

# Section 6

## Panel Discussion on Safety, Energy Conservation, and Emissions



Ms. Joan Claybrook, Chairman, United States

### Panel Member Statement

**MICHAEL M. FINKELSTEIN**  
NHTSA  
United States

Good afternoon. It is a pleasure to participate in the final event of this Conference. Appropriately, this is a panel of government regulators. I say appropriately because so much of the work of the safety community on experimental safety vehicles ultimately is used to support regulations.

Today, before the panel addresses questions from the floor, I thought it might be useful to try to anticipate some of those questions in my remarks. The question that we are most frequently asked is whether we should continue to issue regulations while the industry is confronting a serious economic downturn.

I do not think that you will be surprised with my answer. However, you may be surprised at some of the reasons for my answer.

First, so there is no possible misunderstanding, I unequivocally believe that regulations that enhance public safety should be issued. Last year in Paris, I had the privilege to present a paper developed by Dr. A. C. Malliaris and I that examined the effects of regulations on safety. That paper postulated that a 30 to 40 percent reduction in the risk of a fatality or injury would be experienced by an occupant of a post-1974 car compared to an occupant of a pre-1968 car. What that means, is that once a crash has occurred, the likelihood of death or injury is 30 to 40 percent lower for occupants of passenger cars covered by U.S. crashworthiness standards.

This year, I do not intend to cover that ground again. Rather, I will examine the other side of the equation—costs. Analyses that we have completed argue rather convincingly that the cost of safety has been relatively modest.

In the USA, the Bureau of Labor Statistics (BLS) gathers data on costs and is the principal enumerator of the cost of living. According to the BLS, the total price increase for new cars attributable to health and safety regulations from 1975 through 1979 was under \$200. Approximately \$160 was attributable to emissions standards and less than \$37 was attributable to safety standards. While a \$200 increase over 5 model years is not trivial, it assumes its proper perspective when one realizes that auto prices increased by \$1691.09 during that same period. Only 11.8 percent of the 5 year price increases was attributable to regulations and only 2.2 percent to safety standards.

In fact, over the last 10 years, only three safety regulations have added more than \$10 to the price of cars in the U.S.—

Bumpers	—\$67
Safety Belt improvements (Manual Restraints)	—\$46
Side Door Strength	—\$30

Moreover, these price increases have principally been generated by changes in variable costs which have been recaptured by the industry as they are made. We are not talking about any substantial investment burden.

Does the recent past give a hint as to what the future holds? Looking at 8 model years, 1978 through 1985, again, we do not expect any major

increase in prices. One estimate projects price increases of \$115 for safety standards over that period. This works out to less than \$15 per year for the period when the automatic crash protection standard goes into effect.

Obviously, the BLS does not make projections of future price increases. This \$115 figure was General Motor's estimate of price increases attributable to safety standards. Again, I do not mean to contend that these are trivial sums, but I do believe that they are not of sufficient scale to affect the auto manufacturers profitability.

By now, it should be abundantly clear that my thesis is that the economic problems facing the industry are not in any way the effect of Federal safety standards.

Before looking at our specific agenda, let me not leave this subject without making clear what the public has received for these modest investments.

Looking at all safety standards issued from 1966 through 1978, we have estimated that they added approximately \$250 to the price of a car. Through that same period, 55,000 peoples lives were saved. This estimate is not ours but was developed by the General Accounting Office, an independent review agency of the U.S. Congress. In the future, the \$115 per vehicle price increase will save an additional 9,000 lives per year and reduce serious injuries by 65,000 annually, when the crash protection systems are installed in most vehicles on the road.

The fact that we have an outstanding record of achievement measured against virtually any criterion does not permit us to rest on our laurels.

We still approach each safety problem with an open mind, carefully examining the consequences of many alternative courses of action. You will note that I did not say that we approach each "regulation with an open mind," because to NHTSA, regulations are just one of many means of solving problems. Moreover, as often as not, our decision is that we should not regulate.

Under President Carter's Executive Order on Regulatory Reform, and even prior to that date, in accordance with our own internal rulemaking procedures, each area where we considered a regulation was carefully examined. We explored alternatives and fully analyzed projected benefits in the face of estimated costs. Those analyses

were made public for all but the most trivial regulations.

We will continue these practices in the future as we work to further enhance vehicle safety. Our immediate plans are clearly described in our rulemaking plan. Our priorities have not significantly changed, but our optimism with respect to scheduling has been somewhat tempered by both the complexity of some of the problems we are addressing as well as by the workload generated by the industry from requests maintain and amend the existing standards.

