

'AIR BAGS': STATE OF THE ARGUMENT

The "air bag" — considered a panacea by some, a pandora's box by others and a mixture of both problems and promise by most of those in between — has become the subject of considerable public and private controversy in industry, government and the media.

Since it began final hearings in June on its proposed passive restraint regulation, the National Highway Safety Bureau has been accepting statements from all sides on the passive restraint on which safety engineers have banked most of their immediate hopes: the air bag.

On August 3, the NHTSB closed the docket of the hearings and began studying comments and testimony. The Bureau is expected either to issue a rule requiring air bags in new cars or to drop the idea by the end of the year.

This issue of Status Report examines current positions on the air bag taken by foreign and domestic automakers, federal and state government officials and consumer groups. As pointed out recently by Transportation Secretary John Volpe, "The central issue does not appear to be the life-saving potential of these devices or even the short-term costs associated with their development, but rather the time needed to set reliable devices into mass production."

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AUTOMAKERS

Automobile manufacturers, both foreign and domestic, unanimously told NHTSB that the proposed Jan. 1, 1973, deadline for air bags is unrealistic. There also was virtual industry unanimity in projecting 1975 as the earliest year in which automakers could get air bags into all new cars.

General Motors, though continuing to have reservations about the current air bag system, was the first manufacturer to

publicly outline a program for mass installation of air bags. GM's phased installation program includes:

- "Building 25,000 production prototype components for installation in General Motors cars for exhaustive laboratory and road testing" starting in January 1972;
- Making approximately 150,000 air cushions "available to the public for the first time as optional equipment" on certain lines in the fall of 1972;
- Offering the air bag as standard equipment for approximately one million 1974 models on the lines in which it was a 1973-model option, and offering it as an option on the remaining 1974 models.

"Assuming that all technical, design and operational problems would have been solved . . . we would install the air cushions on all lines as standard equipment in all our passenger cars and light trucks beginning in September 1974," GM President Edward N. Cole said.

GM outlined its position both in its presentation to NHTSB and in a letter to 82 Congressmen who had petitioned the Bureau not to abandon its 1973 deadline proposal.

In its summary to the Bureau, GM also listed "many problems which need to be resolved with passive restraint systems." The "problems," also cited by other auto manufacturers, included the possibilities of "permanent hearing damage" and "bodily injury" caused by the cushion, "loss of car control caused by inadvertent deployment," and that air bags have "no value in side impacts and limited value in angular impacts, rollovers and multiple impacts."

Ford Motor Company, whose experimentation with inflatable cushions dates from 1957, estimated that "if development and testing efforts are successful, air bags for the front right and center occupants could be installed in all its 1975 model cars and light conventional trucks as optional equipment."

Ford also proposed a phased program beginning with installation of between 200 and 400 air bag units in company-owned 1971 model vehicles. Future steps in Ford's program include:

- Installation of between 2,000 and 4,000 in company-owned cars during the 1972 model year "for a broader range field test";
- Making 20,000 to 40,000 units available as production options on at least one vehicle line beginning Jan. 1, 1973, and five additional car lines beginning Jan. 1, 1974.

Chrysler Corporation said that, "assuming all goes well," it hopes "to be in a position to provide passive restraint systems in volume production by Jan. 1, 1975."

American Motors estimated that the earliest it could incorporate the inflatable passive restraints as standard equipment for front passengers is the 1976 model year — "contingent, of course, upon the success of development programs now in progress." AMC said it

AN 18-YEAR CHRONOLOGY

This chronology has been compiled from newspapers, the Ninth Stapp Conference report and statements in NHSB docket 69-7 (Inflatable Restraints).

