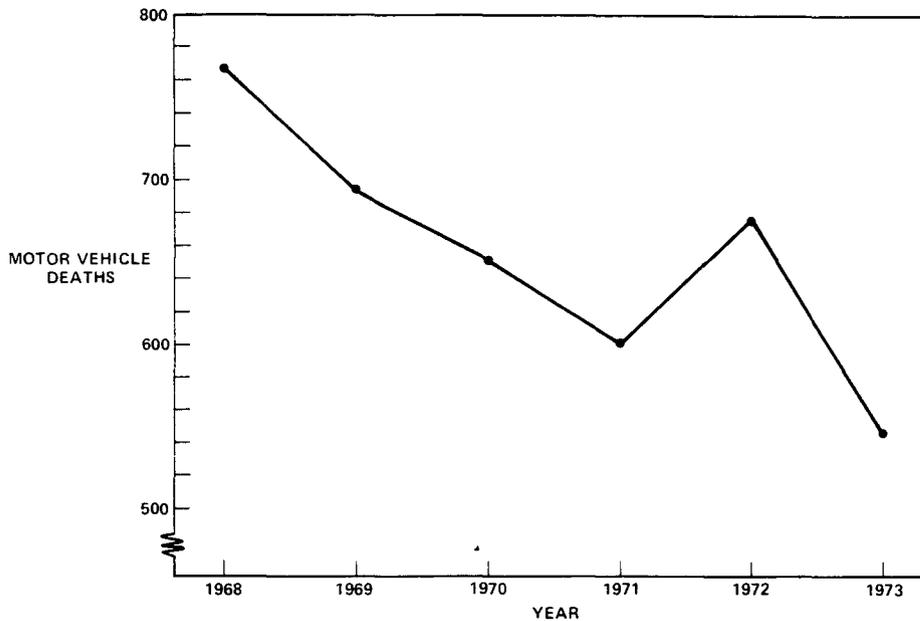
"Reductions in deaths occurring during the 1973 Thanksgiving holiday compared with the same holiday in 1972 have already been widely quoted in the press as an indication that the energy shortage has already begun to reduce motor vehicle deaths. Such conclusions are premature.

"The figure (reproduced on p. 2) shows the Thanksgiving holiday deaths for the last six years; it is clear from this figure that, with the exception of 1972, there has been a consistent downward trend in these deaths and it appears that 1972, rather than 1973, was the unusual year since the deaths were higher in 1972 than would have been predicted on the basis of the figures of previous years. Furthermore, the reported 1973 total appears to be on the declining trend line established by the data for the prior years, *except* for 1972.

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## THANKSGIVING HOLIDAY MOTOR VEHICLE DEATHS\*



\*IMMEDIATE DEATHS, THOSE OCCURRING BY MIDNIGHT ON THE LAST DAY OF THE HOLIDAY PERIOD.

SOURCE: 1968-1972 DATA, ACCIDENT FACTS, 1973 EDITION, NATIONAL SAFETY COUNCIL, 1973 DATA, PUBLIC INFORMATION DEPARTMENT, NATIONAL SAFETY COUNCIL

“Holiday fatality figures are also complicated because holidays are, by definition, not typical of other periods. It is probable, therefore, that their amounts and types of driving are also not typical. This is likely to be particularly true for the Thanksgiving holiday.”

Among other points covered in the paper are these:

#### VEHICLE SIZE

There is “considerable evidence that, if all other aspects of the situation were unchanging, the decreasing size of the cars in the vehicle population would tend to generate more severe and more frequent losses.”

As to the frequency of small car involvement in crashes, the paper includes a graph that reflects Highway Loss Data Institute results showing the frequency of claims for varying sizes of passenger cars by market class.