Our plans call for us to:

1. Initiate rulemaking to minimize risk of death and injury to pedestrians. Our work is sufficiently far along that we expect to issue a proposal early next year addressing lower body injuries. Our research is continuing to see if we can develop countermeasures to reduce pedestrian chest and head injuries.
2. Continue rulemaking to improve side impact protection. Here, as has been reported, we are working simultaneously on the development of test procedures and countermeasures. We are at the point of beginning a major test program to determine whether we have, in fact, developed meaningful countermeasures. A positive finding will lead to early rulemaking.
3. Rulemaking designed to improve visibility for passenger cars will be completed early next year. We will complete rulemaking to establish direct and indirect visibility requirements while we begin new work on improving visibility for other classes of vehicles.
4. Extend automatic crash protection to occupants of light trucks and vans. Rulemaking on this proposal can also be expected in 1981.
5. Rulemaking on truck underride protection should be initiated again, early next year. Here, our research led us to very different conclusions than we had anticipated.
6. Rulemaking to improve truck braking will also be advanced, with minor amendments expected soon, and a major program to investigate heavy truck stability during braking finally getting underway.

7. Rulemaking on seat belt comfort and convenience will be completed in the near future, taking into consideration the comments of the industry.

Finally, we believe that informed consumers can do much more than government to advance the cause of safety. Next to the industry, informed consumers can be the most powerful force for safety.

Which allows me to close with a few words on our plans for consumer information. Our new car assessment program, where we have crashed

cars at 35 mph, is just the start of our work to develop useful auto safety ratings. We are convening a conference in Lancaster, Pennsylvania, from December 9 through 11 to examine this program and help shape it and decide upon its direction and hope to institutionalize this program early next year.

I've discussed **only our near term plans**, because you are much more aware than I am of what our long term plans will be. For it is your successes in developing future safety vehicles that will teach us what is possible.

## Panel Member Statement

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MR. A. KOSUGI  
Ministry of Transport, Japan

I intend to discuss briefly of the intensification of the safety regulations in the future that should be taken in Japan. As I mentioned during the opening session, my government strongly intends to develop the safety standards of the vehicles, on the basis of actual traffic environment of my country.

That is to say, the safety standards when they are newly developed or revised, actual road conditions, accident statistics and the latest technical developments are to be considered as well as the political aspects of the matter.

I really feel that there is much more to do in many fields, for instance, increasing safety performance of vehicles in high speed driving condition, such as up-grading head lamps, easy wearing of seat belt and so on.

Improvement of fire prevention measures are also to be considered as well.

Measures to decrease accidents involving, especially, heavy duty trucks, such as trucks to cars, trucks to two wheelers and, of course, trucks to pedestrians should be seriously considered.

During the conference, I was listening, with great interest, to many presentations made by distinguished experts, especially items for smaller vehicles; since smaller vehicles are occupying the major part of the traffic flow in Japan.

Concerning the smaller vehicles problems. I

am in the opinion that the safety measures on the smaller vehicles problems are the most essential things to be considered.

However, I believe that it is also necessary to review impact behavior of larger vehicles at the same time.

Rear under-ride protection of heavy duty trucks is one of the big items to be discussed.

In this connection, I have been observing the trailers exhibited by the United Kingdom with great interest.

Moreover, improvement of rear visions and rear conspicuity of heavy duty trucks are also investigated.

To reduce the damage of smaller car occupants, in case of the accident against the larger car, energy absorbing construction of the larger might be one of the major items to solve.

And, I wish to add that pollution control measures should be further promoted together with the promotion of motor vehicle safety measures.

Another issue newly surfaced recently is the question of energy conservation. We must face and cope with a more than ever difficult question of solving safety, pollution and energy saving problems simultaneously.

We intend to cope with these problems by facilitating researches and studies, and encouraging technical developments in manufactures and to attain uniformity with international standards with our utmost efforts.

Unfortunately, it will be impossible to take all those unhappy traffic accidents away from our

modern society. However, I strongly believe that it is very important to continue to have the place, such as this conference, to exchange views and

up-dated information each others, in order to achieve the goal of tasks. Thank you.

## Panel Member Statement

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**MR. DOTT. ING. RENZO STRAMPELLI**  
Italian Ministry of Transport

The Italian administration cannot overlook the fact that the trend in accidents on Italian roads has shown a clear tendency toward a reduction. This may, no doubt, be attributed to improved structural characteristics of the vehicles, but above all to the behavior of road users in their driving habits and in the handling of motor vehicles. The highway construction projects implemented over the past 20 years have also had particular importance even if recently work has been confined to the completion of highways already initiated. The economic crisis in the motor vehicle industry makes it necessary to give planning priority to energy conservation and, as a result, in the field of transportation, to fuel economy.