- 1952 Patent filed by J. W. Hetrick for an air cushion which automatically inflates when the vehicle suddenly decelerates.
- 1953 Patent filed by R. H. Hodges for inflatable bag to be stored in instrument panels.
- 1955 Patent filed by H. A. Bertrand for inflatable devices to be stored at strategic positions throughout the vehicle.
- 1955 Patent filed by P. M. Maxwell for an air bag actuation system.
- 1957 Ford Motor Company begins experiments with air bags, terms results "disappointing."
- 1964 Eaton Yale and Towne, Inc., begins development of air bags.
- 1965 Dr. Carl Clark of Martin Aircraft outlines his work and cites similar work by U. S. Rubber Co., Goodyear, Douglas Aircraft, Ling-Temco-Vought and private inventors.
- 1966 Dr. Clark produces design for prototype "safety vehicle" which includes an air bag system.
- 1968 Eaton Yale and Towne, Inc., demonstrates air bag to NHSB.
- 1968 Eaton Yale and Towne, Inc., says such a system "could be ready in 3 to 4 years."
- 1969, April NHSB Acting Director Dr. Robert Brenner supports air bag concept in Senate hearing.
- 1969, June NHSB issues advance notice of proposed rulemaking for "Inflatable Occupant Restraint System," proposed effective date Jan. 1, 1972.
- 1969, August NHSB holds public meeting on proposed "air bag" rule; manufacturers ask for postponement of effective date.
- 1970, May NHSB proposed deadline deferred to Jan. 1, 1973.
- 1970, May International conference in Milford, Mich., demonstrates air bag state-of-the-art; automakers oppose Jan. 1, 1973 deadline.
- 1970, June NHSB holds second public meeting on passive restraints.
- 1970, August NHSB closes "air bag" docket.

will be able to install air bags as optional equipment in one car line starting in the 1973 model year and add other car lines possibly in 1974 and 1975 model years.

Foreign automakers lined up with their American counterparts in proclaiming the difficulties they would face in meeting the 1973 deadline.

Volkswagen said it is "impossible" to meet the performance requirements and effective dates of the proposed rule. "Assuming that an adequate system for our vehicle can be developed with no major technical problems, passive restraints for the front seat passenger position can be installed for Jan. 1, 1975," VW said.

Japan Automobile Manufacturers Association Inc., submitting a statement for all Japanese automakers, stated, "We shall not be able to meet all of the occupant protection requirements proposed to be effective on and after Jan. 1, 1973 We will try to meet the goals of installation of passive restraints for front passenger seats by Jan. 1, 1975. "

Renault maintained that an effective date earlier than Jan. 1, 1974, would not be "reasonable" for front passenger restraints. It said the deadline should be Jan. 1, 1975, for the driver's and rear passengers' positions.

DOT OFFICIALS

Transportation Secretary John Volpe told a press conference shortly after the NHTSB hearings that "from the knowledge we have today, we believe that it (passive restraint installation by 1973) can be done. We are going to work our head off to get it done — no matter what the industry says. "

The man charged with carrying out Volpe's directive, **NHTSB Director Douglas Toms**, heard automakers' objections to the air bag at a NATO Conference on Passive Restraints in May and said categorically that he was not impressed by them. In an interview published in Automotive Engineering in August, Toms said:

- "Before we moved ahead with the air bag, we exhaustively analyzed the arguments for and against, so I could have listed more arguments against the air bag than I heard at the conference. We, the government, thoroughly understand the situation. The key point, however, is not that you can always find some reason for not doing something. It is whether you weigh the pros and cons and decide which outweighs the other — not which is most convenient to you in terms of comfort and profit and loss, but what is best for the public. "

- ". . . The automobile industry has had long experience with passive restraints and could have installed them if they wanted to. No one was willing to step forward and put air bags in their cars voluntarily. The key leaders in the automobile industry said to us time and time again that they wouldn't install bags until the government makes them. They make no bones about this Make no mistake, legislation or rule-making is the way you force progress. "

- Asked about industry complaints that the proposed deadline leaves no time for fleet testing: "To exhaustively evaluate air bags in service would take three to eight years.

Calculate how many deaths you would save in eight years and then, as a government official, say you shouldn't do it. "

STATE OFFICIALS

State level government officials evidently don't share DOT's enthusiasm over the air bag.