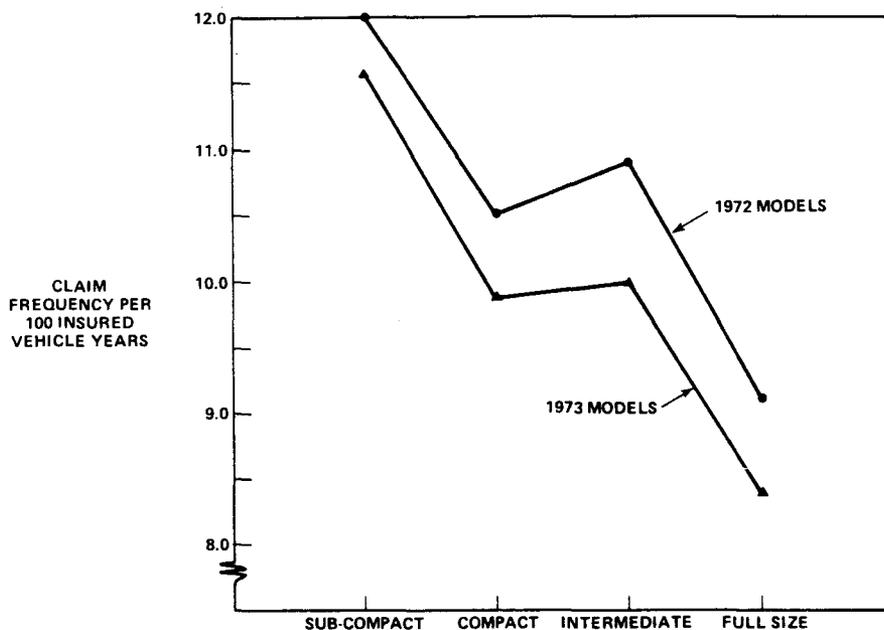
#### REDUCTIONS IN SPEED

Available data suggest that “if all other aspects were unchanging, it is likely that reduced speeds would result in fewer deaths and injuries but little appreciable change in crash frequencies.” Also, “decreased travel speeds result in increased travel times” and this will “increase traffic density. The effect of this increase in ‘time exposure’ is unknown.”

#### PASSENGER CAR MILEAGE

“Passenger car mileage may decrease. It is likely that substantial decreases in vehicle mileage would result in some reductions in highway losses. It is not possible at this time, however, to scientifically predict what, if any, these reductions would be.”

## LOSS PAYMENT SUMMARY BY MARKET CLASS - 1973 AND 1972 MODELS - COLLISION COVERAGES



SOURCE: ADAPTED FROM "AUTOMOBILE INSURANCE LOSSES, COLLISION COVERAGES. INITIAL RESULTS FOR 1973 MODELS COMPARED WITH 1972 MODELS". HLDI RESEARCH REPORT R73-1, SEPTEMBER 1973.

### VEHICLE OCCUPANCY RATES

These "may increase," meaning that "the chances of injury in a given crash are increased. In addition, it is probable that increased occupancy rates in small cars adversely affect the braking and handling characteristics to a much greater extent than increased occupancy rates in larger cars. Therefore, the combination of small cars and higher occupancy rates could tend to increase crash frequencies."

### DIFFERENT SPEED LIMITS FOR TRUCKS, CARS

"If trucks are traveling faster than passenger cars the already major discrepancies in braking performance become even more pronounced and under these circumstances, more crashes of this type can be expected." (See following story.)

### AGE OF VEHICLE POPULATION

The average age of vehicles in use may increase "if people disproportionately use older vehicles because of their better gasoline consumption . . . . The effect of a change in the average age of vehicles in use is uncertain, although many of the older vehicles would not be designed and constructed to satisfy the more recent federal motor vehicle safety standards."

### YOUNG DRIVERS

"It is possible that the amount of non-essential driving done by young drivers may be reduced. For example, some high schools have already proposed that student parking lots be closed to students' cars. And, in the event of severe gasoline shortages, more essential family auto use needs would presumably take priority over non-essential driving by youthful family members."