Hence, safety and pollution control have been given comparatively minor attention. This does mean that there are no plans to introduce appropriate measures to improve motor vehicle safety and ensure environmental protection. Such measures, in fact, will have to fall into line with a cost reduction policy in motor vehicle production and maintenance. As regards the desired reduction in fuel consumption, Italy cannot overlook the special condition of the utilization of motor vehicles in high-density city traffic, since Italian drivers have already reduced consumption on their own initiative by cutting down on mileage. Additional economies may be obtained only by improving urban traffic flows and by matching motor car functional features to the prevailing use of their vehicles.

## Panel Member Statement

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**W. L. BAXTER**  
Directorate of Road and Vehicle Safety  
Department of Transport  
United Kingdom

As I said earlier this week the United Kingdom considers that there is a constant and increasing need to develop improved designs of all types of vehicles with high standards of safety which will make travel by road safer and environmentally acceptable even though there are energy and economic difficulties.

We believe that vehicle and component manufacturers have done much to help road safety, energy conservation and emission controls but there is still much to be done. With the increasing costs of oil, the trends towards lower vehicle weight and improvements in aerodynamics will continue to improve fuel consumption. The mandatory publication of fuel consumption figures

now being adopted by different nations will encourage these developments still further.

Lower noise levels and more severe standards for exhaust emissions will be encouraged by the adoption of internationally agreed rules within the European Community.

The United Kingdom's future legislation on vehicles will continue to be bound up with the international discussions which take place within the United Nations and European Community fora. Our aim is harmonised rules which promote safety and environmental control and minimises barriers to trade. Of particular interest within these organizations are, of course, draft proposals for rule making. On vehicle safety, rules for an integrated frontal impact test and a side impact test are being considered as are requirements for pedestrian protection. But progress is held back by the lack of suitable dummies which behave like humans in real accidents.

As we have seen at this conference a great deal of work is being done around the World to improve the existing dummies. The European Community is endeavouring to finalise a suitable side impact dummy specification and calibration system by the end of 1981. If the programme goes well it should be possible to finalise a draft regulation on side impact testing in 1982 or early in 1983. It is our hope that an international regulation on frontal impact testing using dummies will be concluded during 1981.

Much has been said at this conference about the probable increase in fatal accidents in the USA as smaller cars are introduced. The figure of 8 deaths per small car for every one death in large cars is introduced. The figure of 8 deaths per small car for every one death in large cars has been mentioned. There is little doubt that there will be an increase in injury risk as small cars replace larger cars and it is right therefore to encourage safety features which may help to mitigate the severity of injuries. A similar problem exists in those countries where, due to energy and economic difficulties, there is a considerable increase in the numbers of motorcycles. We must therefore do all we can not only to mitigate the effects of collisions but to minimise the underlying causes of accidents.

The United States method of comparing crashworthiness of new cars is of particular interest to us all. It represents a considerable incentive to vehicle manufacturers to produce vehicles which are designed beyond the criteria set by national regulations. From a consumer and legislative point of view the method has considerable merit. But sometimes an improvement in a particular design to get a higher rating may mean a lowering of performance in other features. We

will have to study the results of this method to see whether there are any adverse side effects.

So far as the United Kingdom's plans for the future are concerned we intend to do all we can to conclude a satisfactory regulation for the side impact testing of cars. We see a need to improve the current frontal impact test to ensure that wider protection is given to occupants in car accidents particularly to minimise injuries caused by the steering wheel and column. Our publicity campaigns designed to encourage the greater use of seat belts will continue.

A package of proposals to help minimise motorcycle accidents—particularly through rider training—is being considered. The wearing of safety helmets by motorcycle riders is already compulsory in Britain, but we intend to improve the technical standards for motorcycle helmets.

Our successful programme of training in schools to help reduce child pedestrian injuries is to continue. Further publicity to discourage drinking and driving and better law enforcement procedures are envisaged.

Our intention is to make rear underrun guards on lorries compulsory in accordance with the technical requirements of a recent European Community Directive.

The United Kingdom's programme for roads was announced earlier this year. In addition to concentrating the available resources on important routes and increased use of bypasses for small towns, low cost road engineering developments such as the laying of skid resistant surface at a road junction or replacing of a cross road by a roundabout are being encouraged.

By these and other means we hope that further improvements in road and vehicle safety will be achieved.

