

Letters

Air Bags, Safety, and Big Brother

In his article on air bag passive restraint systems (News and Comment, 24 Sept., p. 1219), Luther J. Carter cites several numbers in support of the view that the National Highway Traffic Safety Commission (NHTSA) should require that air bag systems be installed in all cars. These numbers relate to the reliability and cost-benefit analyses of air bag systems.

1) Carter deals with reliability considerations by stating that only six inadvertent air bag deployments have occurred in some 240 million vehicle miles of experience with 12,000 cars. This amounts to an average of only 20,000 miles per vehicle, which is perhaps 2 years of trial. Because 2 years is well under half the lifetime of an average American car, it is questionable to base lifetime reliability estimates on Carter's figures. A more meaningful way to look at the reliability of the systems, as produced, is to consider the failure rate as a function of the number of systems manufactured, not how long each is used. Elsewhere in his article Carter states that 12,000 bags have been installed and only two have inadvertently deployed due to manufacturing defects. This is a failure rate of one in 6000 (with no allowance for bags that failed to deploy when they were needed). If we assume that 10 million cars per year are manufactured in the United States, then we could expect something like 1600 inadvertent deployments per year (and perhaps an equal number of nondeployments). Another approach to predicting production quality control would be to assume a very optimistic manufacturing and installation failure rate of only 0.1 percent (though I doubt that modern assembly line production techniques can achieve such a low failure rate). This rate would yield 10,000 failures per year from an annual production of 10 million units. Thus, the number of inadvertent deployments or other failures is likely to be of the same order of magnitude as the NHTSA's estimate of fatality reduction (one-third of 27,000).

2) Ralph Nader estimates a cost of less than \$100 per air bag installation, the Ford Motor Company estimates more than \$300, and NHTSA estimates between \$100 and \$200. If we assume a cost of \$200 per car in 10 million cars per year, air bags will cost the United States \$2 billion every year. Can we afford such a cost for a system that may fail as often as it succeeds?

3) Richard G. Chilcott of Nationwide Insurance Companies says that consumers could save \$1.9 billion in auto insurance costs if airbags were installed in all cars for drivers and front seat passengers. This statement is reminiscent of those made by automobile insurance companies relative to the "5 miles per hour bumper," when they promised that the safety bumper was going to lower insurance costs. It may be true that some insurance companies have not increased their rates as rapidly as they would have without the safety bumpers. However, it is also true that car costs have increased due to the bumper system, car weight has increased significantly (thus lowering gas mileage), and repair costs for accidents occurring at speeds exceeding the design resistance of the bumpers (5 miles per hour) have gone up. It is doubtful that the consumer has actually saved any money with safety bumpers, and I suspect that if anyone "saves" any money due to air bags, it will be the insurance companies.

In the area of safety, we must realize that no machine operated by a human being can ever be made 100 percent "safe." Further, we will always reach a point where the cost of an added increment of "safety" is not worth the "price" (which may not always be exacted in monetary units). In the case of air bags, I think we have reached that point. We are talking about a system that will cost at least as much as it "saves" and may very well cause a number of accidents comparable to the number of fatalities it prevents.

In the past few years, the government's approach to automobile safety seems to have been to concentrate on reducing the consequences of an acci-

dent. Perhaps we should spend our efforts trying to prevent the accidents, rather than tacitly assuming that all we can do is minimize the consequences. I suggest that it is time for the NHTSA to initiate programs such as more extensive driver training and much stiffer licensing requirements, in order to improve the performance of the human element in the personal automobile transportation system.

WALTER F. WEGST, JR.
*Safety Department,
California Institute of Technology,
Pasadena 91125*

Carter implies that, since people won't wear seat belts, it is up to the government to require air bags or some other passive restraint mechanism in automobiles. I disagree. This is simply one more instance of government paternalism going too far. It is none of the government's concern whether the individual driver chooses to wear his seat belts, sit on them, or even remove them.

I can sympathize with those who wish to have air bags installed on their cars at their own initiative. I have had seat belts on every car I have owned since 1956. However, I have no wish to impose seat belts on those who don't want to use them, and I resent the efforts of those who want to impose air bags on me.

Even if air bags were to be made available on a voluntary basis, I feel the government shouldn't be rushing so fast to get them on the market. Instead, the government ought to be imposing a test program at least as lengthy and rigorous as that imposed on new drugs. At most a few thousand people may be exposed to a new drug. Millions of people will be exposed to air bags even if they are made available only on a voluntary basis. Such a device should not be released to the public for voluntary use, let alone made mandatory, without a demonstration that it is much safer than a new drug.

JOSEPH P. MARTINO
*819 North Maple Avenue,
Fairborn, Ohio 45304*

In taking a position implicitly advocating air bags, Carter, to be consistent, should also advocate government control of many other aspects of our private lives. It is not as if failure to use air bags will endanger the public, as, for example, failure to enact gun control will. It is essentially the idea that people are unable to provide for their own welfare and that Big Brother must take charge.

Irvine Page (Editorial, 3 Sept., p. 837) lists a few of the other actions which Big Brother might consider. Cigarettes are

undoubtedly very harmful. Alcohol is a most pernicious drug. The consumption of excessive food, failure to exercise properly, and many other aspects of human behavior are harmful.

A great deal of our attitude depends on whose business interests are involved. Tobacco and liquor lobbies are strong. John Z. De Lorean (quoted by Carter) is hired by Allstate Insurance to study air bags. Ralph Nader makes his living as a consumer buff, certainly not as an advocate of personal rights.