The Institute paper, whose complete title is, "Some Hard Data Relative to Highway Losses in Damaged People and Property and Changes That Might Result from the Energy Shortage," concludes:

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“The extent and duration of the energy shortage is not yet predictable, although there is apparently no doubt that there will continue to be at least short term shortages of gasoline and truck fuels. In view of uncertain short term prospects and the many aspects of the situation that are changing, it is not possible at this time to predict with any confidence what the short term effects, even as to direction, will be on each of the various categories of highway losses.”

## Truck Makers Seek Delay In Brake Rule

Major truck makers have asked the government to postpone – or for some trucks eliminate completely – a standard to improve air brakes on trucks, buses and trailers.

Even in its present form, the standard which is to become effective Sept. 1, 1974, will not eliminate the disparity between the stopping capabilities of these vehicles and automobiles.

The federal safety standard on air brake systems (FMVSS 121) was issued Feb. 19, 1971, to become effective Jan. 1, 1973. In issuing the standard, the National Highway Traffic Safety Administration said its purpose “is to insure that the braking performance of these large vehicles will compare favorably with passenger cars.” (See *Status Report*, Vol. 6, No. 5, Mar. 10, 1971.)

In an amendment issued Feb. 16, 1972, the effective date was postponed to Sept. 1, 1974. The purpose of the postponement, according to NHTSA, was to “permit a longer period of fleet testing to evaluate the durability of the new systems” on the premise that “the resulting production systems are likely to be substantially improved by the additional time allowed.”

While granting the extension of the effective date, NHTSA denied petitions requesting increases in the stopping distances. “Greater distances,” the agency explained, “would increase the disparity between trucks and cars and be contrary to the interests of safety.”

The standard would require that vehicles with air brakes traveling at 60 miles per hour be able to stop in a maximum of 245 feet on a dry surface. The NHTSA’s latest consumer information publication indicates that at 60 miles per hour, all of the more than 300 makes, models and styles of 1973 cars listed are capable of stopping in less than 245 feet.

Truck and truck component manufacturers have petitioned NHTSA to have compliance with FMVSS 121 eliminated completely for certain “heavy duty” motor trucks, or postponed for still another two years beyond Sept. 1, 1974. Reasons cited include a lack of adequate brakes, lack of available parts and the need for more testing and evaluation.

Disparity in braking capability is of special interest in view of President Nixon’s recent proposal for a 50 miles per hour limit for automobiles and a 55 miles per hour limit for trucks, trailers and buses.

A braking standard for passenger cars (FMVSS 105a) slated to become effective Sept. 1, 1975, will require cars traveling 50 miles per hour to stop in a maximum of 135 feet. However, a truck, bus or trailer under amended FMVSS 121 must be able to stop from 50 miles per hour in a maximum of 174 feet on a dry surface. This is 39 feet farther than the allowable stopping distance to be required of passenger cars at the same speed.

At a speed of 55 miles per hour, the limit proposed by President Nixon for the larger vehicles, this disparity would be increased even more. A 1976 model car traveling 55 miles per hour will be required to stop within 163 feet. At that same speed, a truck, bus or trailer must be able to stop within 208 feet, a difference of 45 feet. And with a truck traveling 55 miles per hour and a car 50 miles per hour, the difference is 73 feet.

On five separate occasions, the National Transportation Safety Board, noting how the discrepancy in stopping distances between passenger cars and commercial vehicles contributes to crash frequency and severity, has urged that stopping distances be more compatible.

- In a report on a 29-vehicle crash in fog on the New Jersey Turnpike Nov. 29, 1969, in which six persons were killed and 18 injured, NTSB recommended that the National Highway Traffic Safety Administration "set a high priority on establishing performance requirements for new buses, trucks, trailers, and combinations in regard to: improved braking capabilities with balanced skid resistance, reduced 'fade,' and shorter stopping with maximum load." (See *Status Report*, Vol. 6, No. 8, April 26, 1971.)