Edward J. Speno, chairman of the DOT's presidentially appointed National Motor Vehicle Safety Advisory Council, requested in a letter to state officials in June that state governments put an air bag installation requirement in their vehicle procurement contracts starting with 1971 model purchases. But, in a survey of **state motor vehicle administrators** after they had received the Speno letter, Status Report found that most of those responding don't plan to specify air bags on their 1971 state fleet vehicles.

In the Status Report survey, state officials were asked to indicate whether air bags will be required on cars purchased by the state beginning with 1971 models or 1972 models. They were also asked whether air bags are planned for state-owned vehicles only when required by federal regulation on new cars.

- Only two state officials of the 20 who responded said that air bags would be required on "some" 1971 model cars in their states' fleet.
- Three others indicated plans to first require air bags on some 1972 model state fleet vehicles.
- Eleven said air bags are envisioned on state-owned vehicles only when they are required by DOT regulation on all new cars. (One state said that it is "not ready to accept them" even when air bags are required by federal regulation.)
- Three who responded indicated a willingness to have air bags installed prior to DOT requirement if the systems could be proven "dependable" to their satisfaction.

A spokesman for the **General Services Administration**, the federal government's chief procurement agency, told Status Report that manufacturers will not be asked to install air bags in 1971-model cars purchased for federal use. He said GSA does plan, however, to retrofit an undetermined number of federal fleet vehicles with air bags "by the first of the year."

"If we tried (to require air bags in procurement specifications for 1971 model vehicles) I don't know that Detroit would respond," the GSA spokesman said.

Another reason for not stipulating air bags in procurement specifications for 1971 model vehicles is a statutory limit on the amount of money that may be spent on each vehicle, both by GSA and by many of the states.

THIRD PARTIES

Interest in the air bag is not confined to automakers and government officials. It has both advocates and detractors in other sectors.

The American Automobile Association (AAA) has urged the government not to require air bag installation by January 1973 because, it says, the auto industry needs more time to insure that air bag systems can be "failsafe." Consistent with its posture of looking askance at NHTSB reliance on technical "research and consulting firms," AAA has urged the Bureau not to require air bags until the system is proven in "real world" experience by auto manufacturers.

The AAA also has sent a letter outlining its position on air bags to the 82 Congressmen who petitioned NHTSB to hold firm on its 1973 deadline proposal. The letter said AAA "believes that the so-called 'safety' device in question at this stage is only half-safe at best and, at worst, possibly could cause rather than prevent some highway deaths and injuries"

Motor Trend, a popular muscle-car magazine, has joined AAA in alarm over the air bag. It contends in an August article that the automakers, "under pressure from scare specialists in Washington," are being forced to rush design of equipment in an unreasonably short amount of time." If manufacturers don't comply, the magazine argues, they are in danger of being "condemned by public opinion . . . or possibly (facing) more serious repercussions from the government."

Comparing the "miracle" air bag to LSD and DDT, **Motor Trend** finds similarities between the initial popularity of the safety device and the two chemicals and urges its readers to "write your Congressman for action" to prevent air bag requirement.

Such pleas to Congressmen would, more than likely, be met with little enthusiasm by the 82 legislators who petitioned the Department of Transportation in June to stand firm on its Jan. 1, 1973, deadline.

The petition was circulated in the Senate by **Sen. Frank E. Moss** (D-Utah) and in the House by **Rep. Benjamin Rosenthal** (D-NY), Chairman of the House Subcommittee on Consumer Affairs. More recently, Rosenthal sent a letter to President Nixon urging that he, too, support the Department of Transportation in its passive restraint proposal.

"My position, and that of those Senators and Congressmen who are concerned for the safety of the motoring public, is that unnecessary delays on the part of the industry cannot be tolerated," Rosenthal said in his letter to the President. "The Department timetable, given the information before us, is reasonable."

Attorney Ralph Nader and two Nader-backed organizations, Center for Auto Safety and Professionals for Auto Safety, also have been active in supporting the Jan. 1, 1973, DOT deadline for passive restraints. In a letter announcing the formation of **Professionals for Auto Safety**, Nader solicited support for the air bag from doctors, lawyers, engineers and other professionals.