Carter is not really discussing air bags. He is discussing Big Brother. I find such advocacy in *Science* disturbing. If people wish to discuss the question of personal liberty versus Big Brother in a suitable forum, more power to the discussion. But let us not chip away at personal liberty by reference to the supposed virtues of technological gadgetry. It is too much like training animals for the circus.

R. WELLER

Post Office Box 226,
Yankeetown, Florida 32698

Carter's article on air bags for cars is very good, but its contents are most disturbing. I suggest that the solution to the air bag controversy is not a technical one. I have been perturbed by the prospect that air bags will be forced on the public simply because a majority of persons refuse to fasten their seat belts. It is highly inequitable that safety-conscious persons should bear the cost of accidents caused by ignorant or careless persons, either by the forcing of air bags upon everyone, or by insurance companies' charging the same rate for different classes of risk.

Presently some insurance underwriters are offering a premium discount on medical payments or no-fault coverages for cars equipped with air bags (1). I propose an extension of this practice whereby the premium would be further prorated in proportion to the loss experience record for all styles of restraint—lap belt, shoulder harness, air bag, and any other devices which may be in sufficient use to generate reliable statistical data (2).

For expediency, I suggest that the insurance premium be fixed but that the actual insurance award vary depending on the safety device in use at the time of the accident. The insurance application and the policy could have a schedule showing the rate of award per \$1000 of basic insurance for each class of safety device, based on past liability experience of the underwriters; however, the actual

payment could be based on the claims rates current at the time of the accident. Successful fraudulent claims would be practically impossible, because the extent and kind of injuries would be incontestable evidence as to the kind of safety device that was *not* employed.

HENRY ECKHARDT

29 Garces Drive,
San Francisco, California 94132

Notes

1. R. Kopke, Office of the Chairman, General Motors Corporation, personal communication.
2. R. Kopke (*ibid.*) reports that "a recent study by the Yankelovich organization, a respected opinion polling firm, showed that only 15% of motorists are aware that a lap belt is needed with an air bag to provide as complete protection as one obtains with the lap-shoulder belt."

Pesticide Use: CAST Review of EPA Report

As chairman of the CAST (Council for Agricultural Science and Technology) task force which reviewed the "draft" document "Investigation of the effects of food standards on pesticide use" [prepared for the Environmental Protection Agency (EPA) by a Berkeley study group], I feel that John Walsh (News and Comment, 27 Aug., p. 744) perhaps inadvertently misrepresented the 17 scientists and industry representatives who contributed to the review. We did not, in the manner in which he states, criticize the report because it dwelt on "negative impacts to public health and environmental quality." That quotation is from the EPA document itself and was part of the authors' description of their intent.

We stated that the topic as represented by the title of the report "is important and deserving of a more confined, in-depth analysis." Our critique was generally based upon the fact that their treatment was not confined to the effects of food standards on use of pesticides but ranged in a somewhat naive manner over the gamut of problems encountered in the use of insecticides. We were also critical of "the multitude of inaccuracies [which] substantially limit the credibility and usefulness of the document."

My reason for noting the credentials of the authors of the report was also inaccurately reported as inferring that the authors, among whom were those with backgrounds in biophysics, chemistry, and theology, have no credibility in the subject matter as dealt with in the document reviewed. Our review actually stated that comment on the topics discussed should come from many fields, as

"the document lies in the social-political area, not in science." In fact, there is not a shred of original scientific or technological investigation in the report. We suggested that comment on the content of the report be "solicited in addition from persons in other walks of life, including environmental lawyers, consumer advocates, public health field personnel, farm workers, cultural anthropologists, and political scientists, provided they had sufficient acquaintance with the factual subject matter to make their comments relevant."

The emphasis placed by Walsh on the "draft" status of the EPA document, inferring valid objection to the publication of our review by CAST, also alludes to but a part of the relevant facts. No mention was made of the significant information that substantial material from the document had been published previously in *Environment* (1) and subsequently publicized in the *Sacramento Bee* (2) and in a Jack Anderson column (3). It should be well recognized that public debate and discussion are long and valued traditions in controversial matters pertaining to public policy.

In contrast to the implication that critics of the report find it ironical that the controversy surrounding the report will lead to its greater impact, I am confident that the members of the task force would welcome analysis of the report by any informed observer. The document as it stands is heavily value-laden and replete with errors of fact. Copies of the document (4) we reviewed may presumably be obtained from EPA, and copies of our review (5) are available from CAST.

Walsh reported a germ of fact when he included the comment that "little analytical work had been done" on the influence of food standards on pesticide use prior to issuance of the \$50,000 EPA contract for the study in that area. Indeed, based on the material in the report we reviewed, little analytical work has been done to date, and this is solidly documented by our critique.

MARTIN M. BARNES

Department of Entomology, University
of California, Riverside 92502

References

1. J. Barnes, "Poisoning farmworkers," *Environment* 17 (No. 4), 26 (1975); M. Brown, "An orange is an orange," *ibid.* (No. 5), p. 6.
2. *Sacramento Bee* (21 August 1975), p. 2-F.
3. J. Anderson, *San Francisco Chronicle* (23 January 1976), p. 39.
4. Environmental Protection Agency, "Investigation of the effects of food standards on pesticide use" (contract 68-01-2602, Washington, D.C., 1975).
5. Council for Agricultural Science and Technology, "Review of 'Investigation of the effects of food standards on pesticide use'" (Report No. 55, Iowa State Univ., Ames, 1976).