## Panel Member Statement

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**PROFESSOR RUDOLPH FREIER**  
Federal Republic of Germany

Let me first take this opportunity to express on behalf of the Government of the Federal Republic of Germany my satisfaction as to the course of this Conference. Such a worldwide exchange of views as has taken place here is not

only an indispensable source of information for the Government, but also a prerequisite for well-founded decisions—decisions which present themselves in the form of legal regulations.

For the discussion we have three given topics:

- safety (meaning technical safety),
- automotive emissions, and
- energy saving.

Each topic *by itself* is already very complex.

Special problems arise, however—at least so it seems—if the discussion of the topics leads to requirements to the motor vehicle which exclude each other or, in other words, lead to conflicting objectives.

Of course the problems can only be dealt with briefly here. But because of this it seems necessary to me to first find out systematically whether and where conflicting objectives could be expected.

To illustrate this I want to base my remarks on the following structure: The relationship between

- Safety and energy saving
- Safety and emissions
- Emissions and energy saving.

Let us first look at the relationship between safety and energy saving.

Here I may remind you of the fact that the automobile industry has committed itself to reduce fuel consumption by 10 to 12 percent until 1985. In all probability this result will be achieved even earlier. The Government will closely follow the fulfillment of this promise.

Up to now it has not been necessary for the Government to intervene, since the manufacturers themselves do what they can to reduce fuel consumption, and the consumers, faced with soaring fuel prices, pay more attention to fuel consumption when they decide to buy a new car.

For the Federal Government it is a matter of course that the relatively high safety standard of motor vehicles is not changed because of reasons of energy saving, or, to put it quite clearly, that no changes are made which would be detrimental to the safety standard. This is, by the way, a safety standard which certainly resulted from worldwide influences.

And nothing seems to indicate that low energy consumption of motor vehicles can only be achieved at the expense of the safety standard. To prove this I only want to refer to the automobile types which were presented at this conference. They show that it is possible to produce motor vehicles which—always according to the state of our knowledge—combine a high level of safety with a relatively low energy consumption.

Another important source of energy is certainly the economical use of energy. For this reason fuel-efficient driving is important. Applications for a driving licence in the Federal Republic of Germany will, therefore, have to prove in their test that they master this art.

Next we should ask about the problems arising in connection with safety and emissions.

Let me put it quite simply:

Environmental protection makes demands to the *engine*, but this does *not* affect safety. There is no need to go into detail, but there hardly seem to arise conflicting objectives here.

Finally, there is the problem of environmental protection and energy conservation (emission).

Endeavours to solve these problems on an extreme short-term basis may indeed lead to conflicting objectives. I hope, however, that constructive solutions can be worked out within reasonable periods of time, solutions which will meet the requirements to be imposed.

Nevertheless, the Federal Government persists in its perspectives, because it is of the opinion that the market does not, at least not at the moment, have a regulatory effect here.

As was often the case before in the course of technical development, it is my view that, thanks to the efforts of researchers and engineers, solutions to the conflicting objectives that I described can be found in this difficult situation, too.

I think we have reason to be confident.

# Section 7

## Conference Conclusion



### Final Address

**PROF. DR. HEINRICH PRAXENTHALER**  
President of the Federal Highway  
Research Institute and Conference  
Chairman

At the end of the 7th ESV Conference the question arose as to whether the date of the next conference had been correctly chosen. Let us look briefly for an answer to this question—or in other words—let us ask ourselves whether new developments and new trends have become apparent in the past few days.

A final address should certainly not provide a complete answer. Results of congresses have to be evaluated and studied. New information has to be separated from facts already known. Perhaps even the chaff has to be sifted from the wheat. However, a general statement could be worded as follows: Fears have proved to be unfounded, new perspectives have become visible and many outlines have become clearer to the scientist and also to the interested public.

Let me refer to some of the statements made and let me try to characterize the facts without forgetting the scientific contents of the great number of excellent papers and contributions to the discussion, which have been presented by the experts from many countries.

At this conference at the least it has become clear to all of us that the safety target can only be pursued in combination with the other objectives: energy, environment, economy. There have even been some proposals to make the so-called integrated concept of the automobile a component part of the slogan of this conference.

Those fearing that the safety aspect would be pushed into the background in favour of the energy saving concept, found out that this objective is firmly anchored in the minds of the designers. That their ingenuity is continuously at work trying to find the correct parameters and the suitable equilibrium.

A discussion of the question can vehicles be classified into two groups of "safe" and "unsafe ones" after one single test and whether a stricter application of an existing test would be the right way of doing it, was not overheard in the course of this conference. The question was raised regarding what preventive measures must be taken to specify test conditions to make heavy vehicles front ends stiffer. This point was raised in view of the smaller vehicle and concern for its safety.