Lowell Dodge, director of the **Center for Auto Safety**, has said that "we see no good justification for any further setbacks in the passive restraint timetable Cost reduction excuses, if they are the true basis of industry objections, are inexcusable, irresponsible and unconscionable."

Eaton Yale and Towne, recognized leader in air bag development, has said that the cost of mass producing the air bag "will be comparable to other safety and comfort accessories that have been introduced in new model cars."

Having reportedly invested \$1.5 million since 1964 in developing the air bag, the company claims to be currently "capable of establishing production capacity as requested by the automotive industry."

HARTMAN'S SLOT EMERGES AS NUMBER TWO AT NHSB

Appointment of a deputy director for programs, coupled with subsequent definition of the job's functions, is having two potentially significant effects at the top of the National Highway Safety Bureau.

- It gives NHSB Director Douglas Toms a "principal assistant" with direct supervisory and policy outreach over all Bureau operations except research, which is handled by the deputy director for technology.
- It places that "principal assistant" in an immediate and direct line of succession to act as director of the Bureau if Toms leaves.

Prior to filling the position, NHSB was staffed with only one deputy director, Dr. Robert Brenner. He was assigned overview of technology and "state of the art" functions. With the advent of Dr. Charles H. Hartman as deputy director for programs, all other NHSB functions now have a similar supervision by a deputy in Toms' office.

At first the two deputy directorships appeared to be equal in stature, but the Bureau's amended regulations issued last month specify that the deputy director for programs is first in line as Toms' successor. The deputy director for technology is second in line.

Thus, when Toms is absent or disabled, Hartman will serve as acting director, and in the event of a long-term vacancy in the office, Hartman will be acting director "until a successor is appointed." (Brenner was acting director of the Bureau for almost 10 months prior to Toms' appointment.)

Though the regulations label both Hartman's and Brenner's positions as those of "principal assistants" to the director, Hartman's bailiwick (programs) is broader in its scope, more administrative in its nature and healthier in its pocketbook than is Brenner's (technology).

The amended regulations state that Hartman's duties include direction and coordination of the Bureau's "management and operational programs as well as the related policies and procedures at headquarters and in the field, including supervision of the NHSB regional directors."

As deputy director for programs Hartman is specifically "delegated authority to approve or disapprove comprehensive multi-year highway safety programs submitted by the states."

All of this, in effect, names Hartman as the most influential person under Toms with respect to determining broad policy and guidelines of operation, particularly since Congressional funding has been concentrated more in highway safety programs than in research and development.

A Bureau spokesman said that specific Bureau projects will still be assigned to individual offices under associate directors, and each associate director is answerable directly to Toms, not to the deputy directors.

Creation of the deputy directorships and division of spheres of interest between them were parts of an overall NHSB reorganization begun by Toms in September 1969 when he was a special consultant to DOT Secretary John Volpe.

The man filling the number two position, Dr. Hartman, formerly served on the faculties of Illinois State University and the University of Wisconsin, and in various administrative positions with the Automotive Safety Foundation until January 1970 when it merged with two other highway support organizations to form the Highway Users Federation for Safety and Mobility. From January until June he was director of the Federation's Highway Safety Division.

DOT MAKES \$67.1 MILLION AVAILABLE FOR STATE SAFETY

State and community safety programs have \$67.1 million dollars available for fiscal year 1971, DOT has announced. The 50-50 matching funds are to be used for the administration of DOT's 16 highway safety standards.

States now are allocated funds solely on the basis of their shares of the total national population. Congress is expected to change that formula during this session to provide that 25 per cent of the funds any state receives be based on its share of total public road mileage, thus giving less populous states a larger share of federal funds to carry out safety programs.

The remaining 75 per cent of any state's federal allocation will continue to be based on population under the proposed formula change. Capitol Hill sources say the formula change is virtually assured.