- In a Nov. 15, 1972, special study entitled "Reduced-Visibility (Fog) Accidents on Limited Access Highways," NTSB noted: "Another approach that could reduce accidents or reduce their severity involves the improved braking characteristics of both private and commercial vehicles. A partial solution to the highway fog problem," the agency concluded, "would be a combination of improved and compatible vehicle stopping distance coupled with improved driver education leading to better driving control." (See *Status Report*, Vol. 8, No. 8, April 9, 1973.)

- In a report stemming from an Aug. 18, 1971, multi-vehicle crash involving fires, NTSB recommended that NHTSA "continue the commendable efforts exemplified in FMVSS 121 effective Sept. 1, 1974, toward more effective braking performance requirements for trucks, trailers, and certain vehicle combinations, not only toward closer compatibility between the performance criteria for truck and passenger-car braking, but toward more extensive use of available technology."

- In a report on a bus/station wagon collision followed by a bus overturn Oct. 10, 1971, near Marshfield, Mo., NTSB recommended that NHTSA "expedite rulemaking" under FMVSS 121 "to improve the antilock braking capability of bus (and truck) braking systems." (See *Status Report*, Vol. 8, No. 7, March 26, 1973.)

- In a Jan. 18, 1973, special study on commercial motor vehicle braking, NTSB recommended that NHTSA and the Bureau of Motor Carrier Safety cooperate in a research and development program, make federal funds available for an "experimental safety vehicle - truck brake," and form a technical advisory committee to draw on the expertise of aerospace industry brake suppliers. (See *Status Report*, Vol. 8, No. 4, Feb. 12, 1973.)

## **DOT Pushing Belt Use Laws**

The Department of Transportation has launched its push for state-level safety belt use laws with a three-day conference in Washington, D.C.

During the conference, the National Highway Traffic Safety Administration (NHTSA) proposed incentive grants to encourage states to enact laws that require the use of safety belts in motor vehicles. NHTSA is empowered by the 1973 Highway Safety Act to award such grants.

Under the proposed incentive grants, states could increase their federal highway safety money by 10, 15 or 25 per cent, respectively, if they enact legislation that would require:

- Lap belt use by all front seat occupants;
- Either all front seat occupants to use all available seat belts, or all front and rear seat occupants to use lap belts;
- All occupants to use all available belts.

## ***Mandatory Child Restraints Urged***

Two safety groups have asked the National Highway Traffic Safety Administration to "incorporate mandatory use of infant and child restraints in its proposed requirement for mandatory seat belt usage laws."

In a petition for rulemaking, the Center for Auto Safety and Physicians for Automotive Safety said that NHTSA should include the child and infant restraint provision among other restraint-use legislative requirements it sets for states.

"In light of the present attention to mandatory adult belt usage legislation it is illogical and discriminatory to ignore those members of our society who are unable to make a free choice regarding their protection. In fact, we believe that such an omission would be tantamount to child abuse," the groups said.

*(Cont'd from page 5)*

NHTSA has no plan to penalize states that fail to pass belt use laws.

The proposal to allow laws requiring only lap belt use was criticized as "worse than no law at all" by Dr. Carl Nash, of the Ralph Nader-affiliated Public Interest Research Group. In one of the conference workshops, Nash asserted that states passing lap-belt-only laws would be unlikely to amend such laws later to require shoulder belts as well. Nash also criticized NHTSA's failure to include a check on safety belt maintenance in its motor vehicle inspection standard.

Laws that would require the use of lap belts in front seats only, which would qualify for incentive grants under NHTSA's proposal, were criticized by DOT undersecretary, John Barnum, in an address to the conference. Barnum advocated belt use in all seats to avoid rear seat passengers being hurled forward during a crash and crushing front seat passengers in forward-folding seats.