It was stated that no car is a saint, no car a devil. But who really wants to argue the question that the consumer is in fact entitled to know how safe his car really is?

Participants heard with satisfaction that our American partners have promised to keep all parties informed on their findings, results, and requirements.

"The lateral impact test is on its way," this statement characterized an important point. Here again is a convincing demonstration of how an international cooperative research project is able to produce scientific results in a relatively short period of time. Results which can be expected to support a regulation.

It became particularly clear that in the field of restraint systems, the choice of the system is not to be found only in engineering and construction. This is the reason why different approaches have been used so far. The essential thrust for safety

improvements must be to continue to work toward improvements of these restraint systems.

I give a warm thank you to all of you, for contributing to the success of this conference. To those who presented the results of their intellectual and experimental work. To those who in the background ensured the proper functioning of the conference and looked after our physical well-being and last but not least to our untiring interpreters, who enabled us to overcome the language barrier.

The Government of the Federal Republic of Germany has been most pleased to organize this Conference and is delighted to see so many experts meeting in this country.

The fact that a total of 4 days have been dedicated to the automobile should not narrow our outlooks. A safe design of the automobile is admittedly of greatest importance, but a certain number of accidents will always remain una-

voidable. However, man must be taken as a component part of the overall system and efforts must be made to adapt his reaction and behaviour to the bounds of technology. Success is very difficult to measure in this field and can hardly be expressed in physical units. But success does exist and we look confidently to the future.

I wish all of you a safe return to your homes, particularly those who have come from so very far. We should not take international cooperation and conferences like this one as a mere matter of fact. We hope that the frontiers of the countries will continue to remain open without restriction for further exchange of experience for the sake of the intellectual and technological progress.

This concludes the 8th International Conference on Experimental Safety Vehicles. I hope that this conference has been of use to all of you. I am appreciative of the fact that it has been a great honour for me to perform as your chairman.

## Conference Closing

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**DR. R. RHOADS STEPHENSON**  
Associate Administrator for Research and Development  
National Highway Traffic Safety Administration Conference  
Technical Chairman

I have just a few comments to make before the conference is closed.

First, the United States National Highway Traffic Safety Administration will sponsor the Third Automotive Fuel Economy Research Contractors Coordination Meeting at the Sheraton Hotel in Arlington, Virginia, in the United States on December 1-2, 1980. As in the past, these meetings are open to all those who are interested in attending. Most of you have already received invitations; however, if for some reason you were not informed, please drop me a note and I will forward the particulars of the meeting.

Second, the Italian Government has graciously agreed to host the Second International Automotive Fuel Economy Research Conference in Rome in late 1981. Details, agenda, and other information will be forwarded by the Italian Government. We are, of course, most grateful to Dr.

Danese and the Italian Ministry of Transportation for their support of this important conference.

Third, the Government of Japan will host the Ninth International Technical Conference on Experimental Safety Vehicles in Koyoto, Japan, in late 1982. This will be the second ESV Conference hosted by the Government of Japan and will continue the important work accomplished by these international conferences. We are, of course, most appreciative and express our thanks to the Japanese Government.

Fourth, in keeping with past practices, the United States Government will publish the proceedings of this conference. This is a big job and requires the support of all of us. Therefore, if you authored a technical paper presented during this conference, please see that the master copy is turned in to your session chairman or to the document room located off the vestibule. Copies of the proceedings will be forwarded to your government representative in sufficient numbers so that all participants will receive a copy. We expect that the proceedings will be available for distribution in approximately 6 months.

I am personally very pleased with the technical content of this conference and the large number



## SECTION 7: CONFERENCE CONCLUSION

of outstanding technical papers presented. Of special importance is the progress being made in the biomechanics area, side impact protection, and pedestrian protection.

Finally, I wish to thank all of you for coming to Wolfsburg and participating in the Eighth ESV Conference. Our special thanks and appreciation to the Government of the Federal Republic of Germany, Dr. Praxenthaler, and his staff for all their hard work in making this conference so successful. Also to Mr. Schmucker, Dr. Seiffert, and Mr. Beckmann of Volkswagen AG for performing as a most gracious host and making our

stay in Wolfsburg so pleasant and enjoyable. Of course, our thanks to the translators who continually amaze me as they convert our technical presentations so accurately into numerous other languages and thereby allow us to converse with each other. I believe the exhibits and displays presented for us during the conference warrant special recognition, and I wish to thank those companies, laboratories, and governments that supported this outstanding exhibit.

The Eighth International Technical Conference on Experimental Safety Vehicle is now adjourned.

# Exhibition of Research Safety Vehicles