Following are the amounts allocated for fiscal year 1971 for each jurisdiction:

Alabama	\$1,275,504	Louisiana	\$1,297,857	Ohio	\$3,397,618
Alaska	167,750	Maine	321,374	Oklahoma	885,630
Arizona	604,252	Maryland	1,144,683	Oregon	724,434
Arkansas	713,120	Massachusetts	1,645,855	Pennsylvania	3,644,303
California	6,401,032	Minnesota	1,216,661	Rhode Island	263,173
Colorado	694,161	Michigan	2,874,711	S. Carolina	953,259
Connecticut	860,548	Mississippi	847,776	S. Dakota	260,792
Delaware	172,713	Missouri	1,615,065	Tennessee	1,407,815
Florida	2,065,736	Montana	271,953	Texas	3,779,081
Georgia	1,614,367	Nebraska	510,779	Utah	362,001
Hawaii	222,267	Nevada	184,379	Vermont	167,750
Idaho	264,119	New Hampshire	221,395	Virginia	1,492,378
Illinois	3,419,268	New Jersey	2,113,371	Washington	1,034,020
Indiana	1,768,832	New Mexico	405,834	W. Virginia	626,061
Iowa	989,823	New York	5,551,903	Wisconsin	1,416,793
Kansas	810,829	N. Carolina	1,831,658	Wyoming	167,750
Kentucky	1,139,939	N. Dakota	228,305	Dist. of Col.	238,905
				Puerto Rico	810,418

SMALL CARS FOUND NOT SO 'ECONOMICAL' IN CRASHES

An analysis of 270,000 car crashes to compare driver injury to make, model and year of car suggests that, from the standpoint of human crash protection, "economy" cars may not be so economical.

The study analyzed injuries to unbelted drivers in crashes in North Carolina in 1966 and 1968. A comparable study of belted drivers is forthcoming, according to Dr. B. J. Campbell, director of the University of North Carolina Highway Safety Research Center.

Dr. Campbell found that crashes of newer cars and larger cars produced injuries less severe than those produced in other cars in comparable crashes. Crashes were indexed for comparability by six variables: speed of car, site of impact on car, type of crash, injury to driver, car year, and car make and body style.

Campbell emphasized that his study did not examine "how or why the crash happens in the first place." He also noted that while the study doesn't pinpoint which physical features of a car are responsible for injury, the results do suggest areas where "more intensive research and innovation may be appropriate to improve the crash performance of particular cars.

"Among some of the smaller cars, this may mean that even more attention will have to be paid to safety design," Campbell said. "Of course, this tends to work against the notion that small cars are economy cars, but perhaps economic considerations have to be downgraded at least as far as passenger protection is concerned." (Campbell's emphasis.)

Campbell presented preliminary findings from the study to the Senate Antitrust and Monopoly Subcommittee in March. He noted then that results contain "few if any surprises. His testimony was covered in detail in the April 2 (Vol. 5, No. 6) issue of Status Report.

For the potential car buyer, information such as that contained in the report adds another dimension — safety performance in a crash — to the shopper's decision-making process.

Campbell also noted the "truly staggering data requirements for this kind of analysis" and observed that if public policy should dictate this kind of analysis, then "the data base should be many times the one used in this study."

The Highway Safety Research Center plans to do similar statistical analyses on an annual basis, each time updating the models to include the most recent cars.

Copies of the 125-page report, "Driver Injury in Automobile Accidents Involving Certain Car Models," are available at one dollar per copy from the Highway Safety Research Center, University of North Carolina, Chapel Hill, N. C., 27514.

NHSB PROPOSES TRAILER HITCH STANDARDS

The National Highway Safety Bureau has proposed companion performance and consumer information standards dealing with trailer hitches.

In initiating the rulemaking process for trailer hitches, the Bureau said available data indicate that "a passenger car pulling a trailer is four times more likely to be involved in an accident than one that is not."

Moreover, the Bureau adds, "In 20 per cent of the accidents involving a vehicle towing a trailer, the trailer hitch was a factor that contributed to the accident."

The potential hazard is caused by "the coupling of trailers to vehicles equipped with hitches of insufficient strength to tow the trailers," the Bureau points out.