Barnum, who was formerly DOT's general counsel, discussed the constitutional objection to safety belt usage laws that a person cannot be forced to protect himself. Citing the precedents of laws requiring motorcyclists to wear helmets, he asserted that safety belt usage laws "will be upheld" by the courts. In one workshop session, additional precedents were cited in laws aimed at personal protection, such as those requiring hunters to wear orange or red clothing. According to the National Rifle Association, 16 states have enacted these laws.

Conference participants, who included members of state legislatures, heard addresses from several federal and state government officials. Australian government officials described their country's experience with safety belt usage laws.

Further material on safety belt legislation is available from the U.S. Department of Transportation, National Highway Traffic Safety Administration, Traffic Safety Program, Office of Standards Development and Information, 400 Seventh St., S.W., Washington, D.C. 20590.

The notice of proposed criteria for safety belt usage laws was published in the *Federal Register*, Vol. 38, No. 228, Nov. 28, 1973. Comments should be sent, prior to Jan. 14, 1974, to docket no. 73-27, National Highway Traffic Safety Administration, room 5221, 400 Seventh St., S.W., Washington, D.C. 20590.

## NHTSA Urged To Require Auto Maker Crash Data

The Center for Auto Safety has urged the National Highway Traffic Safety Administration to require all crash test data from auto makers on a regular basis.

Auto makers seldom release their crash test data to NHTSA or the public. Such data contain information on, among other things, occupant protection in crash situations.

In a formal request that NHTSA require the data from auto makers, the center said that the agency could use it "in assessing technological capabilities for upgrading of present standards, in providing direction for the development of new standards, and in evaluating manufacturer performance which relates to standards compliance and defect investigations."

Along with its request, the center sent "an 'intra-company' memorandum which categorizes information on Ford Motor Co. tests through June 1968. This document lists 900 separate vehicle crash tests and includes such data as speed, dummy location, type of crash and purpose of test." The Ford memorandum shows that the auto maker also conducted crash tests on cars made by General Motors, Chrysler, American Motors and several foreign manufacturers. The memo is dated June 10, 1968. It deals with crashes conducted prior to that date. A Washington spokesman for Ford refused a *Status Report* request for an updated list of crash tests. The lists are "strictly for internal purposes," he said.

The center also sent a General Motors Corp. report that claims, "In 1970, General Motors conducted 273 full-scale crashes into the barrier. These tests were supplemented by over 900 simulated crash runs on two impact sleds."

The National Traffic and Motor Vehicle Safety Act of 1966 gives DOT authority to require that auto makers provide "performance data and other technical data related to performance and safety as may be required to carry out the purposes of this Act."

(Cont'd on page 8)

### ***Document Shows Extensive Fuel Tank Tests***

Between 1966 and 1968, Ford Motor Co. conducted at least 250 crash tests involving fuel tanks, according to Ford's "intra-company" memorandum on crash tests. None of these crash test results have been made public. After seeing only six crash tests involving 1973 models, conducted and made public by the Insurance Institute for Highway Safety, the chairman of the House Commerce and Finance Subcommittee, which has jurisdiction over vehicle safety standards, said the tests "glaringly spotlighted" the deficiencies in auto fuel system design.

The 1968 Ford "intra-company" memorandum supplied to NHTSA by the Center for Auto Safety shows that during the same two-year period, the auto maker also conducted crash tests involving child restraints, bumpers, air bags, truck underride, passenger compartment intrusion and other areas of vehicle crashworthiness that were subjects of federal standard-setting or defect investigations activity.

Notations in the Ford memorandum indicate that some of the tests were conducted for "public relations" purposes. The fuel tank tests were not among them.

Crash test data "would be among the most valuable information that the secretary could request from the manufacturers for the purposes of enforcing safety standards and investigation defects," the center asserted. Auto makers should be required to supply the agency with crash test data on a quarterly basis, the center said.

Earlier this year the government's General Accounting Office recommended that NHTSA make "expanded and systematic use" of manufacturers' certification information. In many cases those data would include crash test performance information. At that time the agency said it would be "naive of us to expect a manufacturer to submit certification data that showed him to be in non-compliance." (See *Status Report*, Vol. 8, No. 10, May 7, 1973.)

## Dangerous Gulf Seen In Highway Environment

There is a dangerous gulf between "the protection afforded crash occupants by the contemporary design of vehicles and roads" and "the excessive speed at which those vehicles are capable of operating and therefore of crashing," IIHS communications vice president, Ben Kelley, has told the American Public Health Association.

"The protective side of the gulf is alarmingly low, usually less than 30 miles per hour, as a result of roadside and vehicle design inadequacies" while the crash production side involves vehicle speed capabilities up to 125 miles per hour, he said in a paper delivered at APHA's annual meeting.

The gulf could be narrowed, Kelley said, by vigorous action to reduce speed production capabilities, to clear roadsides of hazards and increase vehicle crashworthiness.

"It is vehicle design, not the highest posted speed limit, which defines the *real* upper limits of the gulf," he said, citing a study which showed that police detect only one in 7,600 cases of speeding in which the driver is going more than 10 miles per hour faster than the speed limit.

According to a Department of Transportation study, a built-in speed limit of 70 miles per hour could potentially reduce crash fatalities by 10 per cent annually. (See *Status Report*, Vol. 5, No. 22, Dec 15, 1970.) The National Highway Traffic Safety Administration has proposed a speed control standard which would permit the production of vehicles that can go as fast as 95 miles per hour.

Although the 1973 Federal-Aid Highway Act allocated funds for limited roadside boobytrap removal, the problem will remain until state and federal programs are begun to inventory and remove all hazards, Kelley said. He pointed out that probably "no more than one per cent of the nation's 3.6 million miles" of highways can accommodate off-the-road vehicles at speeds up to 50 miles per hour. On most roads, "car occupants stand scant chance of emerging without death or serious injury if their vehicles stray off the travelled way faster than 12 miles per hour."

Current occupant crash protection from vehicles, as set by the federal motor vehicle standard for safety belt performance, is equivalent to a 30 miles per hour, frontal crash into barrier, for survival of belted occupants with no serious injury. Kelley said, "The responsibility clearly lies as a matter of law" on NHTSA to "push forward with research and standards-setting activity" to improve vehicle occupant protection.

The paper, *Speed and Car Crashworthiness: Unfixing a Great Gulf* was presented Nov. 6, 1973, at the annual meeting of the American Public Health Association. Copies are available by writing to "Car Crashworthiness," Insurance Institute for Highway Safety, Watergate Six Hundred, Washington, D.C. 20037.

## Safety Group To Challenge NHTSA Control Arm Finding

The Center for Auto Safety has asked for a hearing in order to challenge the National Highway Traffic Safety Administration's finding that no defect exists in lower control arms on 1965-1969 full-size Ford and Lincoln-Mercury cars.

"Even on the basis of a partial review, we have discovered several items which leave us with no choice other than to challenge the agency's finding," Lowell Dodge, director of the center, told *Status Report*.

Just prior to announcing its no-defect finding for the arms, the agency established a discretionary policy of holding hearings on certain controversial cases when it determines that no defect exists. (See *Status Report*, Vol. 8., No. 22, Nov. 27, 1973.)

More than three and a half years ago, the Insurance Institute for Highway Safety first called the agency's attention to reports of control arm breakage. IIHS followed that initial report with two research reports attributing the failures to progressive metal fatigue. NHTSA admits the failures occur but attributes them to "cumulative damage fatigue due to severe impact type events."

## Morrill Commended By DOT

Thomas C. Morrill, vice president of State Farm Insurance Co., has received a certificate of commendation from the Department of Transportation for his "efforts to support public and private efforts for improved highway safety through alcohol countermeasures, automotive recall campaigns and highway hazards (correction)."