As proposed, the performance standard would:

- Prescribe minimum strength requirements for hitches, couplings and safety chains;
- Establish five trailer weight classes aimed at precluding the mating of trailers to hitches that are not suited for the weight of the trailer;
- Prohibit, except for mobile homes, the manufacture of ball-type hitches for use on trailers weighing more than 6,500 pounds gross weight.

The consumer information standard would require manufacturers of passenger cars and multi-purpose passenger vehicles:

- To recommend to buyers the type of hitch and method of attachment for each vehicle;
- To indicate the heaviest trailer that each vehicle may safely tow with the recommended hitches;
- To make available to consumers test results which "reflect handling characteristics and yaw stability";
- To furnish consumers a diagram indicating attachment points for all recommended towing hitches.

The proposed effective date for the performance standard is Jan. 1, 1972. The proposed effective date for the consumer information standard is Oct. 1, 1971. Comments on both standards should be sent to the Docket Section, National Highway Safety Bureau, 400 Seventh Street, S.W., Washington, D. C., 20591, prior to Dec. 11, 1970.

A NEW FILM: '1970 LOW SPEED CRASH COSTS'

Films of the Institute's low-speed crash tests of popular 1970 model sedans, "pony" cars and small cars have been compiled into a 35-minute film narrated by Dr. John T. Holloway, Institute vice president for research.

Further information about the film can be obtained from the Insurance Institute for Highway Safety, Communications Department, Watergate Office Building, Washington, D. C., 20037.

'A SHIFT IN FOCUS AND PRIORITIES'

The following is excerpted from Causation, Culpability and Deterrence in Highway Crashes, a 218-page report prepared for the Department of Transportation by David Klein, Professor of Social Science and Human Development, Michigan State University, and Julian A. Waller, M. D., Professor of Community Medicine, University of Vermont College of Medicine, as part of DOT's Automobile Insurance and Compensation Study. The complete report is available for \$1 from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., 20402.

"By far the most important inference to be drawn from this report is that efforts need to be shifted from the pre-crash phase of the crash sequence to the crash and post-crash phases — from the prevention or reduction of the number of crashes to the prevention or reduction of the human and economic losses that result from crashes.

"A very substantial proportion of current countermeasures focuses on changing the behavior of the driver, apparently on the assumption that, since the driver is recognized, both in law and in public opinion, as being primarily responsible, countermeasures ought to be concentrated on him. Both the assumption and the policies based upon it, however, are open to serious question. First, as we have noted in many parts of this report, driver responsibility for crashes is rarely unilateral and is often impossible to isolate from the multiplicity of causes involved in almost every crash. Second, considerations of cost-benefit would dictate an emphasis on the most effective means of loss-reduction rather than a choice based on the faulty syllogism that since the driver is responsible for crashes, changing his behavior will reduce the number of crashes.

"Given the present level of technology and the present economic and political system, it would appear that primary emphasis should be devoted to vehicle design improvements to increase crashworthiness — essentially an acceleration of some of the efforts that have been going on for the past several years and have already shown positive results. Second priority should be given to improving emergency health services because, relatively speaking, the costs are low and the return in terms of lives saved is high. Third priority should be given to improving the highway system — since highway changes require more time for legislative approval and both more time and more money for implementation. Lastly, efforts should be devoted to changing driver behavior, but such efforts must be based in sound research and must be implemented not on a happenstance basis, as they currently are, but systematically, tentatively, and under careful professional scrutiny — in the manner of other public health countermeasures."

WAGER NAMED TO COUNCIL — Ivan J. Wager, editor of Cycle World magazine, has been appointed to DOT's National Motor Vehicle Safety Advisory Council, bringing the council to its full membership of 22.

Established by the National Traffic and Motor Vehicle Safety Act of 1966, the Council advises the Secretary of Transportation on motor vehicle safety standards.

A long-time motorcycle enthusiast and former professional racing cyclist, Wager is past president of the Motor Cycle, Scooter, and Allied Trades Association (now Motor Cycle Industry Council).

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