Morrill has served for three years on DOT's National Highway Safety Advisory Committee. He is a member and former chairman of the Insurance Institute for Highway Safety Board of Governors.

## Rail-Grade Crossing Inventory Planned

The Department of Transportation plans to inventory all public, private and pedestrian railroad grade crossings in the United States over the next 14 months. The program will cost \$4 million, funded on a 50-50 basis by DOT and the railroad industry.

According to Federal Railroad Administrator John W. Ingram and Federal Highway Administrator Norbert T. Tiemann, who announced the program, "Public and private crossings have never been identified on a systematic, national basis and without this information it is, of course, impossible to initiate a safety improvement program." The Association of American Railroads will administer and coordinate the program. State highway departments will supply estimates of highway traffic at each crossing.

DOT estimates there are 500,000 railroad grade crossings in the U.S. About 1,500 deaths and 7,000 injuries result from the approximately 12,000 vehicle-train collisions each year, claims DOT. The agency says about one-third of these crashes involve motor vehicles that run into the sides of trains.

The following article, reprinted with permission, appeared in *Parade*, Oct. 14, 1973. It is scheduled to be reprinted in the *Catholic Digest*.

# Is Your Car Safe From Carbon Monoxide?

by Susan P. Baker

Last year carbon monoxide killed more than 500 Americans whose vehicles were deteriorated, damaged or poorly designed. In 1971, in North Carolina alone, 26 people died when exhaust fumes seeped into their cars.

Something new? No — the hazard is almost as old as the horseless carriage. Early cars were open to the breezes and relatively safe. But once passenger compartments were enclosed a new illness appeared. Called "limousine disease," its symptoms were headache, dizziness, and nausea. Today, as then, tragedy results when symptoms of CO poisoning go undiagnosed. Entire families have driven across the United States, feeling sicker each day, recovering at night, not suspecting the cause.

Carbon monoxide is a colorless, odorless, non-irritating gas, produced by incomplete combustion of hydrocarbons like gasoline. Improperly vented indoor heaters are a common source of CO poisoning, and charcoal cooking on a covered patio can be deadly.

In cars, CO can kill under a variety of circumstances, but the fatal chain of events always has two essential links: First, exhaust fumes are not adequately carried away from the car. Second, an opening into the car permits their entry.

At a 1973 automotive engineering convention in Detroit, one expert,

William Masemore, described what can happen when an exhaust pipe is too short. Two people had died sitting in a 1966 station wagon, "only a year old and beautifully maintained." Unfortunately the tailpipe didn't clear the underside of the car. Nearby, rust had eaten a small hole in the thin sheet metal of the spare tire well. The tire hid the hole, "but even if you saw that hole you wouldn't be likely to suspect you were driving a death trap."

## Lovers and hunters

Fumes are most likely to infiltrate cars parked with the motor running. "Lover's lanes" are a common setting, though romantic couples accounted for less than half the deaths in a 1972 Maryland study. The others? A hunter eased his lame back by sleeping in his new station wagon. A young married

couple watched a drive-in movie. An Army colonel waited out a snowstorm. A truck driver napped at a rest stop — each with the motor running, and each for the last time.

"Most of these deaths happen in cold weather, when people shut the windows and keep the motor running so they can use the heater," explains Maryland's chief medical examiner Dr. Russell Fisher. Unfortunately, the hazard is now spreading to the hottest months, as air conditioners entice people to run the engine with the windows closed.

## Even in moving cars

Parked cars invite death, but you are also vulnerable in a moving vehicle. We've learned this from routine tests on the blood of drivers killed in crashes. A 15-year-old boy, *(Cont'd on page 11)*



*This classical love scene in a parked car could have a tragic finale if the driver leaves the engine running. The killer, carbon monoxide, is colorless and odorless.*

*Susan P. Baker is an assistant professor at the Johns Hopkins University's School of Hygiene and Public Health.*  
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(Cont'd from page 10)

for example, was killed in a rollover near Seattle. Without tests it might have been speculated that the youth was merely an inexperienced driver. But an autopsy showed that much of his blood was saturated with carbon monoxide, too little to kill — but probably enough to tip the balance toward death at a moment when he needed quick reflexes.

Dr. Irvin Sopher investigated the death of a young man who was found sitting in his car near Glen Burnie, Md., after taking his girlfriend home. "He had complained of headaches for months, usually after driving, and his girlfriend had seen a physician because of repeated headaches, dizziness, and nausea," said Dr. Sopher. Not until a blood test identified CO as the cause of his death were their illnesses explained: the short tailpipe had been bent upward by an impact, allowing fumes to enter a small hole in the inner fender.

Recognition that the vehicle plays a leading role in hundreds of deaths every year has led to increasing pressure for tough inspection laws.

Unfortunately, existing inspection programs are often weak, especially with respect to measures that could prevent CO tragedies. At last count only half of the 32 states that require inspection checked for holes in fenders and floor-pans. In North Carolina, cars with faulty exhaust systems actually pass inspection — the examiner need only report the condition to the owner.

An inspection system, of course, is no better than its inspectors. One investigator discovered an out-of-state

inspection sticker on a 9-year-old "coffin on wheels" with long-standing rust damage — gaping holes in floor pans and trunk, and the last two feet of tailpipe rusted off. Backtracking revealed that 10 days after a mechanic "inspected" the car the owner died in it. Five weeks later his widow loaned the unrepaired car to a friend who drove to Maryland, parked behind a bar, fell asleep with the motor running. He, too, died.

Repairs and proper maintenance would lower the death toll, but a solution to the problem also demands changes in new cars. Experts have pressed the auto industry to use better tailpipe design and tougher, rust-resistant materials in the exhaust system and adjacent parts of the body. Designs that trap moisture where it can rust through a vital spot; that fail to disperse exhaust fumes, and that permit fumes to travel from trunk to passenger compartment — can have lethal consequences.

#### A question of design

Manufacturers argue that it's up to the motorist to protect himself. But Dr. William Haddon, Jr., president of the Insurance Institute for Highway Safety, disagrees. He cites the life-saving effects of airbags and electrical fuses, "approaches that *automatically* protect people who — for whatever reason — would otherwise be injured. Similarly, cars can — and must — be modified to reduce the likelihood that fatal doses of CO can reach the occupants. In the final analysis, the problem is one of changing behavior, not primarily of the motorist — who can't smell an odorless gas — but of

those who pick the designs of the vehicles.

"The death penalty is not appropriate for the unwary owner of a poorly designed car."

Until design changes make all exhaust systems safe, how can *you* thwart this insidious killer?

- Never park for more than a few minutes with the engine running and windows closed.

- Don't assume that keeping a window open an inch will save your life. One-sixth of the death cars in Maryland had at least one window partly open.

- Never let your car stand inside a garage with the motor running. Even wide-open garage doors can't protect you while you're working on your car or charging the battery.

- Keep your vehicle's exhaust system in good repair. A Baltimore plumber knew something was wrong with the exhaust system of his truck, planned to have it repaired, but put it off a few days. Procrastination cost him his life.

- Check for holes in the body of your car and have them sealed. Fatal flaws include small holes in the spare tire well of station wagons and the trunks of many cars, originally plugged with rubber at the time of manufacture. Bent trunk lids and missing taillight assemblies also suck in deadly fumes.

- Don't count on warning signals. But if you notice dizziness, blurred vision, or headaches while driving, open your window wide, pull off the road and get out into fresh air until you feel better. Have the exhaust system checked as soon as possible.

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the highway  
loss reduction

## STATUS REPORT

**Ralph W. Hoar, Jr., Editor**

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